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 March 2018

[4/2018]

| | Name | Signature |
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| Version: | Rev. 0 | Date: 13 April 2018 |
|---|---|---|



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**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/E Condition 3.3 – Submission of Monthly EM&A Report – March 2018 for the portion of Stage 2 works under Contract No. HY/2012/06**

13 April 2018

By Fax (2805 5028) & Hand

We refer to the Monthly EM&A Report – March 2018 received on 12 April 2018 submitted by the Environmental Team via email. Pursuant to Environmental Permit Condition 3.3, I hereby verify the Monthly EM&A Report – March 2018 (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

Steven Tang
Independent Environmental Checker

c.c.

| | | |
|---|---|---|
| HyD | Mr. Ricky Yeung | By Fax (2714 5198) |
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# 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 urban areas and also cross boundary traffic.

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 Variation of Environmental Permits of EP-324/2008/A, EP-324/2008/B, EP-324/2008/C and EP-324/2008/D on 31 January 2012, 17 March 2014, 27 March 2015 and 27 August 2015 respectively. The current valid VEP was applied on 29 December 2016 and the VEP (EP-324/2008/E) was subsequently granted on 26 January 2017.

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 three 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". In addition, Contract No. "Provision of Bus-Bus Interchange on Fanling Highway Kowloon Bound" was carried out within the site boundary of Contract No. 02/HY/2015. This report focuses on Contract No. HY/2012/06 "Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange" in Stage 2 of the Project and "Provision of Bus-Bus Interchange on Fanling Highway Kowloon Bound" under Works Order Nos. CB128520-5 and CB128519-0 in Contract No. 02/HY/2015 "Highway Department Term Contract (Management and Maintenance of Roads in Tai Po and North District excluding High Speed Roads 2016-2022)".

Pursuant to the EP (EP-324/2008/E) 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 March 2018. As informed by the Contractor, construction activities of Contract No. HY/2012/06 in the reporting period were:

- Site clearance
- Ground investigation
- Pipe laying
- Retaining wall construction
- Noise Barrier
- Excavation
- Backfilling
- Drainage
- Foot Bridge demolition
- Bridge construction
- Piling

As informed by the Contractor, construction activities of Works Order Nos. CB128520-5 and CB128519-0 under Contract No. 02/HY/2015 in the reporting period were:

- Erection of NB panels
- Metal frame & roof cladding of bus shelter

**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 notification of summons and successful prosecution was received in the reporting period.

One (1) noise-related complaint was received on 1 March 2018 and followed up by the Environmental Team. The details of the complaint are described in Section 4.6.4 and the full investigation report is annexed in Appendix M.

**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 Variation of Environmental Permits of EP-324/2008/A, EP-324/2008/B, EP-324/2008/C and EP-324/2008/D on 31 January 2012, 17 March 2014, 27 March 2015 and 27 August 2015 respectively. The current valid VEP was applied on 29 December 2016 and the VEP (EP-324/2008/E) was subsequently granted on 26 January 2017.

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". In addition, Contract No. "Provision of Bus-Bus Interchange on Fanling Highway Kowloon Bound" was carried out within the site boundary of Contract No. 02/HY/2015. This report focuses on Contract No. HY/2012/06 "Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange" in Stage 2 of the Project and "Provision of Bus-Bus Interchange on Fanling Highway Kowloon Bound" under Works Order Nos. CB128520-5 and CB128519-0 in Contract No. 02/HY/2015 "Highway Department Term Contract (Management and Maintenance of Roads in Tai Po and North District excluding High Speed Roads 2016-2022)".

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 Contract No. HY/2012/06).

1.1.7. China State Construction Engineering (Hong Kong) Ltd. (CSHK) was commissioned as the Contractor of Contract No. HY/2012/06. Chiu Hing Construction & Transportation Company Limited (Chiu Hing) was commissioned as the Contractor of Contract No. 02/HY/2015.

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 fifty-third 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 March 2018.

## 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 | Steven Tang | 2828 5920 | 2827 1823 |
| **Contractor of [HY/2012/06]** (China State Construction Engineering (Hong Kong) Limited) | Environmental Officer | Michael Tsang | 9277 4956 | 2672 2501 |
| | | C C Chow | 9679 6315 | 2672 2501 |
| **Contractor of [02/HY/2015]** (Chiu Hing Construction & Transportation Company Limited) | Safety Officer | Marty Tai | 9106 5318 | - |
| **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 of Contract No. HY/2012/06 carried out by the Contractor in this reporting period are listed below:

- Site clearance
- Ground investigation
- Pipe laying
- Retaining wall construction
- Noise Barrier
- Excavation
- Backfilling
- Drainage
- Foot Bridge demolition
- Bridge construction
- Piling

Details of the construction works of Works Order Nos. CB128520-5 and CB128519-0 under Contract No. 02/HY/2015 carried out by the Contractor in this reporting period are listed below:

- Erection of NB panels
- Metal frame & roof cladding of bus shelter

1.4.3 The Construction Programme is shown in Appendix B.

1.4.4 The general layout plan of the Project site of Contract No. HY/2012/06 and Works Order Nos. CB128520-5 and CB128519-0 under 02/HY/2015 showing the contract areas are shown in Figure 1.1 and Figure 1.2 respectively.

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) |
| 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 1.3a.

**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 March 2018 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) | 66.8 | 61.6 – 72.3 | 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) | 39.7 | 26.1 – 53.7 | 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 | B&K 2238 |
| Acoustic Calibrator | Rion NC-74 |

## 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 1.3a-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 March 2018 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**

| Location | Average, dB(A), $L_{eq\ (30\ mins)}$ | Range, dB(A), $L_{eq\ (30\ mins)}$ | Limit Level, dB(A), $L_{eq\ (30\ mins)}$ |
|---|---|---|---|
| **M2*** (West Tai Wo) | 67.3 | 66.0 – 67.8 | 75 |
| **M3**# (Fanling Government Secondary School) | 64.9 | 60.5 – 66.1 | 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 6, 15, 20 and 27 March 2018 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:

Contract No. HY/2012/06

***Air Quality***

4.1.4 The Contractor was reminded to cover the exposed stockpile of dusty materials at SA346 entirely with impervious sheeting for dust suppression.

4.1.5 The Contractor was reminded to clean up the dust on public access road at Tai Wo Service Road West regularly.

4.1.6 Exposed stockpiles of dusty materials were observed at SA340 and SA329. The Contractor was advised to cover the stockpiles entirely with impervious sheeting for dust suppression.

4.1.7 Mud trail and dusty materials were observed near vehicle exit points at NB60. The Contractor was advised to clear the dusty materials and pave the wheel washing area with hardcore.

***Noise***

4.1.8 No adverse observation was identified in the reporting period.

***Water Quality***

4.1.9 Public access road near site boundary was observed dusty at SA310. The Contractor was advised to clean up the road and implement effective measures to prevent muddy surface runoff being spilled from the site to public area.

***Chemical and Waste Management***

4.1.10 Chemical containers without secondary containment were observed at SA340. The Contractor was advised to provide drip tray for the chemical containers to avoid potential leakage.

4.1.11 The Contractor was reminded to plug the opening of the drip tray observed at NB60 to prevent potential leakage.

***Landscape and Visual Impact***

4.1.12 No adverse observation was identified in the reporting period.

***Miscellaneous***

4.1.13 No adverse observation was identified in the reporting period.

Contract No. 02/HY/2015 (Works Order Nos. CB128520-5 and CB128519-0)

***Air Quality***

4.1.14 Exposed stockpile of dusty materials without proper cover was observed. The Contractor was advised to cover the stockpile entirely with impervious sheeting.

***Noise***

4.1.15 No adverse observation was identified in the reporting period.

***Water Quality***

4.1.16 No adverse observation was identified in the reporting period.

***Chemical and Waste Management***

4.1.17 No adverse observation was identified in the reporting period.

***Landscape and Visual Impact***

4.1.18 No adverse observation was identified in the reporting period.

***Miscellaneous***

4.1.19 No adverse observation was identified in the reporting period.

## 4.2 Advice on the Solid and Liquid Waste Management Status

4.2.1 Contract No. HY/2012/06 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 of Contract No. HY/2012/06, 3,781 $m^3$ of inert C&D material was generated in the reporting month (806 $m^3$ disposed of as public fill to Tuen Mun 38, 1,355 $m^3$ of inert C&D materials was reused on site, 1,068 $m^3$ of inert C&D materials was reused in other projects and 552 $m^3$ was broken concrete). For C&D wastes, 85 $m^3$ of general refuse was disposed of at NENT landfill, 59 kg of paper/cardboard packaging, 1,225 kg of plastics and 13,324 kg of metals were collected by recycling Contractors, and 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 for Contract No. HY/2012/06**

| Waste Type | Actual Amount | Disposal/Reuse Locations |
|---|---|---|
| Inert C&D materials disposed as public fill | 806 $m^3$ | Tuen Mun 38 |
| Broken concrete | 552 $m^3$ | Tuen Mun 38 |
| C&D wastes disposed as general refuse | 85 $m^3$ | NENT Landfill |
| Paper/cardboard packaging | 59 kg | Recycling Facilities |
| Plastics | 1,225 kg | Recycling Facilities |
| Metals | 13,324 kg | Recycling Facilities |
| C&D materials reused on site | 1,355 $m^3$ | Site Area |
| C&D materials reused in other projects | 1,068 $m^3$ | Other projects |
| Chemical wastes | 0 kg | Licensed Contractors |

4.2.4 As advised by the Contractor of Works Order Nos. CB128520-5 and CB128519-0 under Contract No. 02/HY/2015, 1 $m^3$ of inert C&D material was generated in the reporting month (0 $m^3$ disposed of as public fill to Tuen Mun 38, 0 $m^3$ of inert C&D materials was reused on site, 0 $m^3$ of inert C&D materials was reused in other projects and 1 $m^3$ was broken concrete). For C&D wastes, 0 $m^3$ of general refuse was disposed of at NENT landfill, 1 kg of paper/cardboard packaging, 1 kg of plastics and 0 kg of metals were collected by recycling Contractors in the reporting period.

4.2.5 The actual amounts of different types of waste generated by the activities of the Project in the reporting period are shown in Table 4.2.

**Table 4.2 Summary of Waste Flow Table for Contract No. 02/HY/2015 (Works Order Nos. CB128520-5 and CB128519-0)**

| Waste Type | Actual Amount | Disposal/Reuse Locations |
|---|---|---|
| Inert C&D materials disposed as public fill | 0 $m^3$ | Tuen Mun 38 |
| Broken concrete | 1 $m^3$ | Tuen Mun 38 |
| C&D wastes disposed as general refuse | 0 $m^3$ | NENT Landfill |
| Paper/cardboard packaging | 1 kg | Recycling Facilities |
| Plastics | 1 kg | Recycling Facilities |

| Waste Type | Actual Amount | Disposal/Reuse Locations |
|---|---|---|
| Metals | 0 kg | Recycling Facilities |
| C&D materials reused on site | 0 $m^3$ | Site Area |
| C&D materials reused in other projects | 0 $m^3$ | Other projects |

4.2.6 The Contractors were 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 4.3.

**Table 4.3 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/E | 26/01/2017 | N/A | HyD | |
| WPCO | Discharge License (Site) | WT00017159-2013 | 18/09/2013 | 30/09/2018 | CSHK | -- |
| | | WT00027968-2017 | 22/05/2017 | 31/05/2022 | Chiu Hing | -- |
| WDO | Chemical Waste Producer Registration | 5213-722-C3822-01 | 05/09/2013 | N/A | CSHK | Chemical waste produced in Contract HY/2012/06 |
| WDO | Billing Account for Disposal of Construction Waste | 7017860 | N/A | N/A | CSHK | Waste disposal in Contract HY/2012/06 |
| | | 7024392 | N/A | N/A | Chiu Hing | Waste disposal in Contract 02/HY/2015 |
| APCO | Notification Under Air Pollution Control (Construction Dust) Regulation | 361991 | 15/07/2013 | N/A | CSHK | -- |
| | | 414360 | 08/03/2017 | N/A | Chiu Hing | -- |
| NCO | Construction Noise Permit | GW-RN0790-17 | 09/12/2017 | 22/03/2018 | CSHK | Zone 2A Deck Concreting for THFB |
| | | GW-RN0792-17 | 17/12/2017 | 18/03/2018 | CSHK | Zone 2 Road Marking Alternation Between CH21.7 and CH22.5 |
| | | GW-RN0802-17 | 12/12/2017 | 22/03/2018 | CSHK | Zone 4 Road Marking Alternation at |

| Statutory Reference | License/ Permit | License or Permit No. | Valid Period | | License / Permit Holder | Remarks |
|---|---|---|---|---|---|---|
| | | | From | To | | |
| | | | | | | SB of Fanling Highway between CH23.4 and CH23.9 |
| | | GW-RN0804-17 | 21/12/2017 | 29/03/2018 | CSHK | Zone 1 Manhole Adjustment at Slip Rd from Hong Lok Yuen to Northbound of Fanling Highway |
| | | GW-RN0814-17 | 21/12/2017 | 20/03/2018 | CSHK | Zone 2B Installation of Temporary Tai Wo Footbridge |
| | | GW-RN0829-17 | 07/01/2017 | 15/04/2018 | CSHK | Zone 2A Concreting for TH FB3 & TH RP2 |
| | | GW-RN0007-18 | 14/01/2018 | 04/02/2018 | CSHK | Zone 4 Road Marking Alternation at SB of Fanling Highway between CH23.4 and CH23.9 |
| | | GW-RN0021-18 | 28/01/2018 | 03/06/2018 | CSHK | Zone 1 & 2A Road Marking Alternation at Northboound of Fanling Highway between CH21.7 and CH22.5 |
| | | GW-RN0026-18 | 25/01/2018 | 09/06/2018 | CSHK | Zone 2A Demolition of Tai Hang Bridge |
| | | GW-RN0028-18 | 28/01/2018 | 08/04/2018 | CSHK | Zone 2B Road Resurfacing at Northbound of Fanling Highway between CH21.8 and CH22.5 |
| | | GW-RN0029-18 | 28/01/2018 | 25/03/2018 | CSHK | Zone 2B Installation of Bridge Tower next to MTR |

| Statutory Reference | License/ Permit | License or Permit No. | Valid Period | | License / Permit Holder | Remarks |
|---|---|---|---|---|---|---|
| | | | From | To | | |
| | | | | | | Track |
| | | GW-RN0032-18 | 04/02/2018 | 03/06/2018 | CSHK | Zone 1 & 2A Road Marking Alternation at Northboound of Fanling Highway_ Between CH21.3 and CH21.8 |
| | | GW-RN0034-18 | 29/01/2018 | 02/06/2018 | CSHK | Zone 4 Drain Rehabilitation |
| | | GW-RN0037-18 | 04/02/2018 | 03/06/2018 | CSHK | Zone 4 Road Marking Alternation at SB of Fanling Highway between CH23.4 and CH24.0 |
| | | GW-RN0041-18 | 06/02/2018 | 07/06/2018 | CSHK | Zone 1 & 2 Road Resurfacing at SB of Fanling Highway_betwe en CH21.4 and CH22.5 |
| | | GW-RN0045-18 | 11/02/2018 | 10/06/2018 | CSHK | Zone 1 & 2 Road Marking Alternation at SB of Fanling Highway_betwe en CH21.3 and CH22.5 |
| | | GW-RN0081-18 | 23/02/2018 | 26/04/2018 | CSHK | Zone 2B Demolition of Tai Wo Footbridge |
| | | GW-RN0116-18 | 29/03/2018 | 31/05/2018 | CSHK | Zone 2B Welding works for of Bridge Tower next to MTR Track |

## 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 notification of summons and successful prosecution was received in the reporting period.

4.6.3 One (1) noise-related complaint was received on 1 March 2018 and followed up by the Environmental Team. The details of the complaint are described in Section 4.6.4 and the full investigation report is annexed in Appendix M.

4.6.4 A complaint was received by the 1823 enquiry and complaint hotline on 25 February 2017. The complaint was referred to the Environmental Team by the Contractor on 1 March 2018.

4.6.5 A complainant complained that noise nuisance was caused continuously by road construction works at Fanling Highway near Tai Hang Village during 01:30 to 04:00 on 25 February 2018.

4.6.6 The complainant concerned that the nuisance affects residence and asked for follow-up action from the related department.

4.6.7 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 Contract No. HY/2012/06 in April 2018 will be:-

- Site clearance
- Ground investigation
- Pipe laying
- Retaining wall construction
- Noise Barrier
- Excavation
- Backfilling
- Drainage
- Foot Bridge demolition
- Bridge construction
- Piling

5.1.2 The major construction works for Works Order Nos. CB128520-5 and CB128519-0 under Contract No. 02/HY/2015 in April 2018 will be:-

- Construction of footpath & bus lay-by
- Installation of lighting facilities
- KMB works

## 5.2 Key Issues for the Coming Month

5.2.1 Key issues to be considered in April 2018:-

- 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 April 2018 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 March 2018. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site audits.

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

6.1.6 One (1) noise-related complaint was received on 1 March 2018 and followed up by the Environmental Team. The details of the complaint are described in Section 4.6.4 and the full investigation report is annexed in Appendix M.

## 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:

Contract No. HY/2012/06

***Air Quality Impact***

- The Contractor was advised to cover the exposed stockpile of dusty materials entirely with impervious sheeting for dust suppression.
- The Contractor was advised to clean up the dust on public access road regularly.
- The Contractor was advised to clear the dusty materials near vehicle exit points and pave the wheel washing area with hardcore.

***Noise Impact***

- No adverse observation was identified in the reporting period.

***Water Quality Impact***

- The Contractor was advised to clean up the public access road near site boundary and implement effective measures to prevent muddy surface runoff being spilled from the site to public area.

***Chemical and Waste Management***

- The Contractor was advised to provide drip tray for the chemical containers to avoid potential leakage.
- The Contractor was advised to plug the opening of the drip tray to prevent potential leakage.

***Landscape and Visual Impact.***

- No adverse observation was identified in the reporting period.

***Miscellaneous***

- The Contractor.

Contract No. 02/HY/2015 (Works Order Nos. CB128520-5 and CB128519-0)

***Air Quality Impact***

- The Contractor was advised to cover the exposed stockpile of dusty materials entirely with impervious sheeting.

***Noise Impact***

- No adverse observation was identified in the reporting period.

***Water Quality Impact***

- No adverse observation was identified in the reporting period.

***Chemical and Waste Management***

- No adverse observation was identified in the reporting period.

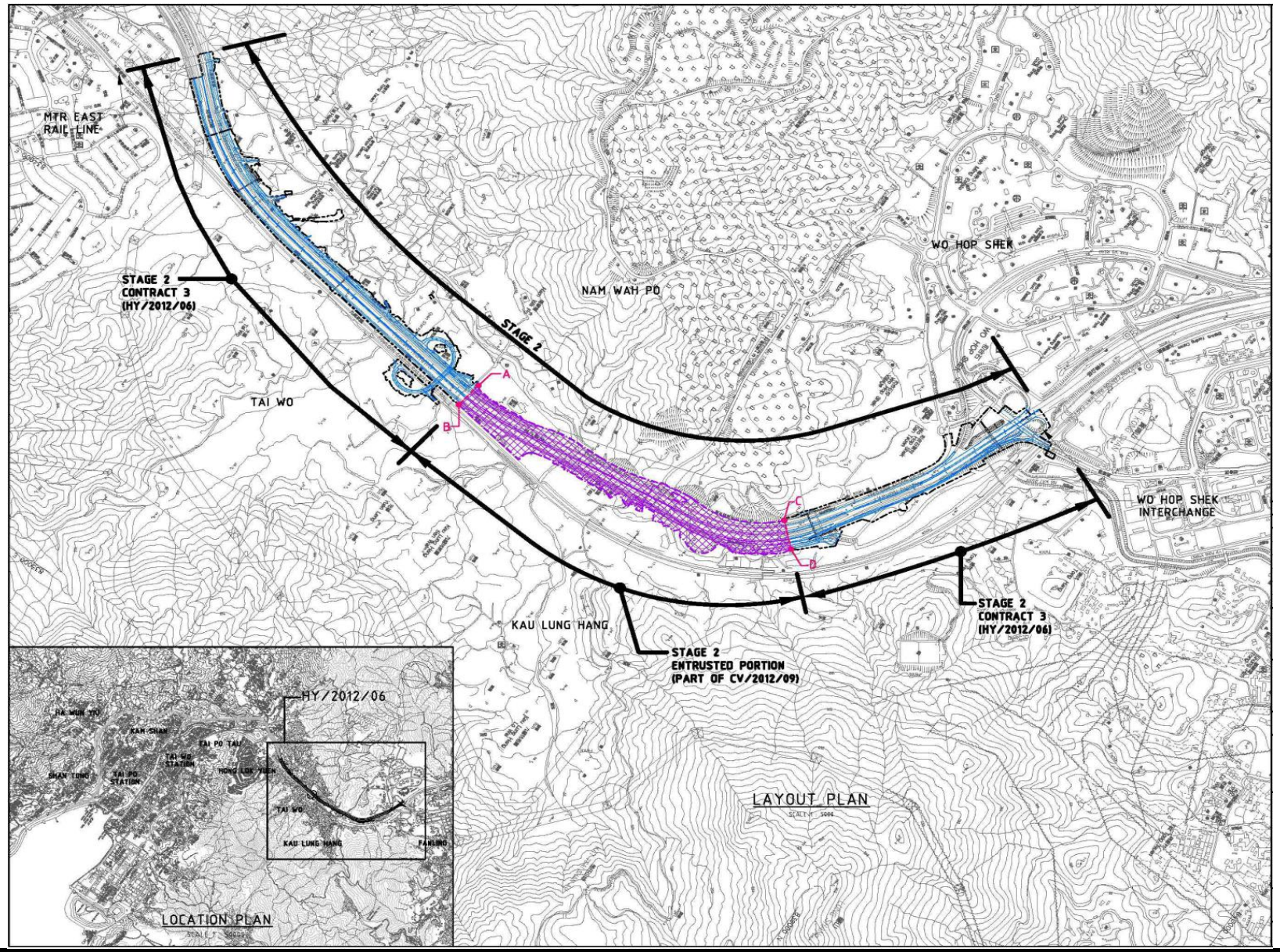
***Landscape and Visual Impact.***

- No adverse observation was identified in the reporting period.

***Miscellaneous***

- No adverse observation was identified in the reporting period.

## FIGURES

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| B | 833945.6833 | 837375.1412 |
| C | 833721.8117 | 838310.5250 |
| D | 833782.3083 | 838375.1303 |



**CONTRACT NO. HY/2012/06**

**WIDENING OF FANLING HIGHWAY**

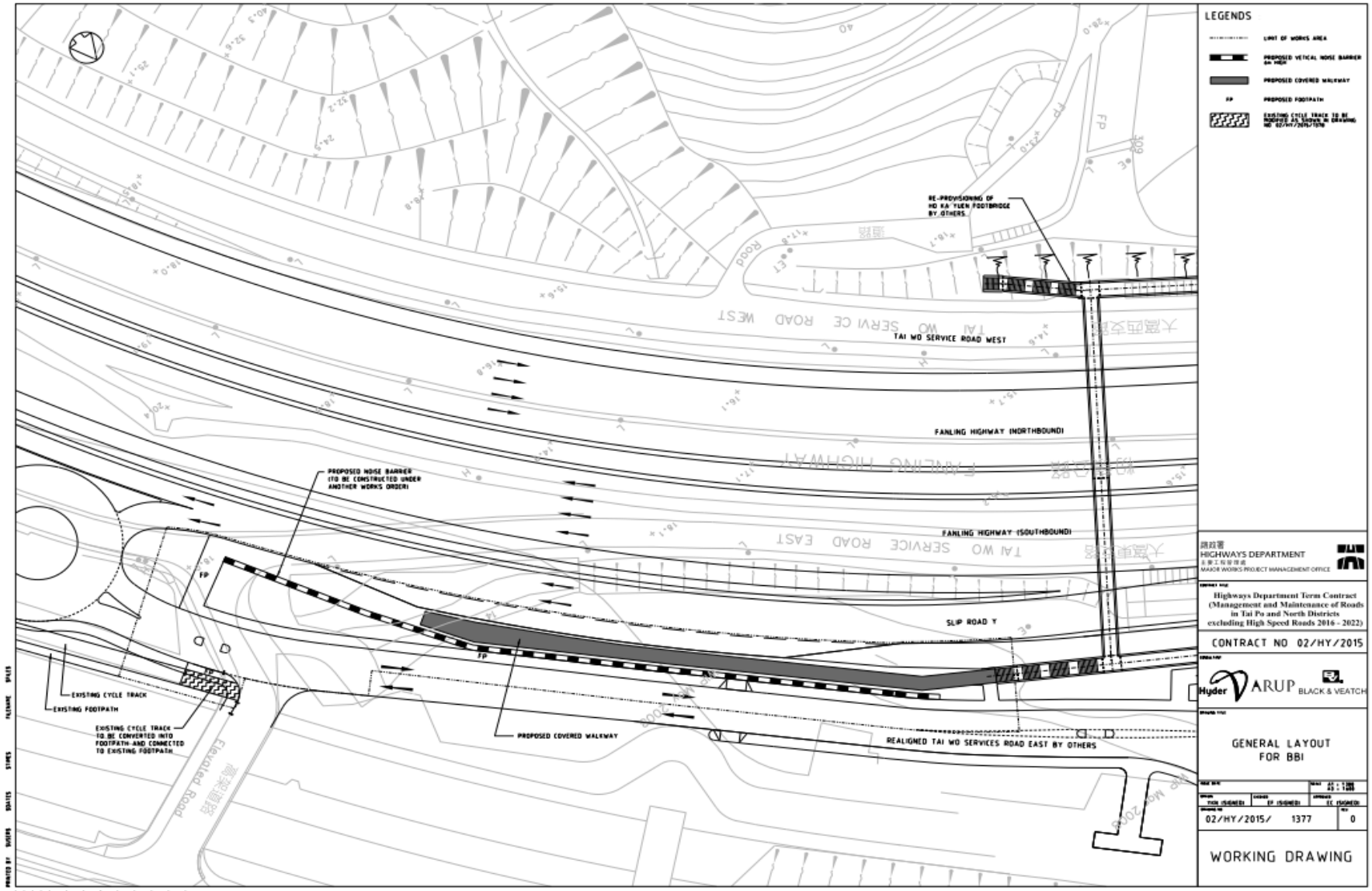
**- TAI HANG TO WO HOP SHEK INTERCHANGE**

AECOM

Layout Plan

**Date: Dec 2013**

**Figure 1.1**






**CONTRACT NO. 02/HY/2015**

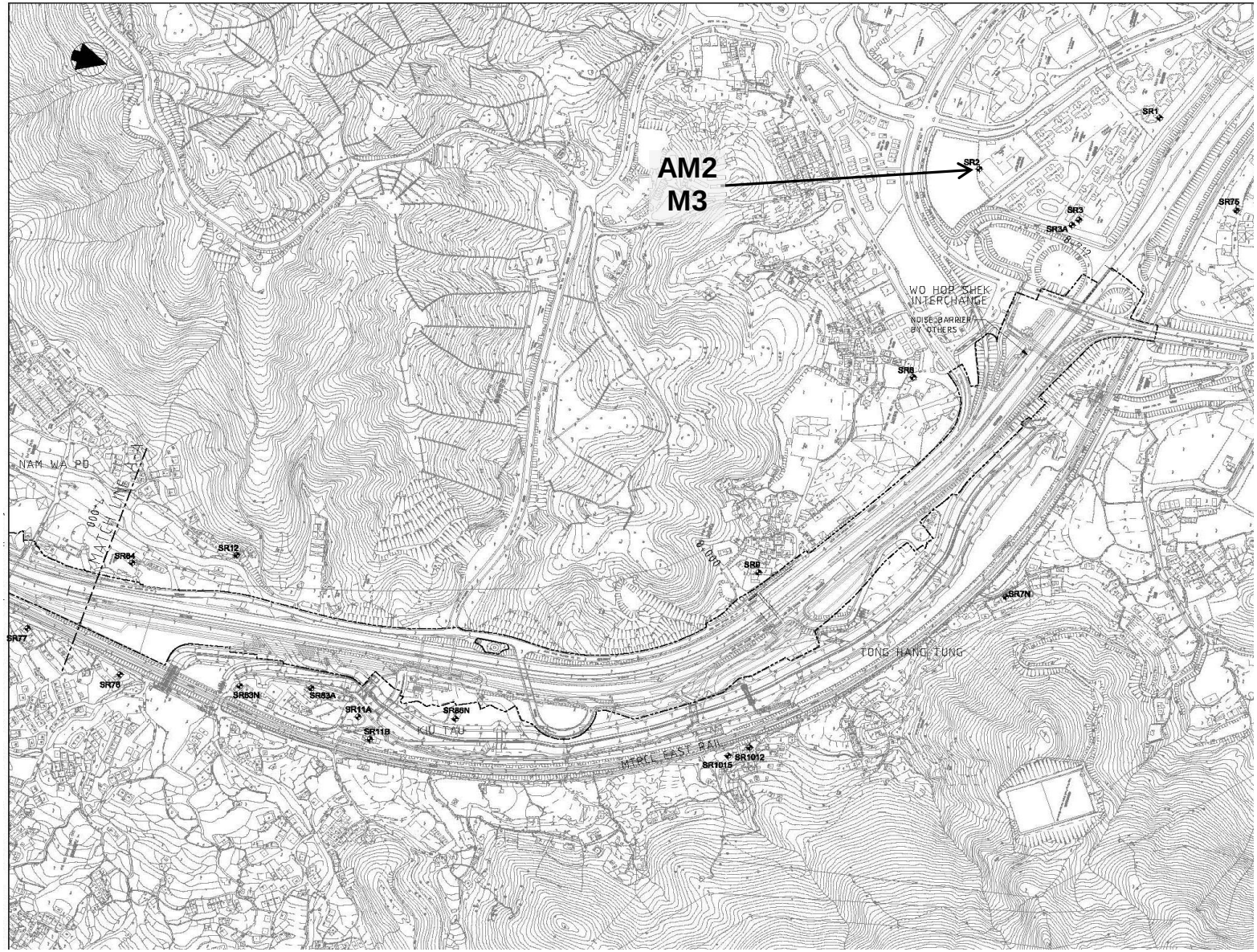
**PROVISION OF BUS-BUS INTERCHANGE ON FANLING HIGHWAY KOWLOON BOUND**

AECOM

Layout Plan

**Date: Apr 2017**

**Figure 1.2**






**CONTRACT NO. HY/2012/06**

**WIDENING OF FANLING HIGHWAY**

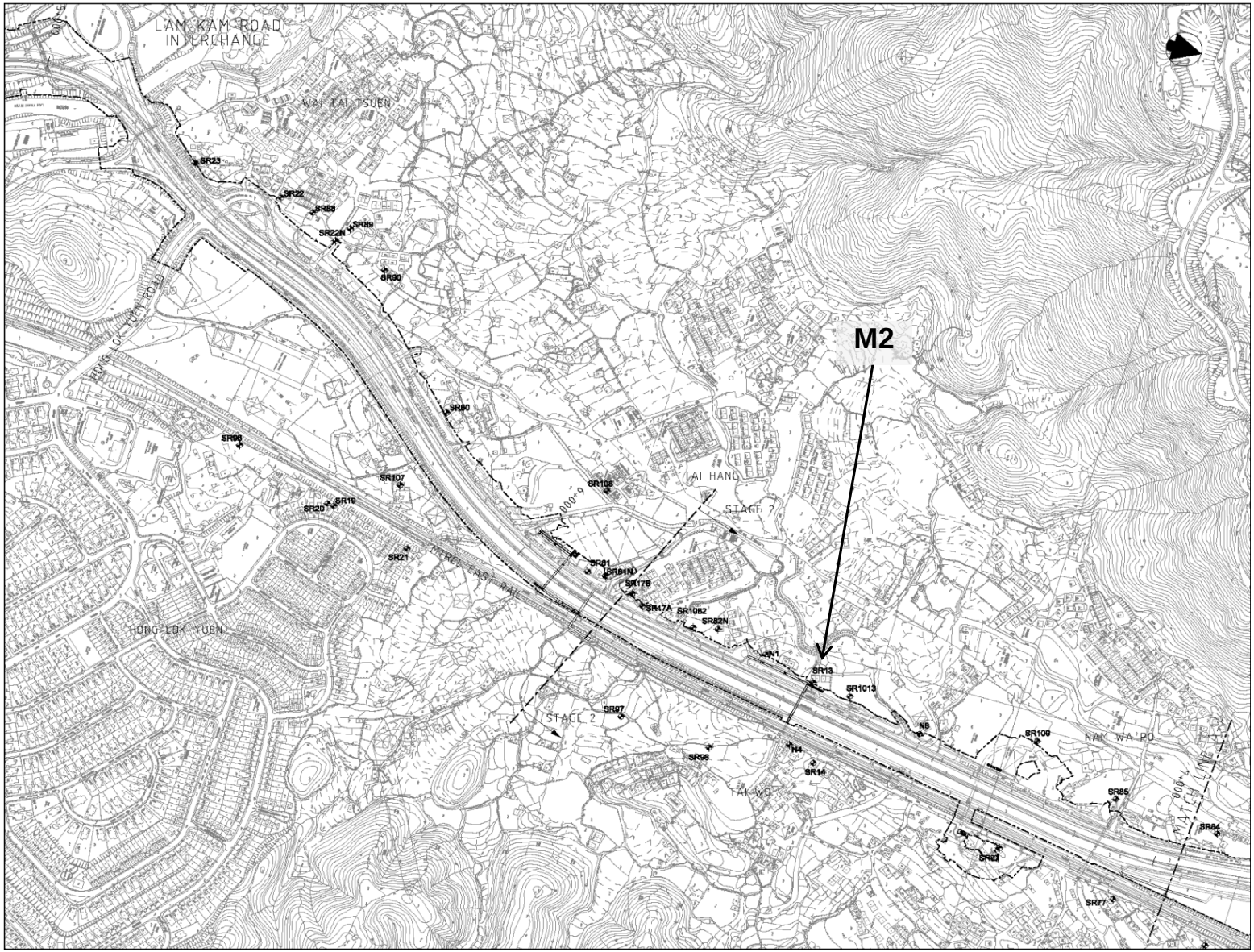
**- TAI HANG TO WO HOP SHEK INTERCHANGE**

AECOM

Locations of Monitoring Station

**Date: Dec 2013**

**Figure 1.3a**






**CONTRACT NO. HY/2012/06**

**WIDENING OF FANLING HIGHWAY**

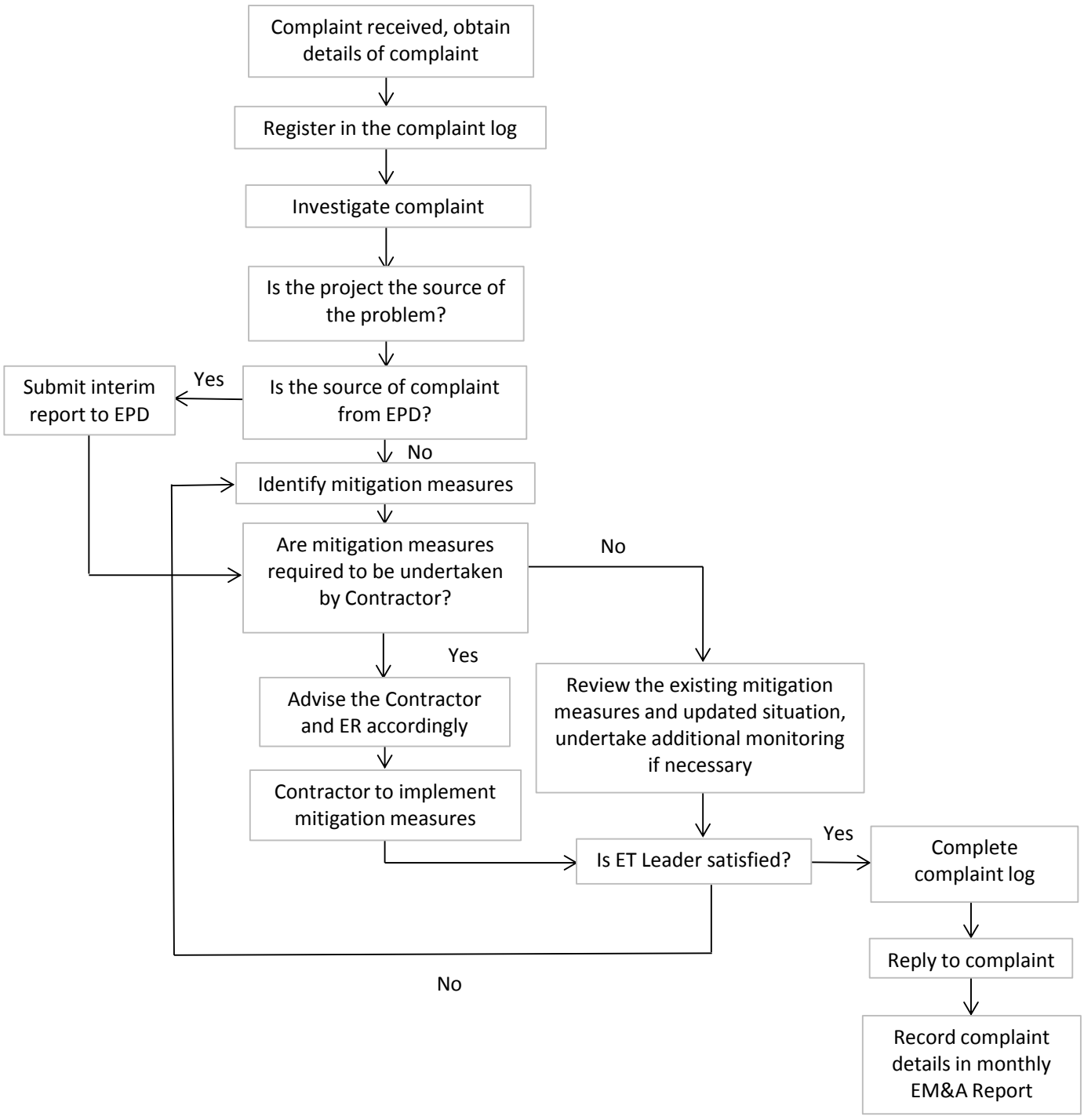
**- TAI HANG TO WO HOP SHEK INTERCHANGE**

AECOM

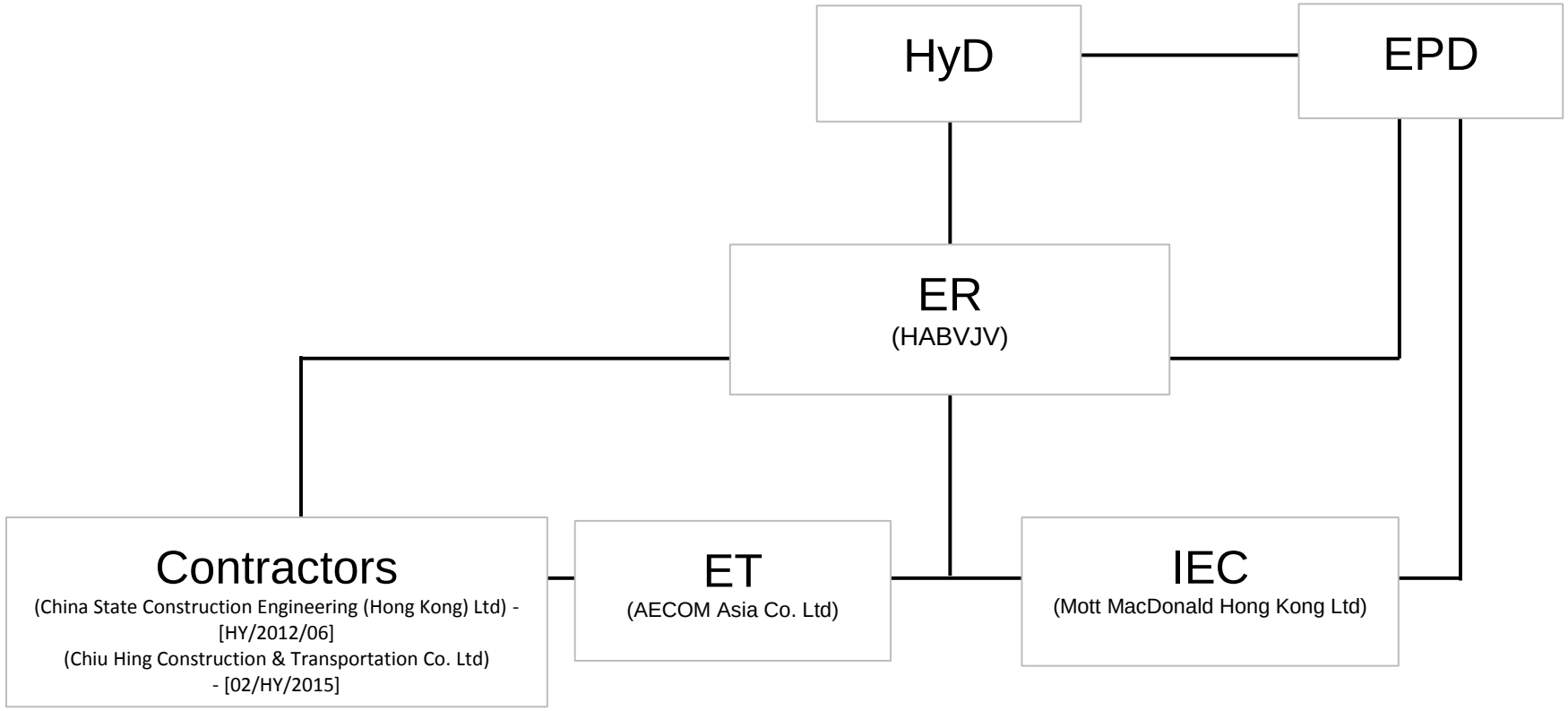
Locations of Monitoring Station

**Date: Dec 2013**

**Figure 1.3b**



# APPENDIX A
# PROJECT ORGANIZATION STRUCTURE





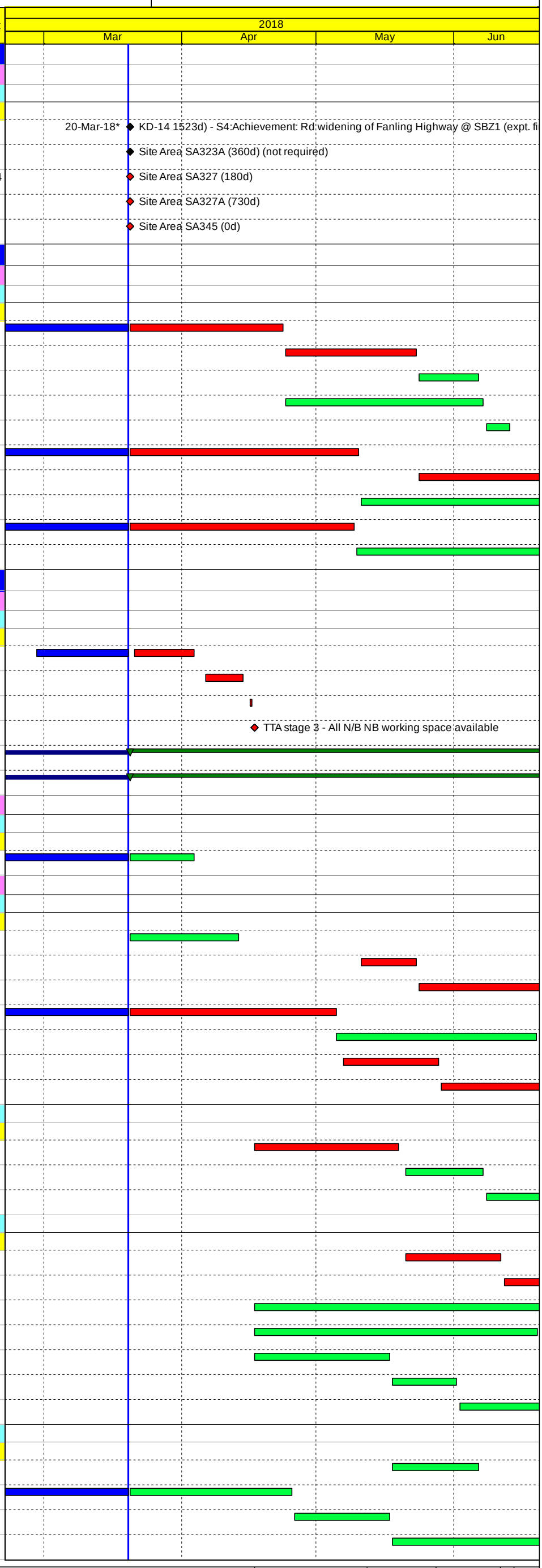

**CONTRACT NO. HY/2012/06**
**WIDENING OF FANLING HIGHWAY**
**- TAI HANG TO WO HOP SHEK INTERCHANGE**

AECOM

Project Organization Structure

# 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** | | | | | | | |
| KD14 | KD-14 1523d) - S4:Achievement: Rd widening of Fanling Highway @ | 0% | 0 | 0 | | 20-Mar-18 | 84 |
| POSSA323A | Site Area SA323A (360d) (not required) | 0% | 0 | 0 | 20-Mar-18 | | 842 |
| POSSA327 | Site Area SA327 (180d) | 0% | 0 | 0 | 20-Mar-18* | | -1174 |
| POSSA327A | Site Area SA327A (730d) | 0% | 0 | 0 | 20-Mar-18* | | -976 |
| POSSA345 | Site Area SA345 (0d) | 0% | 0 | 0 | 20-Mar-18* | | -841 |
| **ZONE 1 (Ch. 5640 to 5880)** | | | | | | | |
| **Noise Barrier Along Fanling Highway N/B** | | | | | | | |
| NB43B (Ch.5640-5880)-FH N/B Side | | | | | | | |
| **Noise Barrier Works** | | | | | | | |
| NB01220 | NB43B-1 - Footing & Wall Structure | 35% | 26 | 40 | 08-Jan-18 A | 23-Apr-18 | -2 |
| NB01225 | NB43B-1 (0-100m) - Drainage Works | 0% | 24 | 24 | 24-Apr-18 | 23-May-18 | -2 |
| NB01230 | NB43B-1 - backfilling | 0% | 12 | 12 | 24-May-18 | 06-Jun-18 | 88 |
| NB01240 | NB43B-1 - NB production | 0% | 45 | 45 | 24-Apr-18 | 07-Jun-18 | 347 |
| NB01250 | NB43B-1 - NB post & panel installation | 0% | 5 | 5 | 08-Jun-18 | 13-Jun-18 | 282 |
| NB01270 | NB43B-2 - Footing & Wall Structure | 0% | 40 | 40 | 13-Jan-18 A | 10-May-18 | 6 |
| NB01275 | NB43B-2 (100-200m) - Drainage Works | 0% | 24 | 24 | 24-May-18 | 21-Jun-18 | -2 |
| NB01290 | NB43B-2 - NB production | 0% | 45 | 45 | 11-May-18 | 24-Jun-18 | 330 |
| NB01320 | NB43B-3 - Footing & Wall Structure | 36.07% | 39 | 61 | 25-Nov-17 A | 09-May-18 | 7 |
| NB01340 | NB43B-3 - NB production | 0% | 45 | 45 | 10-May-18 | 23-Jun-18 | 331 |
| **ZONE 2 (Ch. 5880 to 6930)** | | | | | | | |
| **General** | | | | | | | |
| DRM Proposal | | | | | | | |
| **DRM Proposal** | | | | | | | |
| ADVZ20284 | Demolish existing TW bridge & TH bridge | 10% | 9 | 10 | 27-Feb-18 A | 03-Apr-18 | 5 |
| ADVZ20285 | Road work for Lane 2,3,4 from TH to TW bridge | 0% | 8 | 8 | 06-Apr-18 | 14-Apr-18 | 4 |
| ADVZ20286 | Road work for TWSR-W to FLHY transition | 0% | 1 | 1 | 16-Apr-18 | 16-Apr-18 | 4 |
| ADVZ20288 | TTA stage 3 - All N/B NB working space available | 0% | 0 | 0 | 17-Apr-18 | | 4 |
| ADVZ20290 | NB at FLHY N/B construction Period (Zone 2) | 31.33% | 206 | 300 | 20-Nov-17 A | 27-Nov-18 | -2 |
| ADVZ20310 | NB at FLHY N/B construction Period (Zone 1) | 46.34% | 110 | 205 | 05-Oct-17 A | 03-Aug-18 | 40 |
| **Noise Barrier Along TWSR-West and Laying New Utilities** | | | | | | | |
| NB54A (Ch.6290-6350)-TWSR West Side | | | | | | | |
| **Noise Barrier Works** | | | | | | | |
| NB00790 | NB54A - NB post & panel installation | 0% | 10 | 5 | 15-Jan-18 A | 03-Apr-18 | 320 |
| **Noise Barrier Along Fanling Highway N/B** | | | | | | | |
| NB43A (Ch.5880-6060)-FH N/B Side | | | | | | | |
| **Noise Barrier Works** | | | | | | | |
| NB001080 | NB43A- ID1-2 piling (0.19m -18no)-1 rigs | 0% | 18 | 18 | 20-Mar-18 | 13-Apr-18 | 22 |
| NB001090 | NB43A - ID1-2 Sheet piling & Excavation | 0% | 10 | 10 | 11-May-18 | 23-May-18 | 6 |
| NB001100 | NB43A - ID1-2 Footing & Wall Structure | 0% | 40 | 40 | 24-May-18 | 11-Jul-18 | 6 |
| NB01520 | NB43A-1 - Footing & Wall Structure | 55.56% | 36 | 81 | 25-Nov-17 A | 05-May-18 | 6 |
| NB01540 | NB43A-1 - NB production | 0% | 45 | 45 | 05-May-18 | 19-Jun-18 | 310 |
| NB01560 | NB43A-2 (86.8-166.7m) - Sheet piling & Excavation | 0% | 18 | 18 | 07-May-18 | 28-May-18 | 6 |
| NB01570 | NB43A-2 - Footing & Wall Structure | 0% | 60 | 60 | 29-May-18 | 08-Aug-18 | 6 |
| NB50 (Ch.6060-6130)-FH N/B Side | | | | | | | |
| **Noise Barrier Works** | | | | | | | |
| NB001150 | NB50 -piling (0.19m -28no) | 0% | 28 | 28 | 17-Apr-18 | 19-May-18 | 4 |
| NB001160 | NB50 -Sheet piling & Excavation | 0% | 15 | 15 | 21-May-18 | 07-Jun-18 | 21 |
| NB001170 | NB50 -Footing & Wall Structure | 0% | 60 | 60 | 08-Jun-18 | 18-Aug-18 | 21 |
| NB50A (Ch.6130-6450)-FH N/B Side | | | | | | | |
| **Noise Barrier Works** | | | | | | | |
| NB001220 | NB50A - ID2-2 piling (0.19m -18no) | 0% | 18 | 18 | 21-May-18 | 11-Jun-18 | 4 |
| NB001230 | NB50A - ID2-2 Sheet piling & Excavation | 0% | 12 | 12 | 12-Jun-18 | 26-Jun-18 | 4 |
| NB01606 | NB50A (0-108m)(NB50A/1-11, 0.19m -60nos) Piling (s3) | 0% | 60 | 60 | 17-Apr-18 | 28-Jun-18 | 40 |
| NB01656 | NB50A (132-228m)(NB50A/12-S2, 0.19m -44nos) & FVMS1 (8 nos) | 0% | 52 | 52 | 17-Apr-18 | 19-Jun-18 | 20 |
| NB01706 | NB50A (228-309m)(NB50A/S4-S5, 0.19m -18nos) & ADS1 (8nos)Piling | 0% | 26 | 26 | 17-Apr-18 | 17-May-18 | 64 |
| NB01710 | NB50A (225-311m) - Sheet piling & Excavation | 0% | 12 | 12 | 18-May-18 | 01-Jun-18 | 74 |
| NB01720 | NB50A-3 - Footing & Wall Structure | 0% | 48 | 48 | 02-Jun-18 | 30-Jul-18 | 74 |
| NB60 (Ch.6450-6920)-FH N/B Side | | | | | | | |
| **Noise Barrier Works** | | | | | | | |
| NB01770 | NB60 (15-63m)(NB60/1-4, 0.19m -16nos) Piling | 0% | 16 | 16 | 18-May-18 | 06-Jun-18 | 64 |
| NB01840 | NB60-2 (63-174m)(NB60/5-15, 0.19m -64nos) Piling | 56.25% | 28 | 64 | 15-Jan-18 A | 25-Apr-18 | 20 |
| NB01850 | NB60-2 (63-174m) - Sheet piling & Excavation | 0% | 18 | 18 | 26-Apr-18 | 17-May-18 | 20 |
| NB01860 | NB60-2 - Footing & Wall Structure | 0% | 60 | 60 | 18-May-18 | 30-Jul-18 | 20 |




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

Project ID:WP Rev 06 (1803)

Layout: 3 Month Rolling Program

Page 1 of 5

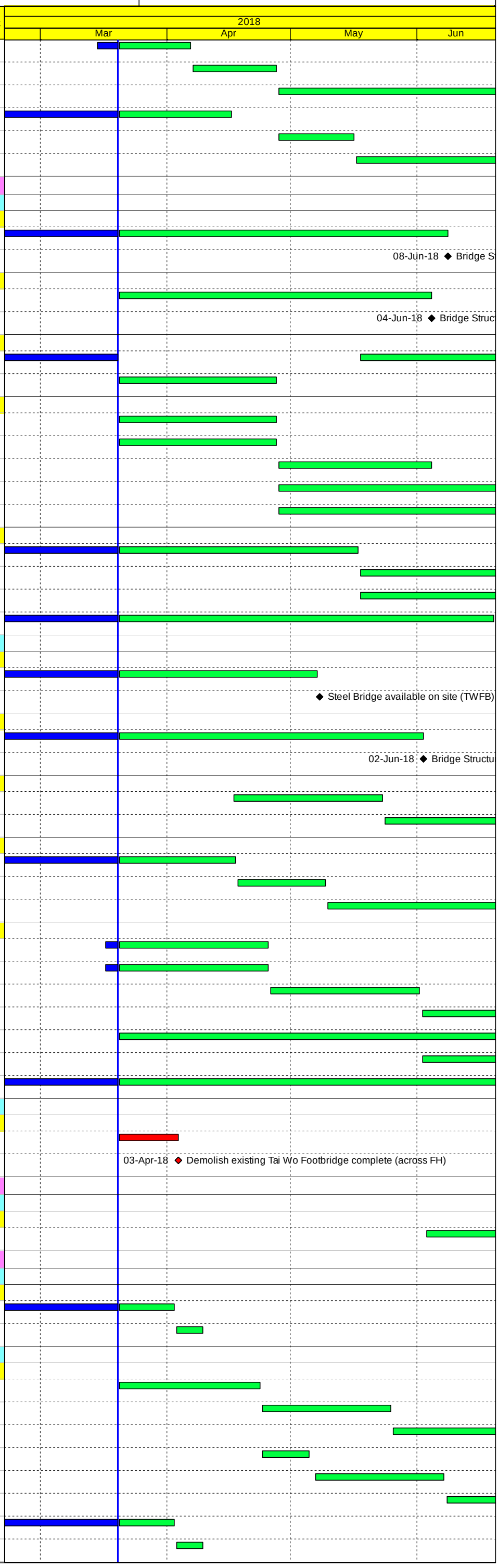
**Contract No. HY/2012/06**

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

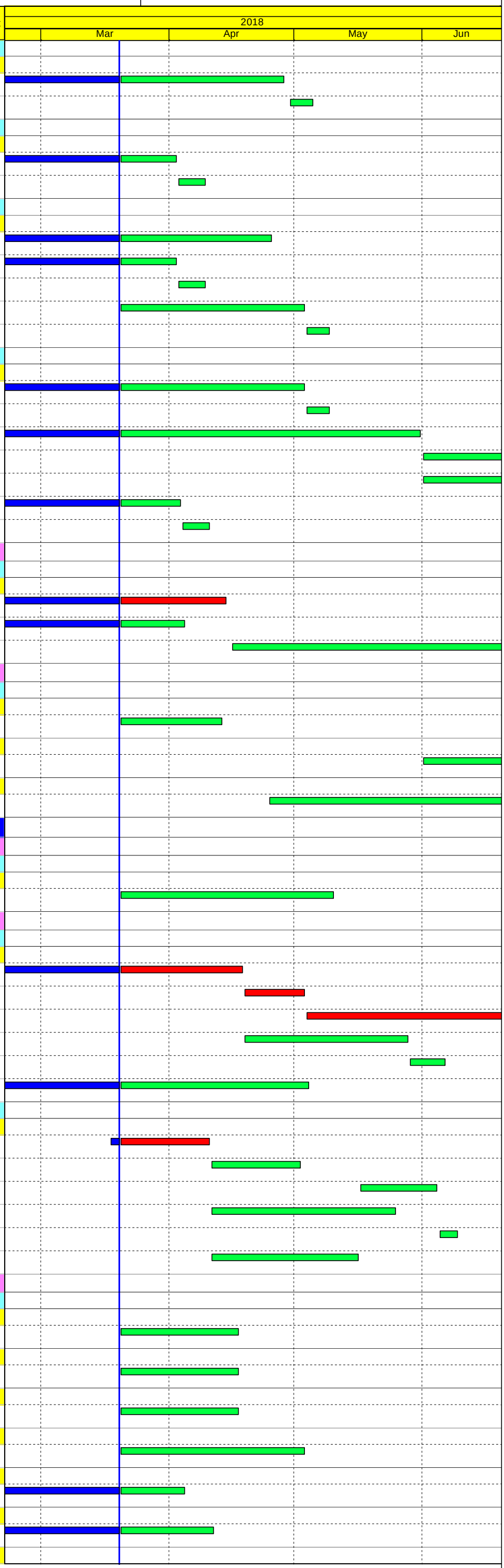
**3 Month Rolling Program(20-Mar-18)**

| Date | Revision | C. | A... |
|---|---|---|---|
| 28-Aug-15 | WP Rev 2 | | |
| 07-Apr-16 | WP Rev 3 | | |
| 08-Nov-16 | WP Rev 4 | | |
| 17-Aug-17 | WP Rev 5 | | |
| 26-Jan-18 | WP Rev 6 | | |

| Activity ID | Activity Name | Dur. % Complete | Rem. Duration | Original Duration | Start | Finish | Total Float |
|---|---|---|---|---|---|---|---|
| NB01910 | NB60 ID3-2 (174-192m) 0.19m -18nos Piling | 33.33% | 12 | 18 | 15-Mar-18 A | 06-Apr-18 | 19 |
| NB01920 | NB60-ID3-2 ((174-192m) - Sheet piling & Excavation | 0% | 18 | 18 | 07-Apr-18 | 27-Apr-18 | 19 |
| NB01930 | NB60-ID3-2 - Footing & Wall Structure | 0% | 50 | 50 | 28-Apr-18 | 28-Jun-18 | 70 |
| NB01980 | NB60 (192-300m)(NB60/16-25, 0.19m -40nos) Piling | 50% | 20 | 40 | 01-Feb-18 A | 16-Apr-18 | 29 |
| NB01990 | NB60-3 (192-300m) - Sheet piling & Excavation | 0% | 15 | 15 | 28-Apr-18 | 16-May-18 | 19 |
| NB02000 | NB60-3 (192-300m) - Footing & Wall Structure | 0% | 60 | 60 | 17-May-18 | 28-Jul-18 | 19 |
| **Bridge Construction** | | | | | | | |
| New Tai Hang Footbridge | | | | | | | |
| **TWSR-West/ FL Highway N/B Side Section** | | | | | | | |
| THBF0620 | Finishes Work | 79.15% | 64 | 307 | 27-Feb-17 A | 08-Jun-18 | 266 |
| THBF0625 | Bridge Structure complete (THFB-TWSR-W side) | 0% | 0 | 0 | | 08-Jun-18 | 266 |
| **Crossing Fanling Highway Section** | | | | | | | |
| THBF0590 | Finishes Work | 0% | 60 | 60 | 20-Mar-18 | 04-Jun-18 | 270 |
| THBF0600 | Bridge Structure complete (THFB-Cross fanling highway) | 0% | 0 | 0 | | 04-Jun-18 | 270 |
| **TWSR-East FL Highway S/B Side Section** | | | | | | | |
| THBF0470 | THAB1 - pile cap & abutment wall | 88.97% | 45 | 408 | 21-Nov-16 A | 12-Jul-18 | 159 |
| THBF0800 | ABWF work | 0% | 30 | 30 | 20-Mar-18 | 27-Apr-18 | 300 |
| **Lift at TWSR-W Side** | | | | | | | |
| L1530 | Structural Laminated glass wall installation | 0% | 30 | 30 | 20-Mar-18 | 27-Apr-18 | 197 |
| L1550 | Metal cover on RC platform | 0% | 30 | 30 | 20-Mar-18 | 27-Apr-18 | 180 |
| L1555 | Glass canopy on ground level | 0% | 30 | 30 | 28-Apr-18 | 04-Jun-18 | 270 |
| L1560 | Lift installation (NF115) | 0% | 70 | 70 | 28-Apr-18 | 23-Jul-18 | 197 |
| L1590 | E&M and Finishes work | 0% | 120 | 120 | 28-Apr-18 | 19-Sep-18 | 180 |
| **Lift at FLHY S/B** | | | | | | | |
| L1370 | Lift shaft & roof | 88.89% | 46 | 414 | 20-Sep-16 A | 17-May-18 | 80 |
| L1380 | Structural Laminated glass wall installation | 0% | 30 | 30 | 18-May-18 | 23-Jun-18 | 110 |
| L1390 | RC Platform connect to bridge (THSC-2 & TH-P2) | 0% | 30 | 30 | 18-May-18 | 23-Jun-18 | 80 |
| L1450 | CLP Power available (by CLP) | 84.14% | 92 | 580 | 21-Jun-16 A | 19-Jun-18 | 223 |
| New Tai Wo Footbridge | | | | | | | |
| **General** | | | | | | | |
| TWFB1090 | Steel Bridge prefabrication (TWFB) | 91.49% | 37 | 435 | 15-Aug-16 A | 07-May-18 | 158 |
| TWFB1100 | Steel Bridge available on site (TWFB) | 0% | 0 | 0 | 08-May-18 | | 158 |
| **TWSR-West/ FL Highway N/B Side Section** | | | | | | | |
| TWFB1390 | Finishes Work | 75.11% | 59 | 237 | 20-May-17 A | 02-Jun-18 | 257 |
| TWFB1400 | Bridge Structure complete (TWFB-TWSR-W side) | 0% | 0 | 0 | | 02-Jun-18 | 257 |
| **Crossing Fanling Highway Section** | | | | | | | |
| TWFB1440 | TWP2 - Pile cap | 0% | 30 | 30 | 17-Apr-18 | 23-May-18 | 86 |
| TWFB1445 | TWP2 - Pier and Pier Head | 0% | 45 | 45 | 24-May-18 | 17-Jul-18 | 86 |
| **TWSR-East FL Highway S/B Side Section** | | | | | | | |
| TWFB1480 | Precautionary work for MTRC I&P area | 53.33% | 21 | 45 | 20-Feb-18 A | 17-Apr-18 | 81 |
| TWFB1550 | TWP3 - Pre-bored H pile (6 nos) | 0% | 18 | 18 | 18-Apr-18 | 09-May-18 | 81 |
| TWFB1570 | TWP3 - Pile cap, Pier and Pier Head | 0% | 75 | 75 | 10-May-18 | 08-Aug-18 | 81 |
| **Lift at TWSR-W Side** | | | | | | | |
| L1680 | Structural Laminated glass wall installation | 6.67% | 28 | 30 | 17-Mar-18 A | 25-Apr-18 | 181 |
| L1690 | RC Link slab connect to bridge | 6.67% | 28 | 30 | 17-Mar-18 A | 25-Apr-18 | 138 |
| L1700 | Metal cover on RC platform | 0% | 30 | 30 | 26-Apr-18 | 01-Jun-18 | 138 |
| L1710 | Glass canopy on ground level | 0% | 30 | 30 | 02-Jun-18 | 09-Jul-18 | 595 |
| L1730 | Lift submission & ordering period | 0% | 120 | 120 | 20-Mar-18 | 17-Jul-18 | 136 |
| L1770 | E&M and Finishes work | 0% | 120 | 120 | 02-Jun-18 | 25-Oct-18 | 138 |
| L1780 | CLP Power available (by CLP) | 80.15% | 105 | 529 | 20-Aug-16 A | 02-Jul-18 | 239 |
| Demolition of Existing Tai Wo Footbridge | | | | | | | |
| **Crossing Fanling Highway Section** | | | | | | | |
| TWFB-DE1070 | Demolish existing Tai Wo Footbridge | 0% | 10 | 4 | 20-Mar-18 A | 03-Apr-18 | 5 |
| TWFB-DE1110 | Demolish existing Tai Wo Footbridge complete (across FH) | 0% | 0 | 0 | | 03-Apr-18 | 5 |
| **Signalized Junction** | | | | | | | |
| New Tai Hang Footbridge | | | | | | | |
| **TWSR-West/ FL Highway N/B Side Section** | | | | | | | |
| THBF0670 | E-prom ordering by EMSD (Tai hang Junction) | 0% | 90 | 90 | 03-Jun-18 | 31-Aug-18 | 128 |
| **Noise Barrier Along Fanling Highway S/B** | | | | | | | |
| NB51 (Ch.5935-6055)-FH S/B Side | | | | | | | |
| **Noise Barrier Works** | | | | | | | |
| NB02300 | NB51 ID1-3 (0-25m) - NB production | 93.86% | 14 | 228 | 20-May-17 A | 02-Apr-18 | 388 |
| NB02310 | NB51 ID1-3 (0-25m) - NB post & panel installation | 0% | 5 | 5 | 03-Apr-18 | 09-Apr-18 | 316 |
| NB53 (Ch.6125-6300) -FH S/B Side (MTRC I&P Area) | | | | | | | |
| **Noise Barrier Works** | | | | | | | |
| NB02430 | Precautionary Measure installation | 0% | 26 | 26 | 20-Mar-18 | 23-Apr-18 | 131 |
| NB02440 | NB53 (0-100m) - Sheet piling & Excavation | 0% | 26 | 26 | 24-Apr-18 | 25-May-18 | 168 |
| NB02450 | NB53 (0-100m) - Footing & Wall Structure | 0% | 60 | 60 | 26-May-18 | 06-Aug-18 | 168 |
| NB02490 | NB53 ID2-3 (100-125m), 18nos Predrilling | 0% | 10 | 10 | 24-Apr-18 | 05-May-18 | 131 |
| NB02500 | NB53 ID2-3 (100-125m) 18nos Piling- 1 rigs | 0% | 27 | 27 | 07-May-18 | 07-Jun-18 | 131 |
| NB02510 | NB53 ID2-3 (100-125m) - Sheet piling & Excavation | 0% | 21 | 21 | 08-Jun-18 | 04-Jul-18 | 131 |
| NB02590 | NB53 (125-180m) - NB production | 97.64% | 14 | 593 | 20-May-16 A | 02-Apr-18 | 388 |
| NB02600 | NB53 (125-180m) - NB post & panel installation | 0% | 5 | 5 | 03-Apr-18 | 09-Apr-18 | 316 |

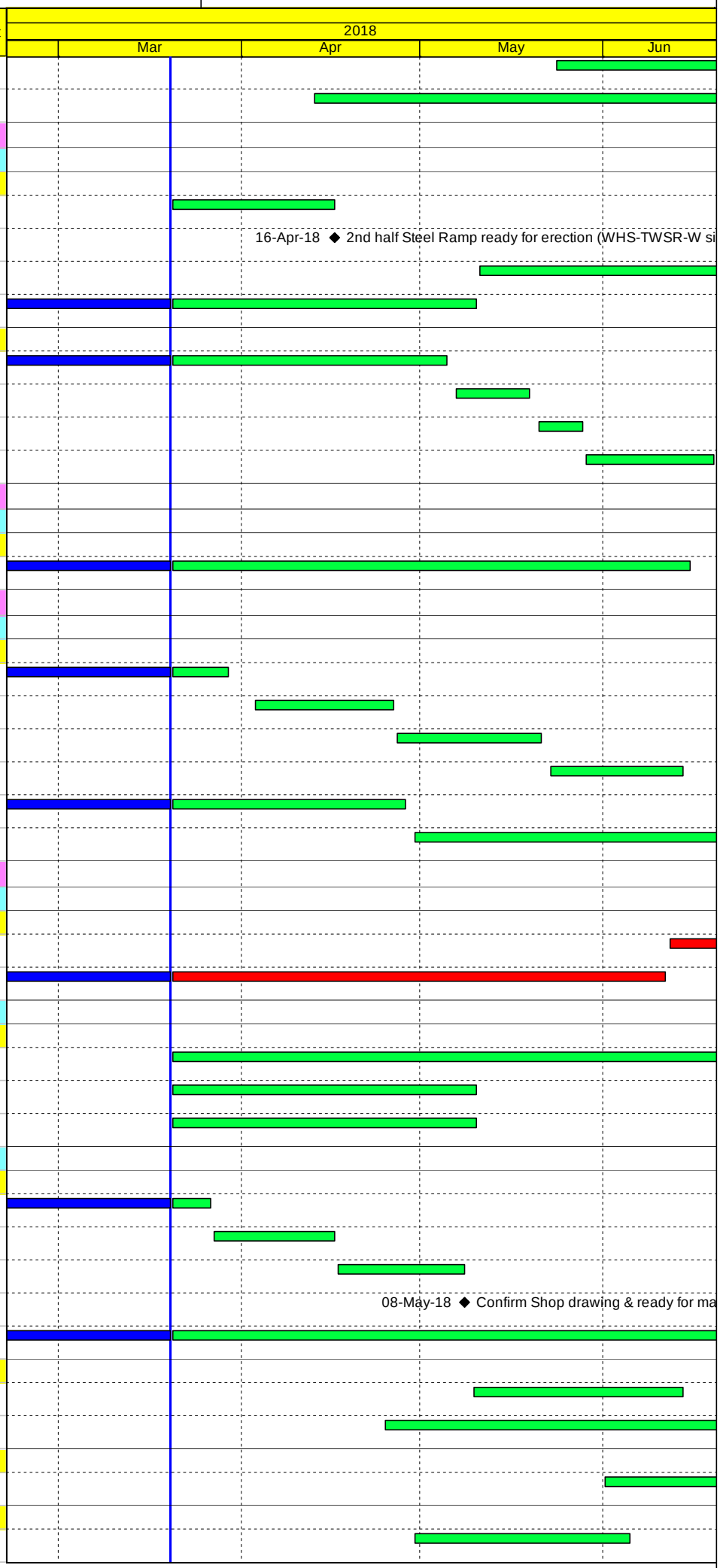


| Activity ID | Activity Name | Dur. % Complete | Rem. Duration | Original Duration | Start | Finish | Total Float |
|---|---|---|---|---|---|---|---|
| **NB55 (Ch.6300-6360)-FH S/B Side (MTRC I&P Area)** | | | | | | | |
| **Noise Barrier Works** | | | | | | | |
| NB02660 | NB55 - NB production | 94.63% | 40 | 745 | 15-Jan-16 A | 28-Apr-18 | 362 |
| NB02670 | NB55 - NB post & panel installation | 0% | 5 | 5 | 30-Apr-18 | 05-May-18 | 294 |
| **NB56 (Ch.6360-6400)-FH S/B Side (MTRC I&P Area)** | | | | | | | |
| **Noise Barrier Works** | | | | | | | |
| NB02730 | NB56 - NB production | 97.95% | 14 | 683 | 20-Feb-16 A | 02-Apr-18 | 388 |
| NB02740 | NB56 - NB post & panel installation | 0% | 5 | 5 | 03-Apr-18 | 09-Apr-18 | 316 |
| **NB61 (Ch.6400-6560)-FH S/B Side (MTRC I&P Area)** | | | | | | | |
| **Noise Barrier Works** | | | | | | | |
| NB02790 | NB61 (0-50m)- backfilling | 44% | 28 | 50 | 20-Jan-18 A | 25-Apr-18 | 302 |
| NB02800 | NB61 (0-50m) - NB production | 68.89% | 14 | 45 | 20-Jan-18 A | 02-Apr-18 | 388 |
| NB02810 | NB61 (0-50m) - NB post & panel installation | 0% | 5 | 5 | 03-Apr-18 | 09-Apr-18 | 316 |
| NB02850 | NB61 (50-160m) - NB production | 0% | 45 | 45 | 20-Mar-18 | 03-May-18 | 357 |
| NB02860 | NB61 (50-160m) - NB post & panel installation | 0% | 5 | 5 | 04-May-18 | 09-May-18 | 291 |
| **NB61A (Ch.6560-6745)-FH S/B Side (MTRC I&P Area)** | | | | | | | |
| **Noise Barrier Works** | | | | | | | |
| NB02920 | NB61A (0-50m) - NB production | 93.7% | 45 | 714 | 20-Feb-16 A | 03-May-18 | 357 |
| NB02930 | NB61A (0-50m) - NB post & panel installation | 0% | 5 | 5 | 04-May-18 | 09-May-18 | 291 |
| NB02970 | NB61A ID2-3 (50-75m) - Footing & Wall Structure | 93.34% | 57 | 856 | 01-Apr-15 A | 31-May-18 | 233 |
| NB02980 | NB61A ID2-3 (50-75m)- backfilling | 0% | 20 | 20 | 01-Jun-18 | 25-Jun-18 | 248 |
| NB02990 | NB61A ID2-3 (50-75m) - NB production | 0% | 45 | 45 | 01-Jun-18 | 15-Jul-18 | 284 |
| NB03040 | NB61A (75-190m) - NB production | 97.81% | 15 | 684 | 20-Feb-16 A | 03-Apr-18 | 387 |
| NB03050 | NB61A (75-190m) - NB post & panel installation | 0% | 5 | 5 | 04-Apr-18 | 10-Apr-18 | 315 |
| **Fanling Highway Construction** | | | | | | | |
| Drainage & Road Works | | | | | | | |
| **Ch 5880-6740** | | | | | | | |
| RDZ41210 | Z2 (CH5880-6740) : Fanling Highway N/B - D&R works (lane | 36.67% | 19 | 30 | 20-Feb-18 A | 14-Apr-18 | 4 |
| RDZ41240 | Z2 (CH5880-6740) : Fanling Highway S/B - D&R works (lane 4) | 85.71% | 11 | 77 | 25-Oct-17 A | 04-Apr-18 | 109 |
| RDZ41250 | Z2 (CH5880-6740) : Fanling Highway S/B - D&R works (lane 3) | 0% | 60 | 60 | 16-Apr-18 | 27-Jun-18 | 101 |
| **Other Works** | | | | | | | |
| TCSS Works | | | | | | | |
| **ADS1** | | | | | | | |
| TCSS1970 | Back filling & reinstatemetn road work (2m) | 0% | 18 | 18 | 20-Mar-18 | 13-Apr-18 | 222 |
| **FADS1** | | | | | | | |
| TCSS2050 | TTA application & Approval - FADS1 | 0% | 90 | 90 | 01-Jun-18 | 15-Sep-18 | 63 |
| **G55** | | | | | | | |
| TCSS1740 | TTA application & Approval - G55 | 0% | 90 | 90 | 25-Apr-18 | 11-Aug-18 | 63 |
| **South Buffer Zone 1 (SBZ1) (within Zone 2)(Ch.6740 to 6930)** | | | | | | | |
| **Noise Barrier Along TWSR-West and Laying New Utilities** | | | | | | | |
| NB64 & NB64A (Ch.6860-6920)-TWSR West Side | | | | | | | |
| **Noise Barrier Works** | | | | | | | |
| NB003350 | Bus Shelter footing & shelter near NB64 - VO86 | 0% | 40 | 40 | 20-Mar-18 | 10-May-18 | 290 |
| **Noise Barrier Along Fanling Highway N/B** | | | | | | | |
| NB60 (Ch.6450-6920)-FH N/B Side | | | | | | | |
| **Noise Barrier Works** | | | | | | | |
| NB02040 | NB60 (300-408m)(NB60/26-S4, 0.19m -26nos) Piling | 15.38% | 22 | 26 | 27-Jan-18 A | 18-Apr-18 | -4 |
| NB02050 | NB60-4 (300-408m) - Sheet piling & Excavation | 0% | 12 | 12 | 19-Apr-18 | 03-May-18 | -4 |
| NB02060 | NB60-4 - Footing & Wall Structure | 0% | 50 | 50 | 04-May-18 | 04-Jul-18 | -4 |
| NB02100 | NB60 (408-468m)(NB60/35-39, 0.19m -32nos) Piling | 0% | 32 | 32 | 19-Apr-18 | 28-May-18 | 62 |
| NB02101 | NB60 (408-468m) FADS1 (8nos) Piling | 0% | 8 | 8 | 29-May-18 | 06-Jun-18 | 62 |
| NB02105 | NB60 (408-468m) Staircase S1 - Pre-bored H Pile (16 nos) | 39.66% | 35 | 58 | 06-Feb-18 A | 04-May-18 | 89 |
| NB66 (Ch.6920-6930)-FH N/B Side | | | | | | | |
| **Noise Barrier Works** | | | | | | | |
| NB02160 | NB66 - Footing & Wall Structure | 28.57% | 15 | 21 | 18-Mar-18 A | 10-Apr-18 | 3 |
| NB02165 | NB66 - Drainage Works | 0% | 18 | 18 | 11-Apr-18 | 02-May-18 | 47 |
| NB02170 | NB66- backfilling | 0% | 15 | 15 | 17-May-18 | 04-Jun-18 | 144 |
| NB02180 | NB66 - NB production | 0% | 45 | 45 | 11-Apr-18 | 25-May-18 | 335 |
| NB02190 | NB66 - NB post & panel installation | 0% | 5 | 5 | 05-Jun-18 | 09-Jun-18 | 265 |
| NB03320 | Bus Shelter footing - VO86 | 0% | 30 | 30 | 11-Apr-18 | 16-May-18 | 144 |
| **Bridge Construction** | | | | | | | |
| Kau Lung Hang Vehicular Bridge | | | | | | | |
| **KLH Bridge - West Ramp** | | | | | | | |
| KLH.1290 | West Ramp - Planting | 0% | 21 | 21 | 20-Mar-18 | 17-Apr-18 | 309 |
| **KLH Bridge - Deck 1** | | | | | | | |
| KLH.3430 | Deck 1 - Planting | 0% | 21 | 21 | 20-Mar-18 | 17-Apr-18 | 309 |
| **KLH Bridge - Deck 3** | | | | | | | |
| KLH.3500 | Deck 3 - Planting | 0% | 21 | 21 | 20-Mar-18 | 17-Apr-18 | 341 |
| **KLH Bridge - East Ramp** | | | | | | | |
| KLH.3590 | East Ramp - Planting | 0% | 34 | 34 | 20-Mar-18 | 03-May-18 | 649 |
| **KLH Bridge - Ramp R1** | | | | | | | |
| Z2.KLH.3610 | Ramp R1 - Steel roof | 96.07% | 11 | 280 | 19-Jan-17 A | 04-Apr-18 | 319 |
| **KLH Bridge - Ramp R2** | | | | | | | |
| Z2.KLH.1550 | Ramp R2 - Steel roof | 93.5% | 16 | 246 | 14-Mar-17 A | 11-Apr-18 | 314 |
| **KLH Bridge - Staircase S1** | | | | | | | |



| Activity ID | Activity Name | Dur. % Complete | Rem. Duration | Original Duration | Start | Finish | Total Float |
|---|---|---|---|---|---|---|---|
| Z2.KLH.1460 | S1 - Staircase steel work, handrail Shop drawing submission & | 0% | 90 | 90 | 05-Apr-18 | 03-Jul-18 | -6 |
| **Bridge Road Work** | | | | | | | |
| Z2.KLH.2040 | Landscape work of KLHVB | 0% | 120 | 120 | 20-Mar-18 | 15-Aug-18 | 210 |
| **Lift at TWSR-W Side** | | | | | | | |
| L01070 | Structural Laminated glass wall installation | 0% | 11 | 11 | 20-Mar-18* | 04-Apr-18 | 230 |
| L01090 | Glass canopy (As Confirmed by ER, No glass canopy is required) | 0% | 0 | 0 | 20-Mar-18 | 20-Mar-18 | 241 |
| L01100 | Lift installation | 0% | 70 | 70 | 06-Apr-18 | 29-Jun-18 | 230 |
| L01130 | Finishes work | 0% | 88 | 88 | 06-Apr-18 | 21-Jul-18 | 231 |
| L01140 | CLP Power available (by CLP) | 94.9% | 32 | 628 | 04-Apr-16 A | 20-Apr-18 | 350 |
| **Lift at FLHY S/B** | | | | | | | |
| L01230 | Structural Laminated glass wall installation | 0% | 12 | 12 | 20-Mar-18* | 06-Apr-18 | 258 |
| L01250 | Glass canopy (As Confirmed by ER, No glass canopy is required) | 0% | 0 | 0 | 20-Mar-18* | 20-Mar-18 | 270 |
| L01260 | Lift installation | 0% | 45 | 45 | 07-Apr-18 | 31-May-18 | 259 |
| L01270 | Lift T&C | 0% | 14 | 14 | 01-Jun-18 | 14-Jun-18 | 315 |
| L01280 | EMSD inspection & approval (Assume 7 days is required instead | 0% | 7 | 7 | 15-Jun-18 | 21-Jun-18 | 315 |
| L01290 | Finishes work | 0% | 60 | 60 | 07-Apr-18 | 19-Jun-18 | 258 |
| L01300 | CLP Power available (by CLP) | 91.24% | 63 | 719 | 04-Apr-16 A | 21-May-18 | 325 |
| **Signalized Junction** | | | | | | | |
| Kau Lung Hang Vehicular Bridge | | | | | | | |
| **KLH Bridge - West Ramp** | | | | | | | |
| Z2.KLH.1032 | Installation of Traffic Signal Poles at TWSR-W N/B (KLHVB) | 0% | 21 | 21 | 20-Mar-18* | 17-Apr-18 | 303 |
| Z2.KLH.1062 | E-prom ordering by EMSD (KLHVB) | 0% | 90 | 90 | 25-Mar-18 | 22-Jun-18 | 222 |
| **Noise Barrier Along Fanling Highway S/B** | | | | | | | |
| NB62 (Ch.6745-6910)-FH S/B Side (MTRC I&P Area) | | | | | | | |
| **Noise Barrier Works** | | | | | | | |
| NB03110 | NB62 (0-80m) - NB production | 0% | 45 | 45 | 20-Mar-18 | 03-May-18 | 357 |
| NB03120 | NB62 (0-80m) - NB post & panel installation | 0% | 5 | 5 | 04-May-18 | 09-May-18 | 291 |
| NB03150 | NB62 (80-110m) Under bridge - backfilling | 0% | 14 | 14 | 20-Mar-18 | 09-Apr-18 | 311 |
| NB03160 | NB62 (80-110m) Under bridge - NB production | 0% | 45 | 45 | 20-Mar-18 | 03-May-18 | 357 |
| NB03170 | NB62 (80-110m) Under bridge - NB post & panel installation | 0% | 5 | 5 | 04-May-18 | 09-May-18 | 291 |
| NB03200 | NB62 (110-170m) - backfilling | 0% | 20 | 20 | 20-Mar-18 | 16-Apr-18 | 305 |
| NB03210 | NB62 (110-170m) - NB production | 0% | 45 | 45 | 20-Mar-18 | 03-May-18 | 357 |
| NB03220 | NB62 (110-170m) - NB post & panel installation | 0% | 5 | 5 | 04-May-18 | 09-May-18 | 291 |
| **Fanling Highway Construction** | | | | | | | |
| Drainage & Road Works | | | | | | | |
| **Ch 6740-6930** | | | | | | | |
| RDZ20490 | Z2 (CH6740-6930) : Fanling Highway S/B - D&R works (lane 4) | 61.04% | 30 | 77 | 25-Oct-17 A | 27-Apr-18 | 300 |
| RDZ20500 | Z2 (CH6740-6930) : Fanling Highway S/B - D&R works (lane 3) | 0% | 24 | 24 | 16-Apr-18 | 14-May-18 | 287 |
| **North Buffer Zone 2 (NBZ2) (within Zone 4) (Ch. 7925 to 8100)** | | | | | | | |
| **Bridge Construction** | | | | | | | |
| New Ho Ka Yuen Footbridge | | | | | | | |
| **TWSR-West/ FL Highway N/B Side Section** | | | | | | | |
| HKY1440 | Remaining Finishes works of HKYFB | 84.76% | 57 | 374 | 21-Nov-16 A | 31-May-18 | 260 |
| HKY1520 | VO11 - slope improvement work | 0% | 45 | 45 | 01-Jun-18 | 25-Jul-18 | 260 |
| **TWSR-East FL Highway S/B Side Section** | | | | | | | |
| HKY1870 | Steel Ramp finishes work (HKYFB-TWSR-E side) | 73.68% | 100 | 380 | 13-Oct-16 A | 23-Jul-18 | 262 |
| **ZONE 4 (Ch. 7925 to 8700)** | | | | | | | |
| **Noise Barrier Along TWSR-West and Laying New Utilities** | | | | | | | |
| Underground Utility Works | | | | | | | |
| **DN450 DI Watermain "A" (Ch 1989-2529)** | | | | | | | |
| DI0170 | DN450 DI watermain laying (350-400m) | 0% | 30 | 30 | 20-Mar-18 | 27-Apr-18 | 192 |
| DI0180 | DN450 DI watermain laying (400-450m) | 0% | 30 | 30 | 28-Apr-18 | 04-Jun-18 | 192 |
| DI0190 | DN450 DI watermain laying (450-500m) | 0% | 30 | 30 | 05-Jun-18 | 11-Jul-18 | 192 |
| **Noise Barrier Along Fanling Highway N/B** | | | | | | | |
| NB75 (Ch.7930-8090)-FH N/B Side | | | | | | | |
| **Noise Barrier Works** | | | | | | | |
| NB4090 | NB75 - NB post & panel installation (Ch7930-7990) | 0% | 5 | 5 | 20-Dec-17 A | 24-Mar-18 | 192 |
| NB4150 | NB75 - NB post & panel installation (Ch7990-8000) | 0% | 5 | 5 | 28-Dec-17 A | 24-Mar-18 | 192 |
| NB4210 | NB75 - NB post & panel installation (Ch8000-8050) | 0% | 5 | 5 | 20-Dec-17 A | 24-Mar-18 | 192 |
| NB4260 | NB75 - NB production (Ch8050-8090) | 66.67% | 15 | 45 | 20-Nov-17 A | 03-Apr-18 | 222 |
| NB4270 | NB75 - NB post & panel installation (Ch8050-8090) | 0% | 5 | 5 | 04-Apr-18 | 10-Apr-18 | 182 |
| NB4280 | NB75 complete | 0% | 0 | 0 | | 10-Apr-18 | 182 |
| NB77 (Ch.8090-8450)-FH N/B Side | | | | | | | |
| **Noise Barrier Works** | | | | | | | |
| NB4310 | NB77 - Footing & Wall Structure (Ch8090-8190) | 89.88% | 17 | 168 | 20-Jul-17 A | 12-Apr-18 | 25 |
| NB4320 | NB77 - backfilling (Ch8090-8190) | 0% | 20 | 20 | 19-May-18 | 12-Jun-18 | 55 |
| NB4330 | NB77 - NB production (Ch8090-8190) | 0% | 45 | 45 | 13-Apr-18 | 27-May-18 | 156 |
| NB4340 | NB77 - NB post & panel installation (Ch8090-8190) | 0% | 15 | 15 | 13-Jun-18 | 30-Jun-18 | 115 |
| NB4390 | NB77 - NB production (Ch8190-8290) | 0% | 45 | 45 | 20-Mar-18 | 03-May-18 | 180 |
| NB4400 | NB77 - NB post & panel installation (Ch8190-8290) | 0% | 15 | 15 | 04-May-18 | 21-May-18 | 148 |
| NB4430 | NB77 - Footing & Wall Structure (Ch8290-8390) | 75% | 27 | 106 | 03-Nov-17 A | 24-Apr-18 | 96 |
| NB4450 | NB77 - NB production (Ch8290-8390) | 0% | 45 | 45 | 24-Apr-18 | 08-Jun-18 | 145 |
| NB4482 | NB77 - Footing & Wall Structure (NB77/27 - 28, N1-N2) | 0% | 50 | 50 | 20-Mar-18 | 23-May-18 | 30 |

| Activity ID | Activity Name | Dur. % Complete | Rem. Duration | Original Duration | Start | Finish | Total Float |
|---|---|---|---|---|---|---|---|
| NB4490 | NB77 - Footing & Wall Structure (NB77/31 - 32, 0.19m & G35) | 0% | 50 | 50 | 24-May-18 | 23-Jul-18 | 30 |
| NB4620 | NB77 Drainage Works | 0% | 100 | 100 | 13-Apr-18 | 11-Aug-18 | 25 |
| **Bridge Construction** | | | | | | | |
| New Wo Hop Shek Pedstrian & Cycle Bridge | | | | | | | |
| **TWSR-West/ FL Highway N/B Side Section** | | | | | | | |
| WHS1390 | WHSAB2, P8, P9 - Backfilling (~3m) | 0% | 20 | 20 | 20-Mar-18 | 16-Apr-18 | 120 |
| WHS1400 | 2nd half Steel Ramp ready for erection (WHS-TWSR-W side) | 0% | 0 | 0 | | 16-Apr-18 | 120 |
| WHS1410 | Erect 2nd half Ramp | 0% | 60 | 60 | 11-May-18 | 23-Jul-18 | 100 |
| WHS2120 | Ramp fabrication | 44.44% | 40 | 72 | 07-Feb-18 A | 10-May-18 | 100 |
| **Crossing Fanling Highway Section** | | | | | | | |
| WHS1510 | TTA for new WHS bridge submission & approval | 40% | 36 | 60 | 20-Feb-18 A | 05-May-18 | 290 |
| WHS1520 | Remove railing | 0% | 12 | 12 | 07-May-18 | 19-May-18 | 290 |
| WHS1530 | Bridge floor marking | 0% | 6 | 6 | 21-May-18 | 28-May-18 | 290 |
| WHS1540 | Install bollards | 0% | 18 | 18 | 29-May-18 | 19-Jun-18 | 290 |
| **VO - Wall 76A Construction** | | | | | | | |
| Retaining Wall W76A | | | | | | | |
| **TWSR-East FL Highway S/B Side Section** | | | | | | | |
| W76A1060 | Road work for Caltex access road | 53.33% | 70 | 150 | 16-Jan-18 A | 15-Jun-18 | 292 |
| **Fanling Highway Construction** | | | | | | | |
| Drainage & Road Works | | | | | | | |
| **TWSR-East FL Highway S/B Side Section** | | | | | | | |
| RDZ41102 | Construct FH N/B Lane 1 (at NBZ2) | 55% | 9 | 20 | 20-Feb-18 A | 29-Mar-18 | 73 |
| RDZ41104 | Construct FH N/B Lane 2 (at NBZ2) | 0% | 20 | 20 | 03-Apr-18 | 26-Apr-18 | 73 |
| RDZ41106 | Construct FH N/B Lane 3 (at NBZ2) | 0% | 20 | 20 | 27-Apr-18 | 21-May-18 | 73 |
| RDZ41108 | Construct FH N/B Lane 4 (at NBZ2) | 0% | 20 | 20 | 23-May-18 | 14-Jun-18 | 73 |
| RDZ41131 | Drainage work at central divider (Ch8100-8600) | 79.33% | 31 | 150 | 10-Oct-17 A | 28-Apr-18 | 101 |
| RDZ41135 | Construct FHS/B Lane 4 (Ch8100-8600) | 0% | 45 | 45 | 30-Apr-18 | 23-Jun-18 | 101 |
| **Other Works** | | | | | | | |
| Retaining Wall W78 | | | | | | | |
| **TWSR-East FL Highway S/B Side Section** | | | | | | | |
| RWZ4.0910 | Demolition of existing retaining wall (Instructed in 2-Jun-17 ad-hoc site | 0% | 35 | 35 | 12-Jun-18 | 24-Jul-18 | 2 |
| RWZ4.1010 | Base slab & Wall (6-11m high)-RW78 (Ch.0-50) | 40% | 66 | 110 | 02-Jan-18 A | 11-Jun-18 | 2 |
| Slope Works | | | | | | | |
| **TWSR-East FL Highway S/B Side Section** | | | | | | | |
| S1030 | Slope S53-Fill ~5m | 0% | 110 | 110 | 20-Mar-18 | 03-Aug-18 | 87 |
| S1040 | Slope S54A-Cut ~4m | 0% | 40 | 40 | 20-Mar-18 | 10-May-18 | 286 |
| S1050 | Slope S54B-Cut ~5m | 0% | 40 | 40 | 20-Mar-18 | 10-May-18 | 286 |
| TCSS Works | | | | | | | |
| **TCSS Pre-Construction Works** | | | | | | | |
| TCSS0120 | Prepare Shop Drawing-TCSS | 80% | 6 | 30 | 20-Dec-17 A | 26-Mar-18 | 108 |
| TCSS0130 | Shop Drawing Comment & Approval | 0% | 21 | 21 | 27-Mar-18 | 16-Apr-18 | 135 |
| TCSS0140 | Revised & Re-submission TCSS shop Drawing | 0% | 18 | 18 | 17-Apr-18 | 08-May-18 | 112 |
| TCSS0150 | Confirm Shop drawing & ready for material ordering & factory | 0% | 0 | 0 | | 08-May-18 | 112 |
| TCSS0160 | Raw material procurement | 38.89% | 110 | 180 | 09-Jan-18 A | 07-Jul-18 | 74 |
| **G34** | | | | | | | |
| TCSS1530 | Fast lane footing - G34 (CH7990, N/B) | 0% | 30 | 30 | 10-May-18 | 14-Jun-18 | 143 |
| TCSS1780 | TTA application & Approval - G34 (Z4) | 0% | 90 | 90 | 25-Apr-18 | 11-Aug-18 | 95 |
| **G36** | | | | | | | |
| TCSS1820 | TTA application & Approval - G36 (Z4) | 0% | 90 | 90 | 01-Jun-18 | 15-Sep-18 | 95 |
| **FADS8** | | | | | | | |
| TCSS1630 | Fast lane footing - FADS8 (CH8220, S/B) | 0% | 30 | 30 | 30-Apr-18 | 05-Jun-18 | 241 |

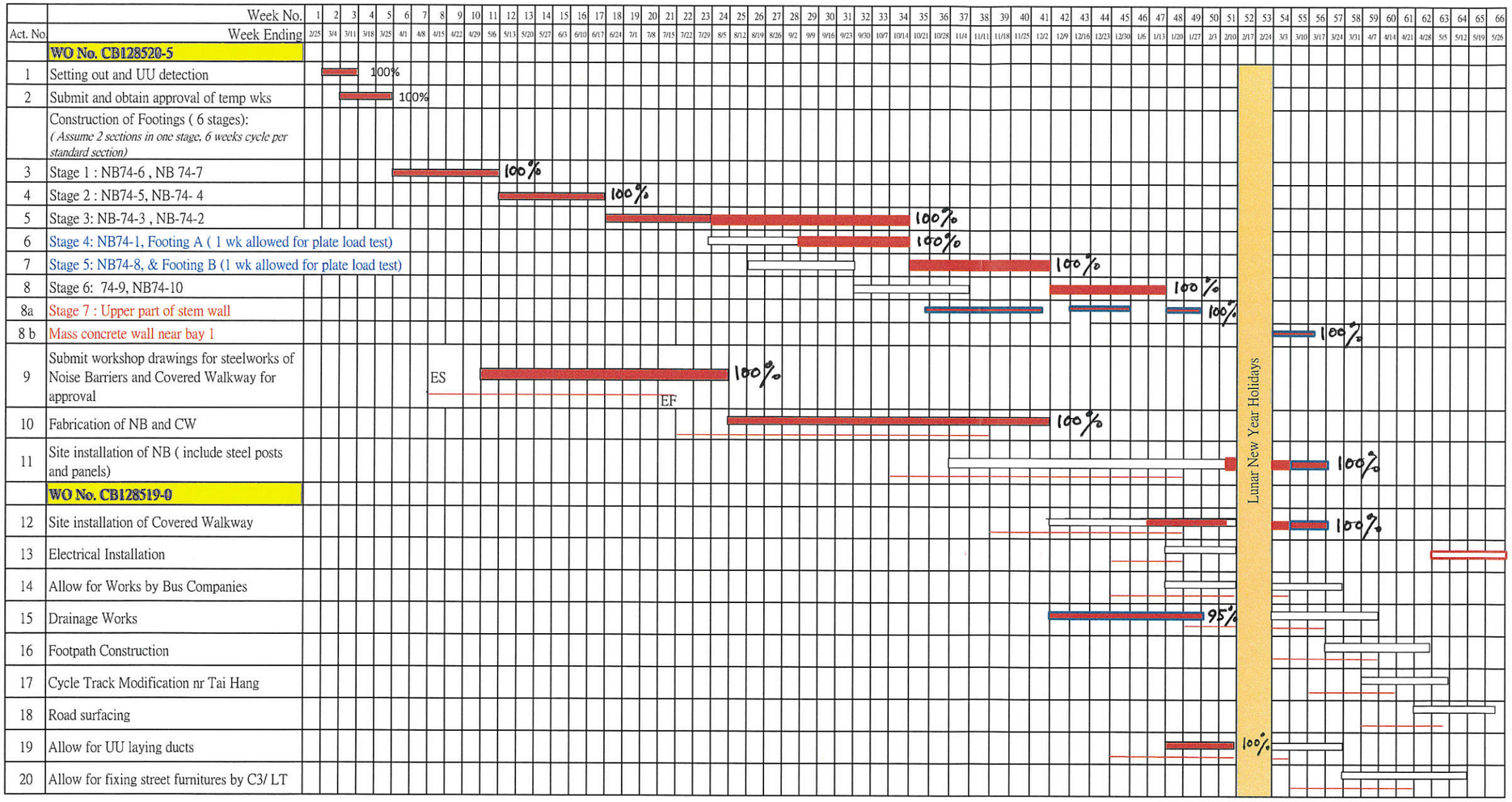


App. A.

CHIU HING CONSTRUCTION AND TRANSPORTATION CO. LTD.
Contract No. 02/HY/2015
Works Order Nos: CB128519-0 & CB128520-5
Progarmme of Construction of Noise Barrier and Pedestrian Covered Walkway at Tai Wo Service Road East near Ho Ka Yuen

Revised Program Duration
Programmed Duration
Actual Progress
Critical Path Activities
Early Start & Early Finsih
Float = 3 weeks
upper part of stem wall

| Rev | Date | Description |
|---|---|---|
| 00 | 28/02/17 | initial issue |
| 01 | 29/03/17 | refer RE's comments |
| 02 | 22/5/17 | add plate load test program |
| 03 | 28/9/2017 | revise program of task 5-9 |
| 04 | 23/1/2018 | add mass wall & revise installation of NB & BBI |




Cycle time for standard section :

| Item | Activity | Approx Qty | Days for Construction ( Calendar Days) |
|---|---|---|---|
| 1 | Sheet-piling with struts | 24 x 7 = 168M2 | 10 days |
| 2 | Excavation | 12 x 6 x 6 =432 M3 | 7 days |
| 3 | Rock Fill ( assumed) | 12 x 2 = 24 M3 | 2 days |
| 4 | Blinding Layer | | 1 day |
| 5 | Fwk-Rebar- Concreting | 110 M 3 | 10 days ** |
| 6 | Posts for Covered Walkway | | 7 days ## |
| 7 | Backfilling | 290M 3 | 5 days |
| | | | Total = 42 days |

** Breakdown of Item 5

| | Base Slab calendar days | Stem calendar days |
|---|---|---|
| Fwk | 1 | 2 |
| Re-bar | 1 | 3 |
| Concreting | 1 | 1 |
| Remove Fwk | | 1 |
| Total : | 10 days | |

## Breakdown of Item 6

| | Posts calendar days | |
|---|---|---|
| Fwk | 2 | |
| Re-bar | 3 | |
| Concreting | 1 | |
| Remove Fwk | 1 | |
| Total : | 7 days | |

$$Breakdown of Item 8a ( for 2 sections of stem wall)

| | Posts calendar days | |
|---|---|---|
| Fwk | 4 | |
| Re-bar | 2 | |
| Concreting | 1 | |
| Fix HD bolts | 2 | |
| Remove Fwk | 1 | |
| Total : | 10 days | |

# 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 | |
|---|---|---|---|---|
| | | | HY/2012/06 | 02/HY/2015 |
| 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 | V |
| | All stockpiles of excavated materials or spoil of more than 50$m^3$ 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. | | V | V |
| | All spraying of materials and surfaces shall avoid excessive water usage. | | V | 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 | V |
| | Materials shall be dampened, if necessary, before transportation. | | V | V |
| | Travelling speeds shall be controlled to reduce traffic induced dust dispersion and re-suspension within the site from the operating haul trucks. | | V | V |
| | Vehicle washing facilities shall be provided to minimize the quantity of material deposited on public roads. | | @ | V |

## Noise – Schedule of Recommended Mitigation Measures

| Impact | Mitigation Measures | Timing | Implementation Status | |
|---|---|---|---|---|
| | | | HY/2012/06 | 02/HY2015 |
| Noise during construction | Use of silenced plant or plant equipped with mufflers or dampers in substitute of ordinary plant. | During construction | V | V |
| | Reduce the number of equipment and their percentage on-time. | | V | V |
| | 3.5 m and 5.5 m high temporary noise barrier at culvert construction work area (Figure 2a of the Environmental Permit). | | V | N.A. |
| | 3 m high temporary noise barrier along the northern edge of Bridge 12 at ground level (Figure 2b of the Environmental Permit). | | V | N.A. |
| | 2 m high temporary noise barrier along the northern edge of Bridge 12 at bridge level (Figure 2b of the Environmental Permit). | | V | N.A. |
| | 2.5 m high temporary noise barrier along Tai Wo Service Road West (Figure 2c of the Environmental Permit). | | V | N.A. |
| | 3.5m and 7m high temporary noise barrier along Tai Wo Services Road West near Tai Hang (Figure 2c of the Environmental Permit). | | V | N.A. |
| | 7 m high temporary noise barrier along Tai Wo Service Road West near Tai Wo Footbridge work area (Figure 2d of the Environmental Permit). | | V | N.A. |
| | 7 m high temporary noise barrier near Kiu Tau Footbridge work area (Figure 2d of the Environmental Permit). | | V | N.A. |
| | 2.5 m high temporary noise barrier near river diversion work area (Figure 2e of the Environmental Permit). | | N.A. | N.A. |

## Water Quality – Schedule of Recommended Mitigation Measures

| Impact | Mitigation Measures | Timing | Implementation Status | |
|---|---|---|---|---|
| | | | HY/2012/06 | 02/HY/2015 |
| Water quality during construction | Demolition and reconstruction of bridges<br>- Prevent off-site migration through use of sheet piles.<br>- Minimise duration of works as far as practical.<br>- All sewer and drainage connections should be sealed to prevent debris, soil, sand, etc, from entering public sewers/drains.<br>- Site surface runoff should be settled to remove sand/silt before it is discharged into the existing storm drains. | During construction | @ | N.A. |
| | Road Widening Works, Earthworks and Culvert Extension Works<br>- 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.<br>- Sand traps, oil interceptors and other pollution prevention installations should be provided, properly cleaned and maintained.<br>- 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.<br>- Regular inspections of stilling basins and/or silt traps are required to ensure that sediment is not conveyed into the existing drainage system.<br>- Open stockpiles should be covered with a tarpaulin cover.<br>- During the wet season, any exposed top soils should be covered with a tarpaulin, shotcreted or hydroseeded.<br>- Sand and silt from wash-water from vehicle washing should be settled out before discharging into storm drains.<br>- 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 | |
|---|---|---|---|---|
| | | | HY/2012/06 | 02/HY/2015 |
| Waste management during construction | General Waste<br>- Transport of wastes off site as soon as possible.<br>- Maintenance of accurate waste records.<br>- Minimisation of waste generation for disposal (via reduction/recycling/re-use).<br>- No on-site burning will be permitted.<br>- Use of re-useable metal hoardings/signboards. | During construction | V | V |
| | Vegetation from site clearance<br>- Segregation of materials to facilitate disposal.<br>- Mulching to reduce bulk and where possible review opportunities for the possible beneficial use within landscaping areas. | | V | V |
| | Demolition Wastes<br>- Segregation of materials to facilitate disposal.<br>- Appropriate stockpile management. | | V | V |
| | Excavated Materials<br>- Segregation of materials to facilitate disposal / reuse.<br>- Appropriate stockpile management.<br>- Re-use of excavated material on or off site (where possible).<br>- Special handling and disposal procedures in the event that contaminated materials are excavated. | | V | V |
| | Construction Wastes<br>- Segregation of materials to facilitate recycling/reuse (within designated area in appropriate containers/stockpiles).<br>- Appropriate stockpile management.<br>- Planning to reduce over ordering and waste generation.<br>- Recycling and re-use of materials where possible (e.g. metal, wood from formwork)<br>- For material which cannot be re-used/recycled, collection should be carried out by an approved waste contractor for landfill disposal. | | V | V |
| | Bentonite Slurries<br>- Bentonite slurries should be reused as far as possible.<br>- Disposal in accordance with Practice Note For Professional Persons ProPECC PN 1/94. | | # | N.A. |

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

## Ecology – Schedule of Recommended Mitigation Measures

| Impact | Mitigation Measures | Timing | Implementation Status | |
|---|---|---|---|---|
| | | | HY/2012/06 | 02/HY/2015 |
| Ecology during construction | Accurate Delineation of Works Area<br>- Boundaries of proposed works areas shall be clearly identified and separated from external areas by a physical barrier to prevent encroachment of adjacent habitats.<br>- 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 | V |
| | Vegetation Clearance<br>- No fires shall be lit within the works area for the purpose of burning cleared vegetation.<br>- The Contractor shall give consideration to mulching the cleared vegetation for recycling within the works area / adjacent land. | | V | V |
| | Dust generation<br>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:<br>- Vehicle washing facilities to be provided at every discernible or designated vehicle exit point;<br>- All temporary site access roads shall be sprayed with water to suppress dust as necessary;<br>- All dusty materials should be sprayed with water immediately prior to any handling; and<br>- All debris should be covered entirely by impervious sheeting or stored in a sheltered debris collection area. | | @ | V |
| | Surface Run-off<br>In general, mitigation measures shall be in accordance with ProPECC PN1/94 on 'Construction Site Drainage'. Key measures include:<br>- Bund and cover stock piles to avoid run-off;<br>- Channel any run-off through a system of oil, grease and sediment / silt traps and reuse water on site where ever practical;<br>- All vehicle maintenance to be undertaken within a bunded area; and<br>- 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 | |
|---|---|---|---|---|
| | | | HY/2012/06 | 02/HY/2015 |
| Landscape & Visual during construction | Preservation of Existing Vegetation<br>- Trees identified for retention within the project limit would be protected during the works;<br>- The tree transplanting and planting works shall be implemented by approved Landscape Contractors. | During construction | V | V |
| | Temporary Works Areas<br>- 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 | V |
| | Hoarding<br>- A hoarding would be erected where practicable in the most visually sensitive locations to screen the temporary construction works from the local VSRs. | | V | N.A. |
| | Top Soils<br>- 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. | | # | N.A. |
| | Protection of Important Landscape Features<br>- Important features such as temples, Island House and kilns within the study area, although remote from the proposed works retained and adequately protected. | | # | N.A. |

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**

TISCH Environmental

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 - May 22, 2017 Rootsmeter S/N 0438320 Ta (K) - 295
Operator Tisch Orifice I.D. - 0988 Pa (mm) - 754.38

| 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 | 1.3910 | 3.2 | 2.00 |
| 2 | NA | NA | 1.00 | 0.9810 | 6.4 | 4.00 |
| 3 | NA | NA | 1.00 | 0.8750 | 7.9 | 5.00 |
| 4 | NA | NA | 1.00 | 0.8330 | 8.8 | 5.50 |
| 5 | NA | NA | 1.00 | 0.6890 | 12.7 | 8.00 |

## DATA TABULATION

| Vstd | (x axis) Qstd | (y axis) | | Va | (x axis) Qa | (y axis) |
|---|---|---|---|---|---|---|
| 0.9984 | 0.7178 | 1.4161 | | 0.9957 | 0.7158 | 0.8844 |
| 0.9942 | 1.0135 | 2.0027 | | 0.9915 | 1.0107 | 1.2507 |
| 0.9921 | 1.1338 | 2.2391 | | 0.9894 | 1.1308 | 1.3983 |
| 0.9910 | 1.1897 | 2.3484 | | 0.9883 | 1.1865 | 1.4666 |
| 0.9858 | 1.4307 | 2.8322 | | 0.9831 | 1.4269 | 1.7687 |
| Qstd slope (m) = | | 1.98425 | | Qa slope (m) = | | 1.24250 |
| intercept (b) = | | -0.00930 | | intercept (b) = | | -0.00581 |
| coefficient (r) = | | 0.99998 | | coefficient (r) = | | 0.99998 |
| y axis = SQRT[H2O(Pa/760)(298/Ta)] | | | | 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}

AECOM

# Total Suspended Particulates (TSP) Sampler
# Field Calibration Report

| | | | |
|---|---|---|---|
| Station | Fanling Government Secondary School (AM2) | Operator: | Shum Kam Yuen |
| Date: | 15-Jan-18 | Next Due Date: | 14-Mar-18 |
| Model No: | TE-5170 | Verified Against: | O.T.S -- 988 |
| Equipment No.: | A-001-74T | Expiration Date: | 22-May-2018 |

| Ambient Condition | | | | | |
|---|---|---|---|---|---|
| Temperature, Ta | 285.0 | Kelvin | Pressure, Pa | 763.3 | mmHg |

| Orifice Transfer Standard Information | | | | | |
|---|---|---|---|---|---|
| Equipment No.: | 988 | Slope, mc | 1.98425 | Intercept, bc | -0.0093 |
| Last Calibration Date: | 22-May-17 | **mc x Qstd + bc = [H x (Pa/760) x (298/Ta)]$^{1/2}$** | | | |
| Next Calibration Date: | 22-May-18 | | | | |

**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 | 7.1 | 2.73 | 1.38 | 5.3 | 2.36 |
| 2 | 5.9 | 2.49 | 1.26 | 4.3 | 2.13 |
| 3 | 4.3 | 2.13 | 1.08 | 3.2 | 1.83 |
| 4 | 3.4 | 1.89 | 0.96 | 2.3 | 1.55 |
| 5 | 2.5 | 1.62 | 0.82 | 1.6 | 1.30 |

**By Linear Regression of Y on X**

**Slope , mw =** **1.8972** **Intercept, bw =** **-0.2530**

**Correlation Coefficient* =** **0.9989**

**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 ) = **3.97**

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

Remarks:

QC Reviewer: Y Ley Signature: Date: 22-1-18

AECOM

# Total Suspended Particulates (TSP) Sampler
# Field Calibration Report

Station: Fanling Government Secondary School (AM2)
Date: 15-Mar-18
Model No: TE-5170
Equipment No.: A-001-74T

Operator: Shum Kam Yuen
Next Due Date: 15-May-18
Verified Against: O.T.S -- 988
Expiration Date: 22-May-2018

| Ambient Condition | | | | | |
|---|---|---|---|---|---|
| Temperature, Ta | 298.0 | Kelvin | Pressure, Pa | 758.7 | mmHg |

| Orifice Transfer Standard Information | | | | | |
|---|---|---|---|---|---|
| Equipment No.: | 988 | Slope, mc | 1.98425 | Intercept, bc | -0.0093 |
| Last Calibration Date: | 22-May-17 | **mc x Qstd + bc = [H x (Pa/760) x (298/Ta)]$^{1/2}$** | | | |
| Next Calibration Date: | 22-May-18 | | | | |

**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 | 2.64 | 1.34 | 5.3 | 2.30 |
| 2 | 5.9 | 2.43 | 1.23 | 4.3 | 2.07 |
| 3 | 4.3 | 2.07 | 1.05 | 3.2 | 1.79 |
| 4 | 3.3 | 1.82 | 0.92 | 2.4 | 1.55 |
| 5 | 2.4 | 1.55 | 0.78 | 1.6 | 1.26 |

**By Linear Regression of Y on X**

**Slope , mw = 1.8134** **Intercept, bw = -0.1354**

**Correlation Coefficient* = 0.9987**

**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 ) = **4.25**

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

Remarks:

QC Reviewer: WS CHAN Signature: [signature] Date: 15/03/18

# 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*: | *6 May 2017* |

*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 | *06-05-17* | *12:30 - 13:30* | *27.5* | *78* | *0.04741* | *1894* | *31.57* |
| 2 | *06-05-17* | *13:30 - 14:30* | *27.6* | *78* | *0.04823* | *1933* | *32.22* |
| 3 | *06-05-17* | *14:30 - 15:30* | *27.6* | *79* | *0.04968* | *1987* | *33.12* |
| 4 | *06-05-17* | *15:30 - 16:30* | *27.6* | *79* | *0.04785* | *1915* | *31.92* |

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: | *0.9957* |
| Validity of Calibration Record: | *6 May 2018* |

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 08 May 2017

# EQUIPMENT CALIBRATION RECORD

| | |
|---|---|
| Type: | ***Laser Dust Monitor*** |
| Manufacturer/Brand: | ***SIBATA*** |
| Model No.: | ***LD-3*** |
| Equipment No.: | ***A.005.09a*** |
| Sensitivity Adjustment Scale Setting: | ***797 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*: | *6 May 2017* |

*Remarks: Recommended interval for hardware calibration is 1 year

## *Calibration Result*

Sensitivity Adjustment Scale Setting (Before Calibration): *797* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *797* 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 | *06-05-17* | *12:00 - 13:00* | *27.5* | *78* | *0.04715* | *1881* | *31.35* |
| 2 | *06-05-17* | *13:00 - 14:00* | *27.6* | *78* | *0.04843* | *1939* | *32.32* |
| 3 | *06-05-17* | *14:00 - 15:00* | *27.6* | *79* | *0.04987* | *1992* | *33.20* |
| 4 | *06-05-17* | *15:00 - 16:00* | *27.6* | *79* | *0.04794* | *1916* | *31.93* |

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: *0.9961*

Validity of Calibration Record: *6 May 2018*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 08 May 2017

# EQUIPMENT CALIBRATION RECORD

Type: ***Laser Dust Monitor***
Manufacturer/Brand: ***SIBATA***
Model No.: ***LD-3***
Equipment No.: ***A.005.11a***
Sensitivity Adjustment Scale Setting: ***799 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*: *6 May 2017*

*Remarks: Recommended interval for hardware calibration is 1 year

## *Calibration Result*

Sensitivity Adjustment Scale Setting (Before Calibration): *799* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *799* 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 | 07-05-17 | 09:15 - 10:15 | 25.5 | 81 | 0.04372 | 1749 | 29.15 |
| 2 | 07-05-17 | 10:15 - 11:15 | 25.5 | 81 | 0.04501 | 1804 | 30.07 |
| 3 | 07-05-17 | 11:15 - 12:15 | 25.6 | 81 | 0.04536 | 1817 | 30.28 |
| 4 | 07-05-17 | 12:15 - 13:15 | 25.6 | 82 | 0.04688 | 1873 | 31.22 |

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: *0.9975*

Validity of Calibration Record: *07 May 2018*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 08 May 2017

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Tel: (852) 2873 6860
Fax: (852) 2555 7533

HOKLAS 028 CAL

# CERTIFICATE OF CALIBRATION

**Certificate No.:** 17CA0901 01 **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.: | 2800927 | , | 2791211 |
| Adaptors used: | - | , | - |

## Item submitted by

| | |
|---|---|
| Customer Name: | AECOM ASIA CO., LTD. |
| Address of Customer: | - |
| Request No.: | - |
| Date of receipt: | 01-Sep-2017 |

**Date of test:** 09-Sep-2017

## Reference equipment used in the calibration

| Description: | Model: | Serial No. | Expiry Date: | Traceable to: |
|---|---|---|---|---|
| Multi function sound calibrator | B&K 4226 | 2288444 | 08-Sep-2018 | CIGISMEC |
| Signal generator | DS 360 | 33873 | 25-Apr-2018 | CEPREI |
| Signal generator | DS 360 | 61227 | 01-Apr-2018 | CEPREI |

## Ambient conditions

| | |
|---|---|
| Temperature: | 21 ± 1 °C |
| Relative humidity: | 50 ± 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:** 09-Sep-2017 **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.

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HOKLAS 028 CAL

# CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 17CA0901 01 Page 2 of 2

## 1, Electrical Tests

The electrical tests were perfomed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

| Test: | Subtest: | Status: | Expanded Uncertainty (dB) | Coverage Factor |
|---|---|---|---|---|
| Self-generated noise | A | Pass | 0.3 | |
| | C | Pass | 1.0 | 2.1 |
| | Lin | Pass | 2.0 | 2.2 |
| Linearity range for Leq | At reference range , Step 5 dB at 4 kHz | Pass | 0.3 | |
| | Reference SPL on all other ranges | Pass | 0.3 | |
| | 2 dB below upper limit of each range | Pass | 0.3 | |
| | 2 dB above lower limit of each range | Pass | 0.3 | |
| Linearity range for SPL | At reference range , Step 5 dB at 4 kHz | Pass | 0.3 | |
| Frequency weightings | A | Pass | 0.3 | |
| | C | Pass | 0.3 | |
| | Lin | Pass | 0.3 | |
| Time weightings | Single Burst Fast | Pass | 0.3 | |
| | Single Burst Slow | Pass | 0.3 | |
| Peak response | Single 100μs rectangular pulse | Pass | 0.3 | |
| R.M.S. accuracy | Crest factor of 3 | Pass | 0.3 | |
| Time weighting I | Single burst 5 ms at 2000 Hz | Pass | 0.3 | |
| | Repeated at frequency of 100 Hz | Pass | 0.3 | |
| Time averaging | 1 ms burst duty factor $1/10^3$ at 4kHz | Pass | 0.3 | |
| | 1 ms burst duty factor $1/10^4$ at 4kHz | Pass | 0.3 | |
| Pulse range | Single burst 10 ms at 4 kHz | Pass | 0.4 | |
| Sound exposure level | Single burst 10 ms at 4 kHz | Pass | 0.4 | |
| Overload indication | SPL | Pass | 0.3 | |
| | Leq | Pass | 0.4 | |

## 2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

| Test: | Subtest | Status | Expanded Uncertainty (dB) | Coverage Factor |
|---|---|---|---|---|
| Acoustic response | Weighting A at 125 Hz | Pass | 0.3 | |
| | Weighting A at 8000 Hz | Pass | 0.5 | |

## 3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by: Lai Sheng Jie Date: 09-Sep-2017

Checked by: Fung Chi Yip Date: 09-Sep-2017

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

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HOKLAS 028 CAL

# CERTIFICATE OF CALIBRATION

**Certificate No.:** 17CA0922 03-02 **Page:** 1 of 2

## Item tested

| | |
|---|---|
| Description: | Acoustical Calibrator (Class 1) |
| Manufacturer: | Rion Co., Ltd. |
| Type/Model No.: | NC-74 |
| Serial/Equipment No.: | 34246490 / N.004.10 |
| Adaptors used: | - |

## Item submitted by

| | |
|---|---|
| Curstomer: | AECOM ASIA CO LIMITED |
| Address of Customer: | - |
| Request No.: | - |
| Date of receipt: | 22-Sep-2017 |

## Date of test: 28-Sep-2017

## Reference equipment used in the calibration

| Description: | Model: | Serial No. | Expiry Date: | Traceable to: |
|---|---|---|---|---|
| Lab standard microphone | B&K 4180 | 2341427 | 11-Apr-2018 | SCL |
| Preamplifier | B&K 2673 | 2743150 | 05-May-2018 | CEPREI |
| Measuring amplifier | B&K 2610 | 2346941 | 03-May-2018 | CEPREI |
| Signal generator | DS 360 | 61227 | 01-Apr-2018 | CEPREI |
| Digital multi-meter | 34401A | US36087050 | 25-Apr-2018 | CEPREI |
| Audio analyzer | 8903B | GB41300350 | 21-Apr-2018 | CEPREI |
| Universal counter | 53132A | MY40003662 | 22-Apr-2018 | CEPREI |

## Ambient conditions

| | |
|---|---|
| Temperature: | 21 ± 1 °C |
| Relative humidity: | 55 ± 10 % |
| Air pressure: | 1000 ± 5 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.

**Approved Signatory:** Huang Jian Min/Feng Jun Qi **Date:** 28-Sep-2017 **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 conditon of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

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HOKLAS 028 CAL

# CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 17CA0922 03-02 Page: 2 of 2

## 1, Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

(Output level in dB re 20 μPa)

| Frequency Shown Hz | Output Sound Pressure Level Setting dB | Measured Output Sound Pressure Level dB | Estimated Expanded Uncertainty dB |
|---|---|---|---|
| 1000 | 94.00 | 94.07 | 0.10 |

## 2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

**At 1000 Hz** **STF = 0.011 dB**

Estimated expanded uncertainty 0.005 dB

## 3, Actual Output Frequency

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

**At 1000 Hz** **Actual Frequency = 1002.1 Hz**

Estimated expanded uncertainty 0.1 Hz Coverage factor k = 2.2

## 4, Total Noise and Distortion

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

**At 1000 Hz** **TND = 2.8 %**

Estimated expanded uncertainty 0.7 %

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

**Calibrated by:** Lai Sheng Jie **Date:** 28-Sep-2017

**Checked by:** Fung Chi Yip **Date:** 28-Sep-2017

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

# 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 March 2018**

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

**Contract No. HY/2012/06**
**Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange**
**Tentative Impact Monitoring and Audit Schedule for April 2018**

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

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

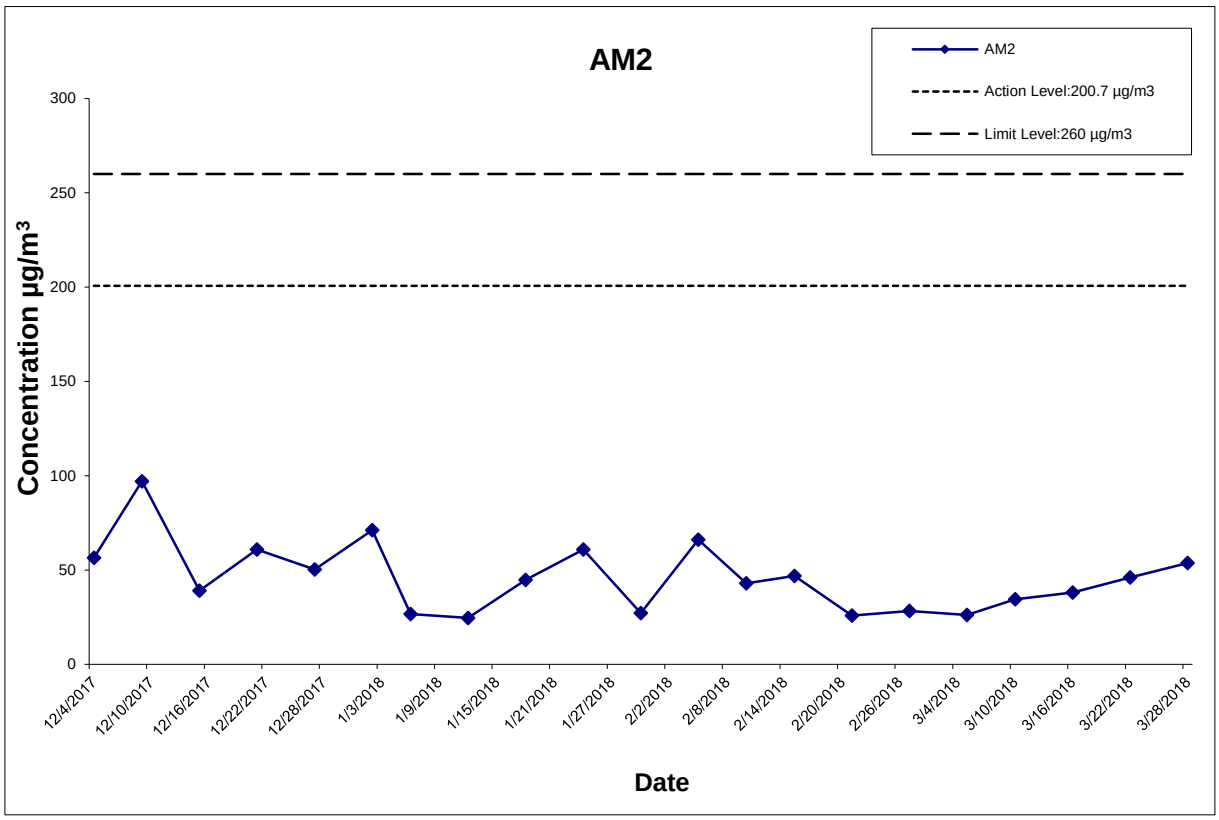
**APPENDIX G**
**IMPACT AIR QUALITY MONITORING RESULTS AND THEIR GRAPHICAL PRESENTATION**

**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 | | | | |
| 5-Mar-18 | Rainy | 14.5 | 1019.4 | 1.304 | 1.304 | 1.304 | 1877.8 | 2.7194 | 2.7684 | 0.0490 | 9954.02 | 9978.02 | 24.00 | 26.1 | 200.7 | 260 |
| 10-Mar-18 | Sunny | 16.7 | 1022.1 | 1.324 | 1.324 | 1.324 | 1906.6 | 2.7396 | 2.8052 | 0.0656 | 9978.02 | 10002.02 | 24.00 | 34.4 | 200.7 | 260 |
| 16-Mar-18 | Sunny | 22.7 | 1014.8 | 1.324 | 1.324 | 1.324 | 1906.6 | 2.7142 | 2.7867 | 0.0725 | 10002.02 | 10026.02 | 24.00 | 38.0 | 200.7 | 260 |
| 22-Mar-18 | Sunny | 19.5 | 1016.9 | 1.324 | 1.324 | 1.324 | 1906.6 | 2.7397 | 2.8275 | 0.0878 | 10026.02 | 10050.02 | 24.00 | 46.1 | 200.7 | 260 |
| 28-Mar-18 | Sunny | 22.7 | 1014.7 | 1.324 | 1.324 | 1.324 | 1906.6 | 2.7216 | 2.8239 | 0.1023 | 10050.02 | 10074.02 | 24.00 | 53.7 | 200.7 | 260 |

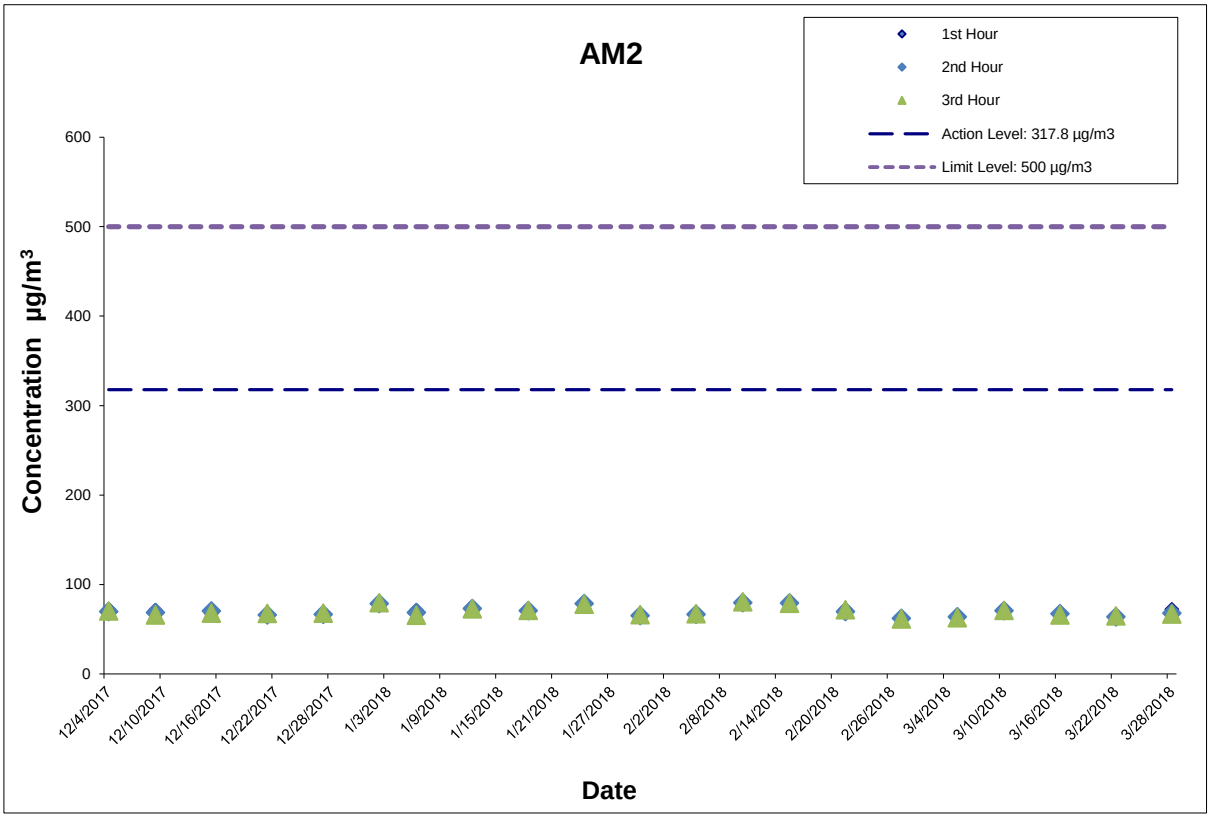
| | |
|---|---|
| Average | 39.7 |
| Min | 26.1 |
| Max | 53.7 |



**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. ($\mu g/m^3$) |
|---|---|---|---|---|
| 5-Mar-18 | 13:00 | 65.0 | 64.0 | 62.8 |
| 10-Mar-18 | 13:45 | 72.3 | 70.8 | 71.1 |
| 16-Mar-18 | 10:25 | 65.5 | 67.2 | 66.0 |
| 22-Mar-18 | 13:00 | 61.6 | 63.7 | 64.9 |
| 28-Mar-18 | 14:35 | 72.1 | 68.1 | 66.9 |
| | | | Average | 66.8 |
| | | | Min | 61.6 |
| | | | Max | 72.3 |



**APPENDIX H**
**METEOROLOGICAL DATA FOR THE REPORTING MONTH**

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# Daily Extract of Meteorological Observations , March 2018 - Tai Po

Year 2018 Month 3 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 | 1011.6 | 23.7# | 20.1 | 17.4# | 18.4 | 90 | *** | *** | *** |
| 02 | 1011.1 | 23.8 | 21.0 | 19.3 | 17.9 | 83 | *** | *** | *** |
| 03 | 1010.4 | 22.1# | 21.0 | 20.1# | 20.1 | 94 | *** | *** | *** |
| 04 | 1010.0 | 23.8# | 22.5 | 21.0# | 21.5 | 94 | *** | *** | *** |
| 05 | 1011.3 | 25.9# | 23.5 | 21.6# | 21.8 | 90 | *** | *** | *** |
| 06 | 1016.4 | 21.6 | 19.2 | 18.2 | 16.2 | 83 | *** | *** | *** |
| 07 | 1016.0 | 20.1 | 18.8 | 17.6 | 15.3 | 81 | *** | *** | *** |
| 08 | 1019.4 | 19.1 | 13.2 | 11.4 | 10.2 | 83 | *** | *** | *** |
| 09 | 1022.3 | 18.4 | 13.6 | 8.4 | 6.5 | 64 | *** | *** | *** |
| 10 | 1021.4 | 20.4 | 15.6 | 11.2 | 9.2 | 68 | *** | *** | *** |
| 11 | 1020.8 | 21.2 | 17.5 | 14.7 | 11.2 | 68 | *** | *** | *** |
| 12 | 1018.3 | 23.4 | 18.5 | 14.4 | 13.9 | 76 | *** | *** | *** |
| 13 | 1015.8 | 24.2 | 19.7 | 15.2 | 16.0 | 80 | *** | *** | *** |
| 14 | 1014.0 | 20.2# | 19.5 | 18.2# | 17.2 | 87 | *** | *** | *** |
| 15 | 1012.3 | 24.5 | 21.0 | 18.9 | 18.8 | 87 | *** | *** | *** |
| 16 | 1013.8 | 25.7# | 21.7 | 18.4# | 19.2 | 86 | *** | *** | *** |
| 17 | 1016.5 | 21.0# | 19.3 | 18.5# | 16.9 | 86 | *** | *** | *** |
| 18 | 1015.1 | 22.3# | 20.3 | 19.1# | 17.8 | 86 | *** | *** | *** |
| 19 | 1010.8 | 24.4# | 21.8 | 19.7# | 20.1 | 90 | *** | *** | *** |
| 20 | 1012.7 | 22.9 | 20.0 | 15.8 | 15.1 | 74 | *** | *** | *** |
| 21 | 1016.2 | 22.6 | 17.6 | 12.6 | 7.4 | 52 | *** | *** | *** |
| 22 | 1016.1 | 22.2# | 17.8 | 12.7# | 10.2 | 62 | *** | *** | *** |
| 23 | 1017.6 | 23.2# | 18.9 | 14.5# | 12.6 | 69 | *** | *** | *** |
| 24 | 1018.1 | 21.9# | 20.1 | 18.4# | 16.2 | 79 | *** | *** | *** |
| 25 | 1018.5 | 22.6# | 20.9 | 19.0# | 14.4 | 67 | *** | *** | *** |
| 26 | 1017.4 | 24.5# | 21.4 | 18.1# | 16.8 | 76 | *** | *** | *** |
| 27 | 1015.2 | 26.0# | 21.9 | 19.4# | 17.6 | 77 | *** | *** | *** |
| 28 | 1013.8 | 24.3# | 21.5 | 19.3# | 18.2 | 82 | *** | *** | *** |
| 29 | 1013.4 | 24.7# | 21.6 | 19.0# | 18.6 | 83 | *** | *** | *** |
| 30 | 1014.4 | 26.1# | 22.6 | 19.2# | 18.5 | 79 | *** | *** | *** |
| 31 | 1014.5 | 26.7# | 23.0 | 21.0# | 15.6 | 64 | *** | *** | *** |

*** unavailable

# data incomplete

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



Last revision date: <17 May 2017>

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# Daily Extract of Meteorological Observations , March 2018 - Tai Mei Tuk

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| 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 | *** | 25.4 | 20.7 | 17.2 | *** | *** | 0.0 | 070 | 8.1 |
| 02 | *** | 26.0 | 21.4 | 18.8 | *** | *** | 0.0 | 070 | 9.0 |
| 03 | *** | 22.4# | 21.2 | 20.4# | *** | *** | 0.0 | 070 | 6.0 |
| 04 | *** | 24.0# | 22.4 | 20.9# | *** | *** | 1.5 | 050 | 4.9 |
| 05 | *** | 30.0# | 24.3 | 21.9# | *** | *** | 0.0 | 060 | 3.8 |
| 06 | *** | 21.9# | 18.8 | 17.4# | *** | *** | 0.0 | 090 | 19.9 |
| 07 | *** | 21.4 | 18.8 | 16.9 | *** | *** | 0.0 | 090 | 13.3 |
| 08 | *** | 19.1# | 12.9 | 11.1# | *** | *** | 13.0 | 030 | 19.7 |
| 09 | *** | 19.4# | 14.1 | 8.5# | *** | *** | 0.0 | 040 | 12.5 |
| 10 | *** | 21.6 | 16.0 | 11.9 | *** | *** | 0.0 | 050 | 12.1 |
| 11 | *** | 23.1# | 17.5 | 13.7# | *** | *** | 0.0 | 090 | 14.6 |
| 12 | *** | 24.9# | 19.0 | 14.8# | *** | *** | 0.0 | 060 | 8.0 |
| 13 | *** | 25.8# | 20.1 | 16.0# | *** | *** | 0.0 | 070 | 6.1 |
| 14 | *** | 20.6# | 19.3 | 18.0# | *** | *** | 3.0 | 060 | 8.4 |
| 15 | *** | 25.4# | 21.2 | 18.8# | *** | *** | 0.0 | 050 | 3.7 |
| 16 | *** | 27.3# | 22.1 | 19.0# | *** | *** | 0.0 | 130 | 4.5 |
| 17 | *** | 20.8# | 18.9 | 18.1# | *** | *** | 0.0 | 080 | 22.6 |
| 18 | *** | 24.9# | 20.4 | 18.4# | *** | *** | 0.0 | 060 | 10.7 |
| 19 | *** | 25.7# | 22.0 | 19.7# | *** | *** | 0.0 | 060 | 4.0 |
| 20 | *** | 23.9 | 19.8 | 14.7 | *** | *** | 1.0 | 040 | 15.5 |
| 21 | *** | 22.7 | 17.7 | 12.6 | *** | *** | 0.0 | 030 | 16.0 |
| 22 | *** | 24.1# | 18.5 | 14.2# | *** | *** | 0.0 | 130 | 8.6 |
| 23 | *** | 24.5# | 19.4 | 15.4# | *** | *** | 0.0 | 070 | 9.8 |
| 24 | *** | 23.5# | 19.9 | 17.8# | *** | *** | 0.0 | 040 | 11.5 |
| 25 | *** | 24.3# | 20.9 | 18.6# | *** | *** | 0.5 | 050 | 14.6 |
| 26 | *** | 28.7# | 22.0 | 18.6# | *** | *** | 0.0 | 140 | 4.8 |
| 27 | *** | 27.6 | 22.2 | 19.3 | *** | *** | 0.0 | 090 | 6.9 |
| 28 | *** | 26.3# | 21.8 | 19.5# | *** | *** | 0.0 | 050 | 8.8 |
| 29 | *** | 27.1# | 21.9 | 18.9# | *** | *** | 0.0 | 080 | 9.9 |
| 30 | *** | 28.2# | 22.8 | 19.6# | *** | *** | 0.0 | 040 | 9.2 |
| 31 | *** | 28.5# | 22.9 | 19.6# | *** | *** | 0.0 | 050 | 12.1 |

*** unavailable

# data incomplete

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



Last revision date: <17 May 2017>

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

**Appendix I Impact Daytime Construction Noise Monitoring Results**

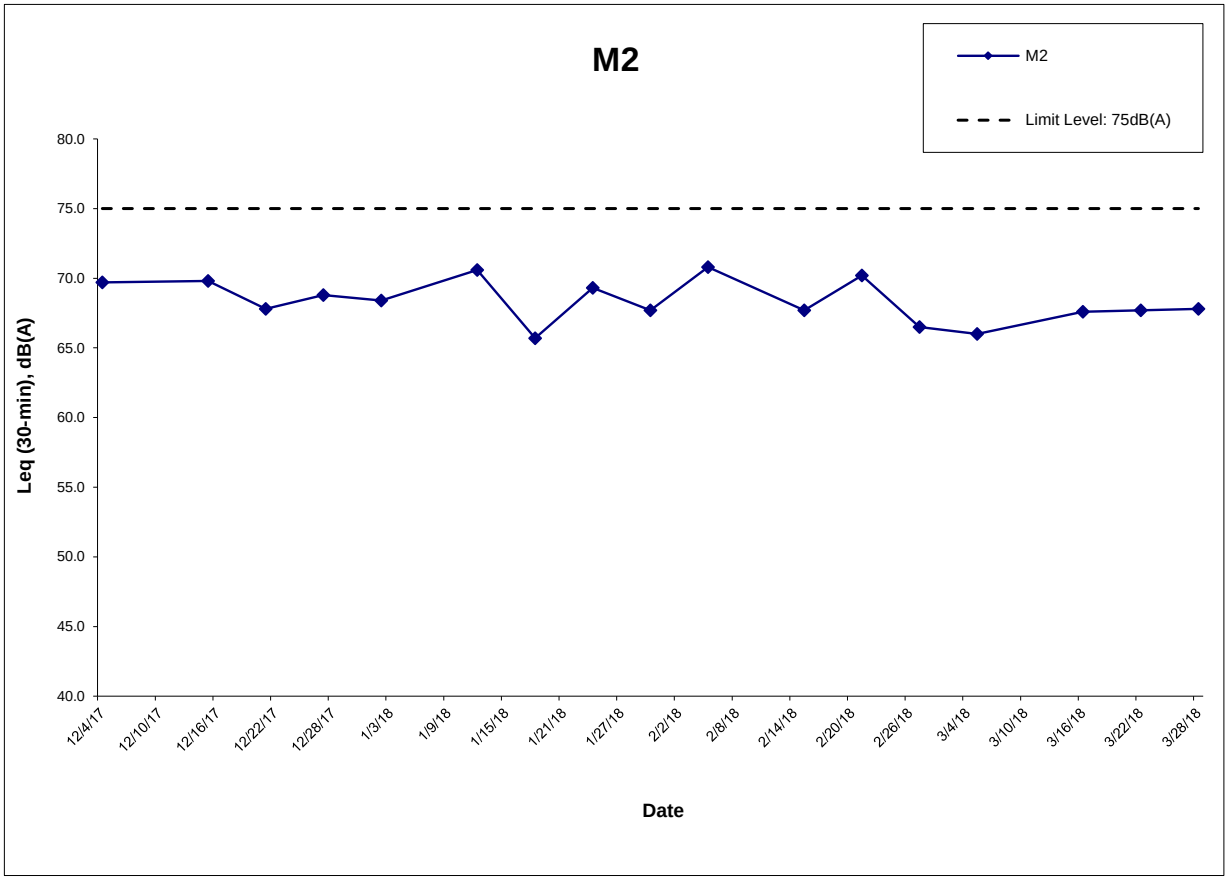
**Location : M2 (West Tai Wo - Free Field)**
Day time 07:00-19:00 hrs Normal Weekdays Impact Noise Monitoring Results

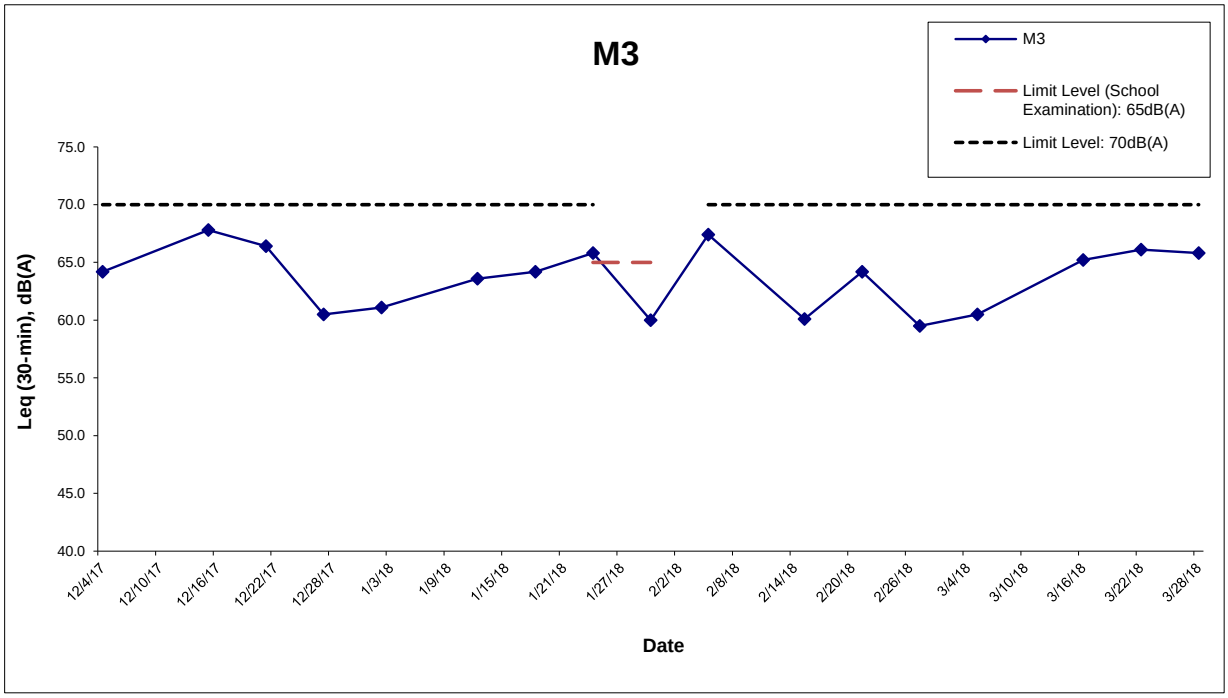
| Date | Measured Noise Level for 30-min, dB(A) | | | | Limit Level, dB(A) | Exceedance (Y/N) |
|---|---|---|---|---|---|---|
| | Start Time | Leq* | L10* | L90* | | |
| 5-Mar-18 | 14:00 | 66.0 | 68.0 | 64.0 | 75 | N |
| 16-Mar-18 | 11:30 | 67.6 | 69.2 | 65.3 | 75 | N |
| 22-Mar-18 | 14:00 | 67.7 | 69.0 | 65.0 | 75 | N |
| 28-Mar-18 | 15:35 | 67.8 | 69.5 | 65.2 | 75 | N |
| | Min | 66.0 | 68.0 | 64.0 | | |
| | Max | 67.8 | 69.5 | 65.3 | | |
| | Average | 67.3 | 69.0 | 64.9 | | |

**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 | | |
| 5-Mar-18 | 13:00 | 60.5 | 61.5 | 58.0 | 70 | N |
| 16-Mar-18 | 10:27 | 65.2 | 67.0 | 63.1 | 70 | N |
| 22-Mar-18 | 13:00 | 66.1 | 61.5 | 57.5 | 70 | N |
| 28-Mar-18 | 14:40 | 65.8 | 67.7 | 63.2 | 70 | N |
| | Min | 60.5 | 61.5 | 57.5 | | |
| | Max | 66.1 | 67.7 | 63.2 | | |
| | Average | 64.9 | 65.4 | 61.2 | | |

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




Remark:

^ Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination period. Examination period of Fanling Government Secondary School (M3) in this reporting period is 3 - 17, 26 - 31 January 2018.

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

Event / Action Plan for Air Quality

| Event<br>Action Level | Action | | | |
|---|---|---|---|---|
| | **ET Leader** | **IEC** | **ER** | **Contractor** |
| **Limit Level** | | | | |
| Exceedance for one sample | 1. Identify source;<br>2. Inform IEC, ER, Contractor and EPD;<br>3. Repeat measurement to confirm finding;<br>4. Increase monitoring frequency to daily;<br>5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. | 1. Check monitoring data submitted by ET;<br>2. Check Contractor's working method;<br>3. Discuss with ET and Contractor on possible remedial measures;<br>4. Advise ER on the effectiveness of the proposed remedial measures;<br>5. Supervise implementation of remedial measures. | 1. Confirm receipt of notification of exceedance in writing;<br>2. Notify Contractor;<br>3. Ensure remedial measures properly implemented. | 1. Take immediate action to avoid further exceedance;<br>2. Submit proposals for remedial actions to IEC within 3 working days of notification;<br>3. Implement the agreed proposals;<br>4. Amend proposal if appropriate. |
| Exceedance for two or more consecutive samples | 1. Notify IEC, ER, Contractor and EPD;<br>2. Identify source;<br>3. Repeat measurement to confirm findings;<br>4. Increase frequency to daily;<br>5. Analyse Contractor's working procedures to determine possible mitigation to be;<br>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;<br>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;<br>8. If exceedance stops, cease additional monitoring. | 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;<br>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly;<br>3. Supervise the implementation of remedial measures. | 1. Confirm receipt of notification of exceedance in writing;<br>2. Notify Contractor;<br>3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented;<br>4. Ensure remedial measures properly implemented;<br>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. | 1. Take immediate action to avoid further exceedance;<br>2. Submit proposals for remedial actions to IEC within 3 working days of notification;<br>3. Implement the agreed proposals;<br>4. Resubmit proposals if problem still not under control;<br>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.<br>2. Carry out investigation.<br>3. Report the results of investigation to IEC and the Contractor.<br>4. Discuss with the Contractor and formulate remedial measures.<br>5. Increase monitoring frequency to check mitigation effectiveness. | 1. Review with analysed results submitted by ET.<br>2. Review the proposed remedial measures by the Contractor and advise ER accordingly.<br>3. Supervise the implement of remedial measures. | 1. Confirm receipt of notification of failure in writing.<br>2. Notify the Contractor.<br>3. Require the Contractor to propose remedial measures for the analysed noise problem.<br>4. Ensure remedial measures are properly implemented. | 1. Submit noise mitigation proposals to IEC.<br>2. Implement noise mitigation proposals. |
| Limit Level | 1. Notify, IEC, ER, EPD and the Contractor.<br>2. Identify the source.<br>3. Repeat measurement to confirm findings.<br>4. Increase monitoring frequency.<br>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented.<br>6. Inform IEC, ER, and EPD the causes & actions taken for the exceedances.<br>7. Assess effectiveness of the Contractor's remedial actions and keep IEC, EPD and ER informed of the results.<br>8. If exceedance stops, cease additional monitoring. | 1. Discuss amongst ER, ET Leader and the Contractor on the potential remedial actions.<br>2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly.<br>3. Supervise the implementation of remedial measures. | 1. Confirm receipt of notification of failure in writing.<br>2. Notify the Contractor.<br>3. Require the Contractor to propose remedial measures for the analysed noise problem.<br>4. Ensure remedial measures are properly implemented.<br>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.<br>2. Submit proposals for remedial actions to IEC within 3 working days of notification.<br>3. Implement the agreed proposals.<br>4. Resubmit proposals if problem still not under control.<br>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: | 6 March 2018 |
| Time: | 13:30 |
| Inspection No.: | 225 |

*Non-compliance*

Nil

*Observations*

Follow-up Observation(s)

1. Mud trail found at the vehicle exit point at NB60 has been removed and the wheel washing area has been paved with concrete. (Closed)

New Observation(s)

2. Public access road near site boundary was observed dusty at SA310. The Contractor was advised to clean up the road and implement effective measures to prevent muddy surface runoff being spilled from the site to public area.

Reminder (s)

Nil.

Follow-up Observation(s) – 02/HY/2015

Nil.

New Observation(s) – 02/HY/2015

Nil.

Reminder (s) – 02/HY/2015

Nil.

*Remarks*

Nil

| | Name | Signature | Date |
|---|---|---|---|
| Prepared by | Sammi Lam | | 6 March 2018 |
| Checked by | Y W Fung | | 6 March 2018 |

## Site Inspection Summary

*Inspection Information*

| | |
|---|---|
| Contract No. | HY/2012/06 |
| Date: | 15 March 2018 |
| Time: | 14:00 |
| Inspection No.: | 226 |

*Non-compliance*

Nil

*Observations*

| | |
|---|---|
| | Follow-up Observation(s) |
| 1. | Dusty public access road near site boundary at SA310 has been cleaned up. (Closed) |
| | New Observation(s) |
| | Nil. |
| | Reminder (s) |
| 2. | The Contractor was reminded to cover the exposed stockpile of dusty materials at SA346 entirely with impervious sheeting for dust suppression. |
| 3. | The Contractor was reminded to clean up the dust on public access road at Tai Wo Service Road West regularly. |
| | Follow-up Observation(s) – 02/HY/2015 |
| | Nil. |
| | New Observation(s) – 02/HY/2015 |
| 4. | Exposed stockpile of dusty materials without proper cover was observed. The Contractor was advised to cover the stockpile entirely with impervious sheeting. |
| | Reminder (s) – 02/HY/2015 |
| | Nil. |

*Remarks*

Nil

| | Name | Signature | Date |
|---|---|---|---|
| Prepared by | Sammi Lam | | 15 March 2018 |
| Checked by | Y W Fung | | 15 March 2018 |

## Site Inspection Summary

*Inspection Information*

| | |
|---|---|
| Contract No. | HY/2012/06 |
| Date: | 20 March 2018 |
| Time: | 14:00 |
| Inspection No.: | 227 |

*Non-compliance*

Nil

*Observations*

Follow-up Observation(s)

1. The exposed stockpile of dusty materials at SA346 has been covered entirely with impervious sheeting for dust suppression. (Closed)
2. Dust on public access road at Tai Wo Service Road West has been cleaned and a water bower has been deployed to wash the road in daily basis. (Closed)

New Observation(s)

3. Exposed stockpiles of dusty materials were observed at SA340. The Contractor was advised to cover the stockpiles entirely with impervious sheeting for dust suppression.
4. Chemical containers without secondary containment were observed at SA340. The Contractor was advised to provide drip tray for the chemical containers to avoid potential leakage.

Reminder (s)

Nil.

Follow-up Observation(s) – 02/HY/2015

5. Exposed stockpile of dusty materials without proper cover has been covered with impervious sheeting entirely. (Closed)

New Observation(s) – 02/HY/2015

Nil.

Reminder (s) – 02/HY/2015

Nil.

*Remarks*

Nil

| | Name | Signature | Date |
|---|---|---|---|
| Prepared by | Sammi Lam | | 20 March 2018 |
| Checked by | Y W Fung | / | 20 March 2018 |

## Site Inspection Summary

*Inspection Information*

| | |
|---|---|
| Contract No. | HY/2012/06 |
| Date: | 27 March 2018 |
| Time: | 14:00 |
| Inspection No.: | 228 |

*Non-compliance*

Nil

*Observations*

Follow-up Observation(s)

1. Exposed stockpiles of dusty materials observed at SA340 have been covered entirely with impervious sheeting for dust suppression. (Closed)
2. Chemical containers without secondary containment observed at SA340 have been removed. (Closed)

New Observation(s)

3. Exposed stockpiles of dusty materials were observed at SA329. The Contractor was advised to cover the stockpiles entirely with impervious sheeting for dust suppression.
4. Mud trail and dusty materials were observed near vehicle exit points at NB60. The Contractor was advised to clear the dusty materials and pave the wheel washing area with hardcore.

Reminder (s)

5. The Contractor was reminded to plug the opening of the drip tray observed at NB60 to prevent potential leakage.

Follow-up Observation(s) – 02/HY/2015

Nil.

New Observation(s) – 02/HY/2015

Nil.

Reminder (s) – 02/HY/2015

Nil.

*Remarks*

Nil

| | Name | Signature | Date |
|---|---|---|---|
| Prepared by | Sammi Lam | | 27 March 2018 |
| Checked by | Y W Fung | / | 27 March 2018 |

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

## Appendix L
## Statistics on Complaints, Notifications of Summons and Successful Prosecutions

**Contract No. HY/2012/06 – Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange**

| | 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 | 1 | 8 |
| | 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.<br>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.<br>The resident also complained that the stockpiles have not been covered and watered properly. He now requires the EPD to follow up.<br>The location of complaint is near Lamppost Location EB5717. | Closed | | |
| | 31 December 2014 | EPD referred a water complaint on 31 December 2014.<br>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.<br>He required the EPD to follow up. | Closed | | |
| | 25 March 2015 | EPD referred a water complaint on 25 March 2015.<br>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.<br>The situation has continued for a few weeks and she asked the EPD to follow up as soon as possible. | Closed | | |

| | Date Received | Subject | Status | Total no. followed up by the ET this month | Total no. followed up by the ET since project commencement |
|---|---|---|---|---|---|
| | 5 January 2017 (Referred by the Contractor on 13 January 2017) | A complaint was received by the 1823 enquiry and complaint hotline on 5 January 2017. The complaint was referred to the Environmental Team by the Contractor on 13 January 2017.<br>The complainant complained against the dust emission generated by the Widening of Fanling Highway construction site on Tai Wo Service Road West near Tai Hang Village.<br>The complainant also complained that Highway Department did not conduct road surface cleansing, which affects residents' health.<br>He/she now requires the Highway Department to follow up. | Closed | | |
| | 22 May 2017 (Referred by the Contractor on 23 May 2017) | A complaint was received by the 1823 enquiry and complaint hotline on 22 May 2017. The complaint was referred to the Environmental Team by the Contractor on 23 May 2017.<br><br>A complainant complained that construction noise was caused by the erection of noise barrier on Tai Wo Service Road West near Tai Hang Village on Sunday(s).<br><br>The complainant concerned about if any Construction Noise Permit is issued by the Environmental Protection Department. | 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 February 2018 (Referred by the Contractor on 1 March 2018) | The 1823 enquiry and complaint hotline received a complaint on 25 February 2018. The complaint was referred to the Environmental Team by the Contractor on 1 March 2018.<br><br>A complainant complained that noise nuisance was caused continuously by road construction works at Fanling Highway near Tai Hang Village during 01:30 to 04:00 on 25 February 2018.<br><br>The complainant concerned that the nuisance affects residence and asked for follow-up action from the related department. | | | |
| **Notification of summons** | - | - | - | 0 | 0 |
| **Successful Prosecutions** | - | - | - | 0 | 0 |

**Contract No. 02/HY/2015 – Provision of Bus-Bus Interchange on Fanling Highway Kowloon Bound**

| | 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** | - | - | - | 0 | 0 |
| **Notification of summons** | - | - | - | 0 | 0 |
| **Successful Prosecutions** | - | - | - | 0 | 0 |

**APPENDIX M**
**COMPLAINT INVESTIGATION REPORT**

**CONTRACT NO. HY/2012/06**

**Widening of Fanling Highway**

**Between Tai Hang and Wo Hop Shek Interchange (Stage 2)**

## ENVIRONMENTAL COMPLAINT ACTION FORM

**Environmental Enquiry No.: EC-08**

**(Related Previous Enquiry NO.: -- )**

**COMPLAINT DETAILS**

| | |
|---|---|
| Date Received | 1 March 2018 |
| Parameter | * ~~Air~~ / Noise/ ~~Water / Waste / Landscape~~ |
| **Enquirer's Details** | |
| Name | Not disclosed |
| Contact Tel No. | Not disclosed |
| Address | Not disclosed |

**FOLLOW-UP ACTION**

| | |
|---|---|
| First Contact with the Complaint by | * ~~Telephone /~~ ~~Site Visit /~~ ~~Referral from EPD/~~ Referral from the 1823 enquiry and complaint hotline |
| Date of the First Contact | 25 February 2018 |

Details of Complaint:

The 1823 enquiry and complaint hotline received a complaint on 25 February 2018. The complaint was referred to the Environmental Team by the Contractor on 1 March 2018.

A complainant complained that noise nuisance was caused continuously by road construction works at Fanling Highway near Tai Hang Village during 01:30 to 04:00 on 25 February 2018.

The complainant concerned that the nuisance affects residence and asked for follow-up action from the related department.

Investigation and Findings :

As advised by the Contractor (China State Construction Engineering (HK) Ltd.), road resurfacing at northbound of Fanling Highway near Tai Hang was undertaken during the concerned period under the Construction Noise Permit (CNP), GW-RN0021-18. Resurfacing works was scheduled to restricted hours to avoid causing serious interruption to road transport. EPD and the publics were notified in accordance with the requirement stipulated in the permit. The works area is

shown in **Figure 1**. The CNP was provided in **Attachment 1**.

Construction works were carried out during restricted hours under CNP: GW-RN0021-18.

| Works Area | CNP No. | Effective Date |
|---|---|---|
| CH21.3 – CH21.8 | GW-RN0021-18 | 28 January 2018 – 3 June 2018 |

According to the Contractor, the PME used are summarized in the following table.

| Time | PME used (with No. of Units) |
|---|---|
| 01:30 – 03:00 a.m. | 1 no. of asphalt paver; and<br>1 no. of dump truck |
| 03:00 – 04:00 a.m. | 1 no. of road roller; and<br>1 no. of roller vibratory |

The construction works carried out within the concerned period, which was reported by the Contractor, was considered to be in compliance with the CNP. One of the Group C and D of the PME items listed in the condition 3.a of the CNP were operated alternatively without overlapping within the concerned period. As advised by the Contractor, all conditions stipulated in the CNP were strictly complied and compliance check has been conducted by Contractor's supervisory staff on site.

The Contractor is advised to implement the mitigation measures as stated in "Recommended Mitigation Measures".

| | |
|---|---|
| Exceedance Associated with Site Activity to | * No Exceedance / ~~Action / Limit~~ |

Recommended Mitigation Measures:

1) Strictly follow all terms and conditions of a valid CNP;
2) Communicate with operation team to draw their attention on relevant Noise Control Ordinance;
3) Inspect the PMEs regularly and well maintain them to ensure that they are operating efficiently and in good condition;
4) Display the copy of CNP at the construction site entry/exit area for public information;
5) Review and relocate the position of fixed plant to minimize nuisance to the neighboring properties and public; and
6) Foster better public relations with the sensitive receivers and complainants nearby.

* Delete where inappropriate

**MONITORING**

| Ad hoc Monitoring undertaken | * ~~Yes~~ / No |
|---|---|
| | |

* Delete where inappropriate

**Prepared by:** *Y W Fung*

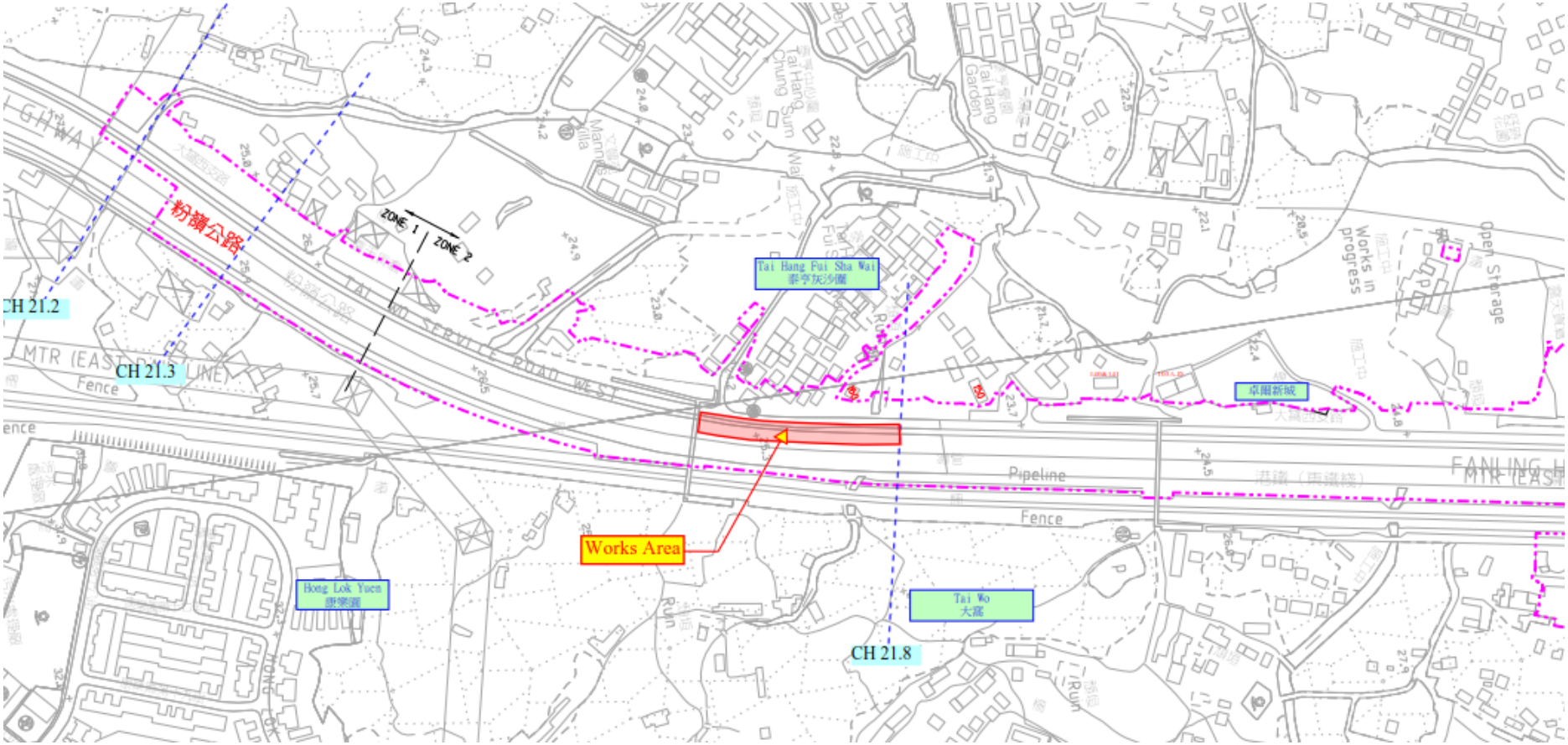
**Designation:** *Environmental Team Leader*

**Signature:**

**Date:** *6 April 2018*

**FIGURE**

**Figure 1 – Site Layout Plan**



**ATTACHMENT**

FORM 3 [reg.5(a)]
NOISE CONTROL ORDINANCE
(Chapter 400)
SECTION 8(9)

# CONSTRUCTION NOISE PERMIT FOR THE USE OF POWERED MECHANICAL EQUIPMENT FOR THE PURPOSE OF CARRYING OUT CONSTRUCTION WORK OTHER THAN PERCUSSIVE PILING AND/OR THE CARRYING OUT OF PRESCRIBED CONSTRUCTION WORK

CONSTRUCTION NOISE PERMIT NO. GW-RN0021-18

To: China State Construction Engineering ( Hong Kong ) Limited

This construction noise permit is issued in accordance with section 8 of the Noise Control Ordinance. Permission is granted for the use of powered mechanical equipment for the purpose of carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work, subject to the conditions set out below. The carrying out of construction work otherwise than in accordance with the conditions may result in the permit being cancelled and in a prosecution for an offence.

## *CONDITIONS*

1. Construction site where the powered mechanical equipment and/or prescribed construction work may be employed :

   Full address : The section of Fanling Highway Northbound between CH21.3 and CH21.8, Tai Po, New Territories (Highways Department Contract No. HY/2012/06 - Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange) Lot No. ---

   The site boundary, that is, the boundary of the area within which the powered mechanical equipment may be used and the prescribed construction work may be carried out is delineated on the attached plan which forms part of this construction noise permit.

2. *PART/~~WHOLE~~ of the site falls *WITHIN/~~OUTSIDE~~ a designated area.

3. Powered Mechanical Equipment

   a. Items of powered mechanical equipment which may be used inside the site boundary :

| *Identification code of item of powered mechanical equipment (if applicable)* | *Description of item of Powered mechanical equipment* | *No. of units* |
|---|---|---|
| | Refer to attached sheet | |

   b. Validity of the construction noise permit for the use of the powered mechanical equipment:

      Date and time of commencement : 28th January 2018 at 0030 hours

      Days and hours: 0000-2400 hours on general holiday (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday [but note Condition 3.d.1 below for the operating hours within which the use of the above listed powered mechanical equipment is allowed].

      This part of the permit expires on : 3rd June 2018 at 0600 hours

   c. One photograph, endorsed by the Authority, of each item of powered mechanical equipment described in this construction noise permit is required to be kept on the construction site and made available for inspection by the Authority.

   d. Other conditions imposed on the use of the powered mechanical equipment:

      Please refer to attached sheet 1 and sheet 2 for conditions imposed for this construction noise permit [which is issued as a **special case** due to constraints on working hours to **avoid causing serious interruption to road transport**].

4. Prescribed Construction Work

a. Type of prescribed construction work which may be carried out inside the site boundary:

| *Identification code of type of prescribed construction work* | *Description of type of Prescribed construction work* |
|---|---|
| PCW 002 | Loading, unloading or handling of rubble |

b. Validity of the construction noise permit for the carrying out of the prescribed construction work:

Date and time of commencement : 28th January 2018 at 0030 hours

Days and hours : 0000-2400 hours on general holiday (including Sundays), 0000-0700 hours and 1900-2400 hours on any day not being a general holiday [but note Condition 4.d.1 below for the operating hours within which the carrying out of the above listed prescribed construction work is allowed].

This part of the permit expires on : 3rd June 2018 at 0600 hours

~~c. Site layout plan(s), endorsed by the Authority, may be attached with the permit to indicate the locations permitted for the carrying out of prescribed construction work described in this permit. The layout plan(s) is(are) required to be kept on the construction site and made available for inspection by the Authority.~~

d. Other conditions imposed on the carrying out of the prescribed construction work:

Please refer to attached sheet 2 for conditions imposed for this construction noise permit [which is issued as a **special case** due to constraints on working hours to **avoid causing serious interruption to road transport**].

5. This construction noise permit or a copy thereof must be displayed on the construction site at all vehicular site entrances/exits for public information .

Dated this 23rd Day of January 2018

*Signed:* _____

**(CHENG Kai-wa)**

*for Authority*

* Delete as necessary

表格 3 [第5(a)條]

噪音管制條例
(第400章)
第8(9)條

# 建築噪音許可證
## 為進行建築工程（撞擊式打樁除外）而使用機動設備及／或進行訂明建築工程

建築噪音許可證編號: GW-RN0021-18

致：中國建築工程(香港)有限公司

本建築噪音許可證是按照《噪音管制條例》第8條的規定而發出的。現准予使用機動設備以進行撞擊式打樁工程以外的建築工程及／或進行訂明建築工程，但須受以下條件規限。若不按照該等條件進行建築工程，許可證可遭撤銷，而且會受到檢控。

*條　件*

1. 可使用機動設備及／或進行訂明建築工程的建築地盤：

   詳細地址： 新界大埔介乎鏈距 CH21.3 與 CH21.8 之間的一段粉嶺公路北行線(路政署合約編號：HY/2012/06 - 粉嶺公路擴闊工程 — 泰亨至和合石交匯處)。

   地段編號: ---

   地盤範圍(即可使用機動設備及進行訂明建築工程的地方範圍)已描劃於夾附的圖則上，而該圖則是本建築噪音許可證的一部分。

2. 該地盤部份/~~全部~~*位於指定範圍之內/~~外~~*。

3. 機動設備

   a. 在地盤範圍內可使用的各項機動設備：

| *各項機動設備的識辨代碼(如適用的話)* | *各項機動設備的說明* | *數目* |
|---|---|---|
| | 參照附頁 | |
| | | |

   b. 可使用機動設備的建築噪音許可證有效期：

   生效日期及時間： 二零一八年一月二十八日 凌晨零時三十分

   日期及時間： 公眾假日(包括星期日)的凌晨零時至晚上十二時，公眾假日以外的任何一日凌晨零時至上午七時及下午七時至晚上十二時[但須注意條件 3.d.1 有關可以使用上列機動設備的時間]。

   此部分許可證屆滿日期及時間： 二零一八年六月三日 上午六時

   日期 時間

   c. 建築地盤須備有本建築噪音許可證所述每件機動設備的照片各一幀，供監督隨時查看；該等照片須經監督認可。

   d. 規限使用機動設備的其他條件：

   請參見附頁一及附頁二有關本建築噪音許可證的規限條件[該條件是鑒於本建築噪音許可證屬**特別個案**而註明的。而該**特別個案**是為**避免**於其他時段施工時引致**嚴重妨礙道路交通**的情況而處理的]。

4. 訂明建築工程

a. 在地盤範圍內可進行的訂明建築工程：

| *訂明建築工程的識辨代碼* | *訂明建築工程的類別的說明* |
|---|---|
| PCW 002 | 裝卸或處理瓦礫 |
| | |

b. 明建築工程的建築噪音許可證有效期：

生效日期及時間： 二零一八年一月二十八日 凌晨零時三十分

日期及時間： 公眾假日(包括星期日)的凌晨零時至晚上十二時，公眾假日以外的任何一日凌晨零時至上午七時及下午七時至晚上十二時[但須注意條件 4.d.1 有關可進行上列訂明建築工程的時間]。

此部分許可證屆滿日期及時間： 二零一八年六月三日 上午六時

日期 時間

~~c. 本許可證可夾附經監督認可的地盤圖則，以顯示本許可證准予進行訂明建築工程的地點。該地盤圖則須存放於建築地盤供監督隨時查看。~~

d. 規限進行訂明建築工程的其他條件：

請參見附頁二有關本建築噪音許可證的規限條件[該條件是鑒於本建築噪音許可證屬**特別個案**而註明的。而該**特別個案**是為**避免**於其他時段施工時引致**嚴重妨礙道路交通**的情況而處理的]。

5. 本建築噪音許可證或其副本必須展示於建築地盤的 所有車輛出入口處，給予公眾人士參閱。

日期： 二零一八年一月二十三日

*簽署:* _____

*監督*

(**鄭啟華** 代行)

* 刪去不適用者

**SPECIAL CASE** – avoid causing serious interruption to road transport
**特別個案** – 避免引致嚴重妨礙道路交通



Sheet Attached to Construction
Noise Permit No. **GW-RN0021-18**

**3.a. Items of powered mechanical equipment which may be used inside the site boundary:**

| *Identification code of item of powered mechanical equipment ( if applicable )* | | *Description of item of Powered mechanical equipment* | *No. of units* |
|---|---|---|---|
| Group A : | --- | Road marking material boiler, lorry mounted | One |
| Group B : | --- | Mini Road miller | One |
| | --- | Dump truck, 5.5 tonne < gross vehicle weight ≦ 38 tonne | One |
| Group C : | CNP 004 | Asphalt paver | One |
| | --- | Dump truck, 5.5 tonne < gross vehicle weight ≦ 38 tonne | One |
| Group D : | CNP 185 | Road roller | One |
| | CNP 186 | Roller, vibratory | One |
| Group E : | --- | Lorry with crane, 5.5 tonne < gross vehicle weight ≦38 tonne | One |

**3.d. Other conditions imposed on the use of the powered mechanical equipment:**

1. Subject to conditions 3.d.6 & 3.d.7 below, the powered mechanical equipment listed in condition 3.a. shall only be operated during the hours shown below :

| | |
|---|---|
| Sunday | 0030 – 0600 hours |

2. The construction work in relation to this Construction Noise Permit shall only be carried out with prior notification to the Authority of the location, date and time of the work as well as the details of work program (including the date and time for carrying out different phases or sequence of work ) etc. Such notification shall be made by logging in the following webpage (http://cnp-advancenotification.hk) and submitting all information required. Such notification shall be made within 14 days but no less than 48 hours before commencement of work for every work location.
3. The powered mechanical equipment listed in condition 3.a. of this Construction Noise Permit shall not be operated when any construction work covered by the Construction Noise Permit no. **GW-RN792-17** is being carried out.
4. The powered mechanical equipment listed in condition 3.a. shall only be operated within **Six** nights during the validity period of this construction noise permit.
5. Only one group of the powered mechanical equipment listed in condition 3.a. shall be allowed to be operated at any time.
6. Mini Road miller shall not be operated between 0230 and 0600 hours.
7. The powered mechanical equipment of Group C and Group D listed in condition 3.a. shall not be operated between 0430 and 0600 hours.

ENVIRONMENTAL PROTECTION DEPARTMENT 環境保護署 HONG KONG

*Signed :* _____

(CHENG Kai-wa)
*for Authority*

**SPECIAL CASE** – avoid causing serious interruption to road transport
**特別個案** – 避免引致嚴重妨礙道路交通



Sheet Attached to Construction
Noise Permit No. **GW-RN0021-18**

**3.d. Other conditions imposed on the use of the powered mechanical equipment:**

8. All flaps and panels of Asphalt paver (CNP 004), Mini Road miller, Road roller (CNP 185) and Roller, vibratory (CNP 186) shall be closed.
9. Asphalt paver (CNP 004), Mini Road miller, Road roller (CNP 185) and Roller, vibratory (CNP 186) shall be equipped with the following noise control measures:
   - minimum 50mm thick sound absorbing lining to the engine compartments as far as possible;
   - effective engine exhaust silencers; and
   - sound baffles comprised of minimum 50mm thick sound absorbing lining and 10mm thick plywood (or 1mm thick steel) backing mounted near all openings of the engine compartments so that there is no direct line of sight to the interior of the engine compartments.
10. All care shall be taken to ensure that the construction work is carried out as quickly as possible with due regard to the potential noise intrusion which may result.
11. Portable phones or walkie talkies with headphones shall be used for site communication. No whistles, horns and loudspeakers shall be used. No shouting shall be allowed.
12. The construction work shall be carried out outside restricted hours as far as practical.

**4.d. Other conditions imposed on the carrying out of the Prescribed Construction Work:**

1. The prescribed construction work listed in condition 4.a. shall only be carried out during the hours shown below :

| | |
|---|---|
| Sunday | 0030 – 0600 hours |

2. The construction work in relation to this Construction Noise Permit shall only be carried out with prior notification to the Authority of the location, date and time of the work as well as the details of work program (including the date and time for carrying out different phases or sequence of work ) etc. Such notification shall be made by logging in the following webpage (http://cnp-advancenotification.hk) and submitting all information required. Such notification shall be made within 14 days but no less than 48 hours before commencement of work for every work location.
3. The prescribed construction work listed in condition 4.a. of this Construction Noise Permit shall not be carried out when any construction work covered by the Construction Noise Permit no. **GW-RN0792-17** is being carried out.
4. The prescribed construction work listed in condition 4.a. shall only be carried out within **Six** nights during the validity period of this construction noise permit.
5. Rubber padding or sheeting of minimum 10 mm thick, or appropriate resilient material shall be placed between hard surfaces when carrying out the loading, unloading or handling of rubble (PCW 002).
6. All care shall be taken to ensure that the construction work is carried out as quickly as possible with due regard for the potential noise intrusion which may result.
7. Portable phones or walkie talkies with headphones shall be used for site communication. No whistles, horns and loudspeakers shall be used. No shouting shall be allowed.
8. The construction work shall be carried out outside restricted hours as far as practical.

ENVIRONMENTAL PROTECTION DEPARTMENT
HONG KONG
環境保護署

*Signed :* _____

(CHENG Kai-wa)
*for Authority*

**SPECIAL CASE** – avoid causing serious interruption to road transport
**特別個案** – 避免引致嚴重妨礙道路交通



建築噪音許可證
編號 **GW-RN0021-18** 的附頁

**3.a. 在地盤範圍內可使用的各項機動設備:**

| 各項機動設備的識辨代碼 (如適用的話) | | 各項機動設備的說明 | 數目 |
|---|---|---|---|
| A組： | --- | 道路油漆熔爐，裝在貨車上 | 壹 |
| B組： | --- | 小型碾路機 | 壹 |
| | --- | 卸土車，5.5 噸 < 總重量 ≦ 38 噸 | 壹 |
| C組： | CNP 004 | 瀝青攤鋪機 | 壹 |
| | --- | 卸土車，5.5 噸 < 總重量 ≦ 38 噸 | 壹 |
| D組： | CNP 185 | 道路滾壓機 | 壹 |
| | CNP 186 | 滾壓機震盪型 | 壹 |
| E組： | --- | 吊臂貨車，5.5 噸 < 總重量 ≦ 38 噸 | 壹 |

**3.d. 規限使用機動設備的其他條件 ：**

1. 除以下條件 3.d.6 及 3.d.7 另有規定外，祇可於以下時間使用列在條件 3.a.內的機動設備：

| 星期日 | 凌晨零時三十分 至 上午六時 |
|---|---|

2. 在進行此建築噪音許可證內所載列的建築工程時，必須確保就每個施工地點於施工前48小時至施工前14日內，登入以下網上平台 (http://cnp-advancenotification.hk/tc) 並就每個施工地點於施工前48小時至施工前14日內填妥及提交有關施工地點、日期及時間、及施工程序安排(包括不同階段或工序施工日期及時間的安排)等所需資料。
3. 當進行建築噪音許可證編號 **GW-RN0792-17** 的建築工程時，不可使用此建築噪音許可證內列在條件3.a.內的機動設備。
4. 祇可於此建築噪音許可證有效日期內的其中陸晚使用列在條件 3.a.內 的機動設備。
5. 在任何時間內，祇可使用列在條件 3.a.內 的機動設備的其中一組。
6. 小型碾路機不可在凌晨二時三十分至上午六時使用。
7. 列在條件3.a.內的C組及D組機動設備不可在凌晨四時三十分至上午六時使用。

ENVIRONMENTAL PROTECTION DEPARTMENT ※ 香港保護環境 ※ HONG KONG

*簽署：* _____

*監督*

（**鄭啟華** 代行）

**SPECIAL CASE** – avoid causing serious interruption to road transport
**特別個案** – 避免引致嚴重妨礙道路交通



建築噪音許可證
編號 **GW-RN0021-18** 的附頁

**3.d. 規限使用機動設備的其他條件：**

8. 瀝青攤鋪機(CNP 004)、小型碾路機、道路滾壓機(CNP 185)及滾壓機震盪型(CNP 186)的所有覆蓋及嵌板必須關閉。
9. 在瀝青攤鋪機(CNP 004)、小型碾路機、道路滾壓機(CNP 185)及滾壓機震盪型(CNP 186)上，必須裝上下列的控制噪音措施：
   - 在引擎間格內盡量襯墊最少50毫米厚的吸音材料；
   - 有效的引擎死氣喉滅聲器；及
   - 在引擎間格的所有通氣出入口裝上隔音板障，該板障必須以不少於50毫米厚的吸音襯墊及10毫米厚的木板或1毫米厚的鐵板造成，以防止引擎的噪音直接散發於外間。
10. 持證人須確保竭力從速完成該等建築工程，並小心防範會引起的噪音干擾。
11. 地盤通訊必須使用手提電話或連耳筒對講機，不可使用哨子、號角及擴音器，不准喧嘩。
12. 在可能範圍內，有關的建築工程須在非限制時間內進行。

**4.d. 規限進行訂明建築工程的其他條件:**

1. 祇可於以下時間內進行列在條件4.a.內的訂明建築工程：

| | |
|---|---|
| 星期日 | 凌晨零時三十分 至 上午六時 |

2. 在進行此建築噪音許可證內所載列的建築工程時，必須確保就每個施工地點於施工前 48 小時至施工前 14 日內，登入以下網上平台 (http://cnp-advancenotification.hk/tc) 並就每個施工地點於施工前 48 小時至施工前 14 日內填妥及提交有關施工地點、日期及時間、及施工程序安排(包括不同階段或工序施工日期及時間的安排)等所需資料。
3. 當進行許可證編號 **GW-RN0792-17** 的建築工程時，不可進行此建築噪音許可證內列在條件 4.a. 內的訂明建築工程。
4. 祇可於此建築噪音許可證有效日期內的其中陸晚進行列在條件 4.a.內的訂明建築工程。
5. 當進行裝卸或處理瓦礫的工程(PCW 002)時，必須將不少於 10 毫米厚的膠墊或彈性襯墊分隔開硬物。
6. 持證人須確保竭力從速完成該等建築工程，並小心防範會引起的噪音干擾。
7. 地盤通訊必須使用手提電話或連耳筒對講機，不可使用哨子、號角及擴音器，不准喧嘩。
8. 在可能範圍內，有關的建築工程須在非限制時間內進行。

ENVIRONMENTAL PROTECTION DEPARTMENT HONG KONG 環境保護署

*簽署：*

*監督*
（鄭啟華 代行）

# 建築噪音許可證編號 GW-RN0021-18 的相

# Photographs attached to Construction Noise Permit No. GW-RN0021-18

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小型碾路機

Mini Road miller


CNP 004

瀝青攤鋪機

Asphalt paver

建築噪音許可證編號 GW-RN0021-18 的相

**Photographs attached to Construction Noise Permit No. GW-RN0021-18**

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卸土車， 5.5 噸 < 總重量 ≦ 38 噸

Dump truck, 5.5 tonne < gross vehicle weight ≦ 38 tonne


---

道路油漆熔爐，裝在貨車上

Road marking material boiler, lorry mounted

建築噪音許可證編號 GW-RN0021-18 的相

**Photographs attached to Construction Noise Permit No. GW-RN0021-18**


---　吊臂貨車，5.5 噸 < 總重量 ≦ 38 噸

Lorry with crane, 5.5 tonne < gross vehicle weight ≦ 38 tonne


CNP 185　道路滾壓機

Road roller

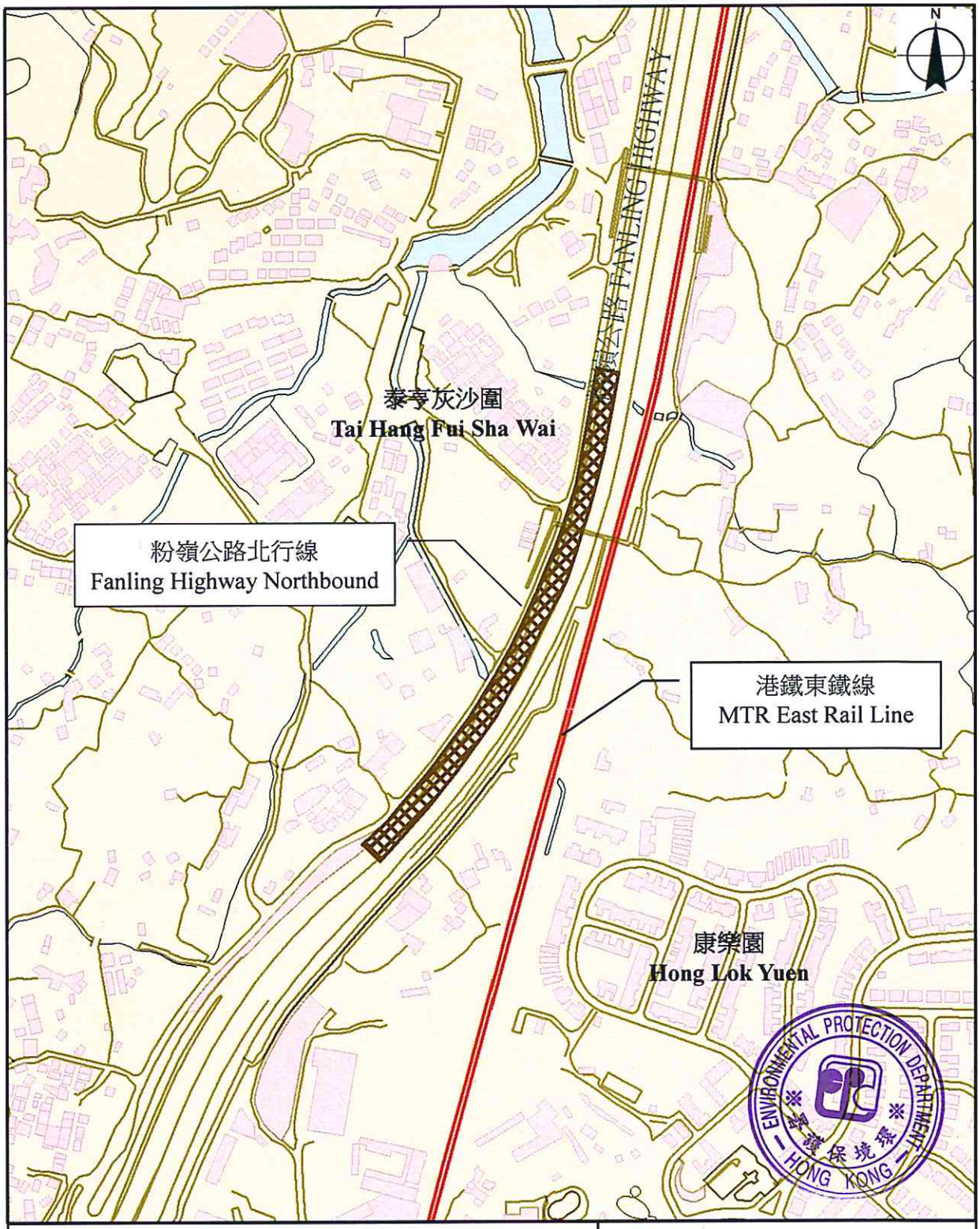
建築噪音許可證編號 GW-RN0021-18 的相

**Photographs attached to Construction Noise Permit No. GW-RN0021-18**


ENVIRONMENTAL PROTECTION DEPARTMENT
HONG KONG
環境保護署

CNP 186 滾壓機震盪型

Roller, vibratory

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|---|---|
| 環境保護署　　噪音管制監督<br>Environmental Protection Department　Noise Control Authority | 圖例 Legend<br>建築地盤 Construction Site |
| 建築噪音許可證編號 GW-RN0021-18 的附圖<br>Plan attached to Construction Noise Permit No. GW-RN0021-18 | 比例 Scale 1:5,000<br>米Meters<br>0 25 50 100 150 |