

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

Quarterly EM&A Report

May 2016 to July 2016

**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

(May 2016 to July 2016)

Certified by: Fredrick Leong



Position: Environmental Team Leader

Date: 15 September 2016

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c/o Arcadis  
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Attn: Mr. James Penny

**Your Reference**

**Our Reference**

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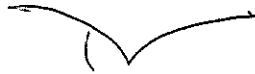
**Environmental Monitoring and Audit (EM&A) for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2 (between Tai Hang to Wo Hop Shek Interchange) – Entrusted Works Environmental Permit No. EP-324/2008/D Quarterly EM&A Summary Report for May 2016 to July 2016 for the portion of Stage 2 works entrusted to CEDD under Contract No. CV/2012/09**

15 September 2016

By Fax (2805 5028) & Hand

We refer to the revised Quarterly EM&A Summary Report for May 2016 to July 2016 for the Project received on 15 September 2016 submitted by ET via email. We confirm we have no comment.

Yours faithfully  
for MOTT MACDONALD HONG KONG LIMITED



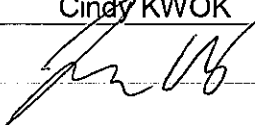


Steven Tang  
Independent Environmental Checker

c.c.

HyD  
CEDD/BCP  
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Mr. Chung Lok Chin  
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15 Sept 2016	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 May 2016 and 31 July 2016.

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 2 exceedance events were recorded. Investigation for the exceedances has been conducted and it has been concluded that the exceedance events were not related to the project works. No necessary remedial actions have been taken.

No environmental non-compliance was recorded in the reporting quarter. No environmental complaints were received in the reporting quarter. No environmental related prosecution or notification of summons were received in the reporting quarter.

The box culvert works have been partially completed by the end of March 2014 except the last construction activity, 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 originally scheduled from 19 February 2016. However, the mentioned works were subsequently cancelled and postponed to the next dry season in late 2016 after the utilities diversions complete.

The construction works at the box culvert ID4 are temporarily suspended until the utilities diversion works complete. The 4-week post construction water quality monitoring will be commenced after the installation of the base slab finishes, hence the completion of the 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. Furthermore, an additional VEP has been applied on 9 March 2015 and the VEP (EP-324/2008/C) was subsequently granted on 27 March 2015. The current VEP (EP-324/2008/D) was granted on 27 August 2015.
- 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/D in accordance with the Updated EM&A Manual (dated March 2015) 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:
- Cable Detection and Trial Trenches;
  - Filling Works at Tong Hang East;
  - Storm Drains Laying;
  - Noise Barrier Construction;
  - Pier / Pier Table Construction;
  - Pile Cap Works;
  - Portal Beam Construction;
  - Pre-drilling Works and Piling Works for Viaduct;
  - Pre-drilling works and Piling Works for Noise Barrier;
  - Retaining Wall Construction;

- Road Works;
- Sewer Works;
- Slope Works;
- Socket H-pile Installation;
- Steel Posts and Panels Installation of Noise Barrier;
- Tree Felling Works;
- Utilities Duct Laying;
- Viaduct segment erection;
- Installation of Stone Cladding;
- Viaduct Segment Erection; and
- Water Main 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. Steven Tang	2828 5920	2827 1823
Chun Wo	Contractor	Site Agent	Mr. Daniel Ho	2638 6144	2638 7077
		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 May 2016 and 31 July 2016.



## 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
<b>Air Quality</b>				
1-hour TSP	µg/m <sup>3</sup>	292.7	500	Three times every 6 days
24-hour TSP	µg/m <sup>3</sup>	170.3	260	Once every 6 days
<b>Construction Noise</b>				
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, 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 originally scheduled from 19 February 2016. However, the mentioned works were subsequently cancelled and postponed to the next dry season in late 2016 after the utilities diversions complete.
- 2.1.3 The construction works at the box culvert ID4 are temporarily suspended until the utilities diversion works complete. The 4-week post construction water quality monitoring will be commenced after the installation of the base slab finishes, hence the completion of the 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
<b>Air Quality</b>			
1 hour Total Suspended Particulate			
SR77	103.9 $\mu\text{g}/\text{m}^3$	188.1 $\mu\text{g}/\text{m}^3$	142.9 $\mu\text{g}/\text{m}^3$
24 hour Total Suspended Particulate			
SR77	51.2 $\mu\text{g}/\text{m}^3$	172.3 $\mu\text{g}/\text{m}^3$	90.8 $\mu\text{g}/\text{m}^3$
<b>Construction Noise</b>			
SR77	59.5dB(A)	76.5dB(A)	63.4dB(A)

### 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**.

**Table 3.2 Summary of Exceedance Events in the Reporting Quarter**

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

3.2.2 Investigation for the exceedance events has been conducted accordingly and it has been concluded that the exceedances were not related to the project works.

3.2.3 One (1) Action Level exceedance was recorded at AM1(SR77) on 23 July 2016 in the reporting quarter. According to the investigation result, road works being carried out by another Contract under Contract No. TP/2010/02 were observed within close proximity of the monitoring works. Excavation was conducted during the monitoring period and exposed earth and stockpiles were found within close proximity of the monitoring station where the exceedance was recorded. Such dusty materials may contribute to the dust sources being recorded by the high volume sampler. As such, the exceedance was not considered project related.

3.2.4 One (1) Limit Level exceedance of noise monitoring was recorded at M1(SR77) on 16 May 2016 in the reporting quarter. According to the investigation result, road works being carried out by another Contract under Contract No. TP/2010/02 were observed within close proximity of the monitoring station. Excavation was conducted using an excavator during the monitoring period where the exceedance was recorded. As such, the exceedance was not considered project related.

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

- Silt removal facilities, channels and manholes should be well inspected and maintained regularly;
- All plant and equipment should be well maintained and in good operating condition to avoid black smoke emission;

- Water spraying or covering of tarpaulin should be properly implemented whenever necessary for the unpaved roads, access roads and construction areas; and
- Secondary containment, like drip trays and/or bundings, should be provided for all chemical containers to retain any oil/chemical waste leakage within the construction site.

## 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 1,576m<sup>3</sup> of excavated material has been generated. 1,441m<sup>3</sup> of inert C&D materials was disposed of at public fill to Tuen Mun Area 38, while no inert C&D materials was reused on site. 325m<sup>3</sup> of general refuse was disposed of at North East New Territories (NENT) Landfill. 5m<sup>3</sup> of plastics and 1m<sup>3</sup> of paper/cardboard packaging were collected by recycling contractor in the reporting quarter. No metals were collected by recycling contractor in the reporting quarter. 1m<sup>3</sup> of chemical waste were 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 complaint was received. 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

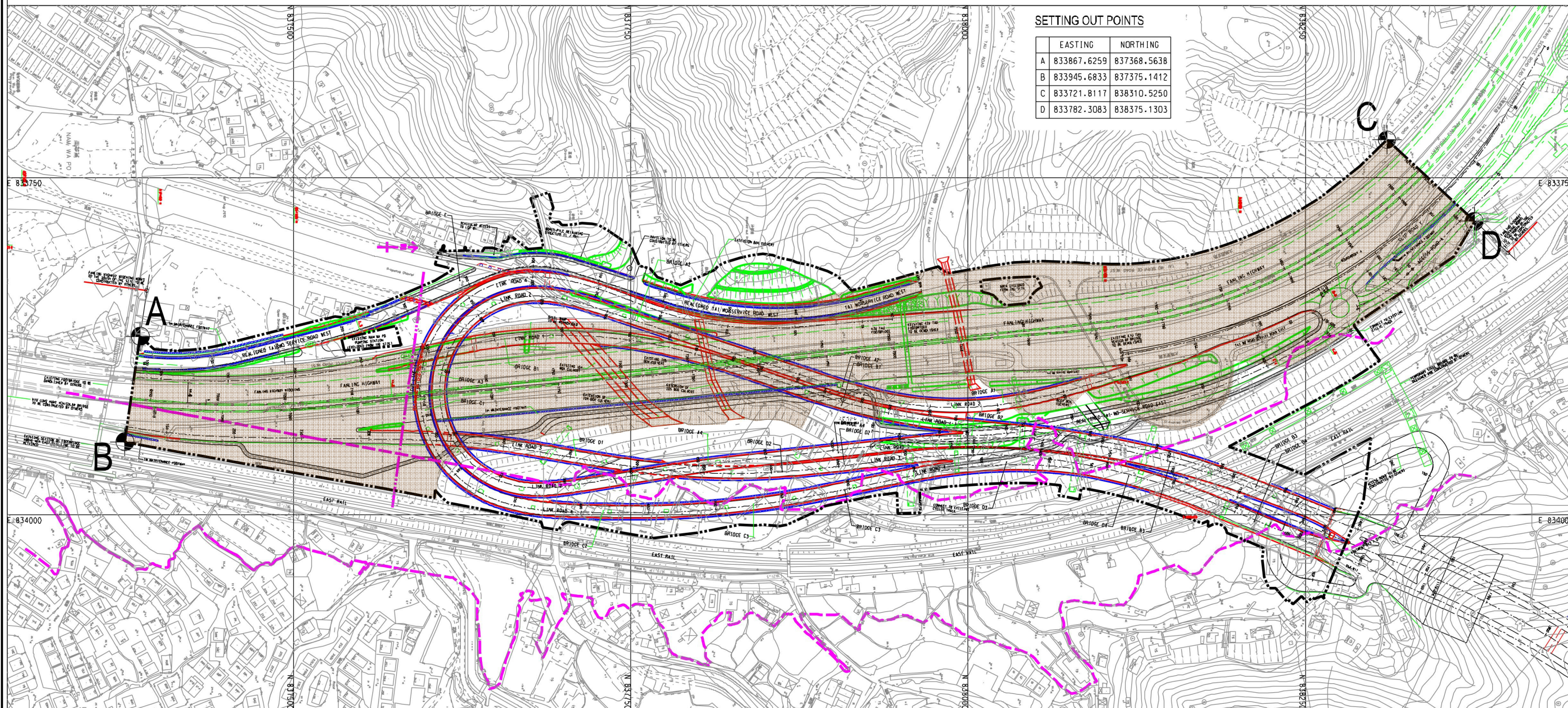
- 6.1.1 The EM&A programme was carried out by the ET in accordance with the EM&A Manual requirements. It is concluded from the environmental monitoring and audit works that adequate environmental mitigation measures have been implemented by the civil works contractors where appropriate in the reporting quarter.
- 6.1.2 In the reporting quarter, a total of 2 exceedance events were recorded.
- 6.1.3 No environmental non-compliance was recorded in the reporting quarter. No environmental complaints were received in the reporting quarter. No environmental related prosecution or notification of summons was 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, 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 originally scheduled from 19 February 2016. However, the mentioned works were subsequently cancelled and postponed to the next dry season in late 2016 after the utilities diversions complete.
- 6.1.5 The construction works at the box culvert ID4 are temporarily suspended until the utilities diversion works complete. The 4-week post construction water quality monitoring will be commenced after the installation of the base slab finishes, hence the completion of the 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

CV/201209-T-CWC-SK-001g\_AD\_edit.dgn 22/1/2014 17:10:34

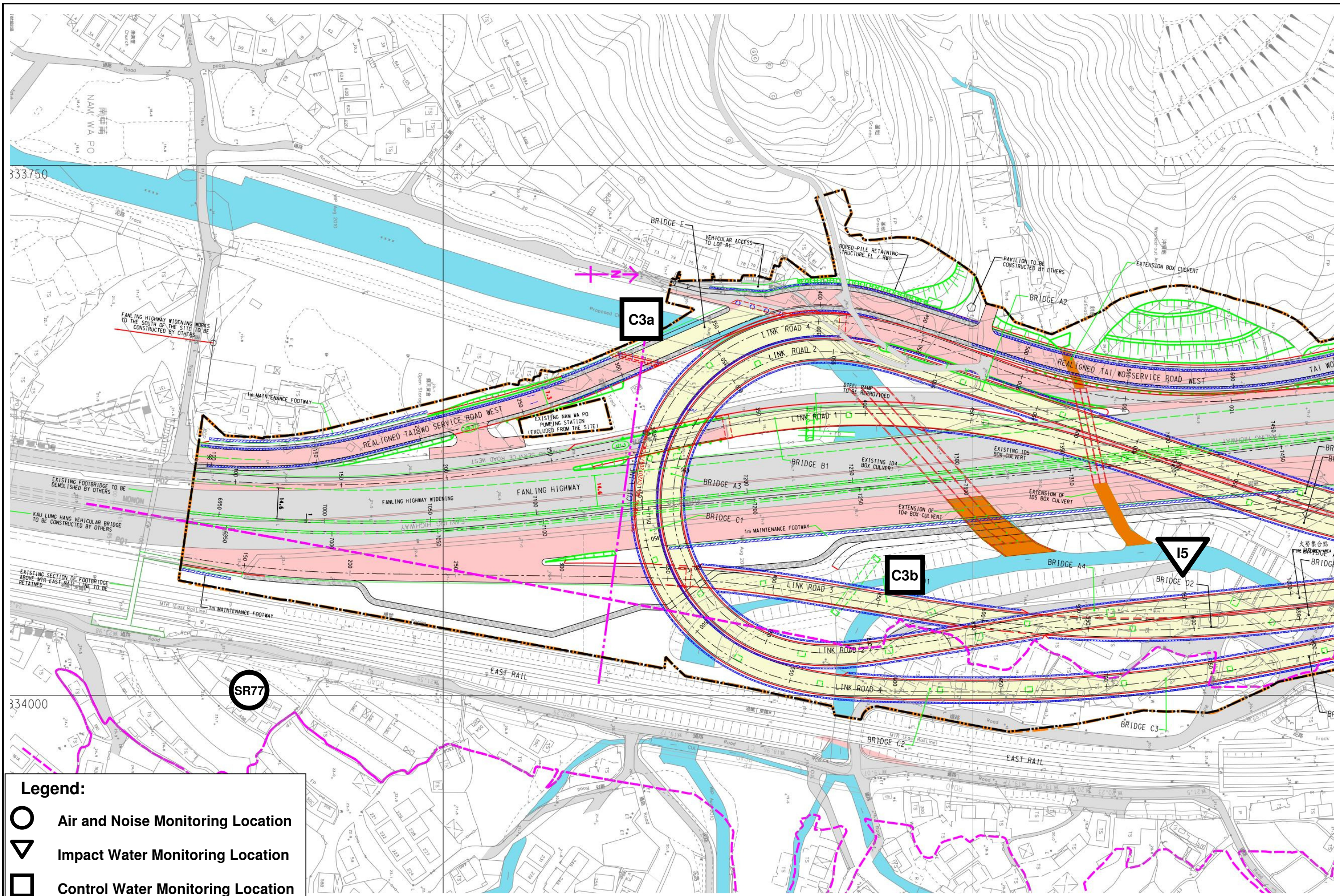
**Legend:**

 Works Area for Entrusted Portion



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






- Legend:**
-  Air and Noise Monitoring Location
  -  Impact Water Monitoring Location
  -  Control Water Monitoring Location

Figure 2: Environmental Monitoring Locations

# Appendix A Construction Programme





Activity ID	Activity Name	OD	RD	Start	Finish	TF	2014												2015												2016												2017												2018												2019											
							A	S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	Jul
PS-P02	Possession of Portion FH2	0	0	27-Jan-14 A			◆ Possession of Portion FH2																																																																							
PS-P03	Possession of Portion FH3	0	0	13-Mar-14 A		◆ Possession of Portion FH3																																																																								
PS-P04	Possession of Portion FH4	0	0	11-Jul-14 A		◆ Possession of Portion FH4																																																																								
PS-P05	Possession of Portion FH5	0	0	15-Aug-14 A		◆ Possession of Portion FH5																																																																								
PS-P06	Possession of Portion FH6	0	0	15-Apr-14 A		◆ Possession of Portion FH6																																																																								
PS-P07	Possession of Portion FH7	0	0	27-Jan-14 A		◆ Possession of Portion FH7																																																																								
PS-P08	Possession of Portion FH8	0	0	27-Jan-14 A		◆ Possession of Portion FH8																																																																								
PS-P09	Possession of Portion FH9	0	0	27-Jan-14 A		◆ Possession of Portion FH9																																																																								
PS-P10	Possession of Portion FH10	0	0	05-May-14 A		◆ Possession of Portion FH10																																																																								
PS-P11	Possession of Portion FH11	0	0	05-May-14 A		◆ Possession of Portion FH11																																																																								
<b>Dependent Milestones from Other Contracts</b>		<b>929</b>	<b>466</b>	<b>03-Feb-15 A</b>	<b>29-Mar-18</b>	<b>0</b>																																																																								
MS-0100	Completion of Temporary Vehicular Bridge by LT-C2 Contractor	0	0	03-Feb-15 A		◆ Completion of Temporary Vehicular Bridge by LT-C2 Contractor																																																																								
MS-0110	Completion of Kau Lung Hang Vehicular Bridge by HY/2012/06	0	0	25-Aug-16*	0													◆ Completion of Kau Lung Hang Vehicular Bridge by HY/2012/06																																																												
MS-NBZ-100	Allowance of free and unobstructed access within NBZ2 for LT-C3 Contractor	0	0	11-May-17*	0																									◆ Allowance of free and unobstructed access within NBZ2 for LT-C3 Contractor																																																
MS-NBZ-110	Cessation of the free and unobstructed access within NBZ2 for LT-C3 Contractor	0	0	09-Nov-17*	0																																					◆ Cessation of the free and unobstructed access within NBZ2 for LT-C3 Contractor																																				
MS-NBZ-200	Allowance of free and unobstructed access within NBZ1 for FHW3 Contractor	0	0	09-Nov-17*	0																																					◆ Allowance of free and unobstructed access within NBZ1 for FHW3 Contractor																																				
MS-NBZ-210	Cessation of the free and unobstructed access within NBZ1 for FHW3 Contractor	0	0	29-Mar-18*	0																																					◆ Cessation of the free and unobstructed access within NBZ1 for FHW3 Contractor																																				
MS-SBZ-100	Allowance of free and unobstructed access within SBZ2 for FHW3 Contractor	0	0	29-Jan-17*	0																									◆ Allowance of free and unobstructed access within SBZ2 for FHW3 Contractor																																																
MS-SBZ-110	Cessation of the free and unobstructed access within SBZ2 for FHW3 Contractor	0	0	30-Sep-17*	0																																					◆ Cessation of the free and unobstructed access within SBZ2 for FHW3 Contractor																																				
MS-SBZ-200	Allowance of free and unobstructed access within SBZ1 for LT-C3 Contractor	0	0	30-Sep-17*	0																																					◆ Allowance of free and unobstructed access within SBZ1 for LT-C3 Contractor																																				
MS-SBZ-210	Cessation of the free and unobstructed access within SBZ1 for LT-C3 Contractor	0	0	29-Mar-18*	0																																					◆ Cessation of the free and unobstructed access within SBZ1 for LT-C3 Contractor																																				
<b>Major Milestones and Events</b>		<b>846</b>	<b>537</b>	<b>09-Nov-14 A</b>	<b>22-Oct-17</b>	<b>0</b>																																																																								
MS-0200	Completion of 4 nos. of piers crash with the existing FLH (by 2 sets)	0	0	20-Apr-16	210																									◆ Completion of 4 nos. of piers crash with the existing FLH (by 2 sets)																																																
MS-0210	Completion of 2 nos. of piers crash with existing FLH (by 1 set)	0	0	16-Jul-16	139																									◆ Completion of 2 nos. of piers crash with existing FLH (by 1 set)																																																
MS-0220	Commissioning of the diverted twin DN1400 Dong Jiang Watermains (Stage 1)	0	0	27-May-15 A														◆ Commissioning of the diverted twin DN1400 Dong Jiang Watermains (Stage 1)																																																												
MS-0230	Commissioning of the diverted twin DN1400 Dong Jiang Watermains (Stage 2)	0	0	14-Nov-16	99																									◆ Commissioning of the diverted twin DN1400 Dong Jiang Watermains (Stage 2)																																																
MS-0240	Commissioning of the diverted DN2300 Dong Jiang Watermains	0	0	19-Dec-15	295													◆ Commissioning of the diverted DN2300 Dong Jiang Watermains																																																												
MS-1000A	T9: TTA to shift entire FLHN SB eastward to the widened pavement	1	1	14-May-17	14-May-17	0																																					I T9: TTA to shift entire FLHN SB eastward to the widened pavement																																			
MS-1000B	T10: TTA to shift FLHN NB eastward to the existing FLH SB carriageway	1	1	09-Jul-17	09-Jul-17	0																																					I T10: TTA to shift FLHN NB eastward to the existing FLH SB carriageway																																			
MS-1000C	T11: TTA to shift FLHN NB westward to the completed FLH NB carriageway	1	1	22-Oct-17	22-Oct-17	0																																					I T11: TTA to shift FLHN NB westward to the completed FLH NB carriageway																																			
MS-2000A1	T1a: TTA to shift FLHS SB eastward to the widened pavement (shift 1 lanes)	1	0	09-Nov-14 A	09-Nov-14 A		I T1a: TTA to shift FLHS SB eastward to the widened pavement (shift 1 lanes)																																																																							
MS-2000A2	T1b: TTA to shift FLHS SB eastward to the widened pavement (shift 2 lanes)	1	0	08-Mar-15 A	08-Mar-15 A		I T1b: TTA to shift FLHS SB eastward to the widened pavement (shift 2 lanes)																																																																							
MS-2000A3	T1c: TTA to shift FLHS SB eastward to the widened pavement (shift 3 lanes)	1	0	22-Mar-15 A	22-Mar-15 A		I T1c: TTA to shift FLHS SB eastward to the widened pavement (shift 3 lanes)																																																																							
MS-2000B	T2: TTA to shift FLHS NB eastward	1	0	27-Jun-15 A	27-Jun-15 A		I T2: TTA to shift FLHS NB eastward																																																																							
MS-2000C	T3: TTA to split FLHS NB & SB with 3 lanes in the middle unoccupied (between CH7130 and CH7470)	1	1	27-Dec-15*	27-Dec-15	0	I T3: TTA to split FLHS NB & SB with 3 lanes in the middle unoccupied (between CH7130 and CH7470)																																																																							
MS-2000D	T4: TTA to divert TWSRW traffic to the completed re-aligned TWSRW	1	1	20-Jan-16	20-Jan-16	68	I T4: TTA to divert TWSRW traffic to the completed re-aligned TWSRW																																																																							
MS-2000F1	T6: TTA to shift FLHS NB & SB (Fast lanes) to the permanent designed alignment, i.e. 4th lanes	1	1	16-Oct-16	16-Oct-16	0	I T6: TTA to shift FLHS NB & SB (Fast lanes) to the permanent designed alignment, i.e. 4th lanes																																																																							
MS-2000F2	T7: TTA to shift FLHS NB & SB (Middle lanes) to the permanent designed alignment, i.e. 3rd lanes	1	1	11-Dec-16	11-Dec-16	0	I T7: TTA to shift FLHS NB & SB (Middle lanes) to the permanent designed alignment, i.e. 3rd lanes																																																																							
MS-2000F3	T8: TTA to shift FLHS NB & SB (Slow lanes) to the permanent designed alignment, i.e. 2nd lanes	1	1	16-Feb-17	16-Feb-17	0	I T8: TTA to shift FLHS NB & SB (Slow lanes) to the permanent designed alignment, i.e. 2nd lanes																																																																							



**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**

**Updated Master Works Programme (Revision 3B)**  
**Programme ID: UMP03B (Data Date: 01-Aug-15) \_\_\_ Print Date: 23-Oct-15**

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Date	Revision	Checked	Approved
29-Jan-14	IWP04	Sam	Victor
08-Jan-15	UMP01	Sam	Victor
24-Apr-15	UMP02	Sam	Victor
01-Aug-15	UMP03	Sam	Victor
02-Oct-15	UMP03A	Sam	Victor
23-Oct-15	UMP03B	Sam	Victor



Activity ID	Activity Name	OD	RD	Start	Finish	TF	Gantt Chart																																																																						
							2014													2015													2016													2017													2018													2019					
PRE-1510	Confirmation of Revised Retaining Structure along Slope no. 3SW-C/C898 (under VO. 78)	0	0		16-Apr-15 A		◆ Confirmation of Revised Retaining Structure along Slope no. 3SW-C/C898 (under VO. 78)																																																																						
PRE-1520	Confirmation of Noise Barrier Footing Design (NB1a) near WSD Tau Pass Restricted Zone (under VO.103)	0	0		20-Aug-15 A		◆ Confirmation of Noise Barrier Footing Design (NB1a) near WSD Tau Pass Restricted Zone (under VO.103)																																																																						
PRE-1530	Confirmation of Noise Barrier Footing Design (NB3) (under VO. 95, 98 & 109)	0	0		26-Aug-15*	0	◆ Confirmation of Noise Barrier Footing Design (NB3) (under VO. 95, 98 & 109)																																																																						
PRE-1540	Confirmation of details of Box Culvert (BC01) (under VO. 12)	0	0		16-Dec-13 A		◆ Confirmation of details of Box Culvert (BC01) (under VO. 12)																																																																						
PRE-1550	Confirmation of construction details of permanent boundary wall for pumping station PST3 (under VO.15)	0	0		07-Jan-14 A		◆ Confirmation of construction details of permanent boundary wall for pumping station PST3 (under VO.15)																																																																						
<b>Method Statement and Design (Major) Approved by AECOM</b>		947	524	20-Jan-14 A	17-May-17	97																																																																							
PRE-2000	Submission of E&M design for the re-provisioned WSD Valve Control House	60	0	20-Jan-14 A	30-May-14 A		Submission of E&M design for the re-provisioned WSD Valve Control House																																																																						
PRE-2010	Submission of irrigation systems for the proposed planting	60	60	02-Mar-17	17-May-17	97	Submission of irrigation systems for the proposed planting																																																																						
PRE-2020	Submission of noise barrier design for absorptive panels, transparent panels and associated fixing details	60	7	11-Mar-14 A	08-Aug-15	155	Submission of noise barrier design for absorptive panels, transparent panels and associated fixing details; Submission of noise barrier design for absorptive panels, transparent panels and associated fixing details																																																																						
PRE-2030	Submission of E&M design for lighting of Kiu Tau Footbridge	60	60	18-Dec-15	07-Mar-16	130	Submission of E&M design for lighting of Kiu Tau Footbridge																																																																						
PRE-2040	Submission of E&M design for lighting inside viaduct structures of Bridge A, B, C & D	60	60	26-Apr-16	08-Jul-16	69	Submission of E&M design for lighting inside viaduct structures of Bridge A, B, C & D																																																																						
PRE-2050	Submission of Shop Drawing for fabrication of Kiu Tau Footbridge Steelworks	30	30	18-Nov-15	22-Dec-15	19	Submission of Shop Drawing for fabrication of Kiu Tau Footbridge Steelworks																																																																						
<b>Contractor's Alternative Design (AD) Submission &amp; Approval</b>		687	0	06-Aug-13 A	04-Mar-15 A																																																																								
PRE-4000	ACABAS submission & approval	50	0	03-Sep-13 A	17-Sep-13 A		ACABAS submission & approval																																																																						
PRE-4010	Contractor's Alternative Design AIP	56	0	06-Aug-13 A	09-Oct-13 A		Contractor's Alternative Design AIP																																																																						
PRE-4110	Foundation Design Package A (AA1, AB1, AC1, AD1, AB12/AD14)	36	0	03-Sep-13 A	11-Nov-13 A		Foundation Design Package A (AA1, AB1, AC1, AD1, AB12/AD14)																																																																						
PRE-4120	Foundation Design Package B (AC4, AA5)	36	0	19-Sep-13 A	11-Nov-13 A		Foundation Design Package B (AC4, AA5)																																																																						
PRE-4130	Foundation Design Package C (AA12, AB5, AC2, AC3)	36	0	19-Sep-13 A	04-Dec-13 A		Foundation Design Package C (AA12, AB5, AC2, AC3)																																																																						
PRE-4140	Foundation Design Package D (AD2, AD3, AD4, AD5)	36	0	21-Nov-13 A	14-Jan-14 A		Foundation Design Package D (AD2, AD3, AD4, AD5)																																																																						
PRE-4150	Foundation Design Package E (AA5, AA8, AA10, AA11, AA12, AA14, AA17, AB2, AB5, AC2-AC4, AC6-AC10, AD2, AD4-AD6)	48	0	26-Sep-13 A	30-Jan-14 A		Foundation Design Package E (AA5, AA8, AA10, AA11, AA12, AA14, AA17, AB2, AB5, AC2-AC4, AC6-AC10, AD2, AD4-AD6)																																																																						
PRE-4160	Foundation Design Package F (AA2-AA4, AA6, AA7, AA15, AA16, AB3-AB4, AB8-AB11, AD7, AD10-AD13)	48	0	25-Dec-13 A	10-Mar-14 A		Foundation Design Package F (AA2-AA4, AA6, AA7, AA15, AA16, AB3-AB4, AB8-AB11, AD7, AD10-AD13)																																																																						
PRE-4170	Foundation Design Package G (AA9, AA13, AA18, AB6-AB7, AC5, AC11-AC12, AD8-AD9)	48	0	28-Jan-14 A	16-Apr-14 A		Foundation Design Package G (AA9, AA13, AA18, AB6-AB7, AC5, AC11-AC12, AD8-AD9)																																																																						
PRE-4170A	Foundation Re-design Package for Bridge B2/D3	0	0		03-Sep-14 A		◆ Foundation Re-design Package for Bridge B2/D3																																																																						
PRE-4180	Pile Cap Design Package A (AA2-AA4, AA6-AA8, AA10-AA12, AA14-AA17, AB2-AB5, AC2-AC4, AC6-AC10, AD2-AD4, AD7)	48	0	02-Dec-13 A	30-Jan-14 A		Pile Cap Design Package A (AA2-AA4, AA6-AA8, AA10-AA12, AA14-AA17, AB2-AB5, AC2-AC4, AC6-AC10, AD2-AD4, AD7)																																																																						
PRE-4190A	Pile Cap Design Package B (AA5, AB8-AB11, AD12-AD13)	48	0	28-Jan-14 A	10-Mar-14 A		Pile Cap Design Package B (AA5, AB8-AB11, AD12-AD13)																																																																						
PRE-4190B	Pile Cap Design Package C (AA9, AA13, AA18, AB6-AB7, AC5, AC11, AC12, AD5-AD6, AD8-AD11)	48	0	28-Jan-14 A	16-Apr-14 A		Pile Cap Design Package C (AA9, AA13, AA18, AB6-AB7, AC5, AC11, AC12, AD5-AD6, AD8-AD11)																																																																						
PRE-4210	Pier Design Package A (AA2-AA5, AA10-AA13, AB2-AB5, AC2-AC10, AD6-AD7)	46	0	28-Nov-13 A	10-Jun-14 A		Pier Design Package A (AA2-AA5, AA10-AA13, AB2-AB5, AC2-AC10, AD6-AD7)																																																																						
PRE-4220	Pier Design Package B (AB6-AB11)	43	0	28-Nov-13 A	20-Nov-14 A		Pier Design Package B (AB6-AB11)																																																																						
PRE-4230	Pier Design Package C (AD2-AD5)	31	0	28-Nov-13 A	11-Jun-14 A		Pier Design Package C (AD2-AD5)																																																																						
PRE-4240	Pier Design Package D (AA6-AA9, AA14-AA18)	46	0	20-Jan-14 A	10-Jun-14 A		Pier Design Package D (AA6-AA9, AA14-AA18)																																																																						
PRE-4250	Pier Design Package E (AC11-AC12)	50	0	28-Nov-13 A	11-Jun-14 A		Pier Design Package E (AC11-AC12)																																																																						
PRE-4260	Pier Design Package F (AD8-AD13)	50	0	20-Jan-14 A	20-Nov-14 A		Pier Design Package F (AD8-AD13)																																																																						
PRE-4270	Portal Beam Design Package 1 (AA2, AB6, AC11/AD8)	54	0	20-Jan-14 A	11-Jun-14 A		Portal Beam Design Package 1 (AA2, AB6, AC11/AD8)																																																																						
PRE-4280	Portal Beam Design Package 2 (AB7/AD9/AC12, AB8, AD11)	38	0	23-Aug-14 A	20-Nov-14 A		Portal Beam Design Package 2 (AB7/AD9/AC12, AB8, AD11)																																																																						
PRE-4290	Portal Beam Design Package 3 (AD3)	31	0	23-Aug-14 A	30-Sep-14 A		Portal Beam Design Package 3 (AD3)																																																																						
PRE-4310A	Superstructure Design Package 9 for Bridge A1 (AA1-AA5)	118	0	16-May-14 A	12-Jan-15 A		Superstructure Design Package 9 for Bridge A1 (AA1-AA5)																																																																						
PRE-4310B	Superstructure Design Package 10 for Bridge A2 (AA6-AA9)	154	0	16-May-14 A	12-Jan-15 A		Superstructure Design Package 10 for Bridge A2 (AA6-AA9)																																																																						
PRE-4310C	Superstructure Design Package 3 for Bridge A3 (AA10-AA13)	158	0	04-Apr-14 A	12-Jan-15 A		Superstructure Design Package 3 for Bridge A3 (AA10-AA13)																																																																						
PRE-4310D	Superstructure Design Package 6 for Bridge A4 (AA14-AA18)	108	0	16-May-14 A	12-Jan-15 A		Superstructure Design Package 6 for Bridge A4 (AA14-AA18)																																																																						



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Date	Revision	Checked	Approved
29-Jan-14	IWP04	Sam	Victor
08-Jan-15	UMP01	Sam	Victor
24-Apr-15	UMP02	Sam	Victor
01-Aug-15	UMP03	Sam	Victor
02-Oct-15	UMP03A	Sam	Victor
23-Oct-15	UMP03B	Sam	Victor

Activity ID	Activity Name	OD	RD	Start	Finish	TF	2014							2015							2016							2017							2018							2019																		
							A	S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	J
PRE-4320A	Superstructure Design Package 11 for Bridge B1 (AB1-AB6)	73	0	21-May-14 A	30-Sep-14 A		Superstructure Design Package 11 for Bridge B1 (AB1-AB6)																																																					
PRE-4320B	Superstructure Design Package 7 for Bridge B2 (AB7-AB12)	196	0	21-May-14 A	12-Jan-15 A		Superstructure Design Package 7 for Bridge B2 (AB7-AB12)																																																					
PRE-4330A	Superstructure Design Package 2 for Bridge C1 (AC1-AC5)	196	0	28-Mar-14 A	30-Sep-14 A		Superstructure Design Package 2 for Bridge C1 (AC1-AC5)																																																					
PRE-4330B	Superstructure Design Package 1 for Bridge C2 (AC6-AC11)	134	0	06-Mar-14 A	27-Aug-14 A		Superstructure Design Package 1 for Bridge C2 (AC6-AC11)																																																					
PRE-4340A	Superstructure Design Package 4 for Bridge D1 (AD1-AD5)	110	0	07-May-14 A	30-Sep-14 A		Superstructure Design Package 4 for Bridge D1 (AD1-AD5)																																																					
PRE-4340B	Superstructure Design Package 8 for Bridge D2 (AD6-AD8)	56	0	30-Jul-14 A	12-Jan-15 A		Superstructure Design Package 8 for Bridge D2 (AD6-AD8)																																																					
PRE-4340C	Superstructure Design Package 5 for Bridge D3 (AD9-AD14)	196	0	07-May-14 A	12-Jan-15 A		Superstructure Design Package 5 for Bridge D3 (AD9-AD14)																																																					
PRE-4400	Abutments Design Package for AA1, AB1, AC1 & AD1	220	0	01-Apr-14 A	04-Mar-15 A		Abutments Design Package for AA1, AB1, AC1 & AD1																																																					
<b>Condition Survey</b>		<b>18</b>	<b>0</b>	<b>26-Aug-13 A</b>	<b>22-Oct-13 A</b>																																																							
PRE-5000	Condition Survey for EBS	18	0	26-Aug-13 A	22-Oct-13 A		Condition Survey for EBS																																																					
<b>Temporary Traffic Arrangement (TTA) Submission and Approval</b>		<b>358</b>	<b>0</b>	<b>12-Aug-13 A</b>	<b>06-Jun-14 A</b>																																																							
<b>Forming of TMLG</b>		<b>50</b>	<b>0</b>	<b>12-Aug-13 A</b>	<b>13-Sep-13 A</b>																																																							
PRE-6000	Traffic consultant nomination & approval	25	0	20-Aug-13 A	29-Aug-13 A		Traffic consultant nomination & approval																																																					
PRE-6020	TMLG establishment	50	0	12-Aug-13 A	13-Sep-13 A		TMLG establishment																																																					
<b>TTA for Tai Wo Service Road West</b>		<b>302</b>	<b>0</b>	<b>13-Sep-13 A</b>	<b>06-Jun-14 A</b>																																																							
PRE-6110	TTA submission & approval - Scheme W2 (for Piling Works & Retaining Structure)	40	0	13-Sep-13 A	15-Oct-13 A		TTA submission & approval - Scheme W2 (for Piling Works & Retaining Structure)																																																					
PRE-6140	TTA submission & approval - Scheme W3 (for laying UU ductings)	40	0	28-May-14 A	06-Jun-14 A		TTA submission & approval - Scheme W3 (for laying UU ductings)																																																					
<b>Section IA &amp; IB - Fanling Highway Widening(KD-1 &amp; KD-2)</b>		<b>1419</b>	<b>906</b>	<b>12-Aug-13 A</b>	<b>31-Aug-18</b>	<b>0</b>																																																						
<b>Fanling Highway South Portion between CH6935 and CH7470</b>		<b>1250</b>	<b>737</b>	<b>12-Aug-13 A</b>	<b>30-Jan-18</b>	<b>0</b>																																																						
<b>Fanling Highway Zone 1 between CH6935 and CH7130 (within SBZ2)</b>		<b>1250</b>	<b>737</b>	<b>12-Aug-13 A</b>	<b>30-Jan-18</b>	<b>0</b>																																																						
<b>At-Grade Roadworks (195m)</b>		<b>1250</b>	<b>737</b>	<b>12-Aug-13 A</b>	<b>30-Jan-18</b>	<b>0</b>																																																						
FHW-1100	Site Formation, Preparation Works & Tree Transplant	65	0	12-Aug-13 A	11-Aug-14 A		Site Formation, Preparation Works & Tree Transplant																																																					
FHW-1110	Noise Barrier NB6 and NB7 - Footing adjacent to SB lane (184m)	280	0	29-Mar-14 A	16-Aug-14 A		Noise Barrier NB6 and NB7 - Footing adjacent to SB lane (184m)																																																					
FHW-1120*	Pipe Laying - DN1200 Watermains (CHC) across Fanling Highway (total 80m for 2 shafts)	275	0	09-Jun-14 A	12-Feb-15 A		Pipe Laying - DN1200 Watermains (CHC) across Fanling Highway (total 80m for 2 shafts)																																																					
FHW-1130*	Pipe Laying - DN1200 Watermains (CHC) along Fanling Highway (80m long, 4m depth)	182	76	20-Feb-14 A	31-Oct-15	155	Pipe Laying - DN1200 Watermains (CHC) along Fanling Highway (80m long, 4m depth)																																																					
FHW-1140	Noise Barrier NB70 - Footing adjacent to SB lane (15m)	115	115	04-Feb-16	02-Jul-16	77	Noise Barrier NB70 - Footing adjacent to SB lane (15m)																																																					
FHW-1150	Road Formation (FLH SB 1st lane)	48	48	04-Jul-16	27-Aug-16	77	Road Formation (FLH SB 1st lane)																																																					
FHW-1160	Road Formation (FLH SB 2nd lane)	25	25	30-Sep-17	01-Nov-17	0	Road Formation (FLH SB 2nd lane)																																																					
FHW-1170	Road Formation & Road Drainage (FLH SB 3rd lane)	50	50	02-Nov-17	02-Jan-18	0	Road Formation & Road Drainage (FLH SB 3rd lane)																																																					
FHW-1180	Road Formation & Pavement (FLH SB 4th lane)	24	24	03-Jan-18	30-Jan-18	0	Road Formation & Pavement (FLH SB 4th lane)																																																					
FHW-1210	Road Formation & Pavement (FLH NB 1st lane)	80	80	25-Aug-16	29-Nov-16	0	Road Formation & Pavement (FLH NB 1st lane)																																																					
FHW-1220	Road Formation & Pavement (FLH NB 2nd lane)	33	33	30-Sep-17	10-Nov-17	0	Road Formation & Pavement (FLH NB 2nd lane)																																																					
FHW-1230	Road Formation & Pavement (FLH NB 3rd lane)	33	33	11-Nov-17	19-Dec-17	0	Road Formation & Pavement (FLH NB 3rd lane)																																																					
FHW-1240	Road Formation & Pavement (FLH NB 4th lane)	33	33	20-Dec-17	30-Jan-18	0	Road Formation & Pavement (FLH NB 4th lane)																																																					
FHW-1300	Noise Barrier NB68 - Mini-Piling at central median (CSD: 24 nos)	80	80	08-Mar-16	16-Jun-16	0	Noise Barrier NB68 - Mini-Piling at central median (CSD: 24 nos)																																																					
FHW-1310	Noise Barrier NB68 - Footing at central median (72m)	73	73	17-Jun-16	10-Sep-16	0	Noise Barrier NB68 - Footing at central median (72m)																																																					
FHW-1320	Road Formation (Middle Part: FLH NB & SB Fast lanes), except CH6935 - CH7035	27	27	12-Sep-16	15-Oct-16	0	Road Formation (Middle Part: FLH NB & SB Fast lanes), except CH6935 - CH7035																																																					
<b>Fanling Highway Zone 2 between CH7130 and CH7290</b>		<b>1113</b>	<b>737</b>	<b>17-Apr-14 A</b>	<b>30-Jan-18</b>	<b>0</b>																																																						
<b>At-Grade Roadworks (160m)</b>		<b>1113</b>	<b>737</b>	<b>17-Apr-14 A</b>	<b>30-Jan-18</b>	<b>0</b>																																																						


**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

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							A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M
FHW-2110A	Noise Barrier NB71 - Footing adjacent to SB lane (24m)	70	0	17-Apr-14 A	16-Aug-14 A		■ Noise Barrier NB71 - Footing adjacent to SB lane (24m)																																													
FHW-2110B	Noise Barrier NB71 - Footing adjacent to SB lane (96m) (under VO.79)	341	88	26-Jul-14 A	14-Nov-15	0	■ Noise Barrier NB71 - Footing adjacent to SB lane (96m) (under VO.79)																																													
FHW-2120*	Pipe Laying - Twin DN1400 Watermains (CHE & G) along Fanling Highway (44m long, 6m depth)	85	0	09-Jul-14 A	19-Dec-14 A		■ Pipe Laying - DN1200 & DN600 Watermains (CHB & CHC) along Fanling Highway (183m long, 4m depth)																																													
FHW-2130*	Pipe Laying - DN1200 & DN600 Watermains (CHB & CHC) along Fanling Highway (183m long, 4m depth)	144	154	13-Jul-15 A	03-Feb-16	77	■ Road Formation, Kerb and Pavement (Eastern Side: FLH SB Slow lane and hard should)																																													
FHW-2140	Road Formation, Kerb and Pavement (Eastern Side: FLH SB Slow lane and hard should)	61	61	14-Oct-15	24-Dec-15	0	■ Footpath & DSD Access Track adjacent to SB lane																																													
FHW-2190	Footpath & DSD Access Track adjacent to SB lane	108	108	04-Feb-16	23-Jun-16	172	■ Noise Barrier NB67 - Mini-Piling adjacent to NB lane (CSD: 36 nos) together with Pile Test																																													
FHW-2200	Noise Barrier NB67 - Mini-Piling adjacent to NB lane (CSD: 36 nos) together with Pile Test	143	143	17-Feb-17	11-Aug-17	0	■ Noise Barrier NB67 - Footing adjacent to NB lane (83m)																																													
FHW-2210	Noise Barrier NB67 - Footing adjacent to NB lane (83m)	105	105	27-Jul-17	29-Nov-17	0	■ Road Formation, Road Drainage & Kerb (Western Side: FLH NB hard shoulder and 1st lane)																																													
FHW-2220	Road Formation, Road Drainage & Kerb (Western Side: FLH NB hard shoulder and 1st lane)	80	80	25-Oct-17	30-Jan-18	0	■ Noise Barrier NB68 - Mini-Piling at central median (CSD: 22 nos)																																													
FHW-2300	Noise Barrier NB68 - Mini-Piling at central median (CSD: 22 nos)	80	80	08-Mar-16	16-Jun-16	0	■ Noise Barrier NB68A - Footing at central median (157m)																																													
FHW-2310	Noise Barrier NB68A - Footing at central median (157m)	135	135	08-Mar-16	20-Aug-16	0	■ Road Formation & Central Barrier (Middle Part: FLH NB & SB 4th lanes)																																													
FHW-2320	Road Formation & Central Barrier (Middle Part: FLH NB & SB 4th lanes)	90	90	29-Jun-16	15-Oct-16	0	■ Road Formation and Pavement (FLH NB 3rd lane)																																													
FHW-2400	Road Formation and Pavement (FLH NB 3rd lane)	48	48	17-Oct-16	10-Dec-16	0	■ Road Formation and Pavement (FLH NB 2nd lane)																																													
FHW-2410	Road Formation and Pavement (FLH NB 2nd lane)	48	48	12-Dec-16	15-Feb-17	0																																														
<b>Fanling Highway Zone 3 between CH7290 and CH7380</b>		1230	737	05-Nov-13 A	30-Jan-18	0																																														
<b>Box Culvert Extension - ID4</b>		614	45	05-Nov-13 A	23-Dec-15	616																																														
ID4-3000	Demolition of existing box structure	7	0	14-Feb-14 A	01-Mar-14 A		■ Demolition of existing box structure																																													
ID4-3010	Flow diversion of existing stream	4	0	05-Nov-13 A	16-Nov-13 A		■ Flow diversion of existing stream																																													
ID4-3020	Installation of dowel bar for connection to existing box structure	4	0	03-Mar-14 A	07-Mar-14 A		■ Installation of dowel bar for connection to existing box structure																																													
ID4-3030A	Bay 1 - Excavation	4	0	03-Mar-14 A	04-Mar-14 A		■ Bay 1 - Excavation																																													
ID4-3030B	Bay 2 - Excavation	4	0	18-Nov-13 A	03-Dec-13 A		■ Bay 2 - Excavation																																													
ID4-3030C	Bay 3 - Excavation	4	0	18-Nov-13 A	18-Dec-13 A		■ Bay 3 - Excavation																																													
ID4-3040A	Bay 1 - Sub-base & Blinding	3	0	04-Mar-14 A	05-Mar-14 A		■ Bay 1 - Sub-base & Blinding																																													
ID4-3040B	Bay 2 - Sub-base & Blinding	3	0	04-Dec-13 A	24-Dec-13 A		■ Bay 2 - Sub-base & Blinding																																													
ID4-3040C	Bay 3 - Sub-base & Blinding	3	0	19-Dec-13 A	23-Dec-13 A		■ Bay 3 - Sub-base & Blinding																																													
ID4-3050A	Bay 1 - Base Slab	7	0	07-Mar-14 A	12-Mar-14 A		■ Bay 1 - Base Slab																																													
ID4-3050B	Bay 2 - Base Slab	7	0	27-Dec-13 A	04-Jan-14 A		■ Bay 2 - Base Slab																																													
ID4-3050C	Bay 3 - Base Slab	7	0	27-Dec-13 A	04-Jan-14 A		■ Bay 3 - Base Slab																																													
ID4-3060A	Bay 1 - Wall and Top Slab	13	0	13-Mar-14 A	26-Mar-14 A		■ Bay 1 - Wall and Top Slab																																													
ID4-3060B	Bay 2 - Wall and Top Slab	21	0	07-Jan-14 A	21-Jan-14 A		■ Bay 2 - Wall and Top Slab																																													
ID4-3060C	Bay 3 - Wall and Top Slab	21	0	07-Jan-14 A	21-Jan-14 A		■ Bay 3 - Wall and Top Slab																																													
ID4-3070	Construction of Temporary Road for Site Access	12	0	24-Jan-14 A	14-Feb-14 A		■ Construction of Temporary Road for Site Access																																													
ID4-3080	Construction of Wing Wall, Cascade and Head Wall	35	0	24-Dec-13 A	15-Feb-14 A		■ Construction of Wing Wall, Cascade and Head Wall																																													
ID4-3090	Bay 1 - Remaining Base Slab (To be carried out after diversion of DN1400 water mains)	45	45	02-Nov-15	23-Dec-15	269	■ Bay 1 - Remaining Base Slab (To be carried out after diversion of DN1400 water mains)																																													
<b>Box Culvert Extension - ID5</b>		288	0	05-Nov-13 A	15-Mar-14 A																																															
ID5-3000	Demolition of existing box structure	7	0	14-Feb-14 A	25-Feb-14 A		■ Demolition of existing box structure																																													
ID5-3010	Flow Diversion of Existing Stream	4	0	05-Nov-13 A	12-Nov-13 A		■ Flow Diversion of Existing Stream																																													
ID5-3020	Installation of Dowel Bar for Connection to Existing Box Structure	4	0	26-Feb-14 A	26-Feb-14 A		■ Installation of Dowel Bar for Connection to Existing Box Structure																																													
ID5-3030A	Bay 1 - Excavation	4	0	26-Feb-14 A	28-Feb-14 A		■ Bay 1 - Excavation																																													



■ Actual Work  
 ■ Remaining Work  
 ■ Summary Bar  
 ■ Critical Remaining Work  
 ◆ Milestone

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**Updated Master Works Programme (Revision 3B)**  
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24-Apr-15	UMP02	Sam	Victor
01-Aug-15	UMP03	Sam	Victor
02-Oct-15	UMP03A	Sam	Victor
23-Oct-15	UMP03B	Sam	Victor



















Activity ID	Activity Name	OD	RD	Start	Finish	TF	Gantt Chart (2014-2019)																																																																						
							2014													2015													2016													2017													2018													2019					
TWSRW-4090	Permanent Prestressing & Abutment Wall	28	28	23-Oct-15	24-Nov-15	-1	[Gantt Bar: Permanent Prestressing & Abutment Wall]																																																																						
TWSRW-4100	Remove Scaffold System and Temporary Work together with Slope Reinstatement	110	110	02-Nov-15*	18-Mar-16*	8	[Gantt Bar: Remove Scaffold System and Temporary Work together with Slope Reinstatement]																																																																						
<b>At-Grade Roadworks</b>							45	45	25-Nov-15	19-Jan-16	-1																																																																		
TWSRW-4200	Cast Parapet, Lay Surfacing and Road Furniture for Footpath and Carriageway	45	45	25-Nov-15	19-Jan-16	-1	[Gantt Bar: Cast Parapet, Lay Surfacing and Road Furniture for Footpath and Carriageway]																																																																						
<b>TWSRW Zone 5 between CH376 and CH520</b>							779	259	15-Oct-13 A	20-Jun-16	478																																																																		
<b>Construction of Retaining Structures</b>							608	60	15-Oct-13 A	12-Oct-15	45																																																																		
TWSRW-5000	Implementation of TTA - Scheme W2	0	0	15-Oct-13 A			◆ Implementation of TTA - Scheme W2																																																																						
TWSRW-5030	CLP Overhead 11KV Cable Diversion at Area B (Phase 1)	140	0	04-Nov-13 A	21-May-14 A		[Gantt Bar: CLP Overhead 11KV Cable Diversion at Area B (Phase 1)]																																																																						
TWSRW-5040	Forming of Earth Platform	40	0	03-Dec-13 A	28-Jan-14 A		[Gantt Bar: Forming of Earth Platform]																																																																						
TWSRW-5050A	Construction of Bored Pile Wall (4 no. Piles) (with existing access road)	48	0	24-Dec-13 A	11-Mar-14 A		[Gantt Bar: Construction of Bored Pile Wall (4 no. Piles) (with existing access road)]																																																																						
TWSRW-5050B	Construction of Bored Pile Wall (10 no. Piles) (with earth platform provided)	80	0	12-Mar-14 A	13-Jun-14 A		[Gantt Bar: Construction of Bored Pile Wall (10 no. Piles) (with earth platform provided)]																																																																						
TWSRW-5050C	Construction of Bored Pile Wall (8 no. Piles) (conflict with overhead cable)	94	0	22-May-14 A	13-Aug-14 A		[Gantt Bar: Construction of Bored Pile Wall (8 no. Piles) (conflict with overhead cable)]																																																																						
TWSRW-5050D	Construction of Remaining Portion of Bored Pile Wall at formation level	85	0	02-Sep-14 A	05-Nov-14 A		[Gantt Bar: Construction of Remaining Portion of Bored Pile Wall at formation level]																																																																						
TWSRW-5060	Removal of grave at Portion FH8 (incl. Archaeological Survey)	25	0	30-Nov-13 A	16-Jan-14 A		[Gantt Bar: Removal of grave at Portion FH8 (incl. Archaeological Survey)]																																																																						
TWSRW-5070	Construction of Mass Concrete Wall (FL/RW4)	70	39	15-Jun-15 A	15-Sep-15	66	[Gantt Bar: Construction of Mass Concrete Wall (FL/RW4), Construction of Mass Concrete Wall (FL/RW4)]																																																																						
TWSRW-5070a	Temporary Slope Works for Construction of Mass Concrete Wall (FL/RW4)	14	0	01-Jun-15 A	13-Jun-15 A		[Gantt Bar: Temporary Slope Works for Construction of Mass Concrete Wall (FL/RW4)]																																																																						
TWSRW-5080	Retaining Structure along Slope no. 3SW-C/C898 (to be covered by VO. 78)	50	60	29-Jun-15 A	12-Oct-15	45	[Gantt Bar: Retaining Structure along Slope no. 3SW-C/C898 (to be covered by VO. 78), Retaining Structure along Slope no. 3SW-C/C898 (to be covered by VO. 78)]																																																																						
TWSRW-5090	Lagging Wall Construction and Capping Beam	160	0	06-Nov-14 A	03-Jun-15 A		[Gantt Bar: Lagging Wall Construction and Capping Beam]																																																																						
<b>At-Grade Roadworks</b>							259	259	27-Apr-15 A	20-Jun-16	478																																																																		
TWSRW-5100	Retaining Wall RW7 & RW8 - adjacent to Realigned TWSR West (66m)	70	70	17-Oct-15	11-Jan-16	0	[Gantt Bar: Retaining Wall RW7 & RW8 - adjacent to Realigned TWSR West (66m)]																																																																						
TWSRW-5110A	Road Formation, DN150 watermain, Kerb, Planter and Pavement	35	35	05-Dec-15	18-Jan-16	0	[Gantt Bar: Road Formation, DN150 watermain, Kerb, Planter and Pavement]																																																																						
TWSRW-5110B	Road Drainage SMH800-SMH801 (Covered by VO No.81)	36	36	03-Sep-15	16-Oct-15	14	[Gantt Bar: Road Drainage SMH800-SMH801 (Covered by VO No.81)]																																																																						
TWSRW-5110C	Road Drainage SMH801-803 (Covered by VO No.81)	80	105	27-Apr-15 A	04-Dec-15	0	[Gantt Bar: Road Drainage SMH801-803 (Covered by VO No.81), Road Drainage SMH801-803 (Covered by VO No.81)]																																																																						
TWSRW-5120	Permanent Vehicular Access to Lot 81	125	125	12-Jan-16	20-Jun-16	478	[Gantt Bar: Permanent Vehicular Access to Lot 81]																																																																						
<b>TWSRW Zone 6 between CH520 and CH530</b>							1136	737	07-Jan-14 A	30-Jan-18	0																																																																		
<b>Box Culvert Extension - BC01</b>							1136	31	07-Jan-14 A	30-Jan-18	0																																																																		
TWSRW-6000	Flow Diversion of Existing Stream	4	0	07-Jan-14 A	07-Jan-14 A		I Flow Diversion of Existing Stream																																																																						
TWSRW-6010A	Excavation and Sub-base for construction of Bay 1	5	0	07-Jan-14 A	25-Jan-14 A		[Gantt Bar: Excavation and Sub-base for construction of Bay 1]																																																																						
TWSRW-6010B	Excavation and Sub-base for construction of Bay 2	18	0	04-Mar-14 A	12-Mar-14 A		[Gantt Bar: Excavation and Sub-base for construction of Bay 2]																																																																						
TWSRW-6020	Bay 1 - Base Slab	14	0	11-Feb-14 A	28-Feb-14 A		[Gantt Bar: Bay 1 - Base Slab]																																																																						
TWSRW-6030	Bay 2 - Base Slab	14	0	13-Mar-14 A	18-Mar-14 A		[Gantt Bar: Bay 2 - Base Slab]																																																																						
TWSRW-6030B	Bay 2 - Remaining Base Slab (To be carried out in next dry season)	31	31	22-Dec-17*	30-Jan-18*	0	[Gantt Bar: Bay 2 - Remaining Base Slab (To be carried out in next dry season)]																																																																						
TWSRW-6040	Bay 1 - Wall and Top Slab	18	0	01-Mar-14 A	10-Mar-14 A		[Gantt Bar: Bay 1 - Wall and Top Slab]																																																																						
TWSRW-6050	Bay 2 - Wall and Top Slab	11	0	19-Mar-14 A	25-Mar-14 A		[Gantt Bar: Bay 2 - Wall and Top Slab]																																																																						
TWSRW-6060	Backfilling to existing road level	55	0	25-Mar-14 A	09-Jun-14 A		[Gantt Bar: Backfilling to existing road level]																																																																						
TWSRW-6070	Inlet structure of the box culvert BC01 (Covered by VO. 41)	70	0	17-Dec-14 A	19-Mar-15 A		[Gantt Bar: Inlet structure of the box culvert BC01 (Covered by VO. 41)]																																																																						
TWSRW-6080	Backfilling to existing road level after completion of inlet structure	72	0	20-Mar-15 A	21-May-15 A		[Gantt Bar: Backfilling to existing road level after completion of inlet structure]																																																																						
<b>At-Grade Roadworks</b>							137	103	22-May-15 A	02-Dec-15	8																																																																		
TWSRW-6100	Preparation Works for Implementation of TTA (shifting TWSRW traffic towards the edge of extended box culvert)	21	21	09-Nov-15	02-Dec-15	0	[Gantt Bar: Preparation Works for Implementation of TTA (shifting TWSRW traffic towards the edge of extended box culvert)]																																																																						



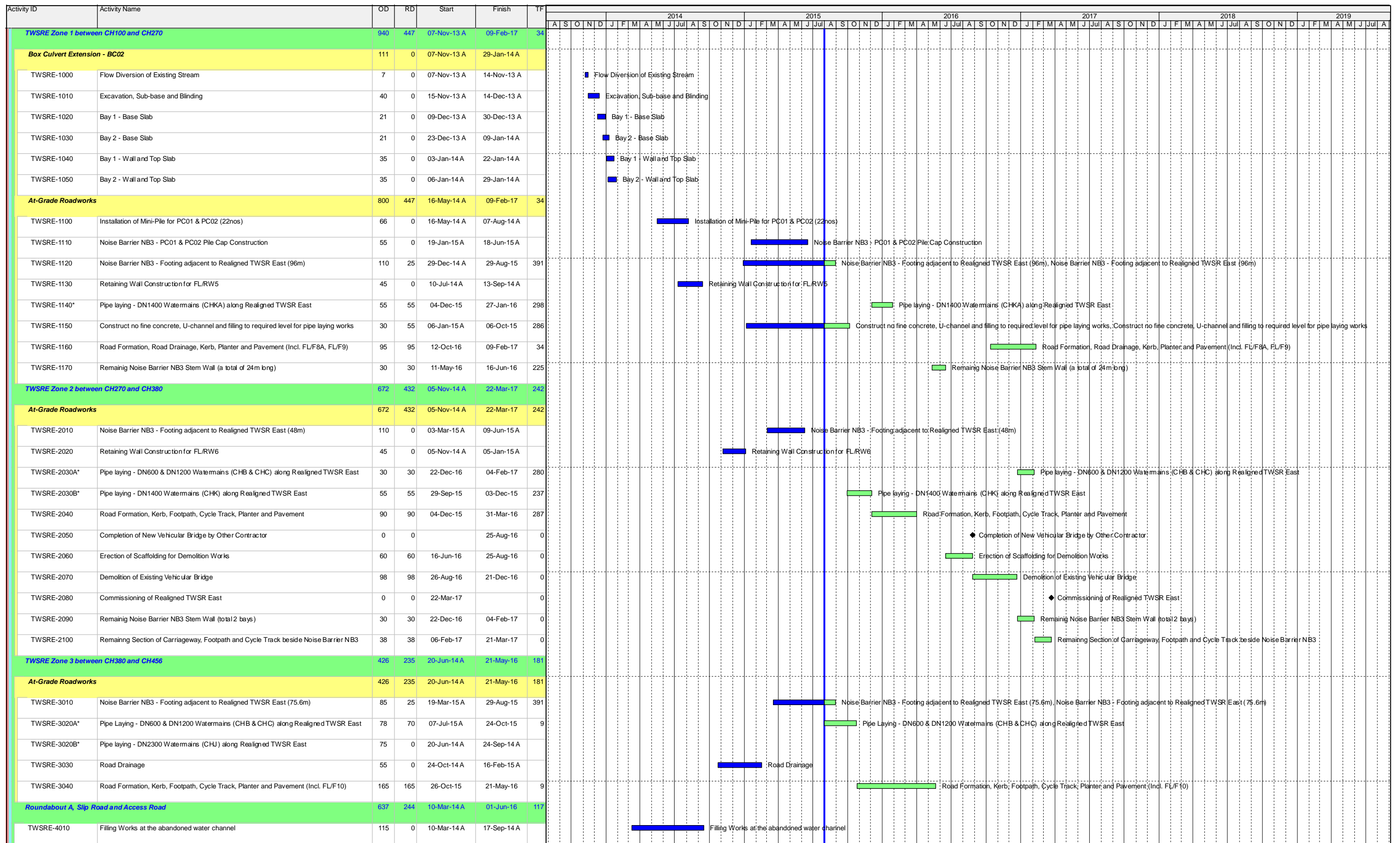
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- ◆ Milestone

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24-Apr-15	UMP02	Sam	Victor
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02-Oct-15	UMP03A	Sam	Victor
23-Oct-15	UMP03B	Sam	Victor





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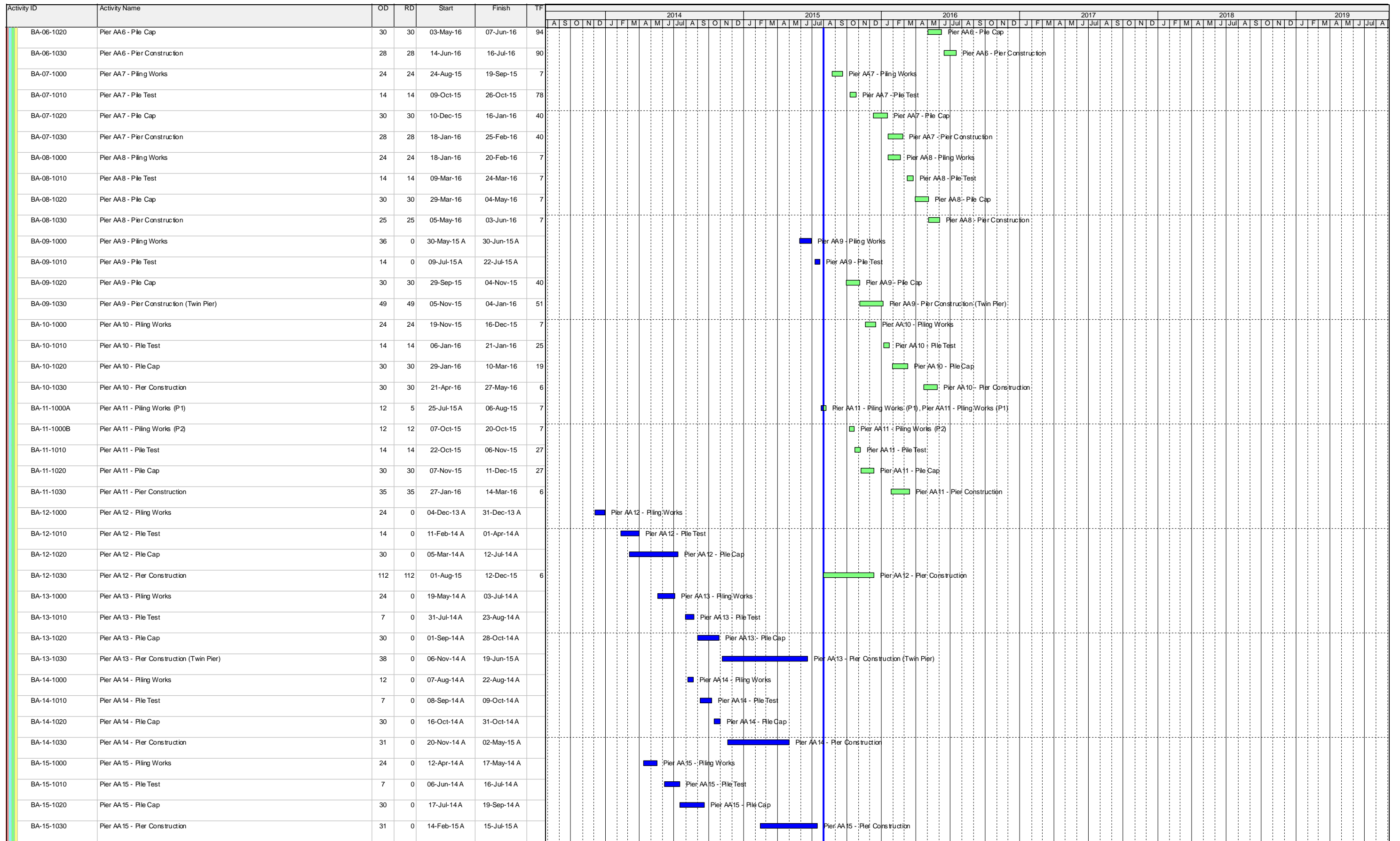
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23-Oct-15	UMP03B	Sam	Victor









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Activity ID	Activity Name	OD	RD	Start	Finish	TF	Gantt Chart (2014-2019)																																																																						
							2014													2015													2016													2017													2018													2019					
BB-06-1020B	Pier AB6W - Pile Cap	30	0	10-Oct-14 A	19-Nov-14 A		[Gantt bars for BB-06-1020B: Pier AB6W - Pile Cap]																																																																						
BB-06-1030	Pier AB6E - Pier Construction	48	48	14-Dec-15	17-Feb-16	3	[Gantt bars for BB-06-1030: Pier AB6E - Pier Construction]																																																																						
BB-06-1040	Pier AB6W - Pier Construction	48	48	16-Nov-15*	13-Jan-16	3	[Gantt bars for BB-06-1040: Pier AB6W - Pier Construction]																																																																						
BB-06-1050	Portal AB6 - Portal Beam Construction together with Kicker	40	40	26-Feb-16	16-Apr-16	3	[Gantt bars for BB-06-1050: Portal AB6 - Portal Beam Construction together with Kicker]																																																																						
BB-07-1000	Pier AB7 - Piling Works	12	0	05-Aug-14 A	27-Aug-14 A		[Gantt bars for BB-07-1000: Pier AB7 - Piling Works]																																																																						
BB-07-1010	Pier AB7 - Pile Test	12	0	19-Sep-14 A	02-Jan-15 A		[Gantt bars for BB-07-1010: Pier AB7 - Pile Test]																																																																						
BB-07-1020	Pier AB7 - Pile Cap	30	0	05-Jan-15 A	24-Jan-15 A		[Gantt bars for BB-07-1020: Pier AB7 - Pile Cap]																																																																						
BB-07-1030	Pier AB7 - Pier Construction	32	0	09-Apr-15 A	18-Jun-15 A		[Gantt bars for BB-07-1030: Pier AB7 - Pier Construction]																																																																						
BB-07-1040	Portal AB7/AD9 - Portal Beam Construction together with Kicker	60	60	19-Sep-15*	01-Dec-15	0	[Gantt bars for BB-07-1040: Portal AB7/AD9 - Portal Beam Construction together with Kicker]																																																																						
BB-08-1000A	Pier AB8(P1) - Piling Works	12	0	28-Apr-14 A	07-Jun-14 A		[Gantt bars for BB-08-1000A: Pier AB8(P1) - Piling Works]																																																																						
BB-08-1000B	Pier AB8(P2) - Piling Works	12	0	25-Aug-14 A	15-Sep-14 A		[Gantt bars for BB-08-1000B: Pier AB8(P2) - Piling Works]																																																																						
BB-08-1010A	Pier AB8(P1) - Pile Test	7	0	04-Jul-14 A	29-Oct-14 A		[Gantt bars for BB-08-1010A: Pier AB8(P1) - Pile Test]																																																																						
BB-08-1010B	Pier AB8(P2) - Pile Test	7	0	25-Sep-14 A	13-Oct-14 A		[Gantt bars for BB-08-1010B: Pier AB8(P2) - Pile Test]																																																																						
BB-08-1020A	Pier AB8W - Pile Cap	30	0	03-Nov-14 A	29-Nov-14 A		[Gantt bars for BB-08-1020A: Pier AB8W - Pile Cap]																																																																						
BB-08-1020B	Pier AB8E - Pile Cap	30	0	04-Nov-14 A	22-Nov-14 A		[Gantt bars for BB-08-1020B: Pier AB8E - Pile Cap]																																																																						
BB-08-1030	Pier AB8W - Pier Construction	24	0	15-Dec-14 A	18-May-15 A		[Gantt bars for BB-08-1030: Pier AB8W - Pier Construction]																																																																						
BB-08-1040	Pier AB8E - Pier Construction	24	0	13-Dec-14 A	18-Apr-15 A		[Gantt bars for BB-08-1040: Pier AB8E - Pier Construction]																																																																						
BB-08-1050	Portal AB8 - Portal Beam Construction together with Kicker	40	36	13-Jun-15 A	11-Sep-15	0	[Gantt bars for BB-08-1050: Portal AB8 - Portal Beam Construction together with Kicker]																																																																						
BB-09-1000	Pier AB9 - Piling Works	24	0	25-Oct-14 A	22-Nov-14 A		[Gantt bars for BB-09-1000: Pier AB9 - Piling Works]																																																																						
BB-09-1010	Pier AB9 - Pile Test	7	0	01-Dec-14 A	09-Jan-15 A		[Gantt bars for BB-09-1010: Pier AB9 - Pile Test]																																																																						
BB-09-1020	Pier AB9 - Pile Cap	48	0	26-Mar-15 A	03-Jun-15 A		[Gantt bars for BB-09-1020: Pier AB9 - Pile Cap]																																																																						
BB-09-1030	Pier AB9 - Pier Construction	24	64	17-Jul-15 A	16-Oct-15	14	[Gantt bars for BB-09-1030: Pier AB9 - Pier Construction]																																																																						
BB-10-1000	Pier AB10 - Piling Works	24	0	04-Dec-14 A	07-Jan-15 A		[Gantt bars for BB-10-1000: Pier AB10 - Piling Works]																																																																						
BB-10-1010	Pier AB10 - Pile Test	7	0	26-Jan-15 A	17-Feb-15 A		[Gantt bars for BB-10-1010: Pier AB10 - Pile Test]																																																																						
BB-10-1020	Pier AB10 - Pile Cap	60	0	23-Mar-15 A	27-May-15 A		[Gantt bars for BB-10-1020: Pier AB10 - Pile Cap]																																																																						
BB-10-1030	Pier AB10 - Pier Construction	25	38	22-Jun-15 A	14-Sep-15	6	[Gantt bars for BB-10-1030: Pier AB10 - Pier Construction]																																																																						
BB-11-1000	Pier AB11 - Piling Works	24	0	15-Jun-15 A	15-Jul-15 A		[Gantt bars for BB-11-1000: Pier AB11 - Piling Works]																																																																						
BB-11-1010	Pier AB11 - Pile Test	14	14	01-Aug-15	17-Aug-15	34	[Gantt bars for BB-11-1010: Pier AB11 - Pile Test]																																																																						
BB-11-1020	Pier AB11 - Pile Cap	30	30	05-Sep-15	12-Oct-15	18	[Gantt bars for BB-11-1020: Pier AB11 - Pile Cap]																																																																						
BB-11-1030	Pier AB11 - Pier Construction	45	45	17-Oct-15	09-Dec-15	14	[Gantt bars for BB-11-1030: Pier AB11 - Pier Construction]																																																																						
BB-12-1000A	Abutment AB12/AD14 - Piling Works	70	0	06-Feb-15 A	10-Jun-15 A		[Gantt bars for BB-12-1000A: Abutment AB12/AD14 - Piling Works]																																																																						
BB-12-1010	Abutment AB12/AD14 - Pile Test	14	0	12-May-15 A	06-Jul-15 A		[Gantt bars for BB-12-1010: Abutment AB12/AD14 - Pile Test]																																																																						
BB-12-1020	Abutment AB12/AD14 - Pile Cap	65	65	18-Nov-15	04-Feb-16	33	[Gantt bars for BB-12-1020: Abutment AB12/AD14 - Pile Cap]																																																																						
BB-12-1030	Abutment AB12/AD14 - Abutment Construction	75	75	05-Feb-16	16-May-16	165	[Gantt bars for BB-12-1030: Abutment AB12/AD14 - Abutment Construction]																																																																						
EB-1010A	Installation of Bearings at Abutment AB1	6	6	07-Feb-17	13-Feb-17	72	[Gantt bars for EB-1010A: Installation of Bearings at Abutment AB1]																																																																						
EB-1120A	Installation of Bearings at Abutment AB12	6	6	18-Jul-16	23-Jul-16	176	[Gantt bars for EB-1120A: Installation of Bearings at Abutment AB12]																																																																						
<b>Bridge C</b>		<b>910</b>	<b>403</b>	<b>20-Nov-13 A</b>	<b>09-Dec-16</b>	<b>90</b>																																																																							
BC-01-1000	Abutment AC1 - Piling Works	36	0	06-May-15 A	29-May-15 A		[Gantt bars for BC-01-1000: Abutment AC1 - Piling Works]																																																																						
BC-01-1010	Abutment AC1 - Pile Test	14	0	08-Jun-15 A	25-Jun-15 A		[Gantt bars for BC-01-1010: Abutment AC1 - Pile Test]																																																																						



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**Updated Master Works Programme (Revision 3B)**  
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29-Jan-14	IWP04	Sam	Victor
08-Jan-15	UMP01	Sam	Victor
24-Apr-15	UMP02	Sam	Victor
01-Aug-15	UMP03	Sam	Victor
02-Oct-15	UMP03A	Sam	Victor
23-Oct-15	UMP03B	Sam	Victor













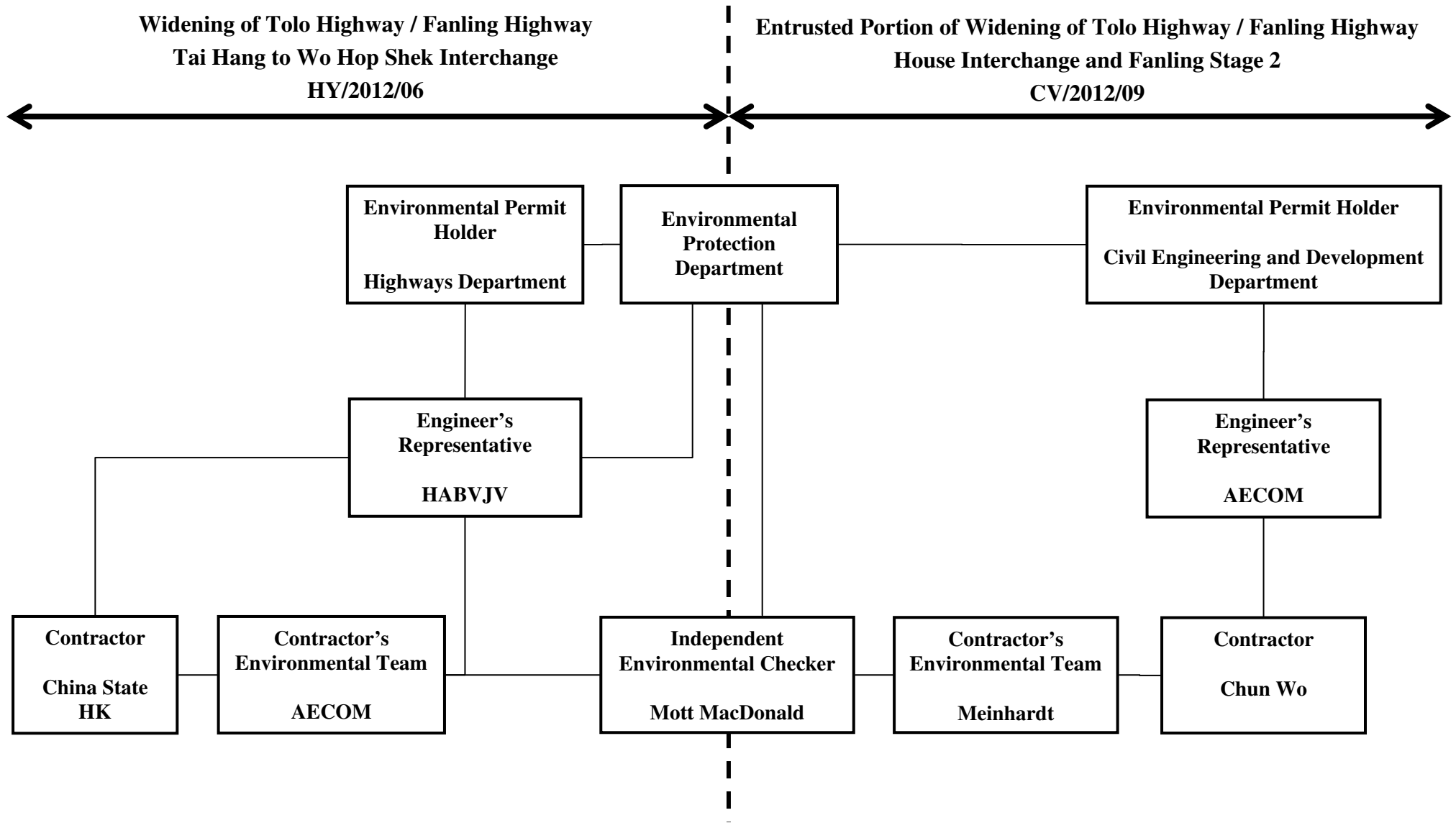






# Appendix B

## Project Organization Structure



# **Appendix C Implementation Schedule of Environmental Mitigation Measures (EMIS)**



Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
<b>Air Quality</b>				
Air Quality during Construction	<ul style="list-style-type: none"> <li>Restricting heights from which materials are dropped, as far as practicable to minimize the fugitive dust arising from unloading/loading.</li> <li>All stockpiles of excavated materials or spoil of more than 50m<sup>3</sup> shall be enclosed, covered or dampened during dry or windy conditions.</li> <li>Effective water sprays shall be used to control potential dust emission sources such as unpaved haul roads and active construction areas.</li> <li>All spraying of materials and surfaces shall avoid excessive water usage.</li> <li>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.</li> <li>Materials shall be dampened, if necessary, before transportation.</li> <li>Travelling speeds shall be controlled to reduce traffic induced dust dispersion and re-suspension within the site from the operating haul trucks.</li> <li>Vehicle washing facilities shall be provided to minimise the quantity of material deposited on public roads.</li> </ul>	During Construction	Contractor	✓  Rem  Rem  ✓ ✓  ✓ ✓  ✓
Air Quality during Operation	Not required	N/A	N/A	N/A
<b>Noise</b>				
Noise during Construction	<ul style="list-style-type: none"> <li>Use of silenced plant or plant equipped with mufflers or dampers in substitute of ordinary plant.</li> <li>Reduce the number of equipment and their percentage on-time.</li> </ul>	During Construction	Contractor	✓  ✓
Noise during Operation	Not required	N/A	N/A	N/A
<b>Water Quality</b>				
Water Quality during Construction	<u>Road Widening Works, Earthworks and Culvert Extension Works</u> <ul style="list-style-type: none"> <li>Wastewater generated from any concrete batching washdown of equipment or similar activities should be discharged into foul sewers, after the removal of settleable 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> </ul>	During Construction	Contractor	✓  ✓

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

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	<ul style="list-style-type: none"> <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>			<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>Rem</p> <p>Obs</p>
Water Quality during Operation	Not required	N/A	N/A	N/A
<b>Waste Management</b>				
Waste Management during Construction	<p><u>General Waste</u></p> <ul style="list-style-type: none"> <li>• Transport of wastes off site as soon as possible.</li> <li>• Maintenance of accurate waste records.</li> <li>• Minimisation of waste generation for disposal (via reduction/recycling/re-use).</li> <li>• No on-site burning will be permitted.</li> <li>• Use of re-useable metal hoardings/signboards.</li> </ul> <p><u>Vegetation from site clearance</u></p> <ul style="list-style-type: none"> <li>• Segregation of materials to facilitate disposal.</li> <li>• Mulching to reduce bulk and where possible review opportunities for the possible beneficial use within landscaping areas.</li> </ul> <p><u>Demolition Wastes</u></p> <ul style="list-style-type: none"> <li>• Segregation of materials to facilitate disposal.</li> <li>• Appropriate stockpile management.</li> </ul>	<p>During Construction</p> <p>During Construction</p> <p>During Construction</p>	<p>Contractor</p> <p>Contractor</p> <p>Contractor</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>

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



Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	<ul style="list-style-type: none"> <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> <p><u>Municipal Wastes</u></p> <ul style="list-style-type: none"> <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>	During Construction	Contractor	✓ ✓ ✓ ✓ ✓
Waste Management during Operation	Not required.	N/A	N/A	N/A
<b>Ecology</b>				
Ecology during Construction	<p><u>Accurate Delineation of Works Area</u></p> <ul style="list-style-type: none"> <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 show do not require removal are to be retained and fenced off to maximise protection.</li> </ul> <p><u>Dust generation</u></p> <p>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:</p> <ul style="list-style-type: none"> <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> </ul>	During Construction	Contractor	✓ ✓
		During Construction	Contractor	✓ ✓ ✓

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

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	<ul style="list-style-type: none"> <li>all debris should be covered entirely by impervious sheeting or stored in a sheltered debris collection area.</li> </ul> <p><u>Surface Run-off</u></p> <p>In general, mitigation measures shall be in accordance with ProPECC PN1/94 on 'Construction Site Drainage'. Key measures include:</p> <ul style="list-style-type: none"> <li>Bund and cover stockpiles to avoid run-off;</li> <li>Channel any run-off through a system of oil, grease and sediment / silt traps and reuse water on site where ever practical;</li> <li>All vehicle maintenance to be undertaken within a bunded area; and</li> <li>Maximise vegetation retention on-site to maximise absorption (minimise transport).</li> </ul>	During Construction	Contractor	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>
Ecology during Operation	<ul style="list-style-type: none"> <li>To conduct compensatory ecological planting as specified in the latest landscape plans approved by EPD (Clause 2.6 of the Environmental Permit refers).</li> </ul>	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
<b>Landscape and Visual</b>				
Landscape and Visual during Construction	<p><u>Preservation of Existing Vegetation</u></p> <ul style="list-style-type: none"> <li>Trees identified for retention within the project limit would be protected during the works</li> <li>The tree transplanting and planting works shall be implemented by approved Landscape Contractors</li> </ul>	During Construction	Contractor	<p>✓</p> <p>✓</p>

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	<p><u>Temporary Works Areas</u></p> <ul style="list-style-type: none"> <li>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.</li> </ul> <p><u>Hoarding</u></p> <ul style="list-style-type: none"> <li>A hoarding would be erected where practicable in the most visually sensitive locations to screen the temporary construction works from the local VSRs.</li> </ul> <p><u>Top Soils</u></p> <ul style="list-style-type: none"> <li>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.</li> </ul> <p><u>Protection of Important Landscape Features</u></p> <ul style="list-style-type: none"> <li>Important features such as temples, Island House and kilns within the study area, although remote from the proposed works retained and adequately protected.</li> </ul>	During Construction	Contractor	✓
		During Construction	Contractor	✓
		During Construction	Contractor	N/A
		During Construction	Contractor	N/A
Landscape and Visual during Operation	Not required.	N/A	N/A	N/A

# **Appendix D Meteorological Data Extracted from Hong Kong Observatory**

## Daily Extract of Meteorological Observations , May 2016 - Sheung Shui

Day	Mean Pressure (hPa)	Air Temperature			Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
		Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)					
01	1011.0	25.3#	22.9	20.0#	20.9	89	0.0	***	***
02	1010.3	29.4#	26.0	23.5#	23.8	88	0.5	***	***
03	1010.8	32.5	26.0	23.0	23.8	89	26.5	***	***
04	1010.9	29.0#	25.5	22.7#	23.7	90	2.0	***	***
05	1009.9	31.9	28.0	24.2	24.5	82	0.0	***	***
06	1009.4	32.3	28.4	25.1	24.5	80	0.0	***	***
07	1010.0	33.6	28.8	24.7	24.0	77	0.0	***	***
08	1010.8	32.1	28.6	25.4	24.5	80	0.0	***	***
09	1009.4	32.3	28.7	24.9	24.4	79	0.0	***	***
10	1007.9	28.2	25.4	23.4	24.3	94	82.0	***	***
11	1008.3	30.6	25.5	22.3	19.4	70	0.0	***	***
12	1009.3	30.6	25.9	23.4	20.9	75	0.0	***	***
13	1011.9	29.7	26.4	24.4	21.6	75	0.0	***	***
14	1013.6	29.0	26.1	23.9	22.9	83	2.5	***	***
15	1011.6	31.5	26.9	24.0	23.6	83	1.5	***	***
16	1011.2	30.3	25.2	21.5	18.2	67	0.0	***	***
17	1012.0	26.0	24.0	22.9	19.6	77	0.0	***	***
18	1011.6	28.0	24.9	23.4	19.2	71	0.0	***	***
19	1009.3	28.7	25.8	24.1	21.9	80	0.0	***	***
20	1006.5	27.1	25.0	23.9	23.7	93	121.0	***	***
21	1005.6	29.6	26.1	23.9	24.4	91	82.0	***	***
22	1007.6	31.7	27.4	24.3	22.2	75	0.0	***	***
23	1007.9	32.2	27.1	22.7	22.6	78	0.0	***	***
24	1007.3	33.7	27.6	23.4	23.6	80	0.0	***	***
25	1007.3	32.2	28.1	25.2	24.0	79	0.0	***	***
26	1007.2	30.7	28.3	26.0	24.2	79	0.0	***	***
27	1005.8	29.7	27.7	26.0	25.1	86	11.0	***	***
28	1007.0	30.7	26.8	24.3	25.1	91	51.5	***	***
29	1007.2	32.2	28.0	24.3	25.7	88	0.0	***	***
30	1008.0	34.5	29.5	26.2	25.9	82	0.5	***	***
31	1008.8	33.8#	30.0	27.2#	25.8	79	0.0	***	***

\*\*\* unavailable

# data incomplete

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



# Daily Extract of Meteorological Observations , June 2016 - Sheung Shui

Day	Mean Pressure (hPa)	Air Temperature			Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
		Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)					
01	1007.1	33.7	30.4	28.7	25.7	76	0.0	***	***
02	1005.2	35.2	30.9	28.7	25.9	75	0.0	***	***
03	1005.7	35.0	30.9	28.4	26.1	76	0.0	***	***
04	1007.3	35.5	29.1	25.4	25.1	80	1.0	***	***
05	1008.4	31.6	26.4	23.7	24.2	88	10.5	***	***
06	1008.5	27.8	25.3	23.9	24.6	96	96.5	***	***
07	1007.6	31.6	26.9	24.6	25.2	91	15.0	***	***
08	1005.8	30.8	26.6	24.7	25.3	93	7.5	***	***
09	1005.4	31.1	27.2	24.9	25.5	91	6.5	***	***
10	1005.4	31.9	27.7	25.7	25.9	90	18.0	***	***
11	1005.4	26.8	26.0	25.2	25.5	97	28.5	***	***
12	1005.0	28.0	26.4	25.1	26.0	97	40.5	***	***
13	1004.3	33.7	29.2	26.4	26.7	87	0.0	***	***
14	1003.5	32.5	30.1	28.4	26.5	81	0.0	***	***
15	1004.6	32.4	30.0	27.8	26.5	82	1.5	***	***
16	1006.2	31.1	29.0	26.9	26.0	84	2.0	***	***
17	1007.5	32.6	29.1	26.8	26.0	84	2.0	***	***
18	1009.8	31.5	29.0	26.6	25.9	84	2.0	***	***
19	1009.6	34.7	29.9	25.3	25.1	77	0.0	***	***
20	1007.9	35.2	30.2	26.4	25.7	78	0.0	***	***
21	1008.8	35.4	30.2	26.0	24.6	74	0.0	***	***
22	1008.9	34.4	29.8	26.2	25.2	77	0.0	***	***
23	1007.8	34.7	29.9	25.8	24.3	74	0.0	***	***
24	1007.5	35.7	29.5	26.0	25.3	80	14.5	***	***
25	1008.4	35.1	30.2	26.2	25.5	78	0.5	***	***
26	1008.6	34.9	30.9	27.5	26.0	76	1.0	***	***
27	1007.1	36.2	30.9	27.1	25.8	76	0.0	***	***
28	1007.1	31.8	29.2	26.2	25.9	83	25.0	***	***
29	1009.6	33.7	28.4	27.1	26.3	88	7.5	***	***
30	1009.8	33.7	29.7	26.7	25.6	80	1.0	***	***

\*\*\* unavailable

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

## Daily Extract of Meteorological Observations , July 2016 - Sheung Shui

Day	Mean Pressure (hPa)	Air Temperature			Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
		Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)					
01	1008.4	33.8	29.8	26.8	25.4	79	1.0	***	***
02	1008.6	32.8	28.6	26.4	25.9	86	12.0	***	***
03	1008.1	32.3	28.5	26.2	25.8	86	3.0	***	***
04	1006.0	32.8	28.7	25.7	25.9	86	8.5	***	***
05	1007.2	33.5	28.5	24.7	25.7	85	9.0	***	***
06	1008.2	29.1	26.6	24.5	25.8	95	48.5	***	***
07	1005.5	34.1	29.5	26.1	25.6	81	0.0	***	***
08	1000.7	37.1	31.2	26.6	25.7	75	0.0	***	***
09	998.4	37.1	31.3	25.1	25.9	75	27.0	***	***
10	999.9	33.1	28.4	25.4	25.5	85	3.5	***	***
11	1001.7	29.3	28.2	26.4	26.2	89	4.0	***	***
12	1003.3	29.2	27.3	26.1	25.8	92	1.0	***	***
13	1004.6	31.7	27.3	24.8	25.9	93	23.5	***	***
14	1006.3	30.4	27.7	25.7	26.2	91	4.5	***	***
15	1006.4	33.6	29.5	26.1	26.2	83	0.0	***	***
16	1007.5	34.6	30.4	27.5	26.2	79	0.0	***	***
17	1007.7	35.1	30.8	27.6	26.0	76	0.0	***	***
18	1006.9	34.3	30.8	28.5	25.2	73	0.0	***	***
19	1007.3	33.3	29.8	27.9	25.4	78	4.0	***	***
20	1009.2	34.2	29.1	25.3	25.3	81	9.5	***	***
21	1010.4	34.1	29.7	26.3	25.1	77	0.0	***	***
22	1009.7	35.6	30.1	25.9	24.6	75	0.0	***	***
23	1008.4	36.2	30.6	26.8	24.6	73	0.0	***	***
24	1007.9	36.6	31.0	27.0	23.7	68	0.0	***	***
25	1008.1	37.7	30.8	26.5	24.0	69	0.0	***	***
26	1007.8	34.3	30.3	27.2	25.5	76	0.0	***	***
27	1008.9	35.7	30.5	26.6	24.5	72	0.0	***	***
28	1009.2	35.8	30.3	26.3	24.5	73	0.0	***	***
29	1008.1	35.9	31.1	27.4	24.4	69	0.0	***	***
30	1006.5	35.7	28.1	23.9	25.3	86	46.5	***	***
31	1004.8	35.7	29.7	25.0	24.5	76	0.0	***	***

\*\*\* unavailable

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

# **Appendix E Environmental Monitoring Data for Air, Noise and Water Quality**

Appendix E  
Air Quality Monitoring Results and their Graphical Presentation

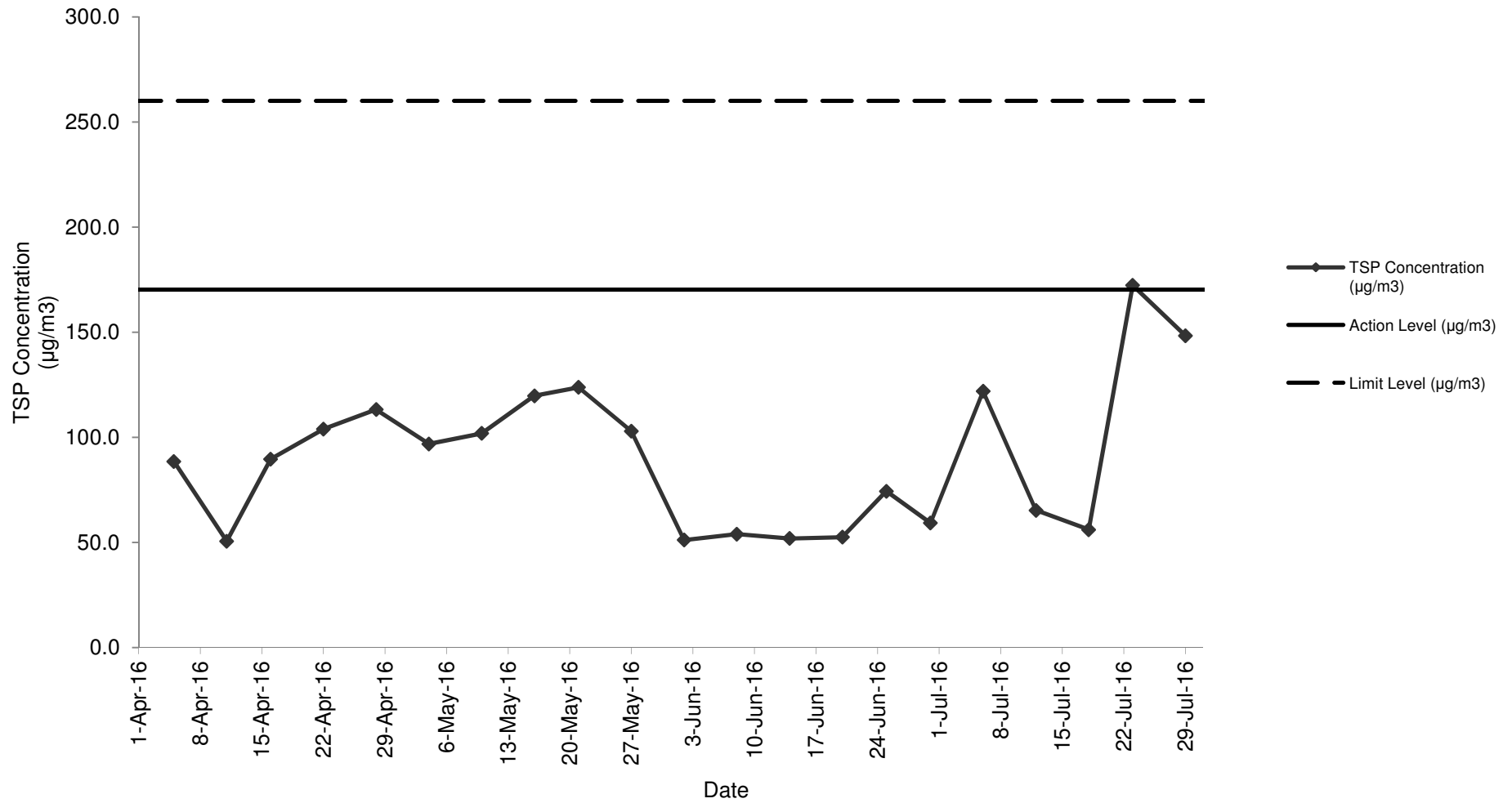
24-Hour TSP Monitoring Result at Station: SR77

Sampling Date	Weather Condition	Paper No.	Wt. of paper (g)			Elapse Time			Flow Rate (CFM)			Flow Rate (m <sup>3</sup> /min)			Total Volume (m <sup>3</sup> )	TSP Concentration (µg/m <sup>3</sup> )	Action Level (µg/m <sup>3</sup> )	Limit Level (µg/m <sup>3</sup> )	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-Apr-16	Sunny	C176	2.8221	3.0062	0.1841	4684.67	4708.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	88.5	170.3	260.0	<5	N
11-Apr-16	Rainy	C178	2.8817	2.9870	0.1053	4711.67	4735.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	50.6	170.3	260.0	<5	N
16-Apr-16	Cloudy	C180	2.8874	3.0738	0.1864	4738.67	4762.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	89.6	170.3	260.0	<5	N
22-Apr-16	Rainy	C182	2.8541	3.0701	0.2160	4765.67	4789.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	103.9	170.3	260.0	<5	N
28-Apr-16	Fine	C184	2.8314	3.0668	0.2354	4792.67	4816.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	113.2	170.3	260.0	<5	N
4-May-16	Sunny	C186	2.8361	3.0376	0.2015	4819.67	4843.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	96.9	170.3	260.0	<5	N
10-May-16	Rainy	C188	2.8169	3.0288	0.2119	4846.67	4870.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	101.9	170.3	260.0	<5	N
16-May-16	Sunny	C190	2.8311	3.0801	0.2490	4873.67	4897.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	119.7	170.3	260.0	<5	N
21-May-16	Sunny	C192	2.7936	3.0511	0.2575	4900.67	4924.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	123.8	170.3	260.0	<5	N
27-May-16	Cloudy	C194	2.7982	3.0123	0.2141	4927.67	4951.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	103.0	170.3	260.0	<5	N
2-Jun-16	Sunny	196	2.7699	2.8763	0.1064	4819.67	4843.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	51.2	170.3	260.0	<5	N
8-Jun-16	Sunny	198	2.7741	2.8863	0.1122	4846.67	4870.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	54.0	170.3	260.0	<5	N
14-Jun-16	Cloudy	200	2.7839	2.8919	0.1080	4873.67	4897.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	51.9	170.3	260.0	<5	N
20-Jun-16	Sunny	202	2.7754	2.8846	0.1092	4900.67	4924.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	52.5	170.3	260.0	<5	N
25-Jun-16	Sunny	204	2.7900	2.9446	0.1546	4927.67	4951.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	74.3	170.3	260.0	<5	N
30-Jun-16	Sunny	206	2.7794	2.9026	0.1232	4954.67	4978.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	59.2	170.3	260.0	<5	N
6-Jul-16	Cloudy	208	2.7836	3.0371	0.2535	4981.67	5005.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	121.9	170.3	260.0	<5	N
12-Jul-16	Cloudy	210	2.7744	2.9102	0.1358	5008.67	5032.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	65.3	170.3	260.0	<5	N
18-Jul-16	Sunny	212	2.8308	2.9474	0.1166	5035.67	5059.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	56.1	170.3	260.0	<5	N
23-Jul-16	Sunny	214	2.8593	3.2177	0.3584	5062.67	5086.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	172.3	170.3	260.0	<5	N
29-Jul-16	Sunny	216	2.8346	3.1431	0.3085	5089.67	5113.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	148.3	170.3	260.0	<5	N

Summary For the Reporting Quarter (May 2016 - Jul 2016)	
Average	90.8
Minimum	51.2
Maximum	172.3

Note: No major dust source observed during the monitoring period

### 24-Hour TSP Monitoring Result at Station: SR77 (April 2016 - July 2016)



**Appendix E**  
**Air Quality Monitoring Results and their Graphical Presentation**

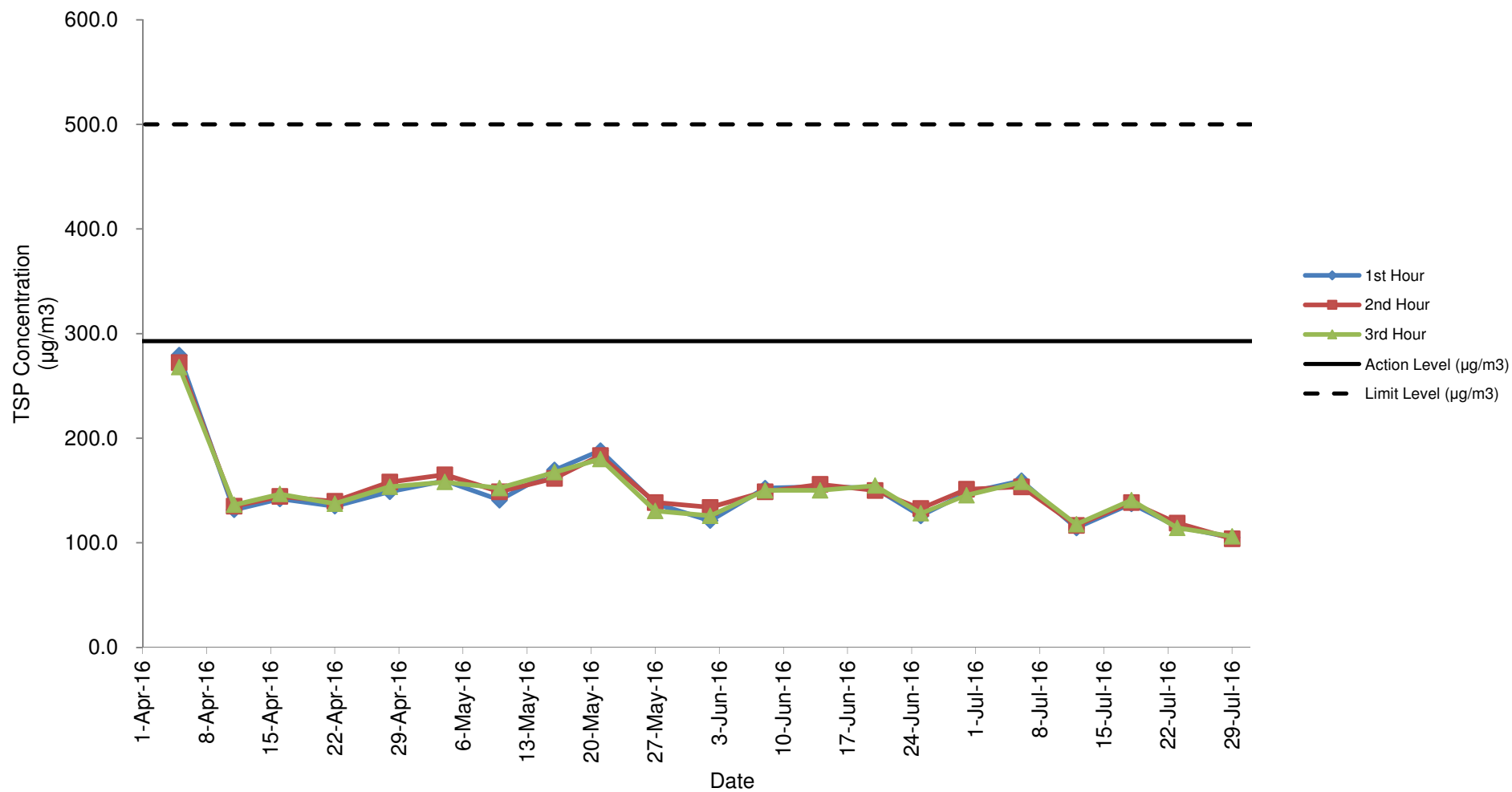
**1-Hour TSP Monitoring Result at Station: SR77**

Date	Weather Condition	Time	Conc.(µg/m <sup>3</sup> )			Action Level (µg/m3)	Limit Level (µg/m3)
			1 <sup>st</sup> Hour	2 <sup>nd</sup> Hour	3 <sup>rd</sup> Hour		
5-Apr-16	Sunny	09:00 - 12:06	279.3	272.4	267.7	292.7	500.0
11-Apr-16	Cloudy	09:00 - 12:07	131.6	135.0	136.2	292.7	500.0
16-Apr-16	Cloudy	09:00 - 12:06	142.0	144.3	146.6	292.7	500.0
22-Apr-16	Cloudy	09:00 - 12:06	135.0	139.6	137.3	292.7	500.0
28-Apr-16	Fine	09:00 - 12:06	148.9	158.1	153.5	292.7	500.0
4-May-16	Sunny	09:00 - 12:07	159.3	165.0	158.1	292.7	500.0
10-May-16	Cloudy	09:00 - 12:07	140.8	148.9	152.3	292.7	500.0
16-May-16	Sunny	09:00 - 12:07	169.6	161.6	167.3	292.7	500.0
21-May-16	Sunny	09:00 - 12:07	188.1	183.5	180.0	292.7	500.0
27-May-16	Cloudy	09:00 - 12:07	137.3	138.5	130.4	292.7	500.0
2-Jun-16	Sunny	09:00 - 12:07	121.2	133.9	125.8	292.7	500.0
8-Jun-16	Sunny	09:00 - 12:08	152.3	148.9	150.0	292.7	500.0
14-Jun-16	Cloudy	09:00 - 12:07	153.5	155.8	150.0	292.7	500.0
20-Jun-16	Sunny	09:00 - 12:08	152.3	150.0	154.6	292.7	500.0
25-Jun-16	Sunny	09:00 - 12:08	125.8	132.7	128.1	292.7	500.0
30-Jun-16	Sunny	09:00 - 12:06	147.7	151.2	145.4	292.7	500.0
6-Jul-16	Rainy	09:00 - 12:07	159.3	153.5	158.1	292.7	500.0
12-Jul-16	Cloudy	09:00 - 12:07	114.3	116.6	117.7	292.7	500.0
18-Jul-16	Sunny	09:00 - 12:07	137.3	138.5	140.8	292.7	500.0
23-Jul-16	Sunny	09:00 - 12:07	115.4	118.9	114.3	292.7	500.0
29-Jul-16	Sunny	09:00 - 12:06	105.0	103.9	106.2	292.7	500.0

<b>Summary For the Reporting Quarter (May 2016 - Jul 2016)</b>	
<b>Average</b>	142.9
<b>Minimum</b>	103.9
<b>Maximum</b>	188.1

Note: No major dust source observed during the monitoring period

### 1-Hour TSP Monitoring Result at station: SR77 (April 2016 - July 2016)



**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)				
2016/04/05	Sunny	13:30	14:00	85.0	60.0	63.0	-	67.8	75.0	N
2016/04/11	Cloudy	13:30	14:00	88.5	54.0	65.0	-	67.8	75.0	N
2016/04/22	Cloudy	14:00	14:30	67.0	60.0	62.0	-	67.8	75.0	N
2016/04/28	Fine	13:30	14:00	88.0	60.0	62.0	-	67.8	75.0	N
2016/05/04	Sunny	13:30	14:00	90.0	55.0	63.5	-	67.8	75.0	N
2016/05/10	Cloudy	13:30	14:00	87.0	61.5	66.0	-	67.8	75.0	N
2016/05/16	Sunny	16:30	17:00	86.5	58.5	76.5	75.9	67.8	75.0	Y
2016/05/27	Cloudy	11:30	12:00	94.0	52.0	59.5	-	67.8	75.0	N
2016/06/02	Sunny	11:30	12:00	86.0	59.0	61.0	-	67.8	75.0	N
2016/06/08	Sunny	11:30	12:00	85.5	53.0	59.5	-	67.8	75.0	N
2016/06/14	Cloudy	11:30	12:00	97.0	54.5	61.5	-	67.8	75.0	N
2016/06/20	Sunny	11:30	12:00	92.0	57.0	63.0	-	67.8	75.0	N
2016/06/30	Sunny	11:30	12:00	85.0	54.0	61.0	-	67.8	75.0	N
2016/07/06	Cloudy	11:30	12:00	86.0	53.5	61.5	-	67.8	75.0	N
2016/07/12	Cloudy	11:00	11:30	85.0	55.0	64.0	-	67.8	75.0	N
2016/07/18	Sunny	11:30	12:00	86.5	54.5	63.5	-	67.8	75.0	N
2016/07/29	Sunny	13:00	13:30	88.5	61.5	64.0	-	67.8	75.0	N

Summary For the Reporting Quarter (May 2016 - Jul 2016)	
Average	63.4
Minimum	59.5
Maximum	76.5

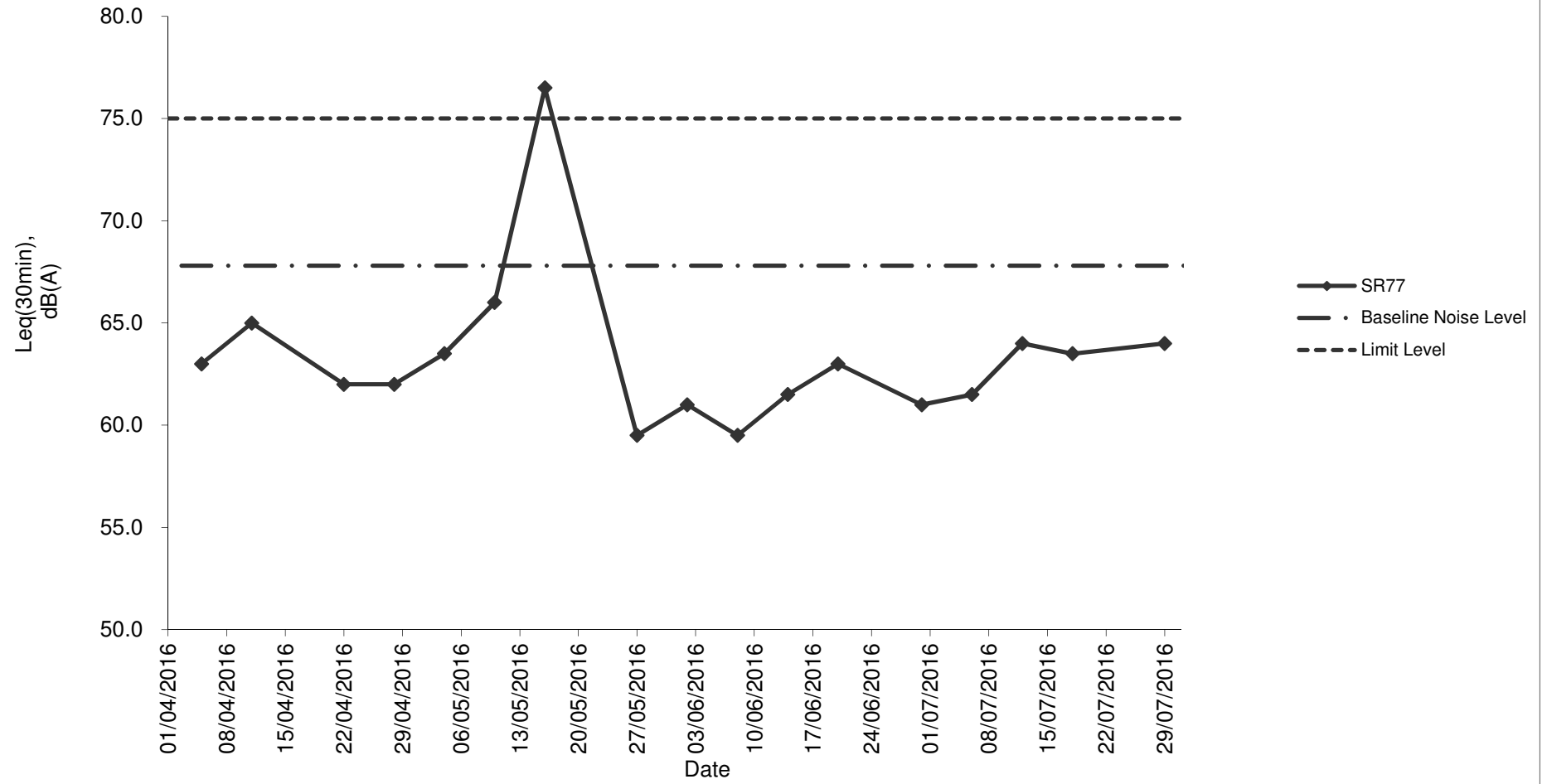
**Remarks**

\* +3dB(A) Façade effect correction included

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



**Noise monitoring result: SR77  
(April 2016 - July 2016)**



# Appendix F

## Waste Flow Table

### Quarterly Summary Waste Flow Table

Month	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	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 '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in m <sup>3</sup> )	(in '000m <sup>3</sup> )
May-16	0.488	0.013	0.475	-	-	0.475	2.479	-	-	-	-	0.105
Jun-16	0.523	0.103	0.420	-	-	0.420	0.716	-	-	0.001	-	0.135
Jul-16	0.565	0.019	0.546	-	-	0.546	1.407	-	0.001	0.004	1.000	0.085
<b>Total</b>	<b>1.576</b>	<b>0.135</b>	<b>1.441</b>	<b>-</b>	<b>-</b>	<b>1.441</b>	<b>4.602</b>	<b>-</b>	<b>0.001</b>	<b>0.005</b>	<b>1.000</b>	<b>0.325</b>

- Note:
1. Assume the density of soil fill is 2 ton/m<sup>3</sup>.
  2. Assume the density of rock and broken concrete is 2.5 ton/m<sup>3</sup>.
  3. Assume each truck of C&D wastes is 5m<sup>3</sup>.
  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/m<sup>3</sup>.

# **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	26, November, 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	<p>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.</p> <p>An EM&amp;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.</p> <p>The complaint is considered an invalid complaint under this Project.</p>	Completed

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
C141120	20 November, 2014	EPD	Ng Tung River and Ma Wat River nearby the site of the Liantang/ Heung Yuen Wai BCP Project (Contract Number CV/2012/09)	At Bridge NF426 in Fanling, the whole Ng Tung River showed milky and suspected illegal discharge by nearby factory has undertaken. (粉嶺近天橋編號 NF426 梧桐河整條河河水呈奶白色懷疑附近有工廠非法排放污水)	<p>Water Supplies Department (WSD) conducted a washout procedure on 20 November 2014 at about 9:30am to flush the newly installed water pipe of diameter of 1400mm which has recently finished disinfection. It is understood that the procedure has lasted for about 1 hour and large amount of freshwater has been discharged into the Ma Wat River through a washout port.</p> <p>Although water was observed seeping from the gantry switch and flew into the works sites, the area is a sump pit and the water was unlikely to run off and entered the river directly. As such, it is anticipated that only freshwater has been discharged into Ma Wat River through the washout port.</p> <p>Both site inspections conducted by the ET before the complaint (19 November 2014), and after the complaint (24 November 2014) did not identify any deficiencies on environmental mitigation measures. Also, there were no rains during the period and the risk of construction site run-off is considered minimal.</p>	Completed

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					<p>The water from the Ma Wat Channel adjoins the Ng Tung River before passing through the complaint location, so other pollution sources may also occur at upstream of Ng Tung River</p> <p>The complaint is considered unlikely due to the construction works of this project.</p>	



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