



FAX MESSAGE

Priority normal / urgent

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Attn.	<u>Mr. Y. W. Fung</u>	Date	<u>12 April 2018</u>
From	<u>Colin Yung</u>	No. of Pages	<u>1</u> (Incl. this page)
C.c. To	<u>Mr. Vincent Kwan</u> <u>(AECOM Consulting Services Limited)</u>	Email	<u>vincent.kwan@aecom.com</u>
Subject	Agreement No. CE 22/2006 (HY) Cycle Tracks Connecting North West New Territories with North East New Territories – Investigation, Design and Construction Contract No. YL/2013/01 (Cycle Tracks from Tuen Mun to Sheung Shui - Stage 1) – Final Environmental Monitoring & Audit Report		

We refer to the Final EM&A Report Rev. 0 received through e-mail on 23 March 2018.

We have no further comment and are pleased to verify the captioned submission is in accordance with Condition 3.5 of the EP-450/2013 and Section 12.6 of the EM&A Manual (Register No. AEIAR-133/2009).

Should you require further information, please do not hesitate to contact Mr. Pak Hin Chung at 3565 4485 or the undersigned at 3565 4114.

Best Regards,

Colin Yung
Independent Environmental Checker

CY/PC/cn

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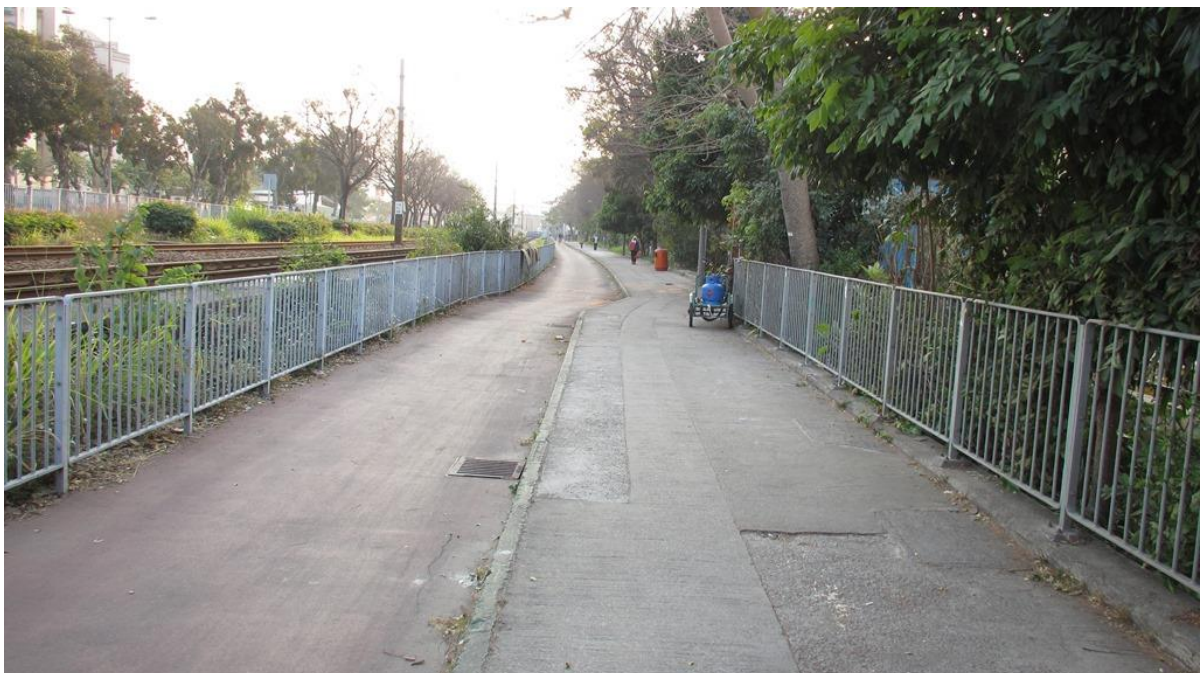
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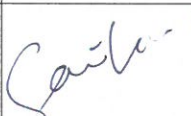
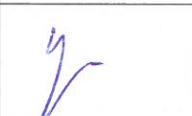

Contract No. YL/2013/01

Cycle Tracks from Tuen Mun to Sheung Shui- Stage 1

Final EM&A Summary Report

(Designated Project Works Area)



REVISION SCHEDULE					
Rev	Date	Details	Prepared by	Reviewed by	Approved by
0	23 Mar 2018	Final EM&A Summary Report	Sammi Lam	YW Fung	YT Tang
Signature					

REVISION RECORD					
Rev	Date	Details	Prepared by	Reviewed by	Approved by
0	23 Mar 2018	Final EM&A Summary Report	Sammi Lam	YW Fung	YT Tang

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ABBREVIATION

CEDD	Civil Engineering and Development Department
C&D	Construction & Demolition
CNP	Construction Noise Permit
EM&A	Environmental Monitoring and Audit
EMP	Environmental Management Plan
EPD	Environmental Protection Department
ET	Environmental Team
IEC	Independent Environmental Checker
NSR	Noise Sensitive Receiver
NT	New Territories
PME	Powered Mechanical Equipment
RE	Resident Engineer
TTS#	Trip-ticket System

EXECUTIVE SUMMARY

The Environmental Team (ET) of AECOM Consulting Services Limited (former URS Hong Kong Ltd) is appointed by Civil Engineering and Development Department to undertake the Environmental Monitoring and Audit (EM&A) programme for the Contract No. YL/2013/01 entitled “Cycle Tracks from Tuen Mun to Sheung Shui” (the Project). The Project is regulated under the Environmental Permit no. EP-450/2013 (EP).

This Final EM&A Summary Report contains the results and findings of site inspection activities and EM&A works carried out by the Works Contractor as required in the contract from 15 April 2014 to 31 August 2017.

Construction Progress

The construction works of the Project was commenced in 28 April 2014. The major construction works in the reporting period were listed below:

- Additional works
- Backfilling of retaining walls
- Concrete works
- Construction of cycle tracks
- Construction of drainage
- Construction of fill slope
- Construction of footpath
- Construction of resting station
- Construction of retaining walls (concreting, formworks, steelworks)
- Defect rectification works
- Excavation works
- Installation of bicycle parapet
- Installation of traffic aids/ colour dressing
- Painting colour dressing and road marking
- Site clearance works
- Stream decking and cycle tracks
- Tree felling and transplantation

Environmental Issues

Several environmental issues have been identified by the ET during reporting period as listed below:

Aspect	Observations
Water Pollution	<ul style="list-style-type: none">• C&D materials shall be kept away from silt traps & drainages and shall be removed once has been found• Chemical toilet should be provided• Desilting measures no longer effective• Drainage was blocked and stagnant water was accumulated• Exposed stockpile & dusty materials in storage near the river are not well enclosed

	<ul style="list-style-type: none"> • Ineffective diversion works of discharge water • Muddy water accumulated was found on site • No Heavy Rainstorm response procedure displayed • Not enough sand bags • Not enough silt traps • Rainwater has been trapped in excavated pit and side of road • Silt traps and Drainages were not cleared • Site runoff has been trapped in excavated well • Site runoff/ waste water were not discharged through sedimentation tanks or silt traps • Stockpiles and dust spread outside the site • Construction materials, waste, general refuse and fallen leaves were found at the U-shaped channel and was not disposed of regularly • Materials stored near river and could be tipped off or blow away easily
Air Pollution	<ul style="list-style-type: none"> • Exposed stockpile and dusty material in storage were not wetted or covered by tarpaulin properly • Haul Road is not paved or keep wet. • Muddy vehicle wheel tracks were found at the entrance and the public road of the site • Non-Road Mobile Machinery (NRMM) without proper label was observed • Site should be sprayed with water to minimize dust condition during dry weather • Wheel washing bay was not provided at site
Noise Pollution	<ul style="list-style-type: none"> • Breaker tip without wrapping was observed • No Noise baffles/ screens was provided to noisy machines
Waste Management	<ul style="list-style-type: none"> • Broken tree branches were found on the site • C&D materials were not stored in designated area properly • Chemical leakage from hydraulic excavator, generator and other machines • Chemicals were not properly stored and labeled • Drip tray was not provided for temporary chemical storage and generator • Empty chemical container disposed of at U-shaped channel • Empty chemical containers pending collection are not stored properly • Excessive accumulation of general waste • Materials were disposed of over the site • No Recycle bins and Rubbish bins • No Emergency spillage procedure displayed • Oil stain were observed on ground • Oil spill from excavator generator was not cleaned up • Wastes were not disposed of regularly

General	<ul style="list-style-type: none"> • Accumulated rubbish was observed in bamboo grove • Existing bamboo grove is not well protected • Existing trees protection were not maintained • Construction materials, waste, chemical containers, cement bags and plants were not kept away from existing trees & vegetation • No copy of EP and Environmental Posters/ Notices • Poor housekeeping was observed on site • Stagnant water accumulated near drains • Transplanted trees were leaning over and withered
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Environmental Monitoring and Audit Progress

According to the “Construction of Cycle tracks and the Associated Supporting Facilities from Sha Po Tsuen to Shek Sheung River Stage 1 Environmental Review EM&A Manual (2013) (EM&A Manual 2013), no air, water and noise monitoring is required.

As no noise monitoring was specified from the EM&A Manual 2013, setting up of Action / Limit Levels is not required.

According to the weekly site inspections carried out in the reporting period, it indicated that the Contractor has implemented mitigation measures to address the environmental problems. The measures taken by the Contractor were considered as adequate and effective to minimize negative impact to the environment.

Environmental Complaints, Notices, Summons and Remedial Action

One (1) environmental complaint, no notification of summons and prosecutions with respect to environmental issues were received in the reporting period.

1. BASIC PROJECT INFORMATION

1.1. Introduction

1.1.1. AECOM Consulting Services Limited (former URS Hong Kong Ltd) has been commissioned by CEDD as ET for the construction works of 'Contract No. YL/2013/01 Cycle Track from Tuen Mun to Sheung Shui – Stage 1' (the Project). The Project commenced in November 2013 and is scheduled for completion by the end of 2017. The construction works of the Project was commenced in 28 April 2014.

1.1.2. The site layout plans and the construction programme are shown in **Appendix 1** and **Appendix 2** respectively.

1.1.3. The Project comprises the following primary works elements:

- Construction of a new cycle track (with footpath) section from near Yuen Long Sha Po Tsuen connecting to the end of the existing cycle track, along Castle Peak Road – Tam Mi Section and along Pok Wai South Road (namely "Section 1");
- Construction of a new cycle track (with footpath) section from near Ho Sheung Heung along Sheung Yue River and Shek Sheung River connecting to the existing cycle track in Sheung Shui ("namely "Section 1b");
- Construction of the associated support facilities including two Resting Stations - R5 and R9 integrated with Information Kiosk;
- The associated streetscape, landscape, utilities diversions, traffic aids installation, street lighting, water, sewerage and drainage works; and
- Provision of environmental mitigation measures.

1.1.4. The major construction works in the reporting period were listed below:

- Additional works
- Backfilling of retaining walls
- Concrete works
- Construction of cycle tracks
- Construction of drainage
- Construction of fill slope
- Construction of footpath
- Construction of resting station
- Construction of retaining walls (concreting, formworks, steelworks)
- Defect rectification works
- Excavation works
- Installation of bicycle parapet
- Installation of traffic aids/ colour dressing
- Painting colour dressing and road marking
- Site clearance works
- Stream decking and cycle tracks
- Tree felling and transplantation

- 1.1.5. The Project is regulated under the Environmental Permit no. EP-450/2013 (EP). According to the EP, the monitoring and audit programme shall be implemented in accordance with the procedures and requirements as set out in the EIA Report and EM&A Manual (Register No. AEIAR–133/2009) & the “Construction of Cycle tracks and the Associated Supporting Facilities from Sha Po Tsuen to Shek Sheung River Stage 1 Environmental Review EM&A Manual (2013) (EM&A Manual (2013)).
- 1.1.6. This Final EM&A Summary Report is prepared in accordance with Section 12.6 of the EM&A Manual (2013) to summarize the results and findings of site inspection activities and EM&A works carried out by the Works Contractor as required in the contract from 15 April 2014 to 31 August 2017. The report is to be submitted to the ER, the Contractor, IEC and EPD.
- 1.1.7. The contact persons and telephone numbers of key personnel for enquiries are shown in **Appendix 3**.

1.2. Project Organization and Management

1.2.1. The Project Organization Chart of the ET is shown in **Figure 1**.

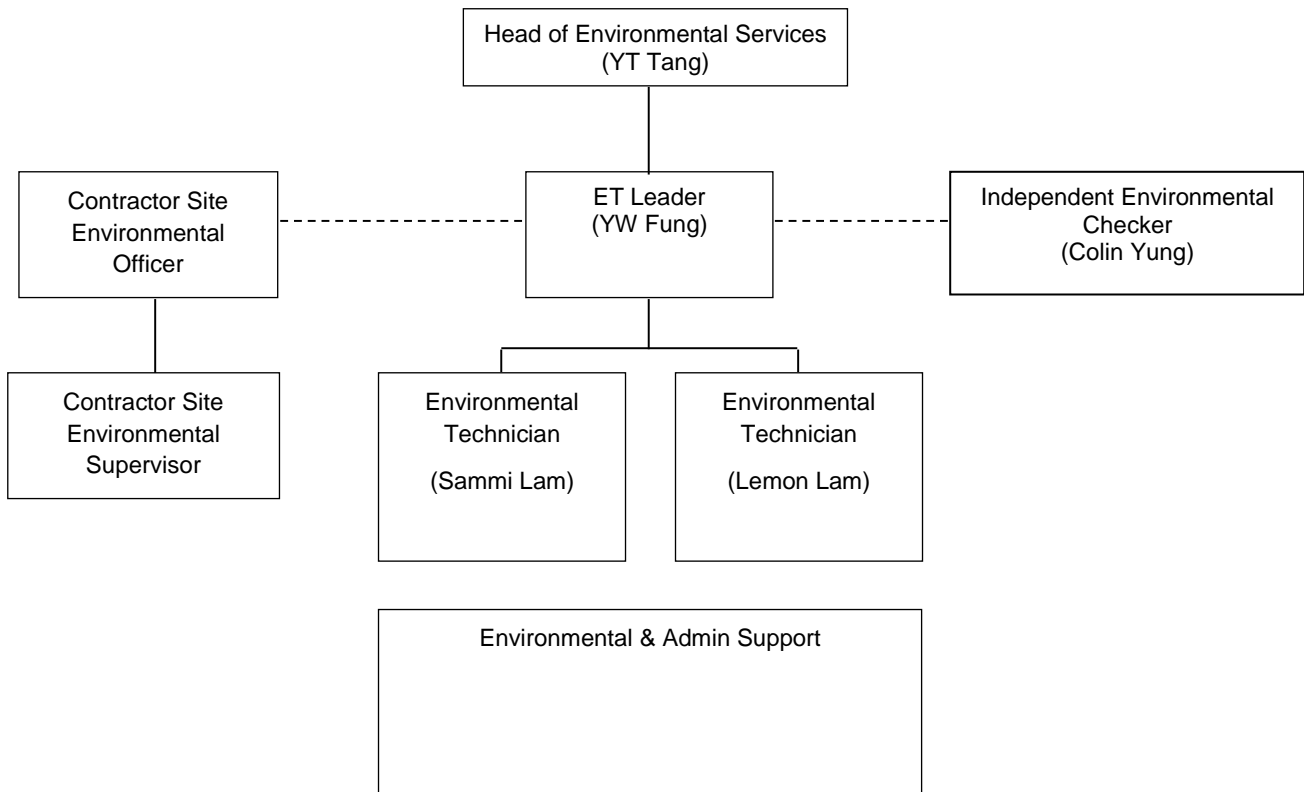


Figure 1 Organization Chart of Environmental Team

2. SUMMARY OF EM&A REQUIREMENTS

2.1. Environmental Requirements

Air Quality

- 2.1.1. The EM&A Manual (2013) identified that no significant impacts could arise during construction and operation of the project. No specific construction dust monitoring was recommended in the EM&A Manual (2013) given proper implementation of the dust control measures under the Air Pollution Control (Construction Dust) Regulation. General air quality control measures are recommended for implementation as good site practice.

Noise

- 2.1.2. The EM&A Manual (2013) identifies that with the use of quiet / silenced PME and noise barriers, where applicable, will result in no unacceptable construction noise. General noise control measures are recommended for implementation as good site practice. No NSR has been identified within 300m of the site working areas and no noise exceedance within the stage 1 designated project works areas were predicted based on the Environmental Review findings, therefore no noise monitoring is recommended under the EM&A Manual (2013). In this connection, setting up of Action / Limit Levels is not required.
- 2.1.3. No construction is planned during restricted hours. If construction is required during restricted hours the Contractor is required to apply for a CNP.

Water Quality

- 2.1.4. The EM&A Manual (2013) identifies that best practicable pollution control measures during construction should be effective to control the potential water quality impacts resulting from stormwater runoff into receiving waters. Water Discharge License has been applied by the Contractor.
- 2.1.5. According to the EM&A Manual (2013), no water quality monitoring is considered necessary within stage 1 designated project works areas based on the Environmental Review findings.

Waste Management

- 2.1.6. The EM&A Manual (2013) identifies that with proper on-site handling and storage (covered containers), reuse (of inert construction wastes) and off-site disposal (via approved waste collectors to approved waste facilities and/or disposal grounds) the generation, handling and disposal of these wastes will not give rise to any adverse environmental impacts. Control and mitigation should be implemented as general good site practices.

Land Contamination

- 2.1.7. The EM&A Manual (2013) considers that no specific EM&A requirements are necessary for Land Contamination.

Ecology and Fisheries

- 2.1.8. The EM&A Manual (2013) identifies that no significant overall loss of valuable ecological habitat and fishponds and it is considered that no significant negative impacts to surrounding habitats and species and aquaculture or water quality will arise from the construction and operation of the cycle track given that appropriate mitigation measures and good practices are properly implemented. No specific ecological or fisheries monitoring is required.

Cultural Heritage

- 2.1.9. The EM&A Manual (2013) identifies that no adverse impacts on cultural heritage resources would be expected from the construction or operational phase of the Project. No specific monitoring is required during the construction phase. However, care has been taken during construction stage to report any signs of possible discovery of artefacts to minimize potential impacts during the construction phase.

Landscape and Visual

- 2.1.10. Based on the EM&A Manual's recommendation, all measures undertaken during the construction stage shall be audited by the Landscape Architect as a member of the Environmental Team. The site inspections were undertaken during the reporting period to ensure all the recommended landscape and visual mitigation measures have been effectively implemented.

2.2. Environmental Site Inspections

- 2.2.1. Environmental site inspections are required to inspect the construction activities of the Project in order to ensure that appropriate environmental protection and pollution control mitigation measures are properly implemented. Regular site inspections should be carried out once per week during the construction phase.

2.3. Environmental Mitigation Measures

- 2.3.1. Required environmental mitigation measures shall be implemented according to the approved EM&A Manual (2013) as subject to the site condition.
- 2.3.2. The environmental mitigation measures that recommended in the Implementation Schedule in the EM&A Manual (2013) are presented in **Appendix 4**.

3. INSPECTION RESULTS

3.1. Summary of Site Inspections

3.1.1. According to the summary of the weekly site inspections carried out in the reporting period, it indicated that the environmental condition has no contrast with the EIA predictions after implementing proper environmental mitigation measures.

3.2. Implementation Status of Environmental Mitigation Measures

3.2.1. According to the weekly site inspections carried out in the reporting period, it indicated that the Contractor has implemented mitigation measures to address the environmental problems. The measures taken by the Contractor were considered as adequate and effective to minimize negative impact to the environment.

3.2.2. Environmental mitigation measures generally implemented in the reporting period are summarized in **Table 3-1**.

Table 3-1 Environmental Mitigation Measures

Aspect	Mitigation Measures
Water Pollution	<ul style="list-style-type: none"> • Cleared and sealed drainage to prevent materials from entering public drains • Chemical toilet was provided • Desilting measure has been provided for site runoff / wastewater discharge • Heavy rainstorm response procedure was displayed • Exposed stockpile and dusty materials in storage near the river were well enclosed • Extra silt traps were provided • Extra sand bags were provided • Rainwater and stagnant water has been removed • Relocated the stockpile and dusty materials from the river • Removed or covered the stockpile and dusty materials properly • Removed fallen leaves, general refuse and construction materials in the drainage and near gullies to ensure entry of water without obstruction • Silt traps and drainages were cleared • Site runoff has been removed from excavated well • Site runoff/waste water discharged through sedimentation tank
Air Pollution	<ul style="list-style-type: none"> • Exposed stockpile and dusty material in storage were covered by tarpaulin • Exposed slopes were covered by cement • Haul road has been kept wet • Muddy vehicle wheel tracks had been cleaned up • Paved the access road with bitumen • Provided valid NRMM label for all NRMM before operation • Removed the exposed stockpile

	<ul style="list-style-type: none"> • Sprayed water during dry weather to minimize dust condition
Noise Pollution	<ul style="list-style-type: none"> • Breaker tip without wrapping was no longer in use • Ensured the breaker tip without wrapping is no longer in use • Noise baffles/ screens to noisy machines/site activities was provided as necessary • Temporary noise barriers installed at works area as needed • Utilized stockpile to backfill the planter
Waste Management	<ul style="list-style-type: none"> • C&D materials have been removed • Chemicals were properly stored and labelled • Contaminated soil has been cleared • Covered chemical containers entirely to prevent any spillage • Disposed of the wastes regularly • Emergency spillage procedure was displayed • Excavator has been repaired and contaminated soil has been cleared • General waste and C&D materials have been removed • Generator has been repaired and the contaminated soil has been removed as chemical waste • Material and waste have been removed • Recycle bins and rubbish bins were provided • Removed construction wastes found scattered on ground • Removed dusty construction waste found scattered on ground • Removed generator and chemical containers without drip tray • Removed the broken branches from site • Removed the empty chemical containers and construction materials disposed at U-shaped channel • Removed the machine with oil leakage from the site for repairing
General	<ul style="list-style-type: none"> • Accumulated rubbish in bamboo grove had been removed • C&D materials were stored in designated area properly • Construction materials, waste, chemical containers, cement bags and plants were relocated and stocked away from existing trees and vegetation • Copy of EP and Environmental Posters/ Notices were provided • Damaged tree has been wrapped • Improved housekeeping condition • Removed stagnant water in the container and treated the container in such a manner that water will not be retained • Site was kept clean & tidy • Transplanted trees, existing trees & vegetation protection were maintained

3.3. Status of Environmental Licensing and Permitting

3.3.1. The status of licenses and permits is summarized in **Table 3-2**.

Table 3-2 Summary of Environmental Licensing and Permit Status

Item No.	Description	Application Date	Date of Issue	Ref. No	Date of Expiry
1	Environmental Permit (EP)	N.A	30 May 2013	EP-450/2013	N.A.
2	Registration as a Chemical Waste Producer	N.A	10 Jan 2014	WPN5213-524-S3 777-01	N.A
3	Effluent Discharge License	N.A	25 Feb 2014	W5/113841/1	28 Feb 2019
4	Account for Disposal of Construction Waste	N.A.	16 Dec 2013	7018953	N.A.
5	Construction Noise Permit	As required	N.A.	N.A.	N.A.

3.3.2. Non-compliance with EP conditions and other requirements associated with the construction of this Contract was not identified in the reporting period.

3.3.3. One (1) environmental complaint, no notification of summons and prosecutions with respect to environmental issues were received in the reporting period.

Complaint from AFCD dated 10 July 2015

3.3.4. A complaint about the suspected clearance of bamboo is made by Mr. Eric Liu, the Nature Conservation Officer (N) of AFCD dated 10 July 2015. Mr Liu stated in his complaint that during a site inspection at Ho Sheung Heung on 29 June 2015, some bamboo within the cordoned off area near the resting station R9 of Sheung Yue River were cleared by the workers of this project which then caused the disappearance of a rare butterfly species. The ET had then conducted a site inspection with the Landscape Architect and site staff, there was no evidence to show that the bamboo was cleared by the workers of this project. Relevant response had been sent to AFCD on 6 August 2015.

3.4. Advice on the Solid and Liquid Waste Management Status

- 3.4.1. The quantities of waste for reuse or disposal in the reporting period are summarized in **Table 3-3**.
- 3.4.2. It is recommended to maximize the reuse or recycle of the C&D material. The Contractor transported the remaining inert C&D material to public fill for disposal and disposed of non-inert wastes such as general refuses and materials segregated to North East New Territory (NENT) Landfill after sorting out the recyclables.

Table 3-3 Summary of Quantities of Waste for Reuse or Disposal in the reporting period

	Type of Waste	Disposal Location	Cumulative Quantity
Inert C&D Materials	Total Quantity Generated (in '000m ³)	TM Area 38	6.017
	Hard Rock and Large Broken Concrete (in '000m ³)	TM Area 38	0
	Reused in the Contract (in '000m ³)	N.A.	0
	Reused in other Projects (in '000m ³)	N.A.	0.62
	Disposed as Public Fill (in '000m ³)	TM Area 38	3.997
C&D Waste	Metals (in '000kg)	Recycling Facilities	0.362
	Paper/cardboard packing (in '000kg)	Recycling Facilities	0.382
	Plastic (in '000kg)	Recycling Facilities	0.382
	Chemical Waste (in '000kg)	Chemical Waste Treatment Centre (CWTC)	0.02
	Others, e.g. general refuse (in '000m ³)	NENT / public waste collection facilities	1.528

- 3.4.3. The Contractor should provide sufficient waste storage facilities on site such as rubbish bins and fenced-off waste storage areas. Waste should be regularly removed from around the site.
- 3.4.4. The Contractor was reminded to increase the frequency of inspection to pump accumulated water from stagnant water ponds when necessary.

4. REVIEW OF ENVIRONMENTAL ACCEPTABILITY OF THE PROJECT

- 4.1.1. The weekly site inspection ensured that all the environmental mitigation measures recommended in the EIA were effectively implemented. Despite the minor deficiencies found during site audits, the relevant contractor had taken appropriate actions to rectify deficiencies within reasonable timeframe. Therefore, environmental mitigation measures were considered effectively implemented.

5. REVIEW OF ENVIRONMENTAL METHODOLOGY

- 5.1.1. No monitoring was proposed in the reporting period.
- 5.1.2. ET regularly reviewed the monitoring methodology. There was no amendment on the monitoring methodology during the construction phase of the Project.

6. REVIEW OF THE EIA PROCESS AND EM&A PROGRAMME

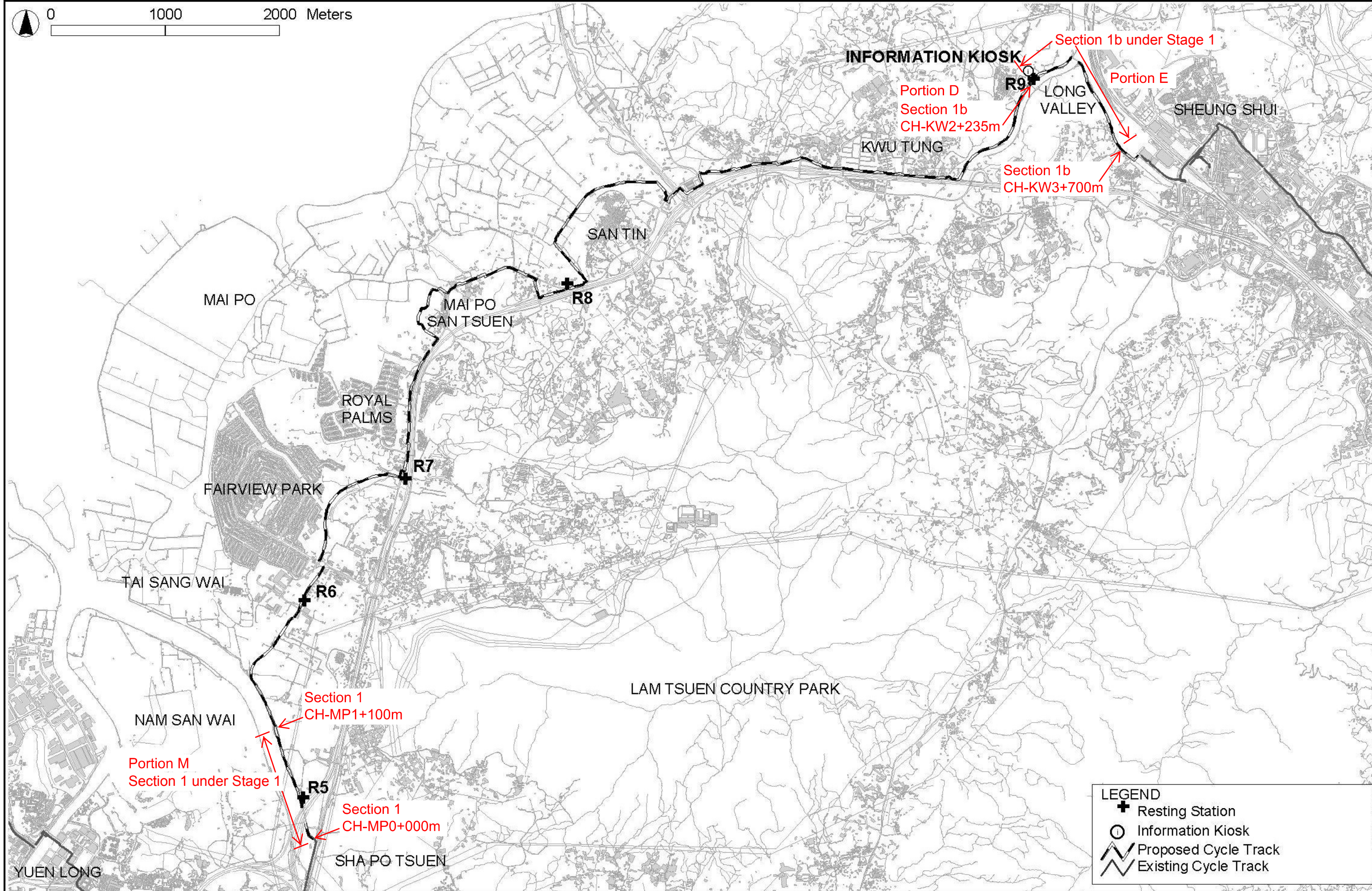
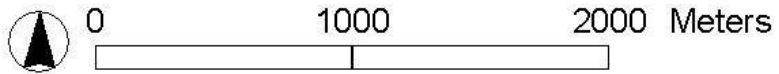
- 6.1.1. The mitigation measures in the EIA and the EM&A programme have been effectively implemented during the construction period.
- 6.1.2. Site audits were carried out weekly to monitor the Contractor's performance on the air quality, noise, water quality and waste management issues. The audit programme confirmed that the mitigation measures were properly implemented by the Contractor.

7. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

- 7.1.1. One (1) environmental complaint, no notification of summons and prosecutions with respect to environmental issues were received in the reporting period.
- 7.1.2. Upon completion of the project, environmental qualities returned to the ambient levels. No significant impact to the adjacent environment was noted, which concurs with the EIA Report findings.
- 7.1.3. The implemented EM&A programme readily detected any environmental impacts to the receivers and timely actions could be taken to rectify any non-compliance. Weekly site inspections checked that the EIA's recommended mitigation measures were effectively implemented. With the minimum amount of environmental complaint, notification of summons and prosecution with the respect to environmental issue, the EM&A programme has prevented severe environmental impact arising from the project. There had no particular recommendation advised for improvement in the EM&A programme in the reporting period.
- 7.1.4. According to the weekly site inspections carried out in the reporting period, it indicated that the Contractor has implemented mitigation measures to address the environmental problems. The measures taken by the Contractor were considered as adequate and effective to minimize negative impact to the environment.

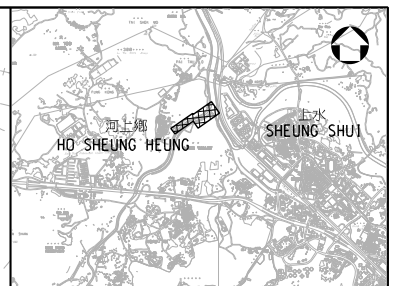
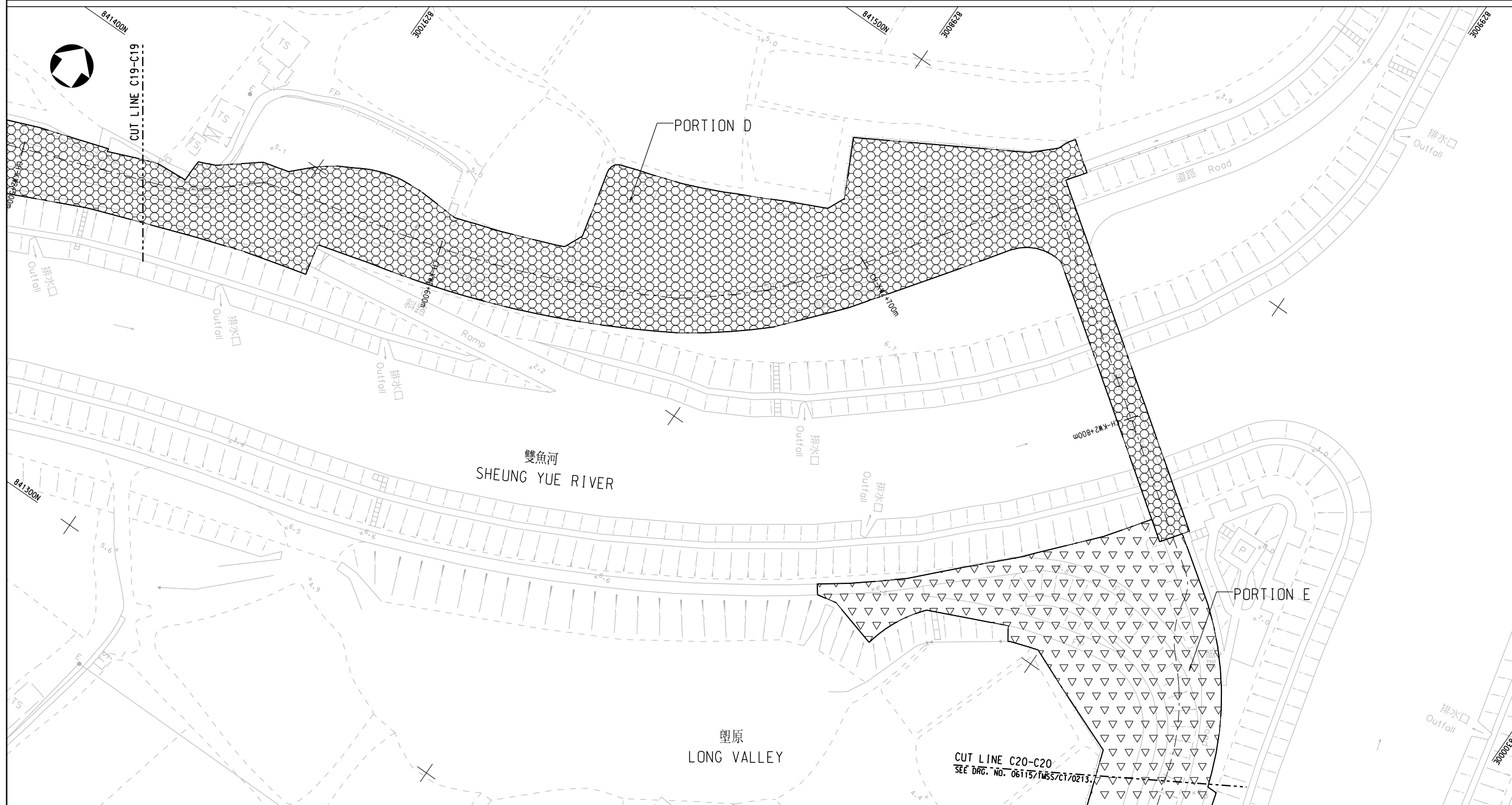
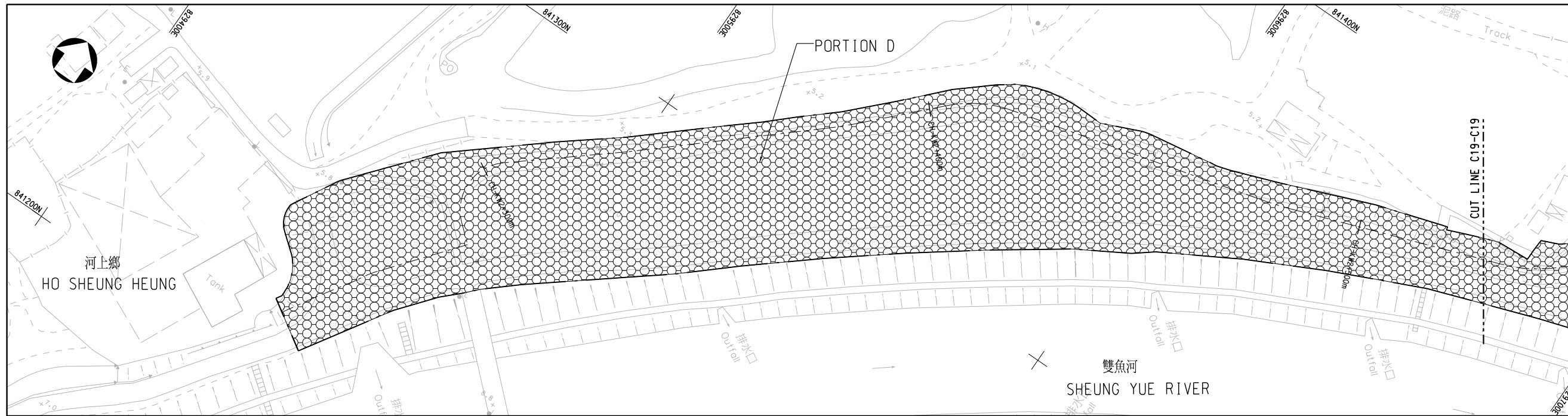
APPENDIX 1

SITE LAYOUT PLANS



LEGEND

- Resting Station
- Information Kiosk
- Proposed Cycle Track
- Existing Cycle Track



KEY PLAN
N.T.S.

NOTES :
1. FOR NOTES AND LEGEND, REFER TO DRG. NO. 06115/TMSS/CT/0202.

-	12/13	ISSUE FOR CONSTRUCTION	NYH	GT
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Rev. 修訂	Date 日期	Description 內容摘要	Drawn 繪圖	Checked 校核

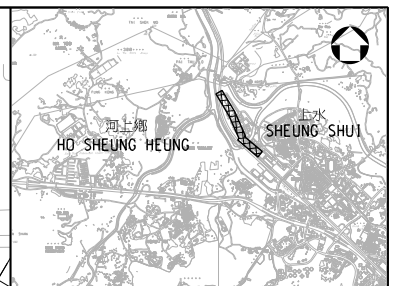
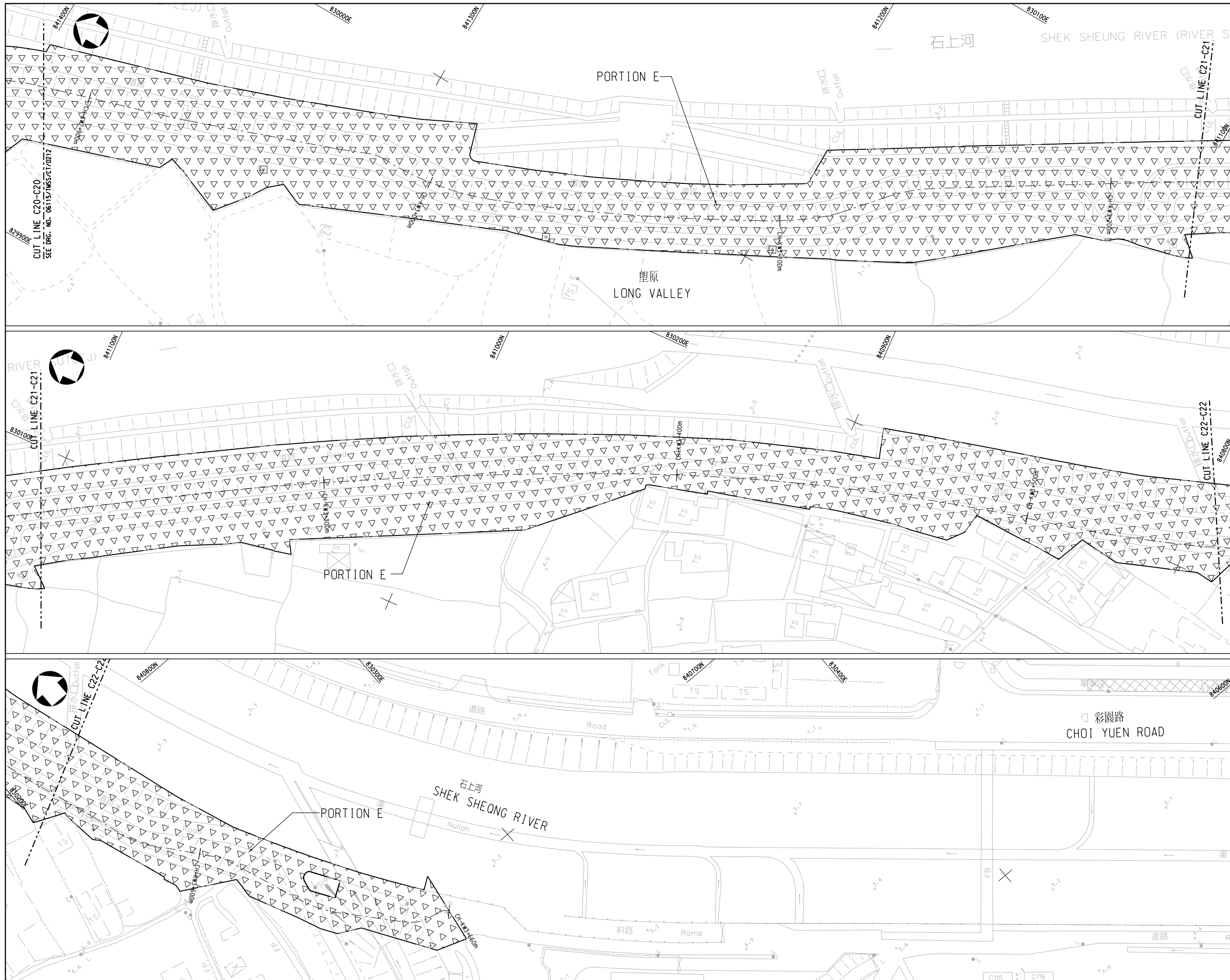
土木工程拓展署
CEDD Civil Engineering and Development Department

CONTRACT NO. YL/2013/01
CYCLE TRACKS FROM TUEN MUN TO SHEUNG SHUI - STAGE 1

PORTION OF THE SITE
(SHEET 12 OF 13)

Drawing No. 圖則編號	06115/TMSS/CT/00212			
Designed 設計	Drawn 繪圖	Checked 校核	Scale 比例	1:500(A1)
GT	HAX	DCSC	1:1000(A3)	
Approved 批准	TSN	Date 日期	Status 狀態	12/13 擬議 CONSTRUCTION





KEY PLAN
N.T.S.

NOTES :
1. FOR NOTES AND LEGEND, REFER TO DRG. NO. 06115/TMSS/CT/0202.

Rev.	Date	Description	Drawn	Checked
12/13		ISSUE FOR CONSTRUCTION	NYH	GT

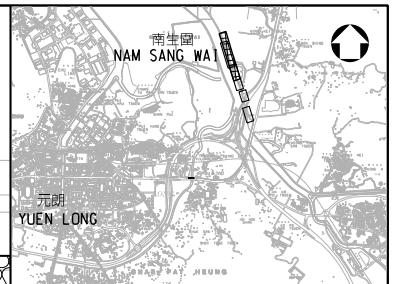
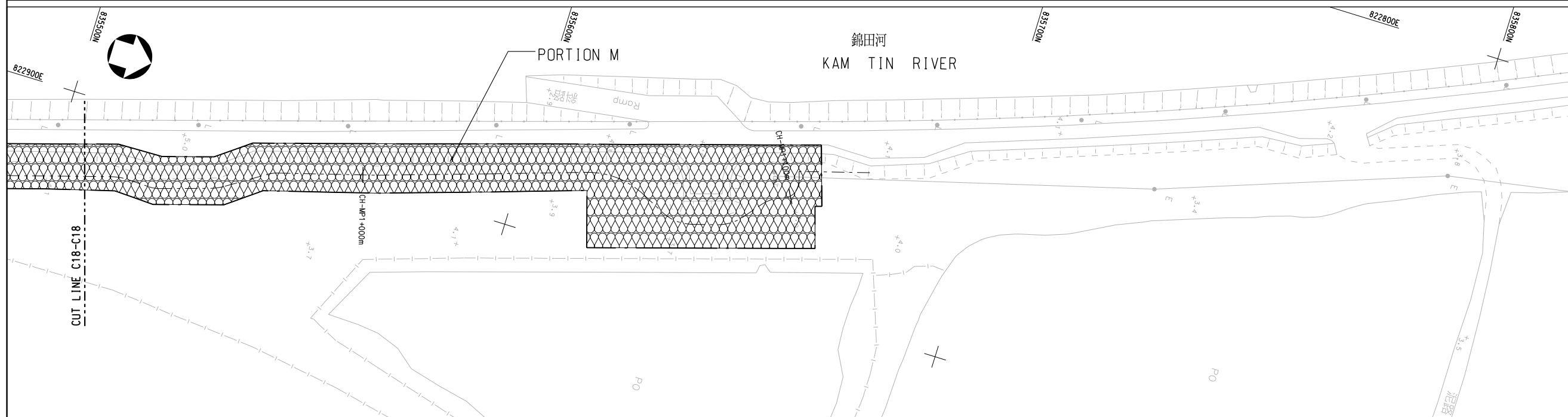
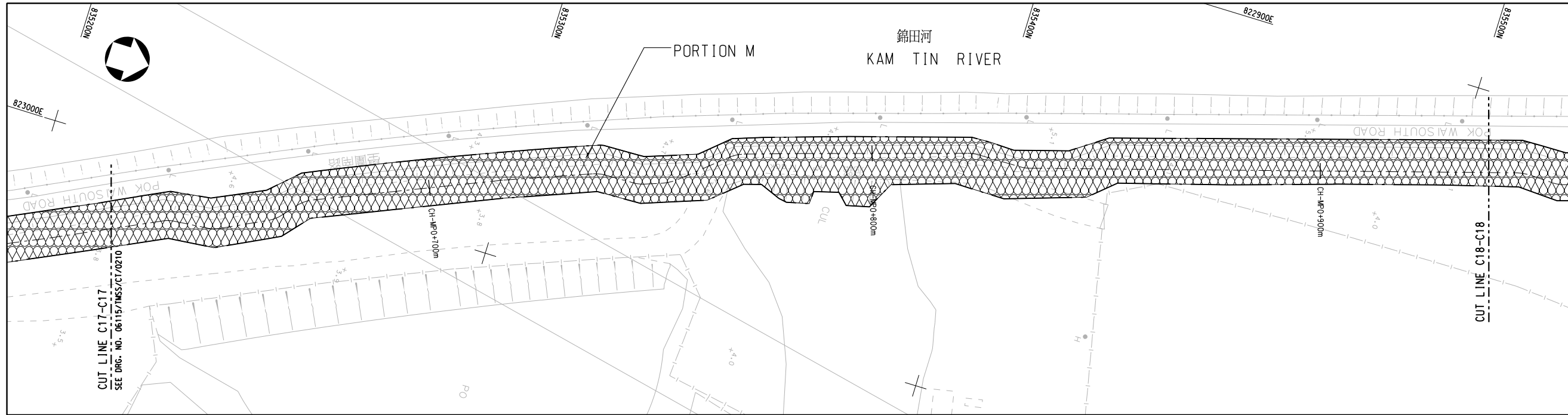
土木工務拓展署
CEDD Civil Engineering and
Development Department

CONTRACT NO. YL/2013/01
CYCLE TRACKS FROM TUEN MUN
TO SHEUNG SHUI - STAGE 1

PORTION OF THE SITE
(SHEET 13 OF 13)

Drawing No.	06115/TMSS/CT/00213			
Designed	Drawn	Checked	Scale	Scale
GT	HAX	DCSC	1:500(A1)	1:1000(A3)
Approved	Date	Status		
TSN	12/13	CONSTRUCTION		





KEY PLAN
N.T.S.

NOTES :
1. FOR NOTES AND LEGEND, REFER TO DRG. NO. 06115/TMSS/CT/0202.

Rev.	Date	Description	Drawn	Checked
-	12/13	ISSUE FOR CONSTRUCTION	NYH	GT

CEDD 土木工程拓展署
Civil Engineering and
Development Department

CONTRACT NO. YL/2013/01
CYCLE TRACKS FROM TUEN MUN
TO SHEUNG SHUI - STAGE 1

PORTION OF THE SITE
(SHEET 11 OF 13)

Designated	Drawn	Checked	Scale
GT	HAX	DCSC	1:500(A1) 1:1000(A3)
Approved	Date	Status	
TSN	12/13	CONSTRUCTION	

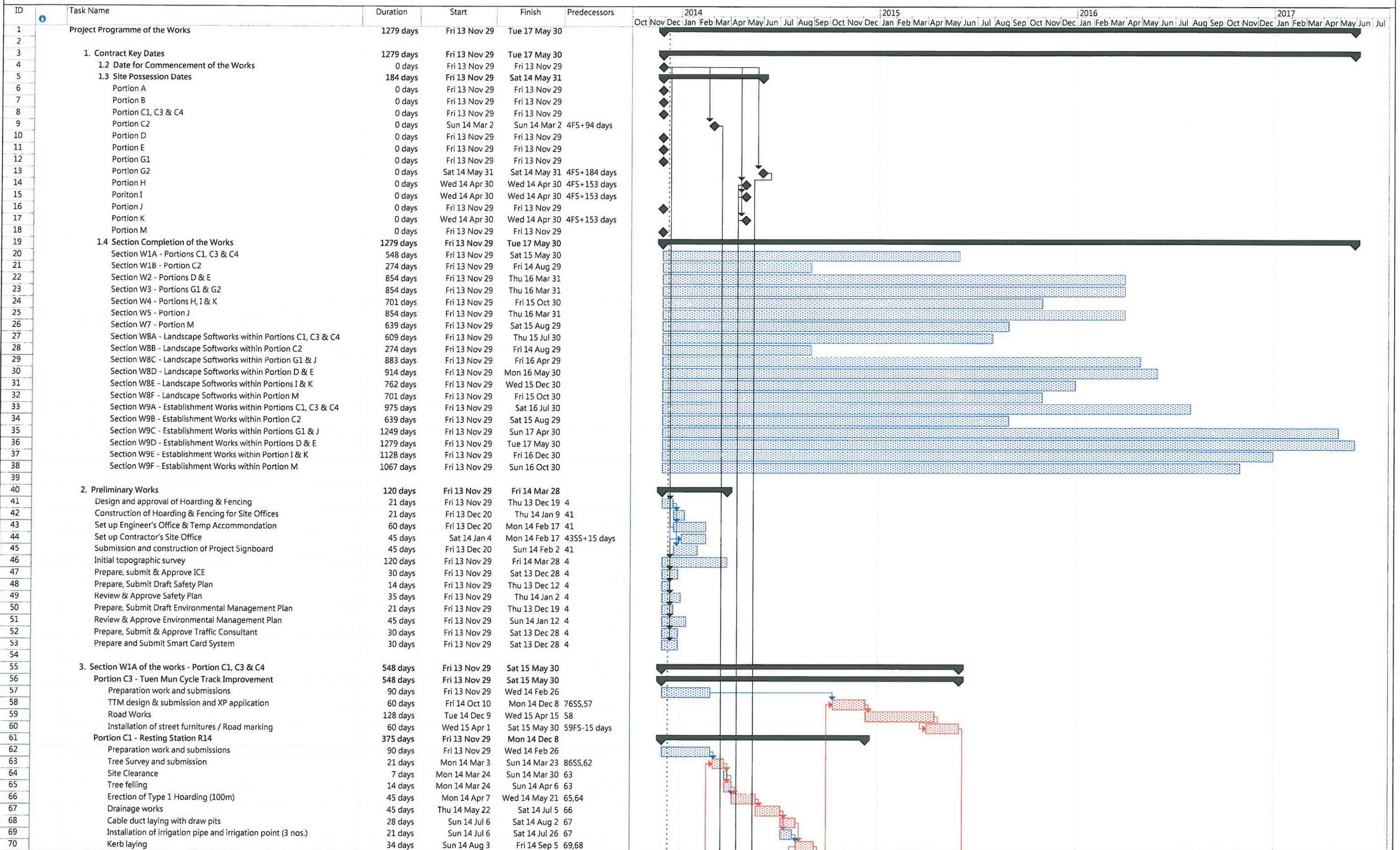


APPENDIX 2

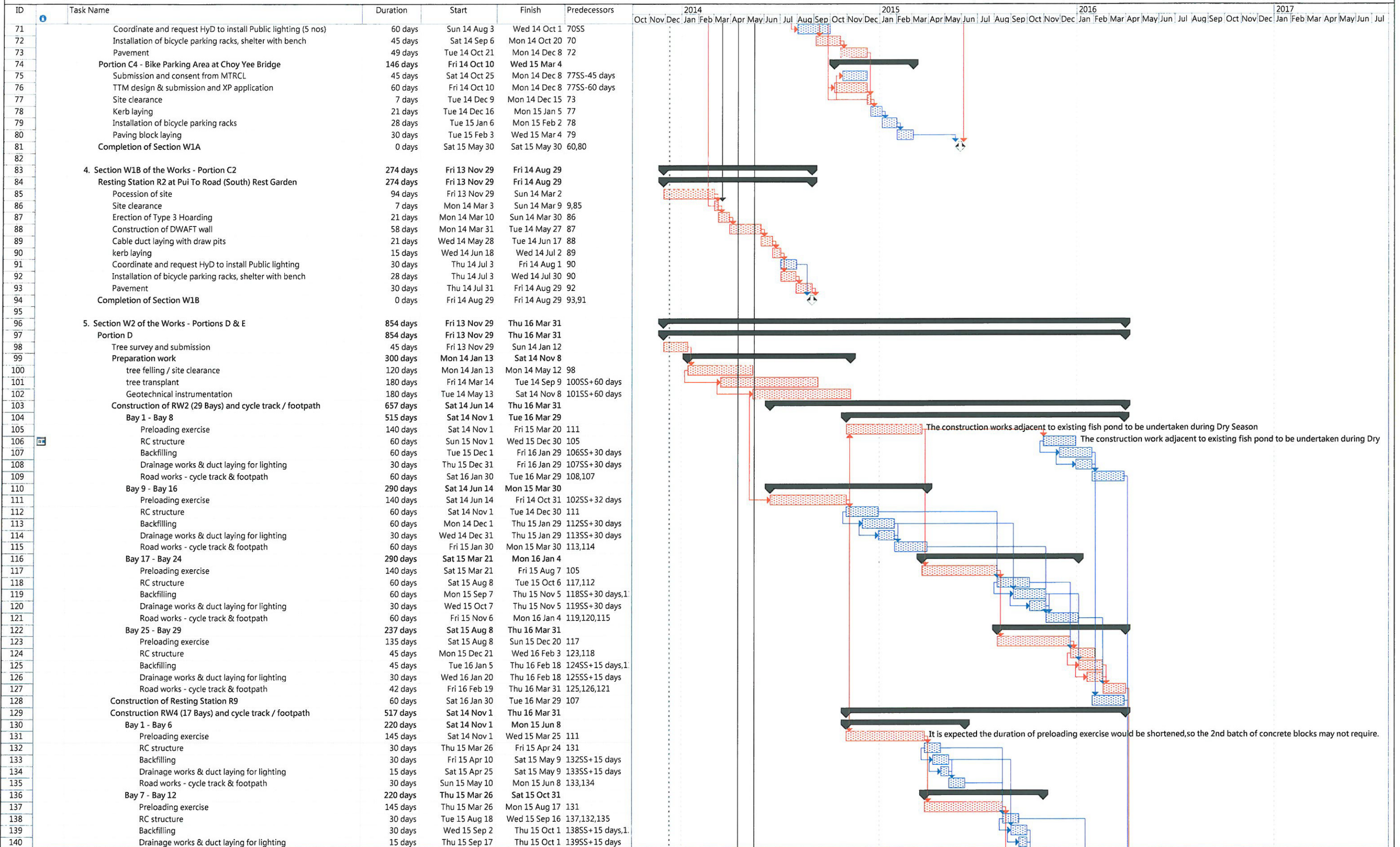
CONSTRUCTION PROGRAMME

Cycle Tracks from Tuen Mun to Sheugn Shui - Stage 1

Project Programme of the Works



Cycle Tracks from Tuen Mun to Sheugn Shui - Stage 1
Project Programme of the Works

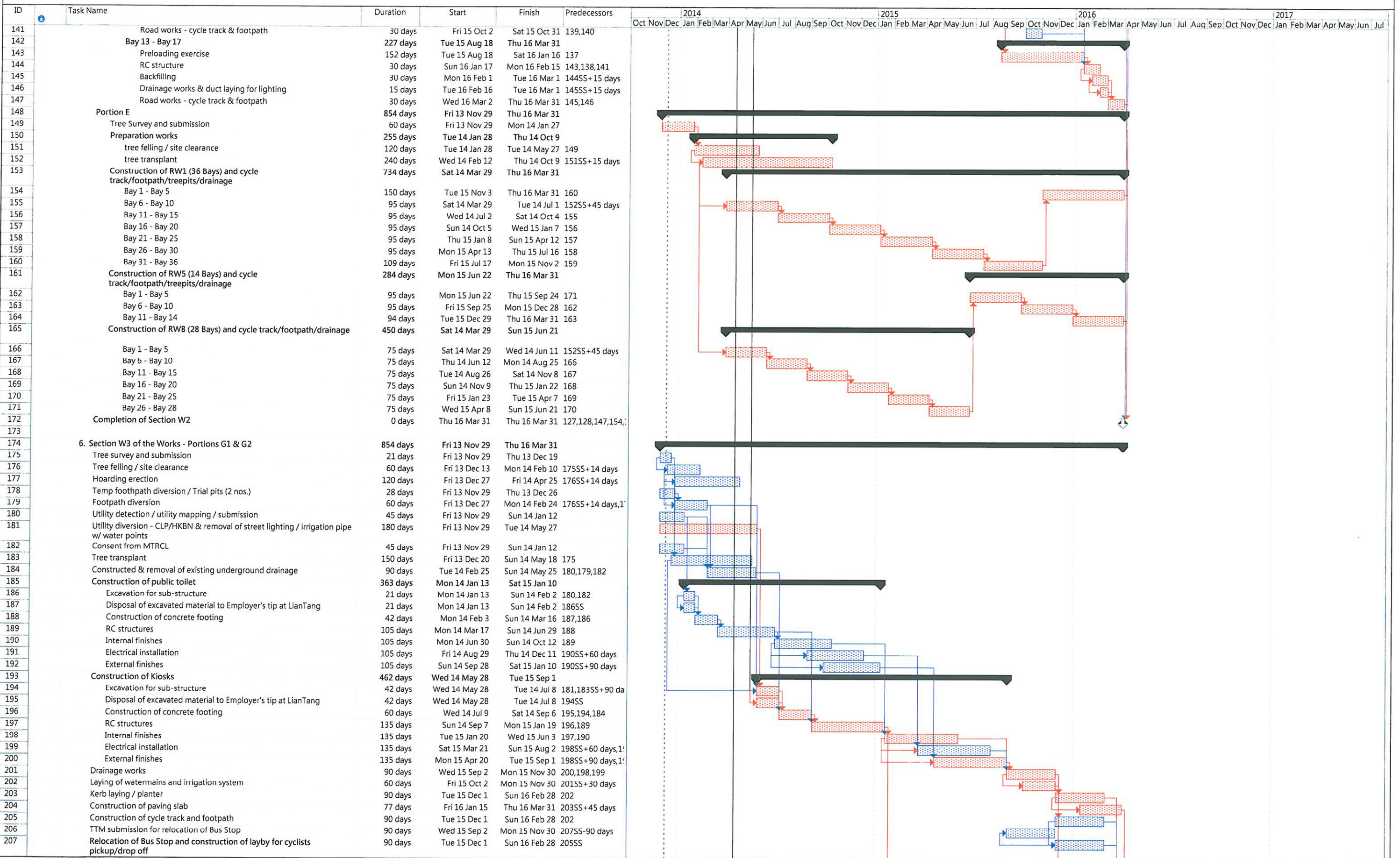


The construction works adjacent to existing fish pond to be undertaken during Dry Season

It is expected the duration of preloading exercise would be shortened,so the 2nd batch of concrete blocks may not require.

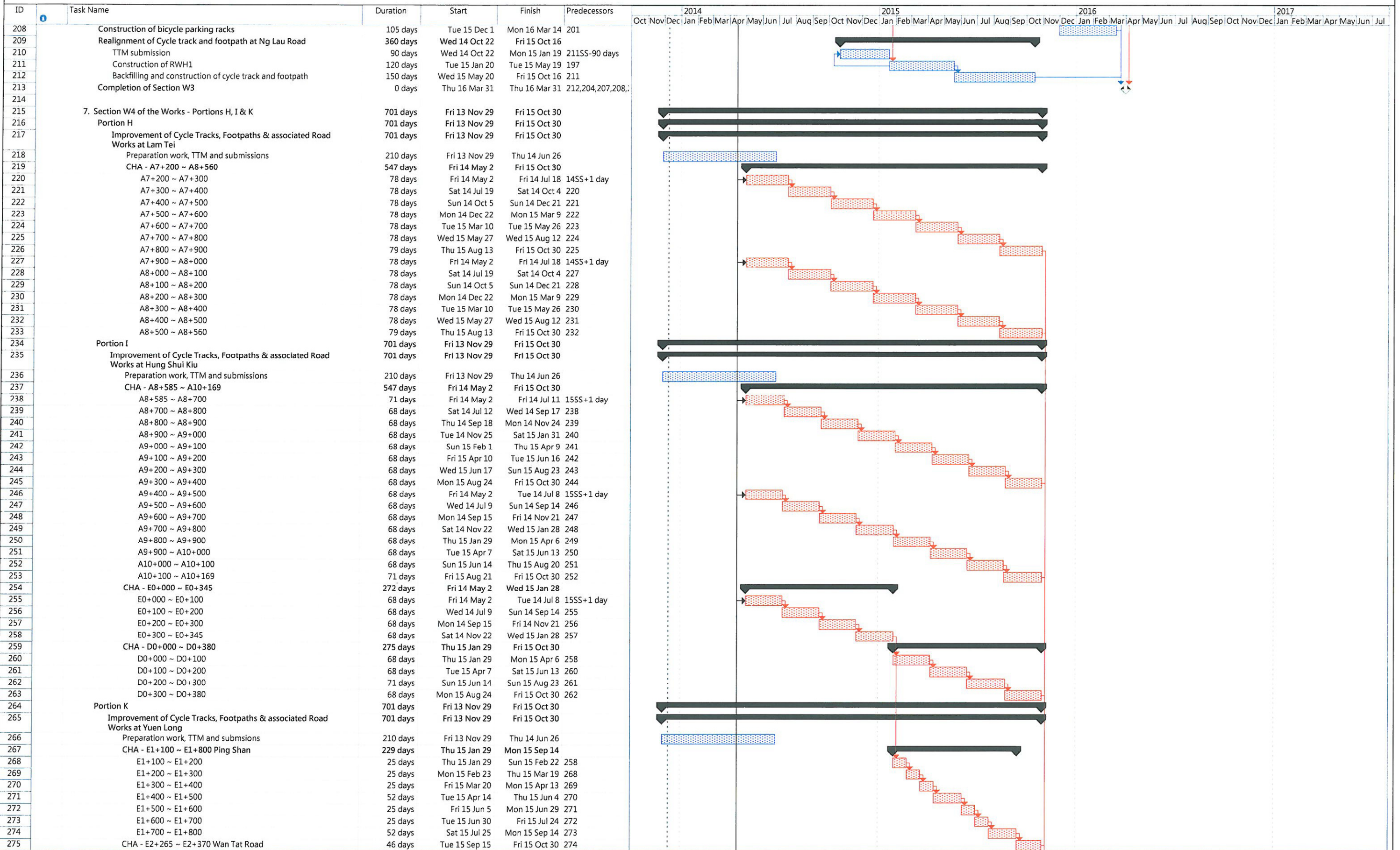
Cycle Tracks from Tuen Mun to Sheugn Shui - Stage 1

Project Programme of the Works



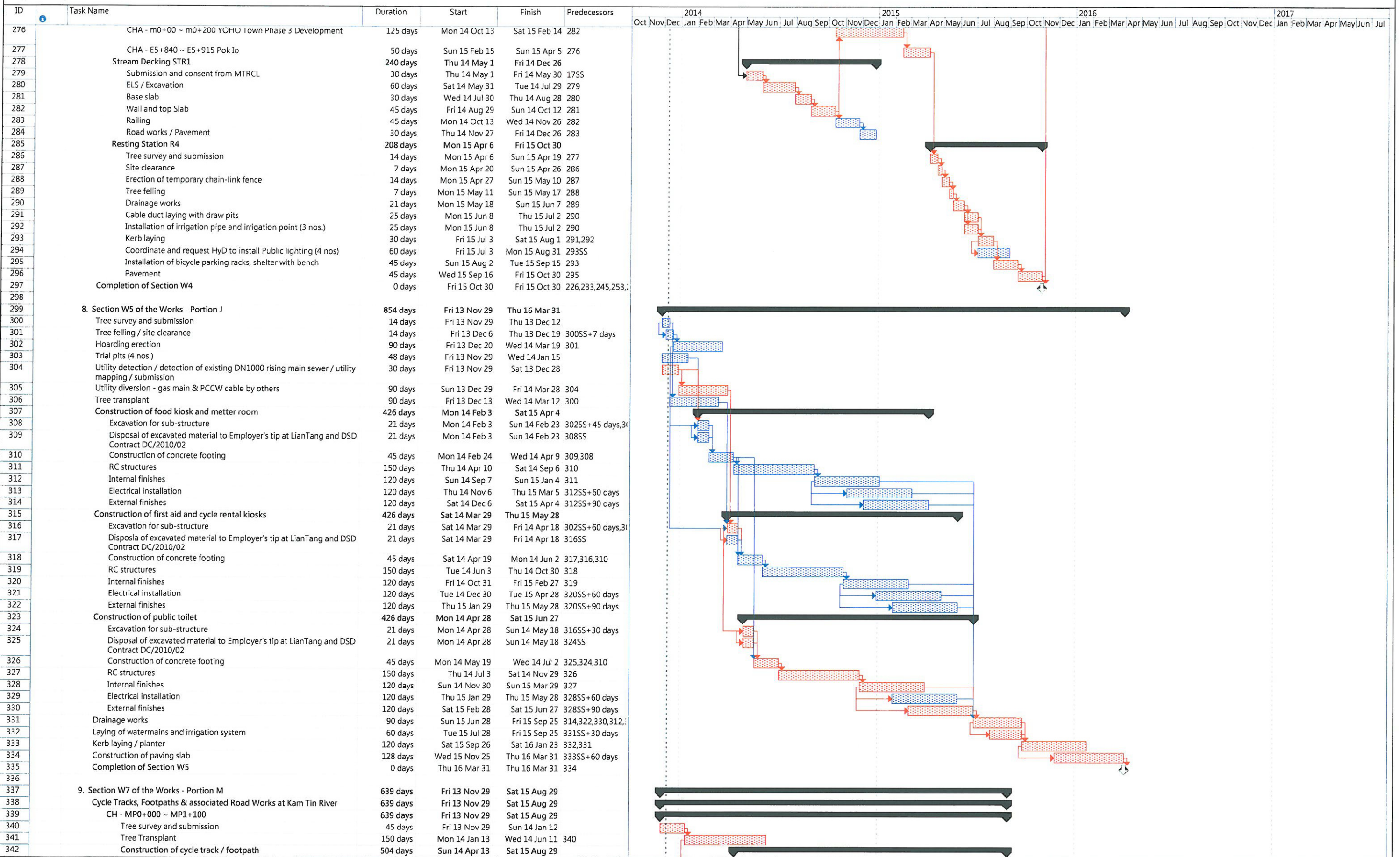
Cycle Tracks from Tuen Mun to Sheugn Shui - Stage 1

Project Programme of the Works



Cycle Tracks from Tuen Mun to Sheugn Shui - Stage 1

Project Programme of the Works

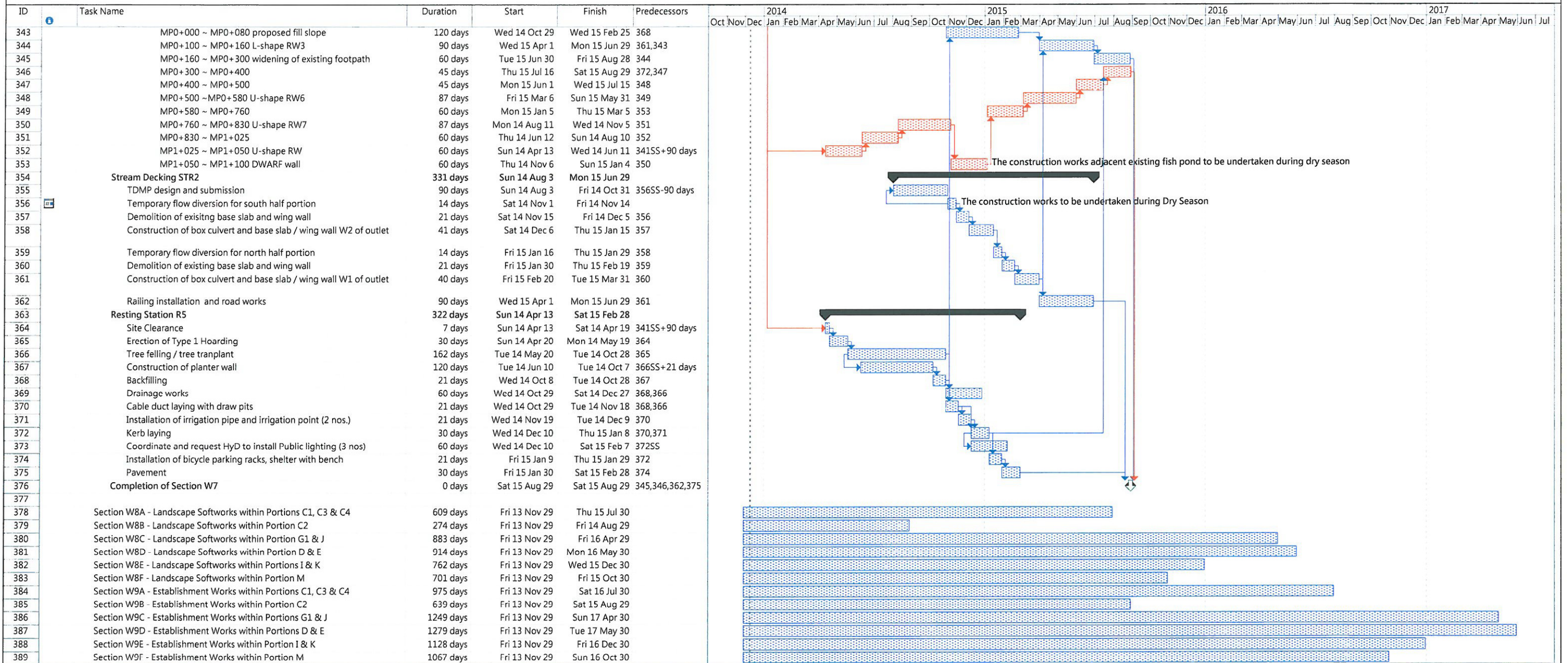


Project: YL/2013/01
 Date Date: 29 Nov 2013
 Submission: 09 Dec 2013

Task: Progress Summary Rolled Up Critical Task Rolled Up Progress External Tasks Group By Summary Deadline

Critical Task: Milestone Rolled Up Task Rolled Up Milestone Split Project Summary Deadline

Cycle Tracks from Tuen Mun to Sheugn Shui - Stage 1
Project Programme of the Works



APPENDIX 3

THE CONTACT DETAILS OF KEY PERSONNEL OF THE PROJECT

Contact Details of Key Personnel for the Project

Company / Department	Name	Position	Telephone
AECOM Consulting Services Limited	Mr. Y.W. Fung	Environmental Team Leader	3922 9366
AECOM Consulting Services Limited (former URS Hong Kong Ltd.)	Mr. Vincent Kwan	Resident Engineer	2672 7938
Sang Hing – Kuly Joint Venture	Mr. Jeff Chan	Project Manager	9606 2398
Sang Hing – Kuly Joint Venture	Mr. W.K. Tang	Site Agent	9300 7037 / 5638 3186 (Hotline)
Sang Hing – Kuly Joint Venture	Mr. Michael Wan	Site Environmental Officer	9222 3089
Fugro Hong Kong Ltd.	Mr. Colin Yung	Independent Environmental Checker	3565 4114

APPENDIX 4

IMPLEMENTATION SCHEDULE FOR ENVIRONMENTAL MITIGATION MEASURE

Table A1-1 Air Quality Impact – Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
Construction Phase						
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:	Air Quality (fugitive dust) Control during Construction Phase	Contractors	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.6.2	S.3.2.3	<ul style="list-style-type: none"> 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 	Air Quality (fugitive dust) Control during Construction Phase	Contractors	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.6.2	S.3.2.3	<ul style="list-style-type: none"> Restricting heights from which materials are to be dropped, as far as practicable to minimize the fugitive dust arising from unloading/ loading 	Air Quality (fugitive dust) Control during Construction Phase	Contractors	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.6.2	S.3.2.3	<ul style="list-style-type: none"> 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 	Air Quality (fugitive dust) Control during Construction Phase	Contractors	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.6.2	S.3.2.3	<ul style="list-style-type: none"> 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 	Air Quality (fugitive dust) Control during Construction Phase	Contractors	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.6.2	S.3.2.3	<ul style="list-style-type: none"> Travelling speeds should be controlled to reduce traffic induced dust dispersion and re-suspension within the site from the operating haul trucks 	Air Quality (fugitive dust) Control during Construction Phase	Contractors	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.6.2	S.3.2.3	<ul style="list-style-type: none"> Erection of hoarding of not less than 2.4 m high from ground level along the site boundary, where appropriate 	Air Quality (fugitive dust) Control during Construction Phase	Contractors	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.6.2	S.3.2.3	<ul style="list-style-type: none"> 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 	Air Quality (fugitive dust) Control during Construction Phase	Contractors	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
S.3.6.2	S.3.2.3	<ul style="list-style-type: none"> 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 	Air Quality (fugitive dust) Control during Construction Phase	Contractors	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
Operational Phase						
N/A	N/A	None specific	N/A	N/A	N/A	N/A

Table A1-2 Noise Impact – Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
Construction Phase						
S.5.5.11	S.4.2.17	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 CH-MP5+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.	Noise control during construction	Contractors, ER	Construction areas near the specified locations during the construction period	EIA, Contractual requirements
S.5.5.14	S.4.2.17	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.	Noise control during construction	Contractors, ER	Construction areas near the specified locations during the construction period	EIA, Contractual requirements
Table 5-7	S.4.2.19	Use of quiet plant (PME): <ul style="list-style-type: none"> - 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 	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	EIA, Contractual requirements

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
S.5.6.2 Table 5-8	S.4.2.19	Noise barrier in the form of site hoarding shall be used for the following PMEs where practicable: <ul style="list-style-type: none"> - 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 - crane mounted auger - grout mixer - grout pump - drill - road ripper, excavator mounted 	Noise control during construction	Contractors	At all construction areas of the site close to identified NSRs during the entire construction period	EIA, Contractual requirements
S.5.6.2	S.4.2.19	Noise enclosure shall be used for the following PMEs where practicable: <ul style="list-style-type: none"> - air compressor - hand-held breaker 	Noise control during construction	Contractors	At all construction areas of the site close to identified NSRs during the entire construction period	EIA, Contractual requirements
S.5.6.2	S.4.2.19	The barrier / enclosure material's surface mass shall be in excess of 7 kg/m ² .	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	EIA, Contractual requirements
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.	Noise control during construction	Contractors	At construction areas of the site close to NSR12 and NSR20 during the entire construction period	EIA, Contractual requirements
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	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	Annex 5 and Annex 13 of EIAO-TM
S.5.6.8	S.4.2.19	The Contractor shall observe and comply with the statutory and non-statutory requirements and guidelines	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	Annex 5 and Annex 13 of EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
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	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	Annex 5 and Annex 13 of EIAO-TM
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	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	Annex 5 and Annex 13 of EIAO-TM
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	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	Annex 5 and Annex 13 of EIAO-TM
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	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	Annex 5 and Annex 13 of EIAO-TM
S.5.6.8	S.4.2.19	Regular maintenance of all plant and equipment	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	Annex 5 and Annex 13 of EIAO-TM
S.5.6.8	S.4.2.19	Material stockpiles and other structures should be effectively utilised as noise barriers, where practicable	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	Annex 5 and Annex 13 of EIAO-TM
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	Noise control during construction	Contractors	At construction areas near schools during the entire construction period	Annex 5 and Annex 13 of EIAO-TM
Operational Phase						
N/A	N/A	None specific	N/A	N/A	N/A	N/A

Table A1-3 Water Quality Impact – Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
Construction Phase						
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	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance
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	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	Water Pollution Control Ordinance
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	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	Water Pollution Control Ordinance
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	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	Water Pollution Control Ordinance
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	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	Water Pollution Control Ordinance
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	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	Water Pollution Control Ordinance
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);	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	Water Pollution Control Ordinance
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	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire	Water Pollution Control Ordinance

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		erosion			construction period	
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	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	Water Pollution Control Ordinance
S. 6.6.1	S.5.2.4	Works adjacent to the fishponds near Kam Tin River inside the conservation area (CA) and Mai Po San Tsuen should be avoided as far as possible during the wet season to avoid runoff into the fishponds	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	Water Pollution Control Ordinance
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.	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	Water Pollution Control Ordinance
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	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	Water Pollution Control Ordinance
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	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	Water Pollution Control Ordinance
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	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	Water Pollution Control Ordinance
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	Protection Against Accidental Spillage	Contractors	At all construction areas of the site during the entire construction period	Water Pollution Control Ordinance
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	Protection Against Accidental Spillage	Contractors	At all construction areas of the site during the entire construction period	Water Pollution Control Ordinance
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	Protection Against Accidental Spillage	Contractors	At all construction areas of the site during the entire construction period	Water Pollution Control Ordinance

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
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 (Chemical Waste) (General) Regulation	Protection Against Accidental Spillage	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal (Chemical Waste) (General) Regulation
Operational Phase						
N/A	N/A	None specific	N/A	N/A	N/A	N/A

Table A1-4 Waste Management Implication – Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location/ Timing of implementation of Measures	What requirements or standards for the measures to achieve?
Construction Phase						
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;	Waste management during construction	Contractors	Prior to commencement of Project works, and implemented throughout the entire construction period	ETWB TCW No. 19/2005, Waste Management on Construction Sites
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	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal Ordinance
S.7.4.1	S. 6.2.6	<ul style="list-style-type: none"> The reuse/ recycling of all materials on site shall be investigated and exhausted prior to treatment/ disposal off-site 	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal Ordinance
S.7.4.1	S. 6.2.6	<ul style="list-style-type: none"> 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 	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal Ordinance
S.7.4.1	S. 6.2.6	<ul style="list-style-type: none"> 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). 	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal Ordinance

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location/ Timing of implementation of Measures	What requirements or standards for the measures to achieve?
S.7.4.1	S. 6.2.6	<ul style="list-style-type: none"> 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 on-site, the materials can be delivered to a Public Fill Area or Public Fill Bank after obtaining the appropriate licence; 	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal Ordinance
S.7.4.1	S. 6.2.6	<ul style="list-style-type: none"> 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 WBTC 31/2004 "Trip Ticket System for Disposal of Construction and Demolition Material". 	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	WBTC 31/2004 "Trip Ticket System for Disposal of Construction and Demolition Material"
S.7.4.1	S. 6.2.6	<ul style="list-style-type: none"> Under the Waste Disposal (Chemical Waste) (General) Regulation, the 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 Control Scheme both published by EPD; 	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal (Chemical Waste) (General) Regulation
S.7.4.1	S. 6.2.6	<ul style="list-style-type: none"> 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 TCW No. 6/2002A, Enhanced Specification for Site Cleanliness and Tidiness, the Contractor is required to maintain a clean and hygienic site throughout the project works; 	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal Ordinance

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location/ Timing of implementation of Measures	What requirements or standards for the measures to achieve?
S.7.4.1	S. 6.2.6	<ul style="list-style-type: none"> 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 	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal Ordinance
S.7.4.1	S. 6.2.6	<ul style="list-style-type: none"> Toolbox talks should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling. 	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal Ordinance
S.7.4.1	S. 6.2.6	<ul style="list-style-type: none"> 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. 	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal Ordinance
Operational Phase						
S. 7.4.2	S.6.3.2	Waste collection facilities (e.g. litter bins) to be included in the design of the supporting facilities, and at regular intervals along the route. The Government Department responsible for managing the facilities will be responsible for arranging for regular collection of litter from these facilities. Separate collection bins shall be provided for aluminium cans, plastic drinks bottles and paper wastes, which will facilitate recycling of these waste streams	Waste management during operational phase	LCSD for management and maintenance of facilities FEHD for arranging regular collection of refuse	All Resting Stations and along the cycle track. Collection of refuse at regular interval	EIA, Contractual requirements

Table A1-5 Land Contamination – Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location/ Timing of implementation of Measures	What requirements or standards for the measures to achieve?
Construction Phase						
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 Remediation Action Plan (RAP) shall be prepared and submitted for EPD's approval.	To formulate CAP and CAR to assess the land contamination impact	Project Proponent, Contractor	Prior to construction works within the area 5 m of the Project alignment neighbouring Sites A to F, and works area of the cycle track section along Castle Peak Road – San Tin near San Sham Road.	Guidance Note for Contaminated Land Assessment and Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards, and Car Repair/ Dismantling Workshops
S.8.7.5	S.7.3.1	The following control measures should be implemented when handling identified contaminated materials: <ul style="list-style-type: none"> ▪ 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. 	Safety precautionary measures for identified contaminated materials	Contractors	During construction at works areas neighbouring Sites A to F and works area of the cycle track section along Castle Peak Road – San Tin near San Sham Road	Guidance Note for Contaminated Land Assessment and Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards, and Car Repair/ Dismantling Workshops

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location/ Timing of implementation of Measures	What requirements or standards for the measures to achieve?
S.8.7.5	S.7.3.1	<p><u>Management of Contaminated Soils</u></p> <ul style="list-style-type: none"> ▪ Where appropriate, the use of bulk handling equipment should be maximised to reduce the potential contacts between excavated contaminated materials and associated workers; ▪ The plants for excavation and transportation of the material shall be cleaned prior to leaving the Site; ▪ 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 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 	Proper management of contaminated soils	Contractors	During construction at works areas neighbouring Sites A to F and works area of the cycle track section along Castle Peak Road – San Tin near San Sham Road	Guidance Note for Contaminated Land Assessment and Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards, and Car Repair/ Dismantling Workshops
Operational Phase						
N/A	N/A	None specific	N/A	N/A	N/A	N/A

Table A1-6 Ecological & Fisheries Impact – Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location/ Timing of implementation of Measures	What requirements or standards for the measures to achieve?
Construction Phase						
S.9.11.4	S.8.2.3	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. It is more realistic to further assess the trees with potential for bat roosting at a later stage in the project, programmed at such a time that a survey can be completed in a reasonable timescale prior to felling	Ecological – to minimize ecological impact/ ecological enhancement works	Contractor, ET	During construction	EIA, Contractual requirements
S.9.11.17 - 9.11.19	S.8.2.4	For the Kam Tin section and the Long Valley section of the Project, construction works shall be carried out during the dry season (October to March) 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.	Ecological – to minimize ecological impact/ ecological enhancement works	Contractor	During construction	EIA, Contractual requirements
S.9.11.23	S.8.2.5	Construction of the section in the vicinity of Mai Po Egretty would need to be completed outside of the recognised breeding season for Ardeids in Hong Kong to prevent any disturbance to the nesting birds. This breeding season is from March to August inclusive. Therefore, construction should take place between the months of <u>September to February</u> to avoid any disturbance to breeding and nesting birds	Ecological – to minimize ecological impact/ ecological enhancement works	Contractor	During construction	EIA, Contractual requirements
S.9.11.25	S.8.2.6	Planting of tall bamboo or other vegetation could also be implemented at the corner of Mai Po Road and Castle Peak Road on the northern side to act as a screen between the cycle track and egretty. This may help to reduce any potential disturbance to breeding ardeids	Ecological – to minimize ecological impact/ ecological enhancement works	Contractor	During construction	EIA, Contractual requirements
S.9.11.7	S.8.2.6	<i>In situ</i> compensation planting should occur at the Information Kiosk and R9, to provide continuing function of the bamboo and plantation (as well as the provision of potential roosting habitats for birds, an anticipated benefit of the mitigation planting from a previous project (Maunsell 1998).	Ecological – to minimize ecological impact/ ecological enhancement works	Contractor	During construction	EIA, Contractual requirements

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location/ Timing of implementation of Measures	What requirements or standards for the measures to achieve?
S.10.5.1	S.8.2.2	Local narrowing of the cycle track (from 4m to 3m) shall be implemented to avoid the impact of the cycle track on the single, inactive fishpond edge just outside Mai Po Village (see Figure 10-1 of the EIA Report).	Fisheries – to minimize impact to fisheries	Contractor	During construction	EIA, Contractual requirements
S.10.5.4	S.8.2.7	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	Fisheries – to minimize impact to fisheries	Contractor	During construction	EIA, Contractual requirements
S.10.5.4	S.8.2.8	Along Pok Wai South Road and San Tin Tsuen Roads, once the final construction sequencing is known, liaison with local residents and aquaculturists should be implemented in order to minimize temporary road blockages and to identify the best timing for works along this area	Fisheries – to minimize impact to fisheries	Contractor	During construction	EIA, Contractual requirements
S.10.5.3	S.8.2.9	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 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	Fisheries – to minimize impact to fisheries	Contractor	During construction	EIA, Contractual requirements
S.9.11.27	S.8.2.11	The following good work practices are recommended: <ul style="list-style-type: none"> ▪ Avoid soil storage against trees; ▪ Fence off any potentially ecologically sensitive areas; ▪ 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 	Ecological – to minimize ecological impact/ ecological enhancement works	Contractor	During construction	EIA, Contractual requirements

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location/ Timing of implementation of Measures	What requirements or standards for the measures to achieve?
Operational Phase						
S.9.11.26	S.8.2.10	Implementation 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 to help to reduce any potential disturbance to wildlife.	Ecological – to minimize ecological impact/ ecological enhancement works	Contractor	During construction	EIA, Contractual requirements
S.9.11.26	S.8.2.10	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.	Ecological – to minimize ecological impact/ ecological enhancement works	Contractor	During construction	EIA, Contractual requirements
S.9.13.2	S.8.3.1	Operational Phase EM&A will comprise of an audit undertaken by the ET Leader during the first year of operation of the cycle track to ensure appropriate implementation of mitigation measures including signage, mitigation planting at Mai Po Egretty, R9 and planting for screening at meander 8 in Long Valley.	Ecological – to minimize ecological impact/ ecological enhancement works	Contractor, ET	During operation	EIA, Contractual requirements

Table A1-7 Cultural Heritage Impact – Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location/ Timing of implementation of Measures	What requirements or standards for the measures to achieve?
Construction Phase						
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.	Cultural heritage protection	Contractors	During the construction period	AMO
Operational Phase						
N/A	N/A	None specific	N/A	N/A	N/A	N/A

Table A1-8 Landscape & Visual Impact – Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	Mit. Code	Recommended Mitigation Measures	Location	Funding	Implementation/ Maintenance Agent	Relevant Standard or Requirement	Implementation Stages			Timing of Implementation	Objectives of the Recommended Measure and Main Concern to address
							D	C	O		
Detailed Design Phase											
Table 12-11	CP1	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 ETWB TCW No. 3/2006, Tree Preservation	Site	Project Proponent	Project Proponent, IDC Consultant	EIA, Contractual requirements Annex 10 and Annex 18 of EIAO-TM, ETWB TCW No. 3/2006 & WBTC No. 14/2002	✓			During detailed design	Landscape mitigation measures
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 fallen within the cycle track works area shall be incorporated in the final landscape design of this Project.	Site	Project Proponent	Project Proponent, IDC Consultant	EIA, Contractual requirements Annex 10 and Annex 18 of EIAO-TM, ETWB TCW No. 3/2006 & WBTC No. 14/2002	✓			During detailed design	Landscape mitigation measures

EIA Ref.	Mit. Code	Recommended Mitigation Measures	Location	Funding	Implementation/ Maintenance Agent	Relevant Standard or Requirement	Implementation Stages			Timing of Implementation	Objectives of the Recommended Measure and Main Concern to address
							D	C	O		
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 Survey Report and approval from relevant departments at that stage	Site	Project Proponent	Project Proponent, IDC Consultant	EIA, Contractual requirements Annex 10 and Annex 18 of EIAO-TM, ETWB TCW No. 3/2006 & WBTC No. 14/2002	✓			During detailed design	Landscape mitigation measures
Construction Phase Landscape and Visual Mitigation Measures											
Table 12-11	CP1	Preservation of Existing Vegetation									
	CP1.1	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.	Site	Project Proponent	Project Landscape Architect / Contractor, Project Proponent	Annex 10 and Annex 18 of EIAO-TM, ETWB TCW No. 3/2006 & WBTC No. 14/2002	✓			Throughout design phase	To minimize the disturbance to the existing landscape resources.
	CP1.2	Creation of precautionary area around trees to be retained equal to half of the trees canopy diameter. Precautionary area to be fenced.	Site	Project Proponent	Contractor / Contractor	Annex 10 and Annex 18 of EIAO-TM, ETWB TCW No. 3/2006 & WBTC No. 14/2002		✓		Before Construction phase Commence	To ensure the success of the tree preservation proposals.

EIA Ref.	Mit. Code	Recommended Mitigation Measures	Location	Funding	Implementation/ Maintenance Agent	Relevant Standard or Requirement	Implementation Stages			Timing of Implementation	Objectives of the Recommended Measure and Main Concern to address
							D	C	O		
	CP1.3	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.	Site	Project Proponent	Contractor / Contractor	Annex 10 and Annex 18 of EIAO-TM, ETWB TCW No. 3/2006 & WBTC No. 14/2002		✓		Throughout construction phase	To ensure the success of the tree preservation proposals.
	CP1.4	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.	Site	Project Proponent	Contractor / Contractor	Annex 10 and Annex 18 of EIAO-TM, ETWB TCW No. 3/2006 & WBTC No. 14/2002		✓		Throughout construction phase	To ensure the success of the tree preservation proposals.
	CP1.5	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.	Site	Project Proponent	Contractor / Contractor	Annex 10 and Annex 18 of EIAO-TM, ETWB TCW No. 3/2006 & WBTC No. 14/2002		✓		Throughout construction phase	To ensure the success of the tree preservation proposals.
	CP1.6	The watering of existing vegetation particularly during periods of excavation when the water table beneath the existing vegetation is lowered.	Site	Project Proponent	Contractor / Contractor	Annex 10 and Annex 18 of EIAO-TM, ETWB TCW No. 3/2006 & WBTC No. 14/2002		✓		Throughout construction phase	To ensure the success of the tree preservation proposals.
	CP1.7	The rectification and repair of damaged vegetation following the construction phase to it's 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	Site	Project Proponent	Contractor / Contractor	Annex 10 and Annex 18 of EIAO-TM, ETWB TCW No. 3/2006 & WBTC No. 14/2002		✓		Throughout construction phase	To ensure the success of the tree preservation proposals.

EIA Ref.	Mit. Code	Recommended Mitigation Measures	Location	Funding	Implementation/ Maintenance Agent	Relevant Standard or Requirement	Implementation Stages			Timing of Implementation	Objectives of the Recommended Measure and Main Concern to address
							D	C	O		
		intention of the area affected									
	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 through out the construction period	Site	Project Proponent	Contractor / Contractor	Annex 10 and Annex 18 of EIAO-TM, ETWB TCW No. 3/2006 & WBTC No. 14/2002		✓		Throughout construction phase	To ensure the success of the tree preservation proposals.
	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 WBTC No. 14/2002.	Site	Project Proponent	Project Proponent, Project Landscape Architect / NA	Annex 10 and Annex 18 of EIAO-TM, ETWB TCW No. 3/2006 & WBTC No. 14/2002	✓			Throughout design phase	To ensure the tree preservation and planting proposals are integrated with the existing landscape context and that the landscape resources are preserved where appropriate.
	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.	Site	Project Proponent	Landscape Architect, Project Proponent / NA	Annex 10 and Annex 18 of EIAO-TM, ETWB TCW No. 3/2006 & WBTC No. 14/2002	✓	✓		Throughout design and construction phases	To ensure the tree preservation and planting proposals are integrated with the existing landscape context and that the landscape resources are preserved where appropriate.
Table 12-11	CP2	Preservation of Existing Topsoil									
	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.	Site	Project Proponent	Contractor / Contractor	Annex 10 and Annex 18 of EIAO-TM		✓		Throughout construction phase	To provide a viable growing medium suited to the existing conditions and reduce the need for the importation of topsoil.

EIA Ref.	Mit. Code	Recommended Mitigation Measures	Location	Funding	Implementation/ Maintenance Agent	Relevant Standard or Requirement	Implementation Stages			Timing of Implementation	Objectives of the Recommended Measure and Main Concern to address
							D	C	O		
	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.	Site	Project Proponent	Contractor / Contractor	Annex 10 and Annex 18 of EIAO-TM		✓		Throughout construction phase	To provide a viable growing medium suited to the existing conditions and reduce the need for the importation of topsoil.
	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.	Site	Project Proponent	Contractor / Contractor	Annex 10 and Annex 18 of EIAO-TM		✓		Throughout construction phase	To provide a viable growing medium suited to the existing conditions and reduce the need for the importation of topsoil.
Table 12-11	CP3	Works Area and Temporary Works Areas									
	CP3.1	Where appropriate to the final design the landscape of these works areas should be restored following the completion of the construction phase.	Site	Project Proponent	Contractor / Contractor	Annex 10 and Annex 18 of EIAO-TM		✓		Through out construction phase	To minimize the disturbance to existing landscape resources and change of visual amenity.
	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.	Site	Project Proponent	Contractor / Contractor	Annex 10 and Annex 18 of EIAO-TM		✓		Through out construction phase	To minimize the disturbance to existing landscape resources and change of visual amenity.
	CP3.3	Screen the works area during the construction phase through the use of decorative hoarding along the site boundary facing adjacent VSRs	Site	Project Proponent	Contractor / Contractor	Annex 10 and Annex 18 of EIAO-TM		✓		Through out construction phase	To minimize the disturbance to existing landscape resources and change of visual amenity.

EIA Ref.	Mit. Code	Recommended Mitigation Measures	Location	Funding	Implementation/ Maintenance Agent	Relevant Standard or Requirement	Implementation Stages			Timing of Implementation	Objectives of the Recommended Measure and Main Concern to address
							D	C	O		
Table 12-11	CP4	Mitigation Planting									
	CP4.1	Replanting of disturbed vegetation should be undertaken at the earliest possible stage of the construction phase	Site	Project Proponent	Contractor / Contractor	Annex 10 and Annex 18 of EIAO-TM, ETWB TCW No. 3/2006 & WBTC No. 14/2002		✓		After the site formation and on completion of planting area.	To minimize the disturbance to existing landscape resources and minimize the impacts on the visual amenity of the area.
	CP4.2	Use of native plant species predominantly in the planting design for the buffer areas.	Site	Project Proponent	Project Landscape Architect/ NA	Annex 10 and Annex 18 of EIAO-TM, ETWB TCW No. 3/2006 & WBTC No. 14/2002	✓	✓		After the site formation and on completion of planting area.	To enhance the local landscape and ecological value.
	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.	Site	Project Proponent	Landscape Architect, Project Proponent / NA	Annex 10 and Annex 18 of EIAO-TM, ETWB TCW No. 3/2006 & WBTC No. 14/2002	✓	✓		Throughout design and construction phases	To ensure the tree preservation and planting proposals are integrated with the existing landscape context and that valuable landscape resources are preserved where appropriate to the final design.
Table 12-11	CP5	Transplantation of Existing Trees									
	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.	Site	Project Proponent	Project Proponent / Contractor	Annex 10 and Annex 18 of EIAO-TM, ETWB TCW No. 3/2006 & WBTC No. 14/2002	✓	✓		Throughout design and construction phases	To ensure the tree preservation and planting proposals are integrated with the existing landscape context and that valuable landscape resources are preserved where appropriate to the final design.

EIA Ref.	Mit. Code	Recommended Mitigation Measures	Location	Funding	Implementation/ Maintenance Agent	Relevant Standard or Requirement	Implementation Stages			Timing of Implementation	Objectives of the Recommended Measure and Main Concern to address
							D	C	O		
	CP5.2	The implementation program should reserve enough time for advance tree transplanting preparation.	Site	Project Proponent	Project Proponent / Contractor	Annex 10 and Annex 18 of EIAO-TM, ETWB TCW No. 3/2006 & WBTC No. 14/2002	✓	✓		Throughout design and construction phases	To ensure the tree preservation and planting proposals are integrated with the existing landscape context and that valuable landscape resources are preserved where appropriate to the final design.
Operational Phase Landscape and Visual Mitigation Measures											
Table 12-12	OP1	Design of Cycle Track and Associated Facilities									
	OP1.1	Where possible integrate the alignment, as far as technically feasible, with existing built structures. Select responsive The locations for the associated facilities away from landscape and visually sensitive areas.	Site	Project Proponent	Project Engineer and Architect/ NA	Annex 10 and Annex 18 of EIAO-TM and BD	✓			Throughout Design phase	To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect.
	OP1.2	Where possible adopt a simple building design and building height profile, single-storey (lower than the adjacent village houses), responding to the village houses in the context.	Site	Project Proponent	Project Engineer and Architect/ NA	Annex 10 and Annex 18 of EIAO-TM and BD	✓			Throughout Design phase	To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect.
	OP1.3	Use of natural materials such as wooden framing or sustainable materials such as recycle plastic for built structure.	Site	Project Proponent	Project Engineer and Architect/ NA	Annex 10 and Annex 18 of EIAO-TM and BD	✓			Throughout Design phase	Responsive building façade treatment to reduce the apparent visual mass of the facilities and reduce the glare effect from the reflection of sunlight.

EIA Ref.	Mit. Code	Recommended Mitigation Measures	Location	Funding	Implementation/ Maintenance Agent	Relevant Standard or Requirement	Implementation Stages			Timing of Implementation	Objectives of the Recommended Measure and Main Concern to address
							D	C	O		
	OP1.4	Use of natural tones with non-reflective finishes on the outward facing building facades to reduce glare effect. Sustainable material such as recycle plastic shall be considered.	Site	Project Proponent	Project Engineer and Architect/ NA	Annex 10 and Annex 18 of EIAO-TM, HKPSG and BD	✓			Throughout Design phase	To reduce the nighttime glare effect to the surrounding environs.
	OP1.5	Formulate lighting operation management programme to minimize potential light spillage and glare impacts.	Site	Project Proponent	HyD and ArchSD/ HyD and ArchSD	Annex 10 and Annex 18 of EIAO-TM			✓	Through out Operation phase	To reduce the nighttime glare effect to the surrounding environs.
Table 12-12	OP2	Roadside and Amenity Planting									
	OP2.1	Utilise large ornamental trees with high canopy and thin foliage to allow some through views from the adjacent neighbourhood and give accent to the existing road planting and wooded areas with the advantage of creating a more coherent landscape framework whilst native species will utilise on sloping area improving the ecological connectivity between existing woodland habitats.	Site	Project Proponent	Project Landscape Architect / AFCD and LCSD	Annex 10 and Annex 18 of EIAO-TM, HKPSG and BD	✓		✓	Through out Design phase	Provide a linkage with the existing roadside and woodland planting areas creating a more coherent landscape framework.
	OP2.2	Large Feature Trees will utilise within the resting station and education centre or along the cycle tracks where space allows	Site	Project Proponent	Project Landscape Architect / AFCD and LCSD	Annex 10 and Annex 18 of EIAO-TM, HKPSG & BD	✓		✓	Through out Design phase	Conserve and enhance the landscape interest.

EIA Ref.	Mit. Code	Recommended Mitigation Measures	Location	Funding	Implementation/ Maintenance Agent	Relevant Standard or Requirement	Implementation Stages			Timing of Implementation	Objectives of the Recommended Measure and Main Concern to address
							D	C	O		
Table 12-12	OP3	Compensatory Planting Proposals									
	OP3.1	Utilise ornamental species along the track and within the resting stations and education whilst species native to Hong Kong will be added the roadside planting along cycle track or on sloping area	Site	Project Proponent	Project Landscape Architect / AFCD and LCSD	Annex 10 and Annex 18 of EIAO-TM, HKPSG and BD	✓		✓	Through out Design phase	The planting proposal seeks to compensate for the predicted tree loss resulting from the construction of the proposed works, visually integrate the proposals within its existing landscape framework and provide an improved visual amenity for future residents.
	OP3.2	A qualified or registered landscape architect will be involved in the design, construction supervision and monitoring, and maintenance period to oversee the implementation of the recommended landscape and visual mitigation measures including the tree preservation and landscape works on site.	Site	Project Proponent	Project Proponent / NA	Annex 10 and Annex 18 of EIAO-TM, HKPSG and BD	✓			Through out Design phase	The planting proposal seeks to compensate for the predicted tree loss resulting from the construction of the proposed works, visually integrate the proposals within its existing landscape framework and provide an improved visual amenity for future users.

EIA Ref.	Mit. Code	Recommended Mitigation Measures	Location	Funding	Implementation/ Maintenance Agent	Relevant Standard or Requirement	Implementation Stages			Timing of Implementation	Objectives of the Recommended Measure and Main Concern to address
							D	C	O		
Table 12-12	OP4	Treatment of Retaining Wall and Slopes									
	OP4.1	Use of soft landscape works including tree and shrub planting to give man-made slopes a more natural appearance blending into the woodland setting for the development	Site	Project Proponent	Project Landscape Architect / AFCD	Annex 10 and Annex 18 of EIAO-TM, HKPSG and BD GEO Publication No. 1/2000 "Technical Guidelines on Landscape Treatment and Bio-engineering for Man-made Slopes and Retaining Walls"	✓			Through out Design phase	The design seeks to visually integrate the engineered slope feature within the rural and riverside landscapes.
	OP4.2	Utilise whip sized planting on the face of soil cut slopes and at the crest and toe of the slope, and within berm planters these smaller, younger plants adapt to their new growing conditions more quickly than larger sized stock and establish a naturalistic effect more rapidly.	Site	Project Proponent	Project Landscape Architect/ AFCD	Annex 10 and Annex 18 of EIAO-TM, HKPSG and BD GEO Publication No. 1/2000 "Technical Guidelines on Landscape Treatment and Bio-engineering for Man-made Slopes and Retaining Walls"	✓		✓	Through out Design phase	The planting proposal seeks to integrate the engineered slope feature within the rural and riverside landscapes.

Legend: D – Design, C – Construction, O - Operation

Note: BD– Building Ordinance

ETWB TCW – Environmental and Transport Works Bureau Technical Circular

HKPSG – Hong Kong Planning Standards and Guidelines

EIAO-TM – Technical Memorandum on Environmental Impact Assessment Process

TPO – Town Planning Ordinance

WBTC - Works Bureau Technical Circulars