# **Civil Engineering and Development Department**

Agreement No. CE 67/2015 (HY)
Cycle Tracks from Tuen Mun
to Sheung Shui – Remaining Works
Design and Construction

Quarterly EM&A Report (Version 1.0)

February 2019 to April 2019

Approved By

(Mr. KS Lee, Environmental Team Leader)

#### REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties.

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Quarterly EM&A Report – February 2019 to April 2019

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#### **EXECUTIVE SUMMARY**

#### Introduction

- 1. This is the 10<sup>th</sup> Quarterly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the "Agreement No. CE 67/2015 (HY) Cycle Tracks from Tuen Mun to Sheung Shui Remaining Works Design and Construction" (hereinafter called "the Project"). This report documents the findings of EM&A Works conducted between 1<sup>st</sup> February 2019 and 30<sup>th</sup> April 2019.
- 2. The construction programme is presented in **Appendix A**. The construction activities undertaken in the reporting quarter were:

Portion A	- Construction of Cycle Track, Installation of Bicycle Parapet,
	Installation of Light pole
Portion B	- Construction of Subway A, Construction of Cycle Track, Parapet Footing
Portion C	- Construction of Retaining Wall RW 11B, 11C, 12, 13 & 14, 15A,
1 of tion C	<u> </u>
	Resting Station R7, Parapet Footing, Construction of U-Channel,
	Laying Bituminous for Cycle Track, Planting
Portion D	- Construction of Drainage Pipe, Construction of RW 15B, 15C, 15D,
	15E, 16A Stream Decking D1, D2 & D3, Realignment of San Tam
	Road
Portion E	- Construction of Retaining Wall RW D3, D4, D5, D6, D17, D18, D19,
	D20, D21, D22, D23, D24, D25 & D26A,B,C Construction of
	Drainage Pipe, Construction of Boundary Wall, Realignment of Mai
	Po Lung Road
Portion F	- Construction of Drainage Pipe, Construction of Retaining wall RW
	43, Construction of Boundary Wall, Relocation of Existing Bus Stop
D (' C	
Portion G	- Remaining Works for Box Culvert C, Relocation of Traffic Sign
	Gantry
Portion H	- Construction of Retaining Wall RW 45A, 45B Ramp, 49, DW1 &
	DW2 Construction of Drainage,
ъ .: т	The state of the s

Portion I - Construction of Subway D, Construction of Drainage Pipe

Portion J - Construction of RW 46, 47, 48,24A, 24C, 25, 26, Construction of Stream Decking D8, Construction near Dills Corner Garden

Portion K - Laying Bituminous for Cycle Track, Construction of U-Channel, Construction of DSD's Access Road, Installation of Bicycle Parapet

Portion M - Backfilling behind RW 30A, 30B, Construction of Bridge E, Construction of Access Road

Portion N - Construction of Bridge B

# **Environmental Monitoring Works**

- 3. Environmental monitoring for the Project was performed in accordance with the EM&A Manual and the monitoring results were checked and reviewed. Site Inspections/Audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
- 4. Summary of the non-compliance in the reporting quarter for the Project is tabulated in Table I.

Table I Non-compliance Record for the Project in the Reporting Ouarter

Domomoton	No. o	Action	
Parameter	Action Level	Limit Level	Taken
February 2019			
Noise	0	0	N/A
March 2019			
Noise	0	0	N/A
April 2019			
Noise	0	0	N/A

5. No exceedance was recorded at any noise monitoring station during the reporting period.

#### **Environmental Licenses and Permits**

- 6. Licenses/Permits granted to the Project include:
  - Environmental Permits (EP) for the Project,
    - EP-450/2013 issued on 30 May 2013 and EP-450/2013/A issued on 25 August 2015: and
    - EP-501/2015 issued on 2 September 2015
  - Billing Account for Waste Disposal (Acc No.: 7025411)
  - Discharge License
    - WT00028748-2017, WT00027672-2017, WT00027661-2017, WT00027606-2017, WT00027510-2017, WT00027509-2017, WT00027603-2017, WT00027605-2017, WT00027508-2017, WT00027834-2017, WT00028431-2017, WT00027584-2017, WT00027607-2017, WT00028850-2017 ,WT00030236-2018
  - Chemical Waste Producers
    - No.:WPN5213-524-K3261-01
  - Construction Noise Permit (expired on 23/2/2019)
    - GW-RN0748-18

# **Key Information in the Reporting Quarter**

7. Summary of key information in the reporting quarter is tabulated in **Table II**.

Table II Summary Table for Key Information in the Reporting Quarter

1 able 1	Event Details					, 2001101	
Event	Number	Received Date	Nature	Action Taken	Relation to Project	Status	Remark
Complaint received	1*	21st Dec 2018	The complaint is filed against site effluent being pumped and discharge into the nearby surface channel from work area near Mai Po San Tsuen (Portion D).	Cover the temporary cut slopes by tarpaulin before any excavation works commence     Clean the water in the channel and all broken covers are replaced by new decking covers     3 weirs have been installed at the downstream     Use of sedimentation tank prior to discharge     New cut-off plate next to the channel will be raised 200mm to prevent potential run-off     A filter with aggregate is placed at the side channel     Water and wastewater filtration system is installed to treat the site effluent.	Project related	CIR was submitted in February	+
Reporting Changes	0			N/A		N/A	
Notifications of any summons & prosecutions received	0			N/A		N/A	

<sup>\*</sup>The complaint in December was submitted in February. No complaints were received in this quarter.

8. Environmental monitoring works for the Project are considered effective and is generating data to categorically identify the environmental impacts from the works and influencing factors in the vicinity of monitoring stations.

#### 1. INTRODUCTION

#### **Background**

- 1.1 "Construction of Cycle Tracks and the Associated Supporting Facilities from Sha Po Tsuen to Shek Sheung River" (the EIA Report) is a Schedule 2 Designated Project (DP) under Environmental Impact Assessment Ordinance (EIAO). The Environmental Impact Assessment (EIA) Report (Registered No.: AEIAR-133/2009) and the associated Environmental Monitoring and Audit (EM&A) Manual was approved on 12 March 2009.
- 1.2 Civil Engineering and Development Department (CEDD) implemented the DP in two stages, i.e. Stage 1 and Stage 2. An Environmental Permit (EP) No. EP-450/2013 has been granted for Stage 1 works on 30 May 2013. Pursuant to Section 13 of the EIAO, the Director of Environmental Protection amends the Environmental Permit (No. EP-450/2013) based on the Application No. VEP-478/2015 and the EP (Permit No. EP-450/2013/A) was issued on 25 August 2015 to CEDD as the Permit Holder.
- 1.3 An Environmental Review (ER) Report of the "Construction of Cycle Tracks and the Associated Supporting Facilities from Sha Po Tsuen to Shek Sheung River Stage 2" had been prepared in July 2015 and the Environmental Monitoring and Audit Manual (EM&A Manual) was also included as part of the ER report in the application (Application No.: AEP-501-2015). An Environmental Permit No. EP-501/2015 was issued on 2 September 2015 for Stage 2 works to CEDD as the Permit Holder.
- 1.4 "Agreement No. CE 67/2015 (HY) Cycle Tracks from Tuen Mun to Sheung Shui Remaining Works Design and Construction" (hereinafter called the "Project") covers the Stage 1 (Part) and Stage 2 works of the DP. This Project was commissioned to Sang Hing Kuly Joint Venture (hereinafter called the "Contractor") for "Contract No.: YL/2015/01 Cycle Tracks from Tuen Mun to Sheung Shui Remaining Works". The site location is shown in **Figure 1a-1h** respectively.
- 1.5 Cinotech Consultants Ltd. was designated as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) works for the Project. The construction commencement of the Project was on 23<sup>rd</sup> November 2016. This is the 10<sup>th</sup> Quarterly EM&A Report summarizing the EM&A works for the Project from 1<sup>st</sup> February 2019 30<sup>th</sup> April 2019.

# **Project Organizations**

- 1.6 Different parties with different levels of involvement in the project organization include:
  - Project Proponent Civil Engineering and Development Department (CEDD)
  - Supervisor Representative Mannings (Asia) Consultants Limited (Mannings)
  - Environmental Team (ET) Cinotech Consultants Limited (Cinotech)
  - Independent Environmental Checker (IEC) ANewR Consulting Limited (ANewR)
  - Contractor Sang Hing Kuly Joint Venture (SKJV)
- 1.7 The key contacts of the Project are shown in **Table 1.1**.

**Table 1.1 Key Project Contacts** 

Party	Role	Contact Person	Phone No.	Fax No.
CEDD	Project Proponent	Mr. Chu Wai Lun, Thomas	2417 6370	2412 0358
Mannings	Supervisor Representative	Mr. Simon Ng	3168 2028	3168 2022
Cinotech	Environmental Team	Mr. KS Lee	2151 2091	3107 1388
Cinotech		Ms. Betty Choi	2151 2072	
ANewR	Independent Environmental Checker	Mr. Adi Lee	2618 2836	3007 8648
SKJV	Contractor	Mr. Ma Kin Man	9552 1734	2890 8205

# 2. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

2.1 The monitoring locations, equipment, period, methodology and QA/QC procedures of the required monitoring parameters designed for the routine impact monitoring were complied with the requirements stipulated under the EM&A Manual.

#### **Monitoring Parameters and Monitoring Locations**

2.2 The EM&A Manual designates locations for the ET to monitor environmental impacts in terms of air quality, noise, landscape and visual due to the Project. The Project area and monitoring locations are depicted in **Figures 2a-2c**. **Appendix B** gives details of monitoring requirements.

#### **Monitoring Methodology**

2.3 Monitoring works/equipments were conducted/calibrated regularly in accordance with the EM&A Manual. Copies of calibration certificates are attached in the appendices of the Monthly EM&A Reports.

#### **Environmental Quality Performance Limits (Action and Limit Levels)**

2.4 Should the environmental quality parameters exceed the Action/Limit Levels, the respective action plans would be implemented. The Action/Limit Levels for each environmental parameter are given in **Appendix C**.

# **Implementation Status of Environmental Mitigation Measures**

2.5 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Report, the Environmental Permit and EM&A Manual. The implementation status of environmental mitigation measures (EMIS) is given in **Appendix E**. Status of required submissions under the Environmental Permit (EP) of the reporting period is presented in **Table 2.1**.

Table 2.1 Status of Required Submissions under EP

EP Condition	Submission	Submission Date	
	Monthly Environmental Monitoring & Audit Report (February 2019)	12 March 2019	
3.5	Monthly Environmental Monitoring & Audit Report (March 2019)	11 April 2019	
	Monthly Environmental Monitoring & Audit Report (April 2019)	10 May 2019	

# **Site Audit Summary**

2.6 Site audits were carried out on a weekly basis. During site inspections in the reporting period, no non-conformance was identified. The observations and recommendations made during the reporting period are summarized in **Appendix F**.

# **Status of Waste Management**

2.7 The amount of wastes generated by the major site activities of this Project during the reporting month is shown in **Appendix G**.

# 3. MONITORING RESULTS AND NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS)

3.1 Environmental monitoring works were performed in the reporting period and all monitoring results were checked and reviewed. A summary of exceedances is attached in **Appendix H**.

#### **Weather Conditions**

3.2 The detail of weather conditions for each individual monitoring session was presented in monthly EM&A report.

#### **Air Quality**

3.3 According to the approved EM&A Manuals for Stage 1 works and Stage 2 works in Year 2015, no air quality monitoring is required for the Project.

#### **Construction Noise**

- 3.4 All construction noise monitoring was conducted as scheduled in the reporting period. No Action and Limit Level exceedance was recorded.
- 3.5 The graphical presentations of the noise monitoring results are shown in **Appendix D**.

#### Landscape and Visual

3.6 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures of this project. No non-compliance of the landscape and visual impact was recorded in the reporting quarter.

# **Influencing Factors on the Monitoring Results**

3.7 During the reporting period, the major noise sources identified at the designated monitoring stations are as follows:

Table 3.1 Major Noise Sources during the Monitoring in the Reporting Period

<b>Monitoring Stations</b>	Locations	Major Noise Source(s)
N1	HKMLC Wong Chan Sook Ying Memorial School	Road traffic noise Noise from daily school activities
N2	Bethel High School	Road traffic noise Noise from daily school activities
N3	No. 159 Mai Po San Tsuen	Road traffic noise
N5	Block 2, Dills Corner Garden	Road traffic noise
N6	Home of Loving Faithfulness	Road traffic noise Noise from activities at the premise and workshops near the premise
N7	Village House in Shek Wu Wai	Road traffic noise Noise from activities at workshops near the village house

#### Comparison of EM&A results with EIA predictions

- 3.8 According to Section 12.5.1 (viii) of the EM&A Manual, the EM&A data are compared with the EIA predictions and summarized in **Annex I**.
- 3.9 When comparing the noise monitoring results to the predicted mitigated construction noise levels in the EIA Report, the results at N1 were slightly higher than the range of predicted mitigated construction noise levels in the EIA Report in March and April, but within the range in February.
- 3.10 The results at N2 were lower than the range of predicted mitigated construction noise levels in the EIA Report in February and April, but slightly lower than the range in March.
- 3.11 The results at N3 were slightly lower than the range of predicted mitigated construction noise levels in the EIA Report in this quarter.
- 3.12 The results at N5 were lower than the range of the predicted mitigated construction noise levels in the EIA Report in this quarter.
- 3.13 The results at N6 were within the range of the predicted mitigated construction noise levels in the EIA Report in March and April, but slightly lower than in the range in February.

#### 4. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

# Review of the Reasons for and the Implications of Non-compliance

4.1 No Action/Limit Level exceedance was recorded at all noise monitoring stations in the reporting quarter.

# Review of Monitoring Methodology and the Practicality and Effectiveness of EM&A Programme

4.2 The EM&A methodology has been effective in monitoring the environmental impacts of the Project and the effectiveness of the mitigation measures. The data collected were useful in determining whether the Project had caused unacceptable impacts on the sensitive receivers. Analysis of all EM&A data collected throughout the baseline and the impact periods demonstrated the environmental acceptability of the Project.

#### **Effectiveness of Mitigation Measures**

- 4.3 The mitigation measures recommended in the EIA report are considered effective in minimizing environmental impacts.
- 4.4 The Contractor has implemented the recommended mitigation measures except those mitigation measures not applicable at this stage.
- 4.5 Environmental monitoring works were performed in the reporting quarter and all monitoring results were checked and reviewed. No non-compliance (exceedances) of Action/Limit Level was recorded.
- 4.6 Three environmental complaints were received in the reporting quarter. No environmental prosecution were received in the reporting quarter.
- 4.7 The effectiveness of environmental management is satisfactory given that the recommendations given in the site inspections performed in the reporting period (as shown in **Appendix F**) are met.

#### Recommendations

4.8 According to the environmental audits performed in the reporting quarter, the following recommendations were made:

#### Air Quality

- Water spraying should be provided frequently to unpaved and exposed area, and haul roads for dust suppression.
- Proper tarpaulin coverage should be provided to all stockpiles in the Site to prevent dust generation.

#### Water Quality

- Wheel washing bays in all Portions within the Site should be maintained as far as practicable by means of removing silty water or using cleaner water in order to enhance the effectiveness of wheel washing in every portion within the Site.
- Embankment or dikes should be established at the site boundary to direct any untreated wastewater from the Site to wastewater treatment facility during rain events to perform water treatment before discharge.
- Standing or ponding water within the Site should be cleared as far as practicable.

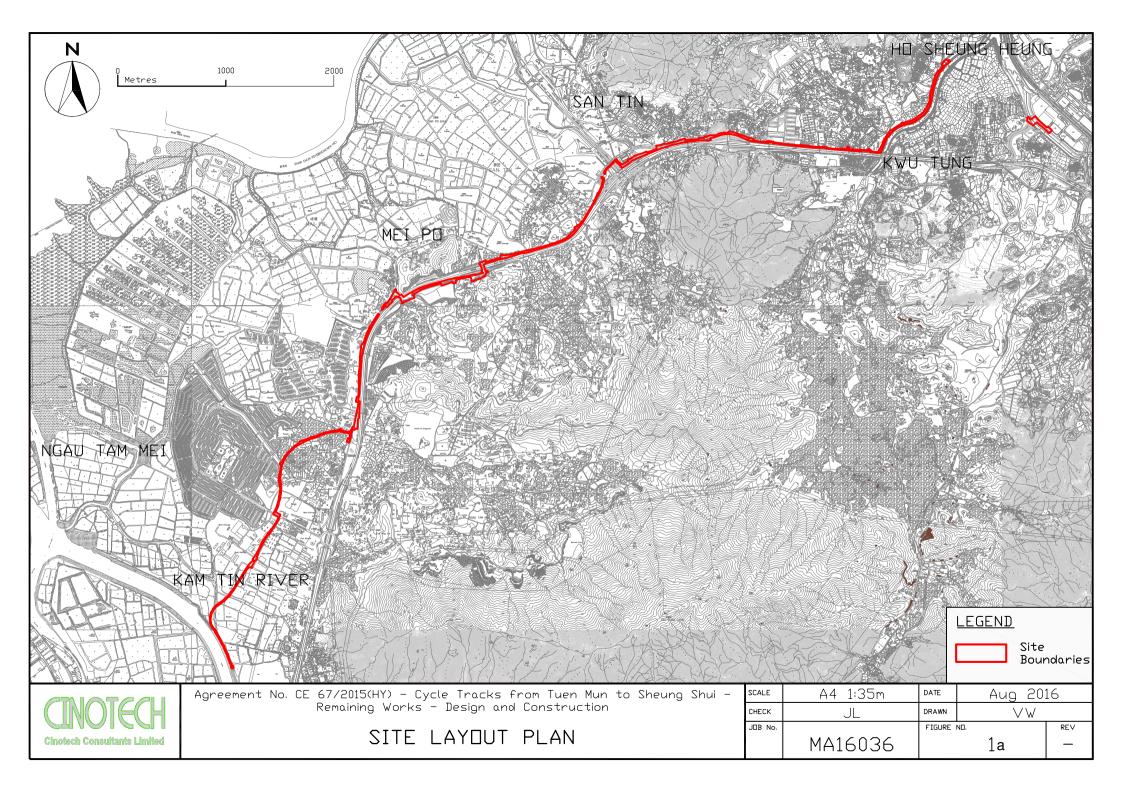
#### Waste/Chemical Management

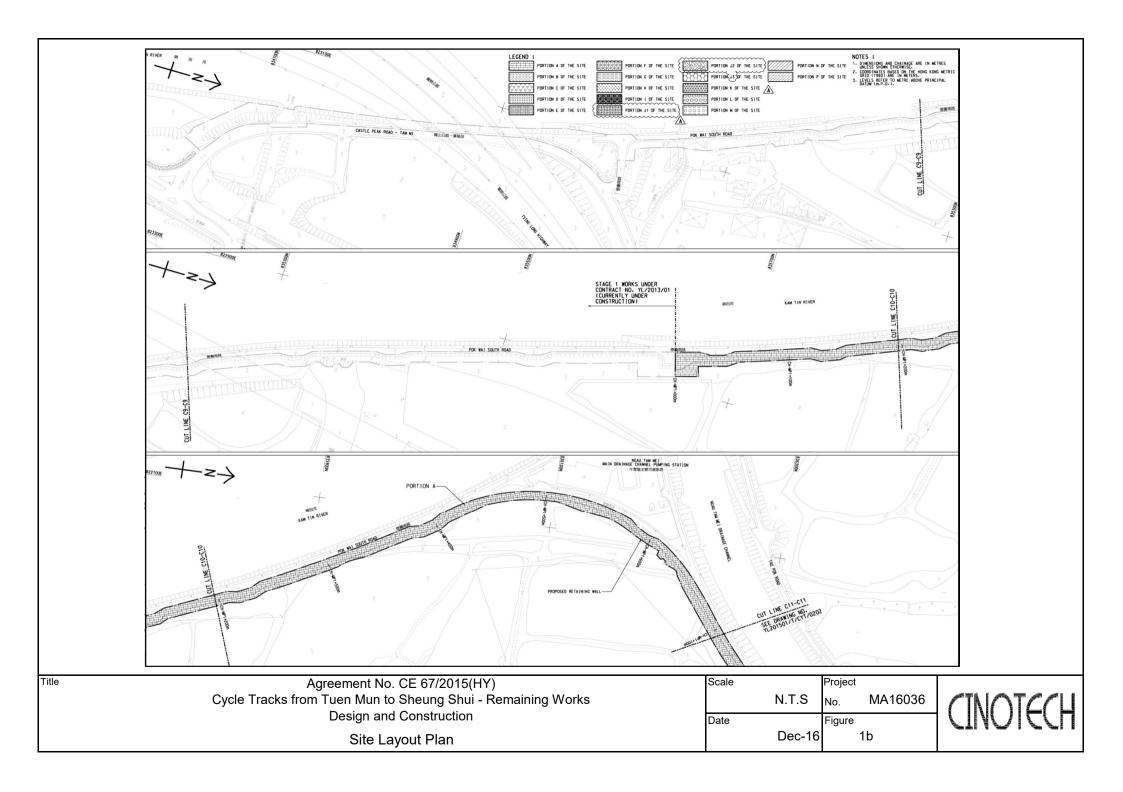
- General refuse should be removed regularly to prevent accumulation on-site.
   Proper enclosed bin should be provided with maintenance for collection of general refuse from workforce.
- Drip tray should be provided to oil/chemical containers and generator to avoid oil leakage. Any oil stain observed on ground should be properly removed as chemical waste.

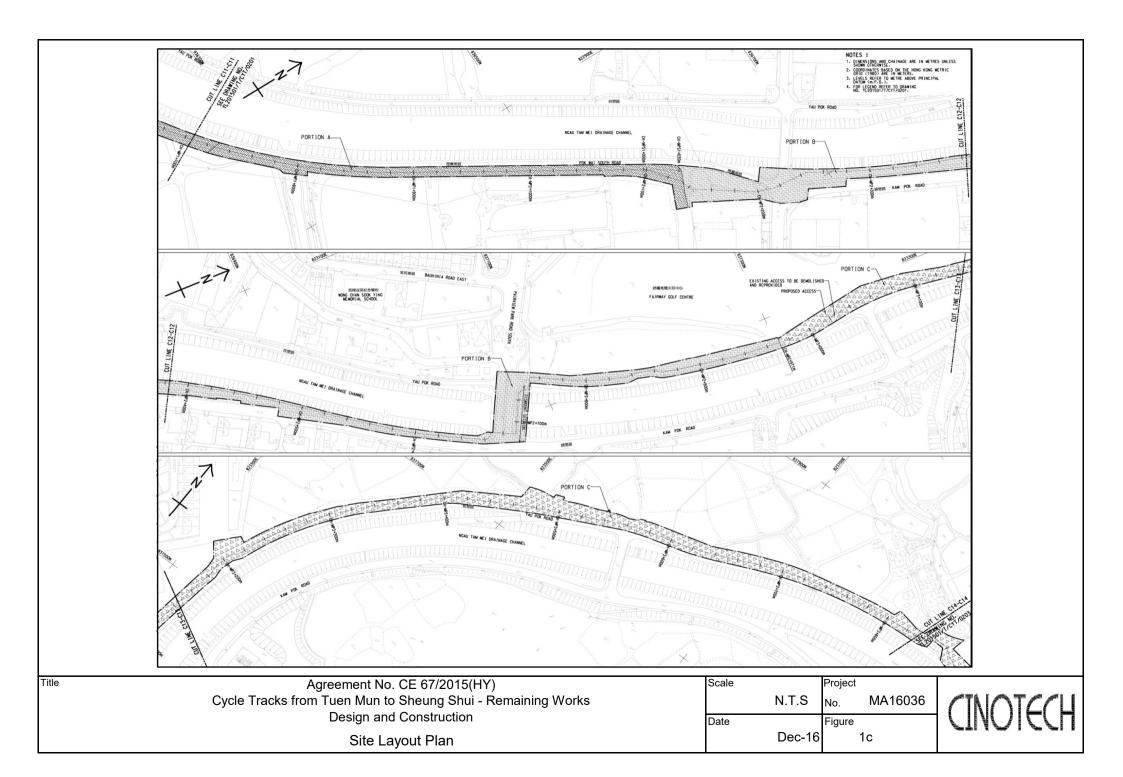
#### Landscape and Visual

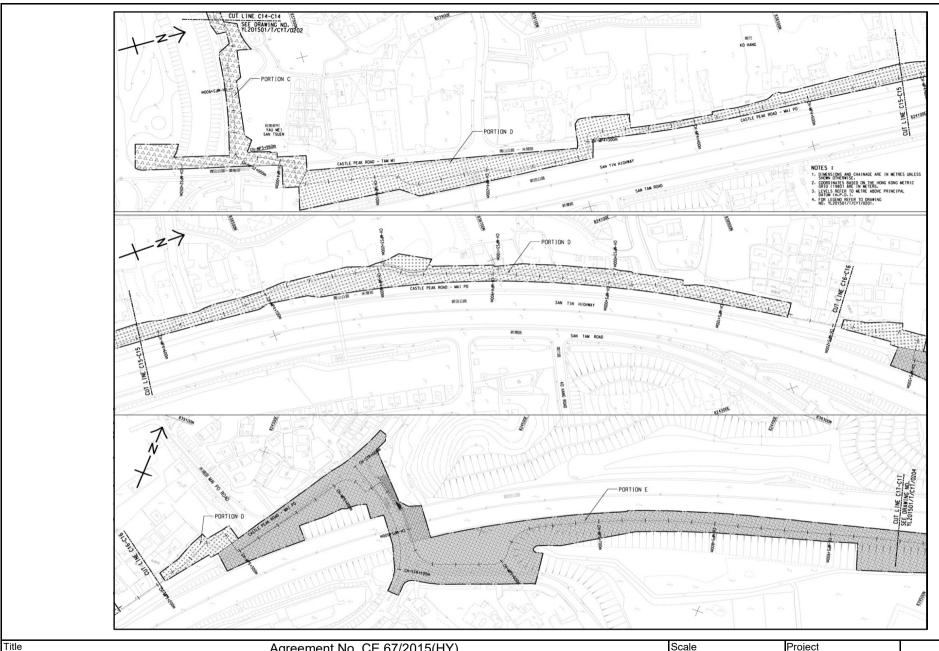
• Adequate tree protection zones should be established to protect retained and existing trees. Conspicuous signs of status of trees should be clearly shown to avoid damage from PMEs or workers.

# **FIGURES**

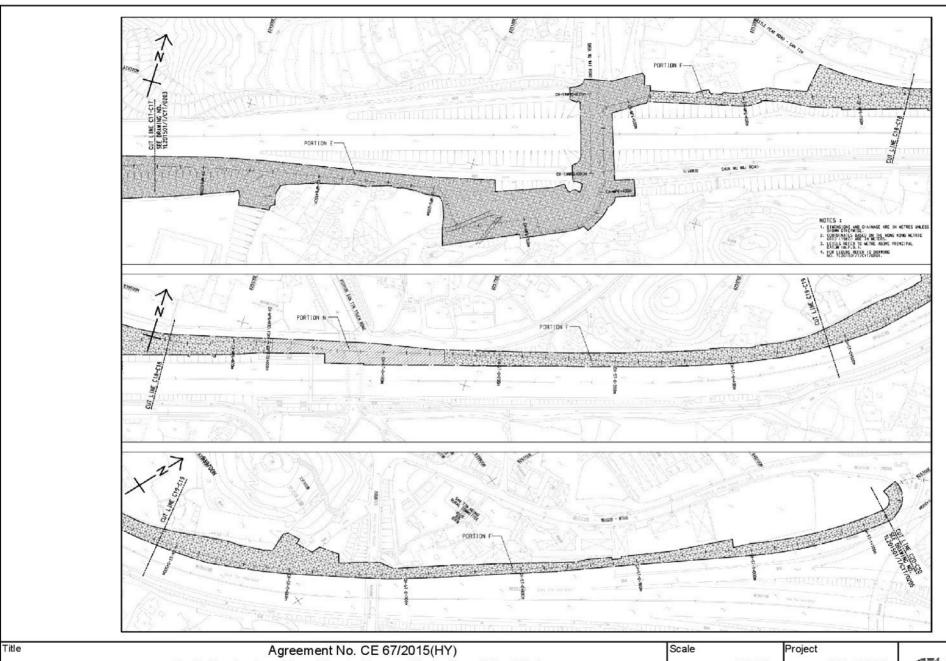




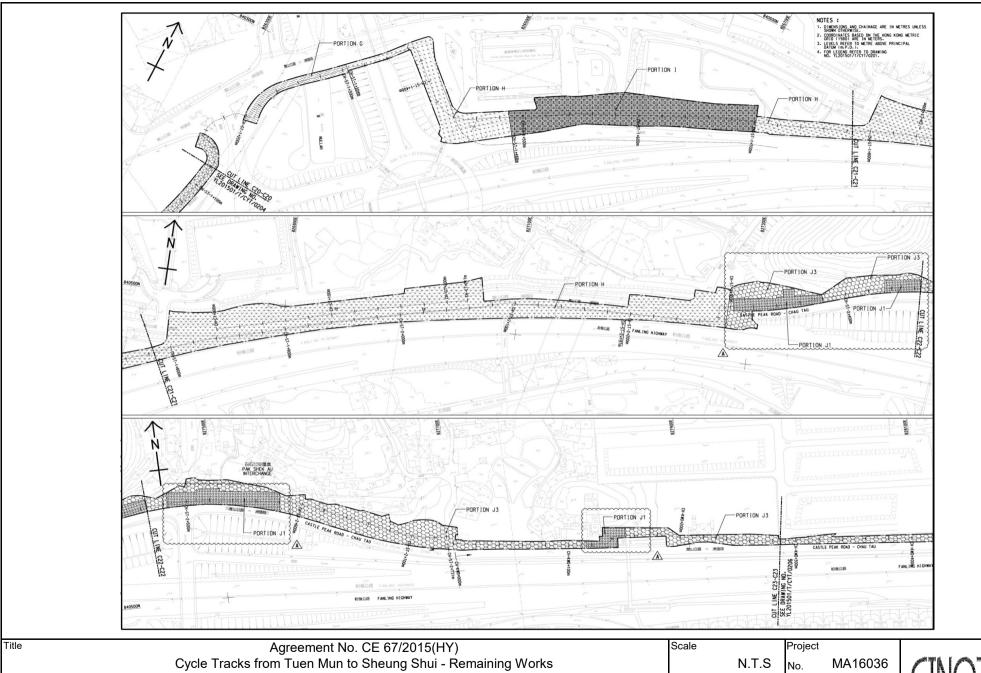




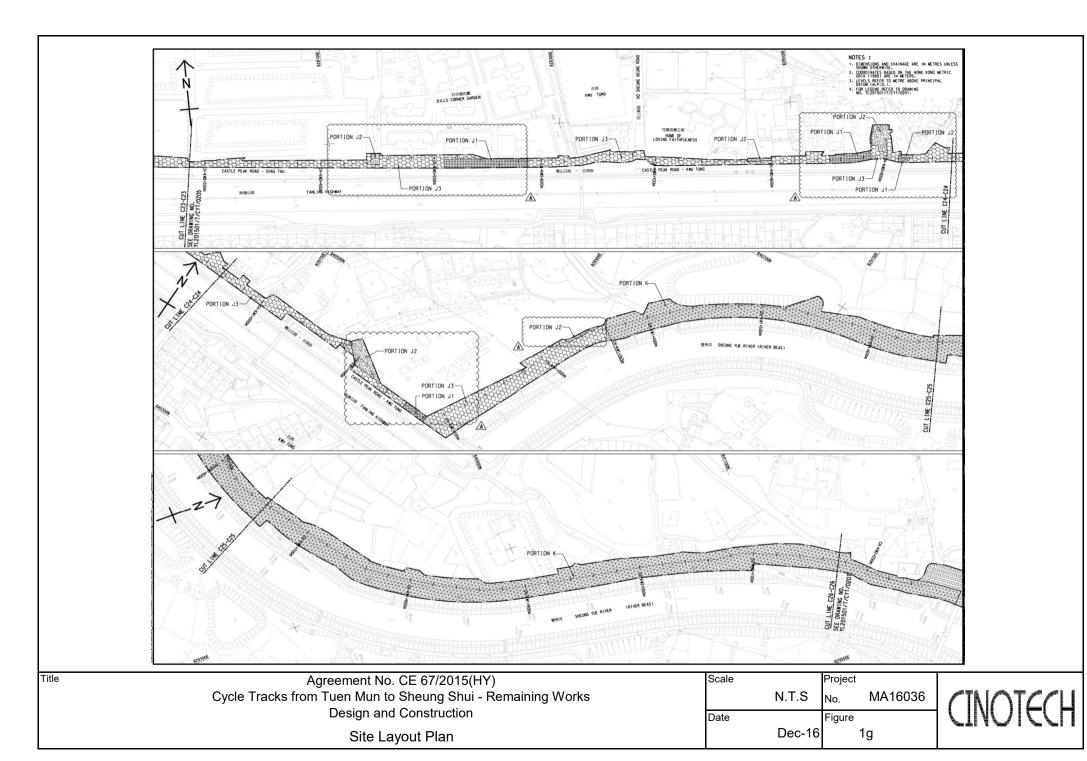
Agreement No. CE 67/2015(HY)
Cycle Tracks from Tuen Mun to Sheung Shui - Remaining Works
Design and Construction
Site Layout Plan

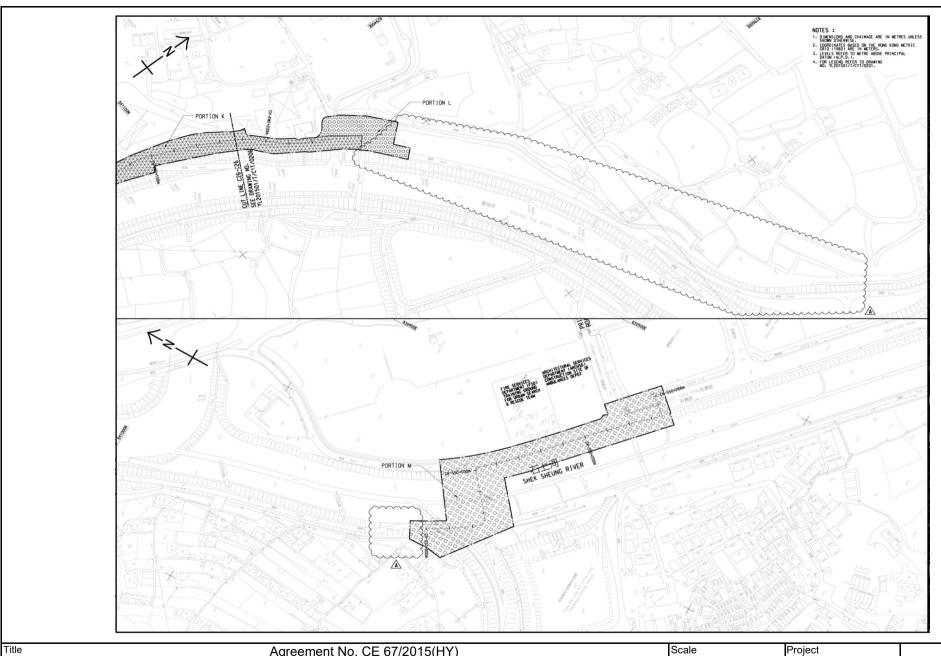


Agreement No. CE 67/2015(HY)
Cycle Tracks from Tuen Mun to Sheung Shui - Remaining Works
Design and Construction
Site Layout Plan



Agreement No. CE 67/2015(HY)
Cycle Tracks from Tuen Mun to Sheung Shui - Remaining Work
Design and Construction
Site Layout Plan

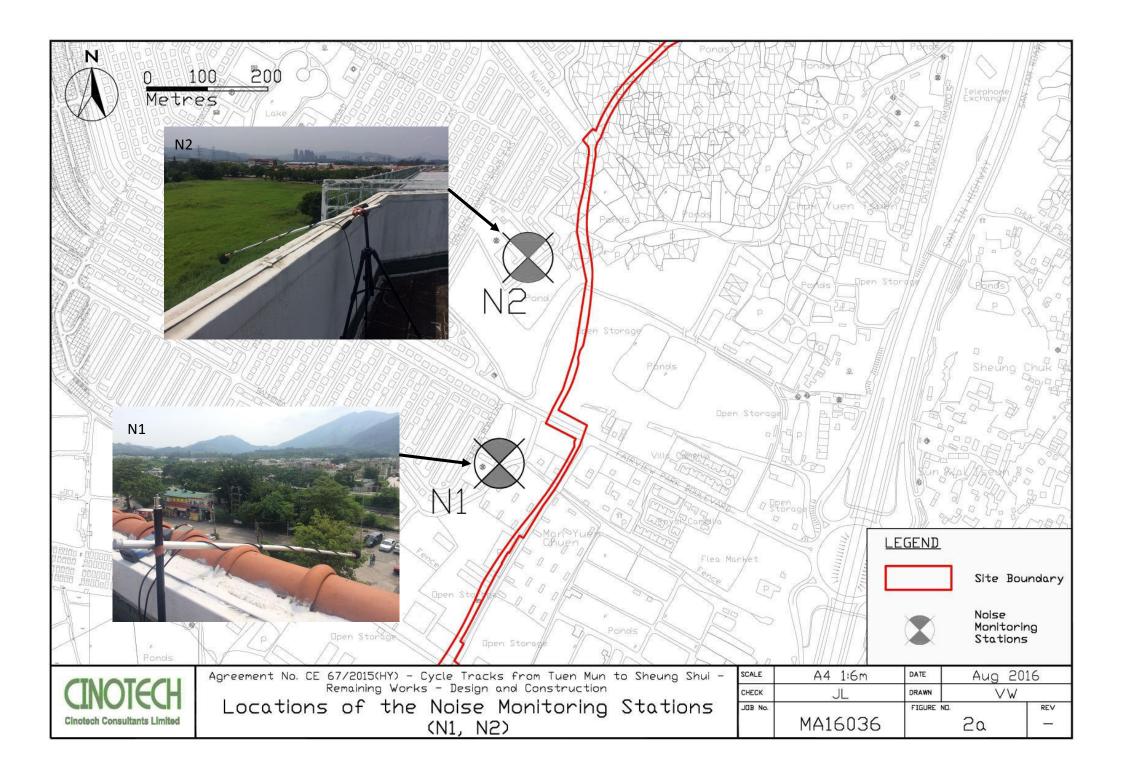


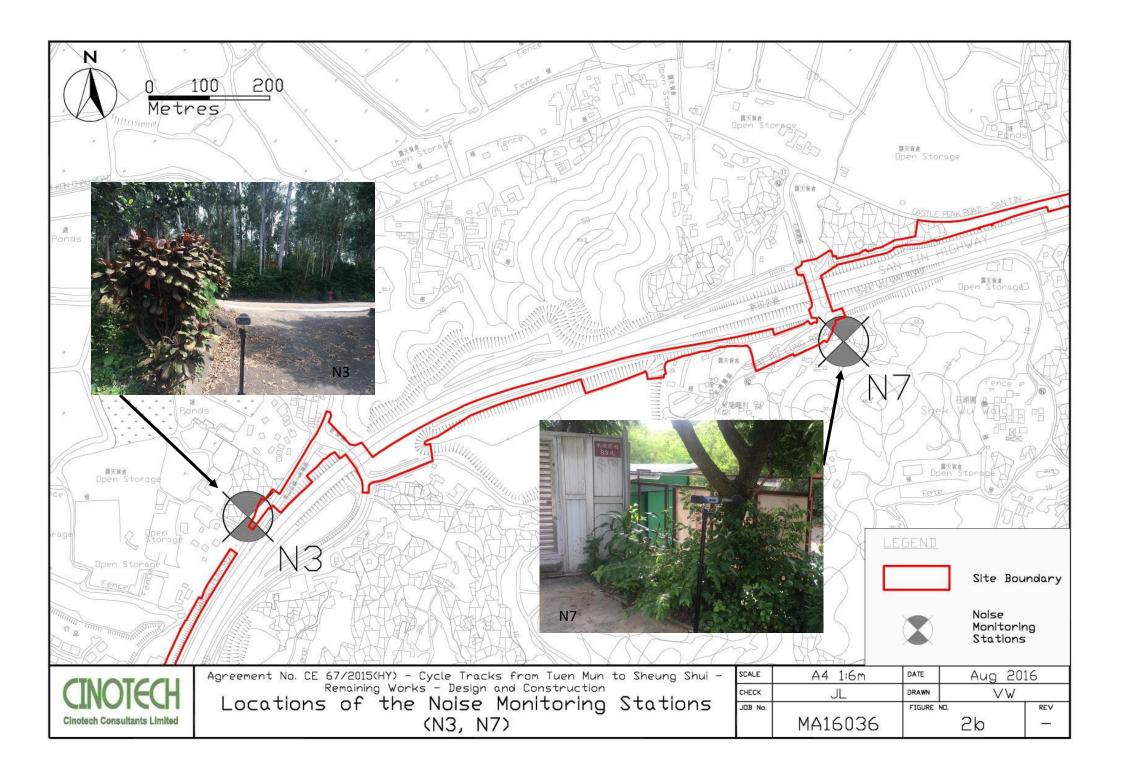


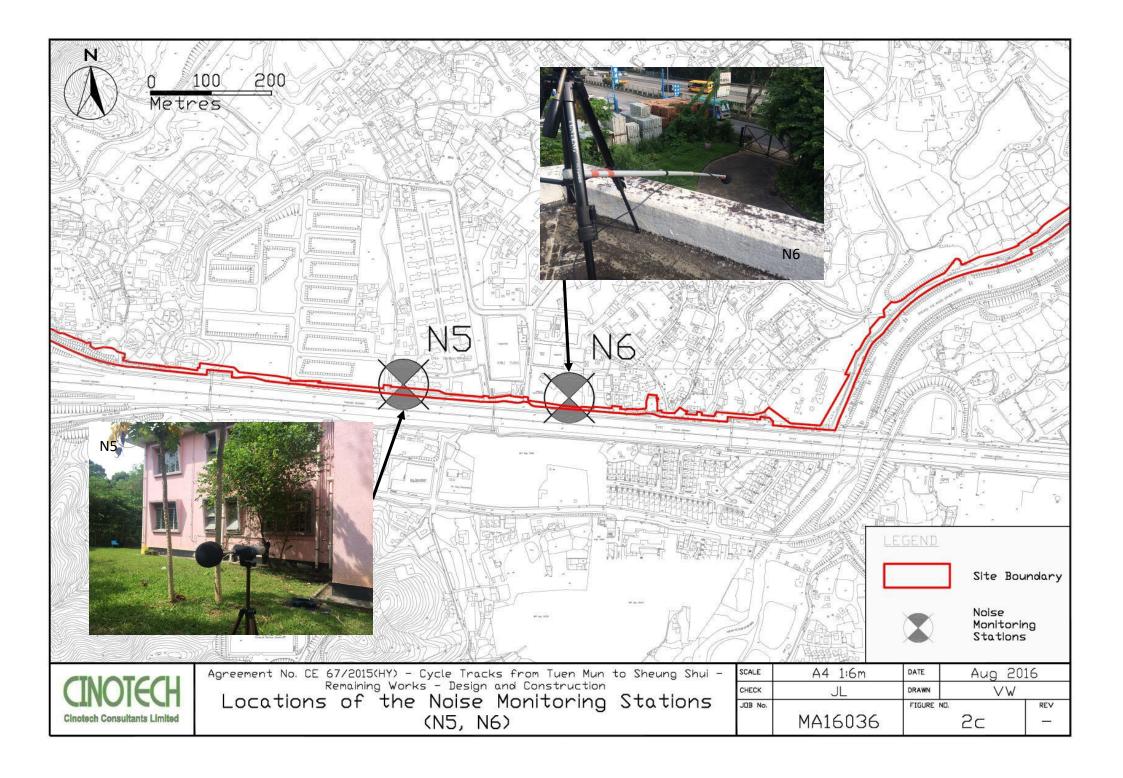
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Cycle Tracks from Tuen Mun to Sheung Shui - Remaining Works
Design and Construction
Site Layout Plan

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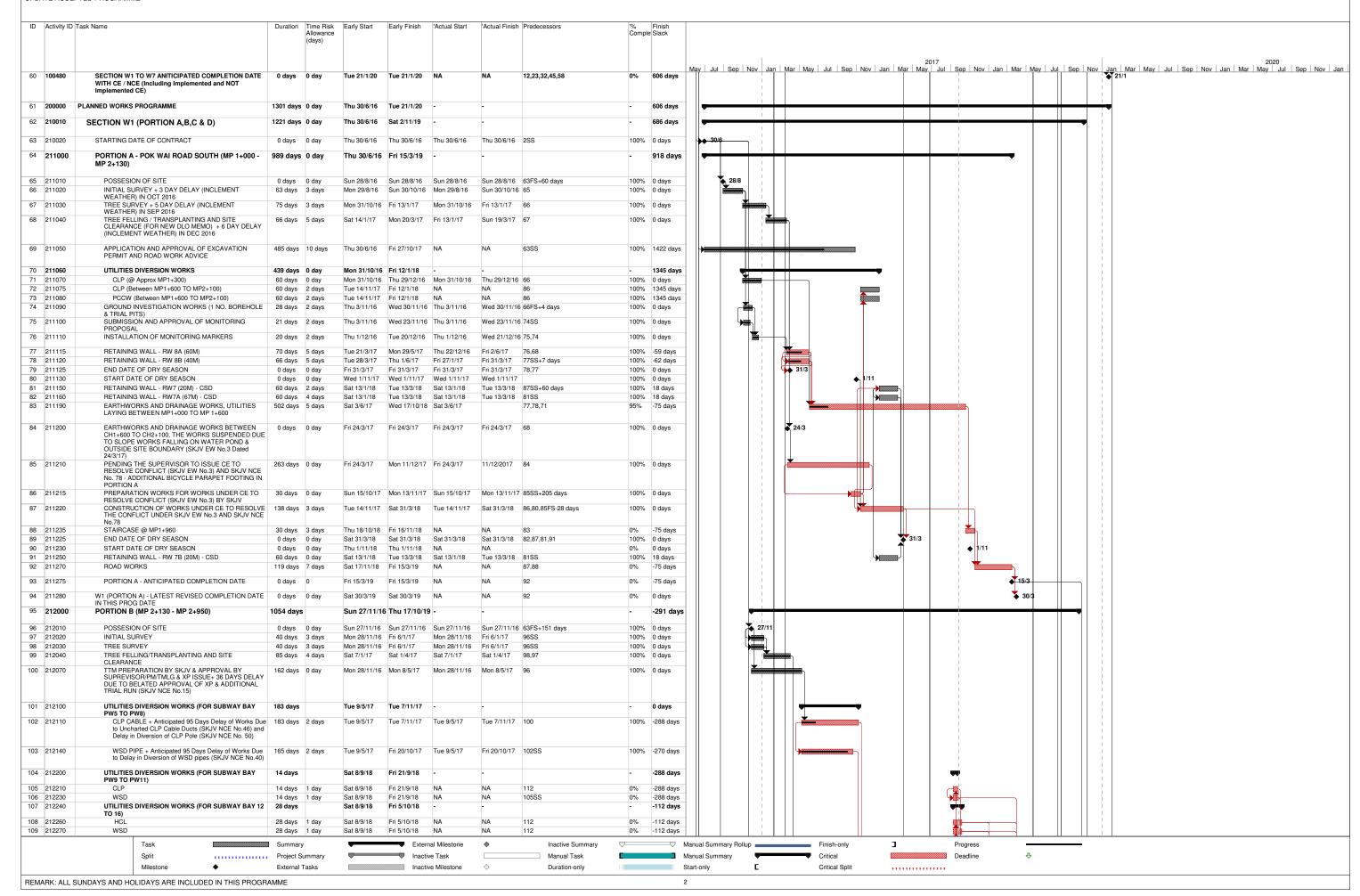
Date Dec-16 Figure 1h

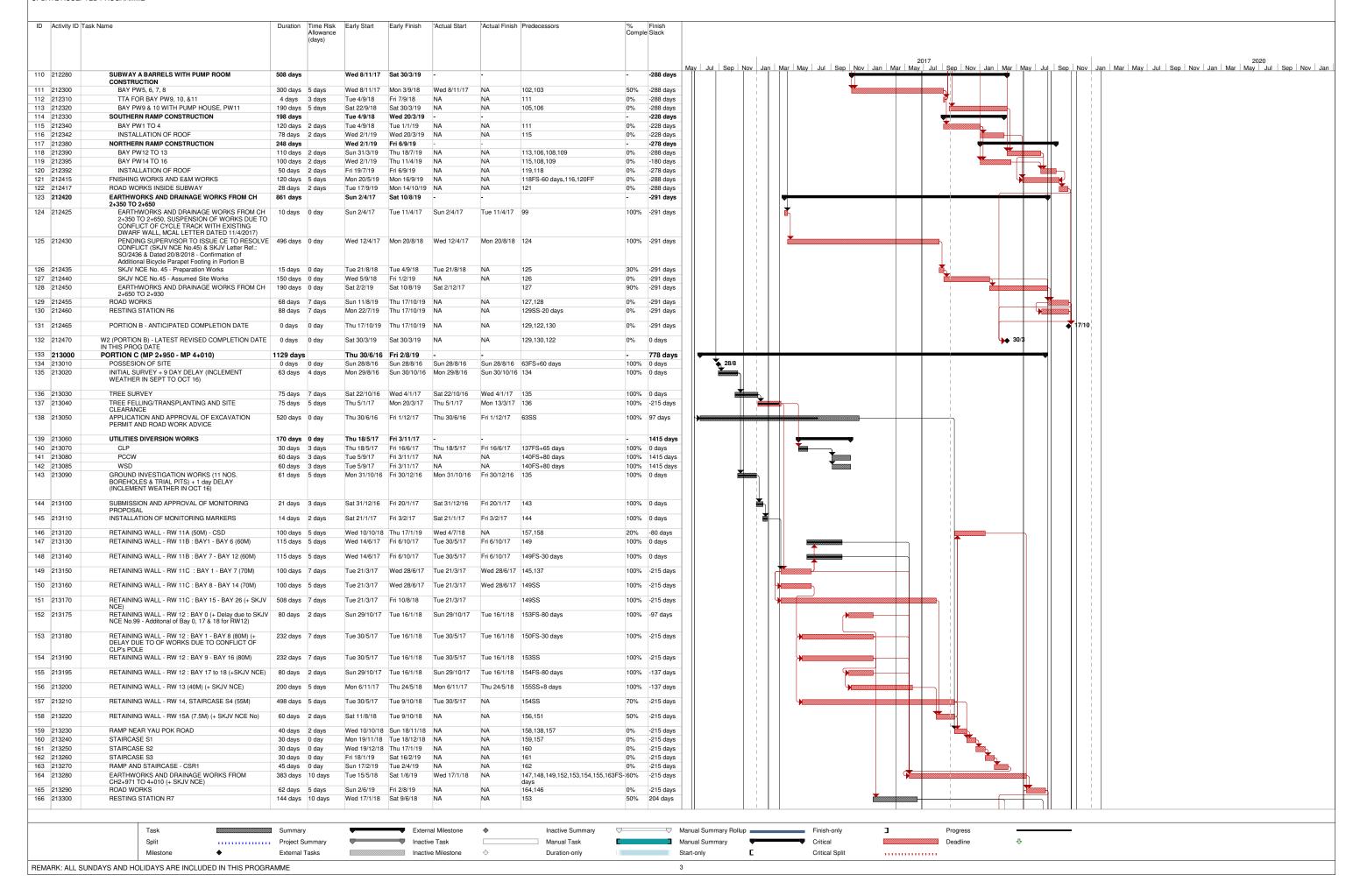


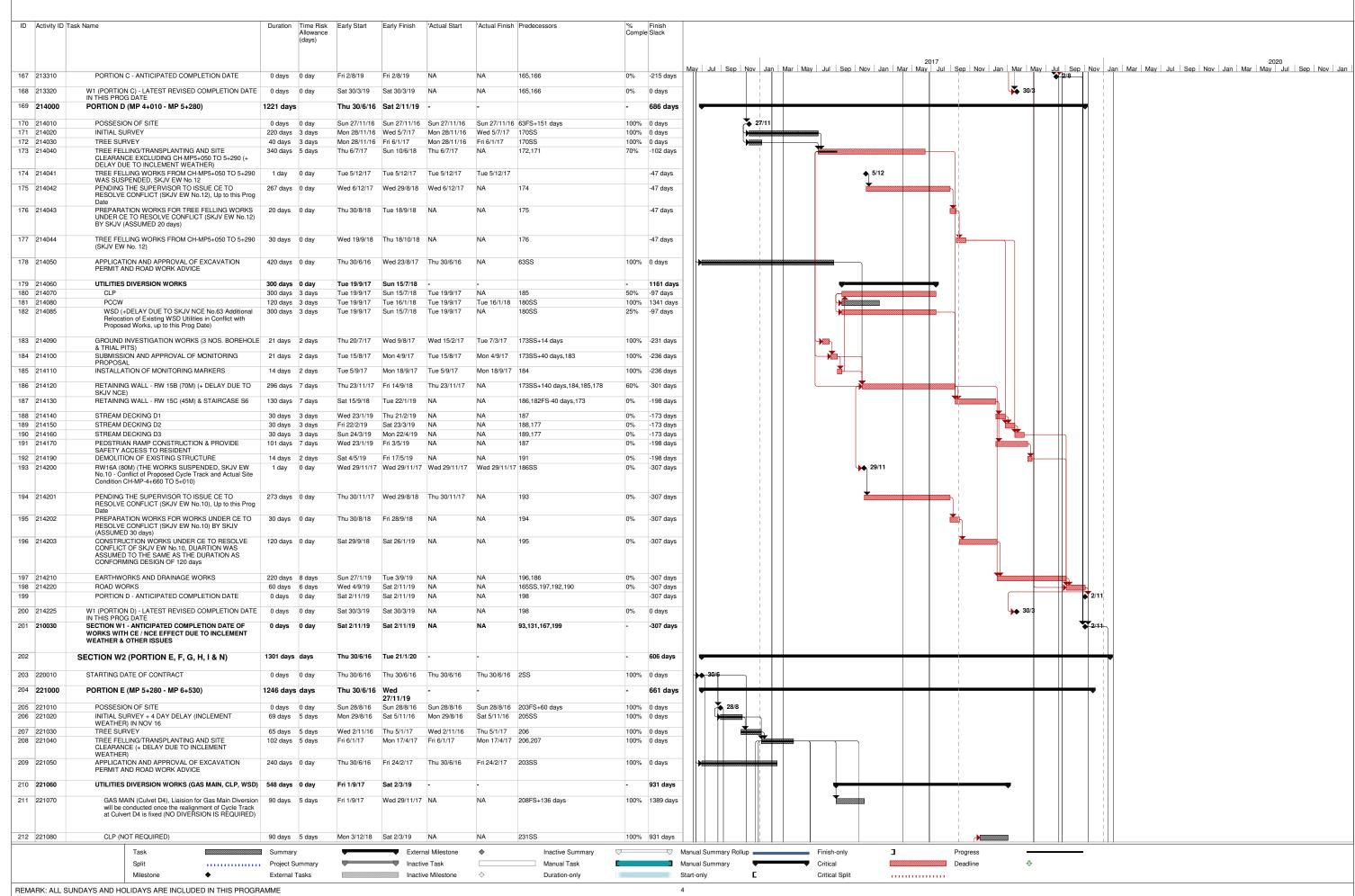


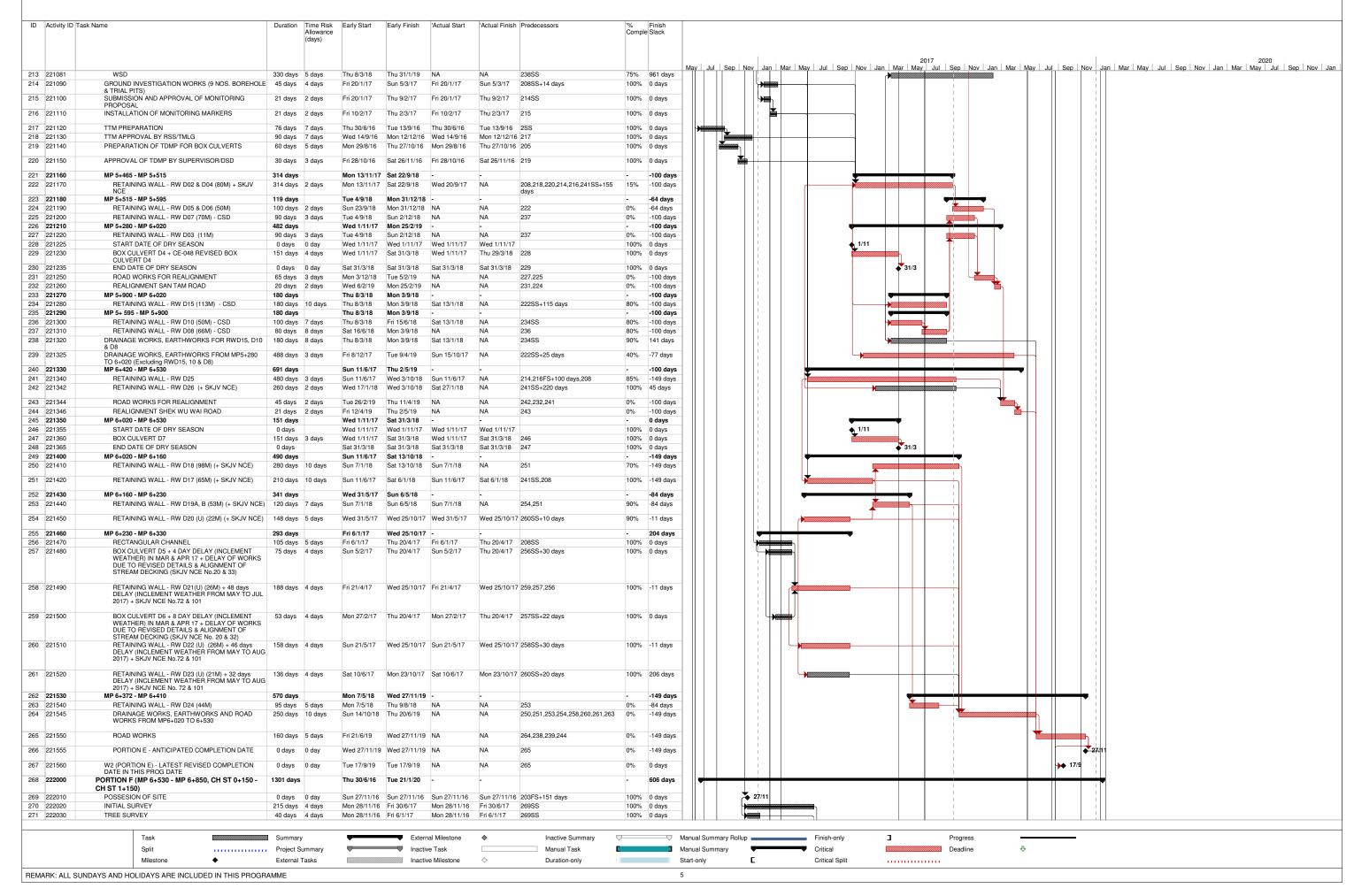


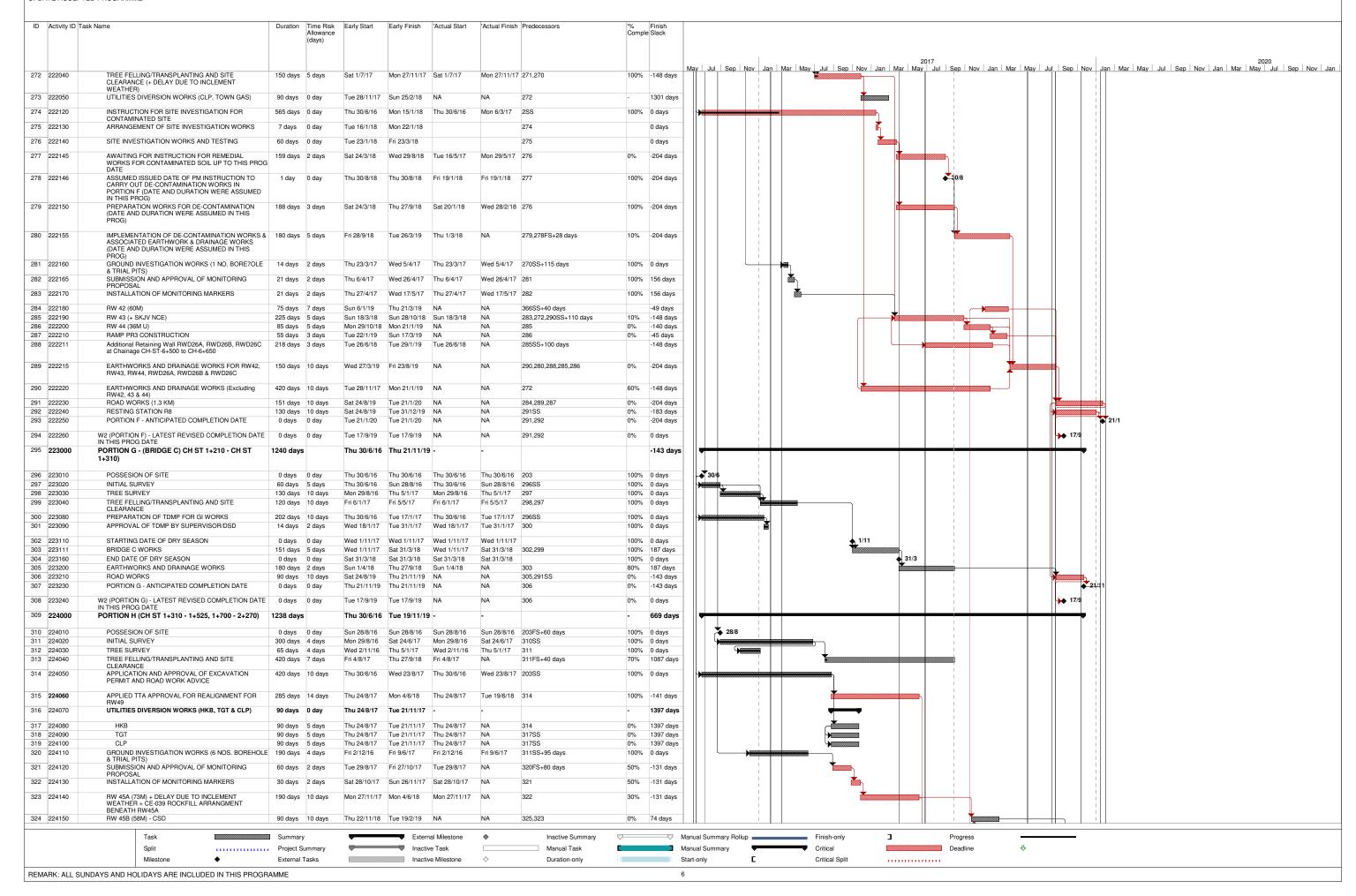
# APPENDIX A CONSTRUCTION PROGRAMME

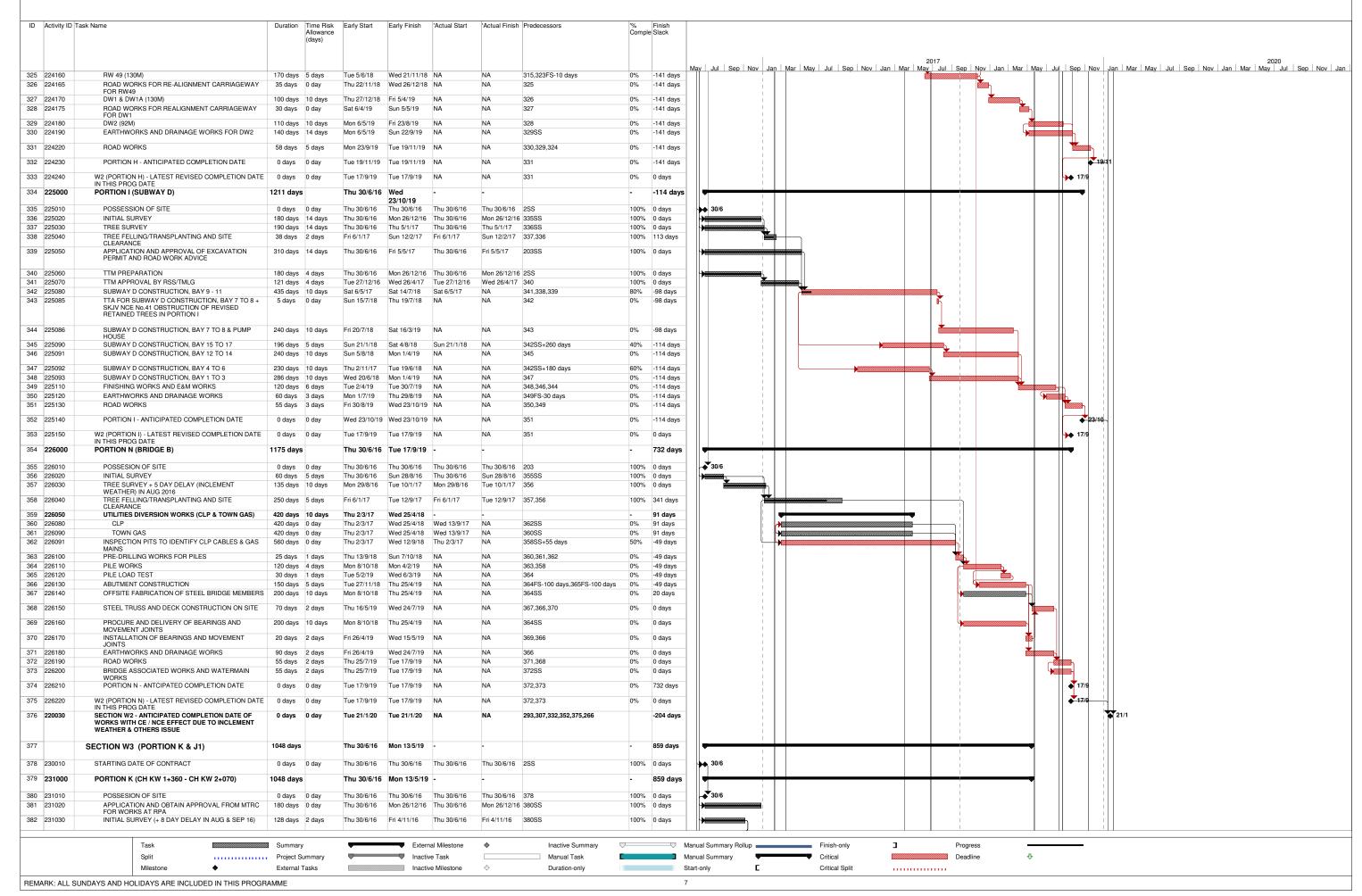


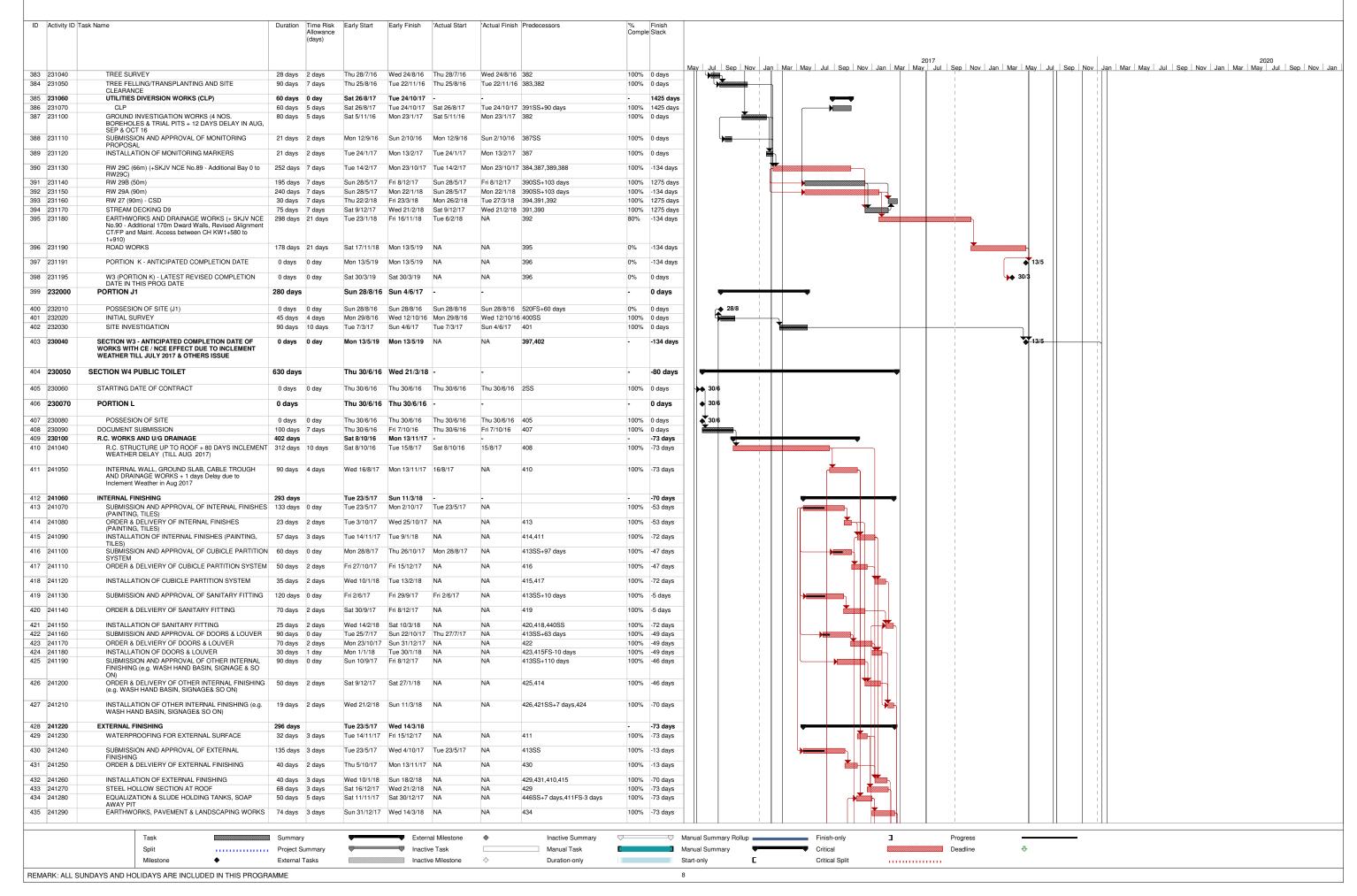


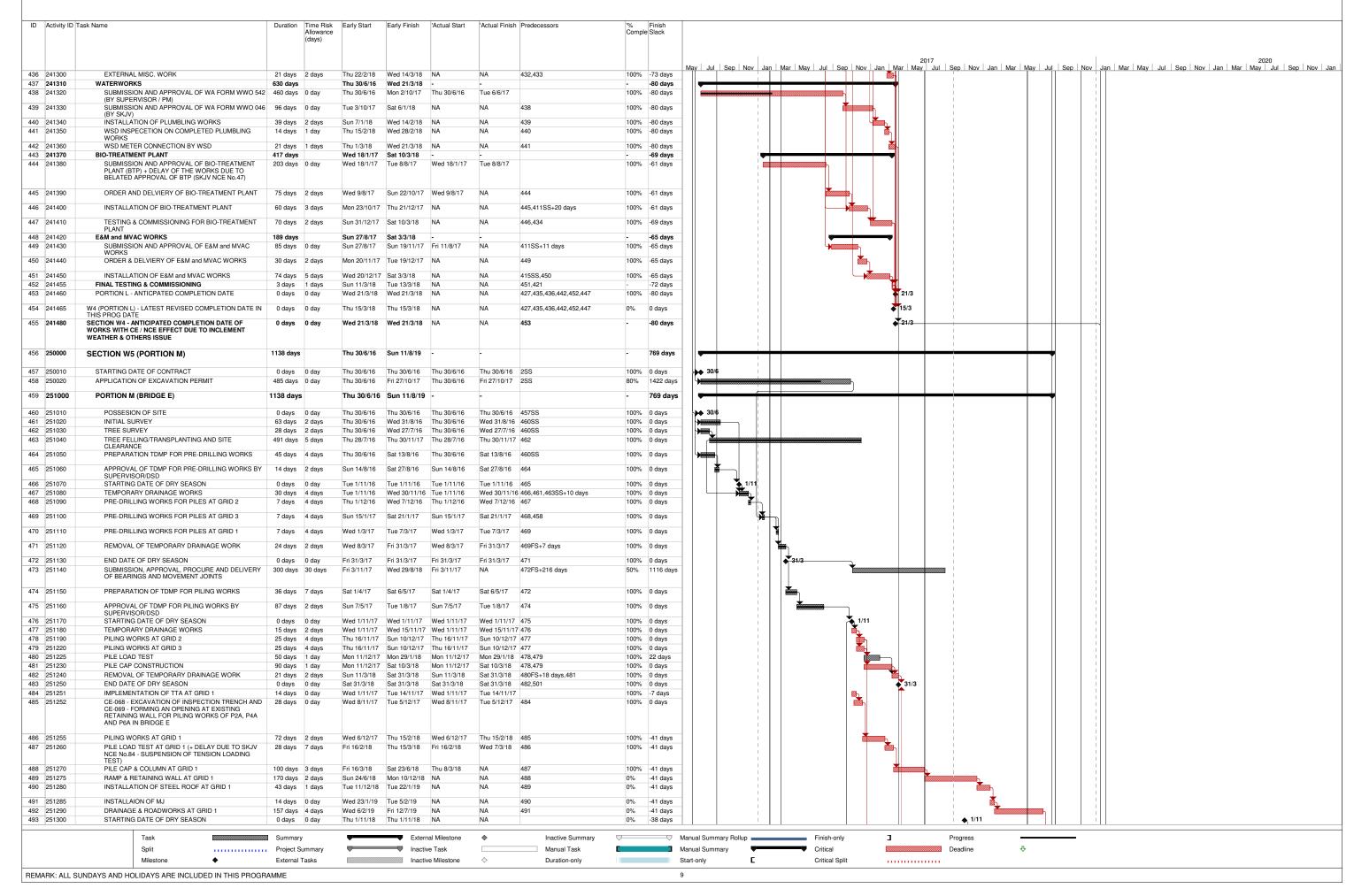


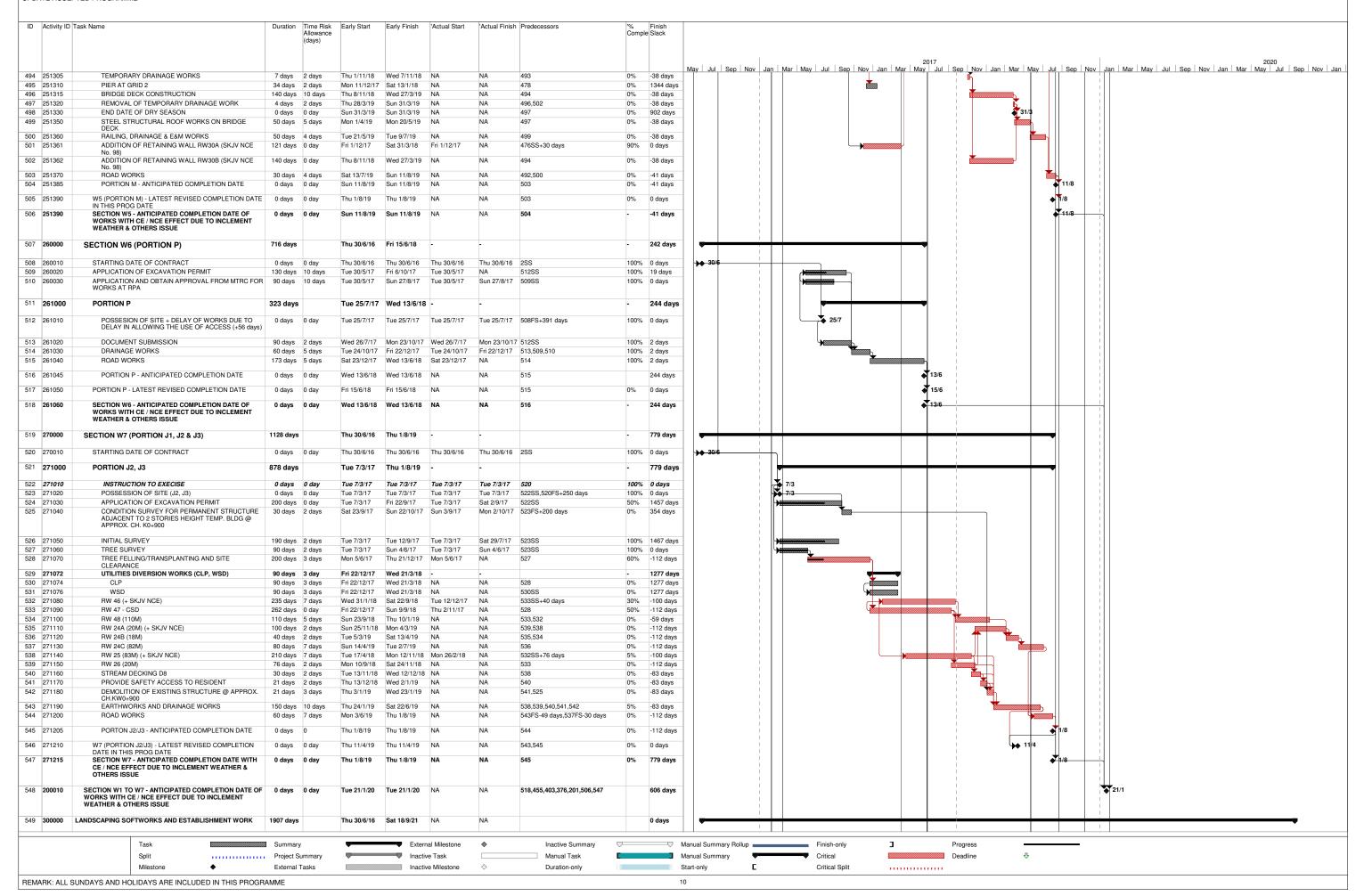


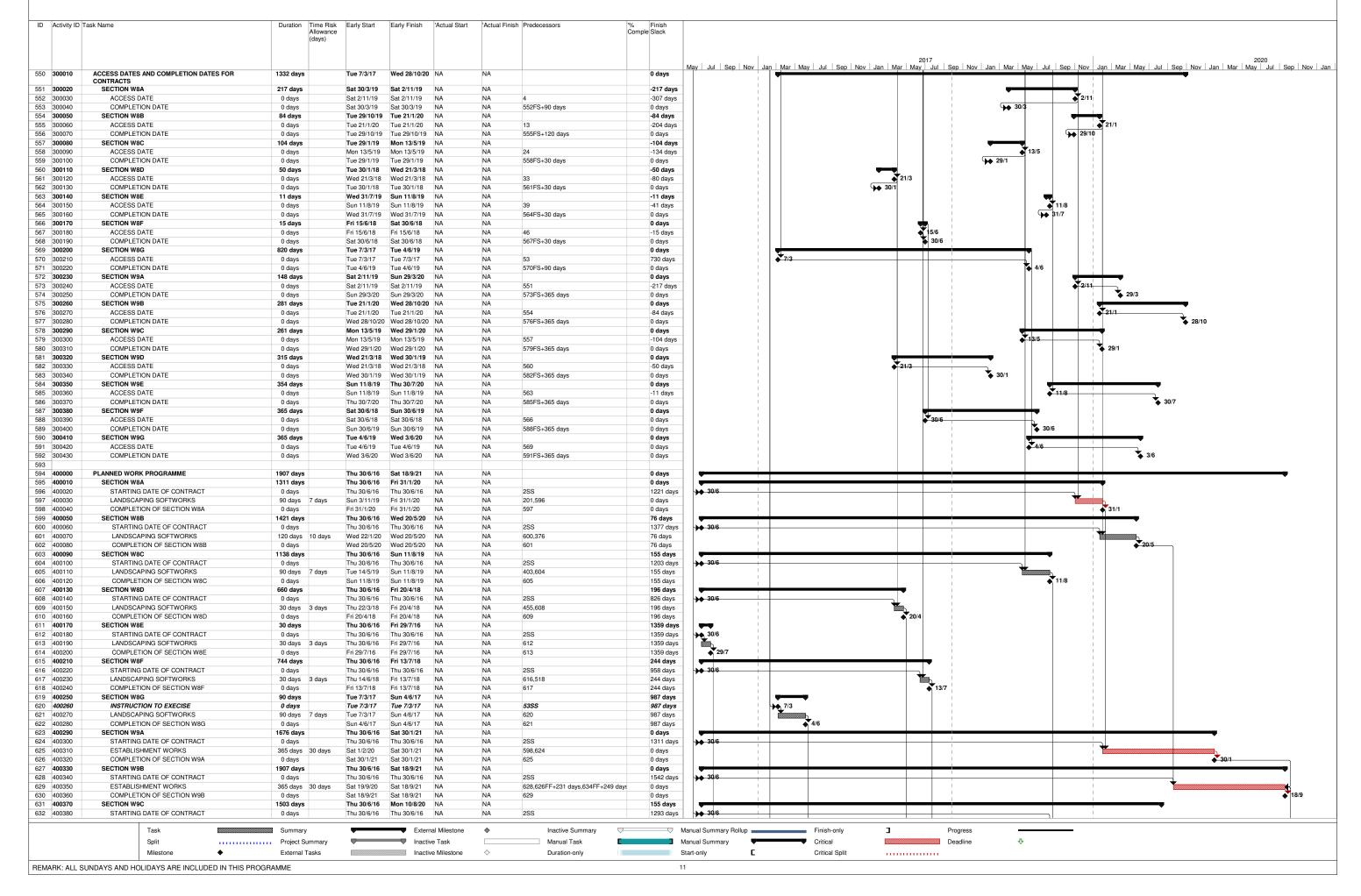












ID Activity ID Ta	ask Name	Duration		Early Start	Early Finish	'Actual Start	'Actual Finish	Predecessors	'% Finish Comple Slack															
			Allowance (davs)						Comple Slack															
			(days)																					
														Nov Jan Ma	2017			1			1		2020	
633 400390	ESTABLISHMENT WORKS	365 days	30 days	Mon 12/8/19	Mon 10/8/20	NΔ	NA	606,632	155 days	May Jul Sep	Nov Ja	an   Mar   M	ay Jul Sep	Nov   Jan   Ma	r May Ju	ul Sep Nov	Jan   Mar   Ma	y Jul Sep	Nov Jan	ı Mar May	ıy   Jul   Se	p Nov Jan	Mar   May   Jul	Sep No
634 400400	COMPLETION OF SECTION W9C	0 days	oo aays	Mon 10/8/20				633	155 days		1					1					10/8	1		1
	SECTION W9D							033											1		-10/0			
635 400410		1025 days		Thu 30/6/16			NA		196 days	<u> </u>														
636 400420	STARTING DATE OF CONTRACT	0 days		Thu 30/6/16	Thu 30/6/16	NA	NA	2SS	856 days	30/6		+			고									
637 400430	ESTABLISHMENT WORKS	365 days	30 days	Sat 21/4/18	Sat 20/4/19	NA	NA	610,636	196 days		i								i					
638 400440	COMPLETION OF SECTION W9D	0 days		Sat 20/4/19	Sat 20/4/19	NA	NA	637	196 days		1					1	20	4	-					—
639 <b>400450</b>	SECTION W9E	395 days		Thu 30/6/16	Sat 29/7/17	NA	NA		1359 days	_	_					1			1					
640 400460	STARTING DATE OF CONTRACT	0 days		Thu 30/6/16	Thu 30/6/16	NA	NA	2SS	1389 days	30/6						i I								
641 400470	ESTABLISHMENT WORKS	365 days	30 days	Sat 30/7/16	Sat 29/7/17	NA	NA	614,640	1359 days							i			i					
642 400480	COMPLETION OF SECTION W9E	0 days		Sat 29/7/17	Sat 29/7/17	NA	NA	641	1359 days		1		29/7											
643 <b>400490</b>	SECTION W9F	1109 days		Thu 30/6/16	Sat 13/7/19	NA	NA		244 days	_								_	l I					
644 400500	STARTING DATE OF CONTRACT	0 days		Thu 30/6/16	Thu 30/6/16	NA	NA	2SS	988 days	30/6						i			i					
645 400510	ESTABLISHMENT WORKS	365 days	30 days	Sat 14/7/18	Sat 13/7/19	NA	NA	618,644	244 days		1								1					
646 400520	COMPLETION OF SECTION W9F	0 days		Sat 13/7/19	Sat 13/7/19	NA	NA	645	244 days							1		13/7						—
647 <b>400530</b>	SECTION W9G	455 days		Tue 7/3/17	Mon 4/6/18	NA	NA		987 days		i	_			_	i			i					
648 <b>400540</b>	INSTRUCTION TO EXECISE	0 days		Tue 7/3/17	Tue 7/3/17	NA	NA	53SS	1077 days		1	7/3				1			1					
649 400550	ESTABLISHMENT WORKS	365 days	30 days	Mon 5/6/17	Mon 4/6/18	NA	NA	622,648	987 days			•				1								
650 400560	COMPLETION OF SECTION W8A	0 days		Mon 4/6/18	Mon 4/6/18	NA	NA	649	987 days		i				4/6									

# APPENDIX B MONITORING REQUIREMENTS

# $\label{lem:appendix B-Environmental Impact Monitoring Requirements} \ \ \,$

Remarks: # The impact monitoring at these locations will only be carried out until existence of the sensitive receiver at the building.

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Construction Noise	L <sub>eq</sub> , L <sub>90</sub> & L <sub>10</sub> at 30 minute intervals during (0700 to 1900 on normal weekdays)	Once per week	<ul> <li>N1 - HKMLC Wong Chan Sook Ying Memorial School</li> <li>N2 - Bethel High School</li> <li>N3 - No. 159 Mai Po San Tsuen</li> <li>N5 - Block 2, Dills Corner Garden</li> <li>N6 - Home of Loving Faithfulness</li> <li>N7 - Village House in Shek Wu Wai</li> </ul>	<ul> <li>N1 – Façade measurement at Rooftop (about 5/F) area</li> <li>N2 – Façade measurement at Rooftop (about 4/F) area</li> <li>N3 – Free field measurement at G/F area</li> <li>N5 – Free field measurement at G/F area</li> <li>N6 – Façade measurement at Rooftop (about 3/F) area</li> <li>N7 – Free field measurement at G/F area</li> </ul>

APPENDIX C ACTION AND LIMIT LEVELS FOR NOISE

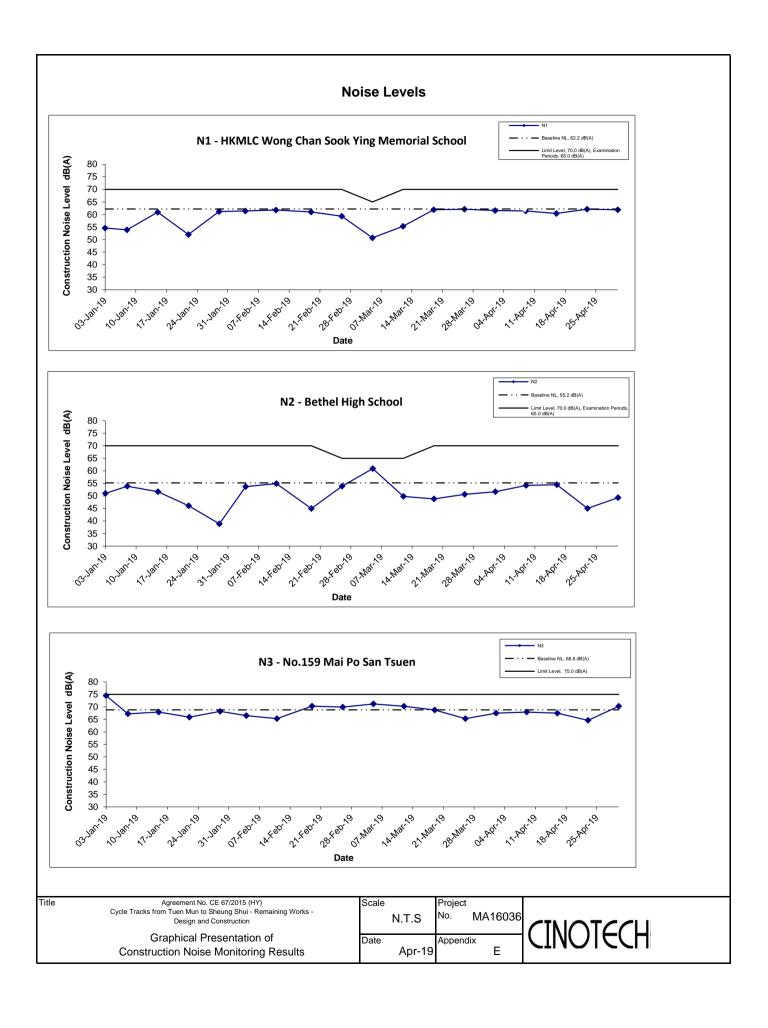
# **Appendix C - Action and Limit Levels**

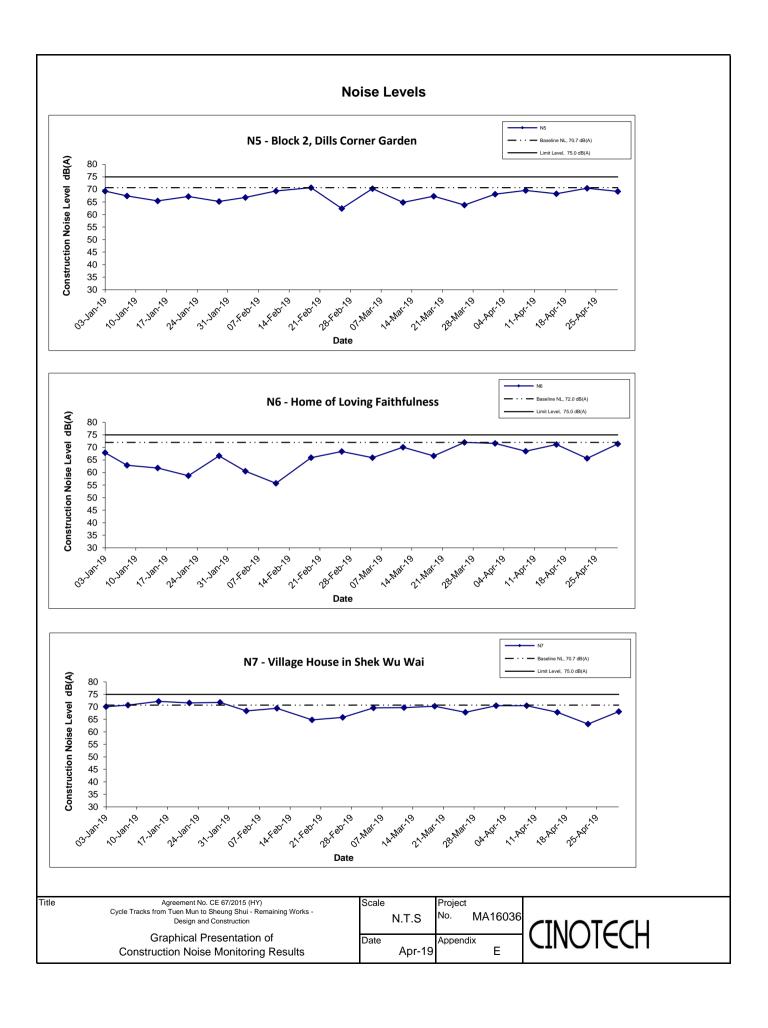
 Table B-1
 Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) 70dB(A)/65dB(A)*

Remarks: If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed. \*70dB(A) and 65dB(A) for schools during normal teaching periods and school examination periods, respectively.

APPENDIX D NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATIONS





APPENDIX E ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

EIA Ref.	EM&A Ref.	Mitigation Measures	Status			
Construction Air Quality						
S.3.6.2	S.3.2.3	All the dust control measures as recommended in the Air Pollution Control (Construction Dust) Regulation, where applicable, should be implemented. Typical dust control measures include:	۸			
S.3.6.2	S.3.2.3	• The works area for site clearance shall be sprayed with water before, during and after the operation so as to maintain the entire surface wet	*			
S.3.6.2	S.3.2.3	• Restricting heights from which materials are to be dropped, as far as practicable to minimize the fugitive dust arising from unloading/loading	٨			
S.3.6.2	S.3.2.3	• Immediately before leaving a construction site, all vehicles shall be washed to remove any dusty materials from the bodies and wheels. However, all spraying of materials and surfaces should avoid excessive water usage	*			
S.3.6.2	S.3.2.3	• Where a vehicle leaving a construction site is carrying a load of dusty materials, the load shall be covered entirely by clean impervious sheeting to ensure that the dusty materials will not leak from the vehicle	۸			
S.3.6.2	S.3.2.3	• Travelling speeds should be controlled to reduce traffic induced dust dispersion and re-suspension within the site from the operating haul trucks	٨			
S.3.6.2	S.3.2.3	• Erection of hoarding of not less than 2.4 m high from ground level along the site boundary, where appropriate	٨			
S.3.6.2	S.3.2.3	• Any stockpile of dusty materials shall be covered entirely by impervious sheeting; and/or placed in an area sheltered on the top and 4 sides	#			
S.3.6.2	S.3.2.3	<ul> <li>All dusty materials shall be sprayed with water or a dust suppression chemical immediately prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet</li> </ul>	*			

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

EIA Ref.	EM&A Ref.	Mitigation Measures	Status
Construction 1	Noise Impact	,	
S5.5.11	S4.2.17 (Stage 1 only)	In order to prevent potential cumulative construction noise impacts to NSRs at Mai Po San Tsuen and Palm Springs, the works at the cycle track section (near CHMP5+100m) are recommended to be scheduled to avoid works at the areas near Castle Peak Road of the Proposed Comprehensive Development at Wo Shang Wai (CDWSW) project if the works site of the CDWSW project is less than 300 m away from Castle Peak Road.	N/A
S.5.5.14	S.4.2.2 (Stage 1 only)	The contractor shall liaise with the Yuen Long and Kam Tin Sewerage and Sewage Disposal Stage 2 (YLKTSSD2) and North West New Territories Salt Water Supply (NWNTSWS) works contractors so as to avoid undertaking works concurrently with the works when they are in the close proximity as far as practicable. As a conservative approach, works for the cycle track shall be carried out when the works from the other projects are over 300 m away. The requirements shall be included in the works contracts.	N/A
N/A	N/A (Stage 2 only)	The contractor shall liaise with Yuen Long and Kam Tin Sewerage and Sewage Disposal (YLKSSD), Construction of Cycle Tracks and the associated Supporting Facilities at Nam Sang Wai, Yuen Long (NSWCT), Drainage Improvement at Northern NT - Package A – Drainage Improvement Works in San Tin (Remaining Works) - Investigation, North East New Territories New Development Areas Planning and Engineering Study (Investigation) (NENTNDA) and the Proposed Residential cum Passive Recreational Development within "Recreation" ("REC") zone and "Residential (Group C)" Zone at Various Lots in DD 104, Yuen Long, N.T. (RCPRD) contractors so as to avoid undertaking works concurrently with their works (refer to S. 4.2.2 of the EM&A Manual for Stage 2 Works).	^

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

EIA Ref.	EM&A Ref.	Mitigation Measures	Status
Table 5-7	S.4.2.19	Use of quiet plant (PME):	٨
		- mini excavator	
		- mobile crane	
		- dump truck	
		- hand-held electric circular saw	
		- concrete lorry mixer	
		- lorry	
		- vibratory poker	
		- asphalt paver	
		- crane mounted auger	
		- road roller	
		- road ripper, excavator mounted	

# Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S.5.6.2	S.4.2.19	Noise barrier in the form of site hoarding shall be used for the following PMEs	٨
Table 5-8		where practicable: - mini excavator	
		- mobile crane	
		- dump truck	
		- hand-held electric circular saw	
		- bar bender	
		- vibrating hammer	
		- generator	
		- concrete lorry mixer	
		- lorry	
		- vibratory poker	
		- asphalt paver	
		- compactor	
		- road roller	

EIA Ref.	EM&A Ref.	Mitigation Measures	Status
		- crane mounted auger	
		- grout mixer	
		- grout pump	
		- drill	
		- road ripper, excavator mounted	

# Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S.5.6.2	S.4.2.19	Noise enclosure shall be used for the following PMEs where practicable: - air compressor - hand-held breaker	N/A (1)
S.5.6.2	S.4.2.19	The barrier / enclosure material's surface mass shall be in excess of 7 kg/m <sup>2</sup> .	٨
S.5.6.6	S.4.2.19	Use of alternative quieter plant such as road ripper, excavator mounted instead of handheld breaker during levelling/excavation works.	^
S.5.6.8	S.4.2.19	The Contractor shall adopt the Code of Practice on Good Management Practice to Prevent Violation of the Noise Control Ordinance (Chapter 400) (for Construction Industry) published by EPD	^
S.5.6.8	S.4.2.19	The Contractor shall observe and comply with the statutory and non-statutory requirements and guidelines	^
S.5.6.8	S.4.2.19	Before commencing any work, the Contractor shall submit to the project Engineer for approval the method of working, equipment and noise mitigation measures intended to be used at the site	۸
EIA Ref.	EM&A Ref.	Mitigation Measures	Status
S.5.6.8	S.4.2.19	The Contractor shall devise and execute working methods to minimize the noise impact on the surrounding sensitive uses, and provide experienced personnel with suitable training to ensure that those methods are implemented	٨
S.5.6.8	S.4.2.19	Noisy equipment and noisy activities should be located as far away from the NSRs as is practical	۸
S.5.6.8	S.4.2.19	Unused equipment should be turned off. PME should be kept to a minimum and the parallel use of noisy equipment / machinery should be avoided	^
S.5.6.8	S.4.2.19	Regular maintenance of all plant and equipment	^

# Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S.5.6.8	S.4.2.19	Material stockpiles and other structures should be effectively utilised as noise barriers, where practicable	N/A
S.5.6.8	S.4.2.19	The Contractor shall liaise with the schools that are located near the works sites regarding their examination period and schedule the noisy works to avoid the examination period as far as possible.	۸

EIA Ref.	EM&A Ref.	Mitigation Measures	Status			
Construction Water Quality						
S.6.6.1	S.5.2.4	Mitigation measures should be implemented to prevent the uncontrolled discharge of wastewater from the construction site in accordance with Practice Note for Professional Persons ProPECC PN1/94 - Construction Site Drainage	#			
S.6.6.1	S.5.2.4	Surface run-off from the construction sites will be directed into storm drains via adequately designed wastewater treatment facilities such as sand traps, silt traps and sediment settling basins. This is important for works immediately along the Kam Tin River, Ngau Tam Mei Main Drainage Channel, River Beas and Shek Sheung River	*			
S.6.6.1	S.5.2.4	Channels, earth bunds or sand bag barriers will be provided on-site to properly direct stormwater to the above-mentioned facilities	۸			
S.6.6.1	S.5.2.4	Existing silt removal facilities, channels and manholes along roads and pedestrian walkways will be maintained and the deposited silt and grit will be removed regularly, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times	*			

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S.6.6.1	S.5.2.4	Other manholes (including any newly constructed ones) will be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system	٨
S.6.6.1	S.5.2.4	Open stockpiles of materials on site will be avoided or where unavoidable covered with tarpaulin or similar fabric during rainstorms. Measures will be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system	٨
S.6.6.1	S.5.2.4	Where possible, works entailing soil excavation will be minimized during the rainy season (i.e. April to September);	۸
S.6.6.1	S.5.2.4	Where applicable, final earthworks surfaces/ slopes will be well compacted and hydro-seeded following completion to prevent erosion	N/A

EIA Ref.	EM&A Ref.	Mitigation Measures	Status
S.6.6.1	S.5.2.4	During construction works, chemical toilets will be provided for the use of site staff. These will be provided by a licensed contractor, who will be responsible for appropriate disposal and maintenance of the effluent	۸
S.6.6.1	S.5.2.4	Works adjacent to the fishponds near Mai Po San Tsuen should be avoided as far as possible during the wet season to avoid runoff into the fishponds	٨
S.6.6.1	S.5.2.4	Wastewater from site facilities (such as toilets) should be discharged to foul sewer, where available. Chemical toilets will be considered where there is no foul sewer connection. There is not expected to be a temporary canteen.	۸
S.6.6.1	S.5.2.4	All site discharges within Water Control Zones must comply with the terms and conditions of a valid discharge licence issued by EPD	٨
S.6.6.1	S.5.2.4	Vehicle wheel washing facilities should be provided, where applicable, at the site exit such that mud, debris, etc. deposited onto the vehicle wheels or body can be washed off before the vehicles are leaving the site area	*

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S.6.6.1	S.5.2.4	Section of the road between the wheel washing bay and the public road should be paved with backfill to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains	*
S.6.6.1	S.5.2.4	The project may occasionally involve the handling of fuel and generates chemical wastes. It must be ensured that all fuel tanks and chemical storage are sited on sealed areas and provided with locks	^
S.6.6.1	S.5.2.4	The storage areas will be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank to prevent accidentally spilled oil, fuel or chemicals from reaching the receiving waters	*
S.6.6.1	S.5.2.4	Oil and grease removal facilities will be provided where appropriate, for example, in area near plant workshop/ maintenance areas	N/A
S.6.6.1	S.5.2.4	Chemical waste arising from the site should be properly stored, handled, treated and disposed of in compliance with the requirements stipulated under the Waste Disposal	*
		disposed of in compliance with the requirements supulated under the waste Bisposal	
EIA Ref.	EM&A Ref.	Mitigation Measures	Status
EIA Ref.	EM&A Ref.		Status
EIA Ref.	S.5.2.7 (Stage 1 only)	Mitigation Measures	Status

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

N/A	S.5.2.6	Based on the current available information, the tentative programmes of some	٨
	(Stage 2 only)	construction works for the Agreement No. CE 57/2011 (DS) Drainage Improvement	
		at Northern NT - Package A Drainage Improvement Works in San Tin (Remaining	
		Works) - Investigation (DIST) and the Construction of Cycle Tracks and the	
		associated Supporting Facilities at Nam Sang Wai, Yuen Long (NSWCT) projects	
		may overlap with Stage 2 cycle track construction works. It is recommended that the	
		Contractor should liaise with the project contractor(s) of the DIST and the NSWCT	
		projects to schedule the construction works and allow programme phrasing to avoid	
		major concurrent activities to be undertaken simultaneously in the vicinity.	

EIA Ref.	EM&A Ref.	Mitigation Measures	Status
<b>Construction V</b>	Waste Managemo	ent	
S.7.4.1	S.6.2.1 – S.6.2.4	An on-site environmental co-ordinator employed by the Contractor should be identified at the outset of the works. Prior to commencement of Project works, the co-ordinator shall prepare a WMP in accordance with the requirements set out in the ETWB TCW No. 19/2005, Waste Management on Construction Sites, for the ER's approval. The WMP shall include monthly and yearly Waste Flow Tables ("WFT") that indicate the amounts of waste generated, recycled and disposed of (including final disposal site), and which should be regularly updated;	^
S.7.4.1	S.6.2.6	Given the potential for secondary environmental impacts (dust, noise, water quality and visual impacts), mitigation measures are required to ensure proper handling, storage, transportation and disposal of materials at the outset and throughout the construction phase of the project	^

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S.7.4.1	S.6.2.6	• The reuse/ recycling of all materials on site shall be investigated and exhausted prior to treatment/ disposal off-site	^
S.7.4.1	S.6.2.6	<ul> <li>Good site practices shall be adopted from the commencement of works to avoid the generation of waste, reduce cross contamination of waste and to promote waste minimisation</li> </ul>	*
S.7.4.1	S.6.2.6	• All waste materials shall be sorted on-site into inert and non-inert C&D materials, and where the materials can be recycled or reused, they shall be further segregated. Inert material, or public fill will comprise stone, rock, masonry, brick, concrete and soil which is suitable for land reclamation and site formation whilst non-inert materials include all other wastes generated from the construction process such as plastic packaging and vegetation (from site clearance)	٨

EIA Ref.	EM&A Ref.	Mitigation Measures	Status
S.7.4.1	S.6.2.6	■ The Contractor shall be responsible for identifying what materials can be recycled/reused, whether on-site or off-site. In the event of the latter, the Contractor shall make arrangements for the collection of the recyclable materials. Any remaining non-inert waste shall be collected and disposed of to the Public Filling Areas whilst any inert C&D materials shall be re-used on site as far as possible. Alternatively, if no use of the inert material can be found onsite, the materials can be delivered to a Public Fill Area or Public Fill Bank after obtaining the appropriate licence	٨
S.7.4.1	S.6.2.6	• In order to monitor the disposal of C&D material and solid wastes at public filling facilities and landfills, and control fly-tipping, a trip-ticket system shall be implemented by the Contractor, in accordance with the contract and the requirements of DEVB Technical Circular (Works) No. 6/2010 "Trip Ticket System for Disposal of Construction and Demolition Material".	٨

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S.7.4.1 S.6.2.6	Contractor shall register as a Chemical Waste Producer if chemical wastes so as spent lubricants and paints are generated on site. Only licensed chemical waste collectors shall be employed to collect any chemical waste generated a site. The handling, storage, transportation and disposal of chemical wastes she conducted in accordance with the Code of Practice on the Packaging,	Contractor shall register as a Chemical Waste Producer if chemical wastes such as spent lubricants and paints are generated on site. Only licensed chemical waste collectors shall be employed to collect any chemical waste generated at site. The handling, storage, transportation and disposal of chemical wastes shall be conducted in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes and A Guide to the Chemical Waste	Producer if chemical wastes such site. Only licensed chemical my chemical waste generated at disposal of chemical wastes shall bractice on the Packaging,
EIA Ref.	EM&A Ref.	Mitigation Measures	Status
S.7.4.1	S.6.2.6	• A sufficient number of covered bins shall be provided on site for the containment of general refuse to prevent visual impacts and nuisance to the sensitive surroundings. These bins shall be cleared daily and the collected waste disposed of to the refuse transfer station. Further to the issue of ETWB Technical Circular (Works) No. 8/2010, Enhanced Specification for Site Cleanliness and Tidiness, the Contractor is required to maintain a clean and hygienic site throughout the project works;	*
S.7.4.1	S.6.2.6	<ul> <li>All chemical toilets, if any, shall be regularly cleaned and the night-soil collected and transported by a licensed contractor to a Government Sewage Treatment Works facility for disposal; and</li> </ul>	٨
S.7.4.1	S.6.2.6	• Toolbox talks should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling.	۸
S.7.4.1	S.6.2.6	<ul> <li>The Contractor shall comply with all relevant statutory requirements and guidelines and their updated versions that may be issued during the course of project construction.</li> </ul>	۸

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

EIA Ref.	EM&A Ref.	Mitigation Measures	Status
Land Contami	ination		
S.8.7.2 – S.8.7.3	S.7.2.2	Preparation of Contamination Assessment Plan (CAP), which should be submitted to EPD for endorsement, prior to investigation.  Site investigation and sampling works in accordance with the approved CAP. If contamination is identified, Contamination Assessment Report (CAR) and	٨
S.8.7.5	S.7.3.1	Remediation Action Plan (RAP) shall be prepared and submitted for EPD's approval.  The following control measures should be implemented when handling identified contaminated materials:  General site safety shall be enforced to include basic practices such as the use of safety boots, hard hats, coveralls, gloves and eye protection;  Avoid skin contact, ingestion and inhalation of excavated contaminated soils.  Basic personal protective equipment should be used;  Site staff and workers shall be given adequate training and instructions specific to the potential hazards, their health and safety responsibilities and safe working practice including basic personal hygiene;  Measures shall be implemented to prevent non-workers from approaching the identified works areas in order to avoid exposure to contaminants.	N/A

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S.8.7.5	S.7.3.1	<ul> <li>Management of Contaminated Soils</li> <li>Where appropriate, the use of bulk handling equipment should be maximised to reduce the potential contacts between excavated contaminated materials and associated workers;</li> <li>The plants for excavation and transportation of the material shall be cleaned prior to leaving the Site;</li> <li>All temporary stockpiles of the materials shall be completely covered with plastic/ tarpaulin sheets, particularly during heavy rainstorms. The stockpiling areas should be concrete-paved or lined with its perimeter constructed of a concrete bund</li> </ul>	N/A
EIA Ref.	EM&A Ref.	Mitigation Measures	Status
		where appropriate in order to avoid any leachate from migrating out of the area;  Any vehicles transporting the material shall be suitably covered to limit potential dust emissions;  Surface waters shall be diverted around any contaminated areas or stockpiles to minimize potential runoff into excavations, as runoff might increase the volume of contaminated water requiring disposal and suspended solids in the wastewater stream	

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

EIA Ref.	EM&A Ref.	Mitigation Measures	Status
Ecological & I	Fisheries Impact		
S.9.11.4	S.8.2.2	Prior to tree felling, survey inspections should be made for their suitability for roosting bats. Once these trees have been highlighted, then appropriate checks of each tree for bats should be made prior to removal as a precautionary measure.	۸
S.9.11.7	S.8.2.3 (Stage 1 only)	In situ compensation planting at the Information Kiosk and R9 should occur to provide continuing function of the bamboo and plantation (see Figure 8-1 of EM&A Manual for Stage 1 Works (Year 2015)). It is recommended that the Information Kiosk and Resting Station R9 should be designed sympathetically to the natural surroundings. Compensation planting along the Sheung Yue River and Shek Sheung River including at R9 and Information Kiosk could be implemented as appropriate.	N/A
S.9.11.17 – S.9.11.19	S.8.2.4 (Stage 1) S.8.2.3 (Stage 2)	For the Kam Tin section and the Long Valley section of the Project, construction works shall not be carried out during the wet season (April to October) which is considered to have no significant impact to wildlife and to avoid the breeding season of Greater Painted-snipes at Long Valley. This is also to prevent any site run-off to adjacent water channels and fishponds including those fishponds along San Tin Tsuen Road.	^
S.9.11.23	S.8.2.4 (Stage 2 only)	Construction of the section in the vicinity of Mai Po Village SSSI shall be undertaken beyond the recognised breeding seasons for ardeids in Hong Kong to prevent any potential disturbance to the nesting birds, i.e., from September to February.	۸
-	S.8.2.5 (Stage 1 only)	In order to avoid any adverse impact to the healthiness of the bamboo groove from dust-coating on leave next to the R9 and hence affect the breeding habitat of the very rare Dark Brown Ace, a dust barrier should be installed between the bamboo and the construct site.	N/A

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

EIA Ref.	EM&A Ref.	Mitigation Measures	Status
-	S.8.2.6 (Stage 1 only)	For the lower Shek Sheung River, construction works should be scheduled in dry season to minimize the disturbance to the foraging ardeids and the Quiet PME shall be implemented practicable to minimize the noise disturbance to the foraging ardeids.	٨
S.10.5.4	S.8.2.7 (Stage 1) S.8.2.5 (Stage 2)	To prevent any negative impact to water quality as a result of site run-off, good site practice must be employed at all times, particularly in the areas close to fishponds. Practice Note for Professional Persons ProPECC PN1/94 – Construction Site Drainage shall be implemented.	۸
S.10.5.4	S.8.2.8 (Stage 1) S.8.2.6 (Stage 2)	Along Pok Wai South Road, once the final construction sequencing is known, liaison with local residents and aquaculturists should be implemented in order to minimise temporary road blockages and to identify the best timing for works along this area.	N/A
S.10.5.3	S.8.2.9 (Stage 1) S.8.2.7 (Stage 2)	During wet seasons, surface run-off from the construction sites will need to be directed into storm drains via adequately designed wastewater treatment facilities such as sand traps, silt traps, oil interceptors and sediment settling basins. Works adjacent to the fishponds near NTMDC inside the Wetland Conservation Area (WCA) and Mai Po San Tsuen should be avoided, as far as practicable, during the wet season to avoid runoff into the fishponds.	٨
-	S.8.2.10 (Stage 1 only)	The use of signage at the Resting Stations to indicate that wildlife may be present and that noise levels and activities should be kept to a minimum could be implemented. This may help to reduce any potential disturbance to wildlife from human activity. At Long Valley, to mitigate against potential indirect human disturbance to Greater Painted-snipe, planting could be undertaken as appropriate along the proposed cycle track at meander 8 to act as screening.	N/A
EIA Ref.	EM&A Ref.	Mitigation Measures	Status

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S.9.11.27	S.8.2.11	The following good work practices are recommended: • Avoid	٨
	(Stage 1)	soil storage against trees;	
	S.8.2.9	■ Fence off any potentially ecologically sensitive areas;	
	(Stage 2)	■ Delineation of works area to prevent encroachment onto adjacent habitats; ■	
		Reinstatement of habitat after works;	
		■ No on-site burning of waste; Waste and refuse in appropriate receptacles;	
		■ Staff training/toolbox talks for site work near Long Valley and WCA – important	
		areas for birds therefore staff should reduce amount of noise whilst working and	
		during breaks where possible; • Regular ecological checks; and	
		■ Silt/ Sediment/ Oil traps for drainage to prevent site run-off	

EIA Ref.	EM&A Ref.	Mitigation Measures	Status	
Cultural Heritage Impact				
S.11.5.1	S.9.2.1	Care should be taken during the construction stage to report any signs of possible discovery of artefacts.	N/A	
Landscape an	d Visual			
Detailed Desig	n Phase			
desi revi tree		A detailed tree survey to be carried out by the IDC Consultant during the detailed design stage. The recommendations of the preliminary tree survey shall be reviewed and confirmed during the detailed survey. Should tree felling be required, tree felling application is required in accordance with DEVB Technical Circular (Works) No. 10/2013 Tree Preservation	٨	

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

S.12.9.3	CP6	It has been agreed that the proposed landscape areas under DSD's 4215DS project which falls within the cycle track works area will be implemented by Project proponent of this Project in form of roadside amenity areas after completion of the cycle track. During the detailed design, the works programme of this Project shall be coordinated with the above-mentioned DSD project in order to avoid abortive planting works and impact on landscape resources between the interface of different public works. The proposed landscape areas under 4215DS falled within the cycle track works area shall be incorporated in the final landscape design of this Project.	^
S.12.10.1	OP1	The Design Concept Drawings and Conceptual Landscape Master Plan of cycle track and associated facilities demonstrate landscape and visual mitigation strategies and design measures including integrated design approach, amenity and compensatory planting proposals and treatment of retaining structure and slopes have been recommended in the EIA. More detailed landscape and compensatory planting proposals shall be developed by IDC consultants at later stage during detailed design and construction phase of this project following the completion of the detailed Tree	^

EIA Ref.	EM&A Ref.	Mitigation Measures	Status
		Survey Report and approval from relevant departments at that stage	
Construction Ph	Construction Phase		
Table 12-11 CP1.1 To retain trees, which have high amenity or ecology value and contribute management landscape and visual amenity of the site and its immediate environs.		To retain trees, which have high amenity or ecology value and contribute most to the landscape and visual amenity of the site and its immediate environs.	٨
	CP1.2	Creation of precautionary area around trees to be retained equal to half of the trees canopy diameter. Precautionary area to be fenced.	#

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

C		Prohibition of the storage of materials including fuel, the movement of construction vehicles, and the refuelling and washing of equipment including concrete mixers within the precautionary area.	۸
С		Phased segmental root pruning for trees to be retained and transplanted over a suitable period (determined by species and size) prior to lifting or site formation works which affect the existing rootball of trees identified for retention. The extent of the pruning will be based on the size and the species of the tree in each case.	^
C		Pruning of the branches of existing trees identified for transplantation and retention to be based on the principle of crown thinning maintaining their form and amenity value.	۸
C	CP1.6	The watering of existing vegetation particularly during periods of excavation when the water table beneath the existing vegetation is lowered.	۸
С		The rectification and repair of damaged vegetation following the construction phase to its original condition prior to the commencement of the works or replacement using specimens of the same species, size and form where appropriate to the design intention of the area affected.	N/A

EIA Ref.	EM&A Ref.	Mitigation Measures	
	CP1.8	All works affecting the trees identified for retention and transplantation will be carefully monitored. This includes the key stages in the preparation of the trees, the implementation of protection measures and health monitoring throughout the construction period.	٨
	CP1.9	Detailed landscape and tree preservation proposals will be submitted to the relevant government departments for approval under the lease conditions and in accordance with ETWB TCW No. 2/2004 and WB Technical Circular No. 14/2002.	N/A

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

CP2.0		The tree preservation works should be implemented by approved Landscape Contractors and inspected and approved on site by a qualified Landscape Architect. A tree protection specification would be included within the contract documents.	٨
CP2.1		Topsoil disturbed during the construction phase should be tested using a standard soil testing methodology and where it is found to be worthy of retention stored for re-use.	۸
	CP2.2	The soil will be stockpiled to a maximum height of 2m and will be either temporarily vegetated with hydroseeded grass during construction or covered with a waterproof covering to prevent erosion.	۸
	CP2.3	The stockpile should be turned over on a regular basis to avoid acidification and the degradation of the organic material, and reused after completion. Alternatively, if this is not practicable, it should be considered for use elsewhere, including other projects.	٨
	CP3.1	Where appropriate to the final design the landscape of these works areas should be restored following the completion of the construction phase.	N/A
	CP3.2	Construction site controls should be enforced including the storage of materials, the location and appearance of site accommodation and the careful design of site lighting to prevent light spillage.	۸
EIA Ref.	EM&A Ref.	Mitigation Measures	Status
	CP3.3	Screen the works area during the construction phase through the use of decorative hoarding along the site boundary facing adjacent VSRs	٨
	CP4.1	Replanting of disturbed vegetation should be undertaken at the earliest possible stage of the construction phase	٨
	CP4.2	Use of native plant species predominantly in the planting design for the buffer areas.	٨

Appendix E - Summary of Implementation Schedule of Mitigation Measures for Construction Phase

CP4.3	The tree planting works should be implemented by approved Landscape Contractors and inspected and approved on site by a qualified Landscape Architect. A tree planting specification would be included within the contract documents	۸
CP5.1	The tree transplanting works should be implemented by approved Landscape Contractors and inspected and approved on site by a qualified Landscape Architect. A tree protection / transplanting specification would be included within the contract documents.	۸
CP5.2	The implementation program should reserve enough time for advance tree transplanting preparation.	٨

Remarks:		Stage 1 Works under EP-450/2013/A (App No.: VEP-478/2015) EM&A Works under EP-501/2015 (App No.: AEP-501/2015)		
	^ Compliance of mitigation measure;	X Non-compliance of mitigation measure;		
	N/A Not Applicable at this stage; N/A(1) Not observed;	Non-compliance but rectified by the contractor;		
	* Recommendation was made during site audit but improved/rectified by the contractor.	# Recommendation was made during site audit but not yet improved/rectified by the contractor.		

#### APPENDIX F SITE AUDIT SUMMARY

# Appendix F Summary of Observation and Recommendation Made during Site Inspection Summary of Observations and Recommendations Made during Site Inspections from February to April 2019

Parameters	Date	Observations and Recommendations	Follow-up
	8, 16, 22, 30 Jan 2019	At Portion E, the wheel washing facility should be cleaned up.	The condition was observed to be improved/rectified by the contractor during the audit session on 4 Feb 2019.
	16, 22, 30 Jan 2019	At Portion B, water should pass through sedimentation tank prior to discharge.	The condition was observed to be improved/rectified by the contractor during the audit session on 4 Feb 2019.
	4, 14 Feb 2019	At Portion N, the catchpit should be covered.	The condition was observed to be improved/rectified by the contractor during the audit session on 20 Feb 2019.
	6 Mar 2019	Sediment control measures should be inspected and maintained after rain storms at Portion D. Accumulation of rain water should be avoided.	The condition was observed to be improved/rectified by the contractor during the audit session on 14 Mar 2019.
Water Quality	20, 27 Feb, 6 Mar 2019	At Portion D, Standing water should be avoided.	The condition was observed to be improved/rectified by the contractor during the audit session on 14 Mar 2019.
	20, 27 Mar 2019	Standing water should be avoided at Portion D. Water pump should be switched on during operation hour.	The condition was observed to be improved/rectified by the contractor during the audit session on 3 Apr 2019.
	20 Mar – 24 Apr 2019	At Portion D, u-channel should be kept clean to ensure water flow direction.	The condition was observed to be improved/rectified by the contractor during the audit session on 30 Apr 2019.
	11 Apr 2019	Stand water should be avoided and pump out discharged via sediment tanks at Portion F.	The condition was observed to be improved/rectified by the contractor during the audit session on 17 Apr 2019.
	17, 24, 30 Apr 2019	Standing Water should be pumped out discharged via sediment tanks at Portion J.	Follow up actions will be reported in the next month.
	24 Apr 2019	Stand water should be avoided at Portion D.	The condition was observed to be improved/rectified by the contractor during the audit session on 30 Apr 2019.

Parameters	Date	Observations and Recommendations	Follow-up
	24, 30 Apr 2019	Stand water should be avoided at Portion F.	Follow up actions will be reported in the next month.
	30 Apr 2019	Sediment control measures should be inspected and maintained after rain storms at Portion J. Sandbags should be implemented to prevent muddy water from entering public drain.	Follow up actions will be reported in the next month.
	30 Apr 2019	Stand water should be avoided at Portion D.	Follow up actions will be reported in the next month.
	16 Jan - 20 Feb 2019	At Subway A, public road should be cleaned. Mitigation measures such as watering should be implemented.	The condition was observed to be improved/rectified by the contractor during the audit session on 27 Feb 2019.
	4,14 Feb 2019	At Portion B, the pedestrian public road should be cleaned.	The condition was observed to be improved/rectified by the contractor during the audit session on 20 Feb 2019.
	22 Jan – 6 Mar 2019	At Portion J, mitigation measure for dust suppressing (e.g. watering) should be implemented at entrance area. Water should be collected and passed through sedimentation tank before discharge.	The condition was observed to be improved/rectified by the contractor during the audit session on 14 Mar 2019.
Air Quality	30 Jan – 27 Feb 2019	At Portion M, the stockpile should be covered by impervious materials or maintained wet.	The condition was observed to be improved/rectified by the contractor during the audit session on 6 Mar 2019.
2	22 Jan – 27 Mar 2019	At Portion A, mitigation measure for dust suppressing (e.g. watering) should be implemented at exposed area and public road.	The condition was observed to be improved/rectified by the contractor during the audit session on 3 Apr 2019.
	14, 20, 27 Mar 2019	The haul road should be watered regularly at Potion M.	The condition was observed to be improved/rectified by the contractor during the audit session on 3 Apr 2019.
	27 Mar - 30 Apr 2019	The haul road should be watered regularly to avoid dust generation at Subway A.	Follow up actions will be reported in the next month.
	27 Mar 2019	The excavated dusty materials or stockpile of dusty materials should covered by impervious materials at Portion B.	The condition was observed to be improved/rectified by the contractor during the audit session on 3 Apr 2019.
	3, 11, 17 Apr 2019	The haul road should be kept clean at Portion B.	The condition was observed to be improved/rectified by the

Parameters	Date	Observations and Recommendations	Follow-up
			contractor during the audit session on 24 Apr 2019.
	11 Apr 2019	Unpaved areas should be watered regularly to avoid dust generation at Portion F.	The condition was observed to be improved/rectified by the contractor during the audit session on 17 Apr 2019.
	11, 17, 24 Apr 2019	The haul roads should be watered regularly to avoid dust generation at Portion B.	The condition was observed to be improved/rectified by the contractor during the audit session on 30 Apr 2019.
	17, 24, 30 Apr 2019	The excavated dusty materials or stockpile of dusty materials should covered by impervious materials at Portion B.	Follow up actions will be reported in the next month.
	17 Apr 2019	The site vehicles wheels should be washed at the site exits at Portion D.	The condition was observed to be improved/rectified by the contractor during the audit session on 24 Apr 2019.
	24 Apr 2019	The public road around the site entrance should be kept clean at Portion F.	The condition was observed to be improved/rectified by the contractor during the audit session on 30 Apr 2019.
Noise	N/A	There was no observation in the reporting period.	N/A
	2, 8, 16, 22, 30 Jan 2019	At Subway A, rubbish should be removed and site should be kept clean.	The condition was observed to be improved/rectified by the contractor during the audit session on 4 Feb 2019.
	22, 30 Jan ,4 Feb 2019	At Portion D, public drainage should be kept clean and free of oil.	The condition was observed to be improved/rectified by the contractor during the audit session on 14 Feb 2019.
	30 Jan, 4,14 Feb 2019	At Portion B, rubbish pile should be removed.	The condition was observed to be improved/rectified by the contractor during the audit session on 20 Feb 2019.
	30 Jan, 4 Feb 2019	At Portion D, the side channel should be cleaned regularly to avoid site run-off from entering the drainage system.	The condition was observed to be improved/rectified by the contractor during the audit session on 14 Feb 2019.
	4, 14, 20 Feb 2019	At Portion D, accumulation of rubbish should be avoided.	The condition was observed to be improved/rectified by the

Parameters	Date	Observations and Recommendations	Follow-up
			contractor during the audit session on 27 Feb 2019.
	4, 14, 20 Feb 2019	At Portion N, piles of rubbish should be removed.	The condition was observed to be improved/rectified by the contractor during the audit session on 27 Feb 2019.
Waste/ Chemical	6, 14 Mar 2019	Rubbish pile and construction waste should be removed at Subway A.	The condition was observed to be improved/rectified by the contractor during the audit session on 20 Mar 2019.
Management	14 Feb – 14 Mar 2019	Rubbish pile under the bridge E should be removed at Portion M.	The condition was observed to be improved/rectified by the contractor during the audit session on 20 Mar 2019.
	26 Jul 2018 – 30 Apr 2019	Clear the oil stains as chemical waste at WA3.	Follow up actions will be reported in the next month.
	20, 27 Mar 2019	Contractor is reminded to store chemicals properly at Subway A and Portion B, e.g. provide drip tray and label containers.	The condition was observed to be improved/rectified by the contractor during the audit session on 3 Apr 2019.
	20, 27 Mar 2019	Contractor is reminded to store chemicals properly at Portion D, e.g. provide drip tray and label containers.	The condition was observed to be improved/rectified by the contractor during the audit session on 3 Apr 2019.
	3 Apr 2019	The construction waste should be reused where practicable or disposed at Portion B.	The condition was observed to be improved/rectified by the contractor during the audit session on 11 Apr 2019.
	3, 11, 17 Apr 2019	The accumulation of general refuse should be avoided at Portion F.	The condition was observed to be improved/rectified by the contractor during the audit session on 24 Apr 2019.
Ecology and Fisheries	N/A	There was no observation in the reporting period.	N/A
Landscape and Visual	5 Dec 2018 - 30 Jan 2019	A proper tree protection zone should be provided for the retained trees for preservation at Portion D and Subway D.	The condition was observed to be improved/rectified by the contractor during the audit session on 4 Feb 2019.

Parameters	Date	Observations and Recommendations	Follow-up	
	26 Jul 2018 – 30 Apr 2019	To set up a proper tree protection zone at WA3.	Follow up actions will be reported in the next month.	
	6 Mar – 17 Apr 2019	Existing trees should be protected and maintained carefully and set up a proper tree protection zone at Subway A.	The condition was observed to be improved/rectified by the contractor during the audit session on 24 Apr 2019.	
Permits/ Licenses	N/A	There was no observation in the reporting period.	N/A	

APPENDIX G MONTHLY SUMMARY WASTE FLOW TABLE

#### Sang Hing – Kuly Joint Venture Environmental Management Plan for Contract No. YL/2015/01 Cycle Tracks from Tuen Mun to Sheung Shui – Remaining Works

Name of Department: CEDD Contract No.: YL/2015/01

- -

#### Monthly Summary Waste Flow Table for <u>2016</u> (Year)

				y Samma,	,	10 11 1 11 11	2 101 201	(1 car)				
	A	ctual Quantities	of Inert C&D	Materials Gene	erated Monthl	у	Actual Quantities of C&D Wastes Generated Monthly					
Month	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill*	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse	
	(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 '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )	
Jan	-	-	-	-	-	-	-	-	-	-	-	
Feb	-	-	-	-	-	-	-	-	-	-	-	
Mar	-	-	-	-	-	-	-	-	-	-	-	
Apr	-	-	-	-	-	-	-	-	-	-	-	
May	-	-	-	1	-	-	-	-	-	-	1	
June	-	-	1	1	1	-	-	ı	1	ı	1	
July	-	-	ı	1	ı	-	0.01	0.01	0.01	ı	0.01	
Aug	-	-	-	1	-	-	0.01	0.01	0.01	ı	0.01	
Sept	0.005	-	-	-	0.005	-	0.01	0.01	0.01	ı	0.06	
Oct	-	-	ı	1	ı	-	0.05	0.05	0.05	ı	0.04	
Nov	0.35	-	-	-	0.35	-	0.05	0.05	0.05	-	0.05	
Dec	0.4	_	-	-	0.4	-	0.05	0.05	0.05	-	0.05	
Total	0.755	-	-	-	0.755	-	0.18	0.18	0.18	-	0.22	

<sup>\*</sup>Remark: Imported Fill not taken into account of Total Quantity Generated

Name of Department: CEDD Contract No.: YL/2015/01

#### Monthly Summary Waste Flow Table for <u>2017</u> (Year)

				y Summer,	)	10 II IUDI	7101	(1001)			
	A	ctual Quantities	of Inert C&D	Materials Gene	erated Monthl	у	Actu	al Quantities o	f C&D Wastes	Generated Mo	onthly
Month	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill*	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	$(in '000m^3)$	$(in '000m^3)$	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
Jan	0.04	-	-	-	0.04	0.124	0.05	0.05	0.05	-	0.06
Feb	0.02	-	-	-	0.02	-	0.05	0.05	0.05	-	0.01
Mar	1.15	-	-	-	1.15	0.369	0.05	0.05	0.05	-	0.02
Apr	0.65	-	-	-	0.65	-	0.05	0.05	0.05	-	0.02
May	0.79	-	1	-	0.79	1	0.05	0.05	0.05	1	0.01
June	1.63	-	ı	1	1.63	1	0.05	0.05	0.05	1	0.02
July	1.25	-	1	1	1.25	1	0.05	0.05	0.05		0.01
Aug	1.49				1.49	1	0.05	0.05	0.05	1	0.01
Sep	1.15	-	ı	1	1.14	0.493	0.05	0.05	0.05	1	0.01
Oct	1.19	-	ı	1	1.19	1	0.05	0.05	0.05	1	0.01
Nov	0.79	-	ı	-	0.76	-	0.05	0.05	0.05	-	0.03
Dec	3.09	-	-	-	3.07	-	0.05	0.05	0.05	-	0.01
Total	13.24				13.18	0.986	0.6	0.6	0.6		0.22

<sup>\*</sup>Remark: Imported Fill not taken into account of Total Quantity Generated

Name of Department: CEDD Contract No.: YL/2015/01

# Monthly Summary Waste Flow Table for <u>2018</u> (Year)

	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of C&D Wastes Generated Monthly					
Month	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill*	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse		
	(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 '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )		
Jan	4.37	-	-	-	4.36	-	0.05	0.05	0.05	-	0.01		
Feb	1.66	-	-	-	1.64	-	0.05	0.05	0.05	-	0.01		
Mar	1.85	-	-	-	1.82	-	0.05	0.05	0.05	-	0.01		
Apr	3.35	-	-	-	3.31	-	0.05	0.05	0.05	-	0.01		
May	0.84	-	-	-	0.82	-	0.01	0.01	0.01	_	0.01		
June	0.04	-	-	-	-	-	0.01	0.01	0.01	-	0.04		
July	2.75	-	-	-	2.72	-	0.01	0.01	0.01	_	0.03		
Aug	1.34	-	-	-	1.32	-	0.01	0.01	0.01	_	0.02		
Sept	0.69	-	-	-	0.68	-	0.01	0.01	0.01	-	0.01		
Oct	2.99	-	-	-	2.97	-	0.01	0.01	0.01	-	0.01		
Nov	4.62	-	-	-	4.61	-	0.01	0.01	0.01	-	0.01		
Dec	6.49	-	-	-	6.45	-	0.01	0.01	0.01	_	0.05		
Total	30.99	-	-	-	30.70	-	0.28	0.28	0.28	-	0.22		
•		•	•	•	•	•	•	•	•	•	•		
		•	•	•	•	•	•	•	•	•			
Total	44.985	-	-	-	44.635	0.986	1.06	1.06	1.06	-	0.66		

<sup>\*</sup>Remark: Imported Fill not taken into account of Total Quantity Generated

Name of Department: CEDD Contract No.: YL/2015/01

#### Monthly Summary Waste Flow Table for <u>2019</u> (Year)

	A	ctual Quantities	of Inert C&D	Materials Gene	Actual Quantities of C&D Wastes Generated Monthly						
Month	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill*	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	$(in '000m^3)$	(in '000m <sup>3</sup> )	$(in '000m^3)$	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
Jan	1.13	-	-	-	1.08	-	0.05	0.05	0.05	-	0.05
Feb	0.04	-	-	-	-	-	0.05	0.05	0.05	-	0.04
Mar	0.06	-	-	-	-	-	0.05	0.05	0.05	-	0.06
Apr	0.05	-	-	-	0.03	-	0.05	0.05	0.05	-	0.02
Sub-total	1.28	-	-	-	1.11	-	0.20	0.20	0.20	-	0.17
May	_	-	-	-	-	-	-	-	-	-	-
June	_	-	-	-	-	-	-	-	-	-	-
July	_	-	-	-	-	-	-	-	-	-	-
Aug	_	-	-	-	-	-	-	-	-	-	-
Sept	_	-	-	-	-	-	-	-	-	-	-
Oct	_	-	-	-	-	-	-	-	-	-	-
Nov	_	-	-	-	-	-	-	-	-	-	-
Dec	_	-	-	-	-	-	-	-	-	-	-
		•	•	•	•	•	•	•	•		•
		•	•	•						•	
Total	46.265	-	-	-	45.745	0.986	1.26	1.26	1.26	-	0.83

<sup>\*</sup>Remark: Imported Fill not taken into account of Total Quantity Generated

#### Sang Hing – Kuly Joint Venture Environmental Management Plan for Contract No. YL/2015/01 Cycle Tracks from Tuen Mun to Sheung Shui – Remaining Works

	Forecast of Total Quantities of C&D Materials to be Generated from the Contract*											
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse		
(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	$(in '000m^3)$	$(in '000m^3)$	$(in '000m^3)$	(in '000m <sup>3</sup> )	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )		
5	2	1	1	1	10	3	3	1	1	3		

\*Remark: Figure to be revised if necessary

#### Notes:

- (1) The performance targets are given in ETWB Technical Circular PS Clause 6(14).
- (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material
- The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 m3. (ETWB Technical Circular PS Clause 5(4)(b) refers). [Delete Note (4) and the table above on the forecast, where inapplicable].

#### APPENDIX H SUMMARY OF EXCEEDANCES

Agreement No. CE 67/2015 (HY)

Cycle Tracks from Tuen Mun to Sheung Shui – Remaining Works – Design and Construction

#### Appendix H - Summary of Exceedance

Exceedance Report for Contract No. YL/2015/01 – Cycle Tracks from Tuen Mun to Sheung Shui – Remaining Works

(A) Exceedance Report for Construction Noise (NIL in the reporting period)

ANNEX I COMPARISONS OF EM&A DATA AND EIA PREDICTIONS

# Annex I – Comparison of EM&A Data and EIA Predictions

#### **Comparison of Noise Monitoring Data with EIA predictions**

Stations	Predicted Mitigated Construction Noise Levels in EIA (2009), dB(A)	Predicted Mitigated Worst Case Construction Noise Levels in ERR for Stage 2 (2015), dB(A)	Reporting Month (February 19), Leq (30min) dB(A)	Reporting Month (March 19), Leq (30min) dB(A)	Reporting  Month (April 19), Leq (30min) dB(A)
N1 - HKMLC Wong Chan Sook Ying Memorial School	55-62	62 <sup>(1)</sup>	59.3 - 61.8	50.7 – 62.1	60.4 – 62.1
N2 – Bethel High School	57-64	64 <sup>(1)</sup>	45.0 - 54.9	48.8 - 60.9	45.0 – 54.5
N3 – No. 159 Mai Po San Tsuen	70-73	74 <sup>(2)</sup>	65.3 – 70.3	65.3 – 71.2	64.6 – 70.3
N5 – Block 2, Dills Corner Garden	73-75	75 <sup>(2)</sup>	62.4 – 70.7	63.8 – 70.3	68.1 – 70.5
N6 – Home of Loving Faithfulness	64-73	74 <sup>(1)</sup>	55.7 – 68.4	65.9 – 72.0	65.6 – 71.6
N7 – Village House in Shek Wu Wai	N/A <sup>(3)</sup>	70 <sup>(2)</sup>	64.8 – 69.4	67.8 – 70.3	63.1 – 70.5

#### Remark:

- (1) With adoptions of quiet PMEs, temporary noise barrier and enclosure
- (2) With sub-grouping of construction activities
- (3) No construction noise level was predicted in EIA Report (2009)