AECOM

Environmental Protection Department

Contract No. HY/2012/06

Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange

Monthly EM&A Report For August 2015

[09/2015]

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15 September 2015
By Fax (2805 5028) & Post

Dear Sir,

Attn: Mr. James Penny

Environmental Monitoring and Audit (EM&A) for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling
Stage 2 (between Tai Hang to Wo Hop Shek Interchange)
Environmental Permit No. EP-324/2008/C
Condition 3.3 – Submission of Monthly EM&A Report – August 2015 for the portion of Stage 2 works under Contract No. HY/2012/06

We refer to the revised Monthly EM&A Report – August 2015 received on 15 September 2015 submitted by the Environmental Team via email. Pursuant to Environmental Permit Condition 3.3, I hereby verify the Monthly EM&A Report – August 2015 (Rev. 0) for the portion of works under Stage 2 of the captioned Project which is managed under Contract No. HY/2012/06.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Terence Kong
Independent Environmental Checker

c.c. HyD – Mr. Chung Lok Chin / Mr. Tang Man Kai (Fax: 2714 5198)
AECOM – Mr. Y W Fung (Fax:2891 0305)

TABLE OF CONTENTS

List of Tables

Figures

List of Appendices

EXECUTIVE SUMMARY

The proposed widening of Tolo Highway and Fanling Highway between Island House Interchange and Fanling (the Project) is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO). An Environmental Impact Assessment (EIA) Report (the approved EIA Report) together with an Environmental Monitoring and Audit (EM&A) Manual (the approved EM&A Manual) were completed and approved under the EIAO on 14 July 2000 (Register Number: EIA-043/2000).

The objective of the Project "Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling" is to widen Tolo Highway and Fanling Highway to dual 4-lane carriageway in order to alleviate the current traffic congestion problems and to cope with the increasing transport demands to and from the The Project is a designated project and governed by an Environmental Permit (EP-324/2008) issued by the EPD on 23 December 2008. Subsequently, the EPD issued a Variation of Environmental Permit (EP-324/2008/A) (VEP) on 31 January 2012 and the VEP (EP-324/2008/B) was granted on 17 March 2014. The current valid VEP was applied on 9 March 2015 and the VEP (EP-324/2008/C) was subsequently granted on 27 March 2015.

The construction works for this Project are delivered in 2 stages i.e. Stage 1 (between Island House Interchange and Tai Hang) and Stage 2 (between Tai Hang and Wo Hop Shek Interchange). Stage 2 would be implemented under two works contracts. Contract No. HY2012/06 "Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange" and the entrusted portion to CEDD under Contract No. CV/2012/09 "Liantang/Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works – Contract 3". This report focuses on Contract No. HY2012/06 "Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange" in Stage 2 of the Project only.

Pursuant to the EP (EP-324/2008/C) Condition 2.7, the Capture Survey Trip Report for Ma Wat River Northern Meander (Version 2) for the Project was submitted on 24 December 2013 by the Environmental Team (ET) and verified by the Independent Environmental Checker (IEC) on 6 January 2014.

The construction phase of the Contract under the EP and the Environmental Monitoring and Audit (EM&A) programme of the contract commenced on 21 November 2013. The impact environmental monitoring and audit includes air quality and noise monitoring.

This report documents the findings of EM&A works conducted in the period between 1 and 31 August 2015. As informed by the Contractor, construction activities in the reporting period were:

- Site clearance
- Ground investigation
- Piling works
- Pipe laying
- Retaining wall construction
- Noise Barrier
- Excavation
- Backfilling
- Drainage
- Temporary bridge construction
- House Construction
- Foot Bridge demolition
- Bridge construction

Reporting Change

There was no reporting change required in the reporting period.

Breaches of Action and Limit Levels for Air Quality

No exceedance of Action and Limit Level was recorded for 1-hour and 24-hour TSP monitoring in the reporting period.

Breaches of Action and Limit Levels for Noise

No Action or Limit Level exceedance of construction noise was recorded in the reporting month. No noise complaints related to 0700 – 1900 hours on normal weekdays was received and followed by Environmental Team in the reporting month.

Complaint, Notification of Summons and Successful Prosecution

No complaint, notification of summons and successful prosecution was received in the reporting period.

Future Key Issues

Key issues to be considered in the coming month include:

- Properly store and label oils and chemicals on site;
- Chemical, chemical waste and waste management;
- Collection of construction waste should be carried out regularly;
- Properly maintain all drainage facilities and wheel washing facilities on site;
- Exposed slopes should be covered up properly if no temporary work will be conducted;
- Quieter powered mechanical equipment should be used;
- Suppress dust generated from excavation activities and haul road traffic; and
- Tree protective measures for all retained trees should be well maintained.

1 INTRODUCTION

1.1 Background

1.1.1. Tolo Highway and Fanling Highway are the expressways in the North East New Territories (NENT) connecting Sha Tin, Tai Po and Fanling. These highways form a vital part of the strategic Route 9, which links Hong Kong Island to the boundary at Shenzhen. At present, this section of Route 9 is a dual 3-lane carriageway. However, at several major interchanges along this section of Route 9, the highway is a dual-2 lane carriageway only. Severe congestion is a frequent occurrence during the peak periods, particularly in the Kowloon-bound direction.

1.1.2. The objective of the Project "Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling" is to widen Tolo Highway and Fanling Highway to dual 4-lane carriageway in order to alleviate the current traffic congestion problems and to cope with the increasing transport demands to and from the urban areas and also cross boundary traffic.

1.1.3. The Project is a designated project and governed by an Environmental Permit (EP-324/2008) issued by the EPD on 23 December 2008. Subsequently, the EPD issued a Variation of Environmental Permit (EP-324/2008/A) (VEP) on 31 January 2012 and the VEP (EP-324/2008/B) was granted on 17 March 2014. The current valid VEP was applied on 9 March 2015 and the VEP (EP-324/2008/C) was subsequently granted on 27 March 2015.

1.1.4. The scope of the Project comprises mainly:-

(i) Widening of a 5.7 km section of Tolo Highway and 3.0 km section of Fanling Highway between Island House Interchange and Wo Hop Shek Interchange from the existing dual 3-lane to dual 4-lane, including construction of new vehicular bridges;

(ii) Widening of interchange sections at Island House Interchange, Tai Po North Interchange, and Lam Kam Road Interchange from dual 2-lane to dual 3-lane, except Sha Tin bound carriageway at Tai Po North Interchange, which is widened from 3-lane to 4-lane, including realignment of various slip roads;

(iii) Modification and reconstruction of highways, vehicular bridges, underpasses and footbridges.

1.1.5. The construction works for this Project will be delivered in 2 stages i.e. Stage 1 (between Island House Interchange and Tai Hang) and Stage 2 (between Tai Hang and Wo Hop Shek Interchange). Stage 2 would be implemented under two works contracts. Contract No. HY/2012/06 "Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange" and the entrusted portion to CEDD under Contract No. CV/2012/09 "Liantang/Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works – Contract 3". This report focuses on Contract No. HY2012/06 "Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange" in Stage 2 of the Project only.

1.1.6. Hyder-Arup-Black and Veatch Joint Venture (HABVJV) are appointed by Highways Department (HyD) as the consultants for the design and construction assignment for the Tolo project under Agreement No. CE 58/2000 Supplementary Agreement No. 3 (SA3) (i.e. the Engineer for the Contract).

1.1.7. China State Construction Engineering (Hong Kong) Ltd. (CSHK) was commissioned as the Contractor of the Contract.

1.1.8. AECOM Asia Co. Ltd. was commissioned by China State Construction Engineering (Hong Kong) Limited as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) works for the Contract and Mott MacDonald Hong Kong Ltd. acts as the Independent Environmental Checker (IEC) for the Contract.

1.1.9. The construction phase of the Contract under the EP commenced on 21 November 2013.

1.1.10. According to the updated EM&A Manual of Stage 2 of the Project, there is a need of an EM&A programme including air quality and noise monitoring. The EM&A programme for Stage 2 of the Project commenced on 21 November 2013.

1.2 Scope of Report

1.2.1 This is the twenty-second monthly EM&A Report under the Contract No. HY/2012/06 "Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange. This report presents a summary of the environmental monitoring and audit works, list of activities and mitigation measures proposed by the ET for the Contract in August 2015.

1.3 Project Organization

1.3.1 The project organization structure is shown in Appendix A. The key personnel contact names and numbers are summarized in Table 1.1.

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
ER (Hyder-Arup-Black & Veatch Joint Venture)	Chief Resident Engineer	Edwin Chung	6115 0818	2638 0950
IEC (Mott MacDonald Hong Kong Limited)	Independent Environmental Checker	Terence Kong	2828 5919	2827 1823
Contractor (China State Construction Engineering (Hong Kong) Limited)	Environmental Officer	Michael Tsang	9277 4956	2672 2501
		C C Chow	9679 6315	2672 2501
ET (AECOM Asia Company Limited)	ET Leader	Y W Fung	3922 9393	3922 9797

1.4 Summary of Construction Works

1.4.1 The construction phase for the Contract under the EP commenced on 21 November 2013.

1.4.2 Details of the construction works carried out by the Contractor in this reporting period are listed below:

- Site clearance
- Ground investigation
- Piling works
- Pipe laying
- Retaining wall construction
- Noise Barrier
- Excavation
- Backfilling
- Drainage
- Temporary bridge construction
- House construction

- Footbridge demolition
- Bridge construction

1.4.3 The Construction Programme is shown in Appendix B.

1.4.4 The general layout plan of the Project site showing the contract areas is shown in Figure 1.1.

1.4.5 The environmental mitigation measures implementation schedule are presented in Appendix C.

1.5 Summary of EM&A Programme Requirements

1.5.1 The EM&A programme required environmental monitoring for air quality, noise and environmental site inspections for air quality, water quality, noise, waste management, ecology, and landscape and visual impact. The EM&A requirements for each parameter described in the following sections include:-

- All monitoring parameters;
- Monitoring schedules for the reporting period and forthcoming months;
- Action and Limit levels for all environmental parameters;
- Event / Action Plan;
- Environmental mitigation measures, as recommended in the Project EIA study final report; and
- Environmental requirement in contract documents.

2 AIR QUALITY MONITORING

2.1 Monitoring Requirements

2.1.1 In accordance with the updated EM&A Manual, baseline 1-hour and 24-hour TSP levels at one air quality monitoring station was established. Impact 1-hour TSP monitoring was conducted for at least three times every 6 days, while impact 24-hour TSP monitoring was carried out for at least once every 6 days. The Action and Limit level of the air quality monitoring is provided in Appendix D.

2.2 Monitoring Equipment

2.2.1 24-hour TSP air quality monitoring was performed using High Volume Sampler (HVS) located at each designated monitoring station. The HVS meets all the requirements of the updated EM&A Manual. Portable direct reading dust meters were used to carry out the 1-hour TSP monitoring. Brand and model of the equipment is given in Table 2.1.

Table 2.1 Air Quality Monitoring Equipment

Equipment	Brand and Model
Portable direct reading dust meter (1-hour TSP)	Sibata Digital Dust Monitor (Model No. LD-3 and LD-3B)
High Volume Sampler (24-hour TSP)	Tisch Total Suspended Particulate Mass Flow Controlled High Volume Air Sampler (Model No. TE-5170)

2.3 Monitoring Locations

2.3.1 The monitoring station was set up at the proposed location in accordance with updated EM&A Manual. Table 2.2 describes details of the monitoring station. The locations are shown in Figure 1.2a.

Table 2.2 Locations of Impact Air Quality Monitoring Station

Location	Monitoring Station
AM2 (SR2)	Fanling Government Secondary School

2.4 Monitoring Parameters and Frequency

2.4.1 Table 2.3 summarizes the monitoring parameters, frequency and duration of impact TSP monitoring.

Table 2.3 Air Quality Monitoring Parameters and Frequency

Parameter	Frequency
24-hour TSP	Once every 6 days
1-hour TSP	3 times every 6 days while the highest dust impact was expected

2.5 Monitoring Methodology

2.5.1 24-hour TSP Monitoring

(a) The HVS was installed in the vicinity of the air sensitive receivers. The following criteria were considered in the installation of the HVS.

(i) A horizontal platform with appropriate support to secure the sampler against gusty wind was provided.
(ii) The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.
(iii) A minimum of 2 meters separation from walls, parapets and penthouse for rooftop sampler.
(iv) A minimum of 2 meters separation from any supporting structure, measured horizontally.
(v) No furnace or incinerator flues nearby.
(vi) Airflow around the sampler was unrestricted.
(vii) Permission was obtained to set up the samplers and access to the monitoring stations.
(viii) A secured supply of electricity was obtained to operate the samplers.
(ix) The sampler was located more than 20 meters from any dripline.
(x) Any wire fence and gate, required to protect the sampler, did not obstruct the monitoring process.
(xi) Flow control accuracy was kept within ±2.5% deviation over 24-hour sampling period.

(b) Preparation of Filter Papers

(i) Glass fibre filters, G810 were labelled and sufficient filters that were clean and without pinholes were selected.
(ii) All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ±3 °C; the relative humidity (RH) was < 50% and not variable by more than ±5%. A convenient working RH was 40%.
(iii) All filter papers were prepared and analysed by ALS Technichem (HK) Pty Ltd., which is a HOKLAS accredited laboratory and has comprehensive quality assurance and quality control programmes.

(c) Field Monitoring

(i) The power supply was checked to ensure the HVS works properly.
(ii) The filter holder and the area surrounding the filter were cleaned.
(iii) The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
(iv) The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
(v) The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied was sufficient to avoid air leakage at the edges.
(vi) Then the shelter lid was closed and was secured with the aluminum strip.
(vii) The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
(viii) A new flow rate record sheet was set into the flow recorder.
(ix) On site temperature and atmospheric pressure readings were taken and the flow rate of the HVS was checked and adjusted at around 1.1 m^3/min, and complied with the range specified in the updated EM&A Manual (i.e. 0.6-1.7 m^3/min).
(x) The programmable digital timer was set for a sampling period of 24 hrs, and the starting time, weather condition and the filter number were recorded.
(xi) The initial elapsed time was recorded.
(xii) At the end of sampling, on site temperature and atmospheric pressure readings were taken and the final flow rate of the HVS was checked and recorded.
(xiii) The final elapsed time was recorded.

(xiv) The sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
(xv) It was then placed in a clean plastic envelope and sealed.
(xvi) All monitoring information was recorded on a standard data sheet.
(xvii) Filters were then sent to ALS Technichem (HK) Pty Ltd. for analysis.

(d) Maintenance and Calibration

(i) The HVS and its accessories were maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
(ii) 5-point calibration of the HVS was conducted using TE-5025A Calibration Kit prior to the commencement of baseline monitoring. Bi-monthly 5-point calibration of the HVS will be carried out during impact monitoring.
(iii) Calibration certificate of the HVSs are provided in Appendix E.

2.5.2 1-hour TSP Monitoring

(a) Measuring Procedures

The measuring procedures of the 1-hour dust meter were in accordance with the Manufacturer's Instruction Manual as follows:-
(i) Turn the power on.
(ii) Close the air collecting opening cover.
(iii) Push the "TIME SETTING" switch to [BG].
(iv) Push "START/STOP" switch to perform background measurement for 6 seconds.
(v) Turn the knob at SENSI ADJ position to insert the light scattering plate.
(vi) Leave the equipment for 1 minute upon "SPAN CHECK" is indicated in the display.
(vii) Push "START/STOP" switch to perform automatic sensitivity adjustment. This measurement takes 1 minute.
(viii) Pull out the knob and return it to MEASURE position.
(ix) Push the "TIME SETTING" switch the time set in the display to 3 hours.
(x) Lower down the air collection opening cover.
(xi) Push "START/STOP" switch to start measurement.

(b) Maintenance and Calibration

(i) The 1-hour TSP meter was calibrated at 1-year intervals against a continuous particulate TEOM Monitor, Series 1400ab. Calibration certificates of the Laser Dust Monitors are provided in Appendix E.
(ii) 1-hour validation checking of the TSP meter against HVS is carried out yearly at the air quality monitoring locations.

2.6 Monitoring Schedule for the Reporting period

2.6.1 The schedule for environmental monitoring in August 2015 is provided in Appendix F.

2.7 Results and Observations

2.7.1 The monitoring results for 1-hour TSP and 24-hour TSP are summarized in Table 2.4 and 2.5 respectively. Detailed impact air quality monitoring results are presented in Appendix G.

Table 2.4 Summary of 1-hour TSP Monitoring Results in the Reporting Period

Location	Average ($\mu g/m^3$)	Range ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
AM2 (Fanling Government Secondary School)	75.9	70.6 – 80.9	317.8	500

Table 2.5 Summary of 24-hour TSP Monitoring Results in the Reporting Period

Location	Average ($\mu g/m^3$)	Range ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
AM2 (Fanling Government Secondary School)	37.8	18.0 – 65.4	200.7	260

2.7.2 The major dust source during the monitoring was mainly from nearby traffic emission.

2.7.3 All 1-hour and 24-hour TSP results were below the Action and Limit Level at all monitoring locations in the reporting period.

2.7.4 The event action plan is annexed in Appendix J.

2.7.5 Weather information including wind speed and wind direction is annexed in Appendix H. The information was obtained from the Hong Kong Observatory Tai Po and Tai Mei Tuk Automatic Weather Stations.

3 NOISE MONITORING

3.1 Monitoring Requirements

3.1.1 In accordance with the EM&A Manual, impact noise monitoring was conducted for at least once per week during the construction phase of the Contract. The Action and Limit level of the noise monitoring is provided in Appendix D.

3.2 Monitoring Equipment

3.2.1 Noise monitoring was performed using sound level meter at each designated monitoring station. The sound level meters deployed comply with the International Electrotechnical Commission Publications (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator was deployed to check the sound level meters at a known sound pressure level. Brand and model of the equipment is given in Table 3.1.

Table 3.1 Noise Monitoring Equipment

Equipment	Brand and Model
Integrated Sound Level Meter	Rion NL-31 & B&K 2238
Acoustic Calibrator	Rion NC-73

3.3 Monitoring Locations

3.3.1 Monitoring stations M2 and M3 were set up at the proposed locations in accordance with updated EM&A Manual. Figure 1.2a-b shows the locations of the monitoring stations. Table 3.2 describes the details of the monitoring stations.

Table 3.2 Locations of Impact Noise Monitoring Stations

Monitoring Station	Location	Description
M2	West Tai Wo	1.2m from the ground floor free-field of the Residential
M3	Fanling Government Secondary School	1m from the exterior of the roof top façade of the school

3.4 Monitoring Parameters and Frequency

3.4.1 Table 3.3 summarizes the monitoring parameters, frequency and duration of impact noise monitoring.

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

Parameter	Frequency
30-mins measurement at each monitoring station between 0700 and 1900 on normal weekdays. L_{eq}, L_{10} and L_{90} would be recorded.	At least once per week

3.5 Monitoring Methodology

3.5.1 Monitoring Procedure

(a) Façade measurement was made at monitoring station M3, while free-field measurement was made at monitoring station M2.

(b) The sound level meter was set on a tripod at a height of 1.2 m above the ground for free-field measurements at monitoring station M2.

(c) The battery condition was checked to ensure the correct functioning of the meter.

(d) Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:-

(i) frequency weighting: A
(ii) time weighting: Fast
(iii) time measurement: $L_{eq(30\text{-minutes})}$ during non-restricted hours i.e. 07:00 – 1900 on normal weekdays; $L_{eq(5\text{-minutes})}$ during restricted hours i.e. 19:00 – 23:00 and 23:00 – 07:00 of normal weekdays, whole day of Sundays and Public Holidays

(e) Prior to and after each noise measurement, the meter was calibrated using the acoustic calibrator for 94dB(A) at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1 dB(A), the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.

(f) During the monitoring period, the L_{eq}, L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.

(g) Noise measurement was paused during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible. Observations were recorded when intrusive noise was unavoidable.

(h) Noise monitoring was cancelled in the presence of fog, rain, wind with a steady speed exceeding 5m/s, or wind with gusts exceeding 10m/s.

3.5.2 Maintenance and Calibration

(a) The microphone head of the sound level meter was cleaned with soft cloth at regular intervals.

(b) The meter and calibrator were sent to the supplier or HOKLAS laboratory to check and calibrate at yearly intervals.

(c) Calibration certificates of the sound level meters and acoustic calibrators are provided in Appendix E.

3.6 Monitoring Schedule for the Reporting period

3.6.1 The schedule for environmental monitoring in August 2015 is provided in Appendix F.

3.7 Monitoring Results

3.7.1 The monitoring results for construction noise are summarized in Table 3.4 and the monitoring data is provided in Appendix I.

Table 3.4 Summary of Construction Noise Monitoring Results in the Reporting Period

	Average, dB(A), $L_{eq\ (30\ mins)}$	**Range, dB(A), $L_{eq\ (30\ mins)}$**	**Limit Level, dB(A), $L_{eq\ (30\ mins)}$**
M2*	69.7	68.5 – 70.2	75
M3#	63.7	62.1 – 64.2	65/70

*+3dB(A) Façade correction included
Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination period.

3.7.2 No Action or Limit Level exceedance of construction noise was recorded in the reporting month. No noise complaints related to 0700 – 1900 hours on normal weekdays was received and followed by Environmental Team in the reporting month.

3.7.3 Major noise sources during noise monitoring in the reporting period were mainly road traffic noise.

3.7.4 The event action plan is annexed in Appendix J.

4 ENVIRONMENTAL SITE INSPECTION AND AUDIT

4.1 Site Inspection

4.1.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Contract. In the reporting period, 4 site inspections were carried out respectively on 4, 13, 18 and 25 August 2015 for the Contract. While no specific observation was recorded, recommendations on remedial actions were given to the Contractor for precautionary purpose.

4.1.2 The environmental site inspections summaries are provided in Appendix K.

4.1.3 Particular observations during the site inspections are described below:

Air Quality

4.1.4 The Contractor was reminded to cover the soil stockpile entirely for dust suppression. (Reminder)

4.1.5 The Contractor should water the site area frequently for dust suppression.

4.1.6 Mud trails were observed outside the site entrance. The Contractor should clear the mud trails, and keep the public road and site entrance clear of dusty materials.

Noise

4.1.7 No adverse observation was identified in the reporting period.

Water Quality

4.1.8 No adverse observation was identified in the reporting period.

Chemical and Waste Management

4.1.9 No adverse observation was identified in the reporting period.

Landscape and Visual Impact

4.1.10 No adverse observation was identified in the reporting period.

Miscellaneous

4.1.11 Dusty material was observed on the ground outside Area 329 site entrance. The Contractor should clean up the dusty material frequently and ensure public road is kept clear of dusty materials from the construction site.

4.2 Advice on the Solid and Liquid Waste Management Status

4.2.1 The Contractor has registered as chemical waste producers for the Contract. C&D material sorting was carried out on site. Sufficient numbers of receptacles were available for general refuse collection.

4.2.2 As advised by the Contractor, 1,614 m^3 of inert C&D material was disposed of as public fill to Tuen Mun 38 (of which 0.15 m^3 was broken concrete), while 85 m^3 of general refuse was disposed of at NENT landfill. 65 kg of paper/cardboard packaging, 350 kg of plastics and 0 kg of metals were collected by recycling contractors in the reporting period. 785 m^3 of inert C&D materials was reused on site. 350 m^3 of inert C&D materials was reused in other projects. 329 m^3 of inert C&D materials was disposed of as public fill at NENT. 0 kg of chemical wastes was collected by licensed contractors in the reporting period.

4.2.3 The actual amounts of different types of waste generated by the activities of the Project in the reporting period are shown in Table 4.1.

Table 4.1 Summary of Waste Flow Table

Waste Type	Actual Amount	Disposal/Reuse Locations
Inert C&D materials	1,614 m^3 (of which 0 m^3 was broken concrete)	Tuen Mun 38
General refuse	85 m^3	NENT Landfill
Paper/cardboard packaging	65 kg	Recycling Contractors
Plastics	350 kg	Recycling Contractors
Metals	0 kg	Recycling Contractors
C&D materials reused on site	785 m^3	Site Area
C&D materials reused in other projects	350 m^3	Other projects
C&D materials reused in NENT for backfilling	329 m^3	NENT Landfill
Chemical wastes	0 kg	Licensed Contractors

4.2.4 The Contractor was advised to maintain on site waste sorting and recording system and maximize reuse / recycle of C&D wastes.

4.3 Environmental Licenses and Permits

4.3.1 The environmental licenses and permits for Stage 2 of the Project and valid in the reporting period is summarized in Table 4.2.

Table 4.2 Summary of Environmental Licensing and Permit Status

Statutory Reference	License/ Permit	License or Permit No.	Valid Period		License / Permit Holder	Remarks
			From	To		
EIAO	Environmental Permit	EP-324/2008/C	27/03/2015	N/A	HyD	The VEP (EP-324/2008/C) was subsequently granted on 27 March 2015 which superseded the previous EP (EP-324/2008/B).
WPCO	Discharge	WT00017159-2013	18/09/2013	30/09/2018	CSHK	--

Statutory Reference	License/ Permit	License or Permit No.	Valid Period		License / Permit Holder	Remarks
			From	To		
	License (Site)					
WDO	Chemical Waste Producer Registration	5213-722-C3822-01	5/09/2013	N/A	CSHK	Chemical waste produced in Contract HY/2012/06
WDO	Billing Account for Disposal of Construction Waste	7009328	08/09/2009	N/A	CSHK	Waste disposal in Contract HY/2008/09
NCO	Construction Noise Permit	GW-RN0119-15	26/02/2015	25/08/2015	CSHK	Zone A Grouting (SA340)
		GW-RN0149-15	15/03/2015	23/08/2015	CSHK	Zone 2 Coring of Road Pavement Samples (South Bound)
		GW-RN0293-15	19/05/2015	30/09/2015	CSHK	Zone 2 Removal of catch fence (VBP 5 & 6)
		GW-RN0376-15	27/06/2015	29/11/2015	CSHK	Zone 4 Loading of Precast Beam (Precast Yard)
		GW-RN0408-15	04/07/2015	29/11/2015	CSHK	Zone 2 Installation of Precast Beam (South Bound)
		GW-RN0427-15	19/07/2015	30/08/2015	CSHK	Zone 4 Tree Felling (North Bound)
		GW-RN0485-15	05/08/2015	15/08/2015	CSHK	Zone 2 Installation of Catch Fence near Tai Hang Footbridge (South Bound)

4.4 Implementation Status of Environmental Mitigation Measures

4.4.1 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in Appendix C.

4.5 Summary of Exceedances of the Environmental Quality Performance Limit

4.5.1 All 1-hour and 24-hour TSP monitoring results complied with the Action / Limit Levels in the reporting period.

4.5.2 No Action or Limit Level exceedance of construction noise was recorded in the reporting month. No noise complaints related to 0700 – 1900 hours on normal weekdays was received and followed by Environmental Team in the reporting month.

4.6 Summary of Complaints, Notification of Summons and Successful Prosecutions

4.6.1 The Environmental Complaint Handling Procedure is annexed in Figure 4.1.

4.6.2 No complaint, notification of summons and successful prosecution was received in the reporting period.

4.6.3 Statistics on complaints, notifications of summons and successful prosecutions are summarized in Appendix L.

5 FUTURE KEY ISSUES

5.1 Construction Programme for the Coming Months

5.1.1 The major construction works for the Contract in September 2015 will be:-

- Site clearance
- Ground investigation
- Piling works
- Pipe laying
- Retaining wall construction
- Noise Barrier
- Excavation
- Backfilling
- Drainage
- Temporary bridge construction
- House Construction
- Foot Bridge demolition
- Bridge construction

5.2 Key Issues for the Coming Month

5.2.1 Key issues to be considered in September 2015:-

- Properly store and label oils and chemicals on site;
- Chemical, chemical waste and waste management;
- Collection of construction waste should be carried out regularly;
- Properly maintain all drainage facilities and wheel washing facilities on site;
- Exposed slopes should be covered up properly if no temporary work will be conducted;
- Quieter powered mechanical equipment should be used;
- Suppress dust generated from excavation activities and haul road traffic; and
- Tree protective measures for all retained trees should be well maintained.

5.3 Monitoring Schedule for the Coming Month

5.3.1 The tentative schedule for environmental monitoring in September 2015 is provided in Appendix F.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

6.1.1 The construction phase and EM&A programme of the Contract commenced on 21 November 2013.

6.1.2 All 1-hour and 24-hour TSP monitoring results complied with the Action / Limit Levels in the reporting period.

6.1.3 No Action or Limit Level exceedance of construction noise was recorded in the reporting month. No noise complaints related to 0700 – 1900 hours on normal weekdays was received and followed by Environmental Team in the reporting month.

6.1.4 4 environmental site inspections were carried out in August 2015. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site audits.

6.1.5 No complaint, notification of summons and successful prosecution was received in the reporting period.

6.2 Recommendations

6.2.1 According to the environmental site inspections performed in the reporting period, the following recommendations on remedial actions were provided to the Contractor for precautionary purpose:

Air Quality Impact

- The Contractor was recommended to cover the soil stockpile entirely to reduce dust generation.
- The Contractor was recommended to water the site area frequently for dust suppression.
- The Contractor was recommended to keep the public road and site entrance clear of dusty materials.

Construction Noise Impact

- Nil.

Water Quality Impact

- Nil.

Chemical and Waste Management

- Nil.

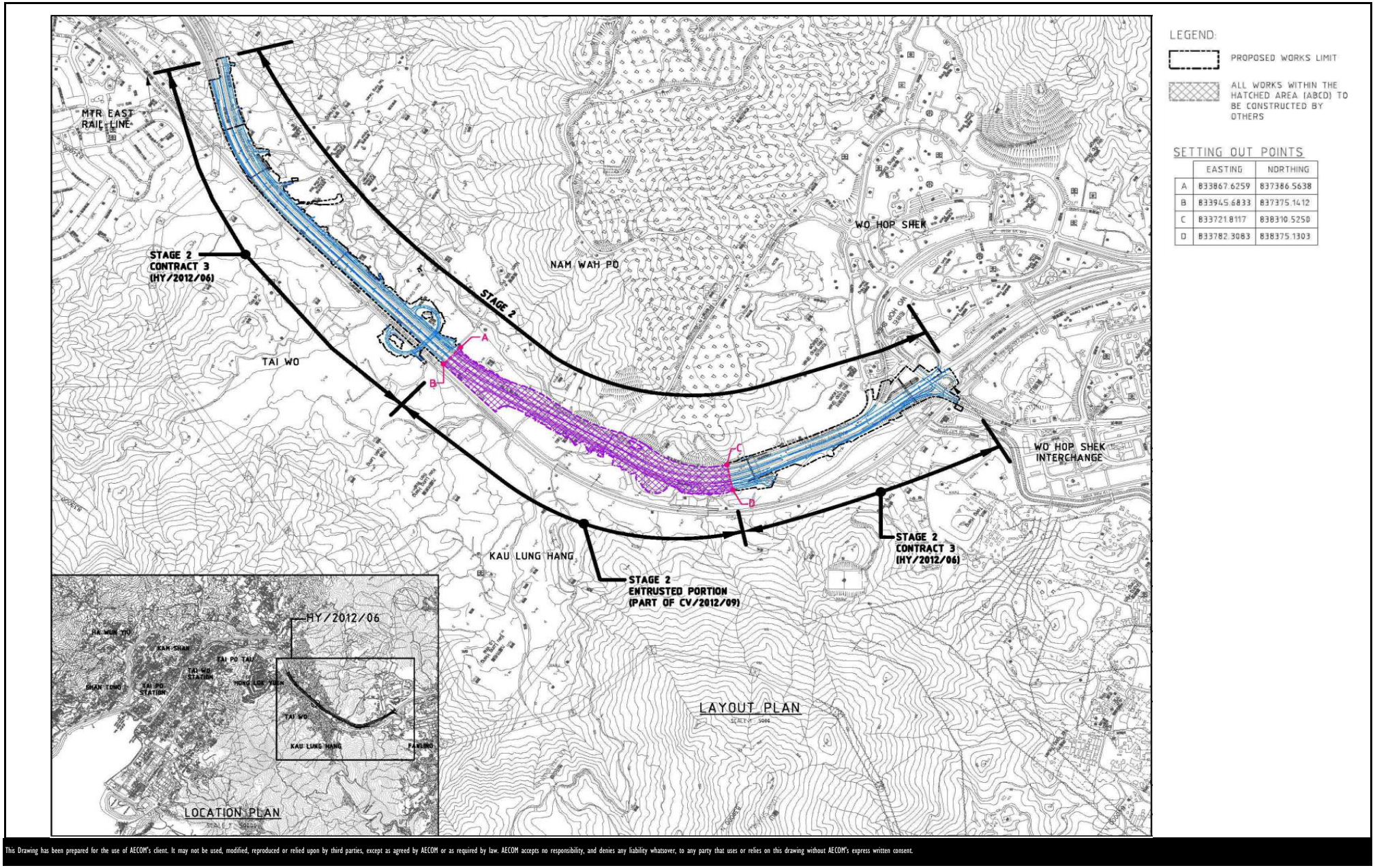
Landscape and Visual Impact

- Nil.

Miscellaneous

- The Contractor was recommended to ensure public road is kept clear of dusty materials from the construction site.

FIGURES



CONTRACT NO. HY/2012/06

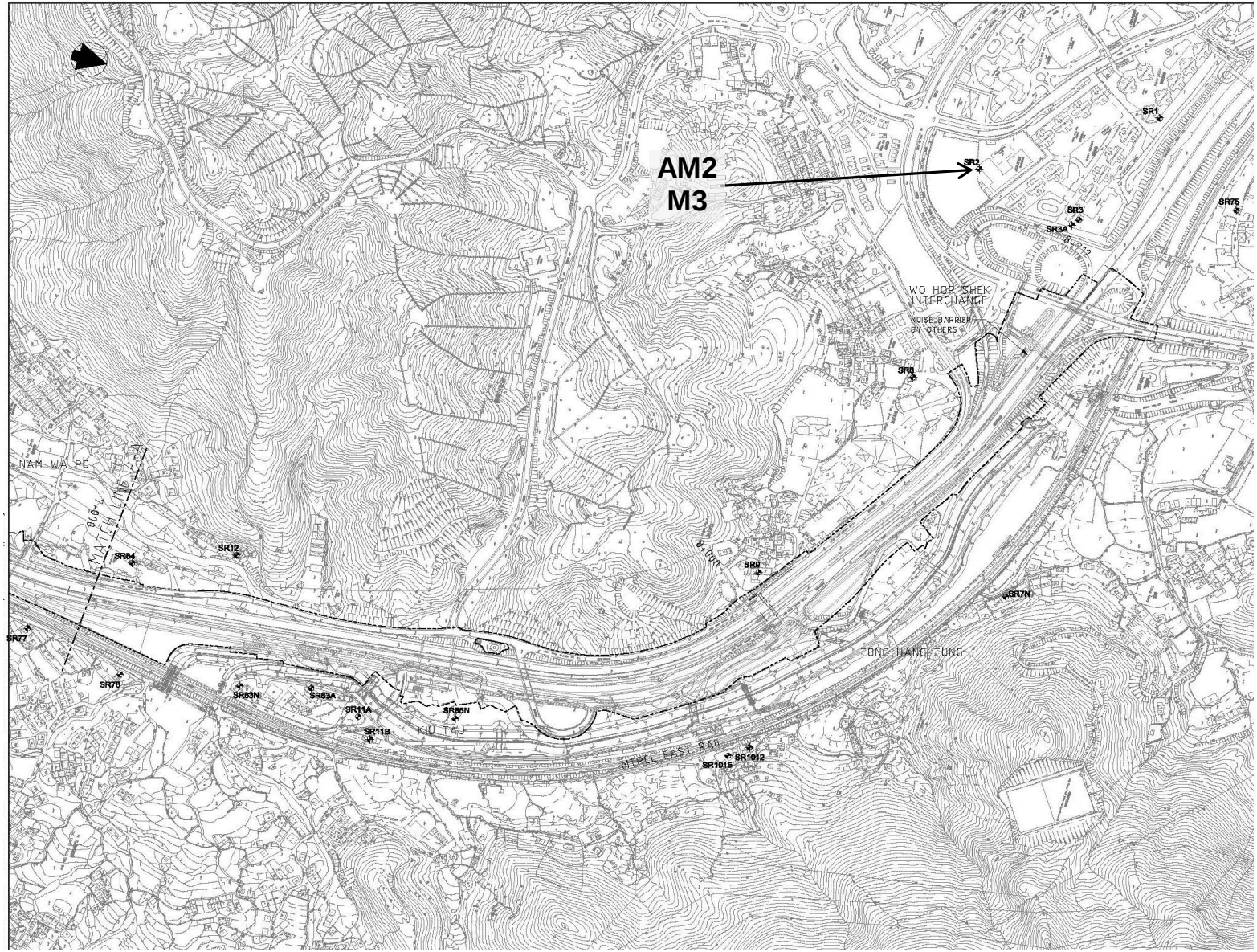
WIDENING OF FANLING HIGHWAY

- TAI HANG TO WO HOP SHEK INTERCHANGE

Layout Plan

Date: Dec 2013

Figure 1.1



CONTRACT NO. HY/2012/06

WIDENING OF FANLING HIGHWAY

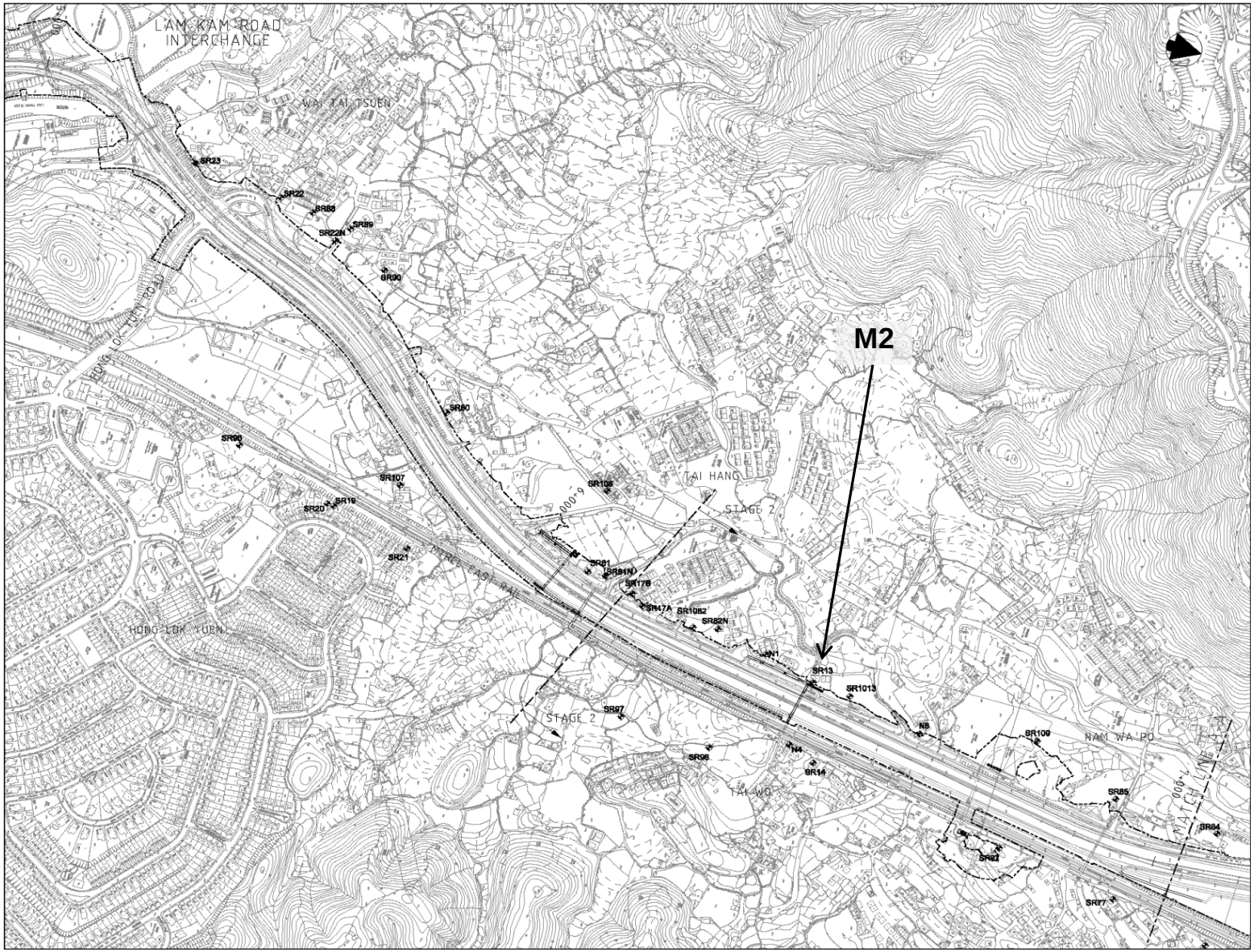
- TAI HANG TO WO HOP SHEK INTERCHANGE

AECOM

Locations of Monitoring Station

Date: Dec 2013

Figure 1.2a



CONTRACT NO. HY/2012/06

WIDENING OF FANLING HIGHWAY

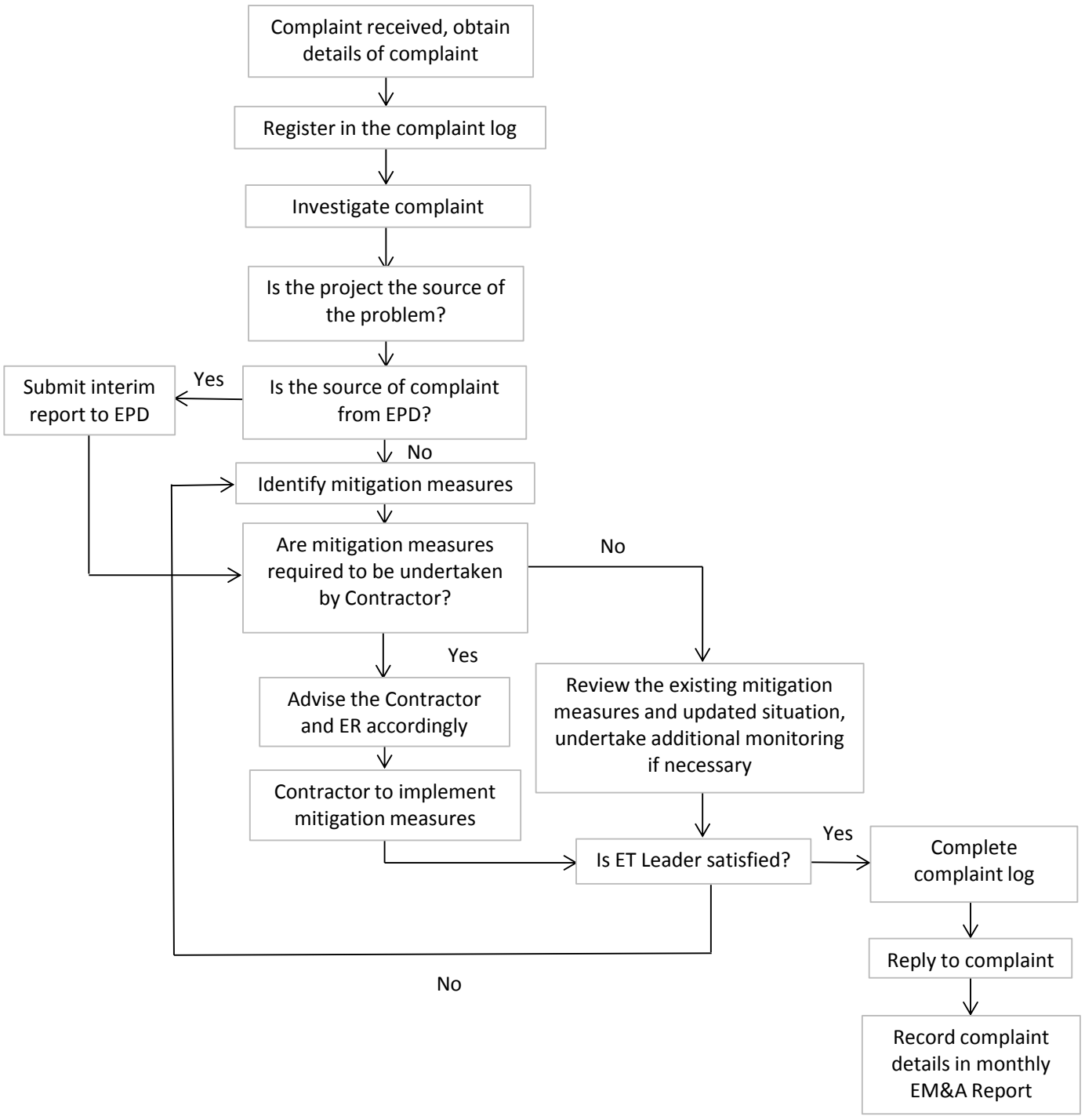
- TAI HANG TO WO HOP SHEK INTERCHANGE

AECOM

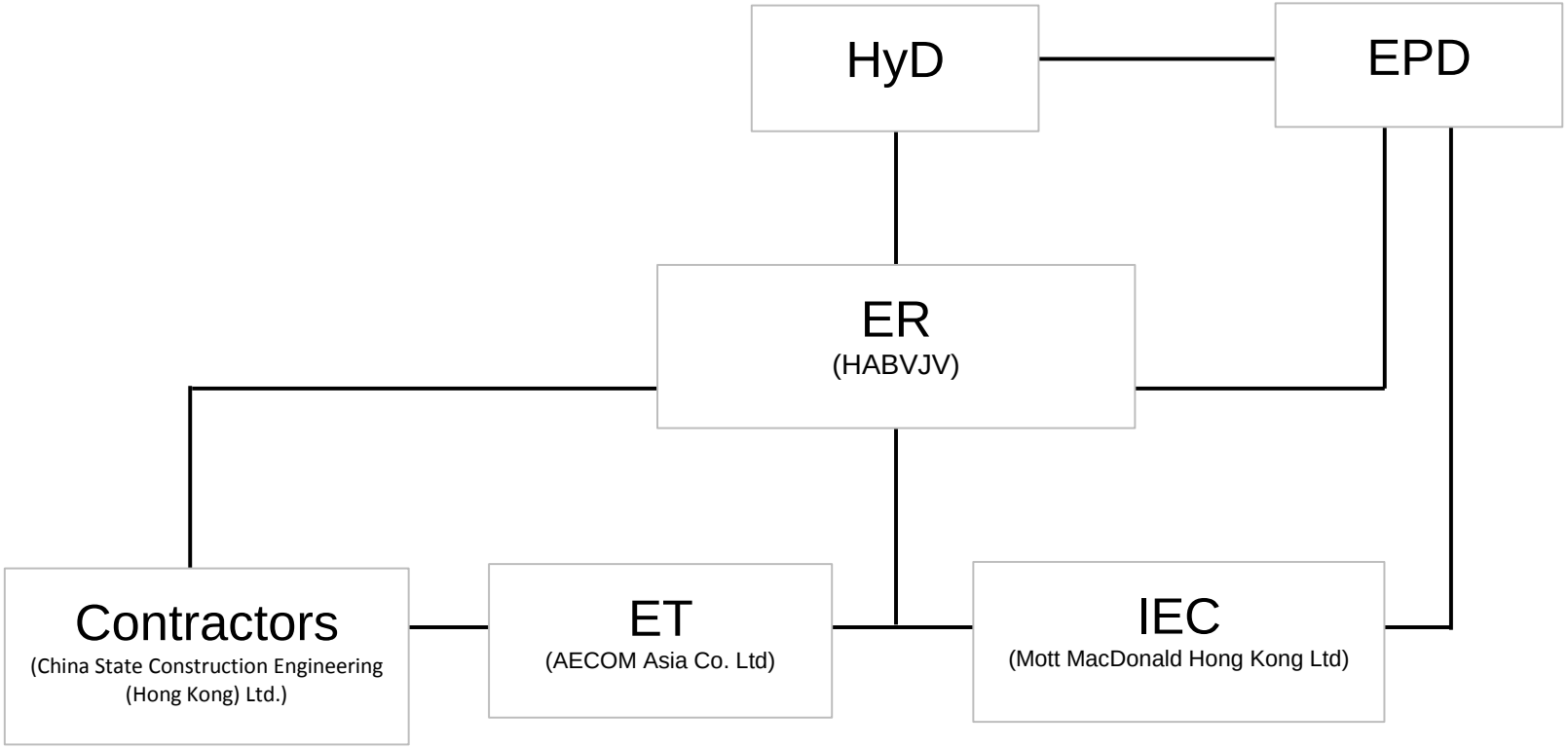
Locations of Monitoring Station

Date: Dec 2013

Figure 1.2b



APPENDIX A
PROJECT ORGANIZATION STRUCTURE



CONTRACT NO. HY/2012/06
WIDENING OF FANLING HIGHWAY
- TAI HANG TO WO HOP SHEK INTERCHANGE

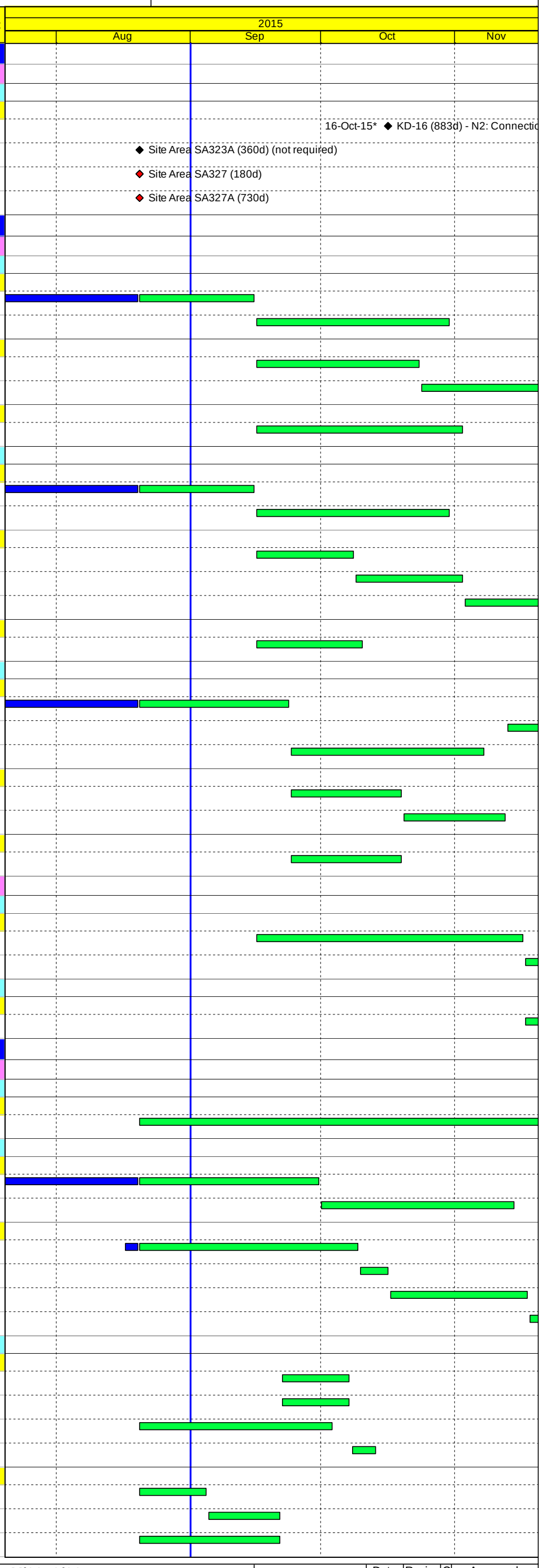
AECOM

Project Organization Structure

Project No.: 60307376 **Date: Dec 2013** **Appendix A**

APPENDIX B
CONSTRUCTION PROGRAMMES

Activity ID	Activity Name	Dur. % Complete	Rem. Duration	Original Duration	Start	Finish	Total Float
Contract Condition							
General							
Contract Condition							
Contract Condition							
KD16	KD-16 (883d) - N2: Connection of realigned Tai Wo Service Road East	0%	0	0		16-Oct-15*	62
POSSA323A	Site Area SA323A (360d) (not required)	0%	0	0	20-Aug-15		1784
POSSA327	Site Area SA327 (180d)	0%	0	0	20-Aug-15*		-231
POSSA327A	Site Area SA327A (730d)	0%	0	0	20-Aug-15*		-33
ZONE 1 (Ch. 5640 to 5880)							
Noise Barrier Along TWSR-West and Laying New Utilities							
NB42 (Ch.5640-5740)-TWSR West Side							
Noise Barrier Works							
NB00110	NB42 (Ch5640-5740) - Footing & Wall Structure - 8 bays	70.89%	23	79	13-Feb-15 A	15-Sep-15	106
NB00120	NB42 (Ch5640-5740) - NB production	0%	45	45	16-Sep-15	30-Oct-15	1297
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10130	Watermain installation (along NB42)	0%	30	30	16-Sep-15	23-Oct-15	106
TSZ10140	Firemain installation (along NB42)	0%	30	30	24-Oct-15	27-Nov-15	106
Underground Utility Works							
UUZ10100	Utility cable laying by Utility companies (Along NB42)	0%	38	38	16-Sep-15	02-Nov-15	128
NB42A (Ch.5750-5810)-TWSR West Side							
Noise Barrier Works							
NB00190	NB42A (Ch5750-5810) - Footing & Wall Structure - 5 bays	64.62%	23	65	13-Apr-15 A	15-Sep-15	108
NB00200	NB42A (Ch5750-5810) - NB production	0%	45	45	16-Sep-15	30-Oct-15	1297
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10150	Sheet Piling & Excavation(~5m below ground) (along NB42A)	0%	18	18	16-Sep-15	08-Oct-15	108
TSZ10180	Watermain installation (along NB42A)	0%	20	20	09-Oct-15	02-Nov-15	108
TSZ10190	Firemain installation (along NB42A)	0%	20	20	03-Nov-15	25-Nov-15	108
Underground Utility Works							
UUZ10110	Utility cable laying by Utility companies (Along NB42A)	0%	20	20	16-Sep-15	10-Oct-15	146
NB47B (Ch.5820-5880)-TWSR West Side							
Noise Barrier Works							
NB00230	NB47B (Ch5820-5880)- Footing & Wall Structure - 4 bays	0%	30	30	14-Jul-15 A	23-Sep-15	119
NB00235	NB47B (Ch5820-5880)- backfilling	0%	12	12	13-Nov-15	26-Nov-15	119
NB00240	NB47B (Ch5820-5880) - NB production	0%	45	45	24-Sep-15	07-Nov-15	1289
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10230	Watermain installation (along NB47B)	0%	20	20	24-Sep-15	19-Oct-15	119
TSZ10240	Firemain installation (along NB47B)	0%	20	20	20-Oct-15	12-Nov-15	119
Underground Utility Works							
UUZ10120	Utility cable laying by Utility companies (Along NB47B)	0%	20	20	24-Sep-15	19-Oct-15	139
Noise Barrier Along Fanling Highway S/B							
NB44 (Ch.5700-5760)-FH S/B Side							
Noise Barrier Works							
NB01385	NB44 - Excavation & Footing & Wall Structure (1 bays)	0%	50	50	16-Sep-15	16-Nov-15	945
NB01390	NB44 - NB production	0%	45	45	17-Nov-15	31-Dec-15	1235
NB45 (Ch.5760-5820)-FH S/B Side							
Noise Barrier Works							
NB01435	NB45 - Excavation & Footing & Wall Structure (2 bays)	0%	50	50	17-Nov-15	16-Jan-16	945
ZONE 2 (Ch. 5880 to 6930)							
Noise Barrier Along TWSR-West and Laying New Utilities							
Site Clearance & Demolition of Existing Structure							
Demolition Work							
Z2.P2N.1250	Construction of proposed SHRINE	0%	165	165	20-Aug-15	15-Mar-16	921
NB47 (Ch.5880-5930)-TWSR West Side							
Noise Barrier Works							
NB00270	NB47 (Ch5880-5930)- Footing & Wall Structure - 5 bays	68.18%	35	110	11-Mar-15 A	30-Sep-15	13
NB00280	NB47 (Ch5880-5930)- NB production	0%	45	45	01-Oct-15	14-Nov-15	1257
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10260	DSD Trunk Sewer laying (along NB47)	0%	42	18	17-Aug-15 A	09-Oct-15	13
TSZ10270	Backfill up to NB47 footing level	0%	6	6	10-Oct-15	16-Oct-15	13
TSZ10280	Watermain installation (along NB47)	0%	26	26	17-Oct-15	17-Nov-15	13
TSZ10290	Firemain installation (along NB47)	0%	26	26	18-Nov-15	17-Dec-15	13
NB47A (Ch.5950-5975)-TWSR West Side							
Noise Barrier Works							
NB00330	NB47A - backfilling	0%	12	12	22-Sep-15	07-Oct-15	161
NB00335	Backfilling (Along NB47A-above ID1)	0%	12	12	22-Sep-15	07-Oct-15	161
NB00340	NB47A - NB production	0%	45	45	20-Aug-15	03-Oct-15	1299
NB00350	NB47A - NB post & panel installation	0%	5	5	08-Oct-15	13-Oct-15	1041
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10380	Watermain installation (along NB47A)	0%	14	14	24-Aug-15 A	04-Sep-15	161
TSZ10390	Firemain installation (along NB47A)	0%	14	14	05-Sep-15	21-Sep-15	161
TSZ10560	Watermain & Firemain installation (Along NB47A-above ID1)	0%	28	28	25-Aug-15 A	21-Sep-15	161



Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Crit. Milestone

Project ID:DWP Rev 02 (1508)

Layout: 3 Month Rolling Program

Page 1 of 6

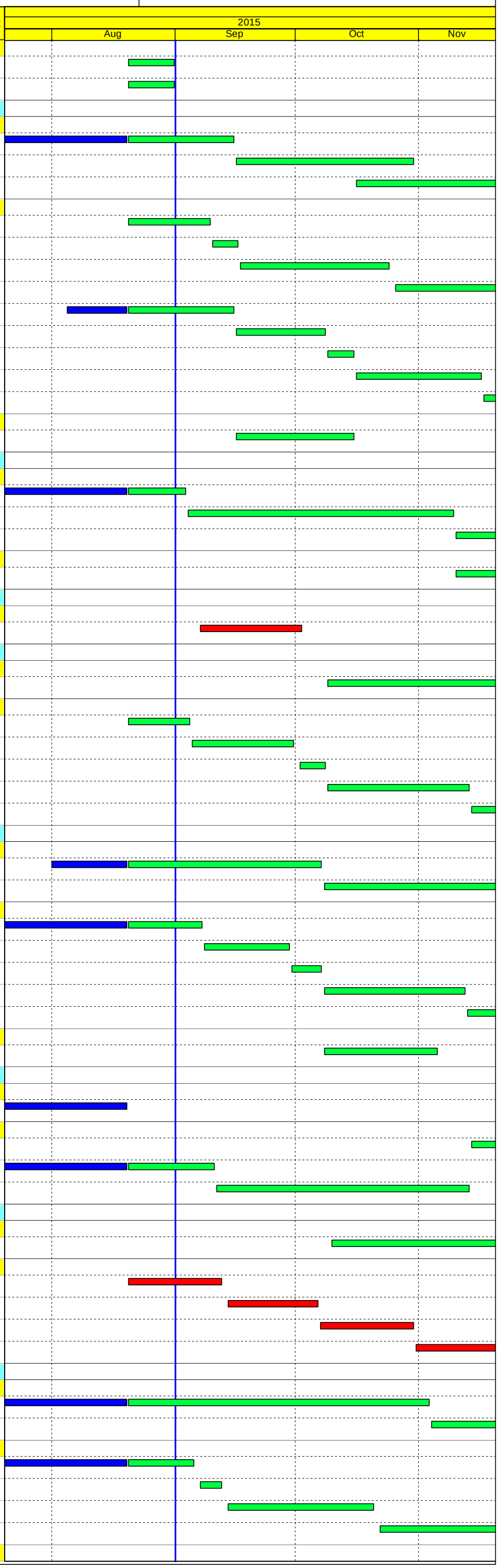
Contract No. HY/2012/06

Widening of Fanling Highway - Tai Hang to Wo Hop Shek Interchange

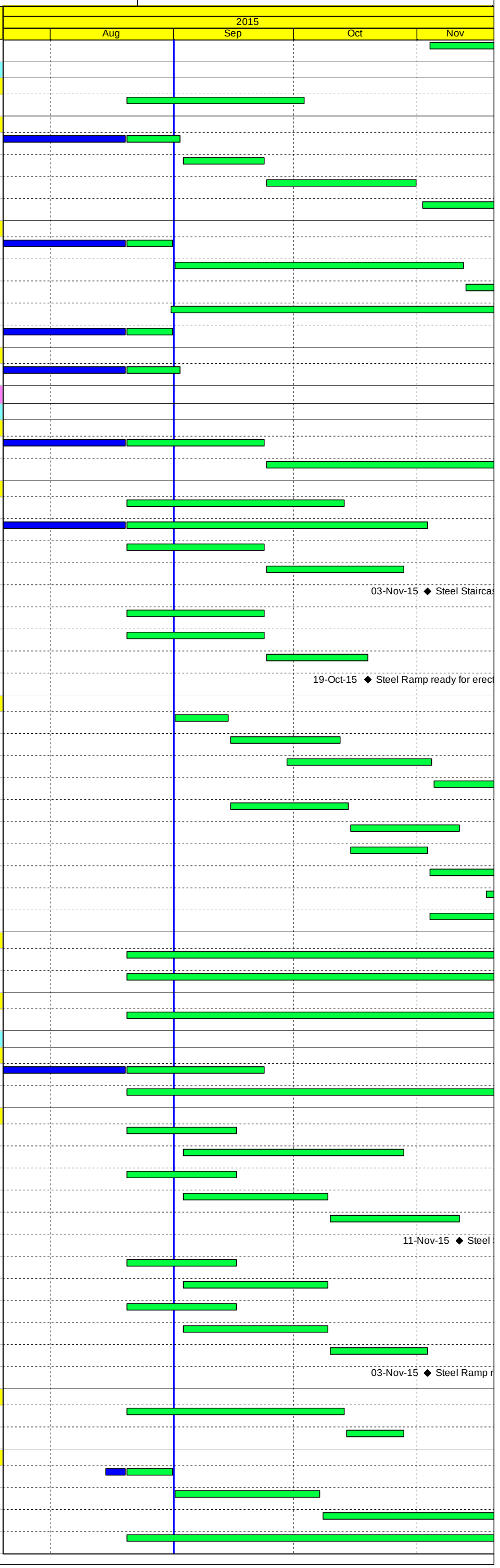
3 Month Rolling Program(20-Aug-15)

Date	Revi...	C	Approved
22-J...	IWP...		
26-...	IWP...		
13-...	WP ...		
30-J...	WP ...		
	WP ...		

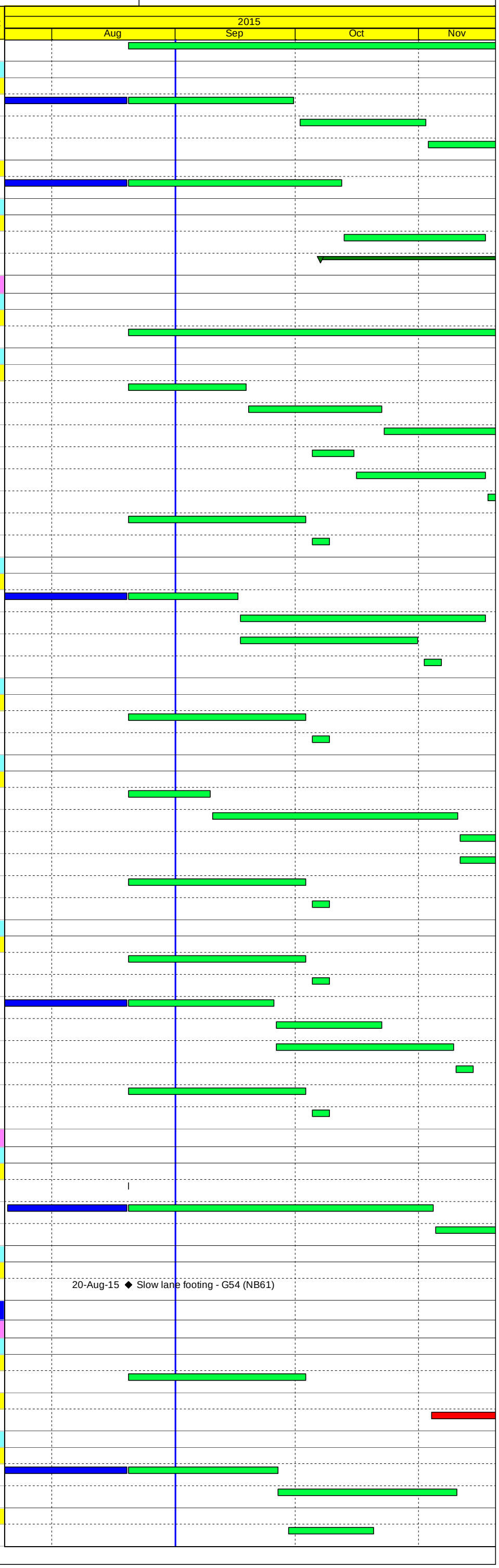
Activity ID	Activity Name	Dur. % Complete	Rem. Duration	Original Duration	Start	Finish	Total Float
Underground Utility Works							
UUZ20110	Utility cable laying by Utility companies (Along NB47A)	0%	10	10	20-Aug-15	31-Aug-15	179
UUZ20240	Utility cable laying by Utility companies (Along NB47A-above	0%	10	10	20-Aug-15	31-Aug-15	179
NB48 (Ch.5995-6120)-TWSR West Side							
Noise Barrier Works							
NB00380	NB48 (Ch5995-6060) - Footing & Wall Structure - 4 bays	75%	23	92	18-Apr-15 A	15-Sep-15	101
NB00400	NB48 (Ch5995-6060) - NB production	0%	45	45	16-Sep-15	30-Oct-15	1272
NB00440	NB48 (Ch6060-6120) - Footing & Wall Structure - 5 bays	0%	45	45	16-Oct-15	08-Dec-15	77
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10410	DSD Trunk Sewer laying (along NB48, 0-60m)	0%	18	18	20-Aug-15	09-Sep-15	105
TSZ10420	Backfill up to NB48, 0-60m footing level	0%	6	6	10-Sep-15	16-Sep-15	105
TSZ10430	Watermain installation (along NB48, 0-60m)	0%	30	30	17-Sep-15	24-Oct-15	105
TSZ10440	Firemain installation (along NB48, 0-60m)	0%	30	30	26-Oct-15	28-Nov-15	105
TSZ10450	Sheet Piling & Excavation(~5m below ground) (along NB48,	11.54%	23	26	05-Aug-15 A	15-Sep-15	64
TSZ10460	DSD Trunk Sewer laying (along NB48, 60-110m)	0%	18	18	16-Sep-15	08-Oct-15	77
TSZ10470	Backfill up to NB48, 60-110m footing level	0%	6	6	09-Oct-15	15-Oct-15	77
TSZ10480	Watermain installation (along NB48, 60-110m)	0%	26	26	16-Oct-15	16-Nov-15	90
TSZ10490	Firemain installation (along NB48, 60-110m)	0%	26	26	17-Nov-15	16-Dec-15	90
Underground Utility Works							
UUZ20120	Utility cable laying by Utility companies (Along NB48, 0-60m)	0%	24	24	16-Sep-15	15-Oct-15	142
NB49 (Ch.6145-6215)-TWSR West Side							
Noise Barrier Works							
NB00508	VO for using silent piler & slient piler mobilisation	27.78%	13	18	16-Jul-15 A	03-Sep-15	20
NB00510	NB49 - Footing & Wall Structure - 5 bays	0%	54	54	04-Sep-15	09-Nov-15	20
NB00530	NB49 - NB production	0%	45	45	10-Nov-15	24-Dec-15	1217
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10500	Sheet Piling & Excavation(~7m below ground) (along NB49)	0%	14	14	10-Nov-15	25-Nov-15	20
NB49B (Ch.6215-6235)-TWSR West Side							
Noise Barrier Works							
NB00550	NB49B piling (0.19m -20no)- rigs 1&2	0%	21	21	07-Sep-15*	02-Oct-15	0
NB54 (Ch.6240-6280)-TWSR West Side							
Noise Barrier Works							
NB00690	NB54 - Footing & Wall Structure - 2 bays	0%	60	60	09-Oct-15	18-Dec-15	68
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10600	Sheet Piling & Excavation(~5m below ground) (along NB54)	0%	14	14	20-Aug-15	04-Sep-15	68
TSZ10610	DSD Trunk Sewer laying (along NB54 excep ID2-1 section)	0%	21	21	05-Sep-15	30-Sep-15	68
TSZ10620	Backfill up to NB54 footing level	0%	6	6	02-Oct-15	08-Oct-15	68
TSZ10630	Watermain installation (along NB54)	0%	30	30	09-Oct-15	13-Nov-15	88
TSZ10640	Firemain installation (along NB54)	0%	30	30	14-Nov-15	18-Dec-15	88
NB54A (Ch.6290-6350)-TWSR West Side							
Noise Barrier Works							
NB00760	NB54A - Footing & Wall Structure - 6 bays	0%	40	40	01-Aug-15 A	07-Oct-15	125
NB00780	NB54A - NB production	0%	45	45	08-Oct-15	21-Nov-15	1250
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10650	Sheet Piling & Excavation(~5m below ground) (along NB54A)	38.46%	16	26	13-Jul-15 A	07-Sep-15	46
TSZ10660	DSD Trunk Sewer laying (along NB54A)	0%	18	18	08-Sep-15	29-Sep-15	89
TSZ10670	Backfill up to NB54A footing level	0%	6	6	30-Sep-15	07-Oct-15	89
TSZ10680	Watermain installation (along NB54A)	0%	30	30	08-Oct-15	12-Nov-15	89
TSZ10690	Firemain installation (along NB54A)	0%	30	30	13-Nov-15	17-Dec-15	89
Underground Utility Works							
UUZ20170	Utility cable laying by Utility companies (Along NB54A, 0-60m)	0%	24	24	08-Oct-15	05-Nov-15	125
NB57 (Ch.6365-6445)-TWSR West Side							
Noise Barrier Works							
NB00830	NB57 - Footing & Wall Structure - 7 bays	80.52%	60	308	15-Dec-14 A	03-Mar-16	34
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10710	DSD Trunk Sewer laying (along NB57)	0%	18	18	14-Nov-15	04-Dec-15	34
TSZ10774	Completion NB57 Bay 1 & 2 and preparation works	71.64%	19	67	02-May-15 A	10-Sep-15	34
TSZ10775	Wash-out chamber water pipe diversion at the site access for NB57	0%	52	52	11-Sep-15	13-Nov-15	34
NB58 (Ch.6445-6480)-TWSR West Side							
Noise Barrier Works							
NB00900	NB58 - Footing & Wall Structure - 3 bays	0%	50	50	10-Oct-15	08-Dec-15	77
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10750	Sheet Piling & Excavation(~5m below ground) (along NB58)	0%	21	21	20-Aug-15	12-Sep-15	0
TSZ10760	DSD Trunk Sewer laying (along NB58)	0%	18	18	14-Sep-15	06-Oct-15	0
TSZ10780	Watermain installation (along NB58)	0%	20	20	07-Oct-15	30-Oct-15	0
TSZ10790	Firemain installation (along NB58)	0%	20	20	31-Oct-15	23-Nov-15	0
NB59 (Ch.6490-6590)-TWSR West Side							
Noise Barrier Works							
NB00970	NB59 - Footing & Wall Structure - 9 bays	39.81%	62	103	02-May-15 A	03-Nov-15	89
NB00990	NB59 - NB production	0%	45	45	04-Nov-15	18-Dec-15	1211
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10810	DSD Trunk Sewer laying (along NB59)	83.52%	15	91	08-Apr-15 A	05-Sep-15	88
TSZ10820	Backfill up to NB59 footing level	0%	6	6	07-Sep-15	12-Sep-15	88
TSZ10830	Watermain installation (along NB59)	0%	30	30	14-Sep-15	20-Oct-15	88
TSZ10840	Firemain installation (along NB59)	0%	30	30	22-Oct-15	25-Nov-15	88
Underground Utility Works							



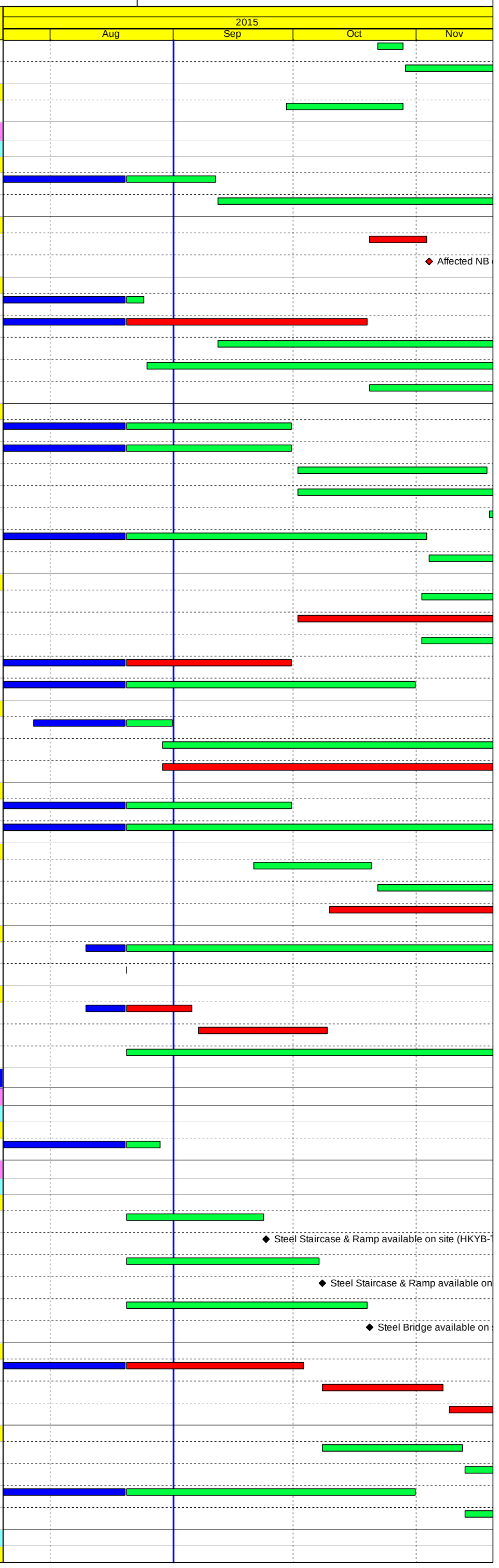
Activity ID	Activity Name	Dur. % Complete	Rem. Duration	Original Duration	Start	Finish	Total Float
UUZ20200	Utility cable laying by Utility companies (Along NB59, 0-95m)	0%	38	38	04-Nov-15	17-Dec-15	89
NB63 (Ch.6610-6700)-TWSR West Side							
Noise Barrier Works							
NB01040	NB63 - NB production	0%	45	45	20-Aug-15	03-Oct-15	1299
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10300	Sheet Piling & Excavation(~7m below ground) (along NB63)	0%	12	12	20-Jul-15 A	02-Sep-15	99
TSZ10310	DSD Trunk Sewer laying (along NB63)	0%	18	18	03-Sep-15	23-Sep-15	99
TSZ10330	Watermain installation (along NB63)	0%	30	30	24-Sep-15	31-Oct-15	99
TSZ10340	Firemain installation (along NB63)	0%	30	30	02-Nov-15	05-Dec-15	99
DSD Southern Trunk Sewer - Trenchless Construction							
TSZ10960	DSD Trunk Sewer laying (along NB63 - ID3-1)-Trenchless	75%	10	40	22-Jun-15 A	31-Aug-15	117
TSZ10970	Both end manholes construction & trench sewer connection	0%	60	60	01-Sep-15	12-Nov-15	117
TSZ10980	Backfilling of jacking pits	0%	32	32	13-Nov-15	19-Dec-15	135
TSZ11025	Town gas pjpe jacking work	0%	101	101	31-Aug-15*	31-Dec-15	77
TSZ11035	DSD trunk sewer along NB63	83.33%	10	60	10-Jul-15 A	31-Aug-15	227
Underground Utility Works							
UUZ20230	Utility cable laying by Utility companies (Along NB63~100m)	91.95%	12	149	27-Dec-14 A	02-Sep-15	177
Bridge Construction							
New Tai Hang Footbridge							
General							
THBF0335	Structure steel Shop drawing approval (THFB)	83.78%	30	185	04-Dec-14 A	23-Sep-15	176
THBF0340	Structure steel procurement (THFB)	0%	150	150	24-Sep-15	20-Feb-16	227
TWSR-West/ FL Highway N/B Side Section							
THBF0140	THP5 - Pile cap, Pier and Pier Head	0%	45	45	20-Aug-15	13-Oct-15	404
THBF0180	THP8, THP9 - Pile cap, Pier and Pier Head	0%	62	30	13-Jul-15 A	03-Nov-15	447
THBF0220	THAB3 - pile cap & abutment wall	0%	30	30	20-Aug-15	23-Sep-15	452
THBF0230	THAB3 - Backfilling (~4m)	0%	27	27	24-Sep-15	28-Oct-15	452
THBF0235	Steel Staircase ready for erection (THFB-TWSR-W side)	0%	0	0		03-Nov-15	447
THBF0270	THP6, THP7 - Pile cap, Pier and Pier Head	0%	30	30	20-Aug-15	23-Sep-15	389
THBF0310	THAB2 - pile cap & abutment wall	0%	30	30	20-Aug-15	23-Sep-15	369
THBF0320	THAB2 - Backfilling (~3m)	0%	20	20	24-Sep-15	19-Oct-15	369
THBF0325	Steel Ramp ready for erection (THFB-TWSR-W side)	0%	0	0		19-Oct-15	369
TWSR-East FL Highway S/B Side Section							
THBF0450	THAB1 - Pre-bored H pile (4 nos)	0%	12	12	01-Sep-15	14-Sep-15	22
THBF0460	THAB1 - Pile Test	0%	28	28	15-Sep-15	12-Oct-15	62
THBF0470	THAB1 - pile cap & abutment wall	0%	30	30	29-Sep-15	04-Nov-15	51
THBF0480	THAB1 - Backfilling (~3m)	0%	20	20	05-Nov-15	27-Nov-15	51
THBF0500	THP2 - Pre-bored H pile (8 nos)	0%	24	24	15-Sep-15	14-Oct-15	22
THBF0510	THP2 - Pile Test	0%	28	28	15-Oct-15	11-Nov-15	93
THBF0710	THP3 - Pre-bored H pile (4 nos)	0%	16	16	15-Oct-15	03-Nov-15	22
THBF0720	THP3 - Pile Test	0%	28	28	04-Nov-15	01-Dec-15	414
THBF0730	THP3 - Pile cap, Pier and Pier Head	0%	45	45	18-Nov-15	12-Jan-16	330
THBF0750	THP4 - Pre-bored H pile (4 nos)	0%	16	16	04-Nov-15	21-Nov-15	22
Lift at TWSR-W Side							
L1556	Lift contractor sub-letting	0%	90	90	20-Aug-15	05-Dec-15	71
L1600	CLP Power available (by CLP)	0%	365	365	20-Aug-15	18-Aug-16	267
Lift at FLHY S/B							
L1450	CLP Power available (by CLP)	0%	365	365	20-Aug-15	18-Aug-16	271
New Tai Wo Footbridge							
General							
TWFB1030	Structure steel Shop drawing approval (TWFB)	83.78%	30	185	04-Dec-14 A	23-Sep-15	1409
TWFB1040	Structure steel procurement (TWFB)	0%	150	150	22-Aug-15 A	16-Jan-16	53
TWSR-West/ FL Highway N/B Side Section							
TWFB1150	TWP1 - Pile Test	0%	28	28	20-Aug-15	16-Sep-15	106
TWFB1160	TWP1 - Pile cap, Pier and Pier Head	0%	45	45	03-Sep-15	28-Oct-15	88
TWFB1230	TWAB2 - Pile Test	0%	28	28	20-Aug-15	16-Sep-15	93
TWFB1240	TWAB2 - pile cap & abutment wall	0%	30	30	03-Sep-15	09-Oct-15	77
TWFB1250	TWAB2 - Backfilling (~4m)	0%	27	27	10-Oct-15	11-Nov-15	927
TWFB1260	Steel Staircase ready for erection (THFB-TWSR-W side)	0%	0	0		11-Nov-15	927
TWFB1290	TWP4, TWP5 - Pile Test	0%	28	28	20-Aug-15	16-Sep-15	209
TWFB1300	TWP4, TWP5 - Pile cap, Pier and Pier Head	0%	30	30	03-Sep-15	09-Oct-15	162
TWFB1330	TWAB1 - Pile Test	0%	28	28	20-Aug-15	16-Sep-15	188
TWFB1340	TWAB1 - pile cap & abutment wall	0%	30	30	03-Sep-15	09-Oct-15	147
TWFB1350	TWAB1 - Backfilling (~3m)	0%	20	20	10-Oct-15	03-Nov-15	158
TWFB1360	Steel Ramp ready for erection (TWFB-TWSR-W side)	0%	0	0		03-Nov-15	158
TWSR-East FL Highway S/B Side Section							
TWFB1480	Precautionary work for MTRC I&P area	0%	45	45	20-Aug-15	13-Oct-15	836
TWFB1540	TWP3 - Predrilling	0%	12	12	14-Oct-15	28-Oct-15	836
Lift at TWSR-W Side							
L1630	TWB (W) - Pre-bored H pile (4 nos)	44.44%	10	18	15-Aug-15 A	31-Aug-15	22
L1640	Pile test	0%	30	30	01-Sep-15	07-Oct-15	739
L1650	Temp work & Pile cap	0%	45	45	08-Oct-15	30-Nov-15	739
L1720	Lift contractor sub-letting	0%	90	90	20-Aug-15	05-Dec-15	622



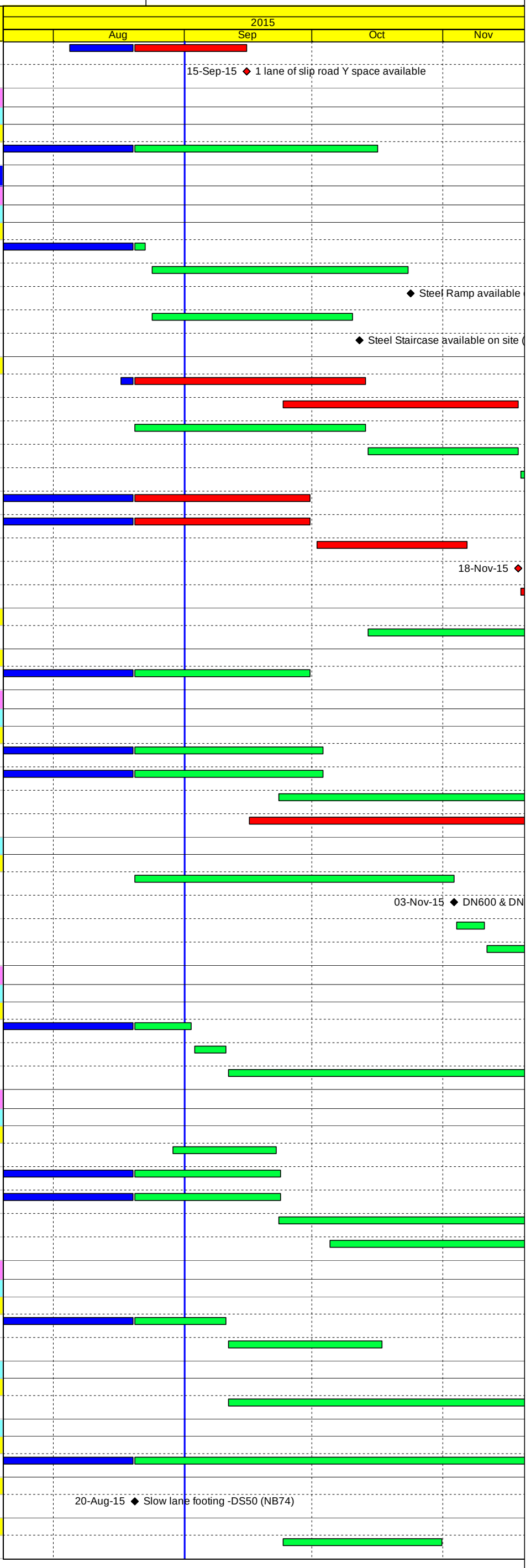
Activity ID	Activity Name	Dur. % Complete	Rem. Duration	Original Duration	Start	Finish	Total Float
L1780	CLP Power available (by CLP)	0%	700	700	20-Aug-15	19-Jul-17	606
Temporary Tai Wo Footbridge							
Design Works							
TWFB-T1010	Design preparation	41.67%	35	60	20-Jul-15 A	30-Sep-15	93
TWFB-T1020	Engineer Comment	0%	26	26	02-Oct-15	02-Nov-15	93
TWFB-T1030	Design amendment	0%	26	26	03-Nov-15	02-Dec-15	93
Construction Works							
TWFB-T1060	Erect Temp Ramp	51.11%	44	90	18-Jul-15 A	12-Oct-15	11
Demolition of Existing Tai Wo Footbridge							
TWSR-West/ FL Highway N/B Side Section							
TWFB-T1130	Demolish existing ramp & staircase at TWSR-W	0%	30	30	13-Oct-15	17-Nov-15	11
TWFB-T1230	Watermain & Firemain at NB58 & backfill	0%	52	52	07-Oct-15	07-Dec-15	0
Noise Barrier Along Fanling Highway S/B							
NB51 (Ch.5935-6055)-FH S/B Side							
Noise Barrier Works							
NB02280	NB51 ID1-3 (0-25m) - Footing & Wall Structure	0%	90	90	20-Aug-15	05-Dec-15	608
NB53 (Ch.6125-6300) -FH S/B Side (MTRC I&P Area)							
Noise Barrier Works							
NB02430	Precautionary Measure installation	0%	26	26	20-Aug-15	18-Sep-15	793
NB02440	NB53 (0-100m) - Sheet piling & Excavation	0%	26	26	19-Sep-15	22-Oct-15	793
NB02450	NB53 (0-100m) - Footing & Wall Structure	0%	60	60	23-Oct-15	04-Jan-16	793
NB02490	NB53 ID2-3 (100-125m), 18nos Predrilling	0%	10	10	05-Oct-15	15-Oct-15	876
NB02500	NB53 ID2-3 (100-125m) 18nos Piling- 1 rigs	0%	27	27	16-Oct-15	17-Nov-15	876
NB02510	NB53 ID2-3 (100-125m) - Sheet piling & Excavation	0%	21	21	18-Nov-15	11-Dec-15	876
NB02590	NB53 (125-180m) - NB production	0%	45	45	20-Aug-15	03-Oct-15	1299
NB02600	NB53 (125-180m) - NB post & panel installation	0%	5	5	05-Oct-15	09-Oct-15	1044
NB55 (Ch.6300-6360)-FH S/B Side (MTRC I&P Area)							
Noise Barrier Works							
NB02640	NB55 - Footing & Wall Structure	88.12%	24	202	07-Nov-14 A	16-Sep-15	876
NB02650	NB55- backfilling	0%	50	50	17-Sep-15	17-Nov-15	876
NB02660	NB55 - NB production	0%	45	45	17-Sep-15	31-Oct-15	1271
NB02670	NB55 - NB post & panel installation	0%	5	5	02-Nov-15	06-Nov-15	1021
NB56 (Ch.6360-6400)-FH S/B Side (MTRC I&P Area)							
Noise Barrier Works							
NB02730	NB56 - NB production	0%	45	45	20-Aug-15	03-Oct-15	1299
NB02740	NB56 - NB post & panel installation	0%	5	5	05-Oct-15	09-Oct-15	1044
NB61 (Ch.6400-6560)-FH S/B Side (MTRC I&P Area)							
Noise Barrier Works							
NB02770	NB61 (0-50m) - Sheet piling & Excavation	0%	18	18	20-Aug-15	09-Sep-15	968
NB02780	NB61 (0-50m) - Footing & Wall Structure	0%	50	50	10-Sep-15	10-Nov-15	968
NB02790	NB61 (0-50m)- backfilling	0%	50	50	11-Nov-15	11-Jan-16	968
NB02800	NB61 (0-50m) - NB production	0%	45	45	11-Nov-15	25-Dec-15	1216
NB02850	NB61 (50-160m) - NB production	0%	45	45	20-Aug-15	03-Oct-15	1299
NB02860	NB61 (50-160m) - NB post & panel installation	0%	5	5	05-Oct-15	09-Oct-15	1044
NB61A (Ch.6560-6745)-FH S/B Side (MTRC I&P Area)							
Noise Barrier Works							
NB02920	NB61A (0-50m) - NB production	0%	45	45	20-Aug-15	03-Oct-15	1299
NB02930	NB61A (0-50m) - NB post & panel installation	0%	5	5	05-Oct-15	09-Oct-15	1044
NB02970	NB61A ID2-3 (50-75m) - Footing & Wall Structure	66.67%	32	96	01-Apr-15 A	25-Sep-15	1014
NB02980	NB61A ID2-3 (50-75m)- backfilling	0%	20	20	26-Sep-15	22-Oct-15	1029
NB02990	NB61A ID2-3 (50-75m) - NB production	0%	45	45	26-Sep-15	09-Nov-15	1262
NB03000	NB61A ID2-3 (50-75m) - NB post & panel installation	0%	5	5	10-Nov-15	14-Nov-15	1014
NB03040	NB61A (75-190m) - NB production	0%	45	45	20-Aug-15	03-Oct-15	1299
NB03050	NB61A (75-190m) - NB post & panel installation	0%	5	5	05-Oct-15	09-Oct-15	1044
Other Works							
Site Clearance & Demolition of Existing Structure							
Contract Condition							
MCLT1050	Apply cert for exemption by DLO by Engineer	0%	0	0	20-Aug-15	20-Aug-15	1439
MCLT1080	Construct New MCLT (Structure)	30%	63	90	21-Jul-15 A	04-Nov-15	16
MCLT1090	New MCLT - finishes works	0%	90	90	05-Nov-15	01-Mar-16	16
TCSS Works							
G54							
TCSS1500	Slow lane footing - G54 (NB61)	0%	0	0		20-Aug-15	936
South Buffer Zone 1 (SBZ1) (within Zone 2)(Ch.6740 to 6930)							
Noise Barrier Along TWSR-West and Laying New Utilities							
NB63A (Ch.6710-6840)-TWSR West Side							
Noise Barrier Works							
NB01090	NB63A-1 - NB production	0%	45	45	20-Aug-15	03-Oct-15	695
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10850	Sheet Piling & Excavation(~6m below ground) (along NB63A)	0%	26	26	04-Nov-15	03-Dec-15	0
NB64 & NB64A (Ch.6860-6920)-TWSR West Side							
Noise Barrier Works							
NB001030	NB64 & NB64A -Footing & Wall Structure - 7 bays	45%	33	60	19-May-15 A	26-Sep-15	108
NB001050	NB64 & NB64A -NB production	0%	45	45	26-Sep-15	10-Nov-15	657
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10910	DSD Trunk Sewer laying (along NB64)	0%	18	18	29-Sep-15	20-Oct-15	108



Activity ID	Activity Name	Dur. % Complete	Rem. Duration	Original Duration	Start	Finish	Total Float
TSZ10920	Backfill up to NB64 footing level	0%	6	6	22-Oct-15	28-Oct-15	108
TSZ10930	Watermain installation (along NB64)	0%	30	30	29-Oct-15	02-Dec-15	108
Underground Utility Works							
UUZ20220	Utility cable laying by Utility companies (Along NB64, 60m)	0%	24	24	29-Sep-15	28-Oct-15	144
Bridge Construction							
Kau Lung Hang Vehicular Bridge							
KLH Bridge - West Ramp							
Z2.KLH.1140	West Ramp - Backfilling (5m-Dx112m-L)-change to Rock fill	20%	20	25	15-Jun-15 A	11-Sep-15	36
Z2.KLH.1230	West Ramp - Road Slab	0%	90	90	12-Sep-15	31-Dec-15	46
Advance Works for VBP3 construction							
Z2.KLH.1280	Pier VBP3 complete and road reinstatement work	0%	12	12	20-Oct-15	03-Nov-15	0
Z2.KLH.1290	Affected NB construction at TWSR-W resume	0%	0	0	04-Nov-15		0
KLH Bridge - Deck 1							
Z2.KLH.1022	Pier VBP2- Pile caps, pier and pier head construction	96.75%	4	123	03-Mar-15 A	24-Aug-15	52
Z2.KLH.1050	Pier VBP3 Pile caps, pier and pier head construction	3.85%	50	52	30-May-15 A	19-Oct-15	0
Z2.KLH.1120	Deck 1 - Bridge deck construction (West Abutment to VBP1)	0%	100	100	12-Sep-15	13-Jan-16	36
Z2.KLH.1125	Deck 1 - Bridge deck construction (VBP1 to VBP2)	0%	100	100	25-Aug-15	22-Dec-15	52
Z2.KLH.1130	Deck 1 - Bridge deck construction (VBP2 to VBP3)	0%	38	38	20-Oct-15	03-Dec-15	68
KLH Bridge - Ramp R1							
Z2.KLH.1450	Ramp R1 - Pile caps and pier construction (R1P1)	12.5%	35	40	02-Jul-15 A	30-Sep-15	202
Z2.KLH.1660	Ramp R1 - Pile caps and pier construction (R1P2)	12.5%	35	40	02-Jul-15 A	30-Sep-15	162
Z2.KLH.1670	Ramp R1 - Pile caps and pier construction (R1P3)	0%	40	40	02-Oct-15	18-Nov-15	162
Z2.KLH.1680	Ramp R1 - Ramp construction (Abutment R1 to R1P1)	0%	45	45	02-Oct-15	24-Nov-15	202
Z2.KLH.1685	Ramp R1 - Ramp construction (R1P1 to P1P3)	0%	45	45	19-Nov-15	13-Jan-16	162
Z2.KLH.1710	Ramp R1 - Abutment R1 - base slab & wall	0%	62	45	22-Jun-15 A	03-Nov-15	100
Z2.KLH.1720	Ramp R1 - Abutment R1 - Top slab	0%	30	30	04-Nov-15	08-Dec-15	100
KLH Bridge - Deck 3							
Z2.KLH.1370	Deck - East abutment to VBP8	0%	90	90	02-Nov-15	26-Feb-16	54
Z2.KLH.1380	Deck - VBP6 to VBP7	0%	90	90	02-Oct-15	19-Jan-16	7
Z2.KLH.1400	Deck - VBP7 to VBP8	0%	90	90	02-Nov-15	26-Feb-16	54
Z2.KLH.1850	VBP7 - Pile caps, pier and pier head construction	53.95%	35	76	18-May-15 A	30-Sep-15	7
Z2.KLH.1890	VBP8 - Pile caps, pier and pier head construction	20%	60	75	20-Jul-15 A	31-Oct-15	54
KLH Bridge - Deck 2							
Z2.KLH.1160	VBP4- Pre-bored H-pile piling works (9 Nos.)	62.96%	10	27	28-Jul-15 A	31-Aug-15	27
Z2.KLH.1170	VBP4- Pile cap, pier & pier head construction	0%	80	80	29-Aug-15	03-Dec-15	27
Z2.KLH.1260	Beam Erection - Above MTRC rail track (2C) (Bet P5 to P6)	0%	12	12	29-Aug-15	12-Dec-15	-6
KLH Bridge - East Ramp							
Z2.KLH.1410	East Ramp - excavation	71.07%	35	121	08-Apr-15 A	30-Sep-15	187
Z2.KLH.1420	East Ramp base slab & Abutment wall	30.08%	86	123	12-May-15 A	01-Dec-15	76
KLH Bridge - Ramp R2							
Z2.KLH.1523	VO 028 - Boundary Wall to Hse 190B structure	0%	24	24	21-Sep-15*	20-Oct-15	1009
Z2.KLH.1524	VO 028 - Boundary Wall to Hse 190B E&M, Drainage	0%	26	26	22-Oct-15	20-Nov-15	1009
Z2.KLH.1530	Ramp R2 - Pile cap, abutment and pier construction	0%	120	120	10-Oct-15	11-Mar-16	-30
Lift at TWSR-W Side							
L01093	Lift contractor sub-letting	0%	90	90	10-Aug-15 A	05-Dec-15	636
L01140	CLP Power available (by CLP)	0%	0	0	20-Aug-15	20-Aug-15	1322
Lift at FLHY S/B							
L01160	Piling Rig mobilisation & set up period	42.31%	15	26	10-Aug-15 A	05-Sep-15	-30
L01170	KLH (E) lift - pile (9 nos)	0%	27	27	07-Sep-15	09-Oct-15	-30
L01300	CLP Power available (by CLP)	0%	365	365	20-Aug-15	18-Aug-16	964
North Buffer Zone 2 (NBZ2) (within Zone 4) (Ch. 7925 to 8100)							
Site Formation							
Retaining Wall W76							
Structure Works							
Z4SF1110	Backfilling up to road finishes level	74.19%	8	31	22-Jun-15 A	28-Aug-15	71
Bridge Construction							
New Ho Ka Yuen Footbridge							
General							
HKY1060	Steel Staircase & Ramp prefabrication (HKYB-TWSR-W	0%	30	30	20-Aug-15	23-Sep-15	143
HKY1070	Steel Staircase & Ramp available on site (HKYB-TWSR-W side)	0%	0	0	24-Sep-15		143
HKY1080	Steel Staircase & Ramp prefabrication (HKYB-TWSR-E side)	0%	40	40	20-Aug-15	07-Oct-15	88
HKY1090	Steel Staircase & Ramp available on site (HKYB-TWSR-E side)	0%	0	0	08-Oct-15		88
HKY1100	Steel Bridge prefabrication (HKYB)	0%	50	50	20-Aug-15	19-Oct-15	189
HKY1110	Steel Bridge available on site (HKYB)	0%	0	0	20-Oct-15		189
TWSR-West/ FL Highway N/B Side Section							
HKY1278	HKYP7 - ELS & Remove existing structure	42.19%	37	64	20-Jul-15 A	03-Oct-15	0
HKY1288	TMLG additional stop work period	0%	26	26	08-Oct-15*	07-Nov-15	0
HKY1290	HKYP7 - Pre-bored H pile (6 nos)	0%	18	18	09-Nov-15	28-Nov-15	-29
TWSR-East FL Highway S/B Side Section							
HKY1590	Erect Stairecase (HKYFB-TWSR-E side)	0%	30	30	08-Oct-15	12-Nov-15	88
HKY1600	Finishes Work	0%	30	30	13-Nov-15	17-Dec-15	163
HKY1760	HKYP4 - Pile cap, Pier and Pier Head	72.73%	60	220	15-Oct-14 A	31-Oct-15	98
HKY1860	Erect Steel Ramp (HKYFB-TWSR-E side)	0%	75	75	13-Nov-15	20-Feb-16	88
Demolition of Existing Ho Ka Yuen Footbridge							
TWSR-East FL Highway S/B Side Section							



Activity ID	Activity Name	Dur. % Complete	Rem. Duration	Original Duration	Start	Finish	Total Float
HKY1960	Demolish existing TWSR-E existing Ramp	37.84%	23	37	05-Aug-15 A	15-Sep-15	1
HKY1970	1 lane of slip road Y space available	0%	0	0		15-Sep-15	1
TWSR-East Construction							
Drainage & Road Works							
TWSR-East FL Highway S/B Side Section							
TWSRE1000	Road work for New TWSR-East	68.83%	48	154	15-May-15 A	16-Oct-15	52
ZONE 4 (Ch. 7925 to 8700)							
Bridge Construction							
New Wo Hop Shek Pedstrian & Cycle Bridge							
General							
WHS1040	Structure steel procurement (WHSB)	98.46%	3	195	10-Dec-14 A	22-Aug-15	26
WHS1050	Steel Ramp prefabrication (WHSB)	0%	50	50	24-Aug-15	23-Oct-15	22
WHS1060	Steel Ramp available on site (WHSB)	0%	0	0	24-Oct-15		22
WHS1070	Steel Staircase prefabrication (WHSB)	0%	40	40	24-Aug-15	10-Oct-15	107
WHS1080	Steel Staircase available on site (WHSB)	0%	0	0	12-Oct-15		107
TWSR-West/ FL Highway N/B Side Section							
WHS1180	WHSP2 - Pile cap, Pier and Pier Head	0%	45	45	17-Aug-15 A	13-Oct-15	0
WHS1220	WHSP6 - Pile cap, Pier and Pier Head	0%	45	45	24-Sep-15	18-Nov-15	0
WHS1228	WHSP7 - Pile cap, Pier and Pier Head	0%	45	45	20-Aug-15	13-Oct-15	30
WHS1260	WHSAB1 - pile cap & abutment wall	0%	30	30	14-Oct-15	18-Nov-15	48
WHS1270	WHSAB1 - Backfilling (~4m)	0%	27	27	19-Nov-15	19-Dec-15	48
WHS1898	WHSP3 - Pile cap, Pier and Pier Head	0%	35	30	02-Jul-15 A	30-Sep-15	10
WHS1930	WHSP4 - Pile cap, Pier and Pier Head	0%	35	30	02-Jul-15 A	30-Sep-15	10
WHS1970	WHSP5 - Pile cap, Pier and Pier Head	0%	30	30	02-Oct-15	06-Nov-15	10
WHS1980	1st half Steel Ramp ready for erection (WHS-TWSR-W side)	0%	0	0		18-Nov-15	0
WHS1990	Erect 1st half ramp	0%	60	60	19-Nov-15	30-Jan-16	0
Crossing Fanling Highway Section							
WHS1480	Erect WHS bridge Structure across fanling highway	0%	90	90	14-Oct-15	30-Jan-16	15
TWSR-East FL Highway S/B Side Section							
WHS2090	North Abutment Wall (AW1) - Backfilling (~6m)	58.82%	35	85	02-Apr-15 A	30-Sep-15	25
Slip Road Y Construction							
Drainage & Road Works							
TWSR-East FL Highway S/B Side Section							
RDZ41000	Construct Slip Rd Y (Ch8250-8370)(SA340) (Z4	60.22%	37	93	02-Mar-15 A	03-Oct-15	15
RDZ41010	Construct Slip Rd Y (Ch8100-8250)(SA342) (Z4	61.05%	37	95	13-Jul-15 A	03-Oct-15	15
RDZ41020	Construct Slip Rd Y @ existing TWSR-E junction	0%	70	70	23-Sep-15	16-Dec-15	71
RDZ41082	Construct Slip Rd Y (Ch7925-8050)(SA3460) - 1 lane @	0%	120	120	16-Sep-15	18-Feb-16	1
Underground Utility Works							
DN600 and DN900 Watermain							
DN1040	DN600 & DN900 watermain laying(Ch8370-8650)(SA340) (near	0%	62	62	20-Aug-15	03-Nov-15	44
DN1050	DN600 & DN900 watermain laying complete (except DN600 lapping	0%	0	0		03-Nov-15	44
DN1054	Watermain (DN900/1200) changeover for DN600 Works	0%	6	6	04-Nov-15	10-Nov-15	44
DN1056	Laying DN600 section after DN900 changeover Works	0%	52	52	11-Nov-15	13-Jan-16	44
VO - Wall 76A Construction							
Retaining Wall W76A							
TWSR-East FL Highway S/B Side Section							
W76A1020	W76A construction (bay 9)	0%	12	12	27-Jun-15 A	02-Sep-15	27
W76A1030	W76A backfilling work (bay 4,5,9)	0%	7	7	03-Sep-15	10-Sep-15	27
W76A1050	Drainage work for Caltex access road	0%	150	150	11-Sep-15	19-Mar-16	799
Fanling Highway Construction							
Drainage & Road Works							
TWSR-East FL Highway S/B Side Section							
HKY1412	Construct temp road for TWSR-East & FH S/B diversion	0%	21	21	29-Aug-15	22-Sep-15	71
RDZ41005	Construct FH S/B Lane 1,2 (Ch8250-8370)(SA340) (Z4	75%	30	120	02-Mar-15 A	23-Sep-15	22
RDZ41015	Construct FH S/B Lane 1,2 (Ch8100-8250)(SA342) (Z4	58.33%	30	72	12-May-15 A	23-Sep-15	22
RDZ41025	Construct FH S/B Lane 1,2 @ existing TWSR-E junction	0%	60	60	23-Sep-15	04-Dec-15	81
RDZ41030	Realign Temp Road from TWSR-E to Petrol station (Z4 TTA-Stage 3)	0%	45	45	05-Oct-15	26-Nov-15	15
Other Works							
Retaining Wall W77A							
TWSR-East FL Highway S/B Side Section							
RWZ4.1060	Base slab & Wall (0-3m high)-RW77A (Ch.50-130)	85.82%	19	134	27-Feb-15 A	10-Sep-15	232
RWZ4.1070	Backfilling (0-3m) - RW77A (Ch.50-130)	0%	30	30	11-Sep-15	17-Oct-15	307
Retaining Wall W77B							
TWSR-East FL Highway S/B Side Section							
RWZ4.1100	Base slab & Wall (0-3m high)-RW77B (Ch 0-40)	0%	60	60	11-Sep-15	23-Nov-15	232
TCSS Works							
TCSS Pre-Construction Works							
TCSS0100	Acquire Design Criteria from Drawing & procurement	58.05%	86	205	27-Feb-15 A	01-Dec-15	356
DS50							
TCSS1590	Slow lane footing -DS50 (NB74)	0%	0	0		20-Aug-15	816
FADS8							
TCSS1620	Slow lane footing - FADS8 (CH8220, S/B)	0%	30	30	24-Sep-15	31-Oct-15	786



APPENDIX C
IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

Appendix C - Implementation Schedule of Environmental Mitigation Measures (EMIS)

Air Quality – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Implementation Status
Air Quality during construction	Restricting heights from which materials are dropped, as far as practicable to minimize the fugitive dust arising from unloading/loading.	During construction	V
	All stockpiles of excavated materials or spoil of more than $50m^3$ shall be enclosed, covered or dampened during dry or windy conditions.		@
	Effective water sprays shall be used to control potential dust emission sources such as unpaved haul roads and active construction areas.		@
	All spraying of materials and surfaces shall avoid excessive water usage.		V
	Vehicles that have the potential to create dust while transporting materials shall be covered, with the cover properly secured and extended over the edges of the side and tail boards.		V
	Materials shall be dampened, if necessary, before transportation.		V
	Travelling speeds shall be controlled to reduce traffic induced dust dispersion and re-suspension within the site from the operating haul trucks.		V
	Vehicle washing facilities shall be provided to minimize the quantity of material deposited on public roads.		@

Noise – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Implementation Status
Noise during construction	Use of silenced plant or plant equipped with mufflers or dampers in substitute of ordinary plant.	During construction	V
	Reduce the number of equipment and their percentage on-time.		V
	3.5 m and 5.5 m high temporary noise barrier at culvert construction work area (Figure 2a of the Environmental Permit).		#
	3 m high temporary noise barrier along the northern edge of Bridge 12 at ground level (Figure 2b of the Environmental Permit).		#
	2 m high temporary noise barrier along the northern edge of Bridge 12 at bridge level (Figure 2b of the Environmental Permit).		#
	2.5 m high temporary noise barrier along Tai Wo Service Road West (Figure 2c of the Environmental Permit).		#
	3.5m and 7m high temporary noise barrier along Tai Wo Services Road West near Tai Hang (Figure 2c of the Environmental Permit).		#
	7 m high temporary noise barrier along Tai Wo Service Road West near Tai Wo Footbridge work area (Figure 2d of the Environmental Permit).		#
	7 m high temporary noise barrier near Kiu Tau Footbridge work area (Figure 2d of the Environmental Permit).		#
	2.5 m high temporary noise barrier near river diversion work area (Figure 2e of the Environmental Permit).		#

Water Quality – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Implementation Status
Water quality during construction	Demolition and reconstruction of bridges - Prevent off-site migration through use of sheet piles. - Minimise duration of works as far as practical. - All sewer and drainage connections should be sealed to prevent debris, soil, sand, etc, from entering public sewers/drains. - Site surface runoff should be settled to remove sand/silt before it is discharged into the existing storm drains.	During construction	V
	Road Widening Works, Earthworks and Culvert Extension Works - Wastewater generated from any concrete batching washdown of equipment or similar activities should be discharged into foul sewers, after the removal of settable solids, and pH adjustment as necessary. All sewage discharges from the study area should meet the TM standards and approval from EPD through the licensing process is required. - Sand traps, oil interceptors and other pollution prevention installations should be provided, properly cleaned and maintained. - Runoff from exposed working areas, unfinished slopes and from unlined temporary channels should be directed to stilling basins and/or silt traps before discharging to the drainage outfalls. - Regular inspections of stilling basins and/or silt traps are required to ensure that sediment is not conveyed into the existing drainage system. - Open stockpiles should be covered with a tarpaulin cover. - During the wet season, any exposed top soils should be covered with a tarpaulin, shotcreted or hydroseeded. - Sand and silt from wash-water from vehicle washing should be settled out before discharging into storm drains. - Fuels should be stored in bunded areas such that spillage can be easily collected.		V

Waste – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Implementation Status
Waste management during construction	General Waste - Transport of wastes off site as soon as possible. - Maintenance of accurate waste records. - Minimisation of waste generation for disposal (via reduction/recycling/re-use). - No on-site burning will be permitted. - Use of re-useable metal hoardings/signboards.	During construction	V
	Vegetation from site clearance - Segregation of materials to facilitate disposal. - Mulching to reduce bulk and where possible review opportunities for the possible beneficial use within landscaping areas.		V
	Demolition Wastes - Segregation of materials to facilitate disposal. - Appropriate stockpile management.		V
	Excavated Materials - Segregation of materials to facilitate disposal / reuse. - Appropriate stockpile management. - Re-use of excavated material on or off site (where possible). - Special handling and disposal procedures in the event that contaminated materials are excavated.		V
	Construction Wastes - Segregation of materials to facilitate recycling/reuse (within designated area in appropriate containers/stockpiles). - Appropriate stockpile management. - Planning to reduce over ordering and waste generation. - Recycling and re-use of materials where possible (e.g. metal, wood from formwork) - For material which cannot be re-used/recycled, collection should be carried out by an approved waste contractor for landfill disposal.		V
	Bentonite Slurries - Bentonite slurries should be reused as far as possible. - Disposal in accordance with Practice Note For Professional Persons ProPECC PN 1/94.		#

	Chemical Wastes - Storage within locked, covered and bunded area. - The storage area shall not be located adjacent to sensitive receivers e.g. drains. - Minimise waste production and recycle oils/solvents where possible. - A spill response procedure shall be in place and absorption material available for minor spillages. - Use appropriate and labelled containers. - Educate site workers on site cleanliness/waste management procedures. - If chemical wastes are to be generated, the contractor must register with EPD as a chemical waste producer. - The chemical wastes shall be collected by a licensed chemical waste collector.		V
	Municipal Wastes - Waste shall be stored within a temporary refuse collection facility, in appropriate containers prior to collection and disposal. - Regular, daily collections are required by an approved waste collector.		V

Ecology – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Implementation Status
Ecology during construction	Accurate Delineation of Works Area - Boundaries of proposed works areas shall be clearly identified and separated from external areas by a physical barrier to prevent encroachment of adjacent habitats. - Individual trees which fall within the works areas but which work plans do not require removal are to be retained and fenced off to maximize protection.	During construction	V
	Vegetation Clearance - No fires shall be lit within the works area for the purpose of burning cleared vegetation. - The Contractor shall give consideration to mulching the cleared vegetation for recycling within the works area / adjacent land.		V
	Dust generation There are a number of measures which shall be taken as specified in the Air Pollution Control (Construction Dust) Regulation on 'Dust Control Requirements, including the following key measures to be applied during construction: - Vehicle washing facilities to be provided at every discernible or designated vehicle exit point; - All temporary site access roads shall be sprayed with water to suppress dust as necessary; - All dusty materials should be sprayed with water immediately prior to any handling; and - All debris should be covered entirely by impervious sheeting or stored in a sheltered debris collection area.		V
	Surface Run-off In general, mitigation measures shall be in accordance with ProPECC PN1/94 on 'Construction Site Drainage'. Key measures include: - Bund and cover stock piles to avoid run-off; - Channel any run-off through a system of oil, grease and sediment / silt traps and reuse water on site where ever practical; - All vehicle maintenance to be undertaken within a bunded area; and - Maximise vegetation retention on-site to maximise absorption (minimise transport).		V

Landscape and Visual Impact – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Responsibility
Landscape & Visual during construction	Preservation of Existing Vegetation - Trees identified for retention within the project limit would be protected during the works; - The tree transplanting and planting works shall be implemented by approved Landscape Contractors.	During construction	V
	Temporary Works Areas - Where feasible the works areas would be screened using hoarding and existing vegetation would be retained where possible to reduce the landscape and visual impacts arising from the construction activity. The landscape of these works areas would be restored following the completion of the construction phase.		V
	Hoarding - A hoarding would be erected where practicable in the most visually sensitive locations to screen the temporary construction works from the local VSRs.		V
	Top Soils - The works will result in disturbance to extensive areas of topsoil. Topsoil worthy of retention should be stockpiled for use following completion of the civil engineering works. It should either be temporarily vegetated with hydroseeded grass or turned over on a regular basis.		#
	Protection of Important Landscape Features - Important features such as temples, Island House and kilns within the study area, although remote from the proposed works retained and adequately protected.		#

Legend:
V = implemented;
x = not implemented;
@ = partially implemented;
+ = recommended and immediately implemented during the site inspection by the Contractor;
N/A = not applicable - No such work was undertaken or no such material was used on site;
= to be implemented.

APPENDIX D
SUMMARY OF ACTION AND LIMIT LEVELS

Appendix D - Summary of Action and Limit Levels

Table 1 – Action and Limit Levels for 1-hour TSP

Location	Action Level	Limit Level
AM2	317.8 μg/m3	500 μg/m3

Table 2 – Action and Limit Levels for 24-hour TSP

Location	Action Level	Limit Level
AM2	200.7 μg/m3	260 μg/m3

Table 3 – Action and Limit Levels for Construction Noise (0700-1900 hrs of normal weekdays)

Location	Action Level	Limit Level
M2	When one documented complaint, related to 0700 – 1900 hours on normal weekdays, is received from any one of the sensitive receivers	75 dB(A)
M3*		65/70 dB(A)

*Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period

APPENDIX E
CALIBRATION CERTIFICATES OF MONITORING EQUIPMENTS

AECOM

Total Suspended Particulates (TSP) Sampler
Field Calibration Report

Station	Fanling Government Secondary School (AM2)	Operator:	Shum Kam Yuen
Date:	27-Jul-15	Next Due Date:	27-Sep-15
Model No:	TE-5170	Verified Against:	O.T.S -- 988
Equipment No.:	A-001-74T	Expiration Date:	28-May-2015

Ambient Condition					
Temperature, Ta	303.0	Kelvin	Pressure, Pa	757.3	mmHg

Orifice Transfer Standard Information					
Equipment No.:	843	Slope, mc	1.99924	Intercept, bc	-0.01238
Last Calibration Date:	9-Dec-14	**mc x Qstd + bc = [H x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	9-Dec-15				

Calibration of TSP Sampler

Calibration Point	H in. of water	[H x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (m^3/min) **X - axis**	W in. of oil	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	7.0	2.62	1.32	4.5	2.10
2	5.8	2.38	1.20	3.7	1.90
3	4.5	2.10	1.06	3.1	1.74
4	3.5	1.85	0.93	2.4	1.53
5	2.3	1.50	0.76	1.6	1.25

By Linear Regression of Y on X

Slope , mw = **1.4914** **Intercept, bw =** **0.1320**

Correlation Coefficient* = **0.9982**

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.21 m^3/min (43 CFM)

From the Regression Equation, the "Y" value according to

m x Qstd + b = [W x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point W = (m x Qstd + b)^2 x (760 / Pa) x (Ta / 298) = **3.83**

*If Correlation Coefficient < 0.990, check and recalibrate again.

Remarks: _____

QC Reviewer: WS CHAN Signature: _____ Date: 27/7/15

TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Dec 09, 2014 Rootsmeter S/N 0438320 Ta (K) - 293
Operator Tisch Orifice I.D. - 0843 Pa (mm) - 755.65

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4010	3.2	2.00
2	NA	NA	1.00	0.9950	6.4	4.00
3	NA	NA	1.00	0.8830	7.9	5.00
4	NA	NA	1.00	0.8420	8.8	5.50
5	NA	NA	1.00	0.6960	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)
1.0069	0.7187	1.4221
1.0027	1.0077	2.0112
1.0006	1.1332	2.2486
0.9994	1.1870	2.3584
0.9942	1.4285	2.8443

Qstd slope (m) = 1.99924
intercept (b) = -0.01238
coefficient (r) = 0.99990

y axis = SQRT[H2O(Pa/760)(298/Ta)]

Va	(x axis) Qa	(y axis)
0.9957	0.7107	0.8806
0.9915	0.9965	1.2454
0.9894	1.1206	1.3924
0.9883	1.1738	1.4603
0.9831	1.4126	1.7612

Qa slope (m) = 1.25189
intercept (b) = -0.00766
coefficient (r) = 0.99990

y axis = SQRT[H2O(Ta/Pa)]

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{[SQRT(H2O(Pa/760)(298/Ta))]- b}
Qa = 1/m{[SQRT H2O(Ta/Pa)]- b}

EQUIPMENT CALIBRATION RECORD

Type:	***Laser Dust Monitor***
Manufacturer/Brand:	***SIBATA***
Model No.:	***LD-3***
Equipment No.:	***A.005.07a***
Sensitivity Adjustment Scale Setting:	***557 CPM***
Operator:	*Mike Shek (MSKM)*

Standard Equipment

Equipment:	*Rupprecht & Patashnick TEOM®*		
Venue:	*Cyberport (Pui Ying Secondary School)*		
Model No.:	*Series 1400AB*		
Serial No:	Control: *140AB219899803*		
	Sensor: *1200C143659803*	K_o: *12500*	
Last Calibration Date*:	*7 May 2015*		

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *557* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *557* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*08-05-15*	*09:15 - 10:15*	*26.9*	*76*	*0.04417*	*1763*	*29.38*
2	*08-05-15*	*10:15 - 11:15*	*26.9*	*76*	*0.04625*	*1851*	*30.85*
3	*08-05-15*	*11:15 - 12:15*	*26.9*	*77*	*0.04513*	*1805*	*30.08*
4	*08-05-15*	*12:15 - 13:15*	*27.1*	*77*	*0.04828*	*1926*	*32.10*

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
2. Total Count was logged by Laser Dust Monitor
3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
Slope (K-factor): *0.0015*
Correlation coefficient: *0.9983*

Validity of Calibration Record: *8 May 2016*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 11 May 2015

EQUIPMENT CALIBRATION RECORD

Type:	***Laser Dust Monitor***
Manufacturer/Brand:	***SIBATA***
Model No.:	***LD-3B***
Equipment No.:	***A.005.16a***
Sensitivity Adjustment Scale Setting:	***521 CPM***
Operator:	*Mike Shek (MSKM)*

Standard Equipment

Equipment:	*Rupprecht & Patashnick TEOM®*		
Venue:	*Cyberport (Pui Ying Secondary School)*		
Model No.:	*Series 1400AB*		
Serial No:	Control: *140AB219899803*		
	Sensor: *1200C143659803*	K_o: *12500*	
Last Calibration Date*:	*7 May 2015*		

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *521* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *521* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*18-07-15*	*09:30 - 10:30*	*29.8*	*75*	*0.05032*	*2014*	*33.57*
2	*18-07-15*	*10:45 - 11:45*	*30.1*	*76*	*0.05117*	*2047*	*34.12*
3	*18-07-15*	*12:15 - 13:15*	*30.4*	*77*	*0.05363*	*2141*	*35.68*
4	*18-07-15*	*13:40 - 14:40*	*30.5*	*78*	*0.05465*	*2179*	*36.32*

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
2. Total Count was logged by Laser Dust Monitor
3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
Slope (K-factor): *0.0015*
Correlation coefficient: *0.9978*

Validity of Calibration Record: *18 July 2016*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 20 July 2015

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
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香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533

HKLAS 028 CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 15CA0317 03 **Page** 1 **of** 2

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	B & K	,	B & K
Type/Model No.:	2238	,	4188
Serial/Equipment No.:	2285692	,	2791211
Adaptors used:	-	,	-

Item submitted by

Customer Name:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	17-Mar-2015

Date of test: 18-Mar-2015

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	20-Jun-2015	CIGISMEC
Signal generator	DS 360	33873	09-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI

Ambient conditions

Temperature:	21 ± 1 °C
Relative humidity:	60 ± 10 %
Air pressure:	1010 ± 5 hPa

Test specifications

1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.

2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 19-Mar-2015 **Company Chop:** SOILS AND MATERIALS ENGINEERING COMPANY LTD 綜合試驗有限公司

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533
HOKLAS 028
CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 14CA1106 04-01 **Page** 1 **of** 2

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	Rion Co., Ltd.	,	Rion Co., Ltd.
Type/Model No.:	NL-31	,	UC-53A
Serial/Equipment No.:	00320528 / N.007.03A	,	90565
Adaptors used:	-	,	-

Item submitted by

Customer Name:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	06-Nov-2014

Date of test: 07-Nov-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	15-Jun-2015	CIGISMEC
Signal generator	DS 360	33873	09-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	65 ± 10 %
Air pressure:	1010 ± 10 hPa

Test specifications

1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.

2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.

3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsess of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 08-Nov-2014 **Company Chop:** SOILS & MATERIALS ENGINEERING COMPANY LTD 綜合試驗有限公司

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533

HKLAS 028 CAL

CERTIFICATE OF CALIBRATION

Certificate No.: 14CA1106 04-02 **Page:** 1 **of** 2

Item tested

Description:	Acoustical Calibrator (Class 1)
Manufacturer:	Rion Co., Ltd.
Type/Model No.:	NC-73
Serial/Equipment No.:	10307223 / N.004.08
Adaptors used:	-

Item submitted by

Curstomer:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	06-Nov-2014

Date of test: 07-Nov-2014

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	13-May-2015	SCL
Preamplifier	B&K 2673	2239857	10-Apr-2015	CEPREI
Measuring amplifier	B&K 2610	2346941	08-Apr-2015	CEPREI
Signal generator	DS 360	61227	09-Apr-2015	CEPREI
Digital multi-meter	34401A	US36087050	17-Dec-2014	CEPREI
Audio analyzer	8903B	GB41300350	07-Apr-2015	CEPREI
Universal counter	53132A	MY40003662	11-Apr-2015	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	65 ± 10 %
Air pressure:	1010 ± 10 hPa

Test specifications

1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.

2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.

3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on **page 2** of this certificate.

SOILS & MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 08-Nov-2014 **Company Chop:**

Comments: The results reported in this certificate refer to the conditon of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

APPENDIX F
EM&A MONITORING SCHEDULES

Contract No. HY/2012/06
Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange
Impact Monitoring and Audit Schedule for August 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Aug
2-Aug	3-Aug	4-Aug	5-Aug	6-Aug	7-Aug	8-Aug
	1-hr TSP 24-hr TSP Noise					1-hr TSP 24-hr TSP
9-Aug	10-Aug	11-Aug	12-Aug	13-Aug	14-Aug	15-Aug
					1-hr TSP 24-hr TSP Noise	
16-Aug	17-Aug	18-Aug	19-Aug	20-Aug	21-Aug	22-Aug
	24-hr TSP	1-hr TSP Noise				1-hr TSP 24-hr TSP
23-Aug	24-Aug	25-Aug	26-Aug	27-Aug	28-Aug	29-Aug
					1-hr TSP 24-hr TSP Noise	
30-Aug	31-Aug					

Contract No. HY/2012/06
Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange
Tentative Impact Monitoring and Audit Schedule for September 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Sep	2-Sep	3-Sep	4-Sep	5-Sep
		1-hr TSP 24-hr TSP Noise				1-hr TSP 24-hr TSP
6-Sep	7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep
			1-hr TSP 24-hr TSP Noise			
13-Sep	14-Sep	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep
		1-hr TSP 24-hr TSP Noise				
20-Sep	21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep
	1-hr TSP 24-hr TSP Noise					1-hr TSP 24-hr TSP
27-Sep	28-Sep	29-Sep	30-Sep			
			1-hr TSP 24-hr TSP Noise			

The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)

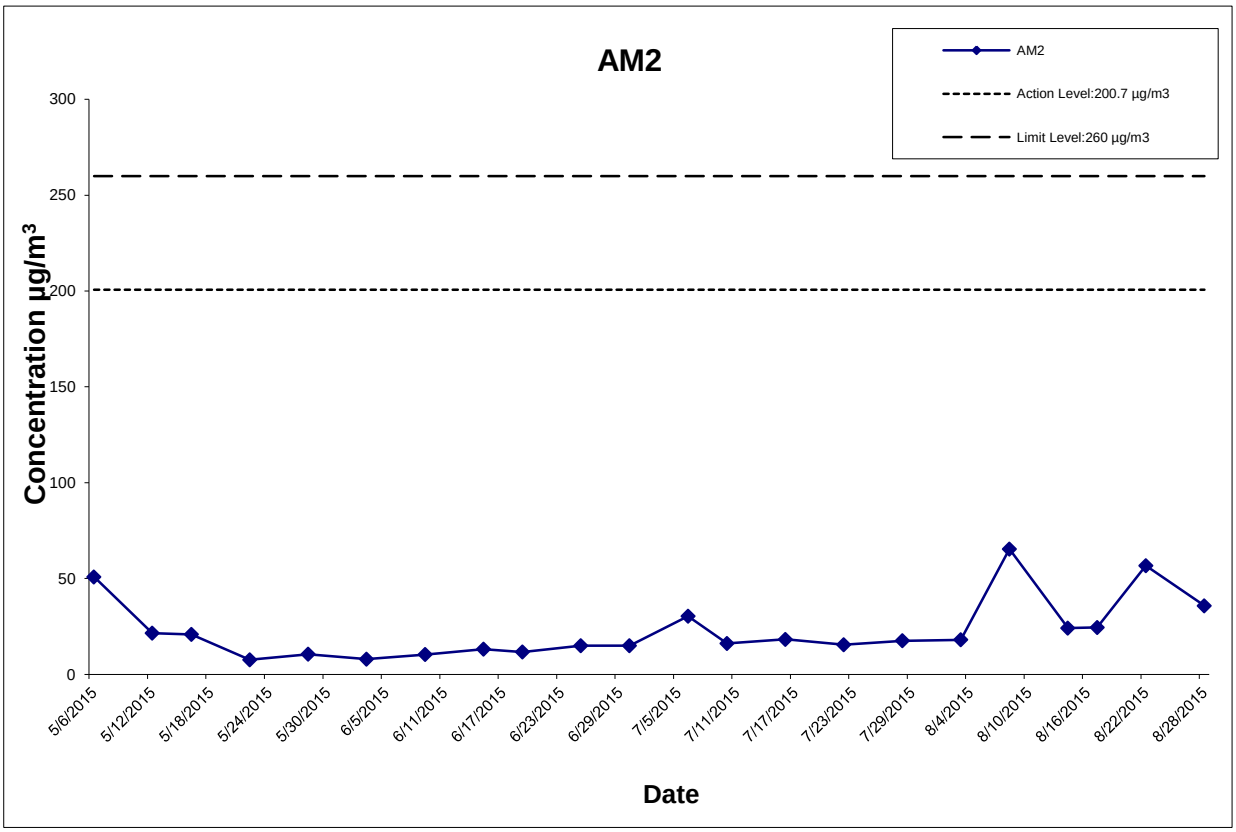
APPENDIX G
IMPACT AIR QUALITY MONITORING RESULTS AND THEIR GRAPHICAL PRESENTATION

Appendix G
Impact Air Quality Monitoring Results

24-hour TSP Monitoring Results at Station AM2 (Fanling Government Secondary School)

Date	Weather Condition	Air Temp. (^{o}C)	Atmospheric Pressure(hPa)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Filter Weight (g)		Particulate weight(g)	Elapse Time		Sampling Time(hrs.)	Conc. ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
				Initial	Final			Initial	Final		Initial	Final				
3-Aug-15	Sunny	29.5	1010.6	1.314	1.314	1.314	1892.2	2.7729	2.8070	0.0341	5882.03	5906.03	24.00	18.0	200.7	260
8-Aug-15	Sunny	32.4	998.5	1.314	1.314	1.314	1892.2	2.8132	2.9369	0.1237	5906.03	5930.03	24.00	65.4	200.7	260
14-Aug-15	Rainy	26.9	1007.4	1.314	1.314	1.314	1892.2	2.8313	2.8771	0.0458	5930.03	5954.03	24.00	24.2	200.7	260
17-Aug-15	Sunny	29.9	1008.2	1.314	1.314	1.314	1892.2	2.7388	2.7852	0.0464	5954.03	5978.03	24.00	24.5	200.7	260
22-Aug-15	Sunny	30.2	1000.1	1.314	1.314	1.314	1892.2	2.8148	2.9221	0.1073	5978.03	6002.03	24.00	56.7	200.7	260
28-Aug-15	Fine	28.3	1006.5	1.314	1.314	1.314	1892.2	2.8182	2.8859	0.0677	6002.03	6026.03	24.00	35.8	200.7	260

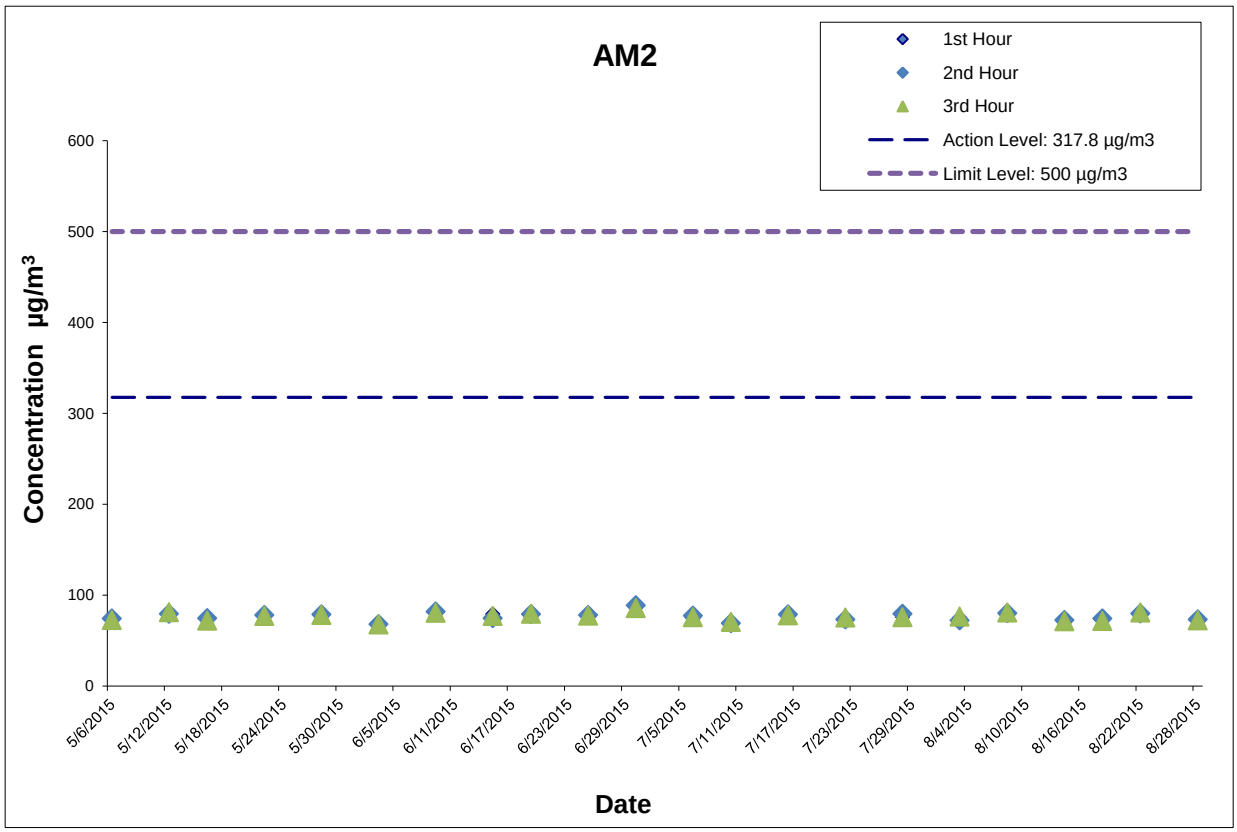
Average	37.8
Min	18.0
Max	65.4



Appendix G
Impact Air Quality Monitoring Results

1-hour TSP Monitoring Results at Station AM2
(Fanling Government Secondary School)

Date	Start Time (hh:mm)	1st Hour Conc. ($\mu g/m^3$)	2nd Hour Conc. ($\mu g/m^3$)	3rd Hour Conc. ($\mu g/m^3$)
3-Aug-15	13:00	75.1	72.4	76.3
8-Aug-15	13:05	79.7	80.4	80.9
14-Aug-15	10:50	70.6	72.6	71.4
18-Aug-15	13:00	72.6	74.3	71.5
22-Aug-15	13:15	80.3	79.8	80.9
28-Aug-15	14:10	71.6	73.4	72.4
			Average	75.9
			Min	70.6
			Max	80.9



APPENDIX H
METEOROLOGICAL DATA FOR THE REPORTING MONTH

Home
What's new
About us
HKO Side Lights
Our Services
Visitors Figures
Press releases
Today's Weather Warnings
Local Weather Observations
Weather Forecast
Weather Monitoring Imagery
Computer Forecast Products
MyObservatory
Tropical Cyclones
Aviation Weather Services
Marine Meteorological Services
Weather Information for Sports
Weather Information for Communities
China Weather
World Weather
Climatological Information Services
> Climate Watch
> Climate Statistics
> Climate Prediction
> Climate Knowledge
> Need More Information?
> Global Climate Services
> Other Useful Links
Climate Forecast
Climate Change
El Nino and La Nina
Earthquakes and Tsunamis
Astronomy, Space Weather and Geomagnetism
Time and Calendar
Radiation Monitoring, Assessment and Protection

Back

Daily Extract of Meteorological Observations , August 2015 - Tai Mei Tuk

Year 2015 Month 8 Go

Day	Mean Pressure (hPa)	Air Temperature			Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
		Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)					
01	***	31.9	28.2	26.2	***	***	0.0	070	9.2
02	***	33.2	28.9	25.7	***	***	0.0	050	7.0
03	***	33.6	29.4	26.2	***	***	0.0	060	5.1
04	***	34.0	29.7	26.2	***	***	0.0	140	5.0
05	***	34.9	30.2	26.7	***	***	0.0	140	4.9
06	***	35.0	30.7	27.2	***	***	0.0	140	4.0
07	***	36.0	31.9	27.6	***	***	0.0	270	5.8
08	***	36.6	33.2	29.4	***	***	0.0	270	13.1
09	***	36.3	31.5	26.4	***	***	0.0	270	18.5
10	***	30.7	28.7	26.5	***	***	0.5	240	12.0
11	***	32.2	28.7	25.9	***	***	4.5	050	8.6
12	***	34.4	30.0	27.2	***	***	1.5	060	7.5
13	***	31.0	27.9	26.6	***	***	5.0	220	9.5
14	***	28.4	26.5	24.5	***	***	13.5	270	6.3
15	***	27.2	25.7	24.7	***	***	85.0	050	7.4
16	***	31.3	27.7	25.8	***	***	13.0	270	4.8
17	***	33.1	29.6	26.6	***	***	0.5	230	10.0
18	***	34.4	30.2	27.6	***	***	0.0	230	8.5
19	***	35.1	30.5	26.8	***	***	0.0	240	6.1
20	***	30.6	29.0	27.6	***	***	2.0	270	4.0
21	***	33.3	30.7	27.5	***	***	0.0	280	10.3
22	***	34.1	31.2	27.9	***	***	0.0	030	8.0
23	***	35.6	31.6	27.9	***	***	0.0	280	7.3
24	***	35.3	30.9	28.4	***	***	0.0	140	6.8
25	***	34.8	30.3	27.1	***	***	0.0	050	7.2
26	***	33.5	28.8	27.1	***	***	0.0	040	11.3
27	***	34.2	29.3	26.4	***	***	0.0	150	6.7
28	***	32.8	27.9	26.1	***	***	4.5	120	6.7
29	***	32.1	27.3	25.8	***	***	10.5	260	4.7
30	***	29.7	27.1	26.2	***	***	4.0	150	4.0
31	***	29.7	27.3	25.7	***	***	0.5	040	6.5

*** unavailable

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

Educational Resources
Publications
Media and Information Services
Audio/Video Webpage
Electronic services
World Meteorological Day
World Meteorological Organization-Official City Weather Forecasts
World Meteorological Organization-Global Severe Weather
Public forms
Contact & Support
Access to information
Tender notices
Links
Important notices
Personalized Website
Mobile Version
RSS Feeds
Text Only Version
Back

Last revision date: <24 Jun 2015>

Home
What's new
About us
HKO Side Lights
Our Services
Visitors Figures
Press releases
Today's Weather Warnings
Local Weather Observations
Weather Forecast
Weather Monitoring Imagery
Computer Forecast Products
MyObservatory
Tropical Cyclones
Aviation Weather Services
Marine Meteorological Services
Weather Information for Sports
Weather Information for Communities
China Weather
World Weather
Climatological Information Services
> Climate Watch
> Climate Statistics
> Climate Prediction
> Climate Knowledge
> Need More Information?
> Global Climate Services
> Other Useful Links
Climate Forecast
Climate Change
El Nino and La Nina
Earthquakes and Tsunamis
Astronomy, Space Weather and Geomagnetism
Time and Calendar
Radiation Monitoring, Assessment and Protection

Back

Daily Extract of Meteorological Observations , August 2015 - Tai Po

Year 2015 Month 8 Go

Day	Mean Pressure (hPa)	Air Temperature			Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
		Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)					
01	1010.9	30.7	27.9	25.6	24.3	82	***	***	***
02	1011.3	31.6	28.1	24.5	23.8	78	***	***	***
03	1010.2	32.1	28.6	25.3	24.2	78	***	***	***
04	1007.9	32.8	28.8	25.0	23.6	74	***	***	***
05	1005.7	32.7	29.1	25.5	24.0	75	***	***	***
06	1004.9	33.1	29.5	26.3	24.1	74	***	***	***
07	1003.0	35.8	31.1	26.9	23.7	66	***	***	***
08	998.0	36.1	33.1	29.7	22.7	55	***	***	***
09	997.8	36.5	31.4	24.8	23.8	66	***	***	***
10	1003.9	30.0	27.8	25.6	25.0	85	***	***	***
11	1006.8	33.5	28.5	25.6	25.6	85	***	***	***
12	1007.3#	31.0	28.6#	26.7	26.3#	87#	***	***	***
13	1007.4#	28.1	27.4#	26.5	25.1#	88#	***	***	***
14	1007.1	28.0	26.1	24.6	25.1	95	***	***	***
15	1008.1	26.8	25.3	24.4	24.7	96	***	***	***
16	1008.1	30.7	26.9	25.3	26.0	95	***	***	***
17	1007.6	32.3	29.1	26.0	25.7	83	***	***	***
18	1007.4	33.7	29.9	27.1	25.4	78	***	***	***
19	1007.1	34.6	29.9	26.7	25.6	78	***	***	***
20	1005.9	30.9	28.5	26.9	25.9	86	***	***	***
21	1001.8	33.0	29.7	28.1	25.3	78	***	***	***
22	999.7	33.6	30.2	27.2	24.4	72	***	***	***
23	999.6	33.4	30.5	27.8	24.3	70	***	***	***
24	1002.1	33.6	30.3	27.6	24.1	71	***	***	***
25	1005.3	33.1	29.7	26.1	22.8	67	***	***	***
26	1007.8	31.6	28.4	26.8	25.1	83	***	***	***
27	1007.7	31.7	28.8	26.6	25.1	81	***	***	***
28	1006.2	29.8	27.2	25.9	24.7	86	***	***	***
29	1006.0	29.2	26.5	25.2	25.2	93	***	***	***
30	1006.4	27.8	26.3	25.4	25.2	94	***	***	***
31	1007.1	29.4	27.1	25.5	25.4	91	***	***	***

*** unavailable

data incomplete

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

Educational Resources
Publications
Media and Information Services
Audio/Video Webpage
Electronic services
World Meteorological Day
World Meteorological Organization-Official City Weather Forecasts
World Meteorological Organization-Global Severe Weather
Public forms
Contact & Support
Access to information
Tender notices
Links
Important notices
Personalized Website
Mobile Version
RSS Feeds
Text Only Version
Back

Last revision date: <24 Jun 2015>

APPENDIX I
IMPACT DAYTIME CONSTRUCTION NOISE MONITORING RESULTS AND THEIR GRAPHICAL PRESENTATION

Appendix I Impact Daytime Construction Noise Monitoring Results

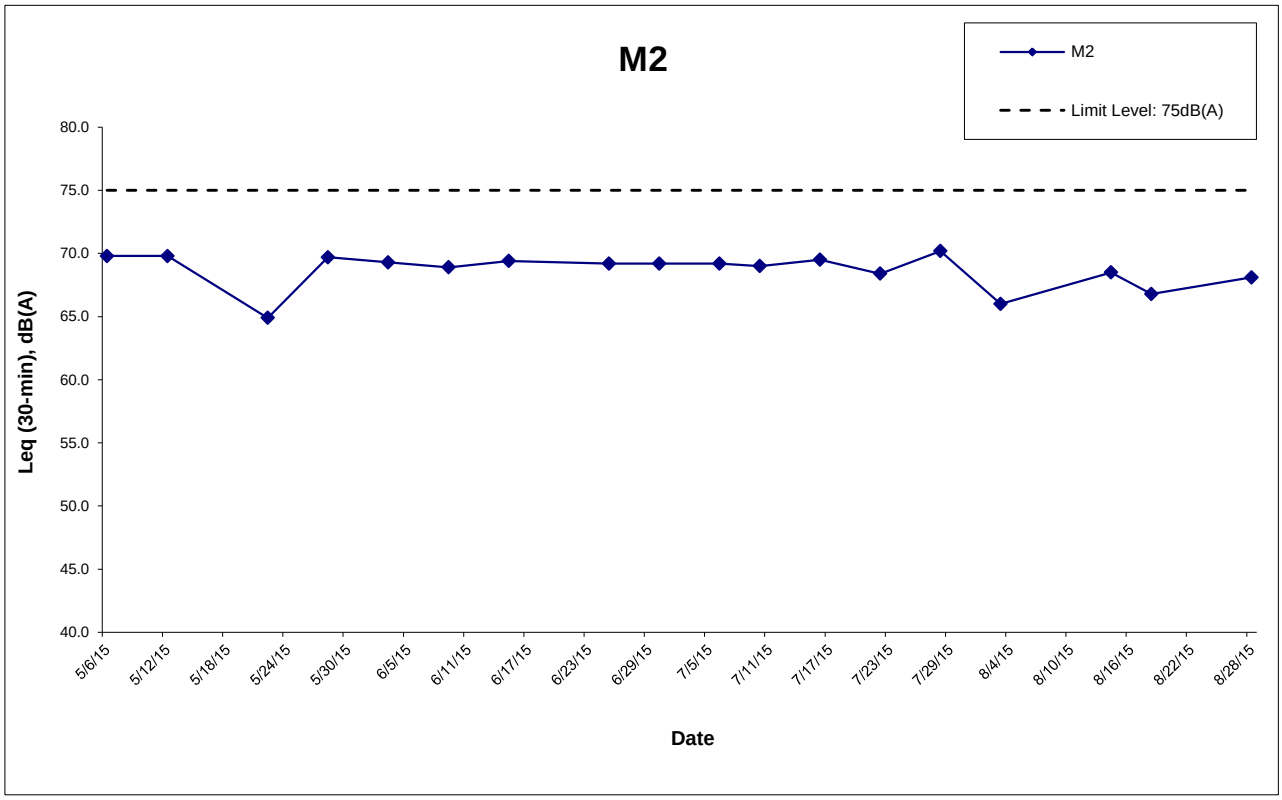
Location : M2 (West Tai Wo - Free Field)
Day time 07:00-19:00 hrs Normal Weekdays Impact Noise Monitoring Results

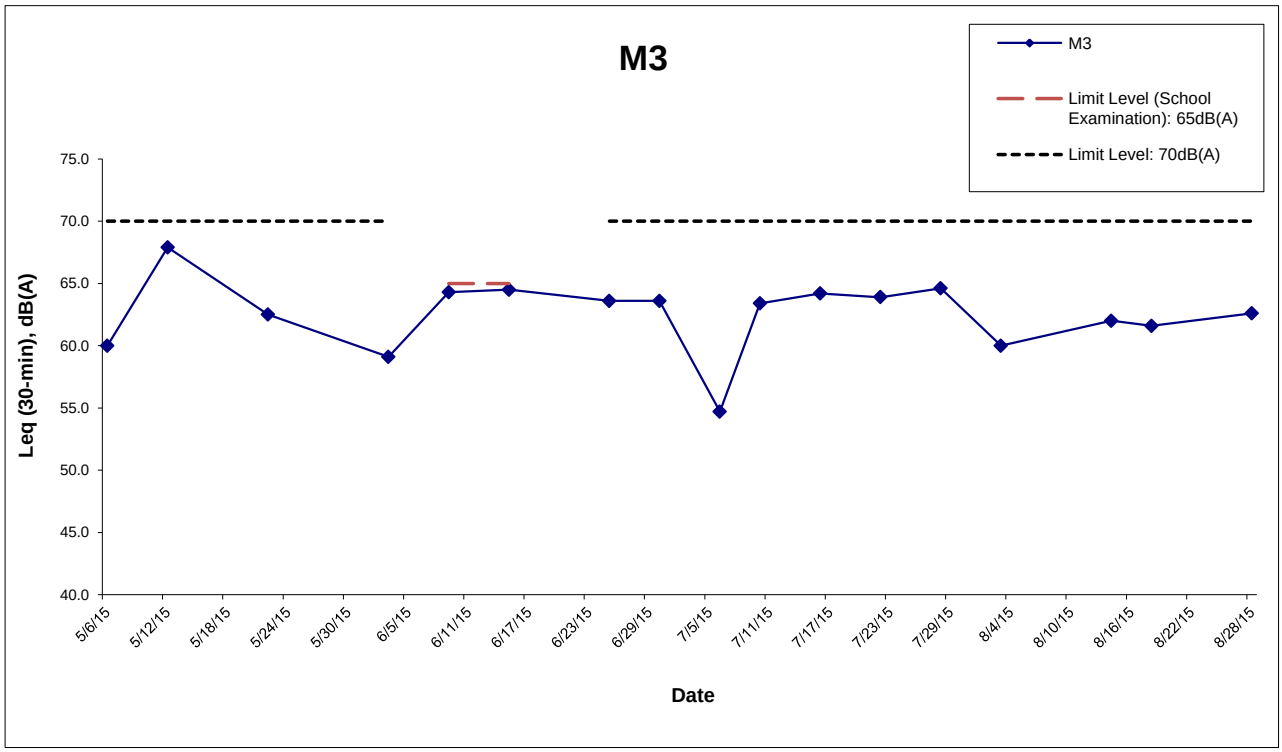
Date	Measured Noise Level for 30-min, dB(A)				Limit Level, dB(A)	Exceedance (Y/N)
	Start Time	Leq*	L10*	L90*		
3-Aug-15	13:25	68.5	69.5	66.0	75	N
14-Aug-15	10:00	70.2	73.6	68.5	75	N
18-Aug-15	14:00	69.6	73.2	66.8	75	N
28-Aug-15	14:00	70.2	73.6	68.1	75	N
	Min	68.5	69.5	66.0		
	Max	70.2	73.6	68.5		
	Average	69.7	72.8	67.5		

Location : M3 (Fanling Government Secondary School- Façade)
Day time 07:00-19:00 hrs Normal Weekdays Impact Noise Monitoring Results

Date	Measured Noise Level for 30-min, dB(A)				Limit Level, dB(A)^	Exceedance (Y/N)
	Start Time	Leq	L10	L90		
3-Aug-15	13:00	62.1	63.5	60.0	70	N
14-Aug-15	10:50	64.1	67.3	62.0	70	N
18-Aug-15	13:00	64.2	66.8	61.6	70	N
28-Aug-15	14:10	64.1	67.3	62.6	70	N
	Min	62.1	63.5	60.0		
	Max	64.2	67.3	62.6		
	Average	63.7	66.5	61.7		

* +3dB(A) Façade effect correction included
^ Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination pe





Remark:

^ Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination period.

CONTRACT NO. HY/2012/06

WIDENING OF FANLING HIGHWAY

- TAI HANG TO WO HOP SHEK INTERCHANGE

AECOM

Graphical Presentation of Impact Daytime Construction Noise Monitoring Results

APPENDIX J
EVENT ACTION PLAN

Appendix J – Event Action Plan

Event / Action Plan for Air Quality

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Action Level				
Exceedance for one sample	1. Identify source; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to dailv.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. Discuss with IEC and Contractor on remedial actions required; 6. If exceedance continues, arrange meeting with IEC and ER; 7. 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 ER 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; 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial actions to IEC within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.

Event / Action Plan for Air Quality

Event Action Level	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Limit Level				
Exceedance for one sample	1. Identify source; 2. Inform IEC, ER, Contractor 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 and Contractor on possible remedial measures; 4. Advise ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	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. Amend proposal if appropriate.
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 frequency to daily; 5. Analyse Contractor's working procedures to determine possible mitigation to be; 6. Arrange meeting with IEC 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. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 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 ER until the exceedance is abated.

Event / Action Plan for Noise Impact

Event Limit Level	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Action Level	1. Notify IEC and the Contractor. 2. Carry out investigation. 3. Report the results of investigation to IEC and the Contractor. 4. Discuss with the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review with analysed results submitted by ET. 2. Review the proposed remedial measures by the Contractor and advise ER accordingly. 3. Supervise the implement of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC. 2. Implement noise mitigation proposals.
Limit Level	1. Notify, IEC, ER, EPD and the Contractor. 2. Identify the source. 3. Repeat measurement 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 & actions taken for the exceedances. 7. Assess effectiveness of the 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 Leader and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity 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 activity of works as determined by the ER until the exceedance is abated.

Appendix J – Event Action Plan

Event / Action Plan for Air Quality

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Action Level				
Exceedance for one sample	1. Identify source; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to dailv.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. Discuss with IEC and Contractor on remedial actions required; 6. If exceedance continues, arrange meeting with IEC and ER; 7. 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 ER 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; 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial actions to IEC within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.

Event / Action Plan for Air Quality

Event Action Level	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Limit Level				
Exceedance for one sample	1. Identify source; 2. Inform IEC, ER, Contractor 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 and Contractor on possible remedial measures; 4. Advise ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	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. Amend proposal if appropriate.
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 frequency to daily; 5. Analyse Contractor's working procedures to determine possible mitigation to be; 6. Arrange meeting with IEC 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. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 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 ER until the exceedance is abated.

Event / Action Plan for Noise Impact

Event Limit Level	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Action Level	1. Notify IEC and the Contractor. 2. Carry out investigation. 3. Report the results of investigation to IEC and the Contractor. 4. Discuss with the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review with analysed results submitted by ET. 2. Review the proposed remedial measures by the Contractor and advise ER accordingly. 3. Supervise the implement of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC. 2. Implement noise mitigation proposals.
Limit Level	1. Notify, IEC, ER, EPD and the Contractor. 2. Identify the source. 3. Repeat measurement 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 & actions taken for the exceedances. 7. Assess effectiveness of the 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 Leader and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity 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 activity of works as determined by the ER until the exceedance is abated.

APPENDIX K
SITE INSPECTION SUMMARIES

Site Inspection Summary

Inspection Information

Contract No.	HY/2012/06
Date:	4 August 2015
Time:	14:00
Inspection No.:	90

Non-compliance

Nil

Observations

Follow-up Observation(s)

1. Stagnant water and general refuse was cleared. (Closed)

2. Stagnant water was cleared. (Closed)

New Observation(s)

3. Mud trails were observed outside the site entrance. The Contractor should clear the mud trails, and keep the public road and site entrance clear of dusty materials.

Reminder(s)

Nil.

Remarks

Nil

	Name	Signature	Date
Prepared by	Joanne Ko		5 August 2015
Checked by	Y W Fung		5 August 2015

Site Inspection Summary

Inspection Information

Contract No.	HY/2012/06
Date:	13 August 2015
Time:	14:00
Inspection No.:	91

Non-compliance

Nil

Observations

Follow-up Observation(s)

1. The site entrance has been cleaned. (Closed)

New Observation(s)

2. Dusty material was observed on the ground outside Area 329 site entrance. The Contractor should clean up the dusty material frequently and ensure public road is kept clear of dusty materials from the construction site.

Reminder(s)

Nil.

Remarks

Nil

	Name	Signature	Date
Prepared by	Joanne Ko		13 August 2015
Checked by	Y W Fung		13 August 2015

Site Inspection Summary

Inspection Information

Contract No.	HY/2012/06
Date:	18 August 2015
Time:	14:00
Inspection No.:	92

Non-compliance

Nil

Observations

Follow-up Observation(s)

1. Pubic road outside SA329 has been cleaned. (Closed)

New Observation(s)

Nil.

Reminder(s)

The Contractor was reminded to cover the soil stockpile entirely for dust suppression.

Remarks

Nil

	Name	Signature	Date
Prepared by	Joanne Ko		19 August 2015
Checked by	Y W Fung		19 August 2015

Site Inspection Summary

Inspection Information

Contract No.	HY/2012/06
Date:	25 August 2015
Time:	14:00
Inspection No.:	93

Non-compliance

Nil

Observations

Follow-up Observation(s)

Nil.

New Observation(s)

1. The Contractor should water the site area frequently for dust suppression.

Reminder(s)

Nil.

Remarks

Nil

	Name	Signature	Date
Prepared by	Joanne Ko		26 August 2015
Checked by	Y W Fung		26 August 2015

APPENDIX L
STATISTICS ON COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

Appendix L

Statistics on Complaints, Notifications of Summons and Successful Prosecutions

	Date Received	Subject	Status	Total no. followed up by the ET this month	Total no. followed up by the ET since project commencement
Environmental complaints	19 December 2013	EPD referred a complaint from Lot no. 116 of Fui Sha Wai at Tai Hang of Tai Po which is concerned about the construction noise and diesel-like smell generated from construction activities nearby which caused nuisance and health problems on 19 December 2013 morning.	Closed	0	5
	24 February 2014	EPD referred an air-and-odour complaint on 24 February 2014. The complainant complained about the construction site located near the bus stop in Fui Sha Wai, Tai Hang, Tai Wo Service Road West. When construction works were carried out, odour, white smoke and dust were generated. The complainant asked for follow-up actions.	Closed		

	Date Received	Subject	Status	Total no. followed up by the ET this month	Total no. followed up by the ET since project commencement
	23 October 2014	EPD referred an air complaint on 24 October 2014. A resident complained against the excavation works of Tai Wo Service Road West between Nam Wah Po & Tai Hang Tsuen, which have piled up high stockpiles, causing serious dust nuisance to his house. The resident also complained that the stockpiles have not been covered and watered properly. He now requires the EPD to follow up. The location of complaint is near Lamppost Location EB5717.	Closed		
	31 December 2014	EPD referred a water complaint on 31 December 2014. The complainant complained about the muddy river outside Tai Hang Village Office on 29 December 2014. It was suspected that the muddy water was discharged from the construction works of the Project. He required the EPD to follow up.	Closed		

	Date Received	Subject	Status	Total no. followed up by the ET this month	Total no. followed up by the ET since project commencement
	25 March 2015	EPD referred a water complaint on 25 March 2015. The complainant complained about the generation of the smell of gasoline from the Widening of Fanling Highway construction site on Tai Wo Service Road West, causing serious nuisance to nearby houses. The situation has continued for a few weeks and she asked the EPD to follow up as soon as possible.	Closed		
Notification of summons	-	-	-	0	0
Successful Prosecutions	-	-	-	0	0