

# **Environmental Protection Department**

Contract No. HY/2012/06

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

Quarterly EM&A Report for May 2014 to July 2014

[08/2014]

	Name	Signature			
Prepared & Checked:	Joanne Ko	Johnne .			
Reviewed & Approved:	YW Fung	h/			

Version:	Rev. 0	Date:	20 August 2014	

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AECOM Asia Co. Ltd.

15/F, Grand Central Plaza, Tower 1, 138 Shatin Rural Committee Road, Shatin, NT, Hong Kong Tel: (852) 3922 9000 Fax: (852) 2317 7609 www.aecom.com



Our ref

AFK/TK/jn/bw/T329380/22.05/L-0038

**T** 2828 5919

terence.kond

terence.kong@mottmac.com.hk

Your ref

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

Dear Sir.

20 August 2014 By Fax (2805 5028) & Post

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)
Environmental Permit No. EP-324/2008/B
Quarterly EM&A Summary Report for May 2014 to July 2014 for the portion of Stage 2 works under Contract No. HY/2012/06

We refer to the Quarterly EM&A Summary Report for May 2014 to July 2014 for the Project received on 18 and 20 August 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) AECOM – Mr. Y W Fung (Fax: 2891 0305)

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AECOM Asia Co. Ltd.
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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 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. HY2012/06 "Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange" and the entrusted portion to CEDD under Contract No. CV/2012/09 "Liantang/Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works – Contract 3". This report focuses on Contract No. HY2012/06 "Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange" in Stage 2 of the Project only.

Pursuant to the EP (EP-324/2008/A) 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 May 2014 to 31 July 2014. As informed by the Contractor, construction activities in the reporting period were:-

- Site clearance;
- Ground investigation:
- Tree felling and transplantation;
- Piling works;
- Pipe laying;
- Retaining wall construction;
- Excavation;
- Backfilling; and
- Drainage.

# **Reporting Change**

There was no reporting change required in the reporting month.

# **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 month.

#### **Breaches of Action and Limit Levels for Noise**

No Action Level exceedance of construction noise was recorded in the reporting period since no noise complaints related to 0700 – 1900 hours on normal weekdays were received. Two (2) Limit Level exceedances were recorded on 12 and 18 June 2014 respectively for noise monitoring at M3 in the reporting period. The exceedances were considered non-project-related. The details of exceedance are given in Appendix M of the Monthly EM&A Report of June 2014.

# 1 INTRODUCTION

# 1.1 Project Organization and Contacts of Key Management

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

Table 1.1 Contact Information of Key Personnel

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

# 1.2 Programme

1.2.1 The Construction Programme is shown in Appendix B.

# 1.3 Summary of Construction Works

- 1.3.1 Details of the construction works carried out by the Contractor in this reporting period are listed below:-
  - Site clearance;
  - Ground investigation;
  - Tree felling and transplantation;
- Piling works;
- Pipe laying;
- Retaining wall construction;
- Excavation;
- Backfilling; and
- Drainage.
- 1.3.2 The general layout plan of the Project site showing the contract areas is shown in Figure 1.1.
- 1.3.3 The environmental mitigation measures implementation schedule are presented in Appendix C.

### 2 ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

#### 2.1 Monitoring Parameters

- 2.1.1 The updated EM&A Manual has designated 1 air quality monitoring station and 2 noise monitoring stations to monitor environmental impacts on air quality and noise due to Stage 2 of the Project.
- 2.1.2 The updated EM&A Manual also requires environmental site inspections for air quality, noise, water quality, chemical, waste management, ecology and landscape and visual impacts.

# 2.2 Monitoring Locations

- 2.2.1 For air quality monitoring, the monitoring station was set up at Fanling Government Secondary School, in accordance with updated EM&A Manual. The location is shown in Figure 1.2a.
- 2.2.2 For noise monitoring, the monitoring stations M2 and M3 were set up at West Tai Wo and Fanling Government Secondary School respectively in accordance with updated EM&A Manual. Figure 1.2a-b shows the locations of the monitoring stations.

# 2.3 Environmental Quality Performance Limits (Action/Limit Levels)

- 2.3.1 The environmental quality performance limits (i.e. Action/Limit Levels) of air quality monitoring were derived from the baseline air quality monitoring results at the monitoring station (AM2); while the environmental quality performance limits of noise monitoring were defined in the EM&A Manual.
- 2.3.2 The environmental quality performance limits are given in Appendix D.

# 2.4 Environmental Mitigation Measures

2.4.1 Relevant environmental mitigation measures were stipulated in the Particular Specification and EP for the Contractor to adopt. A list of environmental mitigation measures and their implementation statuses are given in Appendix C.

# 3 AIR QUALITY MONITORING

- 3.1.1 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.
- 3.1.2 The weather was mostly sunny, with several fine, cloudy and rainy days in the reporting quarter. Weather information including the wind speed and wind direction is annexed in Appendix F. The information was obtained from the Hong Kong Observatory Tai Po and Tai Mei Tuk Automatic Weather Stations.
- 3.1.3 The monitoring results for 1-hour TSP and 24-hour TSP monitoring are summarized in Tables 3.1 and 3.2 respectively. Detailed impact air quality monitoring results are presented in Appendix E.

Table 3.1 Summary of 1-hour TSP Monitoring Results in the Reporting Period

Location	Average (μg/m³)	Range (μg/m³)	Action Level (μg/m³)	Limit Level (μg/m³)
AM2 (Fanling Government Secondary School)	75.4	62.9 – 83.6	317.8	500

Table 3.2 Summary of 24-hour TSP Monitoring Results in the Reporting Period

Location	Average (μg/m³)	Range (μg/m³)	Action Level (μg/m³)	Limit Level (μg/m³)
AM2 (Fanling Government Secondary School)	22.6	9.5 – 53.9	200.7	260

- 3.1.4 The major dust sources in the reporting period included construction activities from Stage 2 of the Project, as well as nearby traffic emissions.
- 3.1.5 All 1-hour and 24-hour TSP results were below the Action and Limit Level in the reporting quarter.
- 3.1.6 Detailed impact air quality monitoring results are presented in Appendix E.

# 4 NOISE MONITORING

- 4.1.1 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.
- 4.1.2 The monitoring results for construction noise are summarized in Table 4.1 and the monitoring data are provided in Appendix G.

Table 4.1 Summary of Construction Noise Monitoring Results in the Reporting Period

	Average (dB(A))	Average (dB(A)) Range (dB(A))			
	L <sub>eq (30 mins)</sub>	L <sub>eq (30 mins)</sub>	L <sub>eq (30 mins)</sub>		
M2*	68.0	65.5 – 71.8	75		
M3 <sup>#</sup>	64.6	60.6 - 66.4	65/70		

<sup>\*+3</sup>dB(A) Façade correction included

- 4.1.3 The major noise sources during the noise monitoring included nearby road traffic noise.
- 4.1.4 There was no noise complaint related to 0700 1900 hours on normal weekdays was received and followed up by Environmental Team in the reporting period. Hence, no Action Level exceedance was recorded.
- 4.1.5 Two (2) Limit Level exceedances were recorded on 12 and 18 June 2014 respectively for noise monitoring at M3 in the reporting period. The exceedances were considered non-project-related. The details of exceedance are given in Appendix M of the Monthly EM&A Report of June 2014.
- 4.1.6 The graphical plots of the trends of the monitoring results are provided in Appendix G.

# 5 ADVICE ON THE SOLID AND LIQUID WASTE MANAGEMENT STATUS

- 5.1.1 As advised by the Contractor, 7,069m³ of inert C&D material was disposed of as public fill to Tuen Mun 38 (of which 0m³ was broken concrete), while 295m³ of general refuse was disposed of at NENT landfill. 136kg of paper/cardboard packaging, 0kg of plastics and 11kg of metals were collected by recycling contractors in the reporting month. 1,375m³, 155m³ and 5,539m³ of inert C&D materials were reused on site, in other projects and in NENT for backfilling purpose respectively. 0kg of chemical wastes was collected by licensed contractors in the reporting period.
- 5.1.2 The actual amounts of different types of waste generated by the activities of the Project in the reporting quarter are shown in Table 5.1.

<sup>#</sup> Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination period.

Table 5.1 Summary of Waste Flow Table

Waste Type	Actual Amount	Disposal/Reuse Locations		
Inert C&D materials	7,069m <sup>3</sup> (of which 0m <sup>3</sup> was	Tuen Mun 38		
	broken concrete)			
General refuse	295m <sup>3</sup>	NENT Landfill		
Paper/cardboard packaging	136kg	Recycling Contractors		
Plastics	0kg	Recycling Contractors		
Metals	11kg	Recycling Contractors		
C&D materials reused on site	1,375m <sup>3</sup>	Site Area		
C&D materials reused in other	155m <sup>3</sup>	Other projects		
projects	155111	Other projects		
C&D materials reused in NENT	5,539m <sup>3</sup>	NENT Landfill		
for backfilling	5,559111	INCINI Landini		
Chemical wastes	0kg	Licensed Contractors		

# 6 SUMMARY OF EXCEEDANCES OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMIT

- 6.1.1 All 1-hour and 24-hour TSP monitoring results complied with the Action / Limit Levels in the reporting quarter.
- 6.1.2 For construction noise, no Action Level exceedance was recorded. Two (2) Limit Level exceedances were recorded on 12 and 18 June 2014 respectively for noise monitoring at M3 in the reporting period.

# 7 SUMMARY OF COMPLAINTS, NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTIONS

- 7.1.1 No complaint, notification of summons and successful prosecution was received in the reporting period.
- 7.1.2 The statistics on complaints, notifications of summons and successful prosecutions are summarized in Appendix H.
- 7.1.3 A 24-hour complaint hotline at 6628 8366 has been established for the Project. The hotline number is displayed at the site entrances, fencings and project signboards, as well as printed on publications such as newsletters for the public.

# 8 COMMENTS, RECOMMENDATIONS AND CONCLUSIONS

# 8.1 Comments

8.1.1 According to the environmental site inspections performed in the reporting quarter, the following comments are made to the Contractor for precautionary and rectification purposes:

#### Air Quality Impact

- All vehicles should be washed to remove any dusty materials before leaving the site.
- Wheel washing facilities should be properly maintained to ensure properly functioning.
- · Open stockpiles should be covered.

#### **Construction Noise Impact**

Noisy operations should be oriented to a direction away from sensitive receivers as far as possible.

# Water Quality Impact

• Stagnant water accumulated should be removed.

# Chemical and Waste Management

- Empty chemical containers should be cleared and disposed of as chemical wastes.
- Drip trays should be provided to chemical containers.
- · Chemicals should be labeled.

#### Landscape and Visual Impact

Nil.

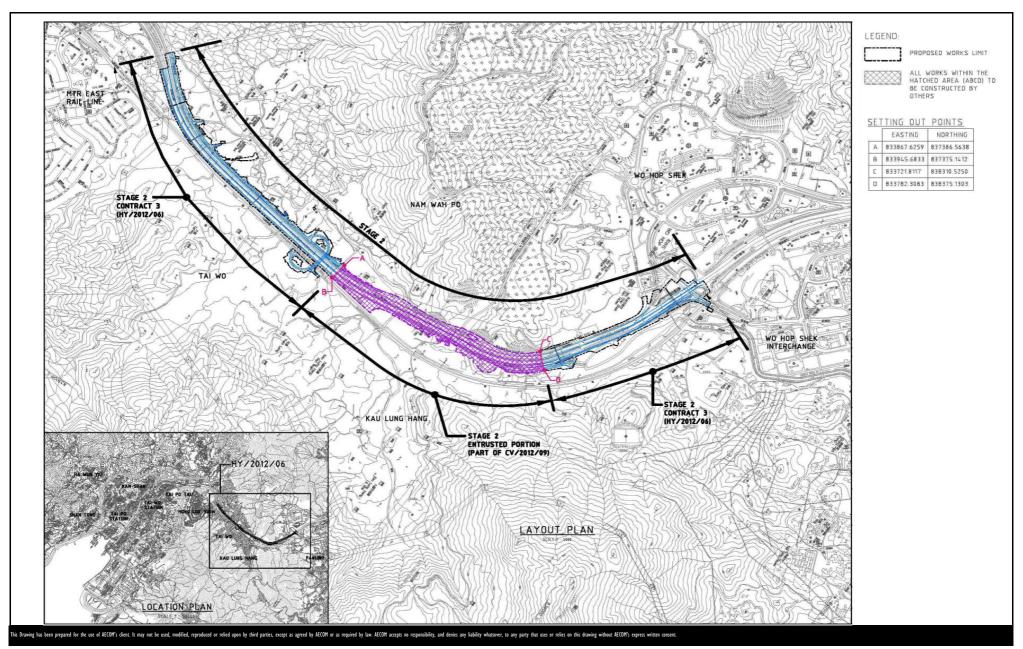
#### 8.2 Recommendations

- 8.2.1 The impact air quality and noise monitoring programme ensures that any deterioration in environmental condition is readily detected and timely actions are taken to rectify any non-compliances. Assessment and analysis of monitoring results collected demonstrated the environmental acceptability of the Project. The weekly environmental site inspections ensure that all the environmental mitigation measures recommended in the ERR are effectively implemented.
- 8.2.2 The EM&A programme effectively monitored the environmental impacts from the construction activities and no particular recommendations were advised for the improvement of the programme.

# 8.3 Conclusions

- 8.3.1 All 1-hour and 24-hour TSP monitoring results complied with the Action / Limit Levels in the reporting quarter.
- 8.3.2 For construction noise, no Action Level exceedance was recorded. Two (2) Limit Level exceedances were recorded on 12 and 18 June 2014 respectively for noise monitoring at M3 in the reporting period.
- 8.3.3 No complaint, notification of summons and successful prosecution was received in the reporting period.

**FIGURES** 



CONTRACT NO. HY/2012/06

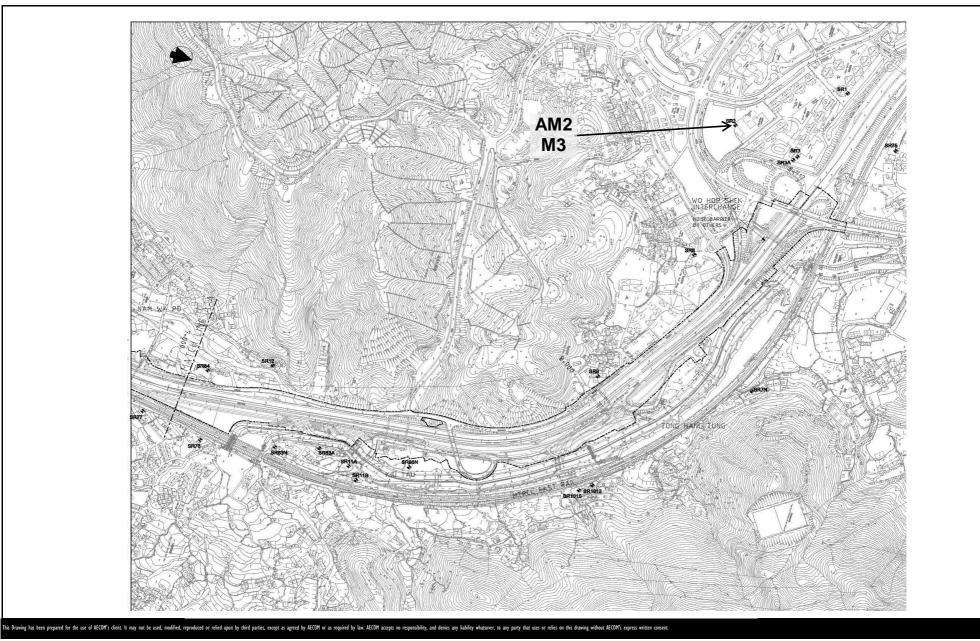
WIDENING OF FANLING HIGHWAY

- TAI HANG TO WO HOP SHEK INTERCHANGE

**AECOM** 

Layout Plan

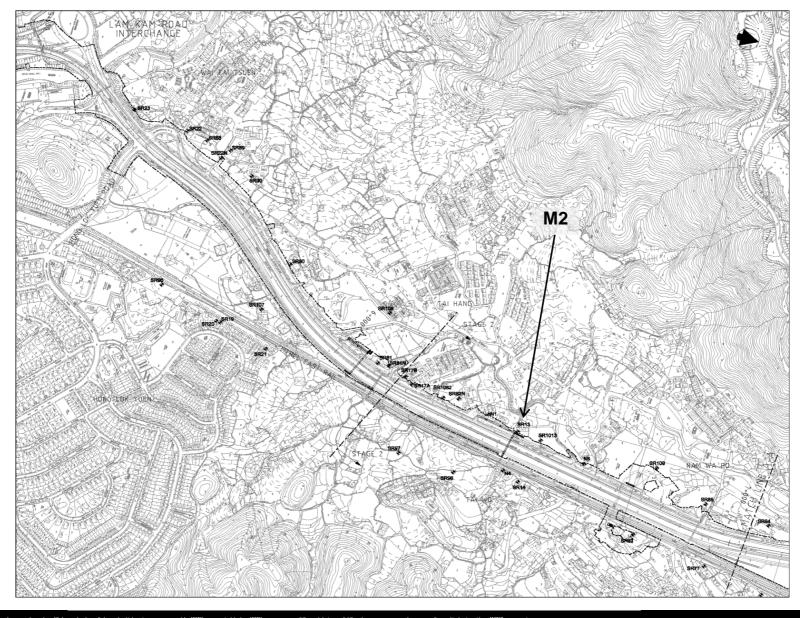
Date: Dec 2013 Figure 1.1



CONTRACT NO. HY/2012/06
WIDENING OF FANLING HIGHWAY

- TAI HANG TO WO HOP SHEK INTERCHANGE





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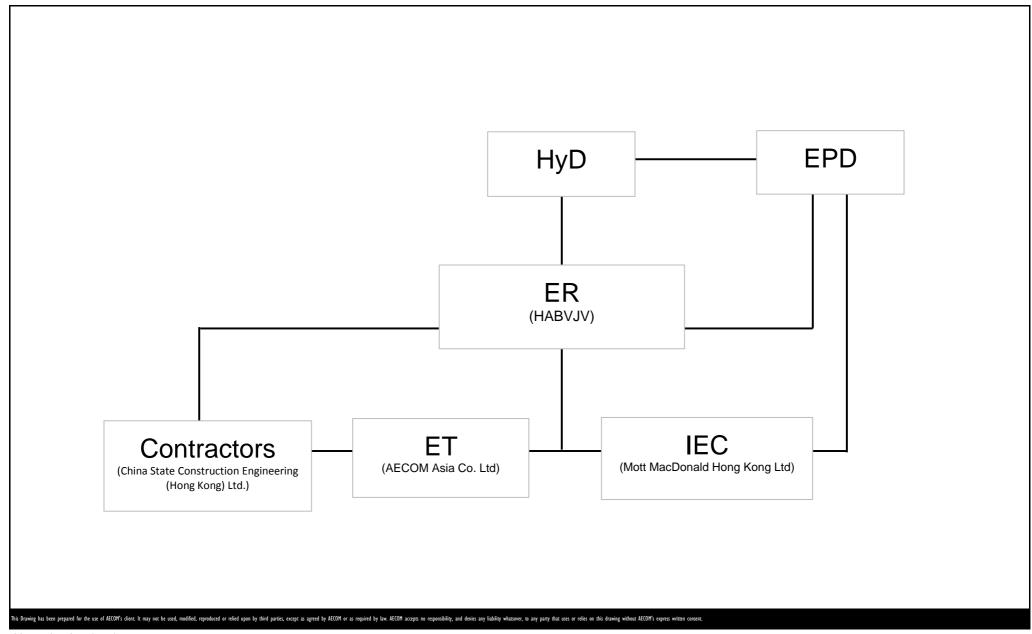
CONTRACT NO. HY/2012/06
WIDENING OF FANLING HIGHWAY

- TAI HANG TO WO HOP SHEK INTERCHANGE



Date: Dec 2013 Figure 1.2b

# APPENDIX A PROJECT ORGANIZATION STRUCTURE



CONTRACT NO. HY/2012/06

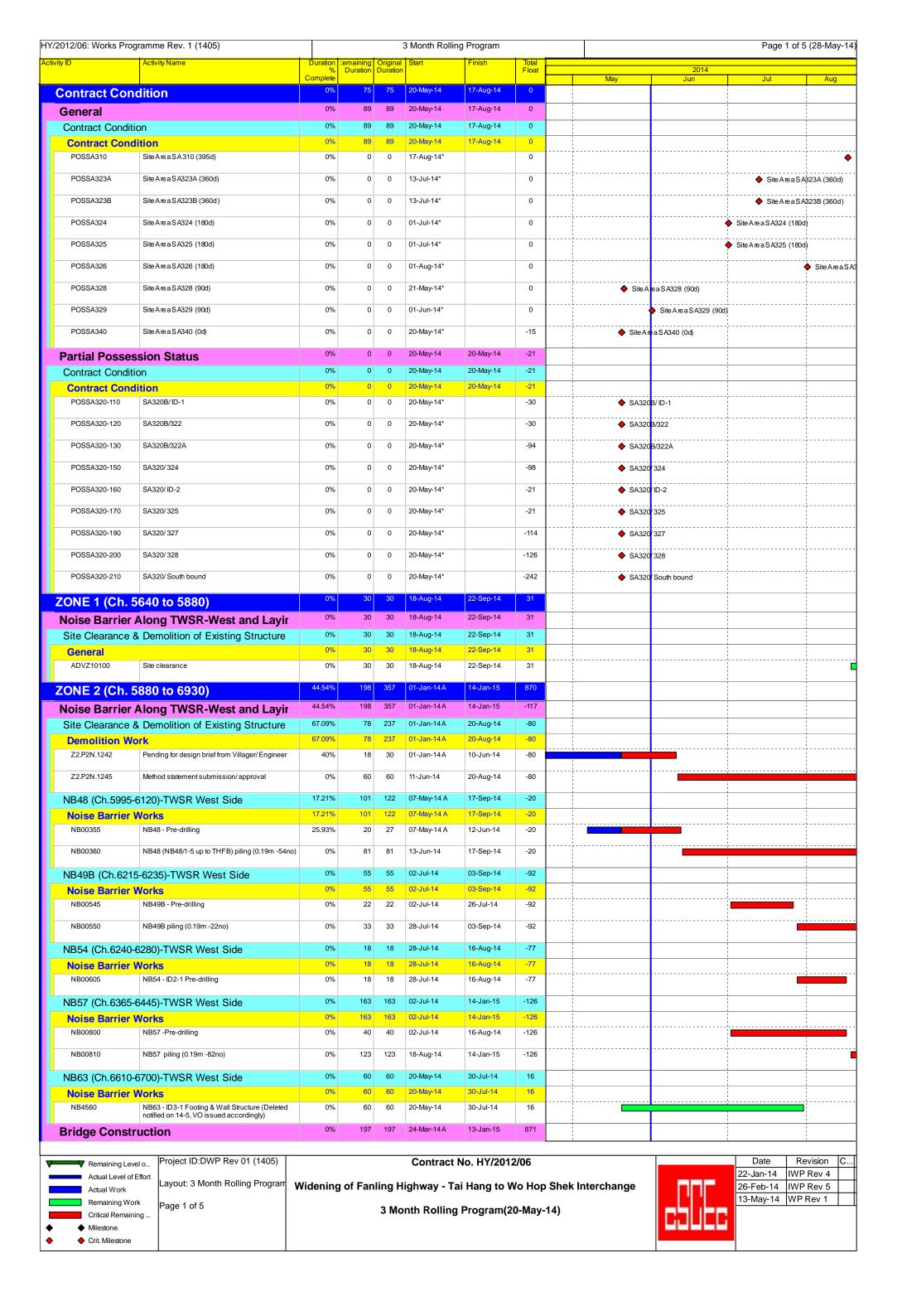
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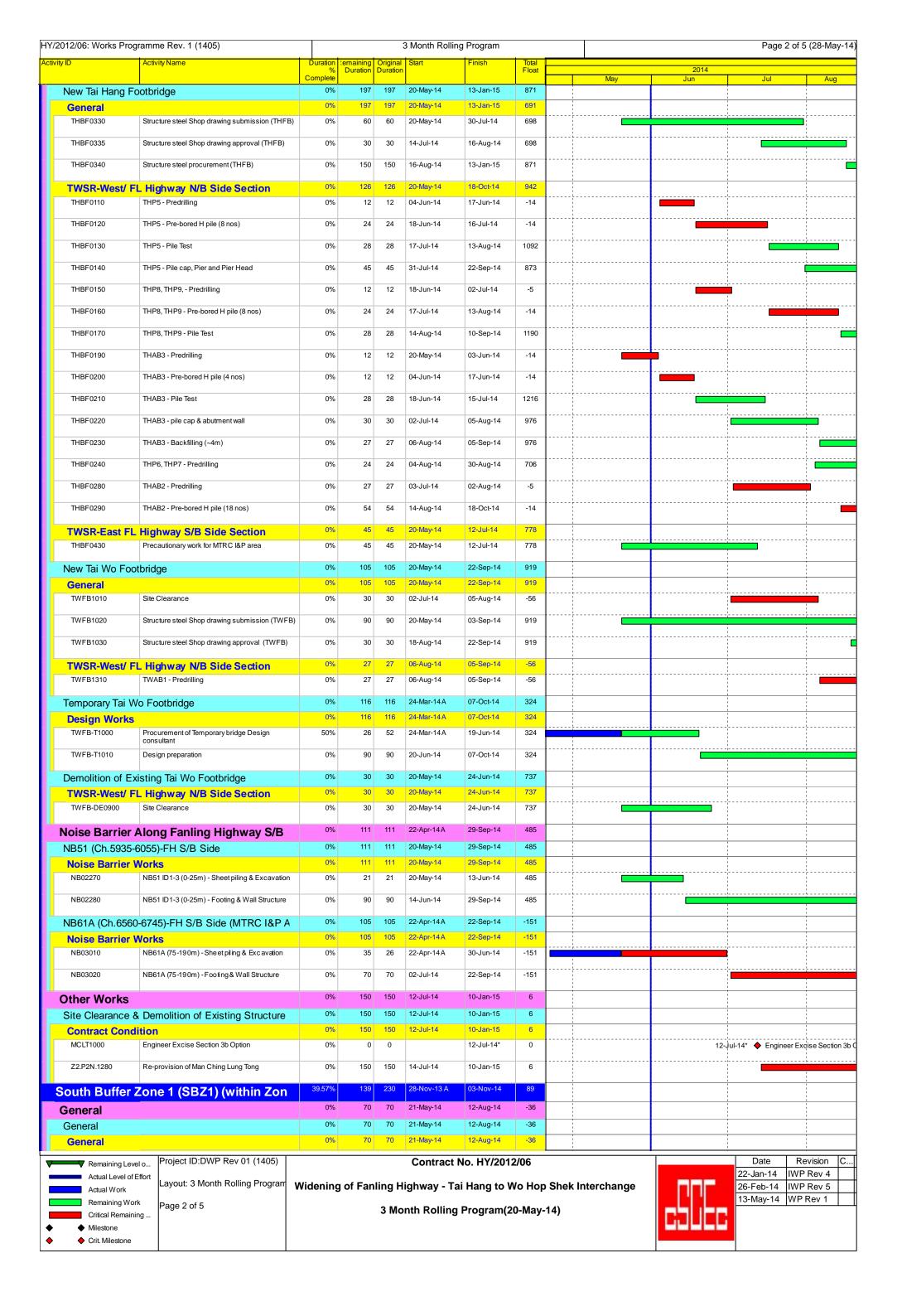
- TAI HANG TO WO HOP SHEK INTERCHANGE

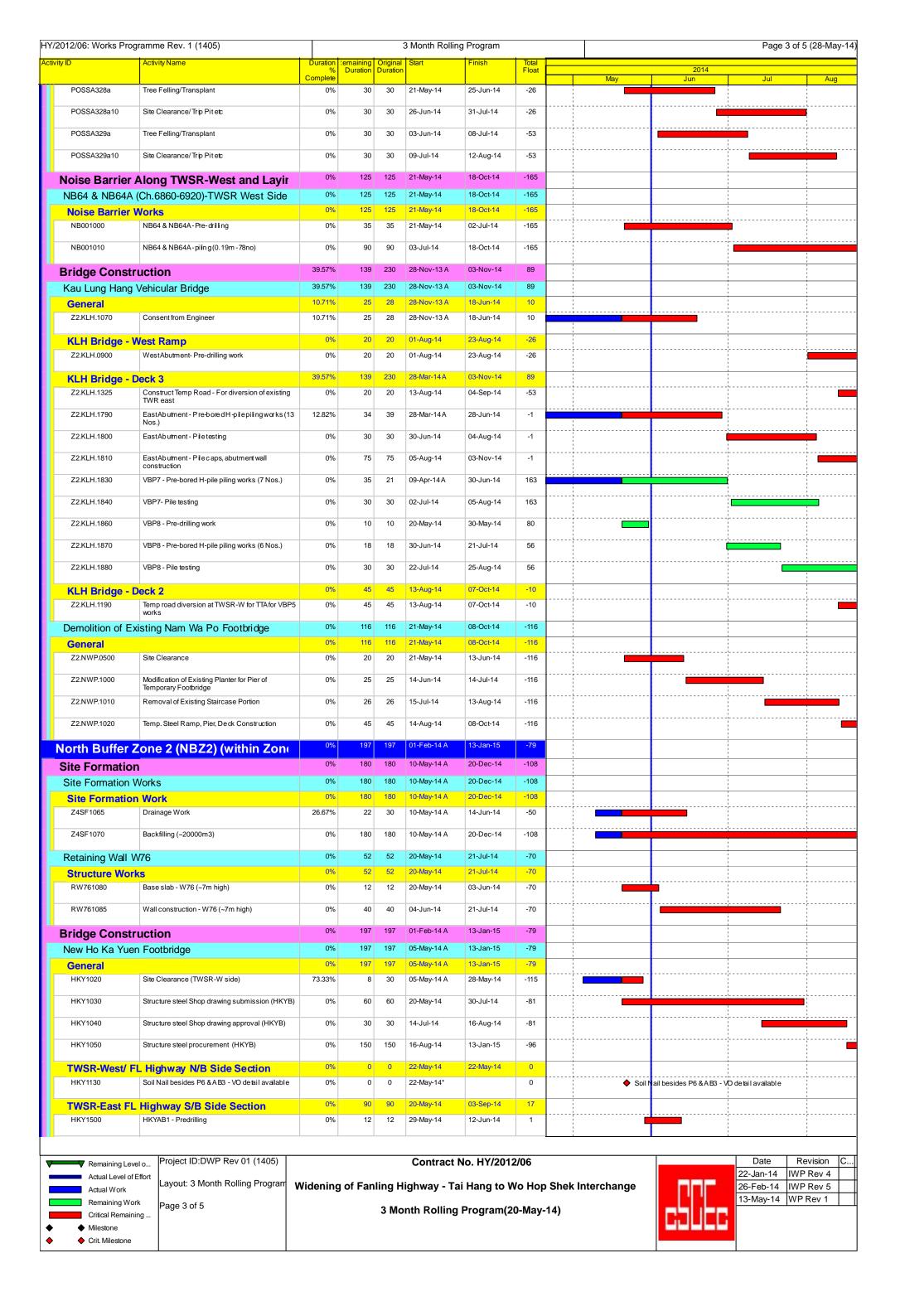


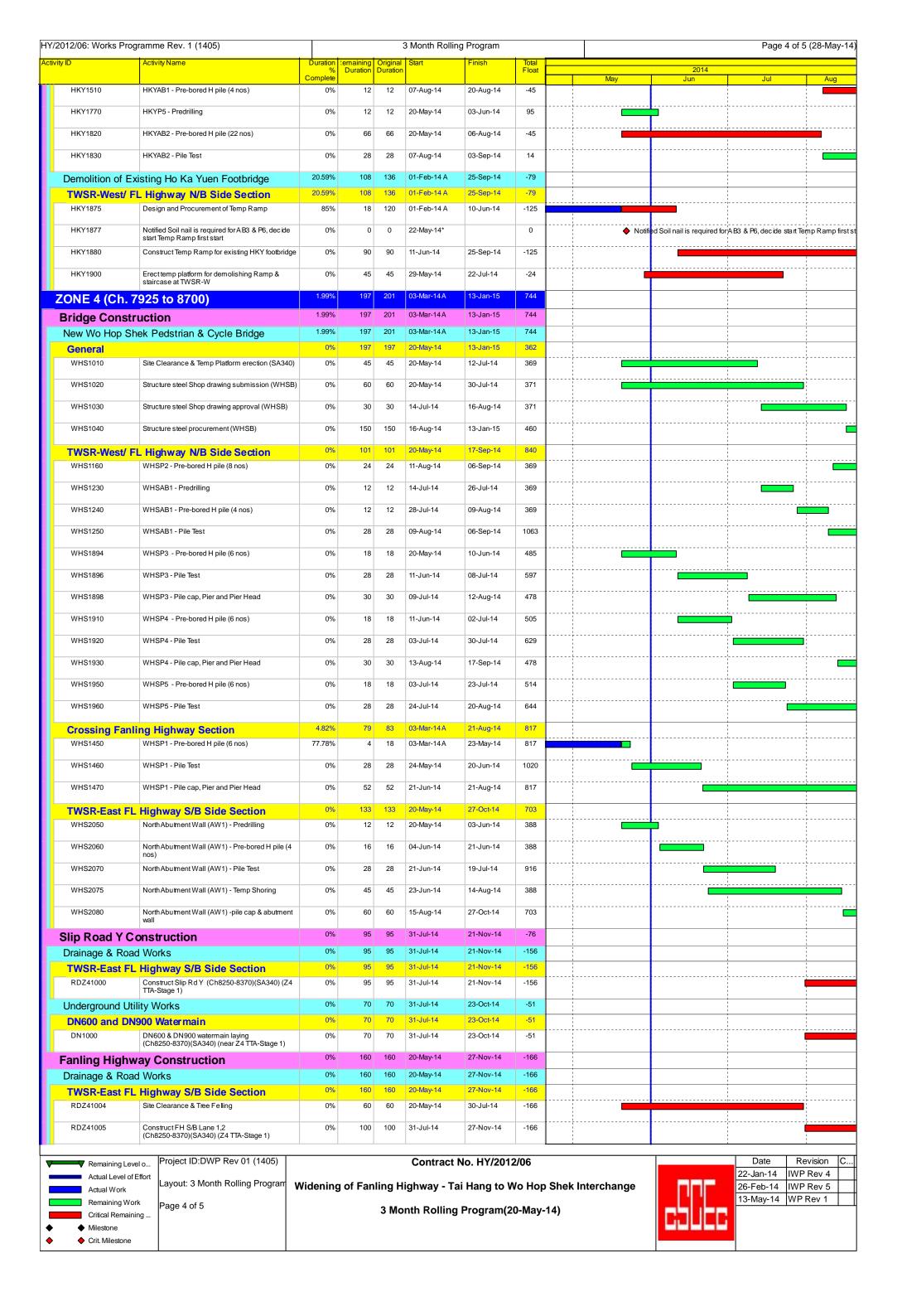
Project No.: 60307376 Date: Dec 2013 Appendix A

# APPENDIX B CONSTRUCTION PROGRAMMES









7/2012/06: Works F	Programme Rev. 1 (1405)			;	3 Month Rollin	ng Program				Page 5 of	f 5 (28-May
tivity ID	Activity Name	%	temaining Duration	Original Duration	Start	Finish	Total Float		2014		
Other Work	(S	Complete 0%	180	180	05-May-14 A	20-Dec-14	512	May	Jun	Jul	Aug
Retaining Wa	all W77A	0%	118	118	05-May-14 A	09-Oct-14	388				
TWSR-East	FL Highway S/B Side Section	0%	118	118	05-May-14 A	09-Oct-14	388	1			1
RWZ4.1050	Site Clearance	40%	18	30	05-May-14 A	10-Jun-14	428				
RWZ4.1060	Base slab & Wall (0-3m high)- RW77A (Ch.50-130)	0%	60	60	11-Jun-14	20-Aug-14	428				
RWZ4.1075	Temp Shoring & Excavation	0%	45	45	15-Aug-14	09-Oct-14	388			 	
Retaining Wa	all W77B	0%	30	30	11-Jun-14	16-Jul-14	533				
TWSR-East	FL Highway S/B Side Section	0%	30	30	11-Jun-14	16-Jul-14	533	 		1	1
RWZ4.1092	Site Clearance	0%	30	30	11-Jun-14	16-Jul-14	533				
Retaining Wa	all W78	0%	30	30	17-Jul-14	20-Aug-14	563				- 1
TWSR-East	FL Highway S/B Side Section	0%	30	30	17-Jul-14	20-Aug-14	563				
RWZ4.0900	Site Clearance	0%	30	30	17-Jul-14	20-Aug-14	563				
TCSS Works		0%	180	180	20-May-14	20-Dec-14	512			 	
TCSS Pre-C	Construction Works	0%	180	180	20-May-14	20-Dec-14	512	1		1	1
TCSS0100	Acquire Design Criteria from Drawing & procurement	0%	180	180	20-May-14	20-Dec-14	512				



Project ID:DWP Rev 01 (1405)

Layout: 3 Month Rolling Program

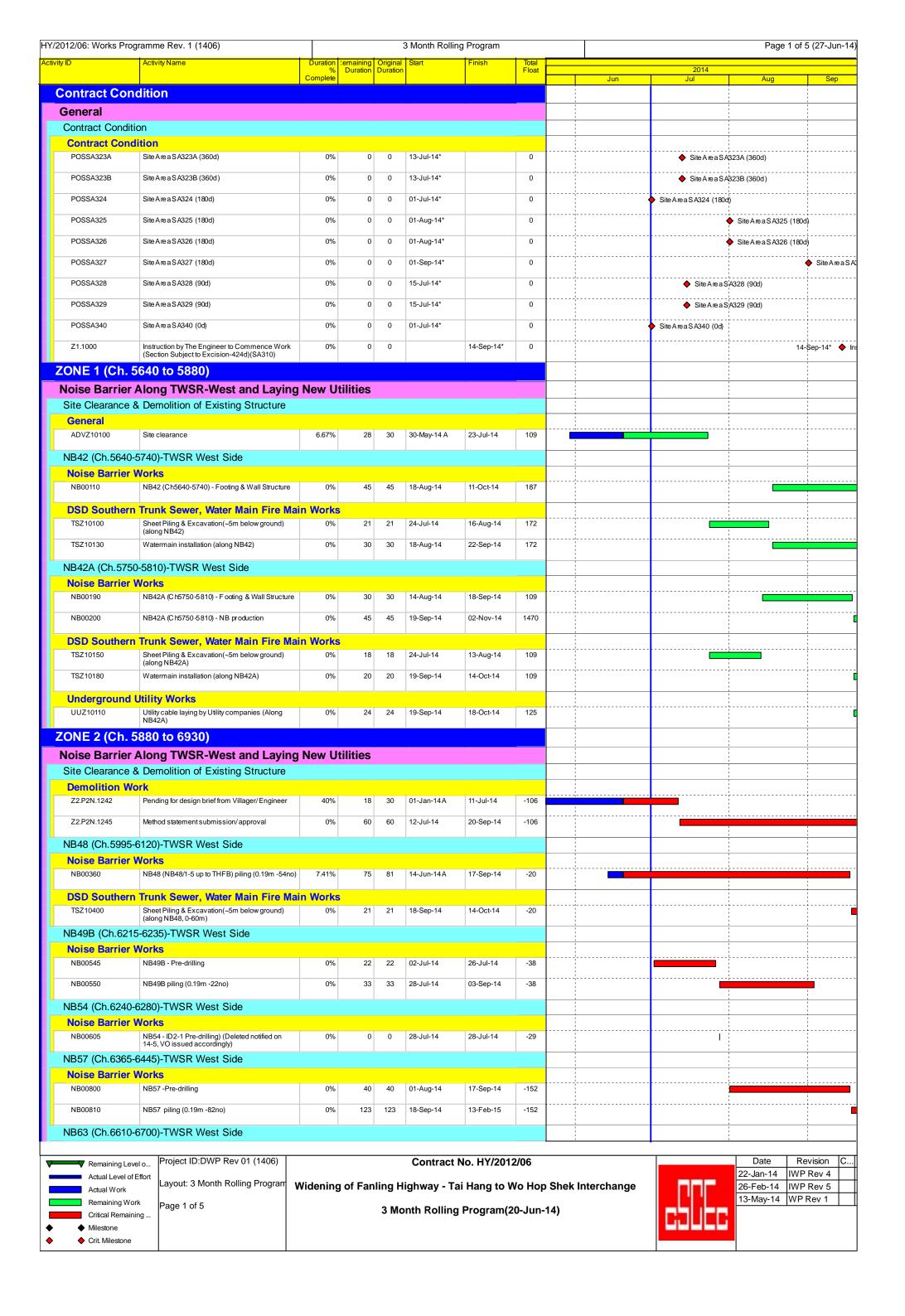
Page 5 of 5

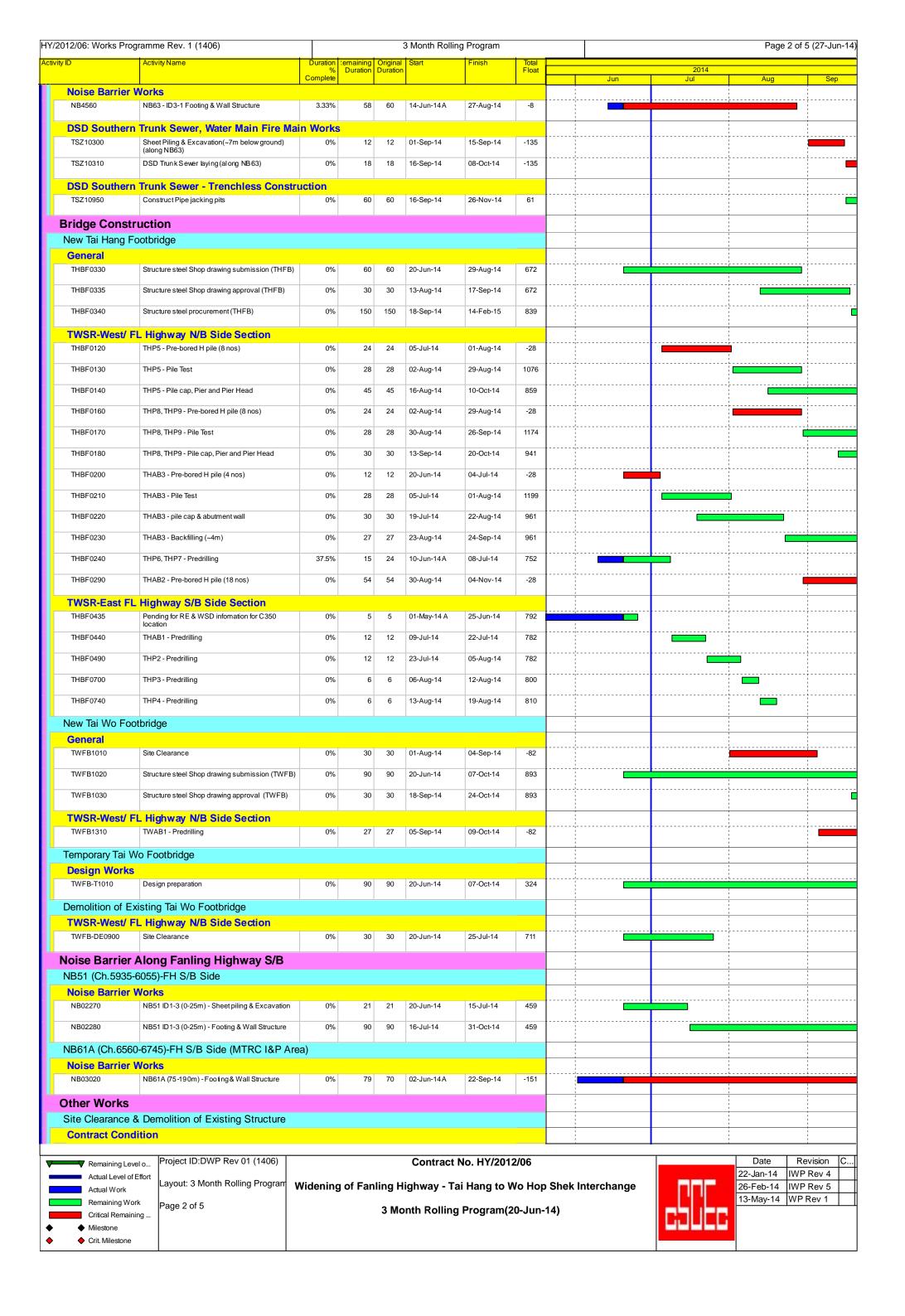
Widening of Fanling Highway - Tai Hang to Wo Hop Shek Interchange
3 Month Rolling Program(20-May-14)

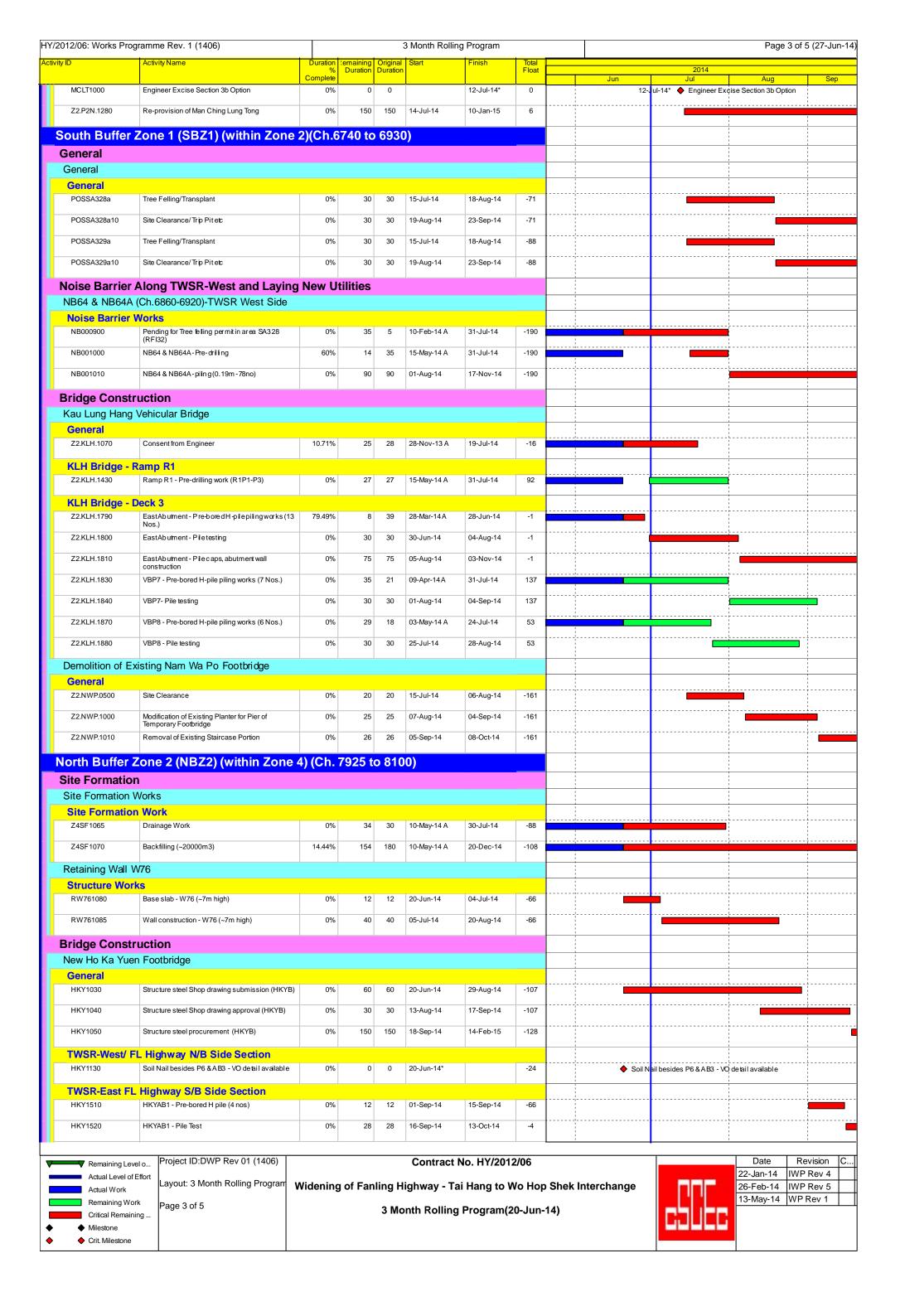
Contract No. HY/2012/06

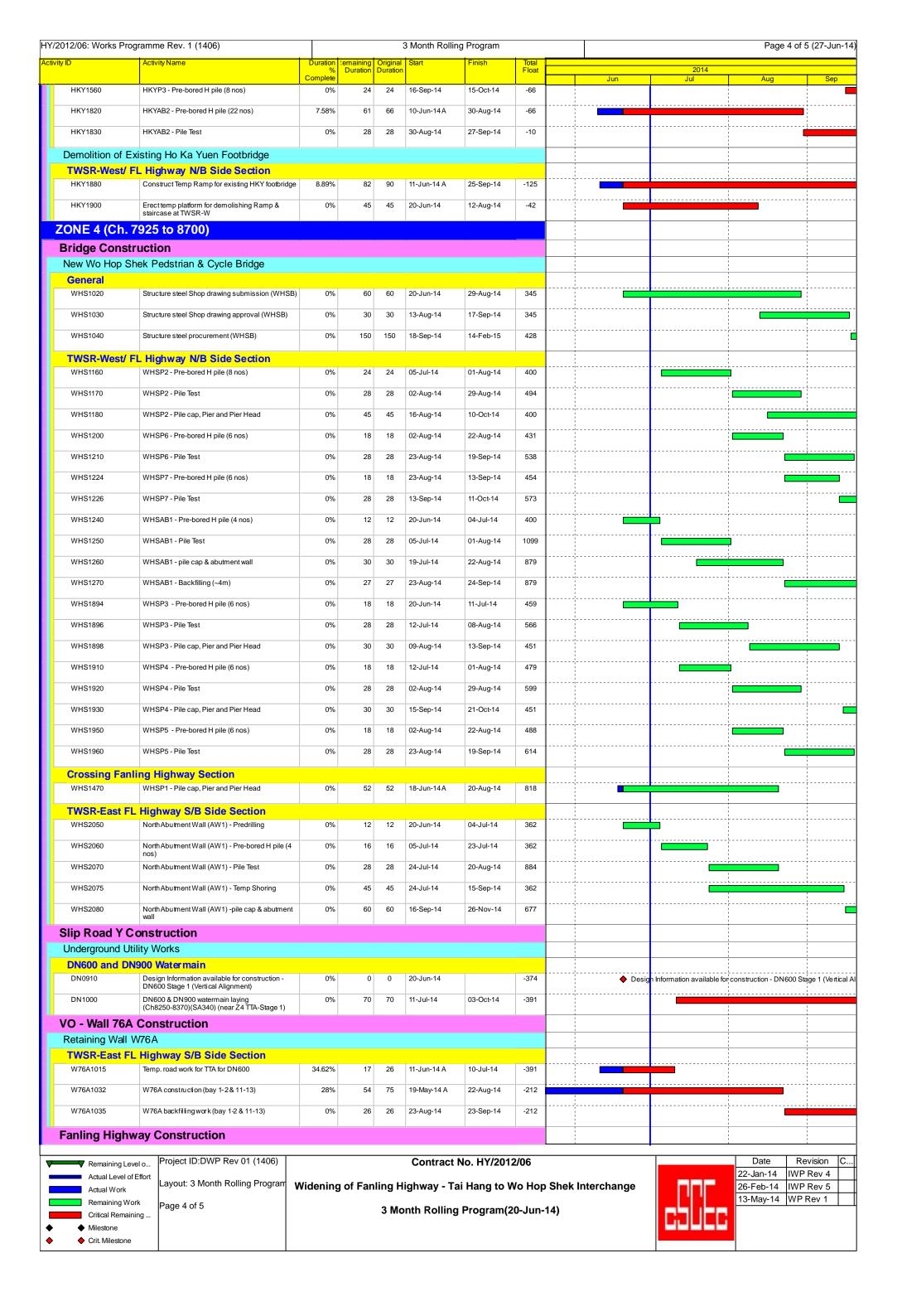


Date	Revision	С
22-Jan-14	IWP Rev 4	
26-Feb-14	IWP Rev 5	
13-May-14	WP Rev 1	









/2012/06: Works F	Programme Rev. 1 (1406)				3 Month Rollir	ng Program				Page 5 o	of 5 (27-Jun-
vity ID	Activity Name	Duration	lemaining Duration	Original	Start	Finish	Total Float		2014		
		Complete	Duration	Duration			Float	Jun	Jul Jul	Aug	Sep
Drainage & R	Road Works										
TWSR-East	FL Highway S/B Side Section										
RDZ41004	Site Clearance & Tree Felling	43.33%	34	60	20-May-14 A	30-Jul-14	-166				 
Other Work	(S				'						
Retaining Wa	all W77A										
TWSR-East	FL Highway S/B Side Section										
RWZ4.1060	Base slab & Wall (0-3m high)- RW77A (Ch.50-130)	0%	60	60	20-Jun-14	29-Aug-14	420				3
RWZ4.1070	Backfilling (0-3m) - RW77A (Ch.50-130)	0%	30	30	30-Aug-14	07-Oct-14	675	 			1
RWZ4.1075	Temp Shoring & Excavation	0%	45	45	16-Sep-14	08-Nov-14	362	 			!
Retaining Wa	all W77B										
TWSR-East	FL Highway S/B Side Section										
RWZ4.1092	Site Clearance	0%	30	30	20-Jun-14	25-Jul-14	525				
RWZ4.1100	Base slab & Wall (0-3m high)- RW77B (C h0-40)	0%	60	60	30-Aug-14	11-Nov-14	495				
Retaining Wa	all W78										
TWSR-East	FL Highway S/B Side Section										
RWZ4.0900	Site Clearance	0%	30	30	26-Jul-14	29-Aug-14	555	 	:		3
TCSS Works	·						1				
TCSS Pre-C	Construction Works										
TCSS0100	Acquire Design Criteria from Drawing & procurement	0%	180	180	20-Jun-14	23-Jan-15	486				!

<b></b>	Remaining Level o
	Actual Level of Effort
	Actual Work
	Remaining Work
	Critical Remaining
<b>♦</b> •	Milestone
•	Crit. Milestone

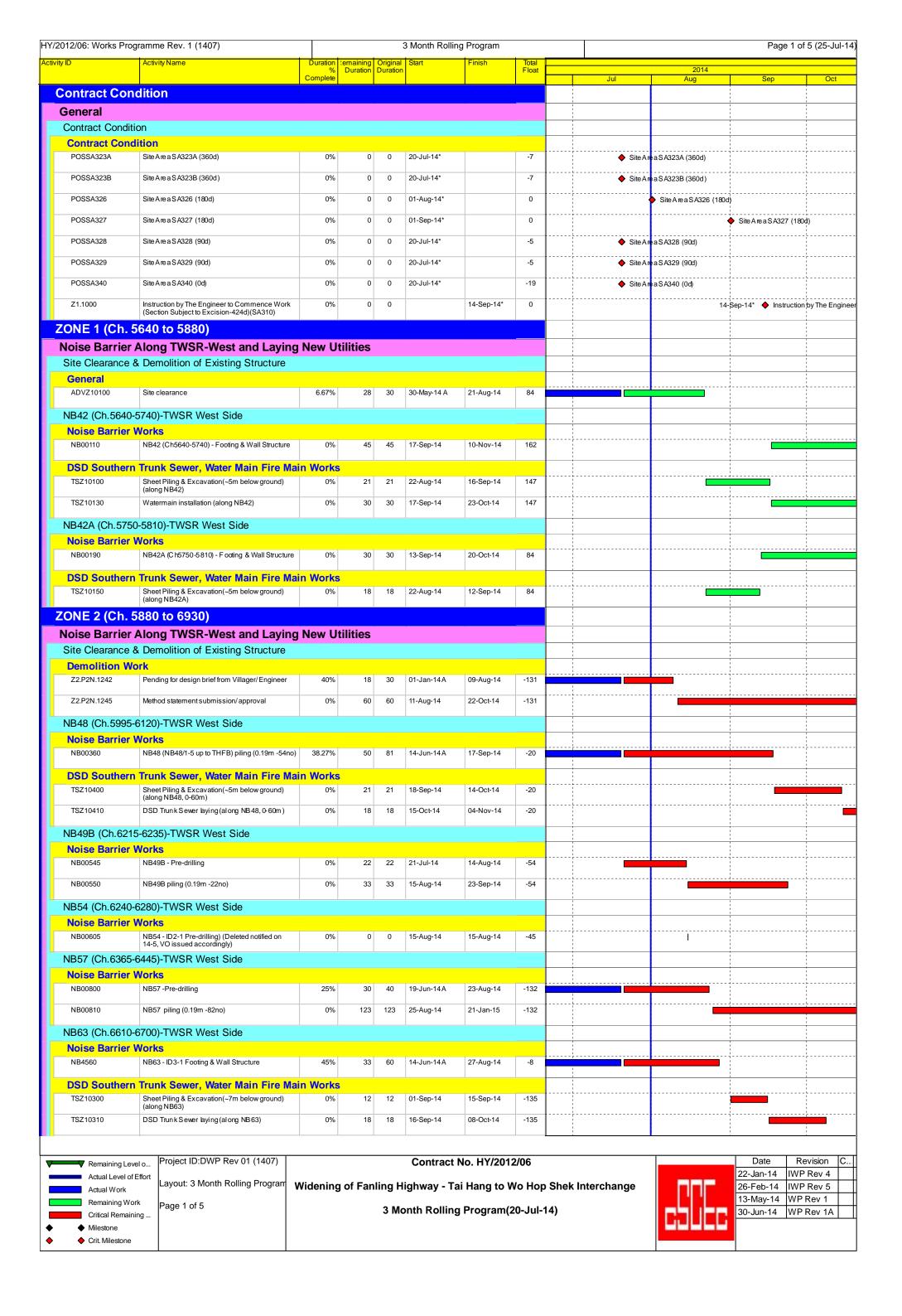
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Layout: 3 Month Rolling Program	
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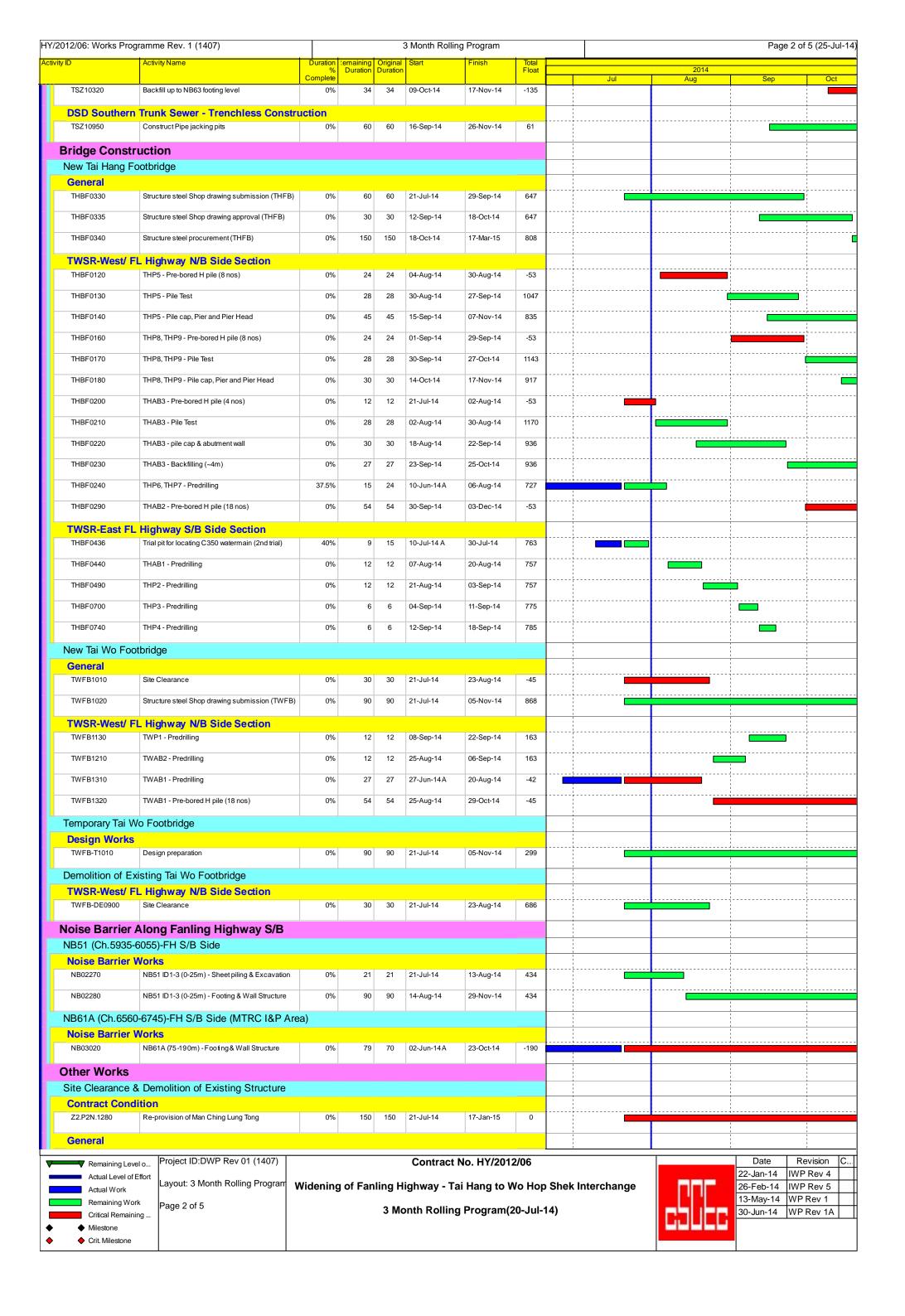


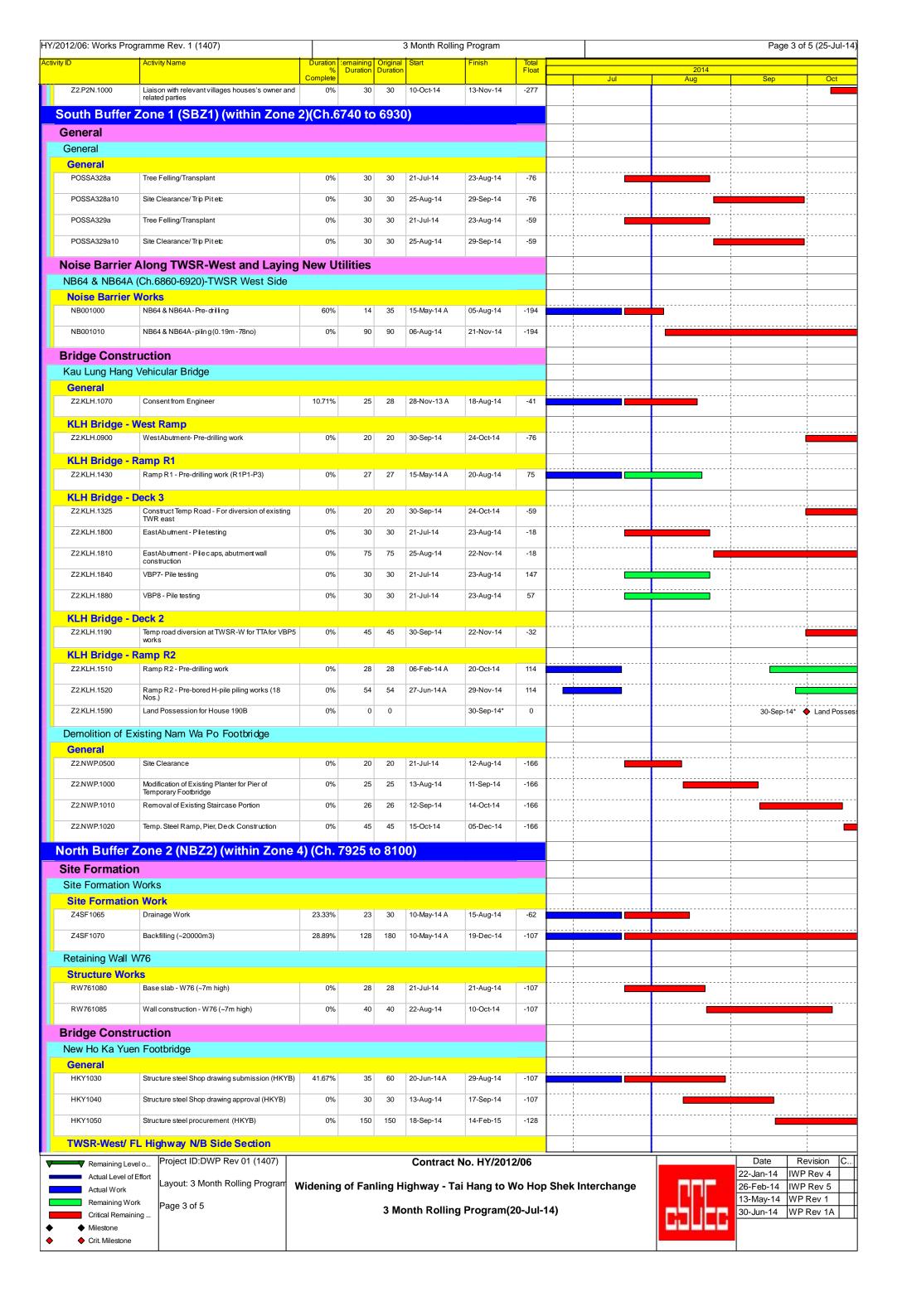
Contract No. HY/2012/06

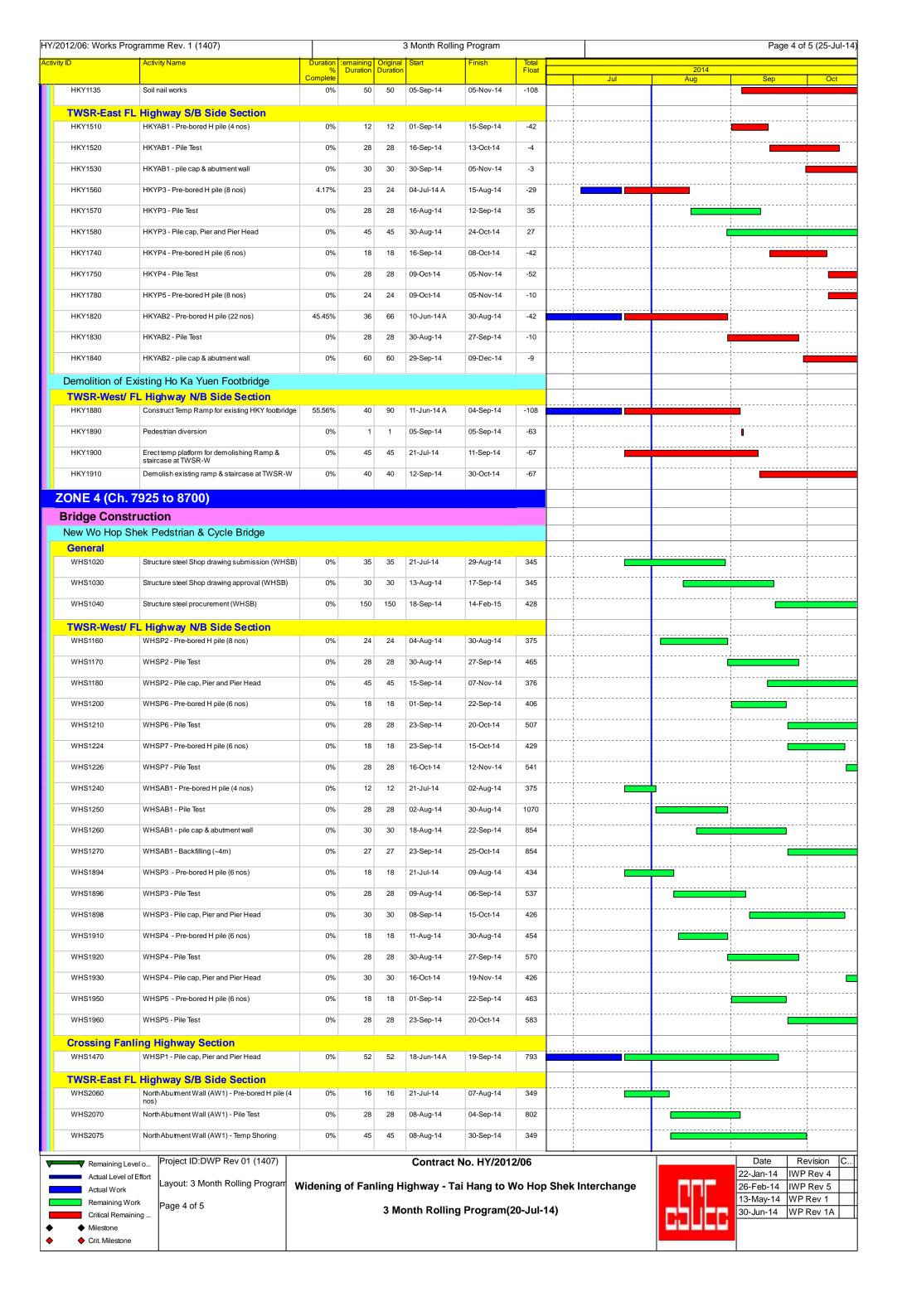


Date	Revision	C	
22-Jan-14	IWP Rev 4		
26-Feb-14	IWP Rev 5		
13-May-14	WP Rev 1		









U 12/Uo: WORKS PI	rogramme Rev. 1 (1407)				3 Month Rollin	ig Program				Page 5 0	of 5 (25-Jul
ctivity ID Activity Name		Duration %		Finish	h Total Float		2014				
		Complete	Duration	Durauon			1 loat	Jul	Aug	Sep	Oct
WHS2080	North Abutment Wall (AW1) -pile cap & abutment wall	0%	60	60	03-Oct-14	11-Dec-14	609				
Slip Road Y	Construction	<u> </u>			1						
Underground L										1	1
DN600 and D	DN900 Watermain									1	1
DN0910	Design Information available for construction - DN600 Stage 1 (Vertical Alignment)	0%	0	0	21-Jul-14		-399	<b>♦</b> Des	gn Information available fo	r construction - DN600	Stage 1 (Ve rt
DN1000	DN600 & DN900 watermain laying (Ch8250-8370)(SA340) (near Z4 TTA-Stage 1)	0%	70	70	30-Jul-14	22-Oct-14	-407				!
VO - Wall 76	A Construction					'				1	1
Retaining Wall	I W76A									1 1 1	
	FL Highway S/B Side Section									1	1
W76A1015	Temp. road work for TTA for DN600	69.23%	8	26	11-Jun-14 A	29-Jul-14	-407		-	ļ	
W76A1032	W76A construction (bay 1-2 & 11-13)	61.33%	29	75	19-May-14 A	22-Aug-14	-212				-
14/7044005					·					<u> </u>	
W76A1035	W76A backfilling work (bay 1-2 & 11-13)	0%	26	26	23-Aug-14	23-Sep-14	-212			1	
Fanling High	way Construction									1	1
Drainage & Ro								1		1	1 1
TWSR-East I	FL Highway S/B Side Section									1	!
RDZ41004	Site Clearance & Tree Felling	85%	9	60	20-May-14 A	30-Jul-14	-166			1	
										1	1
Other Works										1	
Retaining Wall										1	
	FL Highway S/B Side Section										
RWZ4.1060	Base slab & Wall (0-3m high)- RW77A (Ch.50-130)	0%	60	60	21-Jul-14	29-Sep-14	395			1	<b>.</b>
RWZ4.1070	Backfilling (0-3m) - RW77A(Ch.50-130)	0%	30	30	30-Sep-14	05-Nov-14	650		-		
RWZ4.1075	Temp Shoring & Excavation	0%	45	45	03-Oct-14	24-Nov-14	349		-		
Retaining Wall	I W77B									1	1
	FL Highway S/B Side Section							1		1	1
RWZ4.1092	Site Clearance	0%	30	30	21-Jul-14	23-Aug-14	500				
RWZ4.1100	Base slab & Wall (0-3m high)- RW77B (Ch0-40)	0%	60	60	30-Sep-14	10-Dec-14	470		-		
100	Base slab a Wall (e shi high) 10077 (e ne 40)	0,0		00	оо сор 14	10 200 14	110			1	
Retaining Wall											
TWSR-East I	FL Highway S/B Side Section										
RWZ4.0900	Site Clearance	0%	30	30	25-Aug-14	29-Sep-14	530			1	
TCSS Works					·	<u> </u>				1	
TCSS Pre-Co	onstruction Works									1	1 1
TCSS0100	Acquire Design Criteria from Drawing &	0%	180	180	21-Jul-14	02-Mar-15	461		-	<u> </u>	
	procurement							I		1	1

	Remaining Level o
	Actual Level of Effort
	Actual Work
	Remaining Work
	Critical Remaining
<b>* *</b>	Milestone
<b>A</b>	Crit Milestone

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Layout: 3 Month Rolling Program Widening of Fanling Highway - Tai Hang to Wo Hop Shek Interchange 3 Month Rolling Program(20-Jul-14)

Contract No. HY/2012/06



Date	Revision	C.	Ī
22-Jan-14	IWP Rev 4		
26-Feb-14	IWP Rev 5		
13-May-14	WP Rev 1		ſ
30-Jun-14	WP Rev 1A		ſ
			_

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				
			May 14	Jun 14	Jul 14		
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	V		
	All stockpiles of excavated materials or spoil of more than 50m³ shall be enclosed, covered or dampened during dry or windy conditions.		@	V	V		
	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	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	V		
	Materials shall be dampened, if necessary, before transportation.		V	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	V		
	Vehicle washing facilities shall be provided to minimize the quantity of material deposited on public roads.		V	V	V		

# **Noise – Schedule of Recommended Mitigation Measures**

Impact	Mitigation Measures	Timing	Implementation Status				
			Feb 14	Mar 14	Apr 14		
Noise during construction	Use of silenced plant or plant equipped with mufflers or dampers in substitute of ordinary plant.	During construction	V	V	V		
	Reduce the number of equipment and their percentage on-time.		V	V	V		
	3.5 m and 5.5 m high temporary noise barrier at culvert construction work area (Figure 2a of the Environmental Permit).		#	#	#		
	3 m high temporary noise barrier along the northern edge of Bridge 12 at ground level (Figure 2b of the Environmental Permit).		#	#	#		
	2 m high temporary noise barrier along the northern edge of Bridge 12 at bridge level (Figure 2b of the Environmental Permit).		#	#	#		
	2.5 m high temporary noise barrier along Tai Wo Service Road West (Figure 2c of the Environmental Permit).		#	#	#		
	3.5m and 7m high temporary noise barrier along Tai Wo Services Road West near Tai Hang (Figure 2c of the Environmental Permit).		#	#	#		
	7 m high temporary noise barrier along Tai Wo Service Road West near Tai Wo Footbridge work area (Figure 2d of the Environmental Permit).		#	#	#		
	7 m high temporary noise barrier near Kiu Tau Footbridge work area (Figure 2d of the Environmental Permit).		#	#	#		
	2.5 m high temporary noise barrier near river diversion work area (Figure 2e of the Environmental Permit).		#	#	#		

# Water Quality – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Impleme	entation S	tatus
			Feb 14	Mar 14	Apr 14
Water quality during construction	<ul> <li>Demolition and reconstruction of bridges</li> <li>Prevent off-site migration through use of sheet piles.</li> <li>Minimise duration of works as far as practical.</li> <li>All sewer and drainage connections should be sealed to prevent debris, soil, sand, etc, from entering public sewers/drains.</li> <li>Site surface runoff should be settled to remove sand/silt before it is discharged into the existing storm drains.</li> </ul>	During construction	#	#	#
	<ul> <li>Road Widening Works, Earthworks and Culvert Extension Works</li> <li>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.</li> <li>Sand traps, oil interceptors and other pollution prevention installations should be provided, properly cleaned and maintained.</li> <li>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.</li> <li>Regular inspections of stilling basins and/or silt traps is required to ensure that sediment is not conveyed into the existing drainage system.</li> <li>Open stockpiles should be covered with a tarpaulin cover.</li> <li>During the wet season, any exposed top soils should be covered with a tarpaulin, shotcreted or hydroseeded.</li> <li>Sand and silt from wash-water from vehicle washing should be settled out before discharging into storm drains.</li> <li>Fuels should be stored in bunded areas such that spillage can be easily collected.</li> </ul>		@	V	V

# Waste - Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Implementation Status				
-			Feb 14	Mar 14	Apr 14		
Waste management during construction	General Waste - Transport of wastes off site as soon as possible Maintenance of accurate waste records Minimisation of waste generation for disposal (via reduction/recycling/re-use) No on-site burning will be permitted Use of re-useable metal hoardings/signboards.	During construction	V	@	V		
	Vegetation from site clearance - Segregation of materials to facilitate disposal Mulching to reduce bulk and where possible review opportunities for the possible beneficial use within landscaping areas.		V	V	V		
	Demolition Wastes - Segregation of materials to facilitate disposal Appropriate stockpile management.		V	V	V		
	Excavated Materials Segregation of materials to facilitate disposal / reuse. Appropriate stockpile management. Re-use of excavated material on or off site (where possible). Special handling and disposal procedures in the event that contaminated materials are excavated.		V	V	V		
	<ul> <li>Construction Wastes</li> <li>Segregation of materials to facilitate recycling/reuse (within designated area in appropriate containers/stockpiles).</li> <li>Appropriate stockpile management.</li> <li>Planning to reduce over ordering and waste generation.</li> <li>Recycling and re-use of materials where possible (e.g. metal, wood from formwork)</li> <li>For material which cannot be re-used/recycled, collection should be carried out by an approved waste contractor for landfill disposal.</li> </ul>		V	V	V		
	Bentonite Slurries  - Bentonite slurries should be reused as far as possible.  - Disposal in accordance with Practice Note For Professional Persons ProPECC PN 1/94.		#	#	#		

<ul> <li>Chemical Wastes</li> <li>Storage within locked, covered and bunded area.</li> <li>The storage area shall not be located adjacent to sensitive receivers e.g. drains.</li> <li>Minimise waste production and recycle oils/solvents where possible.</li> <li>A spill response procedure shall be in place and absorption material available for minor spillages.</li> <li>Use appropriate and labelled containers.</li> <li>Educate site workers on site cleanliness/waste management procedures.</li> <li>If chemical wastes are to be generated, the contractor must register with EPD as a chemical waste producer.</li> <li>The chemical wastes shall be collected by a licensed chemical waste collector.</li> </ul>	(0)	@	(9)
<ul> <li>Municipal Wastes</li> <li>Waste shall be stored within a temporary refuse collection facility, in appropriate containers prior to collection and disposal.</li> <li>Regular, daily collections are required by an approved waste collector.</li> </ul>	V	V	V

### **Ecology – Schedule of Recommended Mitigation Measures**

Impact	Mitigation Measures	Timing	Implementation Status			
			Feb 14	Mar 14	Apr 14	
Ecology during construction	<ul> <li>Accurate Delineation of Works Area</li> <li>Boundaries of proposed works areas shall be clearly identified and separated from external areas by a physical barrier to prevent encroachment of adjacent habitats.</li> <li>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.</li> </ul>	During construction	V	V	V	
	Vegetation Clearance     No fires shall be lit within the works area for the purpose of burning cleared vegetation.     The Contractor shall give consideration to mulching the cleared vegetation for recycling within the works area / adjacent land.		V	V	V	
	<ul> <li>Dust generation There are a number of measures which shall be taken as specified in the Air Pollution Control (Construction Dust) Regulation on 'Dust Control Requirements, including the following key measures to be applied during construction: <ul> <li>Vehicle washing facilities to be provided at every discernible or designated vehicle exit point;</li> <li>All temporary site access roads shall be sprayed with water to suppress dust as necessary;</li> <li>All dusty materials should be sprayed with water immediately prior to any handling; and</li> <li>All debris should be covered entirely by impervious sheeting or stored in a sheltered debris collection area.</li> </ul> </li></ul>		V	V	V	
	Surface Run-off In general, mitigation measures shall be in accordance with ProPECC PN1/94 on 'Construction Site Drainage'. Key measures include: - Bund and cover stock piles to avoid run-off; - Channel any run-off through a system of oil, grease and sediment / silt traps and reuse water on site where ever practical; - All vehicle maintenance to be undertaken within a bunded area; and - Maximise vegetation retention on-site to maximise absorption (minimise transport).		V	V	V	

### Landscape and Visual Impact – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Respons	sibility	
•			Feb 14	Mar 14	Apr 14
Landscape & Visual during construction	Preservation of Existing Vegetation     Trees identified for retention within the project limit would be protected during the works;     The tree transplanting and planting works shall be implemented by approved Landscape Contractors.	During construction	V	V	V
	Temporary Works Areas Where feasible the works areas would be screened using hoarding and existing vegetation would be retained where possible to reduce the landscape and visual impacts arising from the construction activity. The landscape of these works areas would be restored following the completion of the construction phase.		V	V	V
	Hoarding - A hoarding would be erected where practicable in the most visually sensitive locations to screen the temporary construction works from the local VSRs.		V	V	V
	Top Soils  - The works will result in disturbance to extensive areas of topsoil. Topsoil worthy of retention should be stockpiled for use following completion of the civil engineering works. It should either be temporarily vegetated with hydroseeded grass or turned over on a regular basis.		#	#	#
	Protection of Important Landscape Features - Important features such as temples, Island House and kilns within the study area, although remote from the proposed works retained and adequately protected.		#	#	#

#### Legend:

V = implemented;

x = not implemented;

@ = partially implemented;

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	75 dB(A)
	complaint, related to 0700 -	
	1900 hours on normal	
M3*	weekdays, is received	65/70 dB(A)
	from any one of the sensitive	
	receivers	

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

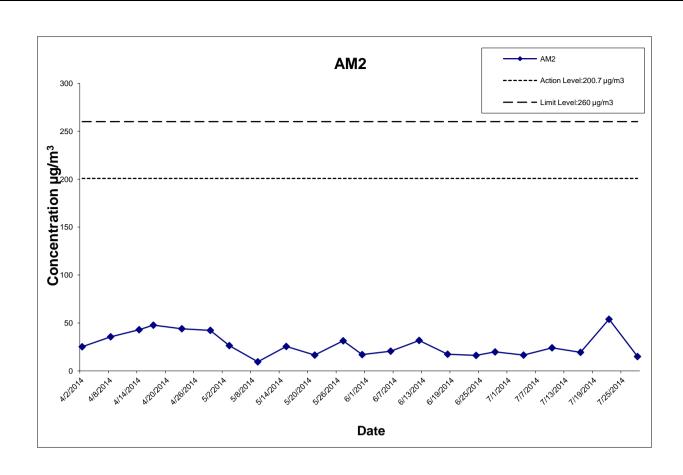
APPENDIX E
IMPACT AIR QUALITY MONITORING
RESULTS AND THEIR GRAPHICAL
PRESENTATION

### **Impact Air Quality Monitoring Results**

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

Date	Weather	Air	Atmospheric	Flow Rate	e (m³/min.)	Av. flow	Total vol.	Filter W	/eight (g)	Particulate	Elapse	e Time	Sampling	Conc.	Actino Level	Limit Level
	Condition	Temp. (°C	Pressure(hPa)	Initial	Final	(m <sup>3</sup> /min)	(m <sup>3</sup> )	Initial	Final	weight(g)	Initial	Final	Time(hrs.)	(µg/m³)	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )
2-Apr-14	Rainy	19.4	1011.9	1.314	1.314	1.314	1892.2	2.7261	2.7737	0.0476	3753.02	3777.02	24.00	25.2	200.7	260
8-Apr-14	Fine	19.9	1014.6	1.314	1.314	1.314	1892.2	2.7022	2.7696	0.0674	3777.02	3801.02	24.00	35.6	200.7	260
14-Apr-14	Sunny	22.8	1014.7	1.314	1.314	1.314	1892.2	2.6934	2.7748	0.0814	3801.02	3825.02	24.00	43.0	200.7	260
17-Apr-14	Fine	24.1	1012.0	1.314	1.314	1.314	1892.2	2.7491	2.8394	0.0903	3825.02	3849.02	24.00	47.7	200.7	260
23-Apr-14	Cloudy	22.4	1012.3	1.314	1.314	1.314	1892.2	2.7202	2.8035	0.0833	3849.02	3873.02	24.00	44.0	200.7	260
29-Apr-14	Sunny	23.9	1013.1	1.314	1.314	1.314	1892.2	2.7230	2.8031	0.0801	3873.02	3897.02	24.00	42.3	200.7	260
3-May-14	Fine	24.6	1014.5	1.314	1.314	1.314	1892.2	2.7160	2.7659	0.0499	3897.02	3921.02	24.00	26.4	200.7	260
9-May-14	Rainy	21.7	1009.1	1.314	1.314	1.314	1892.2	2.7576	2.7756	0.0180	3921.02	3945.02	24.00	9.5	200.7	260
15-May-14	Cloudy	28.9	1005.1	1.314	1.314	1.314	1892.2	2.7400	2.7882	0.0482	3945.02	3969.02	24.00	25.5	200.7	260
21-May-14	Rainy	27.1	1006.9	1.314	1.314	1.314	1892.2	2.7175	2.7487	0.0312	3969.02	3993.02	24.00	16.5	200.7	260
27-May-14	Sunny	29.7	1007.9	1.314	1.314	1.314	1892.2	2.7417	2.8011	0.0594	3993.02	4017.02	24.00	31.4	200.7	260
31-May-14	Sunny	30.1	1008.0	1.314	1.314	1.314	1892.2	2.7477	2.7798	0.0321	4017.02	4041.02	24.00	17.0	200.7	260
6-Jun-14	Fine	28.0	1003.1	1.314	1.314	1.314	1892.2	2.6844	2.7234	0.0390	4041.02	4065.02	24.00	20.6	200.7	260
12-Jun-14	Fine	28.8	1002.1	1.314	1.314	1.314	1892.2	2.6640	2.7242	0.0602	4065.02	4089.02	24.00	31.8	200.7	260
18-Jun-14	Fine	30.1	1004.6	1.314	1.314	1.314	1892.2	2.6580	2.6909	0.0329	4089.02	4113.02	24.00	17.4	200.7	260
24-Jun-14	Fine	27.8	1004.3	1.314	1.314	1.314	1892.2	2.6555	2.6862	0.0307	4113.02	4137.02	24.00	16.2	200.7	260
28-Jun-14	Fine	30.8	1004.3	1.314	1.314	1.314	1892.2	2.7331	2.7706	0.0375	4137.02	4161.02	24.00	19.8	200.7	260
4-Jul-14	Sunny	30.9	1004.0	1.314	1.314	1.314	1892.2	2.7084	2.7397	0.0313	4161.02	4185.02	24.00	16.5	200.7	260
10-Jul-14	Fine	30.1	1003.9	1.314	1.314	1.314	1892.2	2.7170	2.7626	0.0456	4185.02	4209.02	24.00	24.1	200.7	260
16-Jul-14	Sunny	30.2	1007.9	1.314	1.314	1.314	1892.2	2.6473	2.6840	0.0367	4209.02	4233.02	24.00	19.4	200.7	260
22-Jul-14	Sunny	29.4	1002.6	1.314	1.314	1.314	1892.2	2.6721	2.7741	0.1020	4233.02	4257.02	24.00	53.9	200.7	260
28-Jul-14	Sunny	29.6	1006.3	1.314	1.314	1.314	1892.2	2.7296	2.7580	0.0284	4257.02	4281.02	24.00	15.0	200.7	260

Average for the reporting quarter (May 14 to Jul 1 22.6 Minimum for the reporting quarter (May 14 to Jul 9.5 Maximum for the reporting quarter (May 14 to Jul 53.9



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WIDENING OF FANLING HIGHWAY
- TAI HANG TO WO HOP SHEK INTERCHANGE

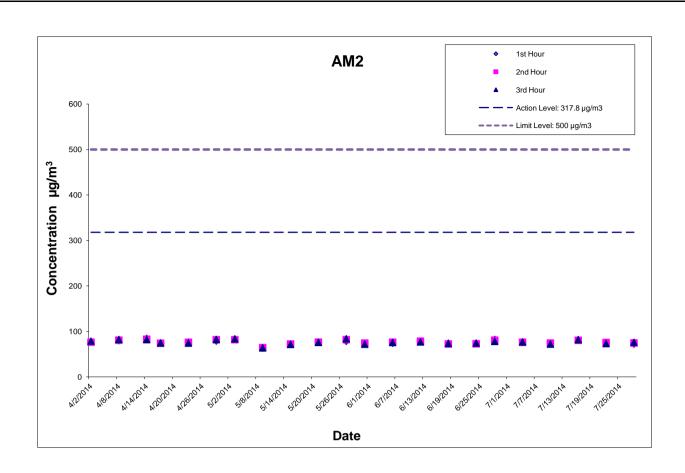


Project No.: 60307376 Date: Aug-14 Appendix G

### **Impact Air Quality Monitoring Results**

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

	Start	1st Hour	2nd Hour	3rd Hour				
	Time	Conc.	Conc.	Conc.				
Date	(hh:mm)	(µg/m³)	(µg/m³)	(µg/m³)				
2-Apr-14	13:31	77.2	76.2	78.4				
8-Apr-14	11:30	79.4	80.6	82.1				
14-Apr-14	12:15	84.4	82.6	81.8				
17-Apr-14	12:16	74.1	73.8	74.4				
23-Apr-14	12:20	76.2	75.9	74.1				
29-Apr-14	13:35	78.7	81.5	82.2				
3-May-14	13:33	82.2	81.6	83.5				
9-May-14	13:30	62.9	64.1	63.7				
15-May-14	14:07	71.7	72.1	71.2				
21-May-14	14:00	75.8	76.2	75.7				
27-May-14	14:00	78.2	81.7	83.6				
31-May-14	10:10	72.7	74.1	71.6				
6-Jun-14	10:21	73.9	76.1	75.5				
12-Jun-14	10:05	77.2	78.3	76.7				
18-Jun-14	13:20	73.9	72.1	73.4				
24-Jun-14	10:20	73.7	72.6	74.2				
28-Jun-14	10:09	82.2	80.5	77.9				
4-Jul-14	10:47	75.4	76.1	76.6				
10-Jul-14	10:18	73.5	74.2	71.9				
16-Jul-14	9:49	81.4	80.3	81.7				
22-Jul-14	10:13	74.2	75.5	73.1				
28-Jul-14	10:00	76.0						
Average for th	e reporting of	quarter (May 1	4 to Jul 14)	75.4				
		quarter (May		62.9				
Maximum for	the reporting	quarter (May	14 to Jul 14)	83.6				



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WIDENING OF FANLING HIGHWAY
- TAI HANG TO WO HOP SHEK INTERCHANGE



Project No.: 60307376 Date: Aug-14 Appendix G

### APPENDIX F METEROLOGICAL DATA

# Extract of Meteorological Observations for Tai Po Automatic Weather Station, May 2014

Date	Mean Pressure at M.S.L.	Air	Temperatu	ıre	Mean Dew Point Temperature	Relative Hum		idity
	(hPa)	Max. (deg C)	Mean (deg C)	Min. (deg C)	(deg C)	Max. (%)	Mean (%)	Min. (%)
1-May	1012.5	24	22.3	21.2	20.1	94	87	79
2-May	1014.7	27.1	24.1	22.1	20.1	89	79	67
3-May	1014.3	27.4	24.5	22.7	19.4	87	74	53
4-May	1011.9	23.2	22.4	21.6	20.7	95	90	76
5-May	1014.4	23.6	20.6	18.7	19.1	98	92	73
6-May	1016.4	20	19.1	18.3	17.6	97	91	82
7-May	1013.6	21.1	20	19.3	18.8	98	93	87
8-May	1010.6	22.8	21.8	20.8	21.2	98	96	91
9-May	1009	22.1	21.4	20.6	20.9	99	97	95
10-May	1007.8	25.4	23.5	21.7	21.8	98	90	80
11-May	1007.5	25.1	22.8	21.7	22.3	99	97	84
12-May	1008.2	27.6	24.5	22.2	23.5	99	94	83
13-May	1006.6	29.2	25.9	24.3	24.5	99	92	79
14-May	1004.6	29.7	27.7	26.3	25.1	95	86	74
15-May	1004.5	30.3	28.2	26.4	25.4	95	85	74
16-May	1007.1	30.1	26.7	25.2	25.6	99	94	77
17-May	1008.3	30.9	27.1	24.6	25.5	99	91	73
18-May	1008.4	29.7	27.4	24.6	25.2	98	88	76
19-May	1008.3	31	27.2	23.8	25.1	97	88	72
20-May	1007.2	30.7	25.5	22.7	24.1	98	92	69
21-May	1006.3	29.6	26.2	23.2	24	98	88	74
22-May	1005	28.6	27.5	25.7	24.8	96	85	76
23-May	1008.2	27.1	25.6	24.4	24.8	98	96	89
24-May	1010.8	30	27	25	24.8	95	89	75
25-May	1010.8	31.8	28.1	24.4	25.2	98	85	66
26-May	1009.1	33.1	29.2	26.1	24.9	93	79	60
27-May	1007	34.2	29.8	26.9	25.3	90	77	58
28-May	1006.6	32.7	29.6	26.9	24.2	86	74	59
29-May	1006.3	32.1	29.1	26.9	24.9	91	78	63
30-May	1006.7	32.8	29.5	27	24.8	93	76	61
31-May	1007.4	34.1	29.7	26.4	24.9	95	76	51
Mean	1009	28.3	25.6	23.6	23.2	96	87	73
Maximum	1016.4	34.2	29.8	27	25.6	99	97	95
Minimum	1004.5	20	19.1	18.3	17.6	86	74	51

## Extract of Meteorological Observations for Tai Po Automatic Weather Station, May 2014

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

<sup>\*\*\*</sup> unavailable

# missing (less than 24 hourly observations a day)

# Extract of Meteorological Observations for Tai Mei Tuk Automatic Weather Station, May 2014

Date	Mean Pressure at M.S.L.	Air	Temperatu	ıre	Mean Dew Point Temperature	Rela	tive Hum	idity
	(hPa)	Max. (deg C)	Mean (deg C)	Min. (deg C)	(deg C)	Max. (%)	Mean (%)	Min. (%)
1-May	*****	26.6	22.6	21	***	***	***	***
2-May	*****	29.4	24.4	22	***	***	***	***
3-May	*****	28.9	24.6	22.7	***	***	***	***
4-May	*****	23.1	22.3	21.5	***	***	***	***
5-May	*****	24.3	20.9	19	***	***	***	***
6-May	*****	19.8	19.1	18.5	***	***	***	***
7-May	*****	21.2	20.1	19.2	***	***	***	***
8-May	*****	23.5	22.2	21.1	***	***	***	***
9-May	*****	22.3	21.6	20.7	***	***	***	***
10-May	*****	25.2	23.4	21.6	***	***	***	***
11-May	*****	24.7	23.2	22.1	***	***	***	***
12-May	*****	29.7	25.4	22.7	***	***	***	***
13-May	*****	28.3	26.3	24.5	***	***	***	***
14-May	****	30.3	28.2	26.5	***	***	***	***
15-May	*****	30.7	28.5	27.2	***	***	***	***
16-May	*****	31	27.3	25.1	***	***	***	***
17-May	****	31.4	27.7	24.9	***	***	***	***
18-May	*****	30.8	27.8	25	***	***	***	***
19-May	*****	30.9	27.7	24.2	***	***	***	***
20-May	*****	30.9	26	23.1	***	***	***	***
21-May	*****	30.2	26.8	23.7	***	***	***	***
22-May	*****	29.7	27.8	25.8	***	***	***	***
23-May	*****	27.7	25.9	24.6	***	***	***	***
24-May	*****	32.2	27.5	24.9	***	***	***	***
25-May	*****	33.2	29	25	***	***	***	***
26-May	*****	33.4	29.8	26.7	***	***	***	***
27-May	*****	34.5	30.3	27.5	***	***	***	***
28-May	*****	33.2	29.8	27.2	***	***	***	***
29-May	*****	32.8	29.6	27.6	***	***	***	***
30-May	*****	33.6	30	27.4	***	***	***	***
31-May	*****	35.6	30.7	27	***	***	***	***
Mean	*****	29	26	23.9	***	***	***	***
Maximum	*****	35.6	30.7	27.6	***	***	***	***
Minimum	*****	19.8	19.1	18.5	****	***	***	***

## Extract of Meteorological Observations for Tai Mei Tuk Automatic Weather Station, May 2014

	Total	Prevailing	Mean
Date	Rainfall	Wind	Wind Speed
Date	(mm)	Direction	(km/h)
	()	(degrees)	(1411/11)
1-May	0.0	50	12.0
2-May	0.0	80	14.2
3-May	0.0	90	20.6
4-May	4.5	80	16.0
5-May	31.5	40	13.7
6-May	5.0	40	13.5
7-May	1.0	40	13.7
8-May	93.5	50	10.9
9-May	71.5	70	15.2
10-May	4.0	140	10.9
11-May	223.5	50	9.6
12-May	4.5	50	7.4
13-May	50.5	50	13.7
14-May	6.0	240	23.4
15-May	1.0	230	10.5
16-May	32.0	50	5.4
17-May	42.5	270	9.1
18-May	3.0	250	10.0
19-May	12.5	270	13.8
20-May	19.5	60	7.6
21-May	8.0	260	9.7
22-May	29.0	250	17.1
23-May	124.5	50	8.8
24-May	0.0	50	7.7
25-May	9.5	50	8.1
26-May	0.0	260	10.1
27-May	0.0	260	12.4
28-May	0.0	220	13.4
29-May	0.0	240	10.8
30-May	0.0	230	9.8
31-May	0.0	140	6.1
Mean		50	11.8
Total	777		
Maximum	223.5		23.4
Minimum *** upovoiloble	0.0		5.4

<sup>\*\*\*</sup> unavailable

# missing (less than 24 hourly observations a day)

### Extract of Meteorological Observations for Tai Po Automatic Weather Station, June 2014

Date	Mean Pressure at M.S.L.	Air	Temperatu	ıre	Mean Dew Point Temperature	Relative Humidit		idity
	(hPa)	Max. (deg C)	Mean (deg C)	Min. (deg C)	(deg C)	Max. (%)	Mean (%)	Min. (%)
1-Jun	1006.7	33.2	29.7	27.3	25.2	94	77	61
2-Jun	1004.6	33.4	30	27.8	24.5	85	73	57
3-Jun	1003.5	32.1	28.8	26.6	24.6	90	79	64
4-Jun	1003.5	33.1	29.2	25.6	24.8	94	78	57
5-Jun	1002.9	33	28.7	26.8	25.9	95	85	62
6-Jun	1002.6	29.7	26.7	24.6	24.6	98	89	79
7-Jun	1001.7	27.8	26.1	24.8	24.6	97	91	85
8-Jun	1000.6	30.8	28	26.5	25.4	97	86	66
9-Jun	1001.3	29.6	27.5	25.7	23.8	91	81	70
10-Jun	1001.1	30.5	27.6	26.5	24	90	81	69
11-Jun	1001.4	28.3	27.4	25.4	24	97	82	73
12-Jun	1001.7	30.7	27.7	26.1	22.2	87	73	48
13-Jun	1002.2	31.3	27.7	23.8	20	84	64	43
14-Jun	1002.6	32.1	29.1	26.2	21.4	84	64	47
15-Jun	1001.1	30.7	27.9	24.9	24.2	97	81	61
16-Jun	1001.5	32.7	29.5	26.8	25.5	94	80	66
17-Jun	1004	31.3	28.9	26.2	26.2	98	86	73
18-Jun	1003.9	32.1	28.4	26.1	26.1	99	88	66
19-Jun	1002.6	32.8	29	25.5	26	98	85	62
20-Jun	1002	29.7	28.4	26.2	26.2	98	88	76
21-Jun	1002.5	30	27.8	25.3	26	98	91	81
22-Jun	1003.4	27.6	26.1	25	25.5	99	97	89
23-Jun	1003.6	28.3	26.5	25.5	25.7	99	95	86
24-Jun	1003.8	28.8	26.6	25.2	25.7	99	94	83
25-Jun	1005.2	28.5	26.8	25.1	25.7	99	94	83
26-Jun	1005.7	34	29.6	26.4	25.4	97	79	59
27-Jun	1004.9	33.4	29.9	26.9	25.9	93	80	54
28-Jun	1003.6	33.1	29.6	27	25.4	91	79	62
29-Jun	1004.3	31	28.8	26.5	25.5	97	83	64
30-Jun	1006.9	29.9	27.9	26.4	26	97	89	76
Mean	1003.2	31	28.2	26	24.9	95	83	67
Maximum	1006.9	34	30	27.8	26.2	99	97	89
Minimum	1000.6	27.6	26.1	23.8	20	84	64	43

### Extract of Meteorological Observations for Tai Po Automatic Weather Station, June 2014

	Total	Prevailing	Mean
Date	Rainfall	Wind	Wind Speed
Date	(mm)	Direction	(km/h)
	(111111)	(degrees)	(KIII/II)
1-Jun	****	* * *	****
2-Jun	****	***	****
3-Jun	****	***	****
4-Jun	****	***	****
5-Jun	****	***	****
6-Jun	****	***	****
7-Jun	****	***	****
8-Jun	****	***	****
9-Jun	****	***	****
10-Jun	****	***	****
11-Jun	****	***	****
12-Jun	****	***	****
13-Jun	****	***	****
13-Jun	****	***	****
15-Jun	****	***	****
16-Jun	****	***	****
17-Jun	****	***	****
18-Jun	****	***	****
19-Jun	****	***	****
20-Jun	****	***	****
21-Jun	****	***	****
22-Jun	****	***	****
23-Jun	****	***	****
24-Jun	****	***	****
25-Jun	****	***	****
26-Jun	****	***	****
27-Jun	****	***	****
28-Jun	****	***	****
29-Jun	****	***	****
30-Jun	****	***	****
Mean		***	****
Total	****		
Maximum	****		****
Minimum	****		****
*** unavailable			

<sup>\*\*\*</sup> unavailable

# missing (less than 24 hourly observations a day)

### Extract of Meteorological Observations for Tai Mei Tuk Automatic Weather Station, June 2014

Date	Mean Pressure at M.S.L.	Air	Temperature		Mean Dew Point Temperature	Relative Humidit		idity
	(hPa)	Max. (deg C)	Mean (deg C)	Min. (deg C)	(deg C)	Max. (%)	Mean (%)	Min. (%)
1-Jun	*****	34.3	30.3	28	***	***	***	***
2-Jun	*****	33.8	30.2	28	***	***	***	***
3-Jun	*****	32.2	29.1	27	***	***	***	***
4-Jun	*****	34.4	30	26.4	***	***	***	***
5-Jun	*****	34.1	29.7	27	***	***	***	***
6-Jun	*****	33.9	27.5	25.1	***	***	***	***
7-Jun	*****	29.3	26.6	25.2	***	***	***	***
8-Jun	*****	33.2	29.1	26.2	***	***	***	***
9-Jun	*****	31.8	28	26.1	***	***	***	***
10-Jun	*****	30.9	28	26.1	***	***	***	***
11-Jun	*****	29.4	27.7	25.8	***	***	***	***
12-Jun	*****	31	28.2	26.1	***	***	***	***
13-Jun	*****	34.2	28.5	24.8	***	***	***	***
14-Jun	*****	35.2	30.4	26.8	***	***	***	***
15-Jun	*****	31.3	28.3	25.1	***	***	***	***
16-Jun	*****	32.5	29.6	26.6	***	***	***	***
17-Jun	*****	32.2	29.5	26.6	***	***	***	***
18-Jun	*****	32.2	29	26.5	***	***	***	***
19-Jun	*****	33.4	29.9	26.3	***	***	***	***
20-Jun	*****	30.9	28.8	26.1	***	***	***	***
21-Jun	*****	30.4	28.2	25.4	***	***	***	***
22-Jun	*****	28.7	26.8	25.4	***	***	***	***
23-Jun	*****	29.5	27.4	25.6	***	***	***	***
24-Jun	*****	31.2	27.5	25.5	***	***	***	***
25-Jun	*****	28.7	27.6	25.6	***	***	***	***
26-Jun	*****	34.2	29.9	27.2	***	***	***	***
27-Jun	*****	35.2	30.5	27.8	***	***	***	***
28-Jun	*****	34.9	30.5	28	***	***	***	***
29-Jun	*****	33.6	29.6	26.3	***	***	***	***
30-Jun	*****	31.9	28.5	26.5	***	***	***	***
Mean	*****	32.3	28.8	26.3	***	***	***	***
Maximum	*****	35.2	30.5	28	***	***	***	***
Minimum	*****	28.7	26.6	24.8	***	***	***	***

### Extract of Meteorological Observations for Tai Mei Tuk Automatic Weather Station, June 2014

	Total	Prevailing	Mean
Date	Rainfall	Wind	Wind Speed
_ 5.55	(mm)	Direction	(km/h)
	()	(degrees)	()
1-Jun	0.0	220	9.2
2-Jun	0.0	270	15.2
3-Jun	0.0	270	9.5
4-Jun	0.0	230	8.4
5-Jun	3.5	270	9.0
6-Jun	27.5	60	5.7
7-Jun	5.0	260	5.3
8-Jun	0.0	90	8.6
9-Jun	0.0	90	16.7
10-Jun	0.0	60	13.8
11-Jun	1.0	80	14.5
12-Jun	0.0	90	12.5
13-Jun	0.0	60	10.0
14-Jun	0.0	40	10.0
15-Jun	6.5	270	10.5
16-Jun	2.0	240	16.3
17-Jun	28.5	240	12.7
18-Jun	50.5	240	12.4
19-Jun	7.5	150	6.1
20-Jun	5.0	270	6.8
21-Jun	41.5	70	7.8
22-Jun	74.5	60	6.7
23-Jun	42.5	40	6.1
24-Jun	16.0	50	6.1
25-Jun	32.5	50	6.4
26-Jun	0.0	150	6.5
27-Jun	0.0	140	6.5
28-Jun	0.0	150	6.1
29-Jun	14.0	70	13.8
30-Jun	20.0	140	9.6
Mean		270	9.6
Total	378		
Maximum	74.5		16.7
Minimum	0.0		5.3
*** unavailable			

<sup>\*\*\*</sup> unavailable

# missing (less than 24 hourly observations a day)

# Extract of Meteorological Observations for Tai Po Automatic Weather Station, July 2014

Date	Mean Pressure at M.S.L.	Air	Temperatu	ıre	Mean Dew Point Temperature	Relative Humidity		idity
	(hPa)	Max.	Mean	Min.	(deg C)	Max.	Mean	Min.
	1000	(deg C)	(deg C)	(deg C)		(%)	(%)	(%)
1-Jul	1008.2	30.2	27.5	25.6	26	98	92	77
2-Jul	1006.3	33	29.4	26.3	25.4	97	80	56
3-Jul	1003.5	32.9	29.6	26.9	25.7	98	80	62
4-Jul	1003.2	34.4	30.4	27.2	24.6	91	72	51
5-Jul	1003.6	33	29.8	27.4	26	89	80	68
6-Jul	1003.2	34.5	30.6	27.8	25.1	89	74	48
7-Jul	1001.1#	31.6	27.8#	25.5	25.2#	98	86#	70
8-Jul	999.7	31.4	28.8	26.1	25.9	94	85	76
9-Jul	1001.6	32.4	29.2	26.6	26	95	83	73
10-Jul	1003.2	31.6	29	26	26.1	96	85	70
11-Jul	1004.6	29.7	27.6	26.5	26.3	98	93	84
12-Jul	1006	32.2	28.3	26.7	26.5	98	90	69
13-Jul	1007.7	32.3	29	26.8	26.2	98	85	62
14-Jul	1008.7	32.9	29.8	27.5	25.6	90	79	60
15-Jul	1009	34.1	30.1	27.4	25	92	75	50
16-Jul	1007.3	31.9	29.4	26.8	25.1	92	78	61
17-Jul	1004.4	31.6	29.3	26.6	25.4	95	80	65
18-Jul	1003.5	29.5	27.8	25.6	25.3	96	87	74
19-Jul	1006.6	30.3	28.4	26.5	25.3	96	84	68
20-Jul	1007.3	30.6	28.1	25.5	25.4	98	86	66
21-Jul	1004.8	32.1	29.1	26.6	24.9	95	79	60
22-Jul	1001.7	33.8	28.7	25.9	25.5	95	83	60
23-Jul	998.5	34.3	31.3	27.4	26.1	92	74	60
24-Jul	1000.2	31.6	30.1	26.7	26	84	79	71
25-Jul	1005	31.1	28.3	25.8	25.1	95	83	72
26-Jul	1008.3	28.9	27.2	25.1	25.4	98	90	78
27-Jul	1008	30.8	28.1	25.9	25.4	98	86	69
28-Jul	1005.6	32.5	28.9	25.9	24.1	94	76	56
29-Jul	1004.6	32.8	29.2	25.9	23.4	85	71	48
30-Jul	1004.4	33.6	30	26.6	24.9	89	75	54
31-Jul	1002.1	34.9	31.1	27.2	24.8	88	70	49
Mean	1004.6#	32.1	29.1#	26.5	25.4#	94	81#	64
Maximum	1009.0#	34.9	31.3#	27.8	26.5#	98	93#	84
Minimum	998.5#	28.9	27.2#	25.1	23.4#	84	70#	48

### Extract of Meteorological Observations for Tai Po Automatic Weather Station, July 2014

	Total	Prevailing	Mean
Date	Rainfall	Wind	Wind Speed
2 4.00	(mm)	Direction	(km/h)
	()	(degrees)	(1111/11)
1-Jul	****	***	****
2-Jul	****	***	****
3-Jul	****	***	****
4-Jul	****	***	****
5-Jul	****	***	****
6-Jul	****	***	****
7-Jul	****	***	****
8-Jul	****	***	****
9-Jul	****	***	****
10-Jul	****	***	****
11-Jul	****	***	****
12-Jul	****	***	****
13-Jul	****	***	****
14-Jul	****	***	****
15-Jul	****	***	****
16-Jul	****	***	****
17-Jul	****	***	****
18-Jul	****	***	****
19-Jul	****	***	****
20-Jul	****	***	****
21-Jul	****	***	****
22-Jul	****	***	****
23-Jul	****	***	****
24-Jul	****	***	****
25-Jul	****	***	****
26-Jul	****	***	****
27-Jul	****	***	****
28-Jul	****	***	****
29-Jul	****	***	****
30-Jul	****	***	****
31-Jul	****	***	****
Mean		***	****
Total	****		
Maximum	****		****
Minimum *** upovoiloble	****		****

<sup>\*\*\*</sup> unavailable

# missing (less than 24 hourly observations a day)

# Extract of Meteorological Observations for Tai Mei Tuk Automatic Weather Station, July 2014

Date	Mean Pressure at M.S.L.	Air	Temperatu	ıre	Mean Dew Point Temperature	Relative Humidi		idity
	(hPa)	Max. (deg C)	Mean (deg C)	Min. (deg C)	(deg C)	Max. (%)	Mean (%)	Min. (%)
1-Jul	*****	30.9	28.1	25.6	***	***	***	***
2-Jul	*****	34	30	27	***	***	***	***
3-Jul	*****	34.4	30.3	27.6	***	***	***	***
4-Jul	*****	34.5	30.8	28.2	***	***	***	***
5-Jul	*****	34.5	30.5	28.3	***	***	***	***
6-Jul	*****	34.8	31.1	28.3	***	***	***	***
7-Jul	*****	34.5	28.9	24.9	***	***	***	***
8-Jul	*****	34.5	30.1	27.1	***	***	***	***
9-Jul	*****	36.4	30.1	26.8	***	***	***	***
10-Jul	*****	35.1	30	27.4	***	***	***	***
11-Jul	*****	31.7	28.7	27	***	***	***	***
12-Jul	*****	31.8	29.3	27.8	***	***	***	***
13-Jul	*****	33.8	29.9	27.9	***	***	***	***
14-Jul	*****	33.7	30.1	28	***	***	***	***
15-Jul	*****	35.2	30.7	28.2	***	***	***	***
16-Jul	*****	34.7	30.3	27.6	***	***	***	***
17-Jul	*****	32.8	29.6	26.3	***	***	***	***
18-Jul	*****	28.7	27.1	25.5	***	***	***	***
19-Jul	*****	32	28.7	26.4	***	***	***	***
20-Jul	*****	32.1	28.7	25.6	***	***	***	***
21-Jul	*****	33.9	29.7	27.2	***	***	***	***
22-Jul	*****	34.6	29.4	27	***	***	***	***
23-Jul	*****	34.8	31.6	28.4	***	***	***	***
24-Jul	*****	31.6	29.8	26	***	***	***	***
25-Jul	*****	33.4	29.2	25.9	***	***	***	***
26-Jul	*****	32.9	27.8	25.4	***	***	***	***
27-Jul	*****	31.3	28.3	26.3	***	***	***	***
28-Jul	*****	34	29.9	26.5	***	***	***	***
29-Jul	*****	34.6	29.9	26.8	***	***	***	***
30-Jul	*****	35.3	30.9	27.7	***	***	***	***
31-Jul	*****	35.2	31.3	27.8	***	***	***	***
Mean	*****	33.6	29.7	27	***	***	***	***
Maximum	*****	36.4	31.6	28.4	***	***	***	***
Minimum	*****	28.7	27.1	24.9	***	***	***	***

### Extract of Meteorological Observations for Tai Mei Tuk Automatic Weather Station, July 2014

	Total	Prevailing	Mean
	Rainfall	Wind	Wind
Date	Naiiliali	Willia	Speed
	(mm)	Direction	(km/h)
		(degrees)	
1-Jul	28.5	40	7.4
2-Jul	0.0	150	4.7
3-Jul	3.5	270	10.0
4-Jul	0.0	270	7.0
5-Jul	1.0	60	5.3
6-Jul	0.0	40	8.4
7-Jul	39.0	270	5.3
8-Jul	0.0	270	4.6
9-Jul	27.5	140	6.4
10-Jul	2.0	040#	5.9#
11-Jul	15.0	60	4.8
12-Jul	12.5	50	6.0
13-Jul	2.0	50	6.6
14-Jul	4.5	270	8.4
15-Jul	0.0	150	4.4
16-Jul	0.0	50	7.5
17-Jul	8.0	80	32.0
18-Jul	46.0	90	36.9
19-Jul	6.0	140	15.8
20-Jul	8.0	70	8.9
21-Jul	0.0	50	3.4
22-Jul	2.0	260	9.2
23-Jul	0.0	260	23.7
24-Jul	4.0	230	16.6
25-Jul	0.0	80	6.5
26-Jul	31.5	50	13.0
27-Jul	4.5	80	15.8
28-Jul	0.0	70	5.1
29-Jul	0.0	150	4.9
30-Jul	0.0	150	4.6
31-Jul	0.0	270	11.6
Mean		050#	10.0#
Total	245.5		
Maximum	46.0		36.9#
Minimum	0.0		3.4#
*** unavailable			

<sup>\*\*\*</sup> unavailable

# missing (less than 24 hourly observations a day)

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

#### Location : M2 (West Tai Wo - Free Field)

Day time 07:00-19:00 hrs Normal Weekdays Impact Noise Monitoring Results

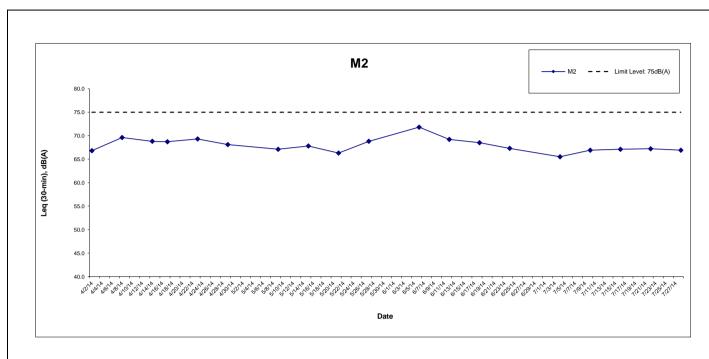
	Mea	sured Noise Le	vel for 30-min, d	B(A)	Limit Level,	Exceedance
Date	Start Time	Leq*	L10*	L90*	dB(A)	(Y/N)
2-Apr-14	14:01	66.8	69.5	62.2	75	N
8-Apr-14	10:40	69.6	71.9	66.8	75	N
14-Apr-14	13:15	68.8	71.2	66.9	75	N
17-Apr-14	15:27	68.7	70.3	66.2	75	N
23-Apr-14	15:37	69.3	71.6	67.2	75	N
29-Apr-14	14:22	68.1	69.8	65.8	75	N
9-May-14	15:00	67.1	68.5	65.0	75	N
15-May-14	15:08	67.8	69.3	65.4	75	N
21-Mar-14	14:00	67.9	69.6	64.3	75	N
27-Mar-14	14:30	67.2	69.6	64.5	75	N
6-Jun-14	11:20	71.8	73.3	68.5	75	N
12-Jun-14	11:04	69.2	70.8	66.3	75	N
18-Jun-14	13:40	68.5	69.7	66.7	75	N
24-Jun-14	11:25	67.3	69.0	65.1	75	N
4-Jul-14	10:25	65.5	67.6	61.8	75	N
10-Jul-14	11:12	66.9	68.5	63.5	75	N
16-Jul-14	10:38	67.1	70.0	62.5	75	N
22-Jul-14	13:00	67.2	69.0	65.0	75	N
28-Jul-14	10:50	66.9	68.5	65.0	75	N
Minimum for Ma	ay 14 to Jul 14	65.5	67.6	61.8		
Maximum for May 14 to Jul 14		71.8	73.3	68.5		
Average for Ma	ay 14 to Jul 14	68.0	69.7	65.2		

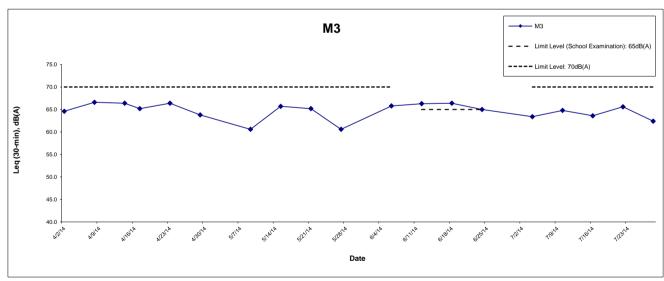
#### Location : M3 (Fanling Government Secondary School- Façade)

Day time 07:00-19:00 hrs Normal Weekdays Impact Noise Monitoring Results

	Mea	sured Noise Le	vel for 30-min, d	B(A)	Limit Level,	Exceedance
Date	Start Time	Leq	L10	L90	dB(A)^	(Y/N)
2-Apr-14	14:01	66.8	69.5	62.2	75	N
8-Apr-14	10:40	69.6	71.9	66.8	75	N
14-Apr-14	13:15	68.8	71.2	66.9	75	N
17-Apr-14	15:27	68.7	70.3	66.2	75	N
23-Apr-14	15:37	69.3	71.6	67.2	75	N
29-Apr-14	14:22	68.1	69.8	65.8	75	N
9-May-14	14:15	60.6	62.0	57.5	70	N
15-May-14	14:12	65.7	67.8	62.4	70	N
21-May-14	14:10	65.2	66.9	63.7	70	N
27-May-14	14:00	60.6	62.0	57.5	70	N
6-Jun-14	10:26	65.8	67.3	63.3	70	N
12-Jun-14	10:11	66.3	67.9	64.1	65	Υ
18-Jun-14	14:09	66.4	68.1	65.2	65	Υ
24-Jun-14	10:18	65.0	66.5	62.4	65	N
4-Jul-14	10:45	63.4	65.4	61.3	70	N
10-Jul-14	10:20	64.8	66.5	62.5	70	N
16-Jul-14	9:52	63.6	65.0	58.5	70	N
22-Jul-14	13:46	65.6	67.2	63.1	70	N
28-Jul-14	10:00	62.4	63.0	59.9	70	N
Minimum for Ma	ay 14 to Jul 14	60.6	62.0	57.5		
Maximum for Maximum	ay 14 to Jul 14	66.4	68.1	65.2		
Average for Ma	y 14 to Jul 14	64.6	66.3	62.2		

<sup>\* +3</sup>dB(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.

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CONTRACT NO. HY/2012/06

WIDENING OF FANLING HIGHWAY
- TAI HANG TO WO HOP SHEK INTERCHANGE

Graphical Presentation of Impact Daytime Construction Noise Monitoring Results

Project No.: 60307376 Date: Aug-14 Appendix G



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

Appendix H
Statistics on Complaints, Notifications of Summons and Successful Prosecutions

	Date Received	Subject	Status	Total no. followed up by the ET this month	Total no. followed up by the ET since project commencement
Environmental	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	2
complaints	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	•	2
Notification of summons	-	-	-	0	0
Successful Prosecutions	-	-	-	0	0