Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2

Quarterly EM&A Report

August 2014 to October 2014

Submitted to

Environmental Protection Department

Prepared By

Meinhardt Infrastructure and Environment Ltd

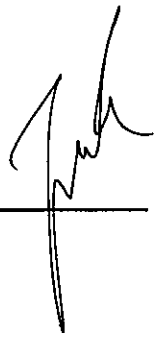
Meinhardt Infrastructure and Environment Limited

Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2

Quarterly EM&A Report

(August 2014 to October 2014)

Certified by: Fredrick Leong



Position: Environmental Team Leader

Date: 13 November 2014

Our ref AFK/TK/jn/bw/T329380/22.05/L-0047
T 2828 5919
E terence.kong@mottmac.com.hk
Your ref

Mott MacDonald

Hyder-Arup-Black & Veatch Joint Venture
c/o Hyder Consulting Limited
47/F Hopewell Centre
183 Queen's Road East
Wanchai, Hong Kong

13 November 2014
By Fax (2805 5028) & Post

Dear Sir,

Attn: Mr. James Penny

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) – Entrusted Works
Environmental Permit No. EP-324/2008/B
Quarterly EM&A Summary Report for August 2014 to October 2014 for the portion of Stage 2 works entrusted to CEDD under Contract No. CV/2012/09

We refer to the Quarterly EM&A Summary Report for August 2014 to October 2014 for the Project received on 13 November 2014 submitted by ET via email. We confirm we have no comment.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Terence Kong
Independent Environmental Checker

c.c. HyD – Mr. Chung Lok Chin (Fax: 2714 5198) / Ms. Jackei Yin (Fax: 2761 4864)
CEDD/BCP – Mr. Chris Wong / Mr. Desmond Lam (Fax: 2714 0103)
AECOM – Mr. Alan Lee (Fax: 3922 9797)
Meinhardt Infrastructure and Environment Limited – Mr. Fredrick Leong (Fax: 2540 1580)

Date	Revision	Prepared By	Checked By	Approved By
13 November 2014	0	Ivan TING Cindy KWOK	Fredrick LEONG	Helen COCHRANE

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EXECUTIVE SUMMARY

This report documents the findings of EM&A works conducted in the quarter between 1 August 2014 and 31 October 2014.

The impact stage EM&A programme for the Project includes air quality and noise monitoring.

The EM&A programme was carried out by the ET in accordance with the EM&A Manual requirements. It is concluded from the environmental monitoring and audit works that adequate environmental mitigation measures have been implemented by the civil works contractors where appropriate in the reporting quarter.

In the reporting quarter, a total of 3 exceedance events were recorded. The exceedances were concluded not to be project related. No necessary remedial actions have been taken.

No environmental non-compliance was noted. No environmental complaint was received. No environmental related prosecution or notification of summons was received in the reporting quarter.

The box culvert works have been partially completed by the end of March 2014 except the last construction activity, i.e. installation of a base slab at Box Culvert ID4. Due to the loading requirement of a fresh water main under the box culvert, installation of the base slab at Box Culvert ID4 has to be scheduled in November 2015 after the utilities diversions were completed, and therefore the construction works were temporary suspended. The 4-week post construction water quality monitoring will be conducted after the installation of the base slab finishes, hence the completion of the box culvert works.

As such, impact monitoring for water quality was not necessary in the reporting quarter due to temporary suspension of the construction works and is anticipated to be resumed in November 2015 during the course of remaining box culvert works.

1 INTRODUCTION AND PROJECT INFORMATION

1.1 Background

1.1.1 The Project is a Designated Project under the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499). An Environmental Impact Assessment (EIA) Report together with an Environmental Monitoring and Audit (EM&A) Manual were approved on 14 July 2000 (Register Number: EIA-043/2000). The Project is governed by an Environmental Permit (EP) (EP-324/2008) which was granted on 23 December 2008. A variation of EP (VEP) was applied and the VEP (EP-324/2008/A) was subsequently granted on 31 January 2012. An additional VEP has been applied on 24 February 2014 and the VEP (EP-324/2008/B) was subsequently granted on 17 March 2014.

1.1.2 Chun Wo Construction & Engineering Co Ltd (Chun Wo) was commissioned by the Civil Engineering and Development Department (CEDD) as the Civil Contractor for the Entrusted Portion of Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2. Meinhardt Infrastructure & Environment Ltd (MIEL) has been appointed by Chun Wo as the Environmental Team (ET) to fulfill the corresponding EM&A requirements pursuant to Environmental Permit No. EP-324/2008/B in accordance with the Updated EM&A Manual (dated October 2013) for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2. The EM&A programme commenced in 5 November 2013.

1.1.3 **Figure 1** shows the works areas for the Entrusted Portion of Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2.

1.2 Construction Programme and Activities

1.2.1 The construction programme is presented in **Appendix A**. The major construction activities undertaken in the reporting quarter are summarized below:

- Bored pile and bored pile wall construction;
- Cable detection and trial trenches;
- Local diversion of DN1400;
- Lay Dia.1050 storm drains;
- Mini pile construction;
- Noise barrier installation;
- Pile Cap Works;
- Piling works for Bridge E;
- Pre-drilling;
- Receiving & Jacking Pit;
- Retaining Structure;
- Road works at Fanling Highway;

- Sewer works at TWSRW;
- Slope upgrading works;
- Soil nail construction;
- Tree Felling Works;
- Water pipe installation;
- RC structure of new valve control & Telemetry House;
- Demolition of Huts;
- Abutment construction for Bridge E;
- Excavation by trenchless method;
- Extension of Bored pile for bored pile wall;
- Filling Works at Tong Hang East;
- Lay storm drains;
- Load test for installed Mini pile;
- Pier Construction;
- Socket H-pile installation; and
- Utilities duct laying.

1.3 Project Organisation

1.3.1 The project organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project, together with the general enquiry hotline, are summarised in **Table 1.1**.

Table 1.1 Contact Information of Key Personnel

Party	Role	Position	Name	Telephone	Fax
AECOM	Engineer's Representative	Senior Resident Engineer	Mr. Alan Lee	2171 3303	2171 3498
		Resident Engineer (Environmental)	Mr. Perry Yam	2171 3350	
Mott MacDonald	Independent Environmental Checker (IEC)	IEC	Mr. Terence Kong	2828 5919	2827 1823

Party	Role	Position	Name	Telephone	Fax
Chun Wo	Contractor	Site Agent	Mr. Daniel Ho	2638 6144	2638 7077
		Senior Environmental Officer	Mr. Sam Lam	2638 6168	
		Environmental Officer	Mr. Victor Huang	2638 6181	
Meinhardt	Environmental Team (ET)	ET Leader	Mr. Fredrick Leong	2859 1739	2540 1580
Enquiry Hotline	General Enquiry	--	Ms Helena Mak	6355 1731	--

1.4 Purpose of the Report

1.4.1 This is the Quarterly EM&A Report which summaries the impact monitoring results and audit findings for the Project during the reporting period between 1 August 2014 and 31 October 2014.

2 SUMMARY OF EM&A REQUIREMENTS

2.1 Monitoring Requirements

2.1.1 In accordance with the Updated EM&A Manual, environmental parameters including Air Quality and Noise have been monitored. The specific parameters, monitoring frequency and the respective Action and Limit Levels are given in **Table 2.1** and the location of the monitoring station is shown in the **Figure 2**.

Table 2.1 Monitoring Parameter

Parameter	Unit	Action Level	Limit Level	Frequency
Air Quality				
1-hour TSP	$\mu g/m^3$	292.7	500	Three times every 6 days
24-hour TSP	$\mu g/m^3$	170.3	260	Once every 6 days
Construction Noise				
Leq 30min	dB(A)	When one documented valid complaint is received	75	Once every Week

Temporary Suspension of Box Culvert Works and Water Quality Monitoring

2.1.2 The box culvert works have been partially completed by the end of March 2014 except the last construction activity, i.e. installation of a base slab at Box Culvert ID4. Due to the loading requirement of a fresh water main under the box culvert, installation of the base slab at Box Culvert ID4 has to be scheduled in November 2015 after the utilities diversions were completed, and therefore the construction works are temporary suspended. The 4-week post construction water quality monitoring will be conducted after the installation of the base slab finishes, hence the completion of the box culvert works.

2.1.3 As such, impact monitoring for water quality was not necessary in the reporting quarter due to temporary suspension of the construction works and is anticipated to be resumed in November 2015 during the course of remaining box culvert works.

2.2 Environmental Mitigation Measures

2.2.1 Environmental mitigation measures have been recommended in the EM&A Manual and are given in **Appendix C**. The implementation status for the reporting quarter is also given in the Appendix.

3 SUMMARY OF EM&A Monitoring Data

3.1 Monitoring Data

3.1.1 Monitoring has been conducted in accordance with the specification in the EM&A Manual in the reporting quarter. Meteorological data for the reporting quarter have been extracted from Hong Kong Observatory and are given in **Appendix D**. Monitoring data with graphical presentation for the reporting quarter have been given in **Appendix E**. A summary on the monitoring results has also been given in **Table 3.1**.

Table 3.1 Summary of Monitoring Data in the Reporting Quarter

Monitoring Location	Minimum	Maximum	Average
Air Quality			
1 hour Total Suspended Particulate			
SR77	41.5μg/m^3	229.7μg/m^3	95.5μg/m^3
24 hour Total Suspended Particulate			
SR77	40.8μg/m^3	237.9μg/m^3	114.5μg/m^3
Construction Noise			
SR77	65.9dB(A)	71.7dB(A)	68.8dB(A)

3.1.2 The maximum recorded 24-hour Total Suspended Particulate in the reporting quarter is 237.9μg/m^3 which is higher than the action level of 170.3μg/m^3. However, respective investigation has been conducted and concluded the exceedances would not be project related.

3.2 Summary of Monitoring Exceedances

3.2.1 The number of exceedances event recorded in the reporting quarter is summarized in **Table 3.2**.

3.2.2 Investigations for the exceedance events in the reporting quarter have been completed. The exceedances were considered not to be related to the construction works. The respective investigation reports have been presented in the respective Monthly EM&A Reports.

Table 3.2 Summary of Exceedance Events in the Reporting Quarter

Parameter		Number of Exceedances Events	Number of Project Related Exceedance Events
Air Quality			
1-hour Total Suspended Particulates	Action Level	0	0
	Limit Level	0	0
24-hour Total Suspended Particulates	Action Level	3	0
	Limit Level	0	0
Construction Noise			
Leq 30min	Action Level	0	0
	Limit Level	0	0

3.2.3 The Contractor has been reminded to strengthen the mitigation measures including:

- Water spraying should be properly implemented whenever necessary for the unpaved roads, access roads and construction areas;
- All vehicles should be washed to remove any dusty materials before leaving the construction site;
- Wheel washing facilities should be properly maintained to ensure proper functioning;
- Water spraying or covering of tarpaulin should be properly implemented whenever necessary for the unpaved roads, access roads and construction areas;
- Channels or earth bunds or sand bag barriers should be provided on site to prevent surface runoff and properly direct the stormwater to silt removal facilities;
- Silty effluent should be treated/desilted before discharged; Untreated effluent should be prevented from entering public drain channel;
- Stockpiles of dusty materials should be covered by tarpaulin or similar fabric during rainy seasons;
- All chemicals stored on site should be provided with drip trays;
- All types of wastes, both on land and floating in the river stream, should be collected and sorted properly, and also be disposed timely and properly;
- All chemicals stored on site should be provided with drip trays; and
- Refuse collection bins should be labelled properly.

4 WASTE MANAGEMENT

4.1.1 The Contractor has registered as a chemical waste producer of the Project. The C&D materials and waste sorting were carried out on-site. Receptacles were provided for general refuse collection.

4.1.2 During the reporting quarter, a total of 15,427m^3 of excavated material has been generated. 10,444m^3 of inert C&D materials was disposed of at public fill to Tuen Mun Area 38, while 4,068m^3 of inert C&D materials was reused on site. 390m^3 of general refuse was disposed of at North East New Territories (NENT) Landfill. 15m^3 of plastics and no paper/cardboard packaging and metals were collected by recycling contractor in the reporting quarter. 9m^3 of chemical waste was collected by licensed contractor in the reporting quarter. Details of the waste management data are presented in **Appendix F**.

5 ENVIRONMENTAL NON-CONFORMANCE

5.1.1 No environmental non-compliance was recorded in the reporting quarter. No environmental complaints were received in the reporting quarter. Investigations for the exceedances have been conducted. No environmental related prosecution or notification of summons was received in the reporting quarter. The summary for the non-compliance, complaints and prosecutions is provided in **Appendix G**.

6 CONCLUSION, COMMENTS AND RECOMMENDATIONS

6.1.1 The EM&A programme was carried out by the ET in accordance with the EM&A Manual requirements. It is concluded from the environmental monitoring and audit works that adequate environmental mitigation measures have been implemented by the civil works contractors where appropriate in the reporting quarter.

6.1.2 In the reporting quarter, a total of 3 exceedance events have been recorded. No exceedances were concluded to be project related. No necessary remedial actions have been taken.

6.1.3 No environmental non-compliances were noted. No environmental complaint was received. No environmental related prosecution or notification of summons were received in the reporting quarter.

6.1.4 The box culvert works have been partially completed by the end of March 2014 except the last construction activity, i.e. installation of a base slab at Box Culvert ID4. Due to the loading requirement of a fresh water main under the box culvert, installation of the base slab at Box Culvert ID4 has to be scheduled in November 2015 after the utilities diversions were completed, and therefore the construction works are temporary suspended. The 4-week post construction water quality monitoring will be conducted after the installation of the base slab finishes, hence the completion of the box culvert works.

6.1.5 As such, impact monitoring for water quality was not necessary in the reporting quarter due to temporary suspension of the construction works and is anticipated to be resumed in November 2015 during the course of remaining box culvert works.

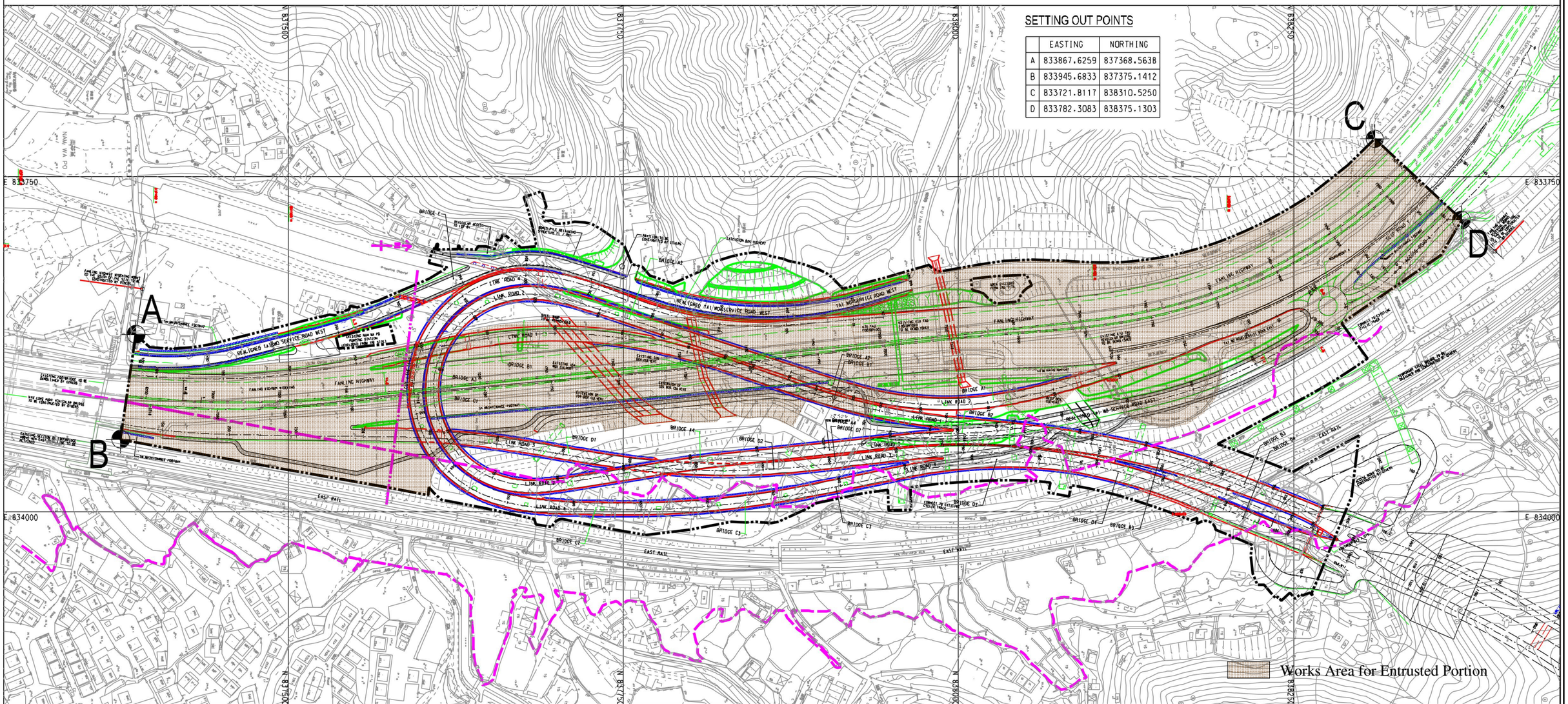
Figure

Contract No. CV/2012/09
Liantang / Heung Yuen Wai Boundary Control Point
Site Formation and Infrastructure Works - Contract 3

俊和建築工程有限公司
CHUN WO CONSTRUCTION & ENGINEERING CO., LTD.

SETTING OUT POINTS

	EASTING	NORTHING
A	833867.6259	837368.5638
B	833945.6833	837375.1412
C	833721.8117	838310.5250
D	833782.3083	838375.1303



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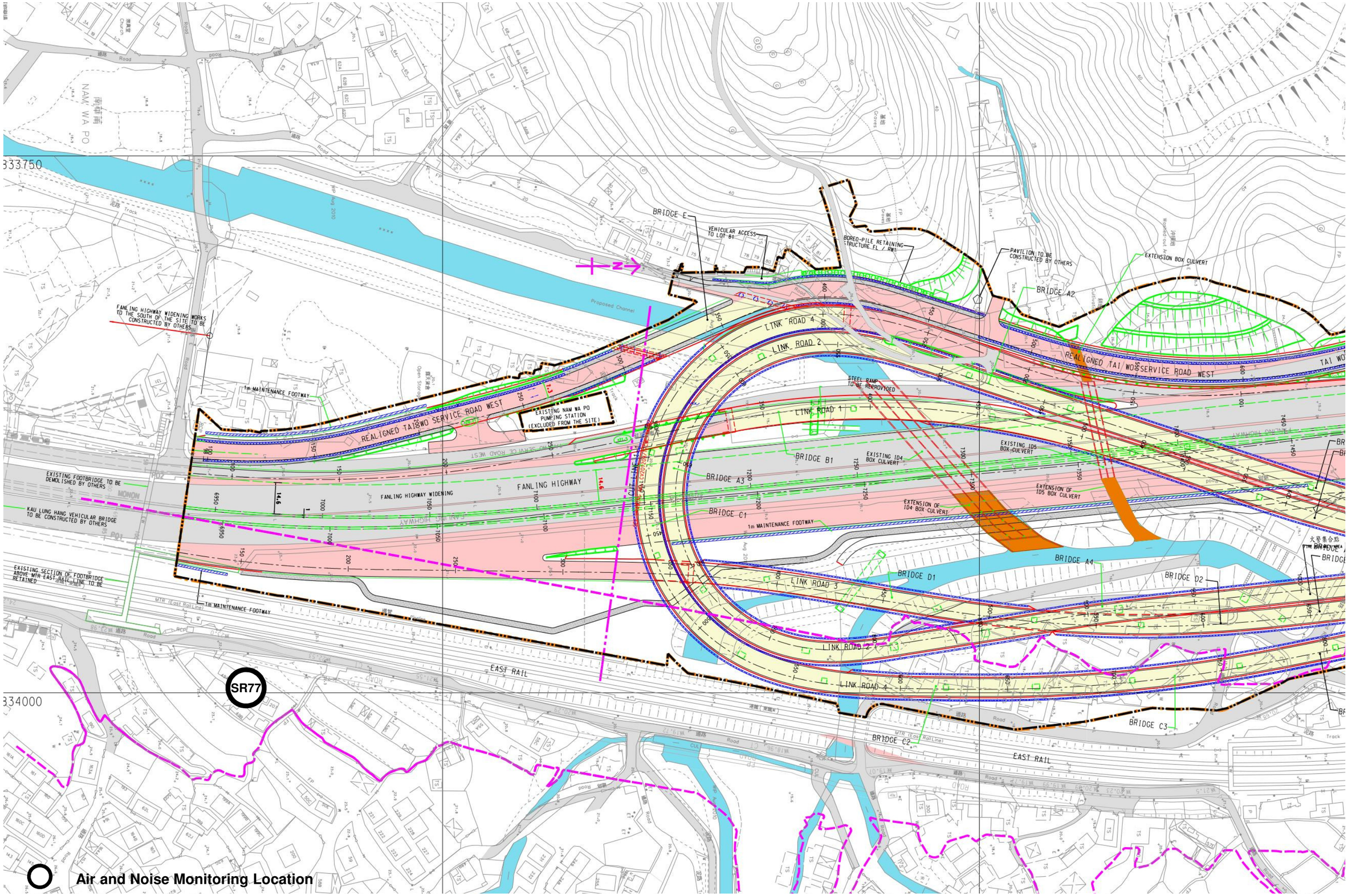
MEINHARDT

Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2

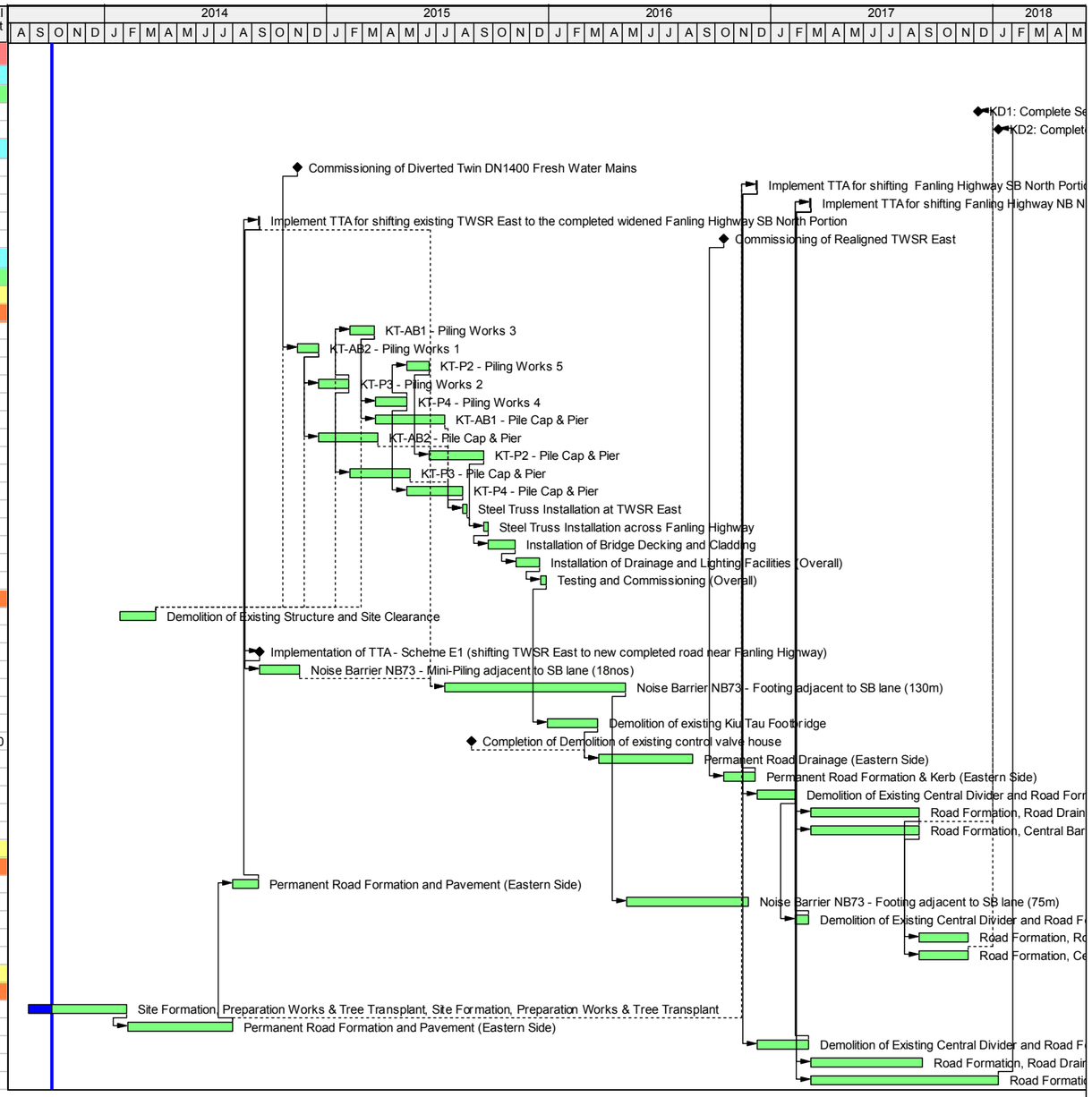
Figure 1: Demarcation of Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling – Stage 2



MEINHARDT	**Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2**	**Figure 2: Air and Noise Monitoring Locations**

Appendix A
Construction Programme

Activity ID	Activity Name	OD	Start	Finish	Total Float
CWP - Under Development (Postpone Pipe Jacking)					
Key Dates (Forecast)					
Major Works					
KD-0105	KD1: Complete Section 1A - all HyD's entrustment works in Zone3 and SBZ2 except for landscaping works	0		07-Dec-17	53
KD-0205	KD2: Complete Section 1B - all HyD's entrustment works in NBZ1 except for landscaping works	0		09-Jan-18	234
Major Milestones and Events					
MS-0220	Commissioning of Diverted Twin DN1400 Fresh Water Mains	0		14-Nov-14	132
MS-1000A	Implement TTA for shifting Fanling Highway SB North Portion (CH7470-7925) eastward to the completed road near TWSI	2	07-Dec-16	08-Dec-16	3
MS-1000B	Implement TTA for shifting Fanling Highway NB North Portion (CH7470-7925) eastward to the designed alignment	2	06-Mar-17	07-Mar-17	3
MS-3000	Implement TTA for shifting existing TWSR East to the completed widened Fanling Highway SB North Portion	2	11-Sep-14	12-Sep-14	7
MS-3010	Commissioning of Realigned TWSR East	0	15-Oct-16		3
Section IA & IB - Fanling Highway Widening (KD-1 & KD-2)					
Fanling Highway North Portion between CH7470 and CH7925					
Fanling Highway Zone 6 between CH7470 and CH7600 (Provision of Kiu Tau Footbridge)					
Kiu Tau Footbridge Reprovision (East)					
FHW-5000A	KT-AB1 - Piling Works 3	30	09-Feb-15	21-Mar-15	612
FHW-5000B	KT-AB2 - Piling Works 1	30	15-Nov-14	19-Dec-14	132
FHW-5000C	KT-P2 - Piling Works 5	30	14-May-15	18-Jun-15	612
FHW-5000D	KT-P3 - Piling Works 2	40	20-Dec-14	07-Feb-15	612
FHW-5000E	KT-P4 - Piling Works 4	40	23-Mar-15	13-May-15	612
FHW-5010A	KT-AB1 - Pile Cap & Pier	90	23-Mar-15	14-Jul-15	660
FHW-5010B	KT-AB2 - Pile Cap & Pier	75	20-Dec-14	27-Mar-15	745
FHW-5010C	KT-P2 - Pile Cap & Pier	75	19-Jun-15	16-Sep-15	612
FHW-5010D	KT-P3 - Pile Cap & Pier	75	09-Feb-15	19-May-15	705
FHW-5010E	KT-P4 - Pile Cap & Pier	75	14-May-15	12-Aug-15	635
FHW-5020	Steel Truss Installation at TWSR East	7	13-Aug-15	20-Aug-15	635
FHW-5030	Steel Truss Installation across Fanling Highway	7	17-Sep-15	24-Sep-15	612
FHW-5040	Installation of Bridge Decking and Cladding	35	25-Sep-15	07-Nov-15	612
FHW-5050	Installation of Drainage and Lighting Facilities (Overall)	35	09-Nov-15	18-Dec-15	612
FHW-5060	Testing and Commissioning (Overall)	7	19-Dec-15	29-Dec-15	612
At-Grade Road Works (130m)					
FHW-5100	Demolition of Existing Structure and Site Clearance	45	27-Jan-14	26-Mar-14	135
FHW-5110*	Pipe Laying & Connection - Twin DN1400 Watermains (CHE & CHG) adjacent to existing TWSRE (90m, 9m depth)	186	31-Mar-14	14-Nov-14	132
FHW-5120	Implementation of TTA - Scheme E1 (shifting TWSR East to new completed road near Fanling Highway)	0	13-Sep-14		573
FHW-5130	Noise Barrier NB73 - Mini-Piling adjacent to SB lane (18nos)	54	13-Sep-14	17-Nov-14	573
FHW-5140	Noise Barrier NB73 - Footing adjacent to SB lane (130m)	240	14-Jul-15	07-May-16	332
FHW-5150*	Pipe Laying - DN1200 &DN600 Watermains (CHB & CHC) along existing TWSRE (120m long, 3m depth)	240	04-Sep-15	02-Jul-16	373
FHW-5160	Demolition of existing Kiu Tau Footbridge	65	30-Dec-15	22-Mar-16	885
FHW-5170	Completion of Demolition of existing control valve house	0		28-Aug-15	1050
FHW-5180	Permanent Road Drainage (Eastern Side)	125	23-Mar-16	24-Aug-16	885
FHW-5190	Permanent Road Formation & Kerb (Eastern Side)	45	15-Oct-16	06-Dec-16	3
FHW-5200	Demolition of Existing Central Divider and Road Formation (Middle Part, Pavement Only)	45	09-Dec-16	09-Feb-17	3
FHW-5300	Road Formation, Road Drainage, Kerb, Noise Barrier (Western Side)	145	08-Mar-17	01-Sep-17	520
FHW-5400	Road Formation, Central Barrier (Remaining Works at Middle Part)	145	08-Mar-17	01-Sep-17	57
Fanling Highway Zone 7 between CH7600 and CH7660 (Existing Vehicular Bridge)					
At-Grade Roadworks (60m)					
FHW-6100	Permanent Road Formation and Pavement (Eastern Side)	35	31-Jul-14	10-Sep-14	7
FHW-6110	Noise Barrier NB73 - Footing adjacent to SB lane (75m)	166	09-May-16	24-Nov-16	332
FHW-6200	Demolition of Existing Central Divider and Road Formation (Middle Part, Pavement Only)	20	10-Feb-17	04-Mar-17	3
FHW-6300	Road Formation, Road Drainage, Kerb (Western Side)	65	02-Sep-17	20-Nov-17	520
FHW-6400	Road Formation, Central Barrier (Remaining Works at Middle Part)	65	02-Sep-17	20-Nov-17	57
Fanling Highway Zone 8 between CH7660 and CH7925					
At-Grade Roadworks (265m)					
FHW-7100	Site Formation, Preparation Works & Tree Transplant	127	30-Aug-13 A	07-Feb-14	7
FHW-7110	Permanent Road Formation and Pavement (Eastern Side)	140	08-Feb-14	30-Jul-14	7
FHW-7200	Demolition of Existing Central Divider and Road Formation (Middle Part, Pavement Only)	65	09-Dec-16	04-Mar-17	3
FHW-7300	Road Formation, Road Drainage, Kerb (Western Side)	150	08-Mar-17	07-Sep-17	3
FHW-7400	Road Formation, Central Barrier (Remaining Works at Middle Part)	250	08-Mar-17	09-Jan-18	187



俊和建築工程有限公司
CHUN WO CONSTRUCTION & ENGINEERING CO., LTD.

Actual Work
Remaining Work
Critical Remaining Work
Milestone

CEDD Contract No. CV/2012/09

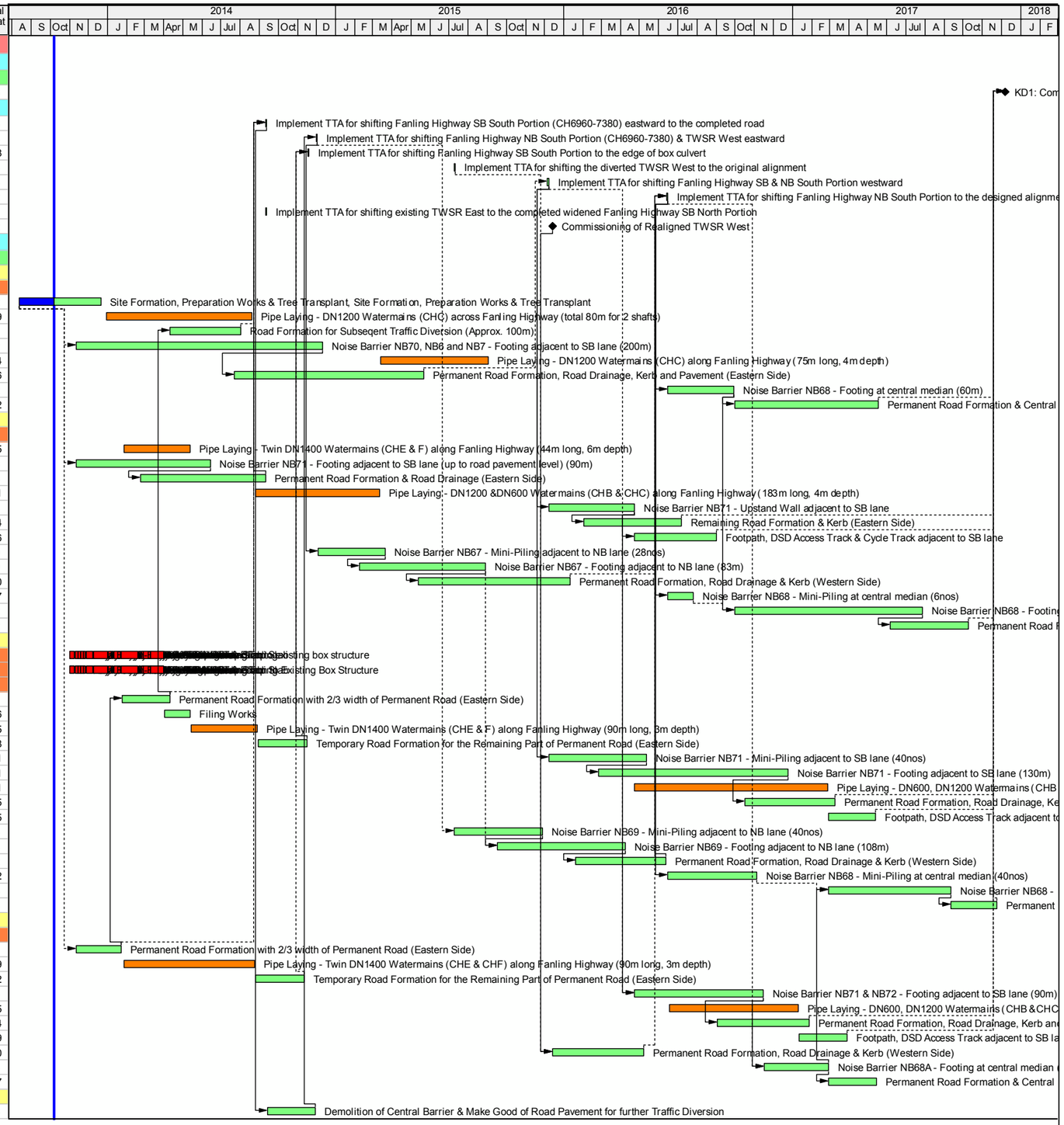
Liantang / Heung Yuen Wai BCP - Site Formation & Infrastructure Works, Contract 3

Works Sequence for Fanling Highway North Portion

CWP004-1 Page 1 of 1 11-Oct-13

Date	Revision	Checked	Approved
11-Oct-13		SL	

Activity ID	Activity Name	OD	Start	Finish	Total Float
CWP - Under Development (Postpone Pipe Jacking)					
Key Dates (Forecast)					
Major Works					
KD-0105	KD1: Complete Section 1A - all HyD's entrustment works in Zone3 and SBZ2 except for landscaping works	0		07-Dec-17	53
Major Milestones and Events					
MS-2010	Implement TTA for shifting Fanling Highway SB South Portion (CH6960-7380) eastward to the completed ro	2	11-Sep-14	12-Sep-14	58
MS-2020	Implement TTA for shifting Fanling Highway NB South Portion (CH6960-7380) & TWSR West eastward	2	01-Dec-14	02-Dec-14	58
MS-2030	Implement TTA for shifting Fanling Highway SB South Portion to the edge of box culvert	2	17-Nov-14	18-Nov-14	238
MS-2040	Implement TTA for shifting the diverted TWSR West to the original alignment	2	09-Jul-15	10-Jul-15	54
MS-2050	Implement TTA for shifting Fanling Highway SB & NB South Portion westward	2	05-Dec-15	07-Dec-15	54
MS-2060	Implement TTA for shifting Fanling Highway NB South Portion to the designed alignment	2	13-Jun-16	14-Jun-16	92
MS-3000	Implement TTA for shifting existing TWSR East to the completed widened Fanling Highway SB North Portion	2	11-Sep-14	12-Sep-14	7
MS-3020	Commissioning of Realigned TWSR West	0	14-Dec-15		42
Section IA & IB - Fanling Highway Widening (KD-1 & KD-2)					
Fanling Highway South Portion between CH6935 and CH7470					
Fanling Highway Zone 1 between CH6935 and CH7130 (within SBZ2)					
At-Grade Roadworks (195m)					
FHW-1100	Site Formation, Preparation Works & Tree Transplant	65	12-Aug-13 A	21-Dec-13	32
FHW-1110*	Pipe Laying - DN1200 Watermains (CHC) across Fanling Highway (total 80m for 2 shafts)	185	30-Dec-13	19-Aug-14	999
FHW-1130	Road Formation for Subseqent Traffic Diversion (Approx. 100m)	90	11-Apr-14	01-Aug-14	91
FHW-1140	Noise Barrier NB70, NB6 and NB7 - Footing adjacent to SB lane (200m)	320	11-Nov-13	11-Dec-14	32
FHW-1150*	Pipe Laying - DN1200 Watermains (CHC) along Fanling Highway (75m long, 4m depth)	140	13-Mar-15	01-Sep-15	644
FHW-1160	Permanent Road Formation, Road Drainage, Kerb and Pavement (Eastern Side)	245	22-Jul-14	22-May-15	216
FHW-1300	Noise Barrier NB68 - Footing at central median (60m)	90	15-Jun-16	29-Sep-16	92
FHW-1310	Permanent Road Formation & Central Barrier (Middle Part)	180	30-Sep-16	17-May-17	212
Fanling Highway Zone 2 between CH7130 and CH7290					
At-Grade Roadworks (160m)					
FHW-2100*	Pipe Laying - Twin DN1400 Watermains (CHE & F) along Fanling Highway (44m long, 6m depth)	80	27-Jan-14	13-May-14	145
FHW-2110	Noise Barrier NB71 - Footing adjacent to SB lane (up to road pavement level) (90m)	170	11-Nov-13	14-Jun-14	58
FHW-2120	Permanent Road Formation & Road Drainage (Eastern Side)	163	22-Feb-14	10-Sep-14	58
FHW-2130*	Pipe Laying - DN1200 &DN600 Watermains (CHB & CHC) along Fanling Highway (183m long, 4m depth)	160	25-Aug-14	12-Mar-15	741
FHW-2140	Noise Barrier NB71 - Upstand Wall adjacent to SB lane	105	08-Dec-15	22-Apr-16	54
FHW-2150	Remaining Road Formation & Kerb (Eastern Side)	120	02-Feb-16	06-Jul-16	464
FHW-2190	Footpath, DSD Access Track & Cycle Track adjacent to SB lane	108	23-Apr-16	31-Aug-16	416
FHW-2200	Noise Barrier NB67 - Mini-Piling adjacent to NB lane (28nos)	84	03-Dec-14	20-Mar-15	70
FHW-2210	Noise Barrier NB67 - Footing adjacent to NB lane (83m)	160	07-Feb-15	28-Aug-15	70
FHW-2220	Permanent Road Formation, Road Drainage & Kerb (Western Side)	200	13-May-15	11-Jan-16	210
FHW-2300	Noise Barrier NB68 - Mini-Piling at central median (6nos)	35	15-Jun-16	26-Jul-16	147
FHW-2310	Noise Barrier NB68 - Footing at central median (157m)	240	30-Sep-16	28-Jul-17	92
FHW-2320	Permanent Road Formation & Central Barrier (Middle Part)	105	06-Jun-17	09-Oct-17	92
Fanling Highway Zone 3 between CH7290 and CH7380					
Box Culvert Extension - ID4					
Box Culvert Extension - ID5					
At-Grade Roadworks (90m)					
FHW-3100	Permanent Road Formation with 2/3 width of Permanent Road (Eastern Side)	60	23-Jan-14	10-Apr-14	91
FHW-3110	Filing Works	30	01-Apr-14	12-May-14	146
FHW-3120*	Pipe Laying - Twin DN1400 Watermains (CHE & F) along Fanling Highway (90m long, 3m depth)	90	14-May-14	28-Aug-14	145
FHW-3120B	Temporary Road Formation for the Remaining Part of Permanent Road (Eastern Side)	65	29-Aug-14	15-Nov-14	238
FHW-3130	Noise Barrier NB71 - Mini-Piling adjacent to SB lane (40nos)	120	08-Dec-15	11-May-16	181
FHW-3140	Noise Barrier NB71 - Footing adjacent to SB lane (130m)	249	26-Feb-16	24-Dec-16	181
FHW-3150*	Pipe Laying - DN600, DN1200 Watermains (CHB &CHC) along Fanling Highway (90m long, 3m depth)	249	23-Apr-16	25-Feb-17	181
FHW-3160	Permanent Road Formation, Road Drainage, Kerb and Pavement (Eastern Side)	115	17-Oct-16	09-Mar-17	265
FHW-3190	Footpath, DSD Access Track adjacent to SB lane	60	27-Feb-17	13-May-17	215
FHW-3200	Noise Barrier NB69 - Mini-Piling adjacent to NB lane (40nos)	120	09-Jul-15	28-Nov-15	54
FHW-3210	Noise Barrier NB69 - Footing adjacent to NB lane (108m)	160	17-Sep-15	08-Apr-16	54
FHW-3220	Permanent Road Formation, Road Drainage & Kerb (Western Side)	112	19-Jan-16	11-Jun-16	92
FHW-3300	Noise Barrier NB68 - Mini-Piling at central median (40nos)	120	15-Jun-16	05-Nov-16	142
FHW-3310	Noise Barrier NB68 - Footing at central median (98m)	160	28-Feb-17	11-Sep-17	54
FHW-3320	Permanent Road Formation & Central Barrier (Middle Part)	60	12-Sep-17	23-Nov-17	54
Fanling Highway Zone 4 between CH7380 and CH7470					
At-Grade Roadworks (90m)					
FHW-4100	Permanent Road Formation with 2/3 width of Permanent Road (Eastern Side)	60	11-Nov-13	22-Jan-14	91
FHW-4110*	Pipe Laying - Twin DN1400 Watermains (CHE & CHF) along Fanling Highway (90m long, 3m depth)	166	27-Jan-14	23-Aug-14	149
FHW-4120	Temporary Road Formation for the Remaining Part of Permanent Road (Eastern Side)	65	25-Aug-14	11-Nov-14	242
FHW-4130	Noise Barrier NB71 & NB72 - Footing adjacent to SB lane (90m)	170	23-Apr-16	15-Nov-16	54
FHW-4140*	Pipe Laying - DN600, DN1200 Watermains (CHB &CHC) along Fanling Highway (90m long, 3m depth)	170	18-Jun-16	10-Jan-17	215
FHW-4150	Permanent Road Formation, Road Drainage, Kerb and Pavement (Eastern Side)	120	03-Sep-16	27-Jan-17	294
FHW-4160	Footpath, DSD Access Track adjacent to SB lane	60	11-Jan-17	28-Mar-17	249
FHW-4200	Permanent Road Formation, Road Drainage & Kerb (Western Side)	112	14-Dec-15	07-May-16	120
FHW-4210	Noise Barrier NB68A - Footing at central median (40m)	80	16-Nov-16	27-Feb-17	54
FHW-4300	Permanent Road Formation & Central Barrier (Middle Part)	60	28-Feb-17	15-May-17	677
Miscellaneous Works for Facilitating Traffic Diversion of Fanling Highway					
FHW-M-1000	Demolition of Central Barrier & Make Good of Road Pavement for further Traffic Diversion	65	13-Sep-14	29-Nov-14	58



俊和建築工程有限公司
CHUN WO CONSTRUCTION & ENGINEERING CO., LTD.

Actual Work
Remaining Work
Summary Bar
Critical Remaining Work
Milestone

CEDD Contract No. CV/2012/09

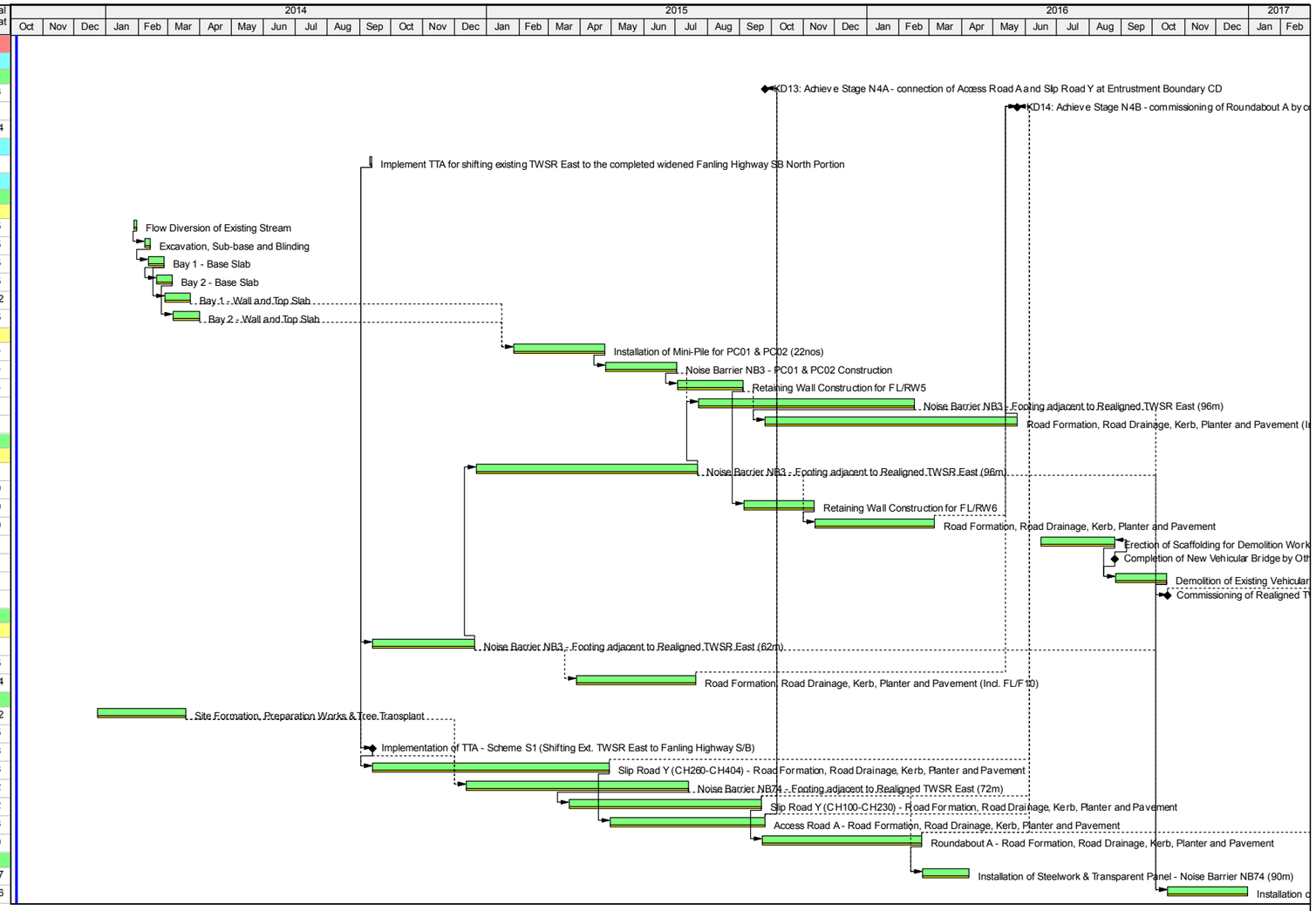
Liantang / Heung Yuen Wai BCP - Site Formation & Infrastructure Works, Contract 3

Works Sequence for Fanling Highway South Portion

CWP004-1 Page 1 of 1 11-Oct-13

Date	Revision	Checked	Approved
11-Oct-13		SL	

Activity ID	Activity Name	OD	Start	Finish	Total Float
CWP - Under Development (Postpone Pipe Jacking)					
Key Dates (Forecast)					
Major Works					
KD-0905	KD13: Achieve Stage N4A - connection of Access Road A and Slip Road Y at Entrustment Boundary CD	0		25-Sep-15	36
KD-1005	KD14: Achieve Stage N4B - commissioning of Roundabout A by connecting to Slip Rd Y, Access Rd A & th	0		24-May-16	8
KD-0205	KD2: Complete Section 1B - all HyD's entrustment works in NBZ1 except for landscaping works	0		09-Jan-18	234
Major Milestones and Events					
MS-3000	Implement TTA for shifting existing TWSR East to the completed widened Fanling Highway SB North Porti	2	11-Sep-14	12-Sep-14	7
Stage N4A & N4B - Realignment of Tai Wo Service Road East (KD-13 & KD-14)					
TWSRE Zone 1 between CH100 and CH270					
Box Culvert Extension - BC02					
TWSRE-1000	Flow Diversion of Existing Stream	4	27-Jan-14	30-Jan-14	95
TWSRE-1010	Excavation, Sub-base and Blinding	5	07-Feb-14	12-Feb-14	95
TWSRE-1020	Bay 1 - Base Slab	14	10-Feb-14	25-Feb-14	95
TWSRE-1030	Bay 2 - Base Slab	14	18-Feb-14	05-Mar-14	95
TWSRE-1040	Bay 1 - Wall and Top Slab	22	26-Feb-14	22-Mar-14	102
TWSRE-1050	Bay 2 - Wall and Top Slab	22	06-Mar-14	31-Mar-14	95
At-Grade Roadworks					
TWSRE-1100	Installation of Mini-Pile for PC01 & PC02 (22nos)	66	27-Jan-15	24-Apr-15	24
TWSRE-1110	Noise Barrier NB3 - PC01 & PC02 Construction	55	25-Apr-15	02-Jul-15	24
TWSRE-1130	Retaining Wall Construction for FL/RW5	55	03-Jul-15	04-Sep-15	24
TWSRE-1120	Noise Barrier NB3 - Footing adjacent to Realigned TWSR East (96m)	166	23-Jul-15	15-Feb-16	7
TWSRE-1160	Road Formation, Road Drainage, Kerb, Planter and Pavement (Incl. FL/F8A, FL/F9)	190	25-Sep-15	24-May-16	7
TWSRE Zone 2 between CH270 and CH380					
At-Grade Roadworks					
TWSRE-2010	Noise Barrier NB3 - Footing adjacent to Realigned TWSR East (96m)	166	22-Dec-14	22-Jul-15	7
TWSRE-2020*	Pipe laying - DN600, DN1400 & DN1200 Watermains (CHB, CHK & CHC) along Realigned TWSR East	172	20-Mar-15	17-Oct-15	89
TWSRE-2020	Retaining Wall Construction for FL/RW6	55	05-Sep-15	11-Nov-15	69
TWSRE-2030	Road Formation, Road Drainage, Kerb, Planter and Pavement	90	12-Nov-15	05-Mar-16	69
TWSRE-2050	Erection of Scaffolding for Demolition Works	60	16-Jun-16	25-Aug-16	3
TWSRE-2040	Completion of New Vehicular Bridge by Other Contractor	0		25-Aug-16	3
TWSRE-2060	Demolition of Existing Vehicular Bridge	40	26-Aug-16	14-Oct-16	3
TWSRE-2070	Commissioning of Realigned TWSR East	0	15-Oct-16		3
TWSRE Zone 3 between CH380 and CH456					
At-Grade Roadworks					
TWSRE-3010	Noise Barrier NB3 - Footing adjacent to Realigned TWSR East (62m)	83	13-Sep-14	20-Dec-14	7
TWSRE-3020*	Pipe Laying - DN600 & DN1200 Watermains (CHB & CHC) along Realigned TWSR East	53	19-Jan-15	27-Mar-15	75
TWSRE-3030	Road Formation, Road Drainage, Kerb, Planter and Pavement (Incl. FL/F10)	90	28-Mar-15	20-Jul-15	254
Roundabout A, Slip Road and Access Road					
TWSRE-4000	Site Formation, Preparation Works & Tree Transplant	65	23-Dec-13	18-Mar-14	172
TWSRE-4050*	Pipe laying - DN600, DN1200 & DN2300 Watermains (CHB, CHC & CHJ) along Access Road A & Round	111	13-Sep-14	26-Jan-15	75
TWSRE-4010	Implementation of TTA - Scheme S1 (Shifting Ext. TWSR East to Fanling Highway S/B)	0	13-Sep-14		28
TWSRE-4020	Slip Road Y (CH260-CH404) - Road Formation, Road Drainage, Kerb, Planter and Pavement	180	13-Sep-14	28-Apr-15	28
TWSRE-4030	Noise Barrier NB74 - Footing adjacent to Realigned TWSR East (72m)	166	12-Dec-14	13-Jul-15	32
TWSRE-4040	Slip Road Y (CH100-CH230) - Road Formation, Road Drainage, Kerb, Planter and Pavement	150	21-Mar-15	21-Sep-15	32
TWSRE-4060	Access Road A - Road Formation, Road Drainage, Kerb, Planter and Pavement	125	29-Apr-15	25-Sep-15	28
TWSRE-4070	Roundabout A - Road Formation, Road Drainage, Kerb, Planter and Pavement	120	22-Sep-15	22-Feb-16	80
Remaining Works for Noise Barrier along realigned TWSR East					
TWSRE-NB-110	Installation of Steelwork & Transparent Panel - Noise Barrier NB74 (90m)	35	23-Feb-16	07-Apr-16	537
TWSRE-NB-120	Installation of Steelwork & Transparent Panel - Noise Barrier NB3 (254m)	65	15-Oct-16	31-Dec-16	316



俊和建築工程有限公司
CHUN WO CONSTRUCTION & ENGINEERING CO., LTD.

Actual Work
Remaining Work
Critical Remaining Work
Milestone
Project Baseline Bar

CEDD Contract No. CV/2012/09

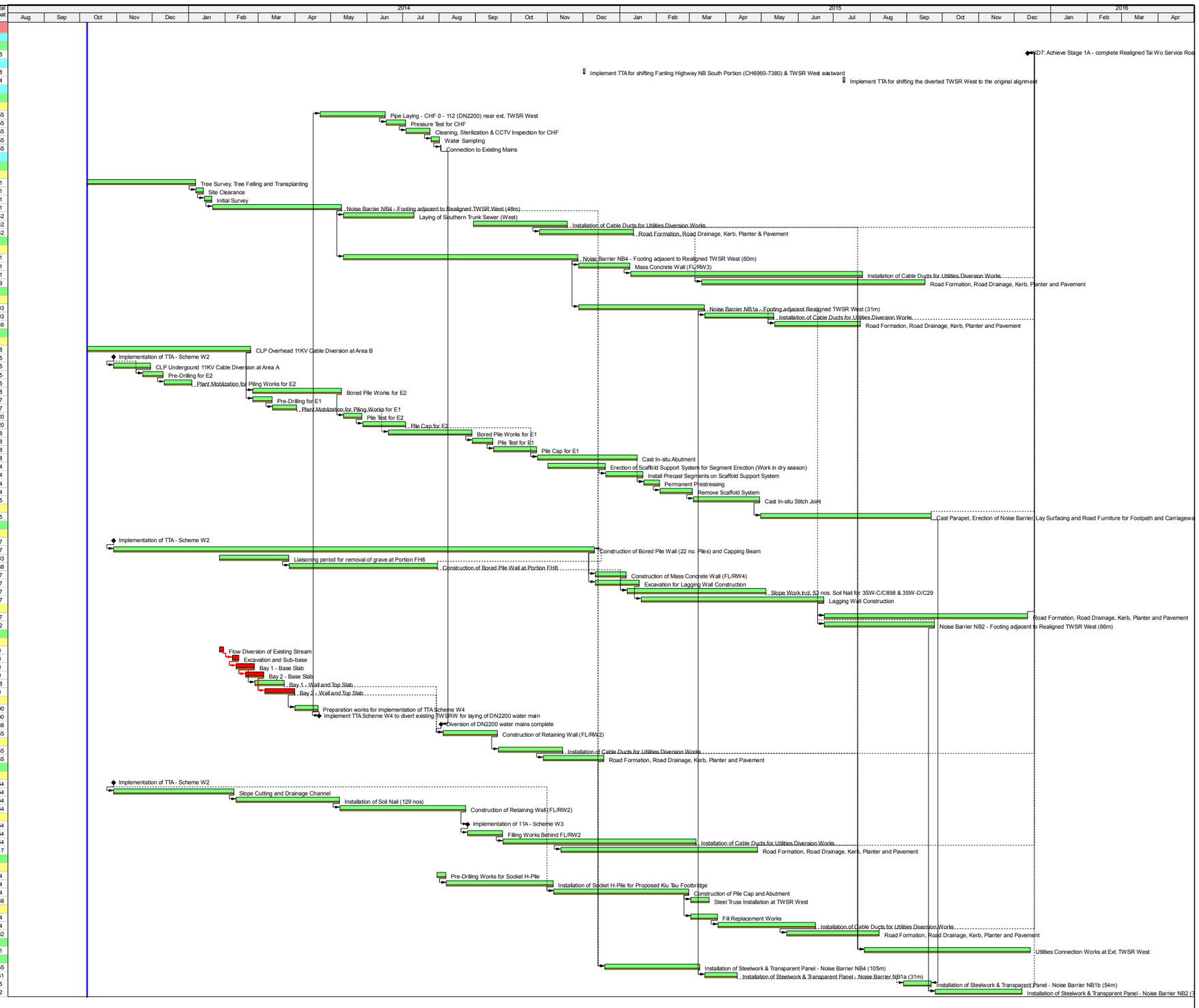
Liantang / Heung Yuen Wai BCP - Site Formation & Infrastructure Works, Contract 3

Works Sequence for TWSRE

CWP004-1 Page 1 of 1 11-Oct-13

Date	Revision	Checked	Approved
11-Oct-13		SL	

Activity ID	Activity Name	OD	Start	Finish	Total Float
CWP - Under Development (Postpone Pipe Jacking)					
Key Dates (Forecast)					
Major Works					
KD-0505	KD7: Achieve Stage 1A - complete Realigned Tai Wo Service Road West	0		12-Dec-15	35
Major Milestones and Events					
MS-2020	Implement TTA for shifting Fanling Highway NB South Portion (CH6960-7380) & TWSR West eastward	2	01-Dec-14	02-Dec-14	58
MS-2040	Implement TTA for shifting the diverted TWSR West to the original alignment	2	09-Jul-15	10-Jul-15	54
Section II - Remainder of the Works (KD-3)					
WSD Works					
DN2200 Water Mains (CHF)					
WF-1000	Pipe Laying - CHF 0 - 112 (DN2200) near ext. TWSR West	45	22-Apr-14	16-Jun-14	155
WF-2000	Pressure Test for CHF	14	17-Jun-14	03-Jul-14	155
WF-2010	Cleaning, Sterilization & CCTV Inspection for CHF	18	04-Jul-14	24-Jul-14	155
WF-2020	Water Sampling	7	25-Jul-14	01-Aug-14	155
WF-2030	Connection to Existing Mains	1	02-Aug-14	02-Aug-14	155
Stage 1A - Realignment of Tai Wo Service Road West (KD-7)					
TWSRW Zone 1 betweeen CH100 and CH155					
At-Grade Roadworks					
TWSRW-1100	Tree Survey, Tree Felling and Transplanting	75	07-Oct-13	06-Jan-14	41
TWSRW-1110	Site Clearance	6	07-Jan-14	13-Jan-14	41
TWSRW-1120	Initial Survey	6	14-Jan-14	20-Jan-14	41
TWSRW-1130	Noise Barrier NB4 - Footing adjacent to Realigned TWSR West (48m)	83	21-Jan-14	10-May-14	41
TWSRW-1140	Laying of Southern Trunk Sewer (West)	50	12-May-14	10-Jul-14	142
TWSRW-1150	Installation of Cable Ducts for Utilities Diversion Works	65	30-Aug-14	17-Nov-14	142
TWSRW-1160	Road Formation, Road Drainage, Kerb, Planter & Pavement	65	25-Oct-14	12-Jan-15	142
TWSRW Zone 2 betweeen CH155 and CH280					
At-Grade Roadworks					
TWSRW-2100	Noise Barrier NB4 - Footing adjacent to Realigned TWSR West (60m)	166	12-May-14	26-Nov-14	41
TWSRW-2110	Mass Concrete Wall (FL/RW3)	35	27-Nov-14	09-Jan-15	41
TWSRW-2120	Installation of Cable Ducts for Utilities Diversion Works	155	10-Jan-15	25-Jul-15	41
TWSRW-2130	Road Formation, Road Drainage, Kerb, Planter and Pavement	155	11-Mar-15	16-Sep-15	99
TWSRW Zone 3 between CH280 and CH315					
At-Grade Roadworks					
TWSRW-3100	Noise Barrier NB1a - Footing adjacent Realigned TWSR West (31m)	83	27-Nov-14	13-Mar-15	103
TWSRW-3110	Installation of Cable Ducts for Utilities Diversion Works	45	14-Mar-15	11-May-15	103
TWSRW-3120	Road Formation, Road Drainage, Kerb, Planter and Pavement	60	12-May-15	23-Jul-15	146
TWSRW Zone 4 between CH315 and CH376					
Construction of Bridge E					
TWSRW-4000A	CLP Overhead 11KV Cable Diversion at Area B	110	07-Oct-13	22-Feb-14	28
TWSRW-4000	Implementation of TTA - Scheme W2	0	29-Oct-13		65
TWSRW-4000A	CLP Undergound 11KV Cable Diversion at Area A	28	29-Oct-13	29-Nov-13	65
TWSRW-4010B	Pre-Drilling for E2	15	23-Nov-13	10-Dec-13	65
TWSRW-4020B	Plant Mobilization for Piling Works for E2	18	11-Dec-13	03-Jan-14	65
TWSRW-4030B	Bored Pile Works for E2	60	24-Feb-14	10-May-14	28
TWSRW-4010A	Pre-Drilling for E1	15	24-Feb-14	12-Mar-14	87
TWSRW-4020A	Plant Mobilization for Piling Works for E1	18	13-Mar-14	02-Apr-14	87
TWSRW-4040B	Pile Test for E2	14	12-May-14	27-May-14	120
TWSRW-4050B	Pile Cap for E2	30	28-May-14	03-Jul-14	120
TWSRW-4030A	Bored Pile Works for E1	60	19-Jun-14	28-Aug-14	28
TWSRW-4040A	Pile Test for E1	14	29-Aug-14	15-Sep-14	28
TWSRW-4050A	Pile Cap for E1	30	16-Sep-14	22-Oct-14	28
TWSRW-4070B	Cast In-situ Abutment	70	23-Oct-14	15-Jan-15	28
TWSRW-4060	Erection of Scaffold Support System for Segment Erection (Work in dry season)	42	01-Nov-14	19-Dec-14	24
TWSRW-4070A	Install Precast Segments on Scaffold Support System	24	20-Dec-14	20-Jan-15	24
TWSRW-4080	Permanent Prestressing	12	21-Jan-15	03-Feb-15	24
TWSRW-4090A	Remove Scaffold System	18	04-Feb-15	03-Mar-15	24
TWSRW-4090B	Cast In-situ Stitch Joint	45	04-Mar-15	29-Apr-15	35
At-Grade Roadworks					
TWSRW-4100	Cast Parapet, Erection of Noise Barrier, Lay Surfacing and Road Furniture for Footpath and Carriageway	120	30-Apr-15	21-Sep-15	35
TWSRW Zone 5 between CH376 and CH520					
Construction of Retaining Structures					
TWSRW-5000	Implementation of TTA - Scheme W2	0	29-Oct-13		27
TWSRW-5010	Construction of Bored Pile Wall (22 no. Piles) and Capping Beam	330	29-Oct-13	10-Dec-14	27
TWSRW-5020	Liaisoning period for removal of grave at Portion FH8	45	27-Jan-14	26-Mar-14	103
TWSRW-5030	Construction of Bored Pile Wall at Portion FH8	100	27-Mar-14	30-Jul-14	138
TWSRW-5040	Construction of Mass Concrete Wall (FL/RW4)	20	11-Dec-14	06-Jan-15	67
TWSRW-5060	Excavation for Lagging Wall Construction	30	11-Dec-14	17-Jan-15	27
TWSRW-5050	Slope Work incl. 53 nos. Soil Nail for 3SW-C/C898 & 3SW-D/C29	90	07-Jan-15	04-May-15	67
TWSRW-5070	Lagging Wall Construction	120	19-Jan-15	22-Jun-15	27
At-Grade Roadworks					
TWSRW-5110	Road Formation, Road Drainage, Kerb, Planter and Pavement	145	23-Jun-15	12-Dec-15	27
TWSRW-5100	Noise Barrier NB2 - Footing adjacent to Realigned TWSR West (66m)	80	23-Jun-15	24-Sep-15	32
TWSRW Zone 6 betweeen CH520 and CH530					
Box Culvert Extension - BC01					
TWSRW-6000	Flow Diversion of Existing Stream	4	27-Jan-14	30-Jan-14	0
TWSRW-6010	Excavation and Sub-base	5	07-Feb-14	12-Feb-14	0
TWSRW-6020	Bay 1 - Base Slab	14	10-Feb-14	25-Feb-14	0
TWSRW-6030	Bay 2 - Base Slab	14	18-Feb-14	05-Mar-14	0
TWSRW-6040	Bay 1 - Wall and Top Slab	22	26-Feb-14	22-Mar-14	88
TWSRW-6050	Bay 2 - Wall and Top Slab	22	06-Mar-14	31-Mar-14	0
Construction of Retaining Structures					
TWSRW-6057	Preparation works for implementation of TTA Scheme W4	20	01-Apr-14	20-Apr-14	190
TWSRW-6059	Implement TTA Scheme W4 to divert existing TWSRW for laying of DN2200 water main	0	21-Apr-14		190
TWSRW-6055	Diversion of DN2200 water mains complete	0		02-Aug-14	188
TWSRW-6060	Construction of Retaining Wall (FL/RW2)	40	04-Aug-14	19-Sep-14	155
At-Grade Roadworks					
TWSRW-6100	Installation of Cable Ducts for Utilities Diversion Works	45	20-Sep-14	13-Nov-14	155
TWSRW-6110	Road Formation, Road Drainage, Kerb, Planter and Pavement	45	28-Oct-14	18-Dec-14	155
TWSRW Zone 7 between CH530 and CH640					
Construction of Retaining Structures					
TWSRW-7000	Implementation of TTA - Scheme W2	0	29-Oct-13		154
TWSRW-7010	Slope Cutting and Drainage Channel	80	29-Oct-13	08-Feb-14	154
TWSRW-7020	Installation of Soil Nail (129 nos)	70	10-Feb-14	08-May-14	154
TWSRW-7030	Construction of Retaining Wall (FL/RW2)	90	09-May-14	23-Aug-14	154
At-Grade Roadworks					
TWSRW-7100	Implementation of TTA - Scheme W3	0	25-Aug-14		154
TWSRW-7110	Filling Works Behind FL/RW2	25	25-Aug-14	23-Sep-14	154
TWSRW-7120	Installation of Cable Ducts for Utilities Diversion Works	130	24-Sep-14	06-Mar-15	154
TWSRW-7140	Road Formation, Road Drainage, Kerb, Planter and Pavement	130	12-Nov-14	27-Apr-15	217
TWSRW Zone 8 between CH640 and CH695					
Kiu Tau Footbridge Reprovision (West)					
TWSRW-8000	Pre-Drilling Works for Socket H-Pile	7	30-Jul-14	06-Aug-14	74
TWSRW-8010	Installation of Socket H-Pile for Proposed Kiu Tau Footbridge	75	07-Aug-14	05-Nov-14	74
TWSRW-8020	Construction of Pile Cap and Abutment	90	06-Nov-14	28-Feb-15	74
TWSRW-8030	Steel Truss Installation at TWSR West	14	02-Mar-15	17-Mar-15	768
At-Grade Roadworks					
TWSRW-8100	Fill Replacement Works	20	02-Mar-15	24-Mar-15	74
TWSRW-8110	Installation of Cable Ducts for Utilities Diversion Works	65	25-Mar-15	15-Jun-15	74
TWSRW-8120	Road Formation, Road Drainage, Kerb, Planter and Pavement	65	22-May-15	08-Aug-15	132
Remainder of the Works					
TWSRW-9000	Utilities Connection Works at Ext. TWSR West	118	27-Jul-15	14-Dec-15	41
Remaining Works for Noise Barrier along realigned TWSR West					
TWSRW-NB-110	Installation of Steelwork & Transparent Panel - Noise Barrier NB4 (105m)	60	19-Dec-14	09-Mar-15	155
TWSRW-NB-120	Installation of Steelwork & Transparent Panel - Noise Barrier NB1a (31m)	20	14-Mar-15	10-Apr-15	151
TWSRW-NB-130	Installation of Steelwork & Transparent Panel - Noise Barrier NB1b (54m)	20	29-Aug-15	21-Sep-15	35
TWSRW-NB-140	Installation of Steelwork & Transparent Panel - Noise Barrier NB2 (77m)	60	25-Sep-15	07-Dec-15	32



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CHUN WO CONSTRUCTION & ENGINEERING CO., LTD.

Actual Work
Remaining Work
Critical Remaining Work
Milestone
Project Baseline Bar

CEDD Contract No. CV/2012/09

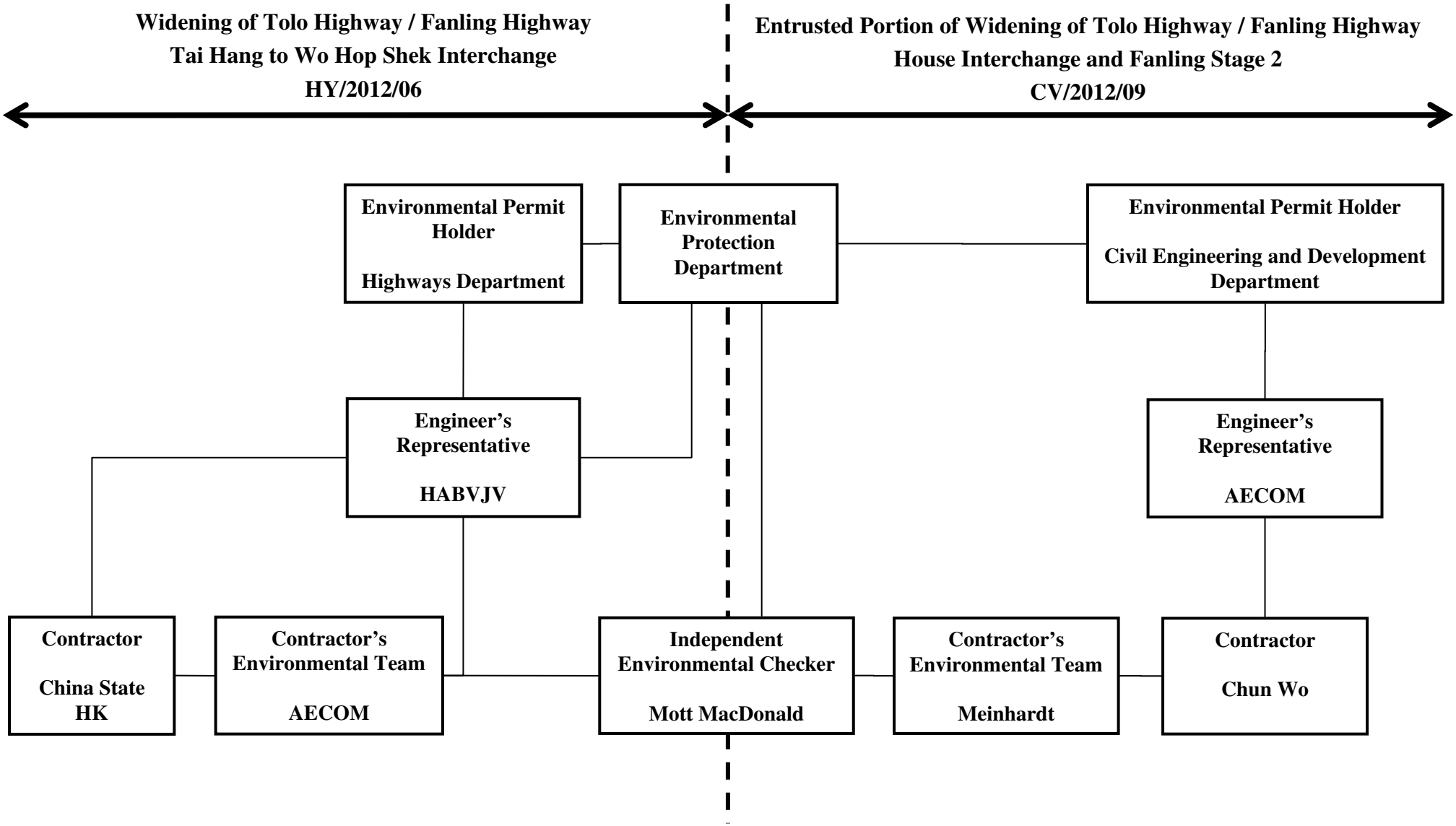
Liantang / Heung Yuen Wai BCP - Site Formation & Infrastructure Works, Contract 3

Works Sequence for TWSRW

CWP004-1 Page 1 of 1 12-Oct-13

Date	Revision	Checked	Approved
11-Sep-13		SL	

Appendix B
Project Organization Structure


Widening of Tolo Highway / Fanling Highway
Tai Hang to Wo Hop Shek Interchange
HY/2012/06
Entrusted Portion of Widening of Tolo Highway / Fanling Highway
House Interchange and Fanling Stage 2
CV/2012/09
Environmental Permit Holder
Highways Department
Environmental Protection Department
Environmental Permit Holder
Civil Engineering and Development Department
Engineer's Representative
HABVJV
Engineer's Representative
AECOM
Contractor
China State HK
Contractor's Environmental Team
AECOM
Independent Environmental Checker
Mott MacDonald
Contractor's Environmental Team
Meinhardt
Contractor
Chun Wo

Appendix C
Implementation Schedule of Environmental Mitigation Measures (EMIS)

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
Air Quality				
Air Quality during Construction	• Restricting heights from which materials are dropped, as far as practicable to minimize the fugitive dust arising from unloading/loading. • All stockpiles of excavated materials or spoil of more than 50m^3 shall be enclosed, covered or dampened during dry or windy conditions. • Effective water sprays shall be used to control potential dust emission sources such as unpaved haul roads and active construction areas. • All spraying of materials and surfaces shall avoid excessive water usage. • 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. • Materials shall be dampened, if necessary, before transportation. • Travelling speeds shall be controlled to reduce traffic induced dust dispersion and re-suspension within the site from the operating haul trucks. • Vehicle washing facilities shall be provided to minimise the quantity of material deposited on public roads.	During Construction	Contractor	✓ Rem and Obs Rem ✓ ✓ ✓ ✓ Rem and Obs
Air Quality during Operation	Not required	N/A	N/A	N/A
Noise				
Noise during Construction	• Use of silenced plant or plant equipped with mufflers or dampers in substitute of ordinary plant. • Reduce the number of equipment and their percentage on-time.	During Construction	Contractor	✓ ✓
Noise during Operation	Not required	N/A	N/A	N/A
Water Quality				
Water Quality during Construction	<u>Road Widening Works, Earthworks and Culvert Extension Works</u> • 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.	During Construction	Contractor	Obs

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable;

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	• Sand traps, oil interceptors and other pollution prevention installations should be provided, properly cleaned and maintained.			✓
	• Runoff from exposed working areas, unfinished slopes and from unlined temporary channels should be directed to stilling basins and/or silt traps before discharging to the drainage outfalls.			Rem
	• Regular inspections of stilling basins and/or silt traps is required to ensure that sediment is not conveyed into the existing drainage system.			✓
	• Open stockpiles should be covered with a tarpaulin cover.			✓
	• During the wet season, any exposed top soils should be covered with a tarpaulin, shotcreted or hydroseeded.			✓
	• Sand and silt from wash-water from vehicle washing should be settled out before discharging into storm drains.			Rem
	• Fuels should be stored in bunded areas such that spillage can be easily collected.			✓
Water Quality during Operation	Not required	N/A	N/A	N/A
Waste Management				
Waste Management during Construction	<u>General Waste</u> • Transport of wastes off site as soon as possible.	During Construction	Contractor	✓
	• Maintenance of accurate waste records.			✓
	• Minimisation of waste generation for disposal (via reduction/recycling/re-use).			✓
	• No on-site burning will be permitted.			✓
	• Use of re-useable metal hoardings/signboards.			✓
	<u>Vegetation from site clearance</u>	During Construction	Contractor	✓
	• Segregation of materials to facilitate disposal.			
	• Mulching to reduce bulk and where possible review opportunities for the possible beneficial use within landscaping areas.			✓

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable;

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	Demolition Wastes	During Construction	Contractor	✓
	• Segregation of materials to facilitate disposal.			
	• Appropriate stockpile management.			✓
	Excavated Materials	During Construction	Contractor	✓
	• Segregation of materials to facilitate disposal / reuse.			
	• Appropriate stockpile management.			✓
	• Re-use of excavated material on or off site (where possible).			✓
	• Special handling and disposal procedures in the event that contaminated materials are excavated.			N/A
	Construction Wastes	During Construction	Contractor	✓
	• Segregation of materials to facilitate recycling/reuse (within designated area in appropriate containers/stockpiles).			
	• Appropriate stockpile management.			Obs
	• Planning to reduce over ordering and waste generation.			✓
	• Recycling and re-use of materials where possible (e.g. metal, wood from formwork)			✓
	• For material which cannot be re-used/recycled, collection should be carried out by an approved waste contractor for landfill disposal.			✓
	Bentonite Slurries	During Construction	Contractor	N/A
	• Bentonite slurries should be reused as far as possible.			
	• Disposal in accordance with Practice Note For Professional Persons ProPECC PN 1/94.			N/A
	Chemical Wastes	During Construction	Contractor	✓
	• Storage within locked, covered and bunded area.			
	• The storage area shall not be located adjacent to sensitive receivers e.g. drains.			✓

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable;

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	• Minimise waste production and recycle oils/solvents where possible.			✓
	• A spill response procedure shall be in place and absorption material available for minor spillages.			✓
	• Use appropriate and labelled containers.			✓
	• Educate site workers on site cleanliness/waste management procedures.			✓
	• If chemical wastes are to be generated, the contractor must register with EPD as a chemical waste producer.			✓
	• The chemical wastes shall be collected by a licensed chemical waste collector.			✓
	Municipal Wastes	During Construction	Contractor	Rem and Obs
	• Waste shall be stored within a temporary refuse collection facility, in appropriate containers prior to collection and disposal.			
	• Regular, daily collections are required by an approved waste collector.			✓
Waste Management during Operation	Not required.	N/A	N/A	N/A
Ecology				
Ecology during Construction	Accurate Delineation of Works Area	During Construction	Contractor	✓
	• Boundaries of proposed works areas shall be clearly identified and separated from external areas by a physical barrier to prevent encroachment of adjacent habitats.			
	• Individual trees which fall within the works areas but which work plans show do not require removal are to be retained and fenced off to maximise protection.			✓
	Dust generation	During Construction	Contractor	Rem
	There are a number of measures which shall be taken as specified in the Air Pollution Control (Construction Dust) Regulation on 'Dust Control Requirements, including the following key measures to be applied during construction:			
	• vehicle washing facilities to be provided at every discernible or designated vehicle exit point;			

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable;

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	• all temporary site access roads shall be sprayed with water to suppress dust as necessary;			✓
	• all dusty materials should be sprayed with water immediately prior to any handling; and			Rem
	• all debris should be covered entirely by impervious sheeting or stored in a sheltered debris collection area.			✓
	<u>Surface Run-off</u>	During Construction	Contractor	✓
	In general, mitigation measures shall be in accordance with ProPECC PN1/94 on 'Construction Site Drainage'. Key measures include:			
	• Bund and cover stockpiles to avoid run-off;			
	• Channel any run-off through a system of oil, grease and sediment / silt traps and reuse water on site where ever practical;		✓	✓
	• All vehicle maintenance to be undertaken within a bunded area; and			N/A
	• Maximise vegetation retention on-site to maximise absorption (minimise transport).			✓
Ecology during Operation	• To conduct compensatory ecological planting as specified in the latest landscape plans approved by EPD (Clause 2.6 of the Environmental Permit refers).	During Construction and operation	Contractor (during construction) / LCSD* (during operation) (Note: * The division of vegetation planting and maintenance responsibilities shall follow the guidelines stipulated in ETWB TCW No. 2/2004.)	N/A
Landscape and Visual				
Landscape and Visual during Construction	<u>Preservation of Existing Vegetation</u>	During Construction	Contractor	✓
	• Trees identified for retention within the project limit would be protected during the works			
	• The tree transplanting and planting works shall be implemented by approved Landscape Contractors			✓

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable;

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	Temporary Works Areas • Where feasible the works areas would be screened using hoarding and existing vegetation would be retained where possible to reduce the landscape and visual impacts arising from the construction activity. The landscape of these works areas would be restored following the completion of the construction phase.	During Construction	Contractor	✓
	Hoarding • A hoarding would be erected where practicable in the most visually sensitive locations to screen the temporary construction works from the local VSRs.	During Construction	Contractor	✓
	Top Soils • The works will result in disturbance to extensive areas of topsoil. Topsoil worthy of retention should be stockpiled for use following completion of the civil engineering works. It should either be temporarily vegetated with hydroseeded grass or turned over on a regular basis.	During Construction	Contractor	N/A
	Protection of Important Landscape Features • Important features such as temples, Island House and kilns within the study area, although remote from the proposed works retained and adequately protected.	During Construction	Contractor	N/A
Landscape and Visual during Operation	Not required.	N/A	N/A	N/A

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable;

Appendix D
Meteorological Data Extracted from Hong Kong Observatory

Extract of Meteorological Observations for Sheung Shui Automatic Weather Station, August 2014 (Table 1)

Date	Mean Pressure at M.S.L. (hPa)	Air Temperature			Mean Dew Point Temperature (deg C)	Relative Humidity		
		Max. (deg C)	Mean (deg C)	Min. (deg C)		Max. (%)	Mean (%)	Min. (%)
Aug 1	1000.7	36.6	30.4	25.3	25.0	98	74	48
Aug 2	1001.2	35.2	29.7	24.9	25.2	98	79	51
Aug 3	1001.6	34.2	29.4	25.2	25.5	96	81	58
Aug 4	1002.2	34.2	28.9	27.1	26.1	94	85	60
Aug 5	1003.2	33.5	29.5	26.2	25.8	96	81	61
Aug 6	1003.3	31.3	28.5	26.4	26.0	97	87	71
Aug 7	1003.0	32.1	28.3	26.6	25.9	96	87	66
Aug 8	1002.6	34.4	30.0	26.3	25.3	96	77	55
Aug 9	1004.0	34.9	30.0	27.1	25.5	92	78	54
Aug 10	1004.3	34.6	30.5	28.2	25.0	86	73	50
Aug 11	1002.9	33.9	30.0	27.2	25.9	93	79	56
Aug 12	1001.6	33.7	29.2	26.3	26.0	97	84	60
Aug 13	1003.2	26.8	25.9	24.7	25.4	99	97	89
Aug 14	1007.7	31.7	28.0	25.3	25.5	99	87	70
Aug 15	1009.7	34.1	29.3	25.6	25.0	96	79	56
Aug 16	1008.1	34.7	29.8	26.4	24.9	95	76	54
Aug 17	1006.8	35.1	30.0	25.9	24.8	94	75	52
Aug 18	1007.8	34.8	30.4	26.9	24.6	90	73	49
Aug 19	1008.3	34.2	28.0	24.9	25.0	98	85	55
Aug 20	1010.1	27.6	25.0	23.8	24.0	98	94	83
Aug 21	1010.3	32.1	27.5	24.5	24.2	97	83	61
Aug 22	1010.3	32.0	27.7	25.0	24.8	100	85	63
Aug 23	1009.6	32.1	27.4	24.6	25.0	96	87	68
Aug 24	1009.4	34.8	28.7	24.3	24.5	96	80	52
Aug 25	1009.9	35.4	29.1	24.8	24.6	96	78	52
Aug 26	1010.4	35.1	29.9	25.7	24.5	96	75	50
Aug 27	1010.2	32.5	29.8	27.8	24.4	89	74	60
Aug 28	1012.0	33.8	29.7	27.4	25.1	93	77	57
Aug 29	1012.2	36.4	30.3	26.3	24.4	95	73	46
Aug 30	1010.8	35.6	30.2	26.5	24.0	90	71	46
Aug 31	1009.5	32.6	29.4	26.8	25.1	92	78	62
Mean	1006.7	33.5	29.0	25.9	25.1	95	80	59
Maximum	1012.2	36.6	30.5	28.2	26.1	100	97	89
Minimum	1000.7	26.8	25.0	23.8	24.0	86	71	46

Extract of Meteorological Observations for Sheung Shui Automatic Weather Station, August 2014 (Table 2)

Date	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
Aug 1	15.5	***	*****
Aug 2	1.0	***	*****
Aug 3	1.0	***	*****
Aug 4	3.5	***	*****
Aug 5	0.0	***	*****
Aug 6	13.0	***	*****
Aug 7	0.0	***	*****
Aug 8	0.0	***	*****
Aug 9	6.0	***	*****
Aug 10	0.0	***	*****
Aug 11	1.5	***	*****
Aug 12	6.0	***	*****
Aug 13	40.5	***	*****
Aug 14	1.0	***	*****
Aug 15	0.0	***	*****
Aug 16	0.0	***	*****
Aug 17	0.0	***	*****
Aug 18	0.0	***	*****
Aug 19	9.0	***	*****
Aug 20	13.5	***	*****
Aug 21	0.0	***	*****
Aug 22	12.5	***	*****
Aug 23	7.0	***	*****
Aug 24	0.0	***	*****
Aug 25	0.0	***	*****
Aug 26	0.0	***	*****
Aug 27	1.5	***	*****
Aug 28	1.5	***	*****
Aug 29	0.0	***	*****
Aug 30	0.0	***	*****
Aug 31	2.5	***	*****
Mean	-----	***	*****
Total	136.5	---	-----
Maximum	40.5	---	*****
Minimum	0.0	---	*****

*** unavailable

missing (less than 24 hourly observations a day)

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

Extract of Meteorological Observations for Sheung Shui Automatic Weather Station, September 2014 (Table 1)

Date	Mean Pressure at M.S.L. (hPa)	Air Temperature			Mean Dew Point Temperature (deg C)	Relative Humidity		
		Max. (deg C)	Mean (deg C)	Min. (deg C)		Max. (%)	Mean (%)	Min. (%)
Sep 1	1010.2	36.4	30.2	27.0	24.9	92	75	50
Sep 2	1010.5	34.8	29.7	25.4	24.5	94	75	53
Sep 3	1009.1	35.0	30.1	26.0	24.5	93	73	49
Sep 4	1006.8	35.8	28.3	25.0	25.1	97	84	50
Sep 5	1006.9	34.0	29.3	26.6	25.3	95	80	56
Sep 6	1007.5	35.8	29.7	26.2	24.7	93	76	49
Sep 7	1007.4	33.7	29.6	27.9	25.1	89	77	58
Sep 8	1006.8	32.6	28.4	26.4	26.2	95	88	67
Sep 9	1007.6	33.5	28.7	25.6	25.1	97	82	57
Sep 10	1007.8	34.4	29.3	25.8	25.1	95	79	56
Sep 11	1007.7	34.8	29.8	25.9	24.7	96	76	53
Sep 12	1006.4	29.2	27.3	25.8	25.4	97	90	74
Sep 13	1005.7	34.0	29.3	26.2	25.5	99	81	58
Sep 14	1005.9	35.8	29.7	26.6	25.5	95	79	54
Sep 15	1002.0	33.5	29.0	25.7	24.9	97	80	57
Sep 16	1003.7	29.6	27.3	25.3	24.6	95	85	68
Sep 17	1010.9	31.0	27.5	26.2	25.7	96	90	73
Sep 18	1011.7	33.8	29.0	25.1	25.3	98	82	57
Sep 19	1006.5	36.6	29.9	25.5	25.4	97	79	49
Sep 20	1004.2	32.8	29.0	26.5	21.6	89	65	51
Sep 21	1005.5	30.0	27.2	24.4	20.3	81	66	54
Sep 22	1007.1	31.6	27.3	24.5	20.8	87	68	54
Sep 23	1008.5	32.6	27.6	23.5	21.8	88	72	52
Sep 24	1010.9	32.5	27.0	24.2	23.6	94	83	53
Sep 25	1011.9	32.7	27.0	23.8	24.3	96	87	55
Sep 26	1012.2	31.9	27.4	23.9	23.8	97	82	62
Sep 27	1012.7	35.2	28.4	24.0	23.7	96	78	50
Sep 28	1011.9	34.2	28.3	23.9	24.0	95	79	57
Sep 29	1011.1	34.0	28.4	24.3	23.4	96	76	50
Sep 30	1011.0	36.5	28.8	25.1	24.7	95	80	49
Mean	1008.3	33.6	28.6	25.4	24.3	94	79	56
Maximum	1012.7	36.6	30.2	27.9	26.2	99	90	74
Minimum	1002.0	29.2	27.0	23.5	20.3	81	65	49

Extract of Meteorological Observations for Sheung Shui Automatic Weather Station, September 2014 (Table 2)

Date	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
Sep 1	0.0	***	*****
Sep 2	0.0	***	*****
Sep 3	0.0	***	*****
Sep 4	30.5	***	*****
Sep 5	1.0	***	*****
Sep 6	0.0	***	*****
Sep 7	1.5	***	*****
Sep 8	4.0	***	*****
Sep 9	1.5	***	*****
Sep 10	0.0	***	*****
Sep 11	0.0	***	*****
Sep 12	26.0	***	*****
Sep 13	17.0	***	*****
Sep 14	0.0	***	*****
Sep 15	34.5	***	*****
Sep 16	75.5	***	*****
Sep 17	30.0	***	*****
Sep 18	0.0	***	*****
Sep 19	0.0	***	*****
Sep 20	0.0	***	*****
Sep 21	0.0	***	*****
Sep 22	0.0	***	*****
Sep 23	0.0	***	*****
Sep 24	3.0	***	*****
Sep 25	8.0	***	*****
Sep 26	0.0	***	*****
Sep 27	0.0	***	*****
Sep 28	0.0	***	*****
Sep 29	0.0	***	*****
Sep 30	2.0	***	*****
Mean	-----	***	*****
Total	234.5	---	-----
Maximum	75.5	---	*****
Minimum	0.0	---	*****

*** unavailable

missing (less than 24 hourly observations a day)

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

Extract of Meteorological Observations for Sheung Shui Automatic Weather Station, October 2014 (Table 1)

Date	Mean Pressure at M.S.L. (hPa)	Air Temperature			Mean Dew Point Temperature (deg C)	Relative Humidity		
		Max. (deg C)	Mean (deg C)	Min. (deg C)		Max. (%)	Mean (%)	Min. (%)
Oct 1	1012.0	32.9	28.4	25.4	23.8	91	77	56
Oct 2	1010.2	33.9	28.7	25.4	24.7	94	80	58
Oct 3	1009.2	33.5	28.5	25.5	23.9	95	77	50
Oct 4	1010.7	32.2	26.7	24.0	23.5	95	84	60
Oct 5	1012.9	32.6	26.7	23.0	19.7	97	69	34
Oct 6	1015.3	31.3	25.6	21.0	17.9	90	66	38
Oct 7	1014.7	31.2	25.7	22.5	17.1	84	61	41
Oct 8	1013.0	31.0	25.2	20.7	17.6	93	66	36
Oct 9	1010.9	30.8	25.4	21.3	17.7	90	65	38
Oct 10	1010.3	31.6	25.2	20.6	18.2	88	67	42
Oct 11	1011.0	33.9	26.6	22.0	18.8	84	64	41
Oct 12	1013.7	33.3	26.6	22.3	17.6	87	60	35
Oct 13	1016.5	30.9	25.4	20.8	15.7	80	56	40
Oct 14	1017.9	30.1	24.8	21.3	15.3	84	57	41
Oct 15	1017.4	30.8	24.3	18.9	17.3	86	66	43
Oct 16	1017.9	29.0	24.9	21.9	18.3	90	68	46
Oct 17	1017.5	31.4	25.3	22.2	17.5	77	63	38
Oct 18	1016.3	31.9	25.7	21.1	18.5	88	66	38
Oct 19	1015.8	32.8	26.4	23.7	19.9	85	69	42
Oct 20	1014.8	32.1	26.8	23.8	21.4	87	73	52
Oct 21	1015.1	34.0	26.7	22.0	21.2	93	74	46
Oct 22	1015.5	31.6	27.1	24.3	19.2	87	63	48
Oct 23	1016.3	27.5	24.5	21.9	19.9	95	76	60
Oct 24	1016.3	26.2	24.9	24.1	20.2	83	75	66
Oct 25	1016.6	27.6	25.2	23.6	20.4	84	75	62
Oct 26	1016.7	30.7	26.3	23.7	21.0	90	74	51
Oct 27	1016.3	32.1	26.4	23.0	20.9	94	73	45
Oct 28	1016.8	28.9	25.6	23.8	17.7	76	63	43
Oct 29	1016.9	30.4	25.9	23.5	19.5	80	68	51
Oct 30	1015.7	31.8	26.0	23.7	20.4	87	72	50
Oct 31	1014.0	30.7	25.5	23.0	21.3	90	78	56
Mean	1014.6	31.2	26.0	22.7	19.6	88	69	47
Maximum	1017.9	34.0	28.7	25.5	24.7	97	84	66
Minimum	1009.2	26.2	24.3	18.9	15.3	76	56	34

Extract of Meteorological Observations for Sheung Shui Automatic Weather Station, October 2014 (Table 2)

Date	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
Oct 1	0.0	***	*****
Oct 2	0.0	***	*****
Oct 3	0.0	***	*****
Oct 4	8.5	***	*****
Oct 5	0.0	***	*****
Oct 6	0.0	***	*****
Oct 7	0.0	***	*****
Oct 8	0.0	***	*****
Oct 9	0.0	***	*****
Oct 10	0.0	***	*****
Oct 11	0.0	***	*****
Oct 12	0.0	***	*****
Oct 13	0.0	***	*****
Oct 14	0.0	***	*****
Oct 15	0.0	***	*****
Oct 16	0.0	***	*****
Oct 17	0.0	***	*****
Oct 18	0.0	***	*****
Oct 19	0.0	***	*****
Oct 20	0.0	***	*****
Oct 21	0.0	***	*****
Oct 22	0.0	***	*****
Oct 23	1.0	***	*****
Oct 24	0.0	***	*****
Oct 25	0.0	***	*****
Oct 26	0.0	***	*****
Oct 27	0.0	***	*****
Oct 28	0.0	***	*****
Oct 29	0.0	***	*****
Oct 30	0.0	***	*****
Oct 31	0.0	***	*****
Mean	-----	***	*****
Total	9.5	---	-----
Maximum	8.5	---	*****
Minimum	0.0	---	*****

*** unavailable

missing (less than 24 hourly observations a day)

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

Appendix E
Environmental Monitoring Data for Air and Noise

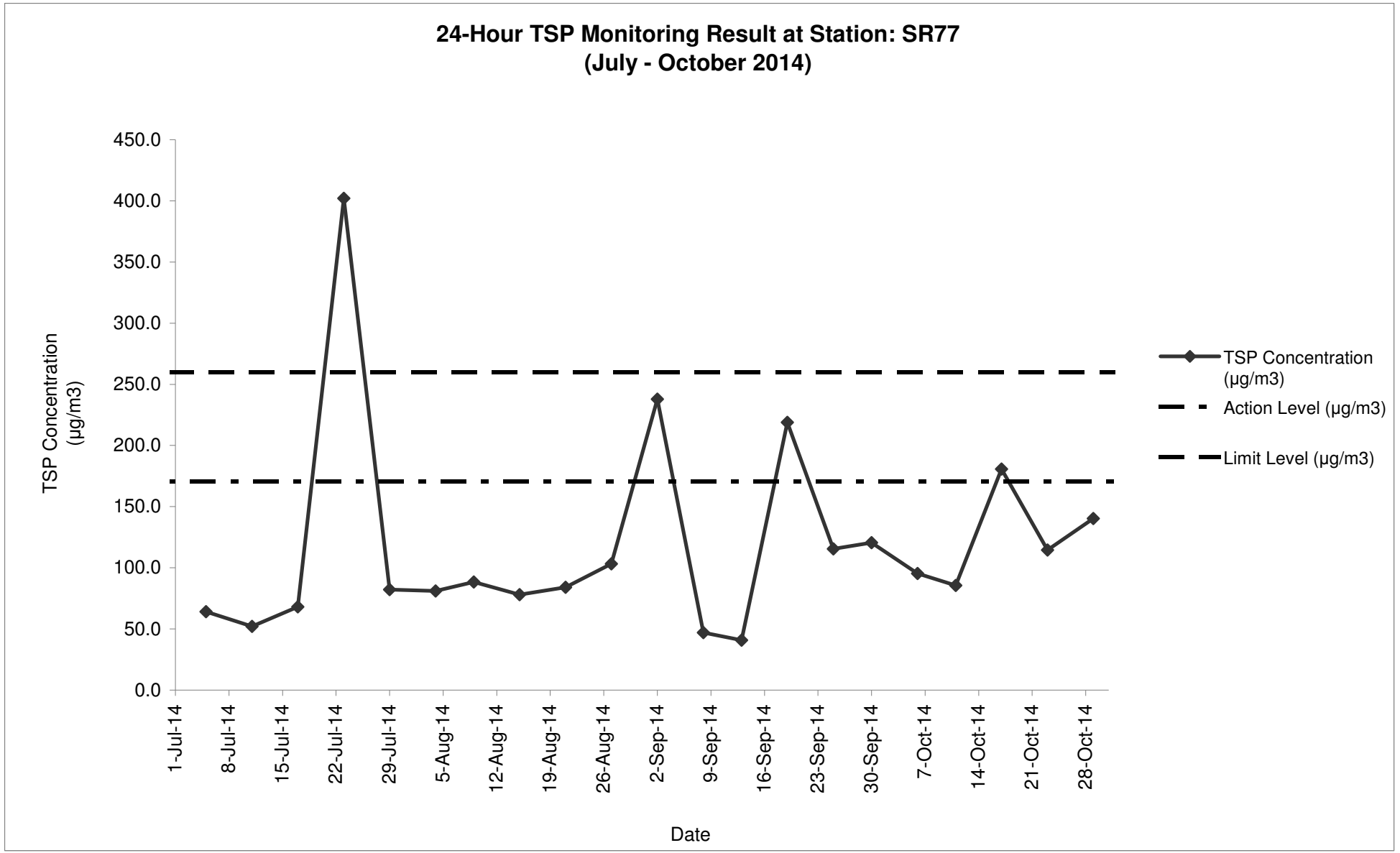
Appendix E
Air Quality Monitoring Results and their Graphical Presentation

24-Hour TSP Monitoring Result at Station: SR77

Sampling Date	Weather Condition	Paper No.	Wt. of paper (g)			Elapse Time			Flow Rate (CFM)			Flow Rate (m^3/min)			Total Volume (m^3)	TSP Concentration (µg/m^3)	Action Level (µg/m3)	Limit Level (µg/m3)	Wind speed m/s	Wind direction
			Initial Wt.	Final Wt.	Wt. of Dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate	Initial	Final	Avg Flow Rate						
5-Jul-14	Rainy	50	2.7048	2.8380	0.1332	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	64.1	170.3	260.0	<5	N
11-Jul-14	Fine	51	2.7072	2.8157	0.1085	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	52.2	170.3	260.0	<5	N
17-Jul-14	Fine	53	2.7005	2.8421	0.1416	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	68.1	170.3	260.0	<5	N
23-Jul-14	Fine	57	2.6795	3.5157	0.8362	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	**402.1**	170.3	260.0	<5	N
29-Jul-14	Fine	59	2.7073	2.8783	0.1710	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	82.2	170.3	260.0	<5	N
4-Aug-14	Sunny	72	2.6718	2.8402	0.1684	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	81.0	170.3	260.0	<5	N
9-Aug-14	Fine	62	2.7200	2.9037	0.1837	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	88.3	170.3	260.0	<5	N
15-Aug-14	Fine	64	2.7060	2.8683	0.1623	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	78.0	170.3	260.0	<5	N
21-Aug-14	Fine	69	2.6983	2.8733	0.1750	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	84.2	170.3	260.0	<5	N
27-Aug-14	Sunny	68	2.6756	2.8903	0.2147	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	103.2	170.3	260.0	<5	N
2-Sep-14	Fine	66	2.7036	3.1984	0.4948	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	**237.9**	170.3	260.0	<5	N
8-Sep-14	Sunny	85	2.7183	2.8161	0.0978	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	47.0	170.3	260.0	<5	N
13-Sep-14	Sunny	84	2.7229	2.8078	0.0849	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	40.8	170.3	260.0	<5	N
19-Sep-14	Fine	87	2.7231	3.1784	0.4553	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	**218.9**	170.3	260.0	<5	N
25-Sep-14	Sunny	89	2.7889	3.0289	0.2400	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	115.4	170.3	260.0	<5	N
30-Sep-14	Fine	91	2.7064	2.9570	0.2506	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	120.5	170.3	260.0	<5	N
6-Oct-14	Fine	93	2.7227	2.9208	0.1981	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	95.3	170.3	260.0	<5	N
11-Oct-14	Sunny	94	2.6914	2.8693	0.1779	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	85.5	170.3	260.0	<5	N
17-Oct-14	Sunny	97	2.8002	3.1761	0.3759	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	**180.8**	170.3	260.0	<5	N
23-Oct-14	Sunny	101	2.7829	3.0210	0.2381	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	114.5	170.3	260.0	<5	N
29-Oct-14	Fine	100	2.7114	3.0030	0.2916	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	140.2	170.3	260.0	<5	N

Summary For the Reporting Quarter (Aug - Oct 2014)	
Average	114.5
Minimum	40.8
Maximum	237.9

Note: No major dust source observed during the monitoring period
Data in **Bold** denotes exceedanece of respective Action Level
Data in **Bold Underline** denotes exceedance of respective Limit Level


24-Hour TSP Monitoring Result at Station: SR77
(July - October 2014)
TSP Concentration (µg/m3)
450.0
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
1-Jul-14
8-Jul-14
15-Jul-14
22-Jul-14
29-Jul-14
5-Aug-14
12-Aug-14
19-Aug-14
26-Aug-14
2-Sep-14
9-Sep-14
16-Sep-14
23-Sep-14
30-Sep-14
7-Oct-14
14-Oct-14
21-Oct-14
28-Oct-14
Date
TSP Concentration (µg/m3)
Action Level (µg/m3)
Limit Level (µg/m3)

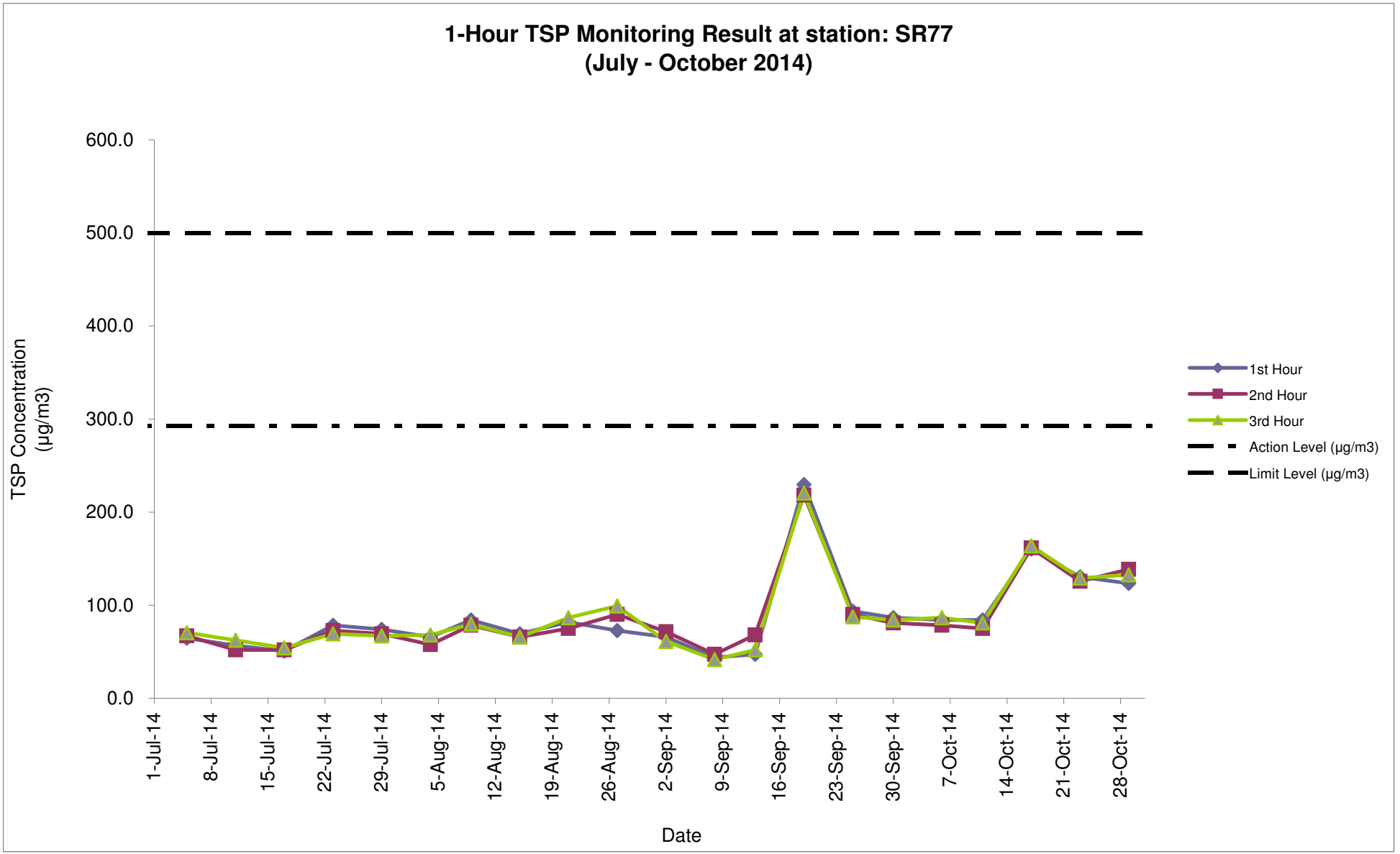
Appendix E
Air Quality Monitoring Results and their Graphical Presentation

1-Hour TSP Monitoring Result at Station: SR77

Date	Weather Condition	Time			Conc.(μg/m^3)			Action Level (μg/m3)	Limit Level (μg/m3)
					1st Hour	2nd Hour	3rd Hour		
5-Jul-14	Rainy	9:00	-	12:00	64.6	66.9	70.4	292.7	500.0
11-Jul-14	Fine	9:00	-	12:00	56.5	51.9	62.3	292.7	500.0
17-Jul-14	Fine	9:00	-	12:00	50.8	51.9	54.2	292.7	500.0
23-Jul-14	Fine	9:00	-	12:00	78.5	72.7	69.2	292.7	500.0
29-Jul-14	Fine	9:00	-	12:00	73.9	69.2	66.9	292.7	500.0
4-Aug-14	Sunny	9:00	-	12:00	65.8	57.7	68.1	292.7	500.0
9-Aug-14	Fine	9:00	-	12:00	84.2	78.5	79.6	292.7	500.0
15-Aug-14	Fine	9:00	-	12:00	69.2	65.8	65.8	292.7	500.0
21-Aug-14	Fine	9:00	-	12:00	81.9	75.0	86.6	292.7	500.0
27-Aug-14	Sunny	9:00	-	12:00	72.7	90.0	99.3	292.7	500.0
2-Sep-14	Fine	9:00	-	12:00	65.8	71.6	61.2	292.7	500.0
8-Sep-14	Sunny	9:00	-	12:00	43.9	47.3	41.5	292.7	500.0
13-Sep-14	Sunny	9:00	-	12:00	47.3	68.1	51.9	292.7	500.0
19-Sep-14	Fine	9:00	-	12:00	229.7	218.1	220.4	292.7	500.0
25-Sep-14	Sunny	9:00	-	12:00	93.5	90.0	87.7	292.7	500.0
30-Sep-14	Fine	9:00	-	12:00	86.6	80.8	84.2	292.7	500.0
6-Oct-14	Fine	9:00	-	12:00	84.2	78.5	86.6	292.7	500.0
11-Oct-14	Sunny	9:00	-	12:00	84.2	75.0	80.8	292.7	500.0
17-Oct-14	Sunny	9:00	-	12:00	160.4	161.6	163.9	292.7	500.0
23-Oct-14	Sunny	9:00	-	12:00	130.4	125.8	129.3	292.7	500.0
29-Oct-14	Fine	9:00	-	12:00	123.5	138.5	132.7	292.7	500.0

Summary For the Reporting Quarter (Aug - Oct 2014)	
Average	95.5
Minimum	41.5
Maximum	229.7

Note: No major dust source observed during the monitoring period


1-Hour TSP Monitoring Result at station: SR77
(July - October 2014)
TSP Concentration (µg/m3)
600.0
500.0
400.0
300.0
200.0
100.0
0.0
1-Jul-14
8-Jul-14
15-Jul-14
22-Jul-14
29-Jul-14
5-Aug-14
12-Aug-14
19-Aug-14
26-Aug-14
2-Sep-14
9-Sep-14
16-Sep-14
23-Sep-14
30-Sep-14
7-Oct-14
14-Oct-14
21-Oct-14
28-Oct-14
Date
1st Hour
2nd Hour
3rd Hour
Action Level (µg/m3)
Limit Level (µg/m3)

Project Name: **Contract No. CV/2012/09 Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure works - Contract 3**
Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling - Stage 2

Noise Monitoring Result at SR77

Date	Weather Condition	Start Time	End Time	Measured Noise Level (dB(A))*			Baseline Corrected Level, dB(A)**	Baseline Noise Level (dB(A)), Leq(30min)	Limit Level dB(A)	Exceedance (Y / N)
				L10(30min)	L90(30min)	Leq(30min)				
2014/07/11	Fine	14:30	15:00	63.3	68.5	59.0	-	67.8	75.0	N
2014/07/17	Fine	9:00	9:30	63.6	68.9	58.9	-	67.8	75.0	N
2014/07/23	Fine	14:00	14:30	67.4	72.5	63.5	-	67.8	75.0	N
2014/07/29	Fine	9:30	10:00	72.1	73.5	64.0	-	67.8	75.0	N
2014/08/04	Sunny	10:00	10:30	73.7	63.4	71.7	-	67.8	75.0	N
2014/08/15	Fine	15:00	15:30	73.5	63.0	69.5	-	67.8	75.0	N
2014/08/21	Fine	14:30	15:00	72.4	62.0	67.9	-	67.8	75.0	N
2014/08/27	Sunny	11:00	11:30	71.6	61.5	66.8	-	67.8	75.0	N
2014/09/02	Fine	10:00	10:30	70.7	60.5	65.9	-	67.8	75.0	N
2014/09/08	Sunny	10:00	10:30	71.5	61.0	66.5	-	67.8	75.0	N
2014/09/19	Sunny	14:00	14:30	70.5	59.5	66.9	-	67.8	75.0	N
2014/09/25	Fine	11:30	12:00	73.5	64.5	69.5	-	67.8	75.0	N
2014/09/30	Sunny	14:30	15:00	73.0	61.0	69.2	-	67.8	75.0	N
2014/10/06	Fine	11:00	11:30	73.0	61.5	69.9	-	67.8	75.0	N
2014/10/17	Sunny	11:30	12:00	73.0	60.5	68.5	-	67.8	75.0	N
2014/10/23	Sunny	11:30	12:00	76.0	63.5	71.5	-	67.8	75.0	N
2014/10/29	Fine	10:30	11:00	74.0	65.0	71.2	-	67.8	75.0	N

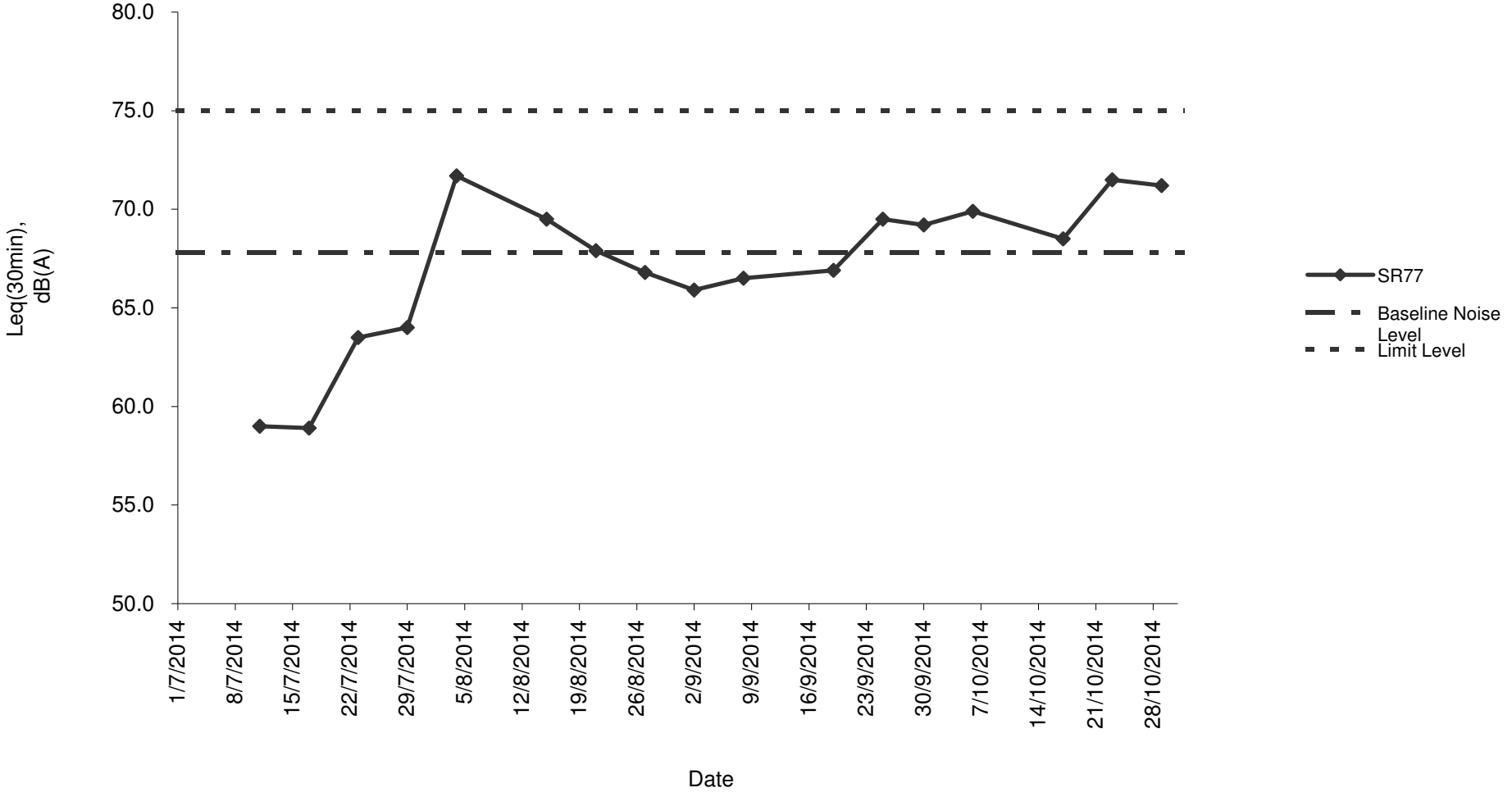
Summary For the Reporting Quarter (Aug - Oct 2014)	
Average	68.8
Minimum	65.9
Maximum	71.7

Remarks

* +3dB(A) Façade effect correction included

** Baseline corrected level is only calculated when measured noise level (Leq) > limit level.

Noise monitoring result: SR77
(July - October 2014)



Appendix F
Waste Flow Table

Monthly Summary Waste Flow Table

	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of C&D Wastes Generated Monthly				
Month	Total Quantity Generated	Hard Rock and Large Broken Concrete	Soil	Soil Reused in the Contract	Soil Reused in other Projects	Soil Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging (Note 3)	Plastics	Chemical Waste	General Refuse (Note 2)
Unit	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)
Aug-14	6.153	0.649	5.504	0.732	-	4.772	1.200	-	-	0.005	0.009	0.220
Sep-14	2.780	0.176	2.604	1.176	-	1.428	0.750	-	-	0.005	-	0.085
Oct-14	6.494	0.090	6.404	2.160	-	4.244	1.501	-	-	0.005	-	0.085
Total	15.427	0.915	14.512	4.068	-	10.444	3.451	-	-	0.015	0.009	0.390

Note:
1. Assume the density of soil fill is 2 ton/m3.
2. Assume the density of rock and broken concrete is 2.5 ton/m3.
3. Assume each truck of C&D wastes is 5m3.
4. The inert C&D materials except slurry and bentonite are disposed at Tuen Mun 38.
5. The slurry and bentonite are disposed at Tseung Kwun O 137.
6. The non-inert C&D wastes are disposed at NENT.
7. Assume the density of metal is 7,850 kg/m3.

Appendix G
Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Cumulative Complaint Log

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
C131126	November 26, 2013	Mr. Tony Hung from WWF	Mat Wat River (works sites for box culvert extension)	Suspected unauthorised discharge of water from a construction site to Ma Wat River, Tai Wo Service Road East, Tai Po	1) It was found that the water leaving the end of the steel pipes was the diverted water from the upstream of the existing box culverts, instead of being discharged from the construction works sites. 2) An EM&A Programme is being undertaken to monitoring the environmental performance of the construction works, and the Contractor has also implemented appropriate mitigation measures to avoid silt-laden runoff discharging from the works sites into the river. 3) The complaint is considered an invalid complaint under this Project.	Completed

Cumulative Log for Notifications of Summons

Log No.	Date/Location	Subject	Status	Total Received in this reporting month	Total no. Received since project commencement

Cumulative log for Successful Prosecutions

Log No.	Date/Location	Subject	Status	Total Received in this reporting month	Total no. Received since project commencement

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