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**Contract No. PM 10/2022 -  
Independent Environmental Checker for Drainage Improvement Works at  
Yuen Long – Stage 2**

**Verification of Monthly EM&A Report**

25 March 2024

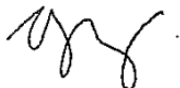
Dear Sir,

We refer to the Monthly EM&A Report under the captioned Project, which was certified on 22 March 2024 by the Environmental Team Leader appointed under Condition 2.1 of the Environmental Permit No. EP-596/2021 (hereinafter referred to as "EP").

We would like to inform you that we have no adverse comment on the captioned submission. Therefore, we hereby verify the abovementioned submission in accordance with EP Conditions 1.9 and 4.4.

Should you have any queries regarding the captioned, please contact our Hin Chan at 2828 5764 or the undersigned at 2828 5751.

Yours faithfully  
for MOTT MACDONALD HONG KONG LIMITED



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**Drainage  
Improvement Works  
Near Four Villages in  
Yuen Long – Sung  
Shan New Village, Tai  
Wo, Lin Fa Tei and Ha  
Che**

Monthly Environmental  
Monitoring and Audit (EM&A)  
Report

**Wing Tat Civil Engineering Co.  
Limited**

Revision: 3

2024-03-22

**aurecon**

*Bringing ideas  
to life*

# Document control record

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# Executive Summary

- A1. This is the first Monthly Environmental Monitoring and Audit (EM&A) Report for Drainage Improvement Works Near Four Villages in Yuen Long (the Project). This report was prepared by Aurecon Hong Kong Limited under Contract No. DC/2022/02 Drainage Improvement Works at Yuen Long – Stage 2 (hereinafter called the “Contract”). This report documents the findings of EM&A works during the reporting period from 20 to 29 February 2024.
- A2. The project construction was commenced on 20 February 2024 and the construction phase EM&A programme started on 20 February 2024.

## Key Construction Works in the Reporting Period

- A3. A summary of construction activities undertaken during the reporting period is presented below:

### Ha Che

- Lifting Operation;
- Plant Operation;
- Excavation; and
- Sheet Piling

## Environmental Monitoring and Audit Programme

- A4. The monthly EM&A programme was undertaken by the ET in accordance with the approved EM&A Manual. A summary of the monitoring and audit activities during the reporting period is presented in **Table A1**.

**Table A1 Summary of EM&A activities in the Reporting Period**

EM&A Activities	Date
Water Quality Monitoring	21, 23, 26 and 28 February 2024
Noise Monitoring	23 February 2024
Weekly Environmental Site Inspection	21 and 28 February 2024

## Breaches of Action and Limit Levels

- A5. Summary of the environmental exceedances of the reporting month is tabulated in **Table A2**.

**Table A2 Summary of Exceedances in the Reporting Period**

Environmental Monitoring	Parameter	No. of non-project related exceedances		Total No. of non-project related exceedances	No. of exceedances related to the project		Total No. of exceedance related to the project
		AL	LL		AL	LL	
Water Quality	DO	0	1	1	0	0	0
	Turbidity	0	1	1	0	0	0
	SS	0	2	2	0	0	0
Noise	Leq(30mins)	0	0	0	0	0	0

### Water Quality

A6. All water quality monitoring was conducted as scheduled in the reporting period. Two (2) limit level exceedances for SS, one (1) limit level exceedance for turbidity, and one (1) limit level exceedance of DO during impact water quality monitoring were recorded. After investigation, all exceedances were considered non-project related.

### Noise

A7. No Action Level or Limit Level exceedance was recorded for construction noise monitoring in the reporting period.

## **Complaint Log**

A8. No environmental complaint was received in the reporting period.

## **Notification of Summons and Successful Prosecutions**

A9. No notification of summons or successful prosecutions was received in the reporting period.

## **Reporting Changes**

A10. There was no reporting change in the reporting period.

## **Future Key Issues**

A11. The major site activities for the next reporting period are summarized below:

### Ha Che

- Lifting Operation;
- Plant Operation;
- Excavation;
- Sheet Piling; and
- Installation of Precast unit

# 1 Introduction

## 1.1 Project Background

- 1.1.1 The Drainage Master Plan Studies for the Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Basin (YLDMP) were completed in 1998. The majority of the improvement works in Yuen Long and Kam Tin recommended under the YLDMP Study have been completed. Since completion of the DMP Studies, there have been changes in developments within the areas and new development proposals and town planning studies were commissioned. In addition, some new flooding complaints were received at the upstream areas of the drainage basins, indicating that further improvement to the drainage systems was required.
- 1.1.2 The Drainage Services Department (DSD) commissioned the “Review of Drainage Master Plans in Yuen Long and North Districts – Feasibility Study” (the Review Study) in 2008 so that the new development scenarios could be incorporated and the effectiveness of the previously recommended works could also be assessed. The Review Study completed in end 2011 identified that some areas in Yuen Long District could not meet the required flood protection level according to the latest land use changes and future developments taking into account various factors, including sedimentation at the downstream main channels, mangrove growth at river estuaries, updated extreme sea level statistics at Tsim Bei Tsui and projected climate change impacts, in the hydraulic analysis. To account for the severity and extent of possible flooding and the works implementation time, the Review Study proposed drainage improvement works in Yuen Long District.
- 1.1.3 Atkins China Ltd (ACL) was commissioned by the DSD in November 2013 to undertake an Investigation, Design and Construction Consultancy entitled “Agreement No. CE 22/2013 (DS) Drainage Improvement Works in Yuen Long, Stage 1 – Investigation, Design and Construction” (hereinafter called the Assignment). The Project comprises construction of drainage improvement works to four villages (namely Sung Shan New Village, Tai Wo, Lin Fa Tei and Ha Che) including landscaping, waterscaping, utilities diversion, temporary traffic arrangements, re-provisioning / improvements to existing dry weather flow intercepting system and any other works incidental to the completion of the Project.
- 1.1.4 An Environmental Impact Assessment (EIA) Study Brief (ESB-279/2014) for four villages namely Ha Che, Tai Wo, Lin Fa Tei and Sung Shan New Village which is a designated project was issued by the Environmental Protection Department (EPD) on 14 October 2014.
- 1.1.5 The EIA Report for Drainage Improvement Works Near Four Villages in Yuen Long – Sung Shan New Village, Tai Wo, Lin Fa Tei and Ha Che (referred to as “the Project”) (Register No. AEIAR-229/2021) was approved on 3 June 2021 and the Environmental Permit (EP) EP-596/2021, covering the Upgrading, Construction and Deepening of the Project was granted on 28 September 2021.
- 1.1.6 Aurecon Hong Kong Limited (Aurecon) is commissioned by the Wing Tat Civil Engineering Co. Limited to undertake the Environmental Team (ET) services and carry out the Environmental Monitoring and Audit (EM&A) for Drainage Improvement Works Near Four Villages in Yuen Long - Sung Shan New Village, Tai Wo, Lin Fa Tei and Ha Che (Register No. EP-596/2021).



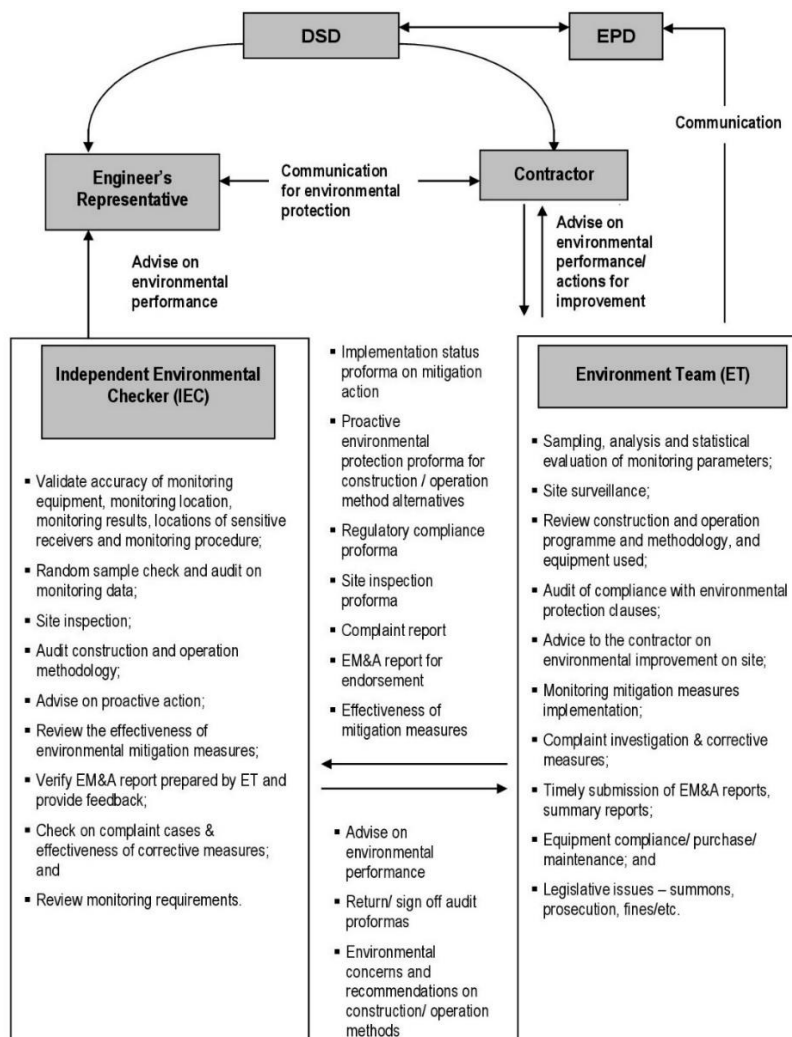
1.1.7 This is the 1<sup>st</sup> Monthly EM&A Report summarizing the key findings of the construction phase EM&A programme from 20 February to 29 February 2024 (the reporting period) and is submitted to fulfil the requirements in Condition 4.4 of EP-596/2021 and Section 12.2 of the approved EM&A Manual of the Project.

## 1.2 Construction Works Programme

1.2.1 The construction programme and the location plan of the Project are shown in **Appendix 1.1** and **Figure 1.1** respectively. The locations of the proposed drainage improvement works at the four villages are presented in **Figures 1.2a** to **Figures 1.2d**.

## 1.3 Project Organisation

1.3.1 Involvement of relevant parties in a collaborative and interactive manner is essential for the implementation of the recommended EM&A programme. The following sections outline the primary responsibilities and duties of the key EM&A programme participants. The lines of communication with respect to EM&A works are shown in **Diagram 1.1**.



**Diagram 1.1 Organisation Chart**

1.3.2 Parties with different levels of involvement in the Project organisation are summarized in **Table 1.1**.

**Table 1.1 Parties Involved in Project Organisation**

Parties	Organization / Company
Project Proponent	Drainage Services Department
Supervisor / Engineer's Representative (ER)	Atkins China Ltd
Contractor	Wing Tat Civil Engineering Co. Limited
Environmental Team (ET)	Aurecon Hong Kong Limited
Independent Environmental Checker (IEC)	Mott MacDonald Hong Kong Limited

1.3.3 The key personnel contact names and numbers are summarized in **Appendix 1.2**.

## 1.4 Construction Works Programme and Construction Works Area

1.4.1 The construction works commenced on 20 February 2024. The construction works programme and the construction works area of the Project are shown in **Appendix 1.1** and **Figure 1.1** respectively. A summary of construction activities undertaken during this reporting period is presented below:

### Ha Che

- Lifting Operation;
- Plant Operation;
- Excavation; and
- Sheet Piling

## 1.5 Summary of Environmental Status

1.5.1 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project is presented in **Table 1.2**.

**Table 1.2 Status of Environmental License, Notifications and Permits**

Permit / License No.	Valid Period		Status
	From	To	
Environmental Permit			
EP-596/2021	28/09/2021	N/A	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation			
Ref. Number: 497623	29/09/2023	N/A	Valid
Billing Account for Disposal of Construction Waste			
7048880	18/10/2023	N/A	Valid
Registration of Chemical Waste Producer			

Permit / License No.	Valid Period		Status
	From	To	
5213-526-W3771-01	02/11/2023	N/A	Valid
Effluent Discharge License under Water Pollution Control Ordinance			
N/A	N/A	N/A	Under application

1.5.2 The status for all environmental aspects is presented in **Table 1.3**.

1.5.3 The EM&A programme has been implemented in accordance with the recommendations presented in the approved EIA Report and the approved EM&A Manual. A summary of implementation status of the environmental mitigation measures for the construction phase of the Project during the reporting period is provided in **Appendix 1.3**.

**Table 1.3 Summary of Status for Key Environmental Aspects under the Approved EM&A Manual**

Parameters	Status
<b>Water Quality</b>	
Baseline Monitoring under Approved EM&A Manual	The baseline water quality monitoring results have been reported in Baseline Monitoring Report and submitted to EPD under EP Condition 4.3.
Impact Monitoring	The regular impact water quality monitoring was commenced on 21 February 2024. Since construction works were only carried out at Ha Che during the reporting period, impact water quality monitoring was only carried out at monitoring points located at Ha Che (i.e. C9 and C10).
<b>Noise</b>	
Baseline Monitoring	Up to the end of the reporting period, the baseline noise monitoring results for Ha Che have been reported in the Baseline Monitoring Report and submitted to the EPD under EP Condition 4.3. Baseline noise monitoring results for Tai Wo, Lin Fa Tei, and Sung Shan New Village will be further updated in the Baseline Monitoring Report and submitted to the EPD.
Impact Monitoring	The weekly impact noise monitoring was commenced on 23 February 2024. Since construction works were only carried out at Ha Che during the reporting period, impact noise monitoring was only carried out at monitoring points located at Ha Che (i.e. HC_M3A, HC_M4 and HC_M6).
<b>Ecology</b>	
Freshwater Crab Translocation Plan (FCTP)	The EPD had no further comment on the submitted FCTP on 9 February 2024. Pre-construction survey at Ha Che was carried out between 5 and 7 February 2024. Pre-construction survey at Lin Fa Tei is scheduled between 11 and 13 March 2024.

Parameters	Status
Habitat Creation and Management Plan (HCMP)	The first draft of HCMP was submitted to the EPD and the Agriculture, Fisheries and Conservation Department (AFCD) on 22 December 2023. Following comments from the EPD and AFCD dated 17 January 2024, the HCMP is pending for further revision.
Mitigation Measures listed in Approved EM&A Manual	On-going
<b>Waste Management</b>	
Mitigation Measures listed in Approved EM&A Manual	On-going
<b>Land Contamination</b>	
Mitigation Measures listed in Approved EM&A Manual	No suspected contamination was observed or reported by the Contractor in the reporting period.
<b>Landscape and Visual</b>	
Landscape and Visual Mitigation Plan (LVMP)	The first draft of LVMP was submitted to the EPD, the AFCD and the Planning Department (PlanD) on 22 December 2023. Following comments from the EPD, AFCD and PlanD on 7 February 2024, the LVMP is pending for further revision.
Weekly Site Audit	On-going
Mitigation Measures listed in Approved EM&A Manual	On-going
<b>Cultural Heritage</b>	
Archaeological Survey	Archaeological Survey will be carried out at site area within Lin Fa Tei of Archaeological Interest.
Mitigation Measures listed in Approved EM&A Manual	On-going
<b>Environmental Audit</b>	
Site Inspection covering Measures of Air Quality, Noise, Water Quality, Waste, Land Contamination, Ecological Quality, Landscape and Visual Impacts and Cultural Heritage	On-going

## 2 Water Quality

### 2.1 Monitoring Requirement

- 2.1.1 In accordance with the approved EM&A Manual, impact water quality monitoring should be carried out three days per week at all designated monitoring stations during the construction period. The interval between two sets of monitoring should not be less than 36 hours.
- 2.1.2 Replicate in-situ measurements of dissolved oxygen (DO), temperature, turbidity, pH, and suspended solids (SS) for each independent sampling event shall be collected to ensure a robust statistically interpretable database.

### 2.2 Monitoring Location

- 2.2.1 Impact water quality monitoring was conducted at 6 monitoring stations which is summarized in **Table 2.1**. The location of water quality monitoring stations is shown in **Figure 2.1a** to **Figure 2.1d**.

**Table 2.1 Summary of Impact Water Quality Monitoring Stations**

Stream	Monitoring ID	Coordinates (HK Grid)		Remarks
		Easting	Northing	
SSNV	C1A <sup>(1)</sup>	821702	831945	Alternative Impact Monitoring Point
	C2	822459	831470	Control Monitoring Point
	C3A <sup>(2)</sup>	822413	831284	Alternative Control Monitoring Point
TW	C4	825497	830664	Control Monitoring Point
	C5	825486	830716	Impact Monitoring Point
LFT	C6	827232	831713	Control Monitoring Point
	C7A <sup>(3)</sup>	826865	832115	Alternative Control Monitoring Point
	C8	826513	832075	Impact Monitoring Point
HC	C9	828304	835029	Control Monitoring Point
	C10	827919	834271	Impact Monitoring Point

Notes:

- (1) At Station C1, access to safe sampling of water is not feasible due to steep banks on both sides of the stream channel. An alternative monitoring location is proposed at Station C1A, which is about 250 m along the same stream channel downstream of Station C1 and is accessible for safe water sampling.
- (2) During the first day of baseline monitoring at Station C3, shallow water was observed, and the ET could not sample enough water for monitoring. As agreed by the ER, the Contractor, and the IEC, a new sampling location, Station C3A, was identified at about 130 m upstream and was accessible for water sampling.
- (3) For Station C7, the location is not close to the nearest, revised works boundary (about 200 m away). An alternative monitoring location is proposed at Station C7A, which is about 23 m upstream of the nearest, revised works boundary.

## 2.3 Monitoring Parameter and Frequency

2.3.1 The monitoring parameters, frequency and duration of impact water quality monitoring are listed in **Table 2.2**.

**Table 2.2 Parameters measured in the Impact Water Quality Monitoring**

Parameter	Frequency	Duration
Dissolved oxygen (DO), temperature, turbidity, salinity, pH, stream water depth and suspended solids (SS)	3 days in a week	Throughout the construction phase

2.3.2 Monitoring location and position, time, sampling depth, weather conditions and any special phenomena or work underway nearby are recorded during the impact monitoring.

## 2.4 Sampling Depths & Replication

2.4.1 During impact water quality monitoring, each station was sampled. Due to a shallow water depth (less than 3 m) with low flow rates in rivers, all the monitoring would be located at mid-depth level.

2.4.2 Duplicate water samples were collected at each sampling depth for laboratory measurement of SS. Samples were stored in high density polythene bottles, packed in ice (cooled to 4 °C without being frozen), and delivered to the laboratory on the same day of collection for analysis.

## 2.5 Monitoring Equipment

2.5.1 The measurement of DO, temperature, turbidity, salinity, pH and stream water depth were undertaken in-situ. In-situ monitoring instruments in compliance with the specifications listed under Section 6.3 of the approved EM&A Manual were adopted to undertake the water quality monitoring for the Project. Water quality monitoring equipment with the following specifications shall be supplied and maintained by the ET.

### Dissolved Oxygen and Temperature Measuring Equipment

2.5.2 The instrument for measuring dissolved oxygen and temperature should be portable and weatherproof complete with cable, sensor, and use DC power source. The equipment was capable of measuring:

- A dissolved oxygen level in the range of 0 – 20 mg/L and 0 – 200% saturation; and
- The temperature within 0 – 45 °C.

- 2.5.3 It should have a membrane electrode with automatic temperature compensation connected with a cable. Sufficient stocks of spare electrodes and cables should be available for replacement where necessary (e.g. YSI model 59 meter, YSI 5739 probe, YSI 5795A submersible stirrer with reel and cable or an approved similar instrument).

#### pH

- 2.5.4 pH meter (e.g. Hanna – HI 9024 or equivalent) should be used to measure pH value of water samples in-situ. It should be readable to 0.1 pH in a range of 0 to 14. Standard buffer solutions of at least pH 7 to pH 10 shall be used for calibration of the instrument before and after use.

#### Turbidity Measurement Equipment

- 2.5.5 The instrument should be a portable, weatherproof turbidity-measuring instrument with a comprehensive operation manual. The equipment should use a DC power source. It should have a photoelectric sensor capable of measuring turbidity between 0 – 1000 NTU and be equipped with a cable (e.g. Hach model 2100P or an approved similar instrument).

#### Suspended Solids

- 2.5.6 A water sampler should comprise a transparent PVC cylinder, with a capacity of not less than 2 litres, and should be effectively sealed with latex cups at both ends. The sampler should have a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler is at the selected water depth (e.g. Kahlsico Water Sampler or an approved similar instrument).
- 2.5.7 Water samples for suspended solids measurement shall be collected in high density polythene bottles, packed in ice (chilled to 4 °C without being frozen), and delivered to the laboratory as soon as possible after collection.

#### Water Depth Detector

- 2.5.8 A portable, battery-operated echo sounder should be used for determining water depth at each designated monitoring station.
- 2.5.9 For shallow water (less than 1 m deep), a portable water depth ruler will be used to measure water depth.

#### Monitoring Position Equipment

- 2.5.10 A hand-held or boat-fixed digital Global Positioning System (GPS) or other equivalent instrument of similar accuracy shall be provided and used during water quality monitoring to ensure the water sampling locations are correct during water quality monitoring work.

### Water Sampling Equipment

- 2.5.11 A transparent PVC or glass cylinder, which has a volume of not less than 2 litres and can be sealed at both ends with cups, should be equipped with a positive latching system. During the water sampling, a messenger is released to trigger the closure of the water sampler at suitable water depth.
- 2.5.12 For sampling location with shallow water depth, plastic bucket would be used instead.

### Calibration of In-situ Instruments

- 2.5.13 All in-situ monitoring instruments should be checked, calibrated and certified by a laboratory accredited under HOKLAS or another international accreditation scheme before use, and subsequently re-calibrated at 3-monthly intervals throughout all stages of the water quality monitoring. Responses of sensors and electrodes should be checked with certified standard solutions before each use. Wet bulb calibration for a DO meter should be carried out before measurement at each monitoring location.
- 2.5.14 For the on-site calibration of field equipment, the BS 127:1993, Guide to Field and On-Site Test Methods for the Analysis of Water should be observed.

### Back-up Equipment

- 2.5.15 Sufficient stocks of spare parts should be maintained for replacements when necessary. Backup monitoring equipment shall also be made available so that monitoring can proceed uninterruptedly even when some equipment is under maintenance, calibration, etc.
- 2.5.16 **Table 2.3** summarizes the equipment used in the water quality monitoring programme. Copies of the calibration certificates of multi-parameter water quality monitoring system are shown in **Appendix 2.1**.



**Table 2.3 Water Quality Monitoring Equipment**

Equipment	Model	Quantity	Serial No.	Parameter	Range	Accuracy
Water Sampler	Wildco 2.2L Water Sampler with messenger or plastic bucket (used in shallow water depth)	1	N/A	N/A	N/A	N/A
Multi-functional Water Quality Meter	YSI ProDSS (multi-parameters)	2	22D100436 and 22C106561	Dissolved Oxygen (DO)	0 to 500%	<ul style="list-style-type: none"> <li>0 to 200%: <math>\pm 1\%</math> of reading</li> <li>200 to 500%: <math>\pm 8\%</math> of reading</li> </ul>
				Temperature	-5 to 50 °C	$\pm 0.2$ °C
				pH	0 to 14 pH units	$\pm 0.2$ pH units
				Turbidity	0 to 4000 NTU	<ul style="list-style-type: none"> <li>0 to 999 NTU: 0.3 NTU or <math>\pm 2\%</math> of reading, whichever is greater</li> <li>1000 to 4000 NTU: <math>\pm 5\%</math> of reading</li> </ul>
Water Depth Ruler	鼎峯 0708	1	NA*	Water depth	0 – 7 m (Used for water depth less than 1 m)	$\pm 0.01$ m
Positioning Equipment	Garmin (GPSmap 78s)	1	1WL223754	Positioning	N/A	GPS: $\pm 1$ m

## 2.6 Monitoring Methodology

- 2.6.1 Water samples were collected at an appropriate water depth using a sealable transparent PVC or glass cylinder. For locations with shallow water depth, a plastic bucket was used as an alternative. Usually, water was then transferred to the sample bottles until they were filled to the top with no remaining air space before the lid was securely screwed on. For samples that were preserved with acid or alkalis prior to transport to the laboratory, the samples bottles were filled to the level specified by the analytical laboratory.
- 2.6.2 Multi-functional water quality meters were checked, calibrated and certified by Quality Pro Test-Consult Limited (HOKLAS reg no. 259) before use, and would be subsequently re-calibrated at 3-monthly intervals throughout all stages of the water quality monitoring. Responses of sensors and electrodes should be checked with certified standard solutions before each use. Wet bulb calibration for a DO meter should be carried out before measurement at each monitoring location. For the on-site calibration of field equipment, the BS 127:1993, Guide to Field and On-Site Test Methods for the Analysis of Water should be observed.
- 2.6.3 Water samples for suspended solids measurement were collected in high density polythene bottles, packed in ice (chilled to 4 °C being frozen), and delivered to the laboratory as soon as possible after collection.
- 2.6.4 Water sampling equipment deployed during the monitoring programme was decontaminated by manual washing and rinsed with clean distilled water after each sampling location.
- 2.6.5 All sampling bottles were labelled with the sample ID (including the indication of sampling station), laboratory number and sampling date. Water samples were dispatched to the testing laboratory for analysis as soon as possible after the sampling. All samples were stored in a cool box and kept at less than 4 °C but without frozen. All water samples were handled under chain of custody protocols and relinquished to the laboratory representatives at locations specified by the laboratory. The laboratory determination works started within 24 hours after collection of water samples.

### Laboratory Analytical Methods

- 2.6.6 Analysis of SS was carried out by a HOKLAS accredited laboratory (Acumen Laboratory and Testing Limited). At least two replicate samples from each independent sampling event were collected for the SS measurement. Sufficient water samples (about 3,000 mL) were collected at the monitoring stations for carrying out the laboratory SS determination. The analytical method for suspended solids is presented in **Table 2.4**.

**Table 2.4 Method for Laboratory Analysis for Water Samples**

Parameters	Analytical Method	Detection Limit
Suspended Solid (SS)	APHA 17ed 2540-D <sup>(1)</sup>	1 mg/L or better

Note:

- (1) APHA American Public Health Association Standard Methods for the Examination of Water and Wastewater.

## 2.7 QA/QC Requirements

### Decontamination Procedures

- 2.7.1 Water sampling equipment used during the course of the monitoring process was decontaminated by manual washing and rinsed with distilled water after each sampling event. All of the disposable components/ accessories were discarded after sampling.

### Sampling Management and Supervision

- 2.7.2 All sampling bottles were labelled with the sample ID numbers (including the sampling station), and sampling date. Water samples were dispatched to the testing laboratory for analysis as soon as possible. All the collected samples were stored in a cool box to keep the temperature less than 4 as possible after the sampling. All samples were stored in a cool box and kept at less than 4 °C but without frozen. All water samples were handled under chain of custody protocols and relinquished to the laboratory representatives at locations specified by the laboratory.

### Quality Control Measures for Sample Testing

- 2.7.3 Quality control of laboratory analysis of water samples was performed by Acumen Laboratory and Testing Limited for every batch of 20 samples:
- One method blank; and
  - One set of QC sample

## 2.8 Action and Limit Level for Water Quality Monitoring

- 2.8.1 The criteria of action and limit levels for water quality monitoring are defined in **Table 2.5**.

**Table 2.5 Action and Limit Levels for Water Quality**

Parameters	Action Level	Limit Level
DO in mg/L	< 5%-ile of baseline data	< 4 mg/L or < 1%-ile of baseline data
SS in mg/L	> 95%-ile of baseline data or >120% of upstream control station of the same day	> 99%-ile of baseline data or 130% of upstream control station of the same day
Turbidity in NTU	> 95%-ile of baseline data or >120% of upstream control station of the same day	> 99%-ile of baseline data or > 130% of upstream control station of the same day

Notes:

- (1) For DO, non-compliance of the water quality limit occurs when monitoring result is lower than the limit.
- (2) For SS and turbidity, non-compliance of the water quality limit occurs when monitoring result is higher than the limit.
- (3) All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered necessary.

- 2.8.2 Based on the criteria listed in **Table 2.5**, the action and limit levels for water quality are determined in **Table 2.6**.

**Table 2.6 Action and Limit Levels of Water Quality**

Stream	Monitoring ID	Parameters	Action	Limit
SSNV	C1A	DO in mg/L	6.72	4 <sup>(1)</sup>
		SS in mg/L	7.3 or >120% of upstream control station of the same day	8.5 or > 130% of upstream control station of the same day
		Turbidity in NTU	10.37 or >120% of upstream control station of the same day	10.81 or > 130% of upstream control station of the same day
TW	C5	DO in mg/L	8.36	4 <sup>(2)</sup>
		SS in mg/L	9.9 or > 120% of upstream control station of the same day	10.0 or > 130% of upstream control station of the same day
		Turbidity in NTU	13.64 or > 120% of upstream control station of the same day	13.87 or > 130% of upstream control station of the same day
LFT	C8	DO in mg/L	5.38	4 <sup>(3)</sup>
		SS in mg/L	6.3 or > 120% of upstream control station of the same day	7.0 or > 130% of upstream control station of the same day
		Turbidity in NTU	12.46 or > 120% of upstream control station of the same day	12.94 or > 130% of upstream control station of the same day
HC	C10	DO in mg/L	2.55	2.43 <sup>(4)</sup>
		SS in mg/L	8.7 or > 120% of upstream control station of the same day	8.8 or > 130% of upstream control station of the same day
		Turbidity in NTU	20.06 or > 120% of upstream control station of the same day	21.07 or > 130% of upstream control station of the same day

Notes:

- (1) The 1%-ile of baseline DO data at C1A is 6.61 mg/L, which is higher than 4 mg/L. Thus, DO concentration of 4 mg/L, which is in line with the Water Quality Objectives, is adopted as the limit level.
- (2) The 1%-ile of baseline DO data at C5 is 8.09 mg/L, which is higher than 4 mg/L. Thus, DO concentration of 4 mg/L, which is in line with the Water Quality Objectives, is adopted as the limit level.
- (3) The 1%-ile of baseline DO data at C8 is 5.36 mg/L, which is higher than 4 mg/L. Thus, DO concentration of 4 mg/L, which is in line with the Water Quality Objectives, is adopted as the limit level.
- (4) The 1%-ile of baseline DO data at C10 is 2.43 mg/L, which is lower than 4 mg/L. Taking account of the baseline water quality condition and to minimise any false alarm of water quality deterioration during construction phase, DO concentration of 2.43 mg/L is adopted as the limit level.

## 2.9 Event and Action Plan

2.9.1 Should any non-compliance of the criteria occur, action in accordance with the Event and Action Plan in **Appendix 2.2** shall be followed. Investigation of the exceedances of environmental quality performance limits should be conducted, and the ET will immediately notify the IEC and EPD, as appropriate. The notification should be followed up with advice to the IEC and EPD on the results of the investigation, proposed actions and success of the action taken, with any necessary follow-up proposals.

## 2.10 Results and Observations

2.10.1 All water quality monitoring was conducted as scheduled in the reporting month. The water quality monitoring schedule for this reporting month is shown in **Appendix 2.3**. The monitoring results and graphical presentation of water quality monitoring at the monitoring stations are shown in **Appendix 2.4**.

2.10.2 Since construction works were only carried out at Ha Che during the reporting period, impact water quality monitoring was only carried out at monitoring points located at Ha Che (i.e. C9 and C10).

2.10.3 During the reporting month, two (2) limit level exceedances for SS were recorded, one (1) limit level exceedance for turbidity were recorded, and one (1) limit level exceedance of DO during impact water quality monitoring were recorded. Summaries of exceedance records are shown in **Table 2.7** and **Table 2.8**.

**Table 2.7 Summary of Exceedance Records of Water Quality Monitoring**

Date	Station	Parameter (Unit)	Averaged Measured Value	Exceedance		Exceedances due to the Project
				Action Level (AL)	Limit Level (LL)	
21/02	C9	DO (mg/L)	7.78			N/A
	C10		1.25		✓	No
	C9	Turbidity (NTU)	10.9			N/A
	C10		76.6		✓	No
	C9	SS (mg/L)	16.5			N/A
	C10		45.5		✓	No
23/02	C9	DO (mg/L)	7.85			N/A
	C10		3.28			N/A
	C9	Turbidity (NTU)	7.4			N/A
	C10		10.6			N/A
	C9	SS (mg/L)	5.5			N/A
	C10		5.0			N/A
26/02	C9	DO (mg/L)	8.49			N/A
	C10		2.98			N/A
	C9	Turbidity (NTU)	7.3			N/A
	C10		7.0			N/A
	C9	SS (mg/L)	13.0			N/A
	C10		5.0			N/A
28/02	C9	DO (mg/L)	8.32			N/A
	C10		3.70			N/A
	C9	Turbidity (NTU)	7.5			N/A
	C10		9.4			N/A
	C9	SS (mg/L)	12.5			N/A
	C10		32.5		✓	NO

**Notes:**

- (1) Additional monitoring was carried out on 22 February 2024 due to the exceedances recorded during the in-situ measurement on 21 February 2024.

**Table 2.8 Summary of Exceedance Records of Water Quality Monitoring**

Parameter	No. of non-project related exceedances		Total No. of non-project related exceedances	No. of exceedance related to the Project		Total No. of exceedance related to the Project
	AL	LL		AL	LL	
Dissolved Oxygen	0	1	1	0	0	0
Turbidity	0	1	1	0	0	0
Suspended Solids	0	2	2	0	0	0

2.10.4 After confirmation of exceedance of the water quality monitoring results, ET has issued Notification of Exceedance (NOE) to inform relevant parties (i.e., EPD, ER, IEC and Contractor) about the exceedances. After investigation, all action and limit level exceedances recorded during the reporting period were considered non-project related.

2.10.5 Exceedances of limit levels on DO, turbidity and SS were recorded during the regular monitoring at C10 on 21 February 2024. The frequency of monitoring was increased to daily at C9 and C10 starting from 22 February 2024. As no further exceedances of action or limit levels were observed on the monitoring results of 23 February 2024, the frequency of monitoring was resumed to normal (regular monitoring) after 23 February 2024. Three sets of geotextiles were deployed at the work areas as the mitigation measure for preventing contaminated site runoff. Since there were no construction works carried out at Ha Che on 21 February 2024 and no deficiency in mitigation measures for preventing site runoff were observed during the follow-up site inspection on 23 February 2024, it is considered that the exceedances of limit levels of DO, turbidity and SS are not related to the Project.

2.10.6 Exceedance of limit level on SS was recorded during the regular monitoring at C10 on 28 February 2024. Two sets of geotextiles were properly deployed onsite and a water bypass was deployed to direct river water from the upstream of work area to the downstream of work area. Since sufficient measures for preventing contamination of downstream water were well implemented and no deficiency in mitigation measures for preventing site runoff was observed during weekly site inspection on 28 February 2024, it is considered that the exceedance of limit level of SS is not related to the Project.

## 3 Noise

### 3.1 Monitoring Locations

3.1.1 The monitoring locations for construction noise monitoring are listed in **Table 3.1** and shown in **Figure 3.1a** to **Figure 3.1d**.

**Table 3.1 Noise Monitoring Stations during Construction Phase**

ID No. <sup>(1)</sup>	Location	Nature of Uses	Type of Measurement
SSNV_M2	Village house next to a nullah in Tong Tai Po Tsuen (near DD118 1720 S.A)	Residential	Façade
SSNV_M3	Village house near a soybean sauce factory in Sung Shan New Village (near DD118 1712)	Residential	Façade
SSNV_M6	#43, Sung Shan New Village	Residential	Free-field
TW_M2	#200, Cheung Po	Residential	Free-field
TW_M3	Kai Yip Garden, #3H, Tai Wo	Residential	Free-field
LFT_M1	#2G, Lin Fa Tei	Residential	Façade
LFT_M3A <sup>(2)</sup>	Near #125B, Lin Fa Tei	Residential	Free-field
LFT_M5	#156B, Lin Fa Tei	Residential	Façade
LFT_M7	Village house near the nullah (DD112 699 S.E)	Residential	Façade
LFT_M11 <sup>(2)</sup>	#210, Ngau Keng Tsuen	Residential	Façade
HC_M3A <sup>(2)</sup>	Next to DD111 326 S.B RP near Fan Kam Road	-	Free-field
HC_M4	#1C, Chuk Hang	Residential	Façade
HC_M6	The Arbutus House 12, #52, Shui Kan Shek	Residential	Façade

Notes:

(1) SSNV – Sung Shan New Village; TW – Tai Wo; LFT – Lin Fa Tei; HC – Ha Che.

(2) LFT\_M3A, LFT\_M11, HC\_M3A and are alternative noise monitoring stations proposed to replace LFT\_M3, LFT\_M13 and HC\_M3, respectively.

### 3.2 Noise Monitoring Parameter, Frequency and Duration

3.2.1 Construction noise level was measured by the ET and measured in terms of the A-weighted equivalent continuous sound pressure level ( $L_{eq}$ ).  $L_{eq(30mins)}$  used as the monitoring parameter for the construction noise monitoring.

3.2.2 As supplementary information for data auditing, statistical results such as L10 and L90 were also obtained for reference.

3.2.3 **Table 3.2** summarizes the monitoring parameters, duration, and frequency of construction noise monitoring.

**Table 3.2 Construction Noise Monitoring Parameter, Frequency and Duration**

Monitoring Station	Parameter	Frequency and Duration
HC_M3A, HC_M4, HC_M6, TW_M2, TW_M3, LFT_M1, LFT_M3A, LFT_M5, LFT_M7 and LFT_M11	$L_{eq(30mins)}$ (as a logarithmic average of 6 consecutive $L_{eq(5mins)}$ )	Once every week throughout the construction phase

### 3.3 Monitoring Equipment, Methodology and QA / QC Procedure

- 3.3.1 As referred to the technical memorandum issued under the Noise Control Ordinance (NCO), sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications were used for carrying out the construction noise monitoring.
- 3.3.2 Noise measurements were not made in fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. The wind speed was checked with a portable wind speed meter capable of measuring the wind speed in m/s.
- 3.3.3 Sufficient numbers of noise measuring equipment and associated instrumentation were prepared by the ET. All the equipment and associated instrumentation were clearly labelled.
- 3.3.4 Wind data were collected from the records of Hong Kong Observatory Shek Kong Weather Station, which is about 2 km south-west of Ha Che and about 900 m north of Lin Fa Tei.
- 3.3.5 The monitoring procedures are as follows:
- For façade measurement, the monitoring station was set at a point 1 m from the exterior of the sensitive receivers building façade and set at a position 1.2 m above the ground. For free-field measurement, the monitoring station was set at a position 1.2 m above the ground.
  - The battery condition was checked to ensure good functioning of the meter.
  - Parameters such as frequency weighting, the time weighting and the interval were set as follows:
    - Frequency weighting: A
    - Time weighting: Fast
    - Interval: 30 minutes ( $L_{eq(30mins)}$ ) would be determined for daytime noise by calculating the logarithmic average of six  $L_{eq(5mins)}$  data
  - Prior to and after each noise measurement, the meter was calibrated using an acoustic calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement is more than 1.0 dB, the measurement was considered invalid and repeat of noise measurement will be required after re-calibration or repair of the equipment.
  - At the end of the monitoring period, the values of  $L_{eq}$ , L90 and L10 were recorded. In addition, noise sources were recorded on a standard record sheet.



3.3.6 **Table 3.3** summarizes the noise monitoring equipment used during the construction noise monitoring. Calibration certificates for the impact noise monitoring equipment are attached in **Appendix 3.1**.

**Table 3.3 Construction Noise Monitoring Equipment**

Equipment	Model	No. of Equipment	Serial No.
Sound Level Meter	Svantek SVAN 971	1	96062
Acoustic Calibrator	Rion NC-75	1	34724244

## 3.4 Maintenance and Calibration

3.4.1 Maintenance and calibration procedures are as follows:

- The microphone head of the sound level meter and calibrator were regularly cleaned with a soft cloth; and
- The sound level meter and acoustic calibrator were calibrated annually by a HOKLAS accredited laboratory or the manufacturer.

## 3.5 Action and Limit Levels

3.5.1 The Action and Limit levels were established in accordance with the approved EM&A Manual. **Table 3.4** presents the Action and Limit Levels for construction noise. Should non-compliance of the criteria occur, action in accordance with the Event and Action Plan presented in **Appendix 3.2** shall be carried out.

**Table 3.4 Action and Limit Levels for Construction Noise Monitoring**

Time Period	Action	Limit Level
07:00 – 19:00 on normal weekdays	When one or more documented complaints are received	75 dB(A) <sup>(1)</sup>
07:00 – 23:00 on holidays; and 19:00 – 23:00 on all other days		45 dB(A) <sup>(2)</sup>
23:00 – 07:00 of the next day		30 dB(A) <sup>(2)</sup>

Notes:

(1) Between 07:00 and 19:00, construction noise limit for school during normal term time is 70 dB(A) and 65 dB(A) during examination period.

(2) The ASR of identified noise sensitive receivers is “A”, which is a rural area that is not affected by the in Influencing Factors (Ifs). The limit levels are stipulated in the Technical Memorandum on Noise from Construction Work in Designated Areas.

## 3.6 Results and Observations

3.6.1 The construction noise monitoring was conducted on 23 February 2024. The monitoring schedule is presented in **Appendix 2.3**.

3.6.2 The construction noise monitoring results are summarized in **Table 3.5**. No Action or Limit levels exceedance was recorded in the reporting period. Details of the results and graphical presentation are shown in **Appendix 3.3**.

**Table 3.5 Summary of Construction Noise Monitoring Results**

Monitoring Station	Noise Level, dB(A)		Limit Level
	Minimum	Maximum	
HC-M3a <sup>(1)</sup>	60.1	60.1	75 dB(A)
HC-M4	60.5	60.5	75 dB(A)
HC-M6	70.6	70.6	75 dB(A)

Note:

(1) For Free Field measurement, +3 dB(A) was added to the measured results.

3.6.3 During the construction noise monitoring period, the influencing factors which may affect the results are summarized in **Table 3.6**.

**Table 3.6 Influencing Factors at Noise Monitoring Stations**

Monitoring Stations	Influencing Factors
HC-M3a	Road Traffic Noise
HC-M4	Road Traffic Noise
HC-M6	Road Traffic Noise

## 4 Ecology

### 4.1 Freshwater Crab

- 4.1.1 With reference to the approved EIA Report (Register No.: AEIAR-229/2021), two freshwater crab species of conservation importance were recorded within the work sites during the ecological baseline survey. *Somanniathelphusa zanklon* was recorded at Lin Fa Tei and Ha Che, while *Cryptopotamon anacoluthon* was recorded in the upstream area at Ha Che. Both species are endemic to Hong Kong and considered to be “Endangered” and “Vulnerable” by the IUCN respectively (IUCN 2023). The construction activities of the project will disturb their natural habitats and potentially causing a direct loss of these two species due to their limited mobility.

#### Freshwater Crab Translocation Plan

- 4.1.2 Freshwater Crab Translocation Plan (FCTP) was prepared by an Ecologist with relevant experience in freshwater habitats and submitted to the EPD and the AFCD for their approval under Condition 2.8 of the EP. Any aquatic species of conservation importance found during the pre-construction surveys were translocated to suitable receptor sites outside of the proposed works area, and their condition and number was monitored to ensure their long-term survivorship after translocation. The EPD advised no further comment on the submitted FCTP on 9 February 2024.

#### Pre-construction Survey Results

- 4.1.3 The pre-construction survey was carried out at Ha Che on 5, 6 and 7 February 2023 prior to the commencement of construction works at Ha Che. A total of 11 freshwater crabs were collected, marked, and translocated from Ha Che. All these captured individuals were observed on the first (5 February 2024) and third (7 February 2024) nights of the three consecutive pre-construction surveys. No crabs were collected on 6 February 2024. Seven *C. anacoluthon* (four males and three females) were found particularly on the upper section of the works area within rocky substratum and leaf-litters, while four *S. zanklon* were noted on sections with soft silty-muddy substrate.
- 4.1.4 The captured endemic freshwater crabs were translocated to the identified receptor sites indicated in the approved Freshwater Crab Translocation Plan. *C. anacoluthon* were translocated in the section of shallow fast-flowing semi-natural watercourse with rocky substratum located south-east of Chuk Hang Village. Meanwhile *S. zanklon* were translocated to the section of shallow slow-flowing seminatural channel characterised soft soil substrate encompassed by a small patch of woodland and village houses. The receptor sites have comparable characteristics with the collection site.

- 4.1.5 Several aquatic invertebrates were also incidentally caught during the surveys. Among the observed aquatic invertebrates, larvae of species with conservation importance namely one *Macromia berlandi*, two *Macromia urania* and two *Zygonyx iris* were translocated to the proposed receptor sites. *M. urania* and *M. berlandi* were translocated to the receptor site for *S. zanklon* while *Z. iris* to the receptor site of *C. anacoluthon*.
- 4.1.6 The pre-construction survey at Lin Fa Tei is scheduled between 11 and 13 March 2024.

#### Post-translocation Monitoring

- 4.1.7 According to Section 5.2.5 of the approved EM&A Manual for the Project, monthly post-translocation monitoring shall be conducted for at least 12 months after pre-construction surveys to monitor their establishment.
- 4.1.8 During the monitoring, active visual search by hand netting and kick sampling for aquatic fauna species would be performed at the respective receptor sites. Potential micro-habitats and hiding spaces that is favoured by the crabs such as rocks, organic debris, leaf litter, and riparian vegetation etc., will also be overturned or raked.
- 4.1.9 Upon discovery of any marked individuals from the pre-construction survey, date and time of capture, size and health condition of the individual will also be recorded once again.
- 4.1.10 The practice of mark and recapture of the translocated population of *S. zanklon* and *C. anacoluthon* at the receptor site can then be used to estimate population size, as well as inform the health and survival status of the translocated population.
- 4.1.11 The result of post-translocation monitoring at Ha Che will be presented in the next monthly EM&A Report.

## **4.2 Habitat Compensation for the Affected Riverine Habitat**

- 4.2.1 In order to ensure the reinstated habitat could compensate the loss of the important riverine habitat, Habitat Creation and Management Plan (HCMP) is required to be submitted for EPD and AFCD approval under Condition 2.9 of the EP.
- 4.2.2 The first draft of HCMP was submitted to EPD and AFCD on 22 December 2023 with the following objectives:
- detail the approach and design features for restoring/ reinstating the three green channels at Sung Shan New Village, Lin Fa Tei and Ha Che so as to facilitate and promote the colonisation of the freshwater crab and other wildlife after the reinstatement; and
  - detail the monitoring programme to monitor the physical environment of the restored/reinstated channels (i.e. green channels) including water quality, water current, as well as the establishment of riparian vegetation and the biota assemblage that would recolonise the reinstated channel.

## 5 Waste Management

- 5.1.1 Waste generated from the Project include inert construction and demolition (C&D) materials and non-inert C&D wastes in the reporting period. The amount of waste generated by the construction works of the Project during the reporting period are shown in **Appendix 5.1**. Inert construction and demolition (C&D) materials and non-inert C&D wastes disposed of off-site between November 2023 and January 2024 were generated from site clearance.
- 5.1.2 Sorting of construction and demolition (C&D) materials was carried out on site. Sufficient numbers of receptacles were provided for general refuse collection and sorting. Excavated inert C&D materials were reused to minimize the disposal of C&D waste to public fill.
- 5.1.3 The Contractor is advised to minimize the wastes generated through recycling or reusing. All applicable mitigation measures stipulated in the approved EM&A Manual and waste management plans will be fully implemented.

## 6 Land Contamination

- 6.1.1 With reference to results of land contamination assessment included in the approved EIA Report (Register No.: AEIAR-229/2021), all identified sites with potential contamination are located outside the work area of the Project and no potential contamination arising from the proposed drainage improvement works is anticipated. Therefore, no land contamination issue is anticipated for this Project.
- 6.1.2 Mitigation measures listed in **Appendix 1.3** should be adopted if any suspended contamination encountered during construction.
- 6.1.3 No suspected on-site contamination was observed or reported by the Contractor in the reporting period.

## 7 Landscape and Visual

### 7.1 Audit Requirements

- 7.1.1 According to the approved EM&A Manual, site audits should be undertaken every week during the construction phase to check that the proposed landscape and visual mitigation measures are properly implemented and maintained as per their intended objectives. Mitigation measures recommended in the EIA Report as the audit requirements including, preservation of existing vegetation, transplanting of affected trees, compensatory tree planting, control of night-time lighting glare, erection of decorative screen hoarding and management of construction activities and facilities are summarized in **Appendix 1.3**.

### 7.2 Results and Observations

- 7.2.1 To monitor and audit the implementation of landscape and visual mitigation measures, two weekly landscape and visual site audits were carried out on 21 and 28 February 2024.
- 7.2.2 No deficiency in the mitigation measures on landscape and visual was observed during the reporting period.

## 8 Cultural Heritage

### 8.1 Archaeology

- 8.1.1 According to the assessment included in the approved EIA report (Register No.: AEIAR-229/2021) the proposed drainage works in the Lin Fa Tei area are located immediately adjacent to existing river course on mainly Pleistocene terraced alluvium and the western end of the alignment on Holocene alluvium between Lin Fa Tei Site of Archaeological Interest (SAI) and Shui Lau Tin SAI. The proposed works are partially located within Lin Fa Tei SAI. Previous investigations within SAI have shown both in situ and secondary deposit and with potential for wooden features near the stream bed. As per the recommendation from EIA report, Archaeological Survey shall be conducted prior to the construction works, the concerned area is marked in **Figure 8.1**.
- 8.1.2 A qualified archaeologist shall be engaged and apply for a licence under the Antiquities and Monuments Ordinance (Cap. 53) to conduct the Archaeological Survey prior to the construction phase. The scope and methodology of the Archaeological Survey shall be agreed with Antiquities and Monuments Office (AMO) prior to implementation. Tentatively and subject to agreement with AMO, a fieldscan, where possible, twenty auger tests and four 5 by 1m narrow trenches are proposed to further assess the archaeological potential of the area. If significant remains are uncovered, AMO should be notified and potential need for mitigation and/ or an appropriate way forward should be agreed by AMO and relevant parties.
- 8.1.3 For remaining drainage work areas (outside the area identified for Archaeological Survey) deemed to have limited (near Kam Sheung Road) to minimal (remainder of Works Areas) archaeological potential, AMO shall be informed immediately if antiquities or supposed antiquities are discovered during construction works for the proposed drainage improvement works for ascertaining required remedial works.

### 8.2 Built Heritage

- 8.2.1 According to the approved EM&A manual, mitigation measures that should be implemented during the construction phase for graded historic buildings are presented in **Table 8.1**.
- 8.2.2 Condition surveys were carried out by qualified structural engineer for Lee Tat Bridge, Lan Fong Study Hall and St John's Chapel prior to construction works. The Pre-construction Condition Survey Report were submitted to the EPD on 22 December 2023 under Condition 2.10 of the EP.



**Table 8.1 Mitigation Measures for Impacted Graded Historic Buildings**

Graded Historic Buildings	Mitigation Measures
Lee Tat Bridge, Shui Tsan Tin (Grade 3)	<ul style="list-style-type: none"> <li>▪ A condition survey should be carried out in advance of works and after completion of works by qualified building surveyor or structural engineer. The Condition Survey Report should contain descriptions of the structure, identification of fragile elements, an appraisal of the condition and working methods for any proposed monitoring and precautionary measures that are or were recommended with aid of photo records. The condition survey report must be submitted to the AMO for comment before construction activities commence and after the works have been completed. The contractor should implement the approved monitoring and precautionary measures.</li> </ul>
Lan Fong Study Hall, Chuk Hang (Grade 3)	<ul style="list-style-type: none"> <li>▪ Vibration, settlement and tilting monitoring should be undertaken during the construction works to ensure that safe levels of vibration are not exceeded. An Alert, Alarm and Action (AAA) vibration limit set at 5 / 6 / 7.5 mm/s for Grade 3 historic buildings, settlement limit set at 6/ 8/ 10mm, and tilting limit set at 1/2000; 1/1500; 1/1000 should be adopted. Monitoring proposal, including checkpoint locations, installation details, response actions for each of the AAA levels and frequency of monitoring should be submitted for AMO's consideration. Installation of monitoring checkpoints shall be carried out in great care and adequate protection shall be provided so as to avoid unnecessary disturbance/ damage to the historic fabrics. Photo records of monitoring checkpoints shall be submitted upon installation for AMO's records. Monitoring records should be submitted to AMO on regular basis and alert AMO should the monitoring reach AAA levels.</li> </ul>
St John's Chapel, Cheung Po (Grade 2)	<ul style="list-style-type: none"> <li>▪ Vibration, settlement and tilting monitoring should be undertaken during the construction works to ensure that safe levels of vibration are not exceeded. An Alert, Alarm and Action (AAA) vibration limit set at 5 / 6 / 7.5 mm/s for Grade 3 historic buildings, settlement limit set at 6/ 8/ 10mm, and tilting limit set at 1/2000; 1/1500; 1/1000 should be adopted. Monitoring proposal, including checkpoint locations, installation details, response actions for each of the AAA levels and frequency of monitoring should be submitted for AMO's consideration. Installation of monitoring checkpoints shall be carried out in great care and adequate protection shall be provided so as to avoid unnecessary disturbance/ damage to the historic fabrics. Photo records of monitoring checkpoints shall be submitted upon installation for AMO's records. Monitoring records should be submitted to AMO on regular basis and alert AMO should the monitoring reach AAA levels.</li> </ul>

## 9 Environmental Site Inspection and Audit

### 9.1 Implementation Status of Environmental Mitigation Measures

9.1.1 Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures under the Contract. In the reporting period, site inspections were carried out on 21 and 28 February 2024 at the site portions listed in **Table 9.1** below.

**Table 9.1 Site Inspection Record**

Date	Inspected Site Portion	Time
21 February 2024	Lin Fa Tei	14:00 PM – 14:30 PM
28 February 2024	Ha Che	15:00 PM – 15:30 PM

9.1.2 Environmental deficiencies were observed during weekly site inspection. Key observations during the site inspections and during the reporting period are summarized in **Table 9.2**.

**Table 9.2 Site Observations**

Date	Environmental Observations	Follow-up Status
21 February 2024	<u>Observation(s) and Recommendation(s)</u>	
	1. Nil	1. Nil
28 February 2024	<u>Observation(s) and Recommendation(s)</u>	
	1. Nil	1. Nil

9.1.3 According to the EIA Study Report, Environmental Permit, contract documents and approved EM&A Manual, the mitigation measures detailed in the documents should be implemented as much as practical during the reporting period. An updated Implementation Status of Environmental Mitigation Measures (EMIS) is provided in **Appendix 1.3**.

# 10 Summary of Monitoring Exceedance, Complaints, Notification of Summons and Prosecutions

## 10.1 Summary of Exceedance

- 10.1.1 During the reporting month, two (2) limit level exceedances for SS, one (1) limit level exceedance for turbidity, and one (1) limit level exceedance of DO were recorded in the impact water quality monitoring. After investigation, all exceedances were considered to be non-project related.
- 10.1.2 Exceedances of limit levels on DO, turbidity and SS were recorded during the regular monitoring at C10 on 21 February 2024. The frequency of monitoring was increased to daily at C9 and C10 starting from 22 February 2024. As no further exceedances of action or limit levels were observed on the monitoring results of 23 February 2024, the frequency of monitoring was resumed to normal (regular monitoring) after 23 February 2024. Three sets of geotextiles were deployed at the work areas as the mitigation measure for preventing contaminated site runoff. Since there were no construction works carried out at Ha Che on 21 February 2024 and no deficiency in mitigation measures for preventing site runoff were observed during the follow-up site inspection on 23 February 2024, it is considered that the exceedances of limit levels of DO, turbidity and SS are not related to the Project.
- 10.1.3 Exceedance of limit level on SS was recorded during the regular monitoring at C10 on 28 February 2024. Two sets of geotextiles were properly deployed onsite and a water bypass was deployed to direct river water from the upstream of work area to the downstream of work area. Since sufficient measures for preventing contamination of downstream water were well implemented and no deficiency in mitigation measures for preventing site runoff was observed during weekly site inspection on 28 February 2024, it is considered that the exceedance of limit level of SS is not related to the Project.
- 10.1.4 No Action Level or Limit Level exceedance was recorded for construction noise monitoring in the reporting period.

## 10.2 Summary of Environmental Non-Compliance

- 10.2.1 No environmental non-compliance was recorded in the reporting period.

## 10.3 Summary of Environmental Complaint

- 10.3.1 No environmental complaint was received in the reporting period. The Cumulative Complaint Log is presented in **Appendix 10.1**.

## 10.4 Summary of Environmental Summon and Successful Prosecution

- 10.4.1 There was no successful environmental prosecution or notification of summons received since the Project commencement. The Cumulative Log for environmental summon and successful prosecution is presented in **Appendix 10.1**.

# 11 Future Key Issues

## 11.1 Works and Potential Environmental Issues in the next Reporting Period

11.1.1 The construction programme for the Project for the next reporting period is presented in **Appendix 11.1**.

11.1.2 Works to be undertaken in the next reporting period are summarized below:

### Ha Che

- Lifting Operation;
- Plant Operation;
- Excavation;
- Sheet Piling; and
- Installation of Precast unit

11.1.3 Potential environmental impacts arising from the above construction activities are mainly associated with construction noise impact, water quality impact, ecological impact, waste management, and landscape and visual.

## 11.2 Recommendation

11.2.1 The key environmental mitigation measures for the Project in the coming reporting period expected to be associated with the construction activities include:

### Noise

- Only well-maintained plant should be operated on-site, and plant should be maintained regularly during the construction programme; and
- Quality Powered Mechanical Equipment (QPME) should be adopted as far as possible.

### Water Quality

- No effluent discharge would be allowed before acquired the effluent discharge license;
- Surface run-off from construction sites should be discharged into dedicated discharge point via adequately designed sand/ silt removal facilities;
- Channels/ earth bunds/ sandbags barriers should be provided on site to properly direct stormwater to silt removal facilities;
- Silt removal facilities, channels and manholes should be maintained, and the deposited silt and grit should be removed regularly;
- Open stockpiles of construction materials on sites should be covered with tarpaulin or similar fabric during rainstorms; and
- Perimeter channels should be provided on site boundaries where necessary to intercept stormwater run-off from outside the site so that it will not wash across the site.

### Waste Management

- Provision of sufficient waste disposal points and regular collection of waste;
- Regular cleaning and maintenance programme for drainage system; and
- Chemical containers shall be stored with drip tray underneath.

### Ecology

- Minimize loss of habitats and associated wildlife; and
- Using directional lighting to prevent excessive light spill into adjacent natural habitat and disturbance to nocturnal fauna.

### Landscape and Visual

- Construction activities shall be carefully designed to minimize impact on existing retained trees; and
- Adequate tree protection measures shall be provided for the trees to be retained on site.

11.2.2 The tentative schedule of regular construction noise and water quality monitoring in the next reporting period is presented in **Appendix 11.1**. The regular impact noise and water quality monitoring will be conducted at the same monitoring locations in the next reporting period.

# 12 Conclusions

## 12.1 Conclusion

- 12.1.1 This 1<sup>st</sup> Monthly EM&A Report presents the EM&A works during the reporting period from 20 February 2024 to 29 February 2024 in accordance with the approved EM&A Manual.
- 12.1.2 Two (2) limit level exceedances for SS, one (1) limit level exceedance for turbidity, and one (1) limit level exceedance of DO were recorded during impact water quality monitoring in the reporting period. After investigation, all exceedances were considered non-project related.
- 12.1.3 No Action Level or Limit Level exceedance was recorded for construction noise monitoring in the reporting period.
- 12.1.4 Environmental site inspections were conducted on 21 and 28 February 2024 by the ET in the reporting period.
- 12.1.5 No environmental complaint was received in the reporting period.
- 12.1.6 No notification of summons and prosecution was received in the reporting period.
- 12.1.7 The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.
- 12.1.8 No change to the EM&A programme was made in this reporting period.

## 12.2 Comments/ Recommendations

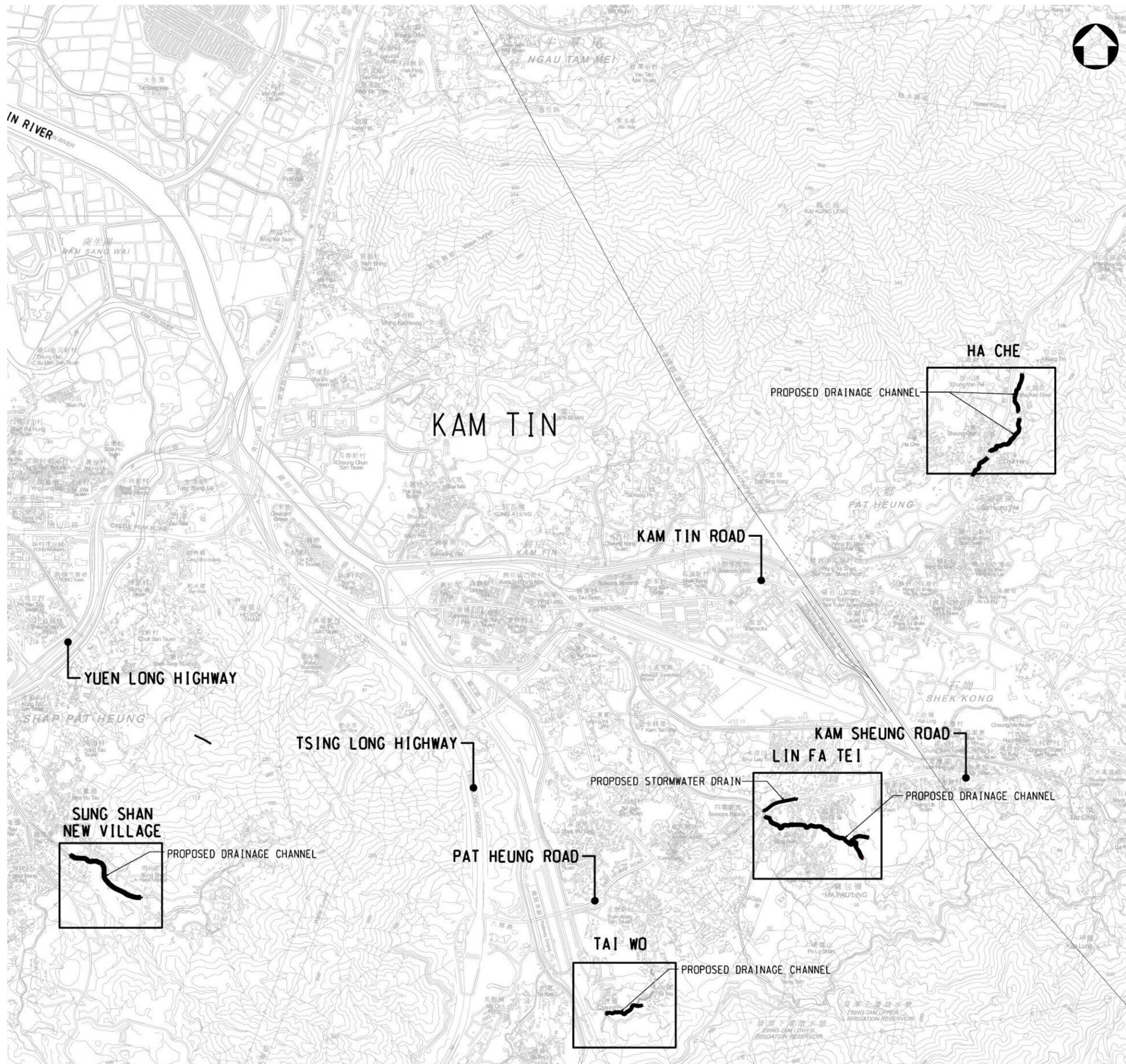
- 12.2.1 The proposed mitigation measures were properly implemented and were considered effective and efficient in pollution control.

# Figures



**Figure 1.1 General Site Location Plan**

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Rev.	Date	Description	By	Chk'd	App'd
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Drawing Status: **CONTRACT**      Suitability: -

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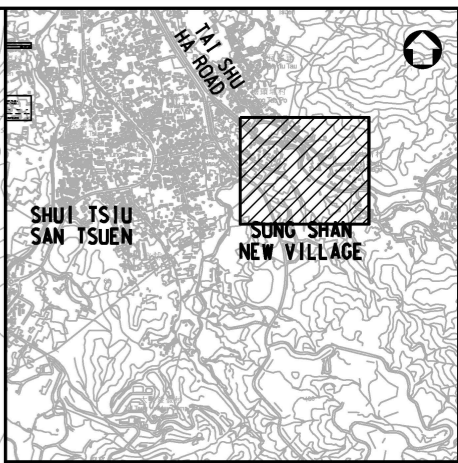
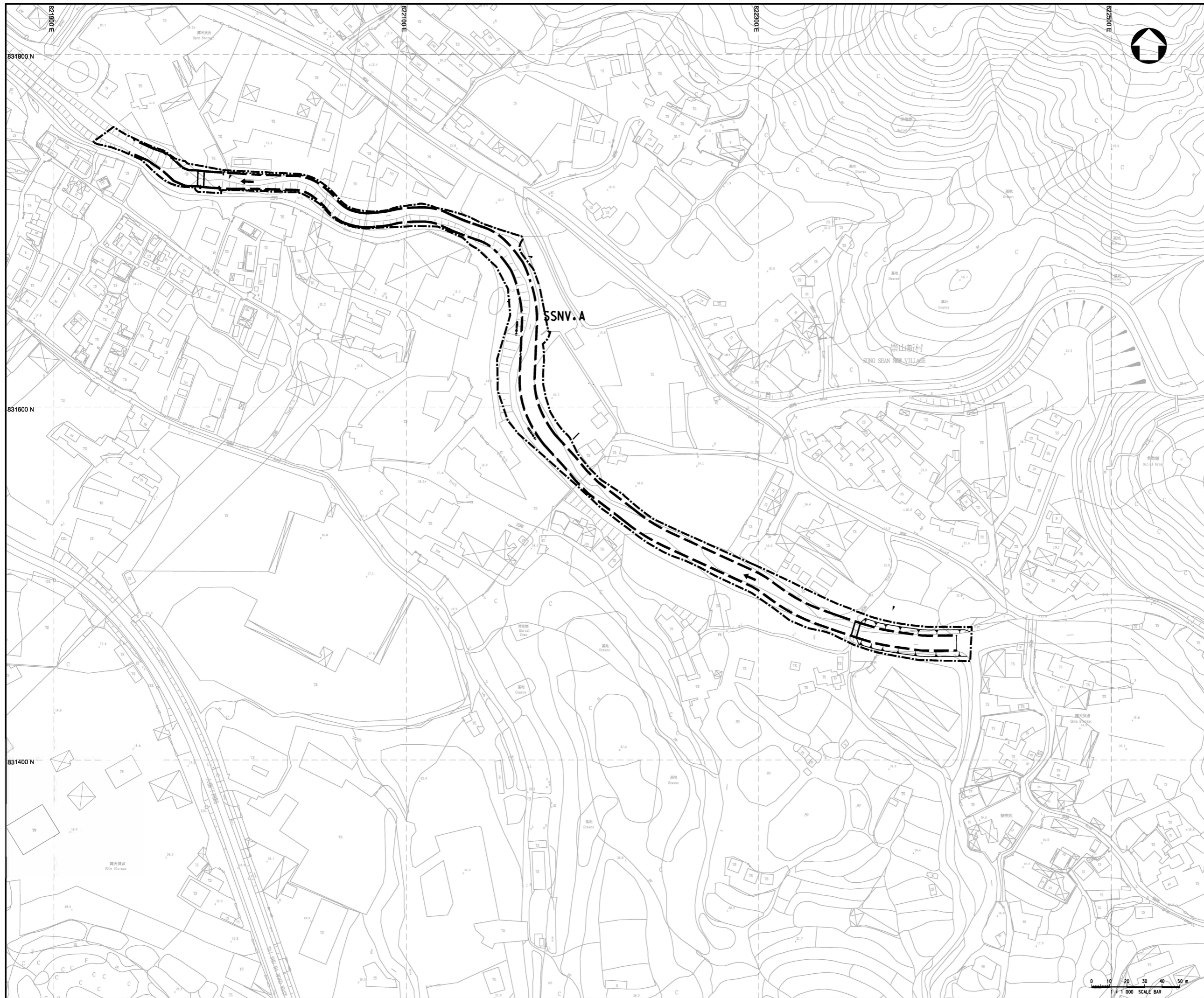
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 DRAINAGE IMPROVEMENT WORKS  
 AT YUEN LONG -  
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Drawing Title: **SITE LOCATION PLAN**

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Drawing Number: **Figure 1.1**      Revision: **A**

**Figure 1.2 Location of Work Areas for the Project**



**KEY PLAN**  
N.T.S.

- LEGEND:**
- WORKS BOUNDARY
  - RECTANGULAR CHANNEL

Rev.	Date	Description	By	Chk'd	App'd	Suitability
A	OCT 2022	TENDER ADDENDUM NO.3				
-	JUL 2022	ISSUE FOR TENDER				
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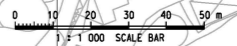
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Drainage Services Department  
**工程管理部**  
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Contract Title  
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**AT YUEN LONG -**  
**STAGE 2**

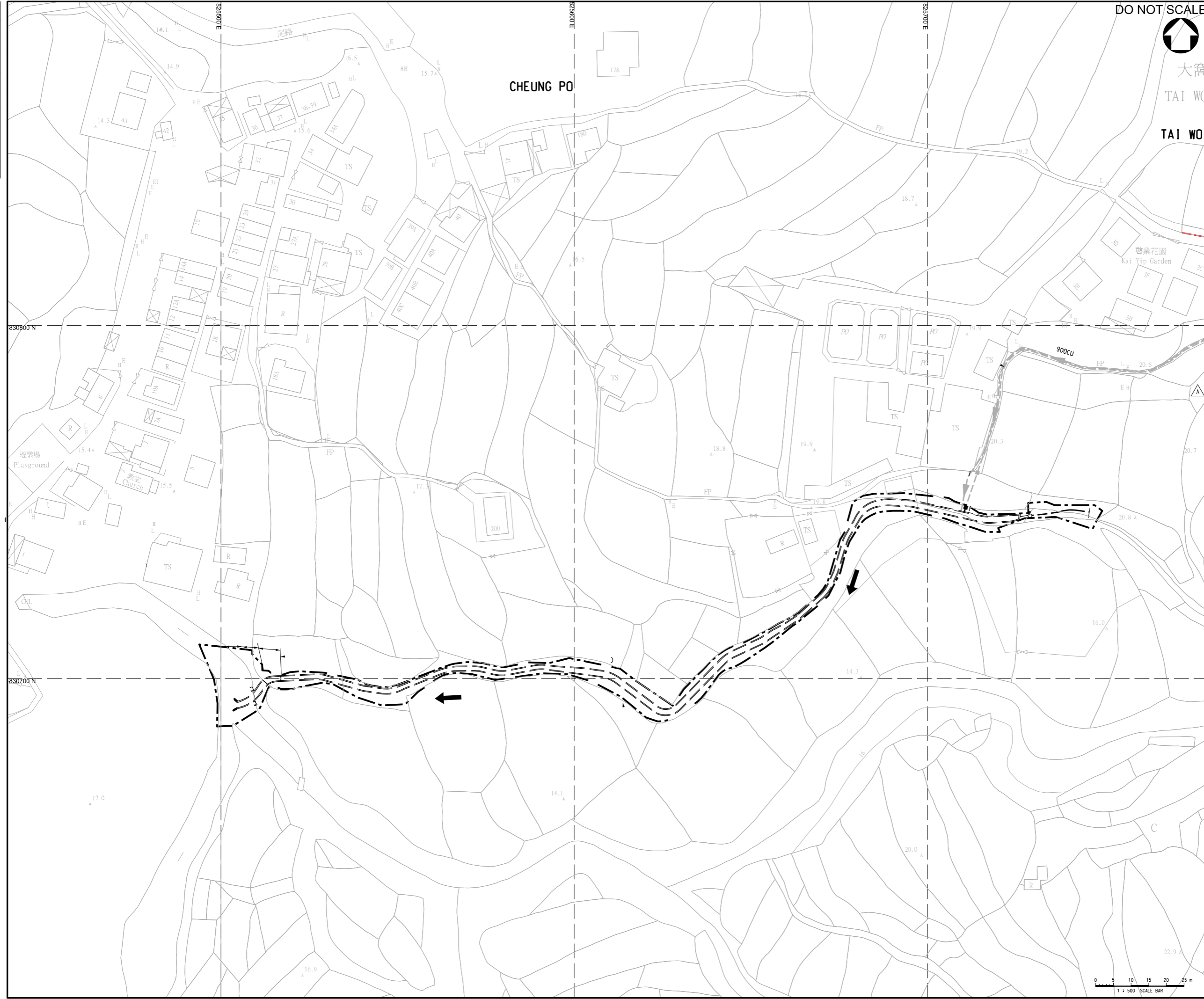
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**GENERAL LAYOUT PLAN**

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Drawing Number  
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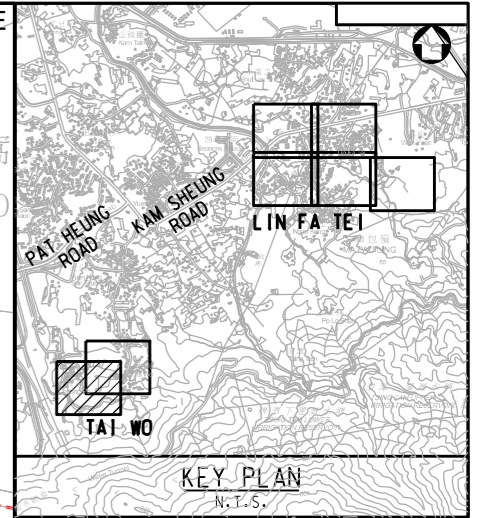
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KEY PLAN  
N.T.S.

**LEGEND:**

- WORKS BOUNDARY
- RECTANGULAR CHANNEL

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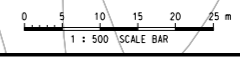
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**工程管理部**  
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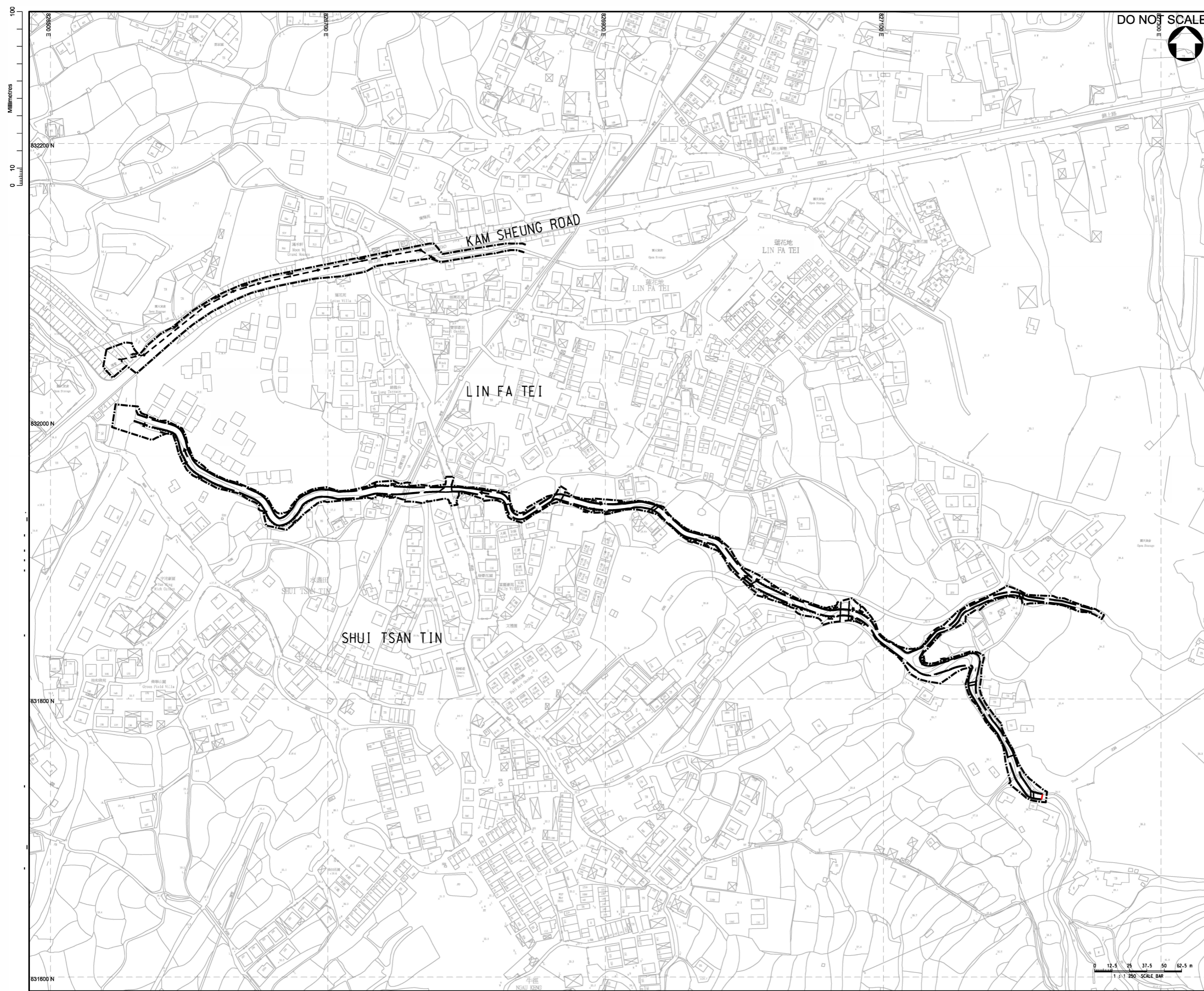
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AT YUEN LONG -  
STAGE 2

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GENERAL LAYOUT PLAN

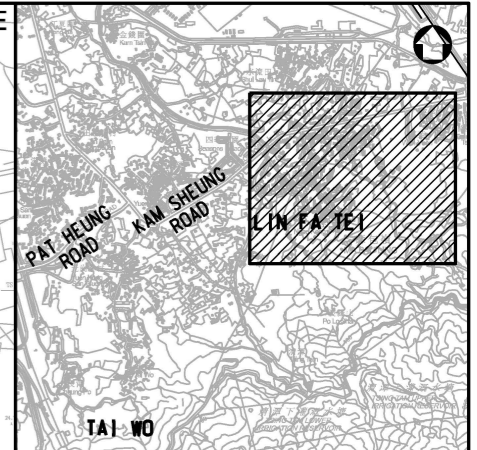
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Drawing Number  
**Figure 1.2b**  
Revision  
A





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**KEY PLAN**  
N.T.S.

- LEGEND:**
- WORKS BOUNDARY
  - RECTANGULAR CHANNEL
  - 450 CU COVERED U-CHANNEL WITH NON-HEAVY DUTY PRECAST CONCRETE COVER
  - MANHOLE

Rev.	Date	Description	By	Chk'd	App'd	Suitability
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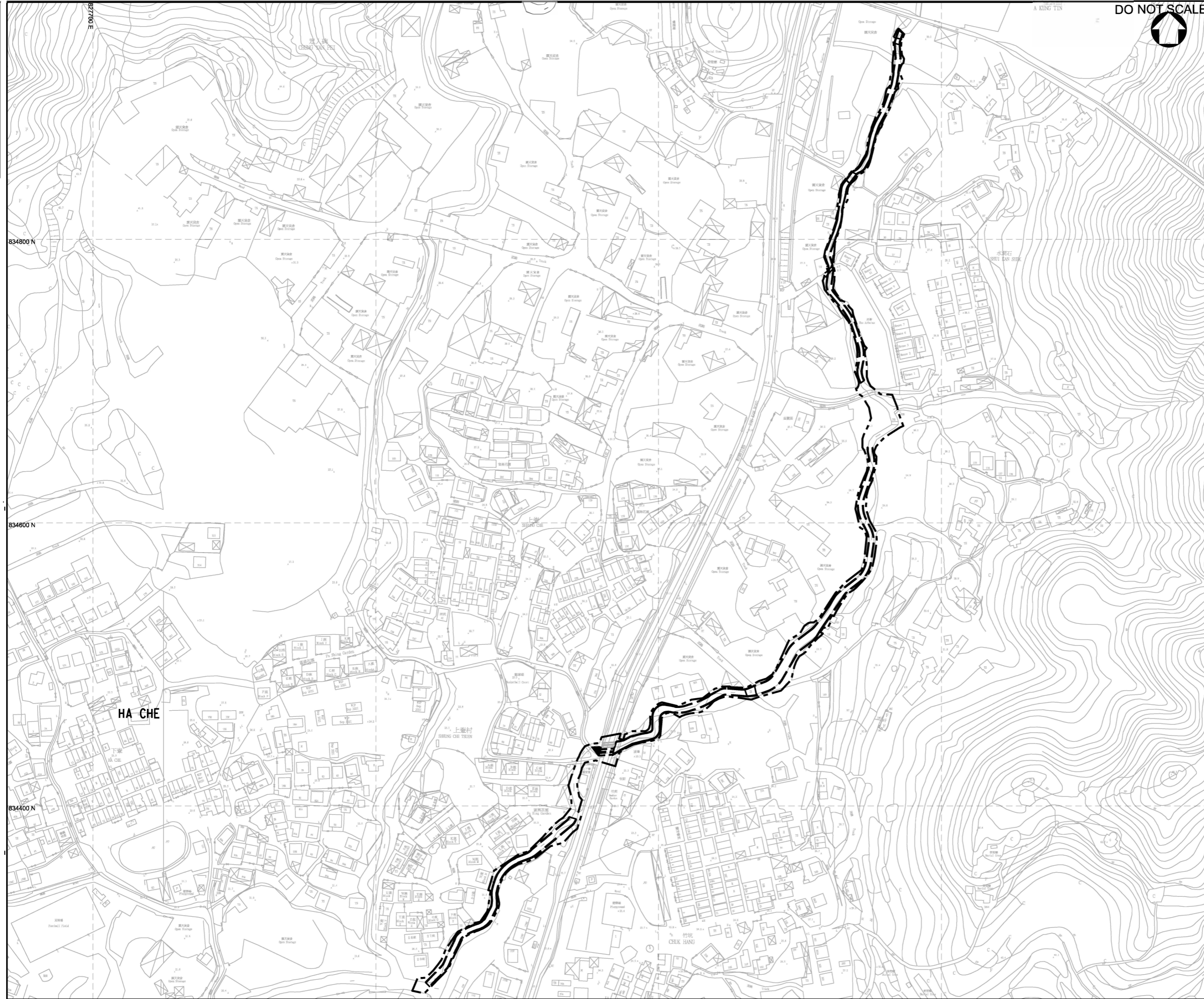
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**AT YUEN LONG -**  
**STAGE 2**

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**GENERAL LAYOUT PLAN**

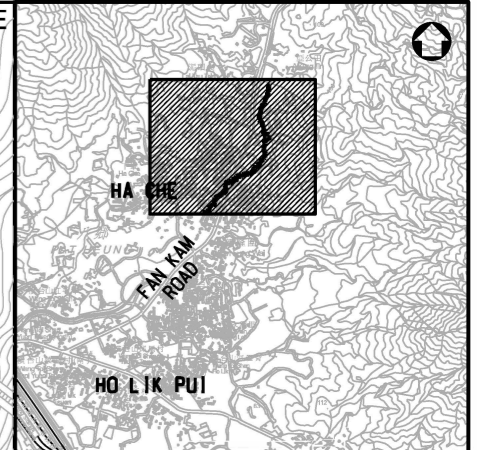
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KEY PLAN  
N.T.S.

LEGEND:  
 WORKS BOUNDARY  
 RECTANGULAR CHANNEL

Rev.	Date	Description	By	Chkd	App'd
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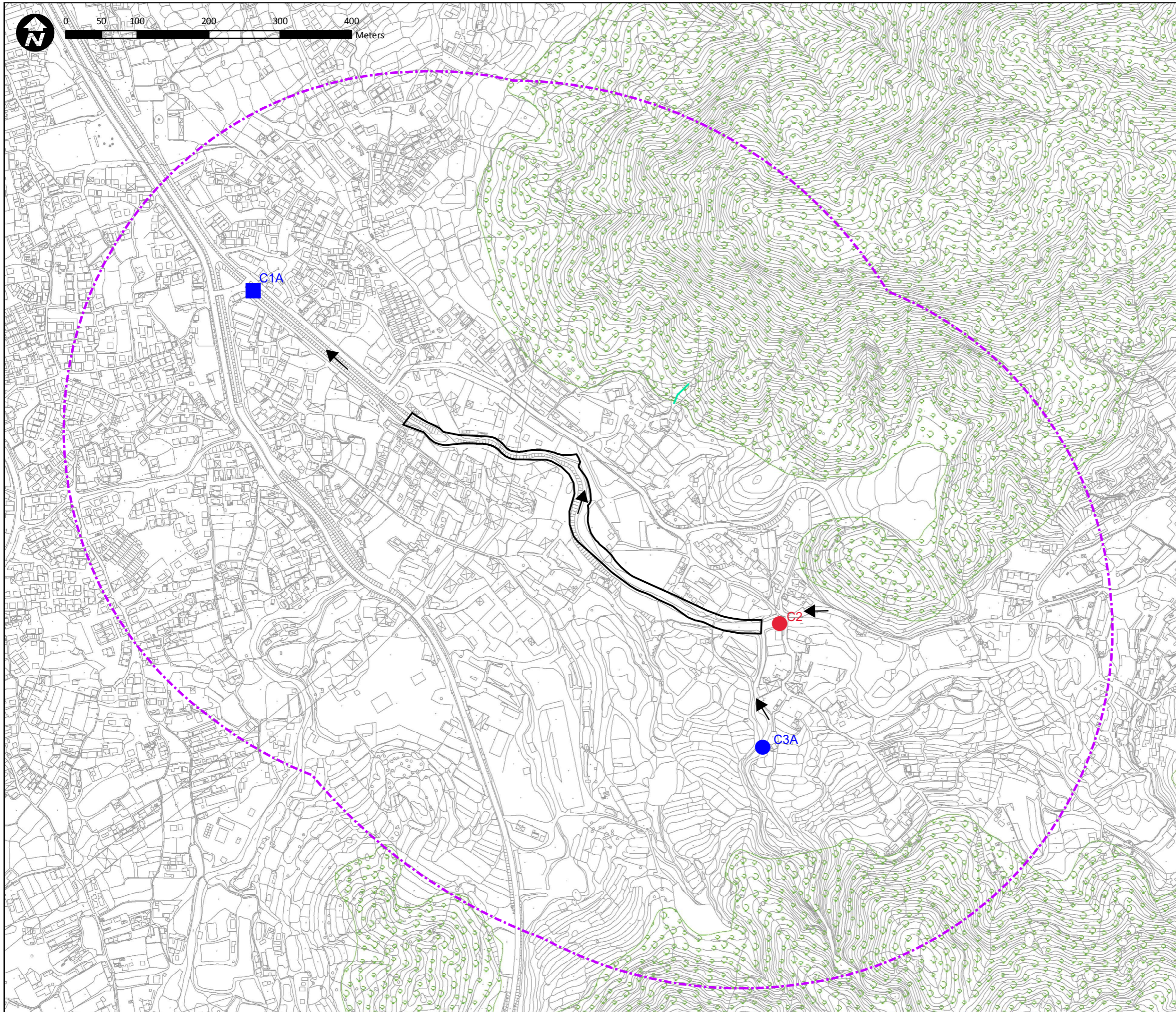
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 Figure 1.2 d

**Figure 2.1 Impact Water Quality Monitoring Locations**





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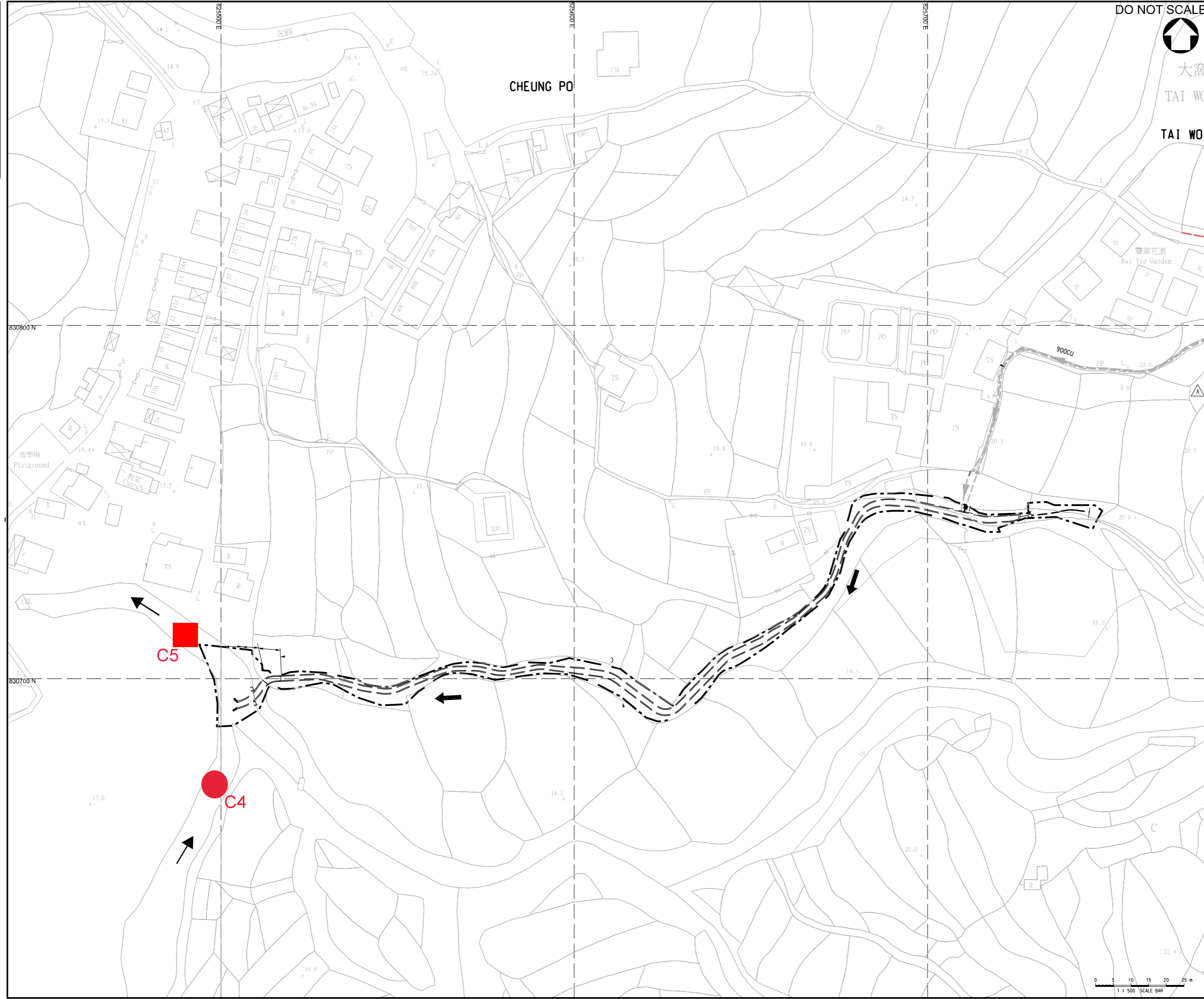
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- 500 m study area
- Control Station
- Alternative Control Station
- Alternative Impact Station
- ← Flow direction

Project Title:  
**CONTRACT NO. DC/2022/02  
 DRAINAGE IMPROVEMENT WORKS  
 AT YUEN LONG -  
 STAGE 2**

Figure Title:  
**Water Quality Monitoring Locations at  
 Sung Shan New Village**

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Approved by:	
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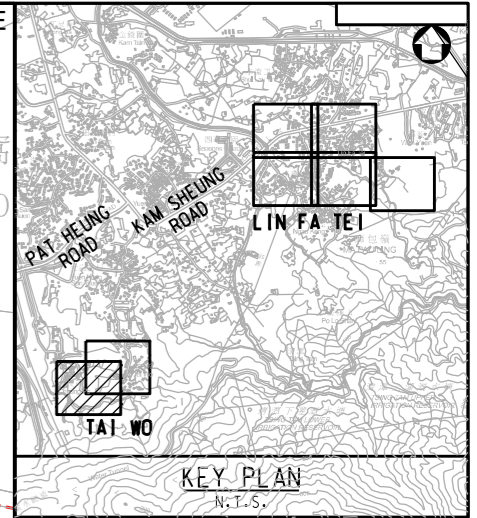
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**LEGEND:**

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- Control Station
- Impact Station
- Flow Direction

Rev.	Date	Description	By	Chkd	App'd	Suitability
A	OCT 2022	TENDER ADDENDUM NO.3	SHC	WCTT	KP	
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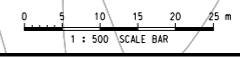
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Drainage Services Department  
**工程管理部**  
Project Management Division

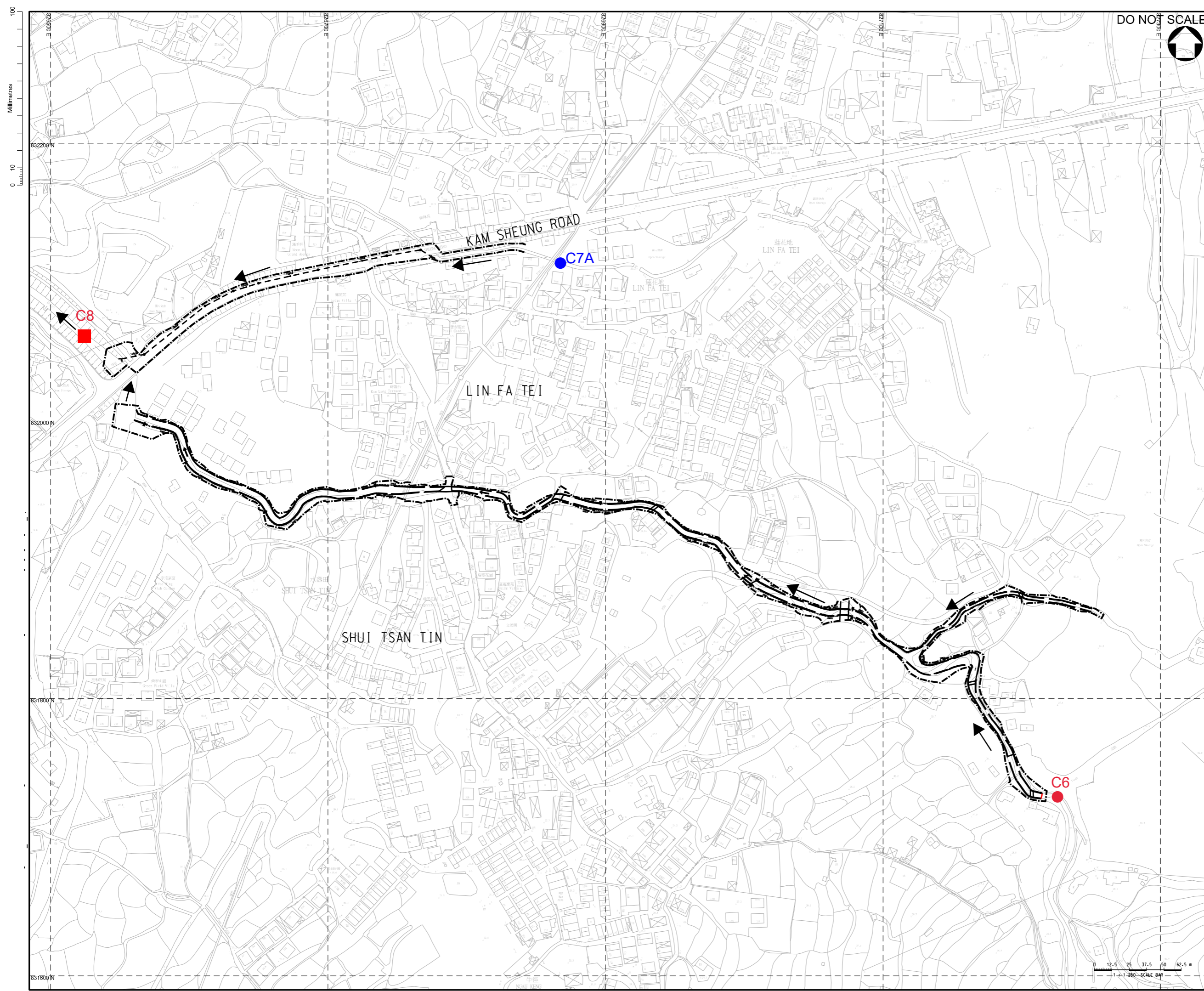
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**AT YUEN LONG -**  
**STAGE 2**

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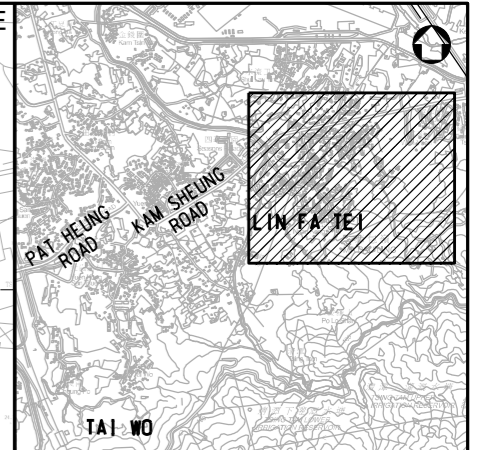
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Drawing Number: **Figure 2.1b**





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KEY PLAN  
N.T.S.

- LEGEND:**
- WORKS BOUNDARY
  - RECTANGULAR CHANNEL
  - 450 CU COVERED U-CHANNEL WITH NON-HEAVY DUTY PRECAST CONCRETE COVER
  - MANHOLE
  - Control Station
  - Alternative Control Station
  - Impact Station
  - Flow Direction

Rev.	Date	Description	By	CHK'd	App'd
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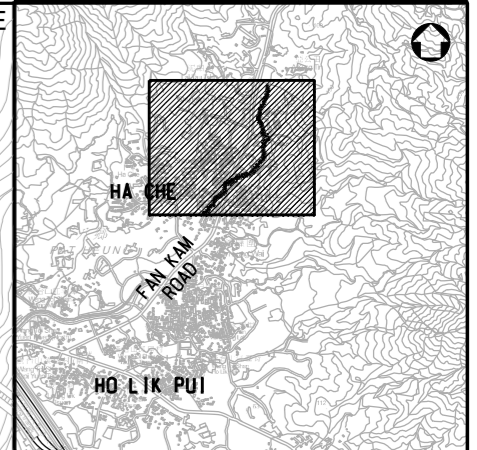
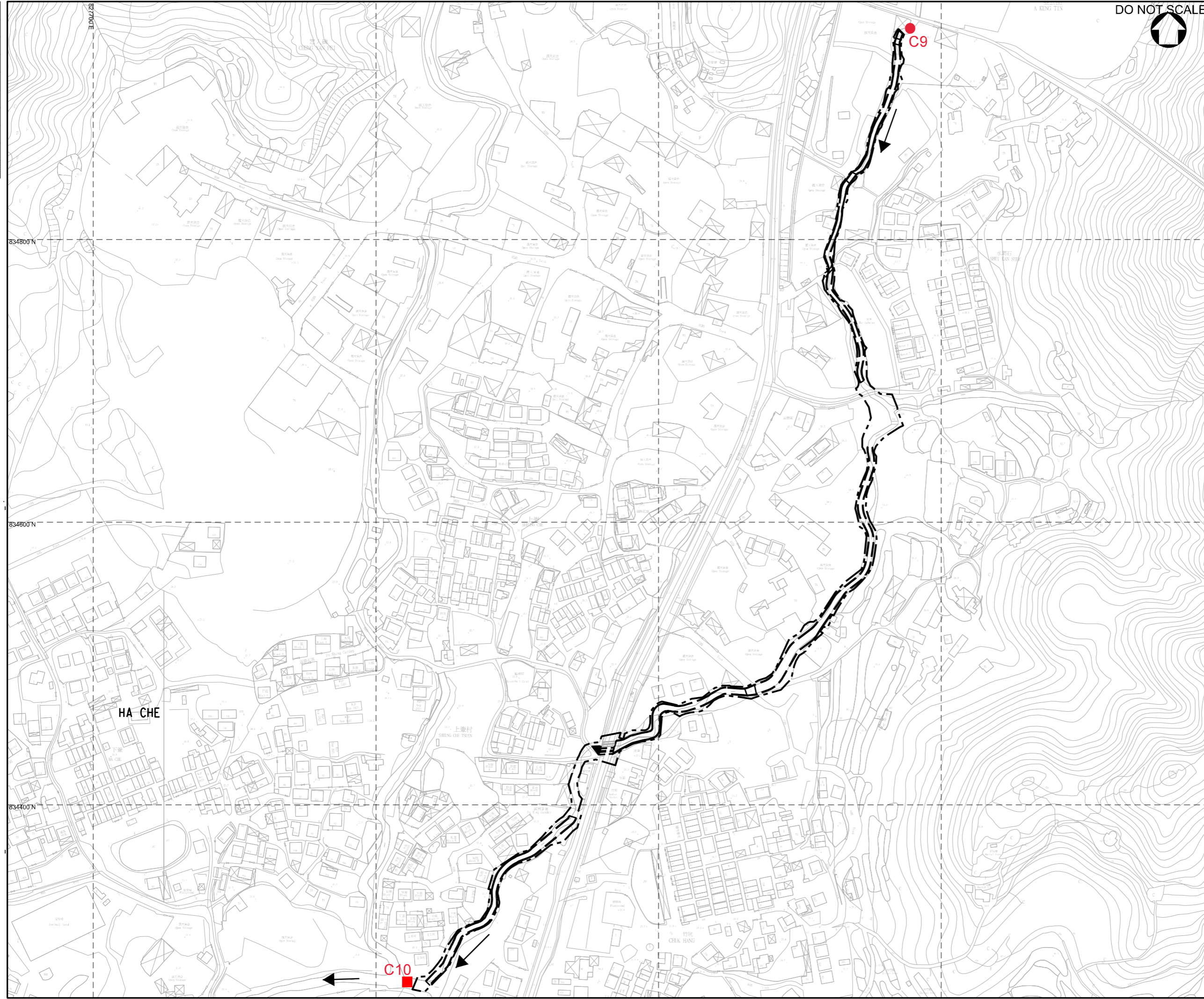
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KEY PLAN  
N.T.S.

- LEGEND:**
- WORKS BOUNDARY
  - RECTANGULAR CHANNEL
  - Control Station
  - Impact Station
  - Flow Direction

Rev.	Date	Description	By	CHK'd	App'd
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-	JUL 2022	ISSUE FOR TENDER			
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Client  
**渠務署**  
Drainage Services Department

Project Management Division

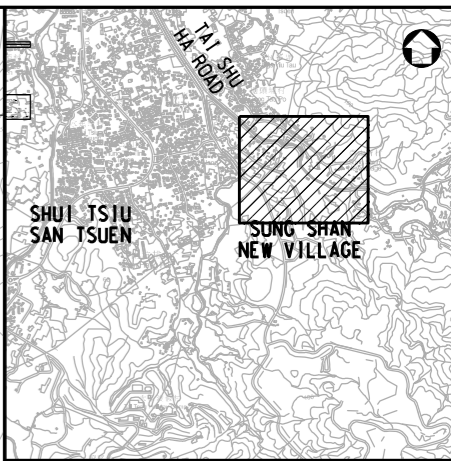
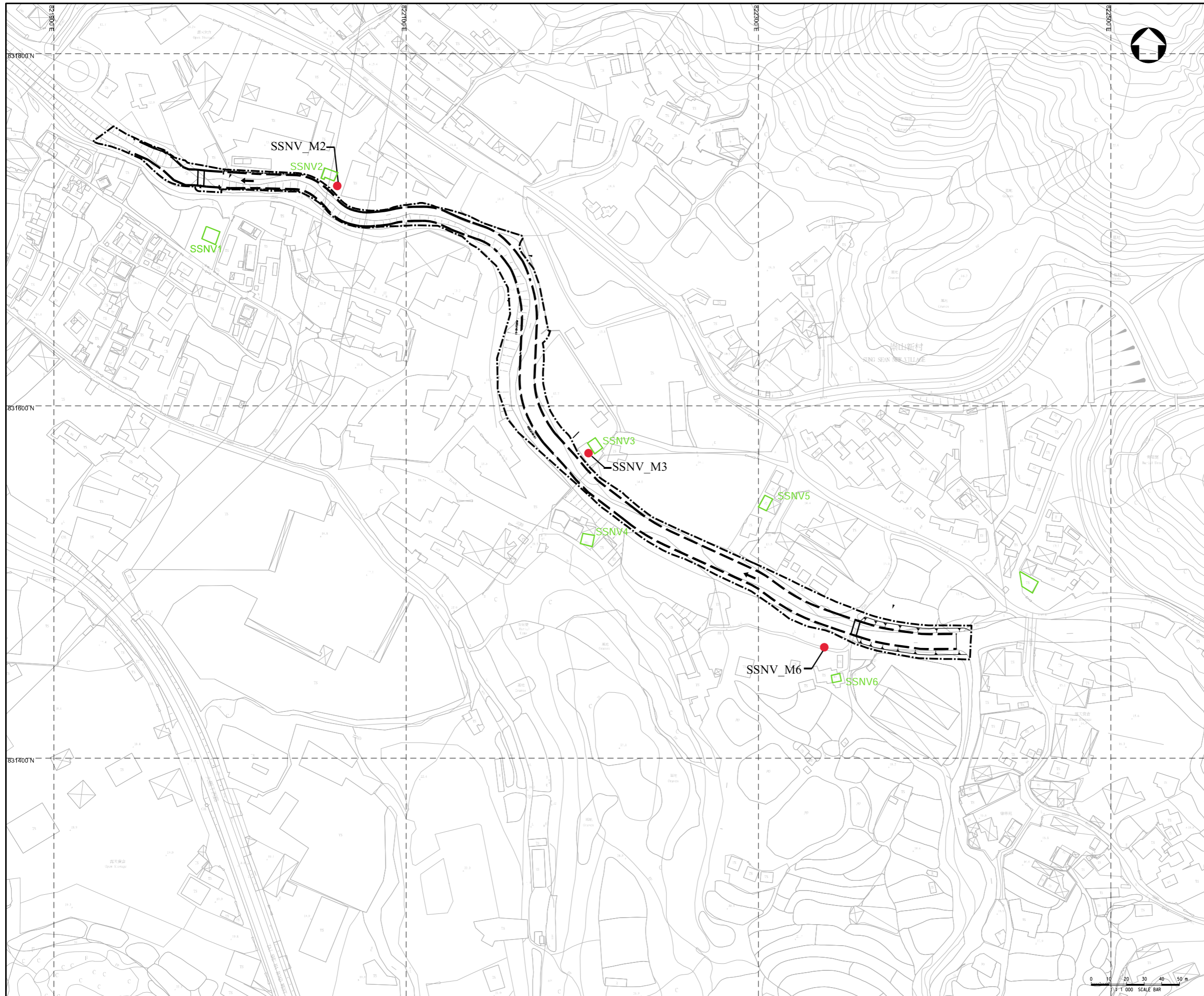
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AT YUEN LONG -  
STAGE 2

Drawing Title  
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at Ha Che**

Scale	Designed	Drawn	Checked	Authorised
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Original Size	Date	Date	Date	Date
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Drawing Number	Revision			

Figure 2.1d

**Figure 3.1 Impact Noise Monitoring Locations**



**KEY PLAN**  
N.T.S.

**LEGEND:**

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- NOISE SENSITIVE RECEIVER
- NOISE MONITORING STATION

Rev.	Date	Description	By	CHK'd	App'd	Suitability
A	OCT 2022	TENDER ADDENDUM NO.3		SHC	WCTT	KP
-	JUL 2022	ISSUE FOR TENDER		SHC	WCTT	KP

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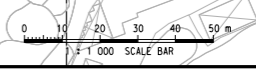
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Drainage Services Department  
**工程管理部**  
Project Management Division

Contract Title  
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DRAINAGE IMPROVEMENT WORKS  
AT YUEN LONG -  
STAGE 2

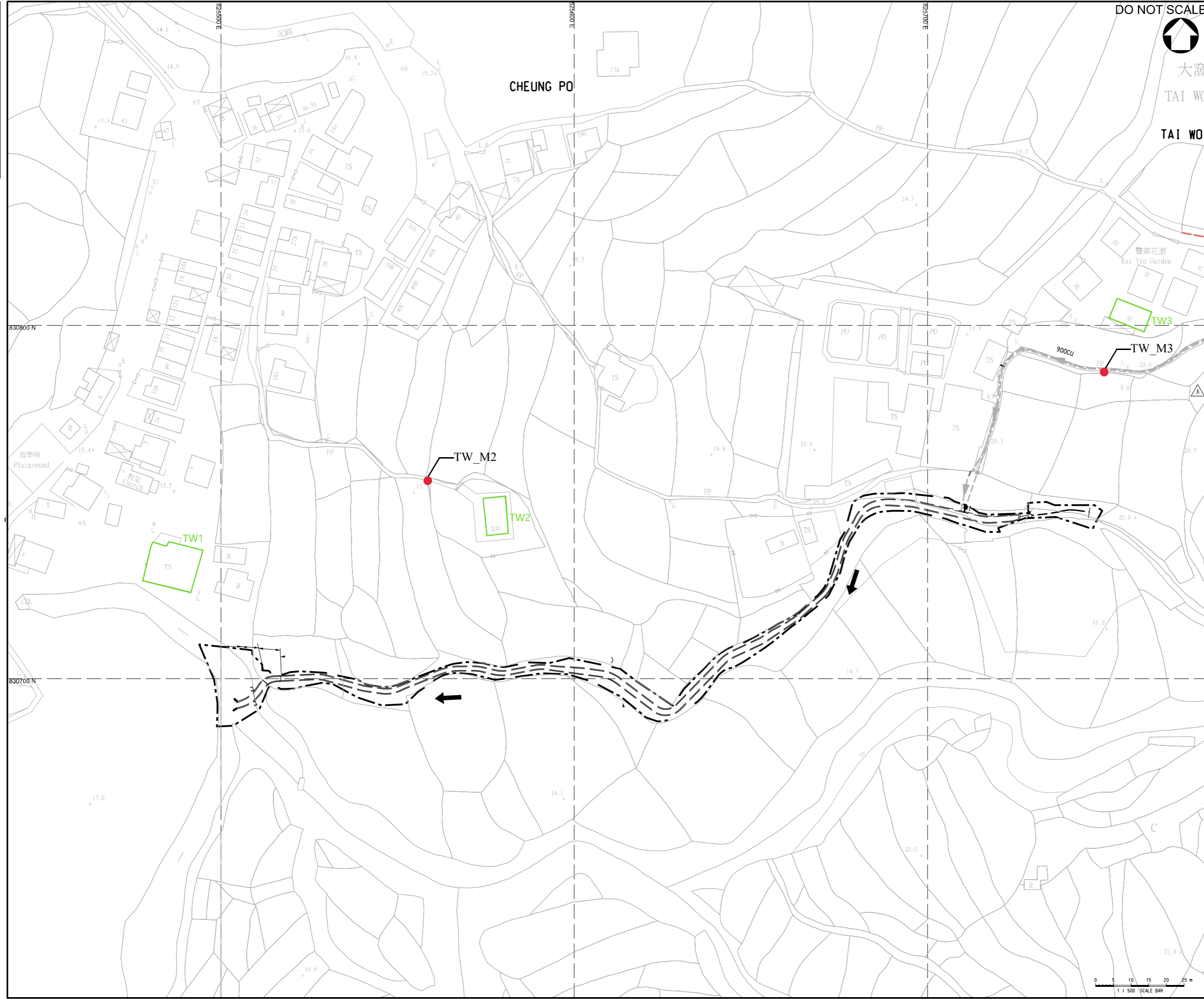
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**Noise Monitoring Locations at  
Sung Shan New Village**

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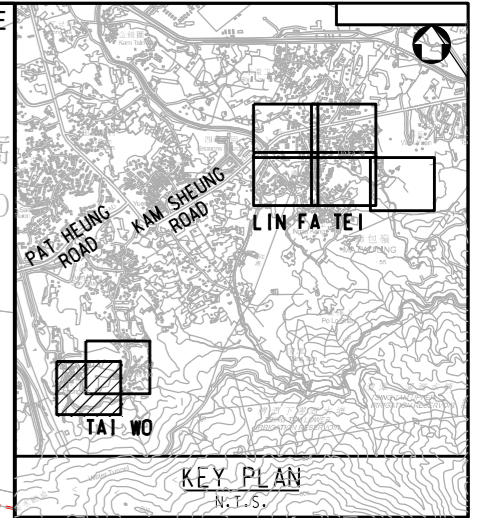
Drawing Number  
**Figure 3.1a**



0 10 100  
Millimetres



DO NOT SCALE



- LEGEND:**
- WORKS BOUNDARY
  - RECTANGULAR CHANNEL
  - NOISE SENSITIVE RECEIVER
  - NOISE MONITORING STATION

Rev.	Date	Description	By	Chk'd	App'd	Suitability
A	OCT 2022	TENDER ADDENDUM NO.3		SHC	WCTT	KP
-	JUL 2022	ISSUE FOR TENDER		SHC	WCTT	KP

Drawing Status: **CONTRACT**

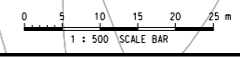
**ATKINS**  
Member of the SNC-Lavalin Group

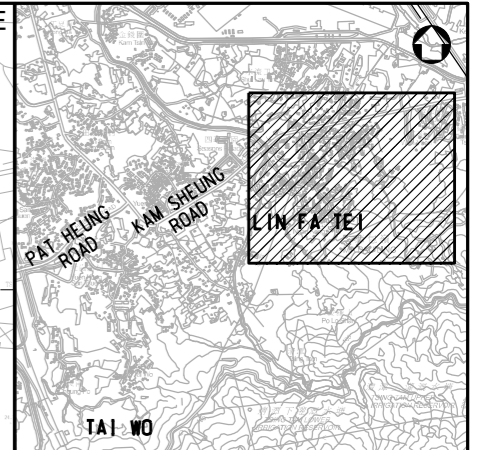
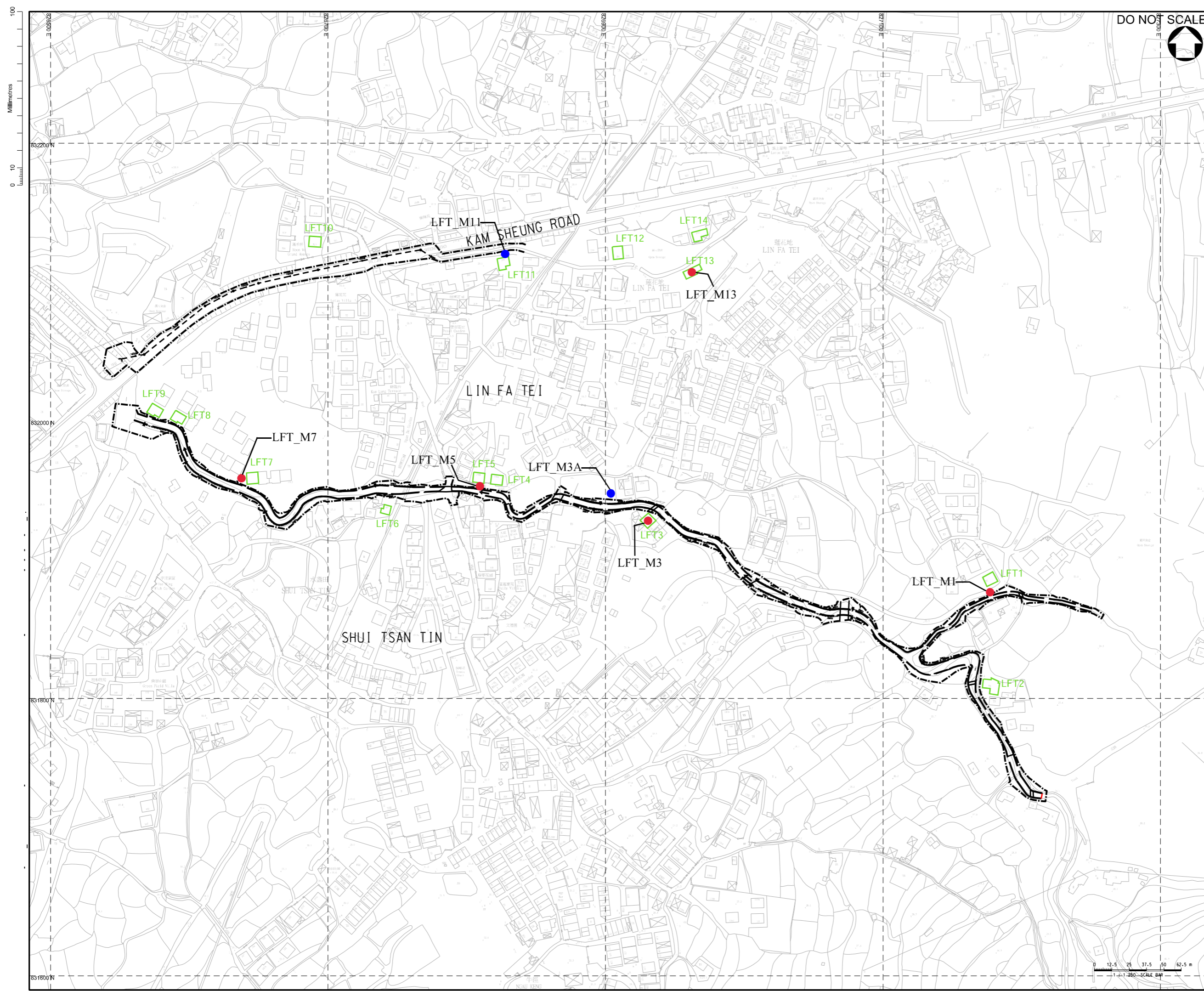
Client: **渠務署**  
Drainage Services Department  
**工程管理部**  
Project Management Division

Contract Title: **CONTRACT NO. DC/2022/02  
DRAINAGE IMPROVEMENT WORKS  
AT YUEN LONG -  
STAGE 2**

Drawing Title: **Noise Monitoring Locations at  
Tai Wo**

Scale	Designed	Drawn	Checked	Authorised
1 : 500	SHC	AC	WCTT	KP
Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022
Drawing Number	Figure 3.1b			Revision
				A





**KEY PLAN**  
N.T.S.

- LEGEND:**
- WORKS BOUNDARY
  - RECTANGULAR CHANNEL
  - NOISE SENSITIVE RECEIVER
  - NOISE MONITORING STATION
  - ALTERNATIVE NOISE MONITORING STATION

Rev.	Date	Description	By	CHK'd	App'd
A	NOV 2022	TENDER ADDENDUM NO. 4	SHC	WCTT	KP
-	JUL 2022	ISSUE FOR TENDER	SHC	WCTT	KP

Drawing Status: **CONTRACT**

**ATKINS**  
Member of the SNC-Lavalin Group

Client: 渠務署  
Drainage Services Department

Project Management Division

Contract Title: **CONTRACT NO. DC/2022/02  
DRAINAGE IMPROVEMENT WORKS  
AT YUEN LONG -  
STAGE 2**

Drawing Title: **Noise Monitoring Locations at  
Lin Fa Tei**

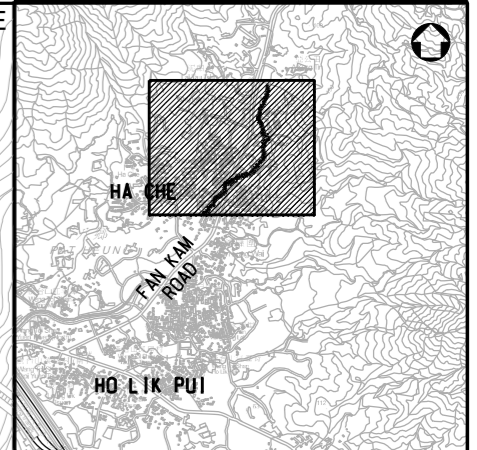
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Drawing Number: **Figure 3.1c**



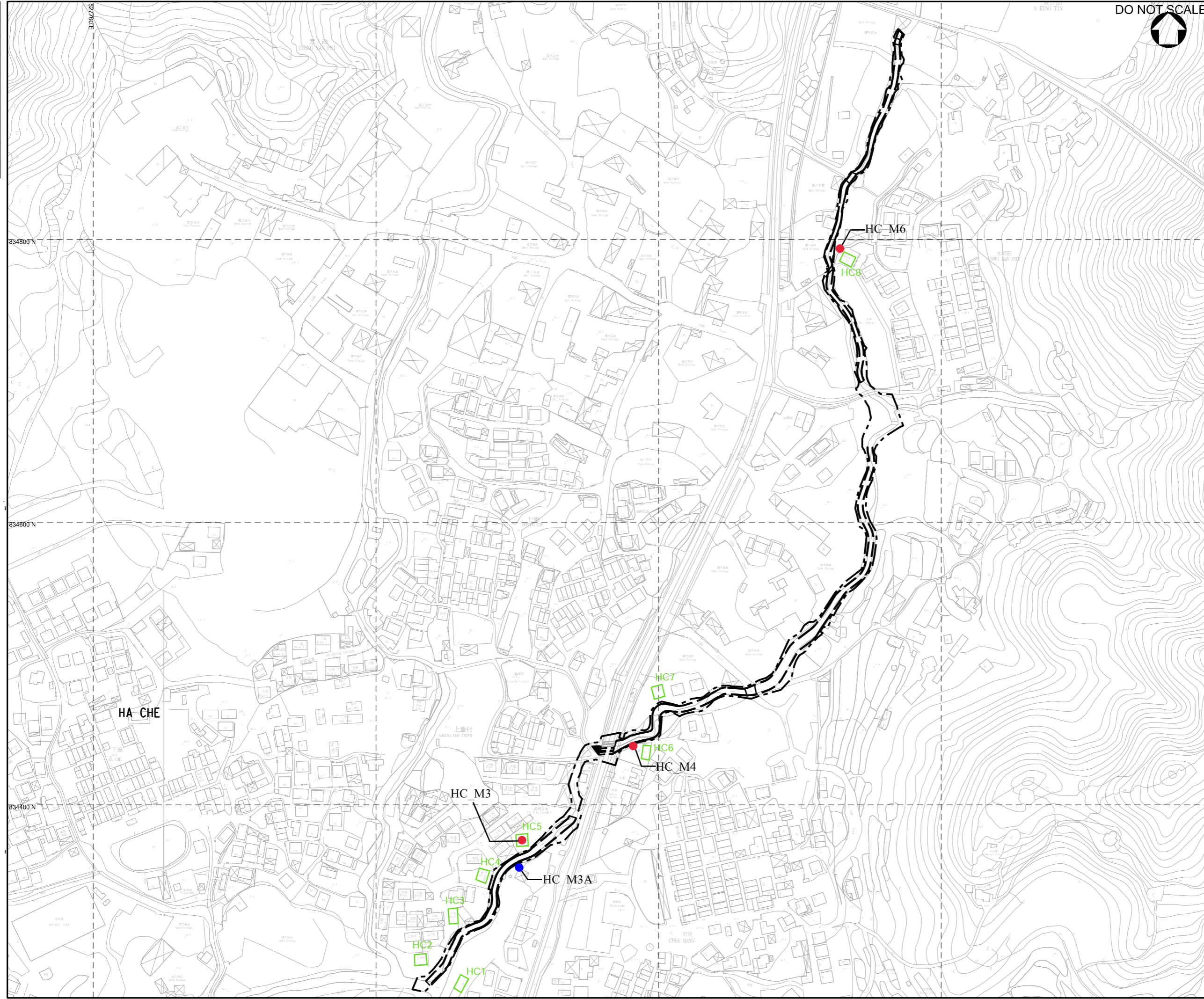
100  
0 10  
Millimetres

DO NOT SCALE



**KEY PLAN**  
N.T.S.

- LEGEND:**
- WORKS BOUNDARY
  - RECTANGULAR CHANNEL
  - NOISE SENSITIVE RECEIVER
  - NOISE MONITORING STATION
  - ALTERNATIVE NOISE MONITORING STATION



Rev.	Date	Description	By	Chk'd	App'd
A	NOV 2022	TENDER ADDENDUM NO. 4	SHC	WCTT	KP
-	JUL 2022	ISSUE FOR TENDER	SHC	WCTT	KP
Drawing Status: <b>CONTRACT</b>					Suitability: <b>III</b>

**ATKINS**  
Member of the SNC-Lavalin Group

Client: 渠務署  
Drainage Services Department

Project Management Division

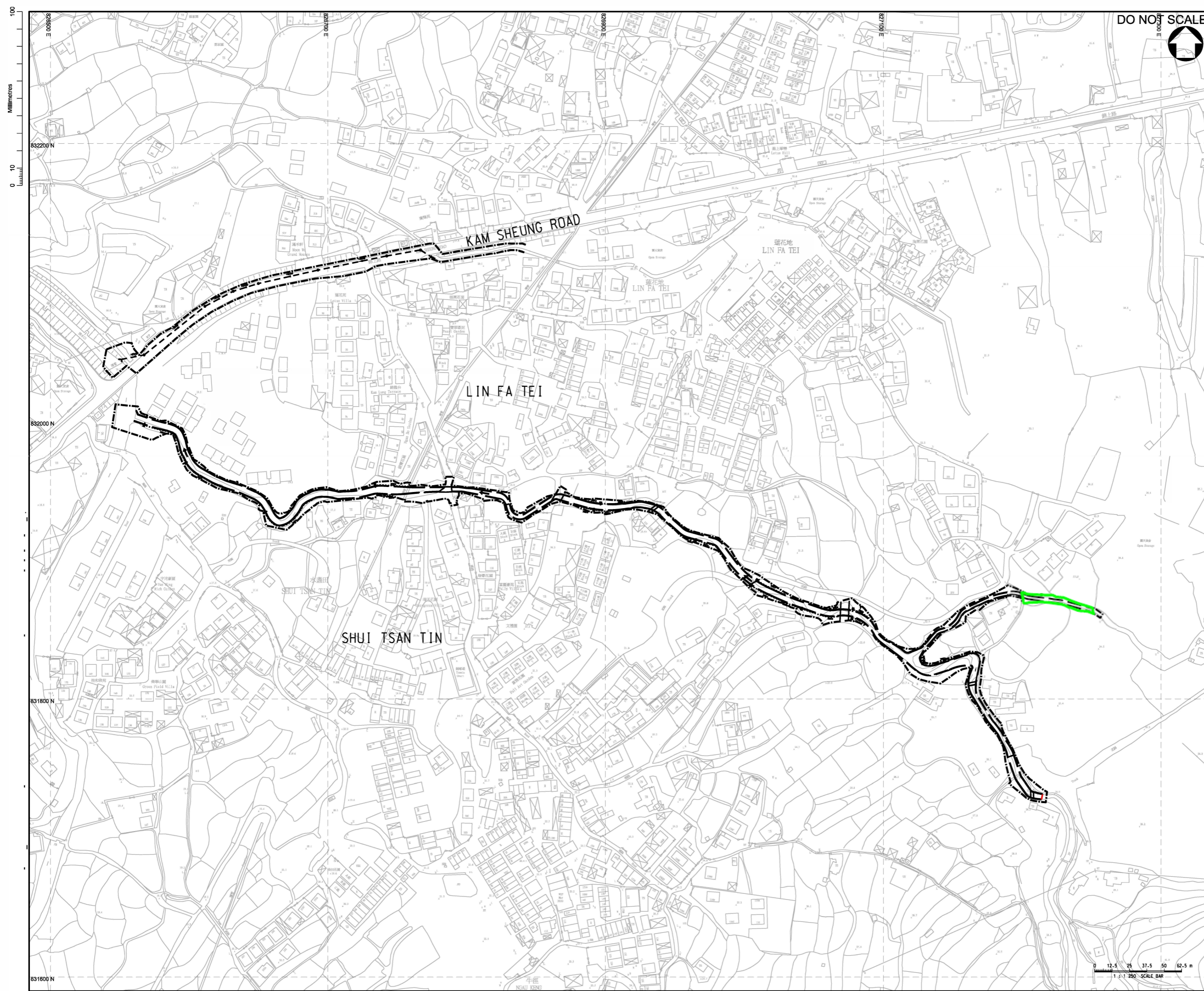
Contract Title: CONTRACT NO. DC/2022/02  
DRAINAGE IMPROVEMENT WORKS  
AT YUEN LONG -  
STAGE 2

Drawing Title: **Noise Monitoring Locations at  
Ha Che**

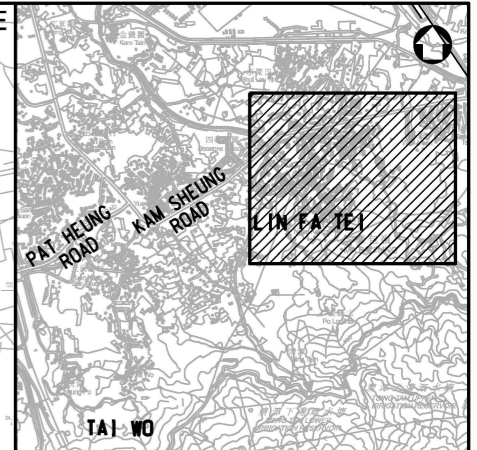
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Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022
Drawing Number	Revision			

Figure 3.1d

**Figure 8.1 Area for Archaeological Survey**



DO NOT SCALE



**KEY PLAN**  
N.T.S.

- LEGEND:**
- WORKS BOUNDARY
  - RECTANGULAR CHANNEL
  - COVERED U-CHANNEL WITH NON-HEAVY DUTY PRECAST CONCRETE COVER
  - MANHOLE
  - AREA IDENTIFIED FOR ARCHAEOLOGICAL SURVEY

Rev.	Date	Description	By	Chkd	App'd	Suitability
A	NOV 2022	TENDER ADDENDUM NO. 4	SHC	WCTT	KP	
-	JUL 2022	ISSUE FOR TENDER	SHC	WCTT	KP	

Drawing Status: **CONTRACT**

**ATKINS**  
Member of the SNC-Lavalin Group

Client: 渠務署  
Drainage Services Department

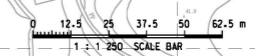
Project Management Division

Contract Title: **CONTRACT NO. DC/2022/02  
DRAINAGE IMPROVEMENT WORKS  
AT YUEN LONG -  
STAGE 2**

Drawing Title: **AREA IDENTIFIED FOR ARCHAEOLOGICAL SURVEY**

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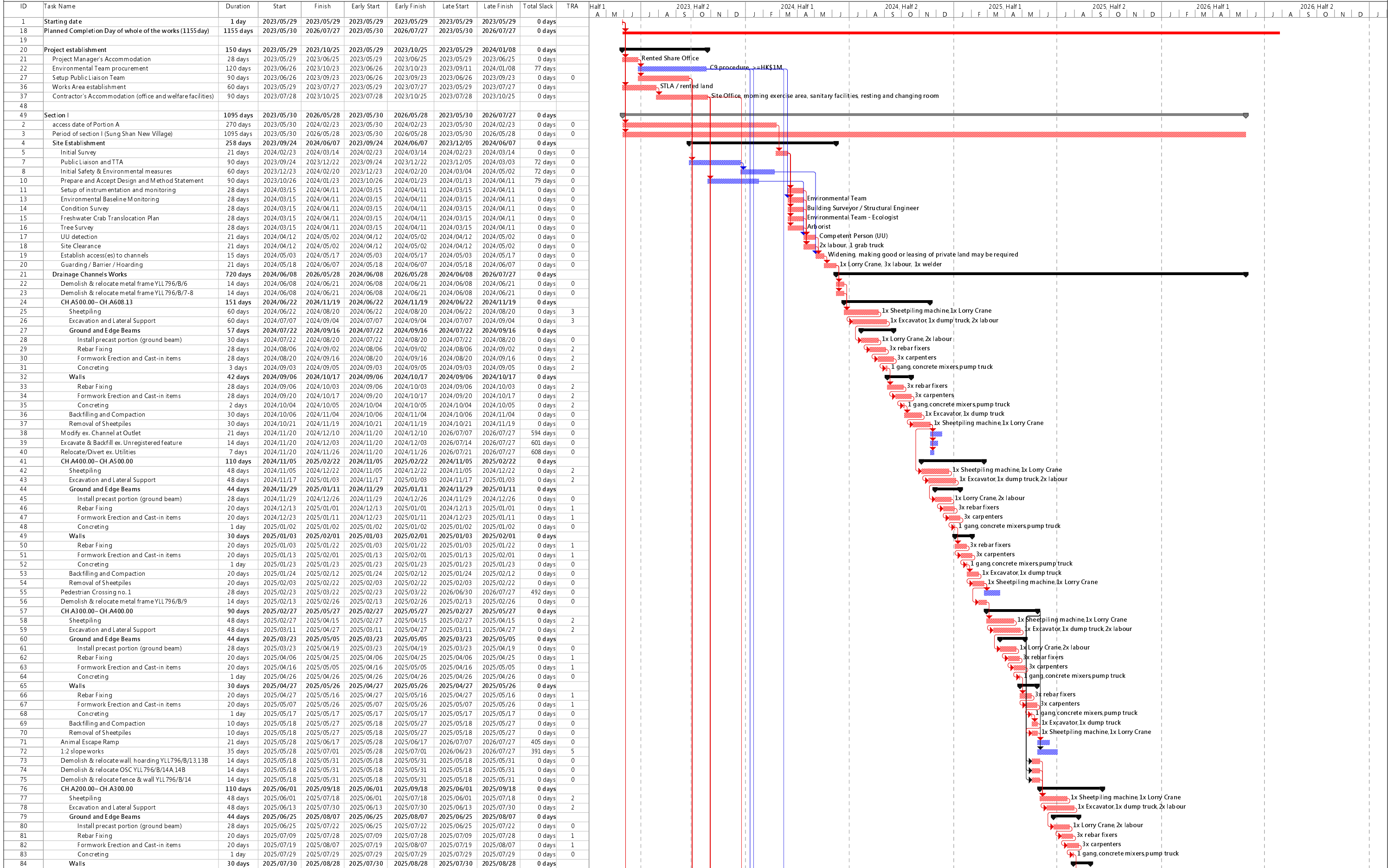
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# Appendices

## **Appendix 1.1 Construction Programme**

WING TAT CIVIL ENGINEERING CO LTD  
CONTRACT NO. DC/2022/02 - DRAINAGE IMPROVEMENT WORKS AT YUEN LONG - STAGE 2



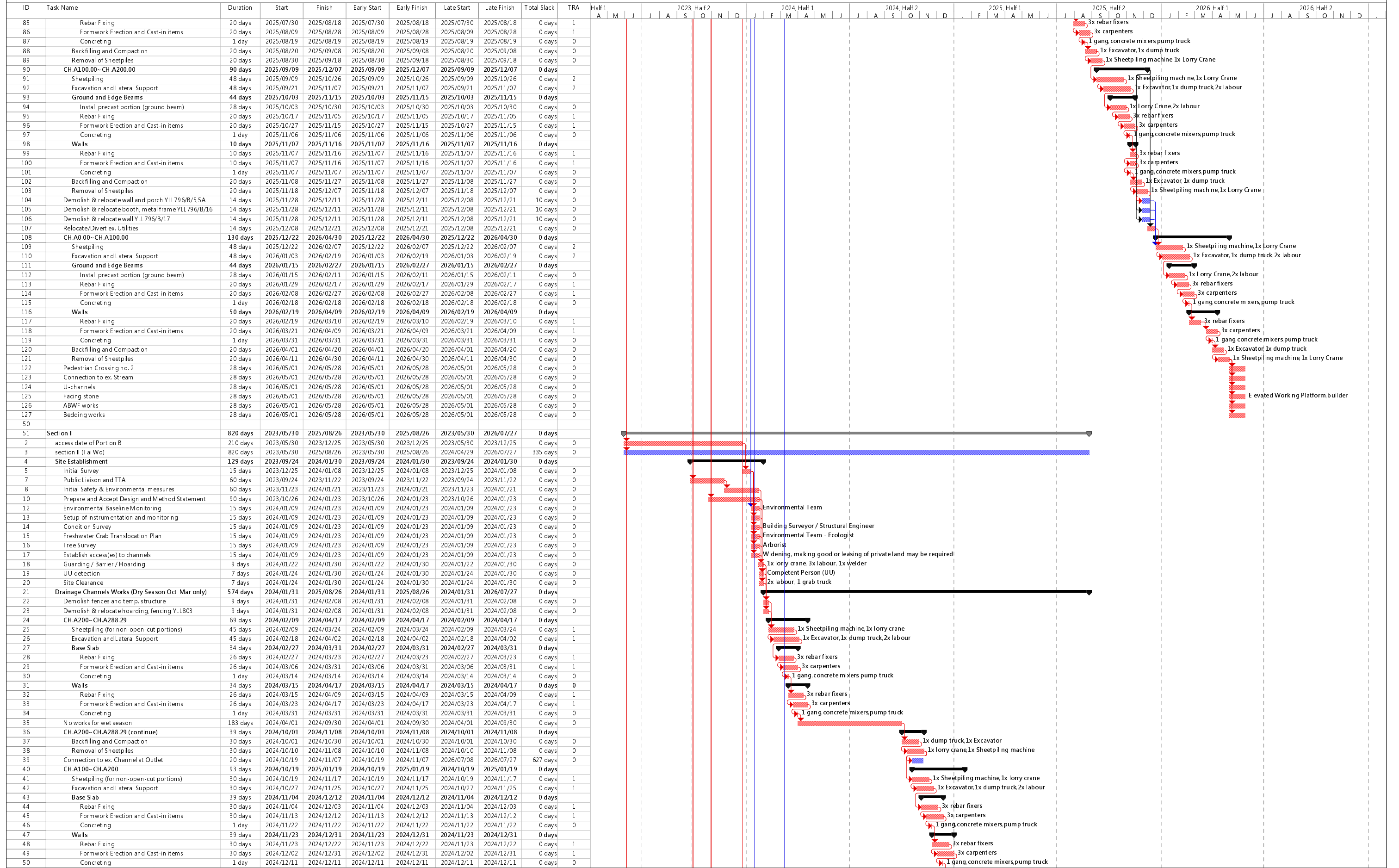
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Critical Task		Summary		Rolled Up Milestone		Inactive Summary		Manual Summary Rollup		Finish-only		Split		Group By Summary	
Progress		Rolled Up Task		Rolled Up Progress		Manual Task		Manual Summary		External Tasks		External Tasks		Deadline	

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U-Channel: {U/S}-(D/S),size+type,length(m)

Page 1

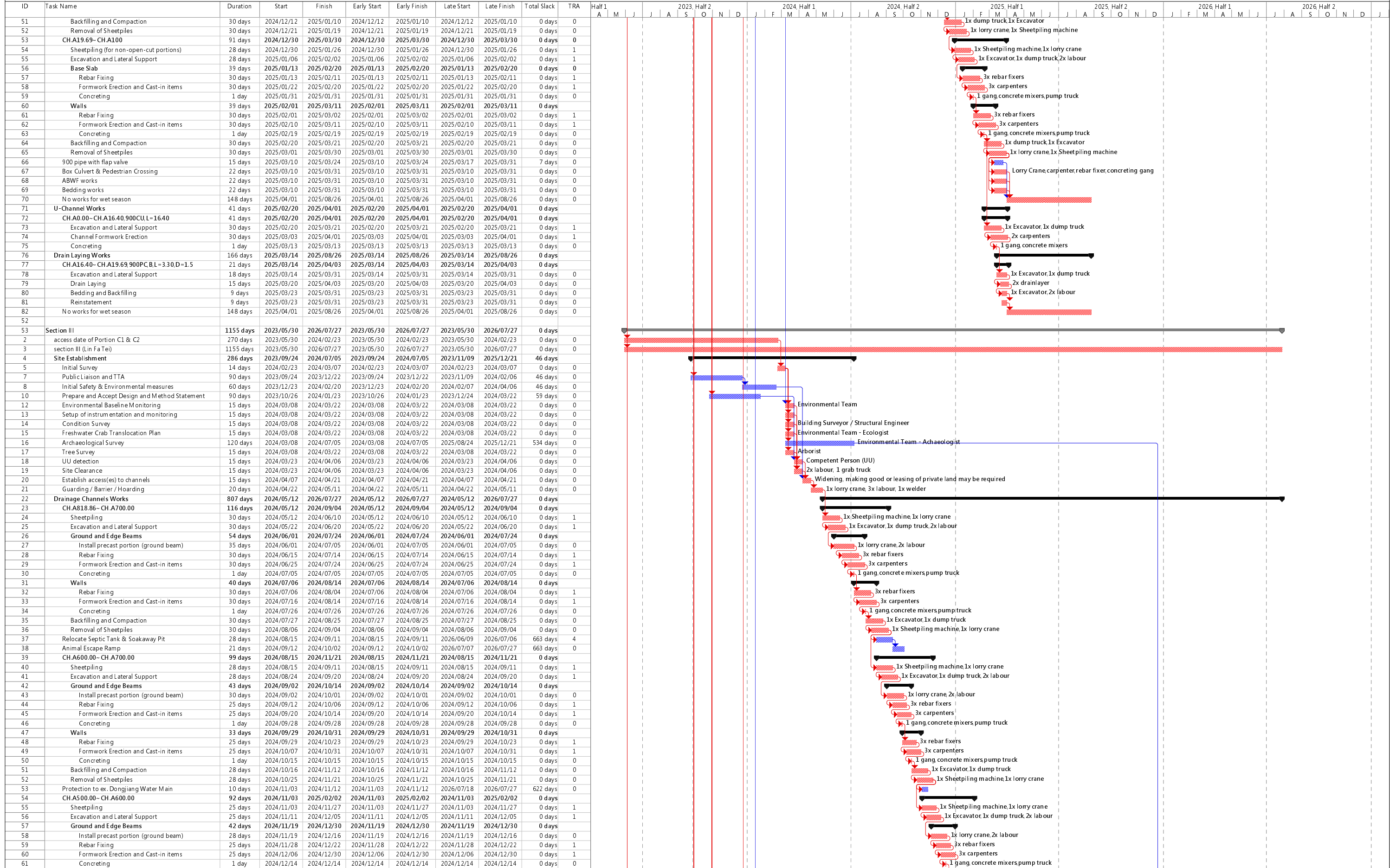
WING TAT CIVIL ENGINEERING CO LTD  
 CONTRACT NO. DC/2022/02 - DRAINAGE IMPROVEMENT WORKS AT YUEN LONG - STAGE 2



Revision: 1.4	Date: 25 September 2023	Task	Milestone	Rolled Up Critical Task	Inactive Milestone	Duration-only	Start-only	External Milestone	Project Summary
		Critical Task	Summary	Rolled Up Milestone	Inactive Summary	Manual Summary Rollup	Finish-only	Split	Group By Summary
		Progress	Rolled Up Task	Rolled Up Progress	Manual Task	Manual Summary	External Tasks	External Tasks	Deadline

Drain: {U/S}-(D/S),size+type,bedding,length(m),depth(m)  
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WING TAT CIVIL ENGINEERING CO LTD  
CONTRACT NO. DC/2022/02 - DRAINAGE IMPROVEMENT WORKS AT YUEN LONG - STAGE 2



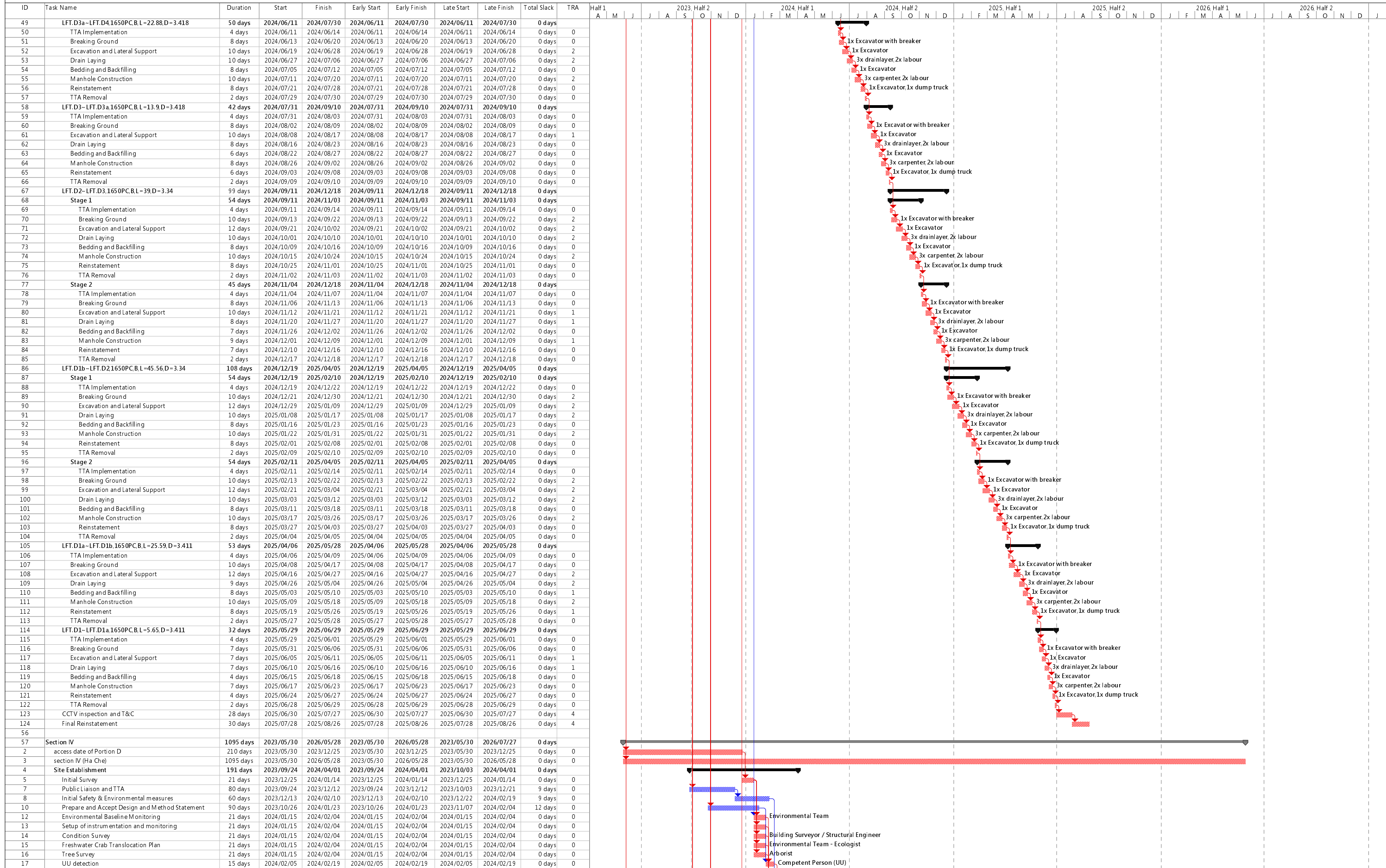
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		<div style="display: flex; justify-content: space-between;"> <span>Critical Task <span style="color: red;">▬</span></span> <span>Summary <span style="color: blue;">▬</span></span> <span>Roll Up Milestone <span style="color: black;">◀▶</span></span> <span>Inactive Summary <span style="color: red;">◆</span></span> </div>	<div style="display: flex; justify-content: space-between;"> <span>Manual Summary Rollup <span style="color: grey;">◆</span></span> <span>External Tasks <span style="color: blue;">◆</span></span> </div>	<div style="display: flex; justify-content: space-between;"> <span>Project Summary <span style="color: green;">▬</span></span> <span>Group By Summary <span style="color: grey;">▬</span></span> </div>	
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Page 3









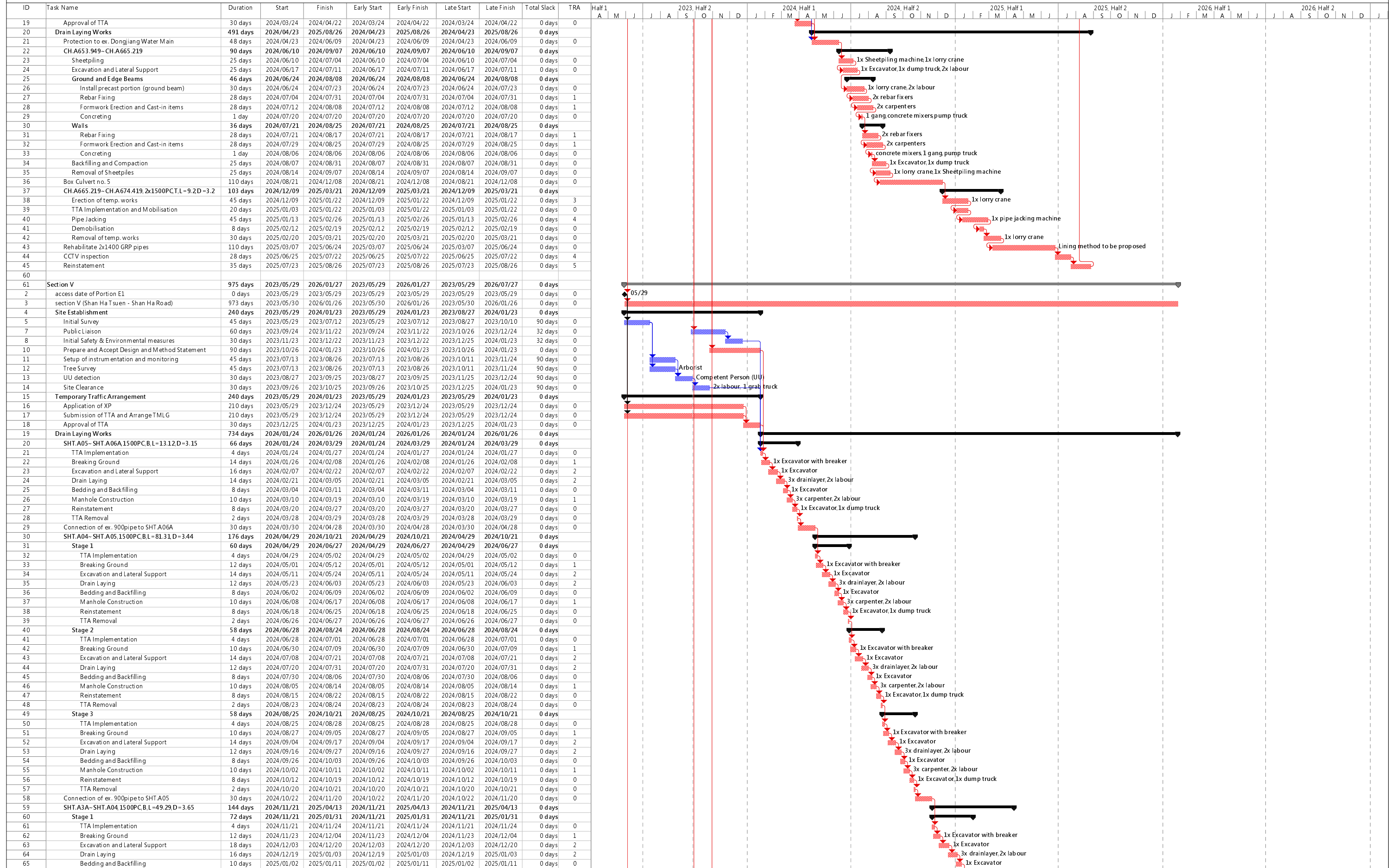
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		Progress	Rolled Up Task	Rolled Up Progress	Manual Task	Manual Summary	External Tasks	External Tasks	Deadline

Drain: {U/S}-(D/S),size+type,bedding,length(m),depth(m)  
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WING TAT CIVIL ENGINEERING CO LTD  
CONTRACT NO. DC/2022/02 - DRAINAGE IMPROVEMENT WORKS AT YUEN LONG - STAGE 2



Revision: 1.4	Date: 25 September 2023	Task	Milestone	Rolled Up Critical Task	Inactive Milestone	Inactive Summary	Manual Summary Rollup	Manual Summary	Start-only	Finish-only	External Milestone	Project Summary	Split	Group By Summary	Deadline	External Tasks
		Critical Task	Summary	Rolled Up Milestone	Inactive Summary	Manual Summary Rollup	Inactive Summary	Manual Summary	Start-only	Finish-only	External Milestone	Project Summary	Split	Group By Summary	Deadline	External Tasks
		Progress	Rolled Up Task	Rolled Up Progress	Manual Task	Manual Summary Rollup	Inactive Summary	Manual Summary	Start-only	Finish-only	External Milestone	Project Summary	Split	Group By Summary	Deadline	External Tasks

Main project schedule table with columns for ID, Task Name, Duration, Start, Finish, Early Start, Early Finish, Late Start, Late Finish, Total Slack, TRA, and Gantt chart data for 2023, 2024, and 2026.

Legend section for symbols: Task, Milestone, Summary, Rolled Up Task, Critical Task, Rolled Up Critical Task, Inactive Milestone, Inactive Summary, Manual Summary Rollup, Manual Summary, Manual Task, Duration-only, Manual Summary, Start-only, Finish-only, External Tasks, External Milestone, Split, External Tasks, Project Summary, Group By Summary, Deadline, and arrows.

Revision: 1.4 Date: 25 September 2023

Drain: {U/S}-(D/S),size+type,bedding,length(m),depth(m)
U-Channel: {U/S}-(D/S),size+type,length(m)









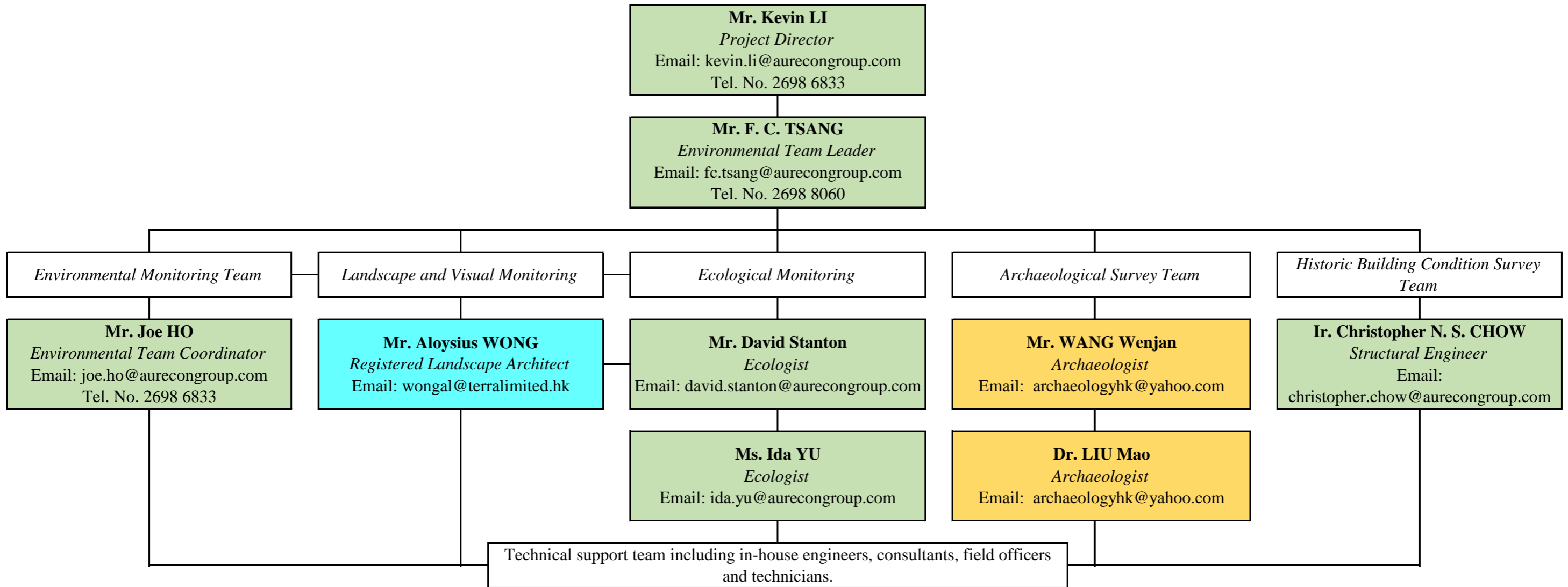
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											Half 1	2023, Half 2					2024, Half 1					2024, Half 2					2025, Half 1					2025, Half 2			
430	Catchpit construcion	10 days	2026/01/18	2026/01/27	2026/01/18	2026/01/27	2026/01/18	2026/01/27	0 days	0	[Gantt bars for 430: Catchpit construcion from 2026/01/18 to 2026/01/27]																								
431	Concreting	1 day	2026/01/26	2026/01/26	2026/01/26	2026/01/26	2026/01/26	2026/01/26	0 days	0	[Gantt bars for 431: Concreting from 2026/01/26 to 2026/01/26]																								

2x carpenter  
Concrete gang

Task		Milestone		Rolled Up Critical Task		Inactive Milestone		Duration-only		Start-only		External Milestone		Project Summary		Deadline	
Critical Task		Summary		Rolled Up Milestone		Inactive Summary		Manual Summary Rollup		Finish-only		Split		Group By Summary			
Progress		Rolled Up Task		Rolled Up Progress		Manual Task		Manual Summary		External Tasks		External Tasks					

## **Appendix 1.2 Project Organization Chart**

**Environmental Team's Organization Chart**



**Lead Consultant:**  
 Aurecon Hong Kong Limited

**Supporting Sub-consultants:**  
 1. Hong Kong Institute of Archaeology  
 2. Terra Studio Limited

## **Appendix 1.3 Implementation Status of Environmental Mitigation Measure**

## 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?	Implementation Status
<b>Construction Phase</b>							
S.3.8.1	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	Contractor(s)	At all construction areas of the site during the entire construction period	Air Pollution Control (Construction Dust) Regulation	Implemented
S.3.8.1	S.3.2.3	<ul style="list-style-type: none"> <li>Proper and regular watering should be provided for all exposed and excavated work sites.</li> </ul>	Air Quality (fugitive dust) Control during Construction Phase	Contractor(s)	At all construction areas of the site during the entire construction period	Air Pollution Control (Construction Dust) Regulation	Implemented
S.3.8.1	S.3.2.3	<ul style="list-style-type: none"> <li>Open stockpiles should be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.</li> </ul>	Air Quality (fugitive dust) Control during Construction Phase	Contractor(s)	At all construction areas of the site during the entire construction period	Air Pollution Control (Construction Dust) Regulation	Implemented
S.3.8.1	S.3.2.3	<ul style="list-style-type: none"> <li>All excavated or stockpile of dusty materials should be entirely covered by impervious sheeting or sprayed with water to ensure that the entire surface is wet. They should be sprayed with water immediately prior to any loading or transfer activities. These materials should be removed, backfilled or reinstated where practicable.</li> </ul>	Air Quality (fugitive dust) Control during Construction Phase	Contractor(s)	At all construction areas of the site during the entire construction period	Air Pollution Control (Construction Dust) Regulation	Implemented

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?	Implementation Status
S.3.8.1	S.3.2.3	<ul style="list-style-type: none"> <li>After the removal of stockpiles, the remaining dusty material should be sprayed with water and cleared from the surface of roads. Stockpiling areas of dusty materials should not be extended beyond the pedestrian barriers, fencing or traffic cones.</li> </ul>	Air Quality (fugitive dust) Control during Construction Phase	Contractor(s)	At all construction areas of the site during the entire construction period	Air Pollution Control (Construction Dust) Regulation	Implemented
S.3.8.1	S.3.2.3	<ul style="list-style-type: none"> <li>At locations with proposed open excavation and reinstatement works, hoarding of not less than 2.4 m from ground level should be provided along the entire length of that portion of the site boundary except for a site entrance or exit. The contractor should ensure that the hoardings are well maintained throughout the entire construction period.</li> </ul>	Air Quality (fugitive dust) Control during Construction Phase	Contractor(s)	At all construction areas of the site during the entire construction period	Air Pollution Control (Construction Dust) Regulation	Implemented
S.3.8.1	S.3.2.3	<ul style="list-style-type: none"> <li>Vehicles used for the transportation of dusty materials/ spoils should be covered with tarpaulin or similar material. The cover should extend over the edges of the sides and tailboards.</li> </ul>	Air Quality (fugitive dust) Control during Construction Phase	Contractor(s)	At all construction areas of the site during the entire construction period	Air Pollution Control (Construction Dust) Regulation	Implemented
S.3.8.1	S.3.2.3	<ul style="list-style-type: none"> <li>Vehicle wheel washing facilities will be provided at exit of the works site. The areas where vehicle wheel washing activities are carried out and the section of the construction site between the vehicle washing facilities and the exit should be paved with concrete or bituminous materials.</li> </ul>	Air Quality (fugitive dust) Control during Construction Phase	Contractor(s)	At all construction areas of the site during the entire construction period	Air Pollution Control (Construction Dust) Regulation	Implemented
S.3.8.1	S.3.2.3	<ul style="list-style-type: none"> <li>Where possible, routing of vehicles and position of construction plant should be at the maximum possible distance from ASRs.</li> </ul>	Air Quality (fugitive dust) Control during Construction Phase	Contractor(s)	At all construction areas of the site during the entire construction period	Air Pollution Control (Construction Dust) Regulation	Implemented



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?	Implementation Status
S.3.8.1	S.3.2.3	<ul style="list-style-type: none"> <li>All demolished materials that may generate dust should be covered entirely by impervious sheeting or placed in a covered area with the top and three sides enclosed within a day of demolition.</li> </ul>	Air Quality (fugitive dust) Control during Construction Phase	Contractor(s)	At all construction areas of the site during the entire construction period	Air Pollution Control (Construction Dust) Regulation	Implemented
S.3.8.1	S.3.2.3	<ul style="list-style-type: none"> <li>At construction works areas where demolition takes place, water or dust suppression chemicals should be sprayed prior to, during and immediately after the demolition activities to ensure that the top surface remains wet.</li> </ul>	Air Quality (fugitive dust) Control during Construction Phase	Contractor(s)	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	Implemented
S.3.8.1	S.3.2.3	<ul style="list-style-type: none"> <li>The requirements stipulated in the Development Bureau Technical Circular (Works) No. 8/2010 Enhanced Specification for Site Cleanliness and Tidiness should be followed as far as practicable to enhance the cleanliness and tidiness of construction sites.</li> </ul>	Air Quality (fugitive dust) Control during Construction Phase	Contractor(s)	At all construction areas of the site during the entire construction period	Development Bureau Technical Circular (Works) No. 8/2010 Enhanced Specification for Site Cleanliness and Tidiness	Implemented
S.3.8.1	S.3.2.3	<ul style="list-style-type: none"> <li>NRMMs should be approved or exempted with a label issued by EPD. The label should be displayed at a conspicuous position of the machine or vehicle. Nonroad vehicles are required to meet the Euro V emission standards and smoke requirements as stipulated under the Air Pollution Control (Vehicle Design Standards) (Emission) Regulation.</li> </ul>	Emission from NRMM during Construction Phase	Contractor(s)	At all construction areas of the site during the entire construction period	Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation	Implemented

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?	Implementation Status
S.3.8.1	S.3.2.3	<ul style="list-style-type: none"> <li>The works at overlapping section are recommended to be scheduled to avoid works at the areas near Fan Kam Road.</li> <li>The Contractor shall liaise with No. CE 61/2012 (HY) – Improvement to Fan Kam Road – Investigation contractors so as to avoid undertaking works concurrently with the works from CE 61/2012 Project when they are in the close proximity. As a conservative approach, works for drainage improvement shall be carried when the works from the No. CE 61/2012 project is over 500 m away.</li> </ul>	Prevent potential cumulative construction air quality impacts	Contractor(s)	At all construction areas of the site for Ha Che during the entire construction period	-	Implemented

## 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?	Implementation Status
<b>Construction Phase</b>							
S.4.6.6	S. 4.8.1	Use of quiet PMEs and smaller sized of PMEs as practicable.	Noise control during construction	Contractor(s)	Construction areas near the specified locations during the construction period	EIAO-TM and NCO	Implemented
S.4.6.7	S. 4.8.1	Use of quiet PME for generator, mobile crane and excavator, wheeled/ tracked.	Noise control during construction	Contractor(s)	Construction areas near the specified locations during the construction period	EIAO-TM and NCO	Implemented
S.4.6.8	S. 4.8.1	The Contractor should be responsible for the design of temporary/ movable noise barriers with consideration of the size of PME and the requirements of intercepting the line of sight between the noise sensitive receivers and PME.	Noise control during construction	Contractor(s)	Construction areas near the specified locations during the construction period	EIAO-TM and NCO	Implemented

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?	Implementation Status
S.4.7.1	S. 4.8.1	<ul style="list-style-type: none"> <li>The Contractor shall adopt the Code of Practice on Good Management Practice to Prevent Violation of the NCO (Cap. 400) (for Construction Industry) published by the EPD;</li> <li>The Contractor shall observe and comply with the statutory and non-statutory requirements and guidelines;</li> <li>Before commencing any work, the Contractor shall submit to the Environmental Review for approval the method of working, equipment and noise mitigation measures intended to be used at the site;</li> <li>The Contractor shall devise and execute working methods to minimise the noise impact on the identified surrounding sensitive uses, and provide experienced personnel with suitable training to ensure that those methods are implemented;</li> <li>Noisy equipment and noisy activities should be located as far away from the NSR's as is practical;</li> <li>Machines and plant (such as dump truck, vibratory compactor, lorry, cranes) that may be intermitted use should be shut down between work periods or should be throttled down to a minimum. Additionally, the combined use of noisy equipment/ machines should be avoided, when possible;</li> </ul>	Noise control during construction	Contractor(s)	At all construction areas of the site during the entire construction period	EIAO-TM and NCO	Implemented

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?	Implementation Status
		<ul style="list-style-type: none"> <li>• Only well-maintained plant should be operated on-site and plants should be serviced regularly during the construction programme;</li> <li>• Silencers, mufflers or acoustic treatment mats on construction equipment should be utilised and properly maintained during the construction duration;</li> <li>• Plants known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and</li> <li>• Material stockpiles and other structures should be effectively utilised as noise barriers, where practicable.</li> </ul>					
S.4.7.2	S. 4.8.1	The Contractor shall, from time to time, be aware of the noise impacts on the surrounding NSRs through adequate noise monitoring during the works so that adjustments can be made to the number of plants used for any construction activity and the corresponding plant positioning. These requirements shall be incorporated into the project works contract.	Noise control during construction	Contractor(s)	At all construction areas of the site during the entire construction period	EIAO-TM and NCO	Implemented

## Ecological 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?	Implementation Status
<b>Construction Phase</b>							
S.5.9.2	S.5.2.1	The section of watercourse with construction activities should be hydrologically isolated from the rest of the watercourse as far as practicable (except discharge of treated runoff).	Ecological – to avoid and minimize the spatial impact/ disturbance to the riverine habitat	Contractor(s)	During construction at all sites	EIA, contractual requirements	Implemented
S.5.9.2	S.5.2.1	The staged construction activities should be commenced from upstream and progresses toward the downstream area and the reinstatement work especially the planting of riparian vegetation should also be undertaken in stages and commenced as soon as the hardscape work completed in the working section	Ecological – to avoid and minimize the spatial impact and shorten the temporal disturbance to the riverine habitat	Contractor(s)	During construction at all sites	EIA, contractual requirements	Implemented

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?	Implementation Status
S.5.9.3	S.5.2.2	<p>Good Site Practice</p> <ul style="list-style-type: none"> <li>• Effective implementation of an Environmental Management Systems in accordance with the ISO 14001 for all work sites;</li> <li>• Effective implementation of mitigation measures recommended for dust suppression, noise reduction, as well as water quality and waste management as detailed in other sections of the EIA Report.</li> <li>• Effective implementation of the Tree Preservation Measures as detailed in the guidelines published by the Tree Management Office.</li> <li>• Staff awareness training on the ecological importance of the riverine habitats and inhabited wildlife, as well as briefing on the mitigation measures recommended in the EIA Report.</li> <li>• Well defined and fenced Work Area to prevent intentional or accidental encroachment or trespassing into the adjacent habitats for access, parking and operation of plants/ machineries, as well as stockpiling of construction material or waste;</li> <li>• Fence off any potentially ecologically sensitive resources within the work area with warning signpost;</li> <li>• Water diversion by means of submerged water pump should be avoided as far as practicable to prevent obstruction of wildlife movement along the channel;</li> </ul>	<p>Ecological – to avoid or minimize the potential disturbance to the habitats and wildlife inhabited within or adjacent to the work sites</p>	<p>Contractor(s)</p>	<p>During construction at all sites</p>	<p>EIA, contractual requirements</p>	<p>Implemented</p>

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?	Implementation Status
		<ul style="list-style-type: none"> <li>• Waste and refuse should be stored or dumped in appropriate receptacles and on-site burning of waste should be strictly prohibited;</li> <li>• Excavated material should be properly covered or promptly disposed of, and opportunities to stockpile and backfill the topsoil should be explored;</li> <li>• No chemical should be stockpiled on-site until absolutely necessary;</li> <li>• On-site maintenance of plant/ machineries/ vehicle should be avoided as far as practicable;</li> <li>• Silt/ Sediment/ Oil traps should be installed to avoid direct discharge of effluent or site run-off;</li> <li>• Regular ecological checks;</li> <li>• Cut down of vegetation during site clearance should be in stages before groundwork takes place as such to disperse any wildlife that is sheltering in the immediate area; and</li> <li>• minimise vehicle access.</li> </ul>					



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?	Implementation Status
S.5.9.4	S.5.2.10	The construction work in Tai Wo should be scheduled in the dry season and sandbags or other similar facilities should be placed along the southern boundary of the work site to prevent any accidental discharge of untreated effluent into the buffered grassland and EIS under adverse weather condition. In addition, discharge of any treated or untreated effluent, either by means of soakaway or direct discharge to nearby waterways, should be directed away from the grassland buffer and the EIS. The above measure should be audited regularly as part of the routine site inspection undertaken by the ET.	Ecological – to avoid and minimize any potential impact to the Cheung Po EIA from site discharge	Contractor(s)	Tai Wo	EIA, contractual requirements	To be implemented, since the construction work at Tai Wo is not commenced yet
S.5.9.6 to 5.9.7	S.5.2.7, 5.2.8	A detail survey to update the abundance and distribution of the endemic freshwater crabs within the project site (include the original watercourse which will be cut-off at Ha Che and Lin Fa Tei, inclusive of a receptor site search for the preparation of a “Freshwater Crab Translocation Plan”, in which the whole process including logistic arrangement should be detailed for the approval of AFCD.	Ecological – to avoid/ minimize the direct impact to the local population of these two endemic freshwater crab species	Engineer	Lin Fa Tei and Ha Che, before the commencement of the construction work	EIA, contractual requirements	Implemented, EPD advised no comment on the FCTP on 9 Feb 2024
S.5.9.6 to 5.9.7	S.5.2.9	Capture and translocate two endemic freshwater crabs and undertake post-translocation monitoring programme in accordance to the approved “Freshwater Crab Translocation Plan”.	Ecological – to avoid/ minimize the direct impact to the local population of these two endemic freshwater crab species.	Contractor, ET	Lin Fa Tei and Ha Che, within one month before the commencement of the construction work	EIA, contractual requirements	Implemented, pro-construction survey at Ha Che was completed between 5 and 7 Feb 2024

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?	Implementation Status
S.5.9.6 to 5.9.8	S.5.2.9	Before the commencement of a construction work in a new section, the site should be inspected by the ecologist to confirm no inhabitation of the two freshwater crab species.	Ecological – to avoid/ minimize the direct impact to the local population of these two endemic freshwater crab species	Contractor, ET	Lin Fa Tei and Ha Che, within one month before the commencement of the construction work	EIA, contractual requirements	Implemented
S.5.9.9	S.5.2.4	The <i>Aquilaria sinensis</i> (seedling) within the site boundary at Sung Shan New Village to be protected and retained during construction in accordance with DEVB TCW No. 4/2020 Tree Preservation	Ecological – to preserve the floral species of conservation concern	Engineer	Sung Shan New Village	EIA, contractual requirements	To be implemented, since the construction work at Sung Shan New Village is not commenced yet
S.5.9.13-5.9.19	S.5.2.15	Restoration of wildlife habitat by ecological habitat and niche that could promote colonisation of aquatic wildlife during the reinstatement of embankment and channel bed	Ecological – to compensate for the loss of wildlife habitat especially the two endemic freshwater crab species	Contractor(s)	All sites during construction	EIA, contractual requirements	The restoration and planting works will be conducted after the completion of construction work at Ha Che, Lin Fa Tei and Sung Shan New Village

## 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?	Implementation Status
<b>Construction Phase</b>							
S.6.7.2	S.6.2.3	<p>The mitigation measures should cover, but not limited to the following Best Management Practices:</p> <ul style="list-style-type: none"> <li>Sand/ silt removal facilities such as sand traps, silt traps and sediment basins should be provided to remove sand/ silt particles from runoff to meet the requirements of the Technical Memorandum standards under the WPCO. The design of silt removal facilities should be based on the guidelines provided in ProPECC PN 2/23. All drainage facilities and erosion and sediment control structures should be inspected monthly and maintained to ensure proper and efficient operation at all times and particularly during rainstorms.</li> <li>Work programmes should be designed to minimize the size of work areas to minimize the soil exposure soil and reduce the potential for increased siltation and runoff;</li> <li>Boundaries of earthworks should be marked and surrounded by dykes or embankments for flood protection, as necessary;</li> <li>Silt removal facilities, channels and manholes should be maintained and cleaned regularly to ensure the proper function;</li> <li>Water pumped out from excavations should be discharged into silt removal facilities;</li> </ul>	Water quality control during construction	Contractor(s)	At all construction areas of the site during the entire construction period	WPCO and ProPECC PN 2/23	Implemented, WPCO license is under application

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?	Implementation Status
		<ul style="list-style-type: none"> <li>Careful programming of the works to minimize soil excavation during the rainy season. If excavation of soil cannot be avoided during the wet season (April to September), exposed slope surfaces should be covered by a tarpaulin or other means. Other measures that need to be implemented before, during, and after rainstorms are summarized in ProPECC PN 2/23;</li> <li>Earthwork surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed;</li> <li>Wastewater generated from the washing down of mixer trucks and drum mixers and similar equipment should wherever practicable be recycled. The discharge of wastewater should be kept to a minimum;</li> <li>To prevent pollution from wastewater overflow, the pump sump of any water recycling system should be provided with an on-line standby pump of adequate capacity and with automatic alternating devices;</li> </ul>					

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?	Implementation Status
		<ul style="list-style-type: none"> <li>Under normal circumstances, surplus wastewater may be discharged into foul sewers after treatment in silt removal and pH adjustment facilities (to within the pH range of 6 to 10). Disposal of wastewater into storm drains will require more elaborate treatment. Surface run-off should be segregated from the concrete batching plant and casting yard area as much as possible, and diverted to the stormwater drainage system. Surface run-off contaminated by materials in a concrete batching plant or casting yard should be adequately treated before disposal into stormwater drains;</li> <li>Open stockpiles of construction materials on site should be covered with tarpaulin or similar fabric during rainstorms.</li> </ul>					
S.6.7.4	S6.2.3	<p>The guidelines stipulated in the ProPECC PN 2/23 "Construction Site Drainage" issued by the EPD should be followed to minimise the potential water quality impacts. Good housekeeping and stormwater best management practices, as detailed below, should be implemented to ensure that all construction runoff are well controlled to minimise the water quality impacts that arise due to the construction works of the Project.</p>	Water quality control during construction	Contractor(s)	At all construction areas of the site during the entire construction period	WPCO and ProPECC PN 2/23	Implemented, WPCO license is under application

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?	Implementation Status
		<ul style="list-style-type: none"> <li>• Flood protection such as dikes or embankments should be provided around the boundaries of earthwork areas. Temporary ditches should be provided as appropriate to facilitate the runoff discharge into drainage system, through a silt/ sediment trap. The silt/ sediment traps should be incorporated in the permanent drainage channels to enhance deposition rates;</li> <li>• Construction works should be programmed to avoid surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means;</li> <li>• All drainage facilities and erosion and sediment control structures, if any, should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms;</li> <li>• Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas;</li> </ul>					

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?	Implementation Status
		<ul style="list-style-type: none"> <li>All open stockpiles of construction materials (for example, aggregates, sand and fill material) should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system; 3Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers;</li> <li>Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 2/23. Particular attention should be paid to the control of silty surface runoff during storm events;</li> </ul>					

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?	Implementation Status
		<ul style="list-style-type: none"> <li>All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-washing bay to the public road should be paved with sufficient backfall toward the wheel-washing bay to prevent vehicle tracking of soil and silty water to public roads and drains;</li> <li>Oil interceptors should be provided in the drainage system downstream of any oil/ fuel pollution sources as far as possible. The oil interceptors, if any, should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage;</li> <li>Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts;</li> <li>All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby.</li> </ul>					



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?	Implementation Status
S.6.7.5	S.6.2.3	Maintenance of vehicles and equipment involving activities with potential for leakage and spillage is expected to be carried out off-site and should only be undertaken within areas appropriately equipped to control these discharges.	To control the effluent discharge during construction	Contractor(s)	At all construction areas of the site during the entire construction period	WPCO	Implemented
S.6.7.6	S.6.2.3	Contractor shall apply for a discharge license under WPCO.	To control the effluent discharge during construction	Contractor(s)	At all construction areas of the site during the entire construction period	WPCO	WPCO license is under application

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?	Implementation Status
S.6.7.7 & S.6.7.8	S.6.2.3	<p>Sewage from Workforce</p> <ul style="list-style-type: none"> <li>Portable chemical toilets and/ or sewage holding tanks should be provided for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets to cater to 0.15 m<sup>3</sup>/day/worker of sewage and be responsible for appropriate disposal and maintenance.</li> <li>Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the project. Regular environmental audit on the construction site should be conducted to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the project would not cause water quality impact after undertaking all required measures.</li> </ul>	To control sewage generation during construction	Contractor(s)	At all construction areas of the site during the entire construction period	WPCO and Waste Disposal Ordinance	Implemented

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?	Implementation Status
S.6.7.10 - S.6.7.15	S.6.2.3	<p>Widening of Drainage Channels</p> <ul style="list-style-type: none"> <li>Due to the characteristics of narrow width and small water flow of the existing channel, the excavation should be carried out in dry condition (even in wet season) by diverting the stream flow from upstream by a temporary drainage channel with a temporary sheet piles, earth bund or barrier so that the works area will remain dry for later excavation and widening works;</li> <li>The temporary drainage channel would be backfilled when the construction works are completed or the temporary diversion is no longer required. Although flooding of the proposed contaminant section seldom occurs in dry season, the excavation would consider to suspend when flood water enters the containment causing leakage of runoffs to stream water;</li> <li>After dewatering of the streams, the sediments should be allowed to dry before excavation (yet still maintain a moist state to avoid dust nuisance). This will facilitate excavation of the sediments and also minimize the risk of drained water flowing back into watercourses or diversion channels as the sediment is handled. Where time or weather constraints require handling of wet sediment, care should be taken in the removal of sediment and the storage area should be bunded to prevent silty runoff entering watercourses. Given its small quantity, all excavated sediment should be reused on-site as backfilling material;</li> </ul>	Water quality control during construction	Contractor(s)	At all construction areas of the site during the entire construction period	WPCO	Implemented

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?	Implementation Status
		<ul style="list-style-type: none"> <li>• To further minimize the leakage and loss of sediments during excavation, tightly sealed closed grab excavators should be employed in river sections where material to be handled is wet. Where material is dry and in non-river sections, conventional excavations can be used;</li> <li>• Excavated sediment will likely be temporarily stored on-site for reuse as backfilling material. This should be stored in a bunded area and covered at any time to avoid inadvertent release of silts and suspended solids to nearby water bodies;</li> <li>• Regular monitoring of suspended solids, pH and turbidity should be conducted during excavation works. Any exceedance of water quality in the nearby water bodies caused by inadvertent release of site runoff should be rectified in accordance with EM&amp;A programme for this project.</li> </ul>					

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?	Implementation Status
S.6.7.16	S6.2.3	Cast in-situ Construction <ul style="list-style-type: none"> <li>Minimise the area of the site which generates contaminated stormwater runoff;</li> <li>Provide a separate dedicated drainage system to discharge clean stormwater from the site;</li> <li>Drain all contaminated stormwater and process wastewater to a collection pit for recycling;</li> <li>Regularly clean out solids that accumulate in the pit;</li> <li>There must be no dry weather wastewater discharges from the site;</li> <li>Monitor wet weather discharges for pH and suspended solids. Retain the records.</li> </ul>	Water quality control during construction	Contractor(s)	At all construction areas of the site during the entire construction period	WPCO	Implemented
S.6.7.17	S6.2.3	Registration to EPD as a CWP (Chemical Waste Producers) is required if chemical wastes are generated and need to be disposed of. Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance (WDO). The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the WDO should be used as a guideline for handling chemical wastes.	Water quality control during construction	Contractor(s)	At all construction areas of the site during the entire construction period	WPCO, WDO and the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes	Implemented

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?	Implementation Status
S.6.7.18	S.6.2.3	Mitigation measures to avoid potential impact to Cheung Po EIS <ul style="list-style-type: none"> <li>The construction work in Tai Wo should be scheduled in the dry season and sand bags or other similar facilities should be placed along the southern boundary to the work site to prevent any accidental discharge of untreated effluent into the buffered grassland and EIS under adverse weather condition;</li> <li>Discharge of any treated or untreated effluent, either by means of soakaway or direct discharge to nearby waterways, should be directed away from the grassland buffer and the EIS.</li> </ul>	Water quality control during construction	Contractor(s)	At Tai Wo Area during the entire construction period	WPCO	To be implemented, since the construction work at Tai Wo is not commenced yet

## 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?	Implementation Status
<b>Construction Phase</b>							
S.7.5.1	S.7.2.5	<ul style="list-style-type: none"> <li>An on-site environmental co-ordinator employed by the contractor should be identified prior to the outset of the work. Prior to commencement of project, the environmental coordinator 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 Engineers Representative's approval. The WMP shall include monthly and yearly Waste Flow Tables (WFT) that indicate the amount of waste generated, recycled and disposed of (including final disposal location), and which should be regularly updated;</li> </ul>	Waste management during construction	Contractor(s)	Prior to commencement of Project works and implemented throughout the entire construction period	ETWB TCW No. 19/2005	Implemented
S.7.5.1	S.7.2.5	<ul style="list-style-type: none"> <li>The Project contractor's waste management practices and effectiveness should also be audited by the Engineer on a regular basis;</li> </ul>	Waste management during construction	Contractor(s)	At all construction areas of the site during the entire construction period	ETWB TCW No. 19/2005	Implemented
S.7.5.1	S.7.2.5	<ul style="list-style-type: none"> <li>The reuse/ recycling of all materials on site should be investigated and exhausted prior to treatment/ disposal off-site;</li> </ul>	Waste management during construction	Contractor(s)	At all construction areas of the site during the entire construction period	ETWB TCW No. 19/2005	Implemented

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?	Implementation Status
S.7.5.1	S.7.2.5	<ul style="list-style-type: none"> <li>Good site practices should be adopted from the commencement of works to avoid the generation of waste, reduce cross contamination of waste and to promote waste minimisation;</li> </ul>	Waste management during construction	Contractor(s)	At all construction areas of the site during the entire construction period	ETWB TCW No. 19/2005	Implemented
S.7.5.1	S.7.2.5	<ul style="list-style-type: none"> <li>All waste materials should be sorted on-site into inert and non-inert C&amp;D materials, and where the materials can be recycled or reused, they should 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;</li> </ul>	Waste management during construction	Contractor(s)	At all construction areas of the site during the entire construction period	Waste Disposal Ordinance	Implemented
S.7.5.1	S.7.2.5	<ul style="list-style-type: none"> <li>The Project contractor should be responsible for identifying what materials can be recycled/ reused, whether on-site or off-site. In the event of the latter, the contractor should make arrangements for the collection of the recyclable materials. Any remaining non-inert waste should be collected and disposed of to the landfill as last resort whilst any inert C&amp;D materials should be re-used on site as far as possible. Alternatively, if no use of the inert materials can be found on-site, the materials can be delivered to a public fill area or public fill bank after obtaining the appropriate licence;</li> </ul>	Waste management during construction	Contractor(s)	At all construction areas of the site during the entire construction period	Waste Disposal Ordinance	Implemented



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?	Implementation Status
S.7.5.1	S.7.2.5	<ul style="list-style-type: none"> <li>In order to monitor the disposal of C&amp;D materials and solid waste at public filling facilities and landfills, and to control fly-tipping, a trip ticket system shall be implemented by the contractor, in accordance with the contract and the requirements of DEVB TCW No. 6/2010 "Trip Ticket System for Disposal of Construction and Demolition Material";</li> </ul>	Waste management during construction	Contractor(s)	At all construction areas of the site during the entire construction period	DEVB TCW No. 6/2010	Implemented
S.7.5.1	S.7.2.5	<ul style="list-style-type: none"> <li>Under the Waste Disposal (Chemical Waste) (General) Regulation, the Project contractor shall register as a Chemical Waste Producer (CWP) if chemical wastes such as spent lubricants, paints, etc. are generated onsite. Only licensed chemical waste collectors shall be employed to collect any chemical waste generated onsite. 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 the EPD;</li> </ul>	Waste management during construction	Contractor(s)	At all construction areas of the site during the entire construction period	Waste Disposal (Chemical Waste) (General) Regulation	Implemented

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?	Implementation Status
S.7.5.1	S.7.2.5	<ul style="list-style-type: none"> <li>A sufficient number of covered bins should be provided onsite for the containment of general refuse to prevent visual impacts and nuisance to the sensitive surroundings. These bins should be cleared daily and the collected waste disposed of to the nearest refuse transfer station. Further to the issue of DEVB TC(W) No. 8/2010, Enhanced Specification for Site Cleanliness and Tidiness, the contractor is required to maintain a clean and hygienic site throughout the Project works;</li> </ul>	Waste management during construction	Contractor(s)	At all construction areas of the site during the entire construction period	Waste Disposal Ordinance and DEVB TC(W) No. 8/2010	Implemented
S.7.5.1	S.7.2.5	<ul style="list-style-type: none"> <li>Minimize windblown litter and dust during transportation by either fitting trucks with mechanical covers or transporting waste in enclosed containers;</li> </ul>	Waste management during construction	Contractor(s)	At all construction areas of the site during the entire construction	Waste Disposal Ordinance	Implemented
S.7.5.1	S.7.2.5	<ul style="list-style-type: none"> <li>All chemical toilets, if any, should be regularly cleaned and the night-soil collected and transported by a licensed contractor to a Government Sewage Treatment Works facility for disposal;</li> </ul>	Waste management during construction	Contractor(s)	At all construction areas of the site during the entire construction	Waste Disposal Ordinance	Implemented
S.7.5.1	S.7.2.5	<ul style="list-style-type: none"> <li>Toolbox talks should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling; and</li> </ul>	Waste management during construction	Contractor(s)	At all construction areas of the site during the entire construction	Waste Disposal Ordinance	Implemented
S.7.5.1	S.7.2.5	<ul style="list-style-type: none"> <li>The project contractor shall comply with all relevant statutory requirements and guidelines and their updated versions that may be issued during the course of the project construction.</li> </ul>	Waste management during construction	Contractor(s)	At all construction areas of the site during the entire construction	Waste Disposal Ordinance	Implemented

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?	Implementation Status
S.7.5.1	S.7.2.5	<p>Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices.</p> <ul style="list-style-type: none"> <li>• Segregation and storage different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;</li> <li>• Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the workforce;</li> <li>• Use of reusable non-timber formwork to reduce the amount of C&amp;D material;</li> <li>• Prior to disposal of C&amp;D waste, it is recommended that wood, steel and other metal shall be separated for re-used and/ or recycling to minimise the quantity of waste to be disposal of to landfill;</li> <li>• Proper storage and site practice to minimise the potential for damage and contamination of construction materials;</li> <li>• Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.</li> </ul>	Waste management during construction	Contractor(s)	At all construction areas of the site during the entire construction	ETWB TCW No. 19/2005	Implemented

## 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?	Implementation Status
<b>Construction Phase</b>							
S.8.8.1	S.8.2.1	<p>Unexpected contaminated materials may be encountered near identified potential contaminated sites during construction. Should suspected contamination be found during construction, the extent and nature of contamination within project areas should be properly assessed and the contaminated soil/ groundwater should be remediated in accordance with EPD issued publications as below:</p> <ul style="list-style-type: none"> <li>Guidance Note for Contaminated Land Assessment and Remediation;</li> <li>Guidance Manual for Use of Risk-based Remediation Goals (“RBRGs”) for Contaminated Land Management; and</li> <li>Practice Guide for Investigation and Remediation of Contaminated Land.</li> </ul>	Safety precautionary measures for handling possible contaminated materials	Contractor(s)	During construction works within the works areas nearby the land contamination sites HC-A, HC-C, HC-D, HC-I, LFT-A, LFT-B, LFT-C, LFT-D, LFT-E and SSNV-A	Guidance Note for Contaminated Land Assessment and Practice Guide for Investigation Remediation of Contaminated Land	No unexpected contaminated material was encountered during reporting period

## Landscaping & Visual 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?	Implementation Status
<b>Construction Phase</b>							
S9.12.1.1	S.9.2	<p>Construction Site Control</p> <p>CM01 - Tree Protection and Preservation</p> <p>Trees / woodland within the Project Site which are unaffected by the works shall be protected and preserved during the construction phase. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at detailed design stage for further retention of individual trees.</p>	Good site practices and to minimize landscape and visual impact	DSD and its contractors.	Work sites	EIAO-TM	Implemented
S9.12.1.1	S.9.2	<p>CM02 – Compensatory Tree Planting</p> <p>If removal of trees unavoidable due to construction impacts, trees will be compensated where technically feasible.</p>	Good site practices and to minimize landscape and visual impact	DSD and its contractors.	Work sites	EIAO-TM	No tree was removed during reporting period
S9.12.1.1	S.9.2	<p>CM03 - Works Area and Temporary Works Areas (Good Site Practice)</p> <p>The construction sequence and construction programme shall be optimized in order to minimize the duration of impact. Construction site controls shall be enforced including the storage of materials, and the location and appearance of site accommodation and site storage. The site office or temporary above-ground structures shall be sited in locations which are not visually prominent.</p>	Good site practices and to minimize landscape and visual impact	DSD and its contractors.	Work sites	EIAO-TM	Implemented
S9.12.1.1	S.9.2	<p>CM04 - Advance Implementation of Mitigation Planting</p> <p>Replanting of existing/ disturbed vegetation shall be undertaken as soon as technically feasible.</p>	Good site practices and to minimize landscape and visual impact	DSD and its contractors.	Work sites	EIAO-TM	No replanting work was conducted during reporting period

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?	Implementation Status
S9.12.1.1	S.9.2	CM05 - Coordination with Concurrent Projects Coordinated implementation programme with concurrent projects to minimise impacts and where possible reduce the period of disturbance.	Good site practices and to minimize landscape and visual impact	DSD and its contractors.	Work sites	EIAO-TM	Implemented
S9.12.1.1	S.9.2	CM06 - Decorative Screen Hoarding Decorative screen hoarding will be erected along areas of the construction works site boundary where the works site borders publicly accessible routes and/ or is close to visually sensitive receivers (VSRs) to screen undesirable views of the works site. It is proposed that the screening be compatible with the surrounding environment and where possible, non-reflective, recessive colours be used.	Good site practices and to minimize landscape and visual impact	DSD and its contractors.	Work sites	EIAO-TM	Implemented
S9.12.1.1	S.9.2	CM07 – Light Control Construction and night time lighting glare will be controlled to minimize glare impact to adjacent VSRs during the construction stage. This is considered a general measure for good practice.	Good site practices and to minimize landscape and visual impact	DSD and its contractors.	Work sites	EIAO-TM	Implemented
S9.12.1.1	S.9.2	CM08 – Topsoil reuse Excavated topsoil should be conserved for re-use by the project or other projects. This is considered a general measure for good site practice.	Good site practices and to minimize landscape and visual impact	DSD and its contractors.	Work sites	EIAO-TM	Implemented
S9.12.1.1	S.9.2	CM09 - Channel Bed Translocation Excavated natural stream bedding should be conserved for re-use by the project. This is considered a general measure for promoting sustainability and ecological continuity.	Good site practices and to minimize landscape and visual impact	DSD and its contractors.	Work sites	EIAO-TM	No excavation work at natural stream was carried out during reporting period

## Cultural Heritage Impact – Implementation Schedule of Recommended Mitigation Measures

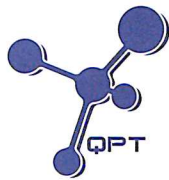
EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location/ Timing of implementation of Measures	What requirements or standards for the measures to achieve?	Implementation Status
<b>Construction Phase</b>							
Table 10-3	Table 10.1	<p>Lee Tat Bridge (GB-01)</p> <ul style="list-style-type: none"> <li>A condition survey will be carried out in advance of works that may be affected by ground-borne vibration. The Condition Survey Report should contain descriptions of the structure, identification of fragile elements, an appraisal of the condition and working methods for any proposed monitoring and precautionary measures that are recommended with aid of photo records. The condition survey report must be submitted to AMO for comment before construction activities commence. The contractor should implement the approved monitoring and precautionary measures;</li> <li>Vibration monitoring should be undertaken during the construction works to ensure that safe levels of vibration are not exceeded. An Alert, Alarm and Action (AAA) vibration limit set at 5 / 6 / 7.5 mm/s for Grade 3 historic buildings should be adopted. A monitoring schedule, the location of monitoring equipment, the frequency of monitoring, reporting requirements and action plan should be included in the condition survey report. The location of any monitoring equipment in the building must be approved by the owner before installation;</li> </ul>	Cultural heritage protection	Contractors	During the construction period, for Lee Tat Bridge (GB-01)	AMO Guidelines on CHIA; EIAO-TM	The condition survey report was submitted on 22 December 2023

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?	Implementation Status
		<ul style="list-style-type: none"> <li>A buffer zone should be provided to separate the building or walls of the building from the construction works. The buffer zone should be clearly marked out by temporary fencing. The buffer zone should be made at least 5 m from the proposed works or if this is not possible as large as the site restrictions allow;</li> <li>The contractor should ensure that safe public access is possible, through provision of clearly marked paths separated from the construction works areas, and is provided for any such affected cultural heritage structure. It is recommended that safe public access to the bridge be provided during the construction works.</li> </ul>					
Table 10-3	Table 10.1	<p>Lan Fong Study Hall (GB-02)</p> <ul style="list-style-type: none"> <li>No mitigation required</li> </ul>	N/A	N/A	N/A	AMO Guidelines on CHIA; EIAO-TM	N/A
Table 10-3	Table 10.1	<p>St. John's Chapel (GB-03)</p> <ul style="list-style-type: none"> <li>No mitigation required</li> </ul>	N/A	N/A	N/A	AMO Guidelines on CHIA; EIAO-TM	N/A
Table 10-1	S.10.2.1 – S.10.2.2	<ul style="list-style-type: none"> <li>The proposed drainage works in the Lin Fa Tei area near previous wooden archaeological remains;</li> <li>Archaeological survey prior to construction works in area marked on Figure 10.16 of the EIA report;</li> <li>A qualified archaeologist shall apply for a licence under the Antiquities and Monuments Ordinance (Cap. 53) for the archaeological fieldwork.</li> </ul>	<p>Identification of archaeological remains, deposits and material within survey area</p> <p>Identification of archaeological extent</p>	Qualified archaeologist engaged by Contractor	Prior to construction phase	Antiquities and Monuments Ordinance	Archaeological Survey will be conducted prior to the construction works



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?	Implementation Status
Table 10-1	S.10.2.3	As a precautionary measure, the Antiquities and Monuments Office (AMO) should be informed immediately in case of discovery of antiquities or supposed antiquities in the course of excavation for the proposed drainage improvement works at Tai Wo area, Ha Che River area, Lin Fa Tei area (all areas except area identified for Archaeological Survey) and Sung Shan New village area, so that appropriate mitigation measures, if needed, can be timely formulated and implemented in agreement with AMO.	To ensure appropriate mitigation measures can be timely formulated and implemented to preserve archaeological data, if discovered, in agreement with AMO	Contractor	During construction phase	Antiquities and Monuments Ordinance	No antiquities or supposed antiquities was discovered during the reporting period

**Appendix 2.1 Calibration Certificates of Impact Water Quality  
Monitoring Equipment**



專業化驗有限公司  
QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 5/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong  
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## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BC120002  
Date of Issue : 05 December 2023  
Page No. : 1 of 2

### PART A - CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited  
Unit E, 12/F, Ford Glory Plaza 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

### PART B - SAMPLE INFORMATION

Name of Equipment : YSI ProDSS (Multi-Parameters)  
Manufacturer : YSI (a xylem brand)  
Serial Number : 22D100436  
Date of Received : 01 December 2023  
Date of Calibration : 04 December 2023  
Date of Next Calibration : 03 March 2024  
Request No. : D-BC120002

### PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Test Parameter	Reference Method
pH value	APHA 21e 4500-H <sup>+</sup> B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure
Salinity	APHA 21e 2520 B
Dissolved oxygen	APHA 23e 4500-O G (Membrane Electrode Method)
Turbidity	APHA 21e 2130 B (Nephelometric Method)

### PART D - CALIBRATION RESULT

#### (1) pH value

Target (pH unit)	Display Reading (pH unit)	Tolerance	Result
4.00	4.13	0.13	Satisfactory
7.42	7.45	0.03	Satisfactory
10.01	10.02	0.01	Satisfactory

Tolerance of pH value should be less than ± 0.2 (pH unit)

#### (2) Temperature

Reading of Ref. thermometer (°C)	Display Reading (°C)	Tolerance	Result
36	35.5	-0.5	Satisfactory
25	24.8	-0.2	Satisfactory
15	15.1	0.1	Satisfactory

Tolerance of Temperature should be less than ± 2.0 (°C)

#### (3) Salinity

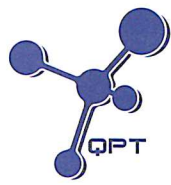
Expected Reading (g/L)	Display Reading (g/L)	Tolerance (%)	Result
10	9.57	-4.30	Satisfactory
20	19.14	-4.30	Satisfactory
30	29.99	-0.03	Satisfactory

Tolerance of Salinity should be less than ± 10.0 (%)

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AUTHORIZED  
SIGNATORY:

  
LEE Chun-ning  
Assistant Manager



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QUALITY PRO TEST-CONSULT LIMITED

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## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

**Test Report No.** : R-BC120002  
**Date of Issue** : 05 December 2023  
**Page No.** : 2 of 2

### (4) Dissolved oxygen

Expected Reading ( mg/L )	Display Reading ( mg/L )	Tolerance	Result
7.99	8.35	0.36	Satisfactory
5.00	5.10	0.10	Satisfactory
2.58	2.40	-0.18	Satisfactory
0.10	0.20	0.10	Satisfactory

Tolerance of Dissolved oxygen should be less than  $\pm 0.5$  ( mg/L )

### (5) Turbidity

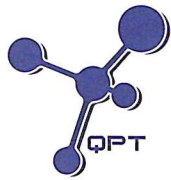
Expected Reading ( NTU )	Display Reading ( NTU )	Tolerance ( % )	Result
0	0.50	--	Satisfactory
10	9.88	-1.2	Satisfactory
20	18.35	-8.2	Satisfactory
100	95.10	-4.9	Satisfactory
800	736.55	-7.9	Satisfactory

Tolerance of Turbidity should be less than  $\pm 10.0$  ( % )

### Remark(s)

- The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted from relevant international standards.
- The results relate only to the calibrated equipment as received
- The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
- "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.
- The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.

--- END OF REPORT ---



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## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

**Test Report No.** : R-BD010030  
**Date of Issue** : 25 January 2024  
**Page No.** : 1 of 2

### PART A - CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited  
Unit E, 12/F, Ford Glory Plaza 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

### PART B - SAMPLE INFORMATION

Name of Equipment : YSI ProDSS (Multi-Parameters)  
Manufacturer : YSI (a xylem brand)  
Serial Number : 22C106561  
Date of Received : 22 January 2024  
Date of Calibration : 24 January 2024  
Date of Next Calibration : 24 April 2024  
Request No. : D-BD010030

### PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Test Parameter	Reference Method
pH value	APHA 21e 4500-H <sup>+</sup> B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure
Salinity	APHA 21e 2520 B
Dissolved oxygen	APHA 23e 4500-O G (Membrane Electrode Method)
Turbidity	APHA 21e 2130 B (Nephelometric Method)

### PART D - CALIBRATION RESULT

#### (1) pH value

Target (pH unit)	Display Reading (pH unit)	Tolerance	Result
4.00	4.02	0.02	Satisfactory
7.42	7.45	0.03	Satisfactory
10.01	10.05	0.04	Satisfactory

Tolerance of pH value should be less than  $\pm 0.2$  (pH unit)

#### (2) Temperature

Reading of Ref. thermometer (°C)	Display Reading (°C)	Tolerance	Result
33	34.1	1.1	Satisfactory
19	18.7	-0.3	Satisfactory
11	11.5	0.5	Satisfactory

Tolerance of Temperature should be less than  $\pm 2.0$  (°C)

#### (3) Salinity

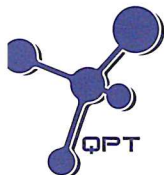
Expected Reading (g/L)	Display Reading (g/L)	Tolerance (%)	Result
10	10.19	1.90	Satisfactory
20	21.27	6.35	Satisfactory
30	30.21	0.70	Satisfactory

Tolerance of Salinity should be less than  $\pm 10.0$  (%)

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## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BD010030  
Date of Issue : 25 January 2024  
Page No. : 2 of 2

### (4) Dissolved oxygen

Expected Reading ( mg/L )	Display Reading ( mg/L )	Tolerance	Result
8.60	8.89	0.29	Satisfactory
5.33	5.70	0.37	Satisfactory
3.40	3.50	0.10	Satisfactory
0.34	0.26	-0.08	Satisfactory

Tolerance of Dissolved oxygen should be less than  $\pm 0.5$  ( mg/L )

### (5) Turbidity

Expected Reading ( NTU )	Display Reading ( NTU )	Tolerance ( % )	Result
0	0.50	--	Satisfactory
10	9.88	-1.2	Satisfactory
20	18.35	-8.2	Satisfactory
100	95.10	-4.9	Satisfactory
800	736.55	-7.9	Satisfactory

Tolerance of Turbidity should be less than  $\pm 10.0$  ( % )

### Remark(s)

- The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted form relevant international standards.
- The results relate only to the calibrated equipment as received
- The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
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- The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted form relevant international standards.

--- END OF REPORT ---

## **Appendix 2.2 Event and Action Plan for Water Quality Exceedance**

## Event and Action Plan for Water Quality

Event	Action			
	ET <sup>(1)</sup>	IEC <sup>(1)</sup>	ER <sup>(1)</sup>	Contractor
Action Level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform the IEC and the Contractor;</li> <li>4. Check monitoring data, all plant, equipment and the Contractor's working methods;</li> <li>5. Discuss mitigation measures with the IEC and the Contractor;</li> <li>6. Repeat measurement on next day of exceedance.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the ET and the Contractor on the mitigation measures;</li> <li>2. Review proposals on mitigation measures submitted by the Contractor and advise the ER accordingly;</li> <li>3. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the IEC on the proposed mitigation measures;</li> <li>2. Make agreement on the mitigation measures to be implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER and confirm notification of the non-compliance in writing;</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment;</li> <li>4. Consider changes of working methods;</li> <li>5. Discuss with the ET and the IEC and propose mitigation measures to the IEC and the ER;</li> <li>6. Implement the agreed mitigation measures.</li> </ol>
Action Level being exceeded by more than one consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform the IEC and the Contractor;</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Discuss mitigation measures with the IEC and the Contractor;</li> <li>6. Ensure mitigation measures are implemented;</li> <li>7. Prepare to increase the monitoring frequency to daily;</li> <li>8. Repeat measurement on next day of exceedance.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the ET and the Contractor on the mitigation measures;</li> <li>2. Review proposals on mitigation measures submitted by the Contractor and advise the ER accordingly;</li> <li>3. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the IEC on the proposed mitigation measures;</li> <li>2. Make agreement on the mitigation measures to be implemented;</li> <li>3. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER and confirm notification of the non-compliance in writing;</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment;</li> <li>4. Consider changes of working methods;</li> <li>5. Discuss with the ET and the IEC and propose mitigation measures to the IEC and the ER within 3 working days;</li> <li>6. Implement the agreed mitigation measures.</li> </ol>



Event	Action			
	ET <sup>(1)</sup>	IEC <sup>(1)</sup>	ER <sup>(1)</sup>	Contractor
Limit Level being exceeded by one sampling days	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform the IEC, the Contractor and the DEP;</li> <li>4. Check monitoring data, all plant, equipment and the Contractor's working methods;</li> <li>5. Discuss mitigation measures with the IEC, the ER and the Contractor;</li> <li>6. Ensure mitigation measures are implemented;</li> <li>7. Increase the monitoring frequency to daily until no exceedance of Limit Level.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the ET and the Contractor on the mitigation measures;</li> <li>2. Review proposals on mitigation measures submitted by the Contractor and advise the ER accordingly;</li> <li>3. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the IEC, the ET and the Contractor on the proposed mitigation measures;</li> <li>2. Request the Contractor to critically review the working methods;</li> <li>3. Make agreement on the mitigation measures to be implemented;</li> <li>4. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the Engineer and confirm notification of the non-compliance in writing;</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment;</li> <li>4. Consider changes of working methods;</li> <li>5. Discuss with the ET, the IEC and the ER and propose mitigation measures to the IEC and the ER within 3 working days;</li> <li>6. Implement the agreed mitigation measures.</li> </ol>

Event	Action			
	ET <sup>(1)</sup>	IEC <sup>(1)</sup>	ER <sup>(1)</sup>	Contractor
Limit Level being exceeded by more than one consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement to confirm findings;</li> <li>2. Identify source(s) of impact.</li> <li>3. Inform the IEC, the Contractor and the DEP;</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Discuss mitigation measures with the IEC, the ER and the Contractor;</li> <li>6. Ensure mitigation measures are implemented;</li> <li>7. Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the ET and Contractor on the mitigation measures;</li> <li>2. Review proposals on mitigation measures submitted by the Contractor and advise the ER accordingly;</li> <li>3. Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the IEC, the ET and the Contractor on the proposed mitigation measures;</li> <li>2. Request Contractor to critically review the working methods;</li> <li>3. Make agreement on the mitigation measures to be implemented;</li> <li>4. Assess the effectiveness of the implemented mitigation measures;</li> <li>5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the works until no exceedance of Limit Level.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER and confirm notification of the non-compliance in writing;</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment;</li> <li>4. Consider changes of working methods;</li> <li>5. Discuss with the ET, the IEC and the ER and propose mitigation measures to the IEC and the ER within 3 working days;</li> <li>6. Implement the agreed mitigation measures;</li> <li>7. As directed by the ER, slow down or stop all or part of the construction activities.</li> </ol>

Note (1) ET – Environmental Team, IEC – Independent Environmental Checker, ER – Engineer's Representative, DEP – Director of Environmental Protection.

## **Appendix 2.3 Impact Monitoring Schedule of the Reporting Month**

**Impact Noise & Water Monitoring Schedule for Contract No. DC/2022/02 Drainage Improvement Works at Yuen Long Stage 2 (Version 1.0)**

**February 2024**

Sun	Mon	Tue	Wed	Thur	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21 Water quality monitoring at C9 and C10	22	23 Noise monitoring at HC_M3a, HC_M4 and HC_M6 Water quality monitoring at C9 and C10	24
25	26 Water quality monitoring at C9 and C10	27	28 Water quality monitoring at C9 and C10	29		

Noise Monitoring Locations:  
 Noise monitoring stations at Ha Che: HC\_M3A, HC\_M4, and HC\_M6  
 Noise monitoring stations at Tai Wo: TW\_M2 and TW\_M3  
 Noise monitoring stations at Lin Fa Tei: LFT\_M1, LFT\_M3A, LFT\_M5, LFT\_M7, and LFT\_M11  
 Noise monitoring stations at Sung Shan New Village: SSNV\_M2, SSNV\_M3, and SSNV\_M6

Water Monitoring Locations:  
 Water quality monitoring stations at Ha Che: C9 and C10  
 Water quality monitoring stations at Tai Wo: C4 and C5  
 Water quality monitoring stations at Lin Fa Tei: C6, C7A, and C8  
 Water quality monitoring stations at Sung Shan New Village: C1A, C2, and C3A

Remarks:  
 1. The schedule may be changed due to unforeseen circumstances (e.g. adverse weather, etc.)  
 2. As construction work will only be carried out at Ha Che in February 2024, monitoring works will only be conducted at Ha Che in February 2024

## **Appendix 2.4 Impact Water Quality Monitoring Data**

Contract No. DC/2022/02  
 Drainage Improvement Works at Yuen Long -  
 Sung Shan New Village, Tai Wo, Lin Fa Tei and Ha Che  
 Water Quality Monitoring Result



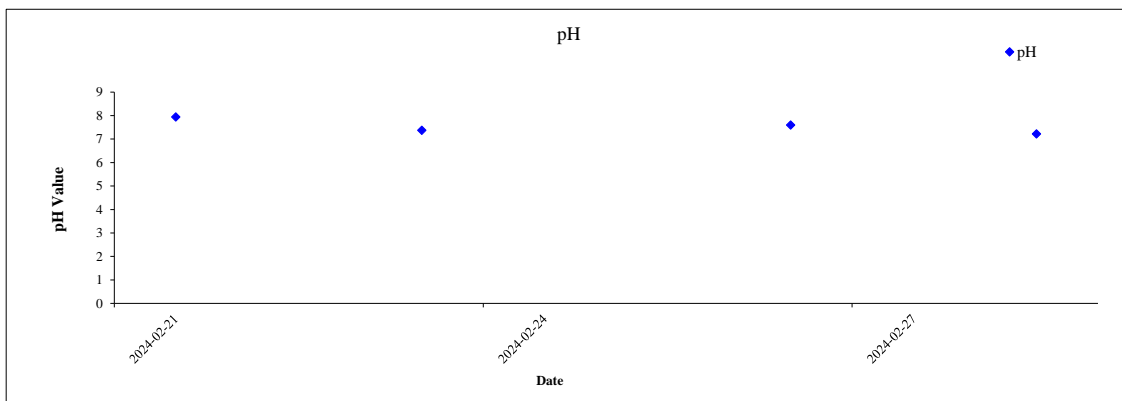
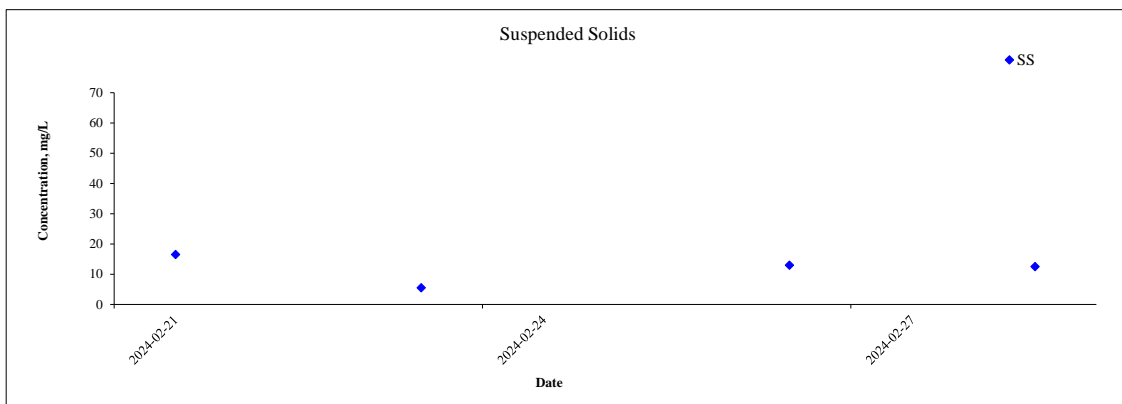
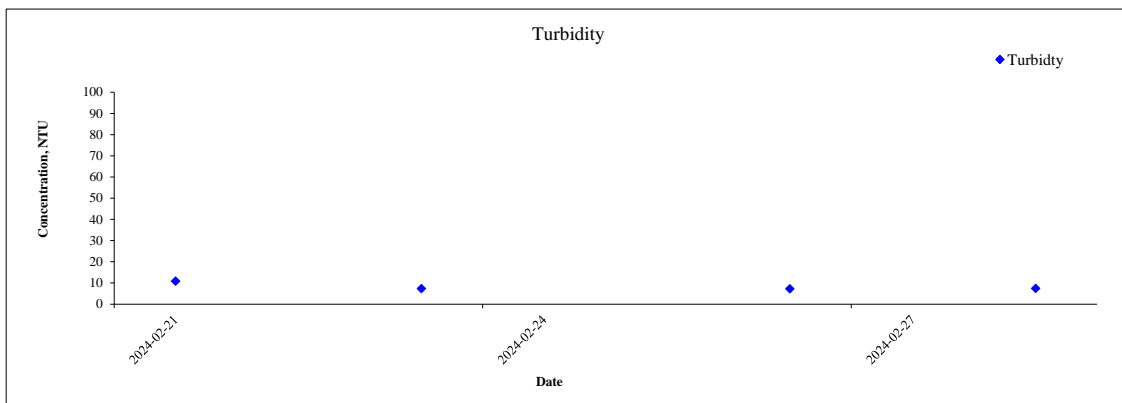
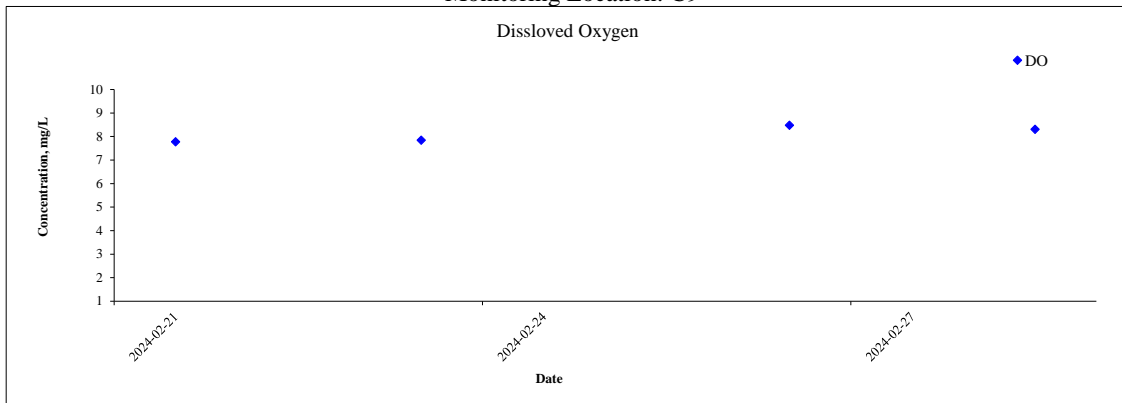
Water Quality Monitoring Location: HC-C9

Location	Date	Weather	Time	DO (mg/L)	Do Saturation (%)	pH	Sal (ppt)	Temp (°C)	Turbidity (NTU)	SS (mg/L)	Remark
C9	20240221	Cloudy	8:37	7.76	87.7	7.94	0.05	21.40	10.88	16	/
C9	20240221	Cloudy	8:38	7.8	88.2	7.94	0.05	21.40	10.93	17	/
C9	20240223	Cloudy	10:36	7.9	87.2	7.34	0.06	20.20	7.34	5	/
C9	20240223	Cloudy	10:37	7.8	86	7.41	0.06	20.20	7.41	6	/
C9	20240226	Cloudy	8:27	8.49	86.8	7.59	0.08	16.40	7.24	16	/
C9	20240226	Cloudy	8:28	8.48	86.7	7.61	0.08	16.40	7.29	10	/
C9	20240228	Cloudy	13:34	8.5	89.9	7.29	0.05	18.00	7.51	12	/
C9	20240228	Cloudy	13:34	8.13	86.1	7.15	0.05	18.00	7.41	13	/

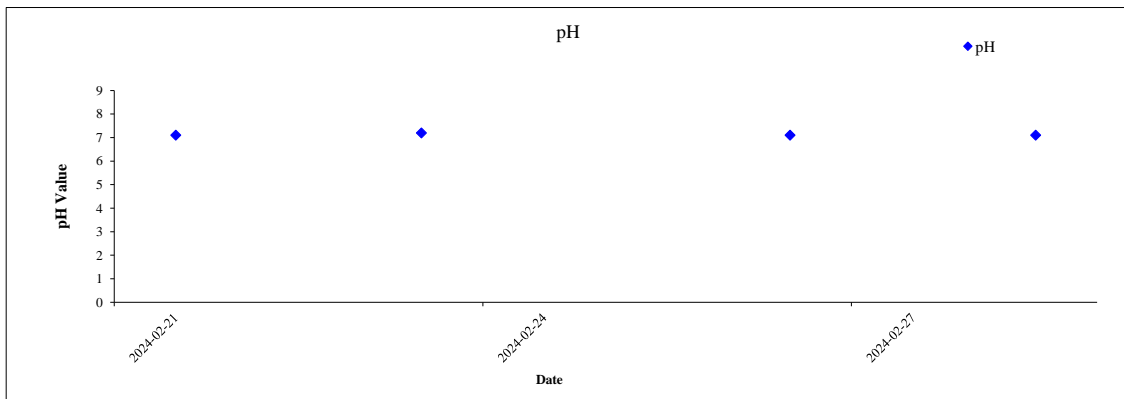
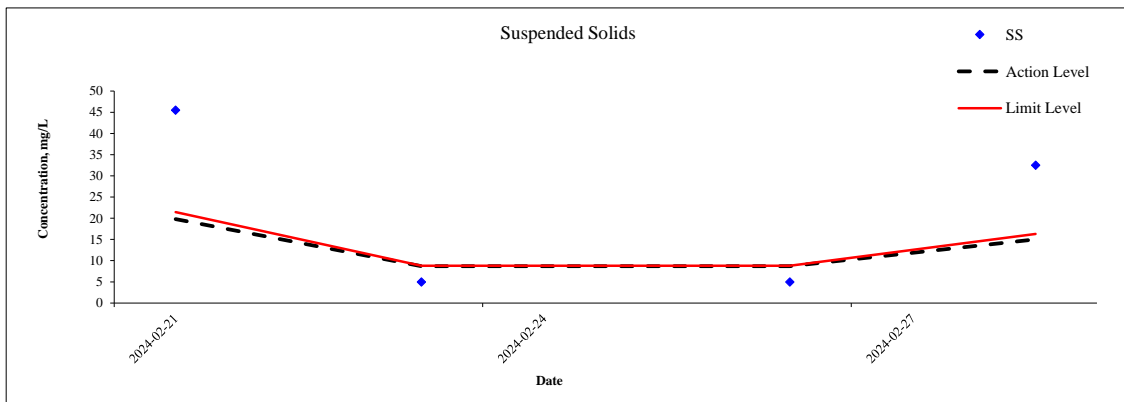
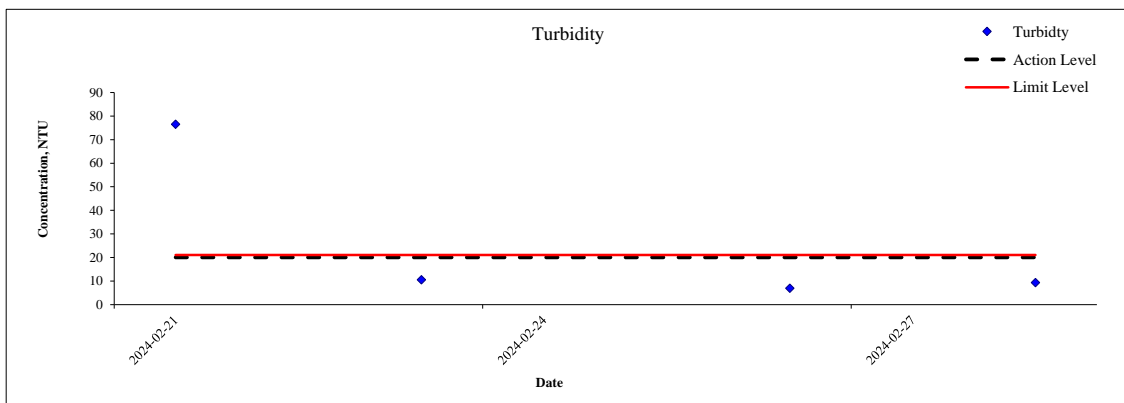
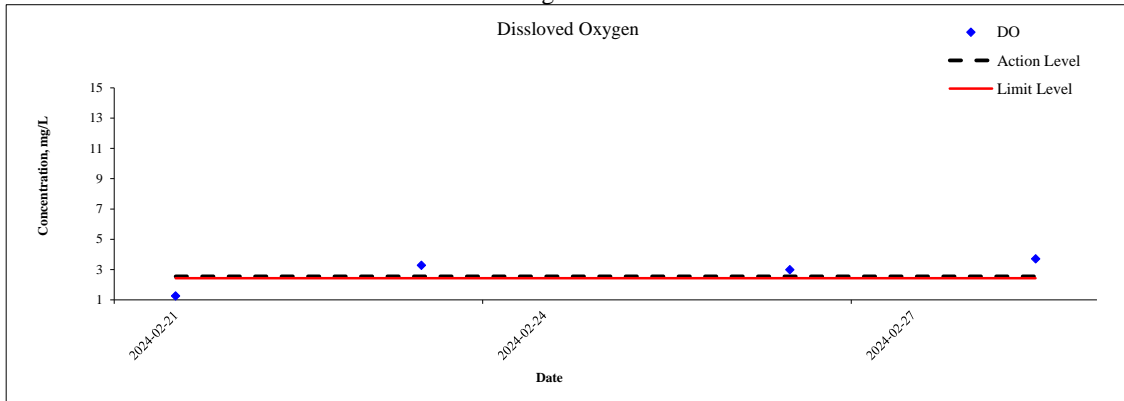
Water Quality Monitoring Location: HC-C10

C10	20240221	Cloudy	9:03	1.1	12.6	7.1	0.07	22.10	77.85	45	/
C10	20240221	Cloudy	9:04	1.4	16	7.11	0.07	22.10	75.41	46	/
C10	20240223	Cloudy	10:56	3.41	38.4	7.2	0.14	21.10	10.34	5	/
C10	20240223	Cloudy	10:57	3.14	35.4	7.16	0.14	21.10	10.77	5	/
C10	20240226	Cloudy	8:39	2.99	31.1	7.08	0.11	17.30	6.96	5	/
C10	20240226	Cloudy	8:40	2.96	30.8	7.09	0.11	17.30	7.05	5	/
C10	20240228	Cloudy	13:53	3.82	42.1	7.06	0.12	20.00	9.37	32	/
C10	20240228	Cloudy	13:54	3.58	39.4	7.05	0.12	20.00	9.41	33	/

### Monitoring Location: C9



Monitoring Location: C10





## **Appendix 3.1 Calibration Certificates of Impact Noise Monitoring Equipment**

# Certificate of Calibration

for

**Description:** *Sound Level Calibrator*  
**Manufacturer:** *RION*  
**Type No.:** *NC-75*  
**Serial No.:** *34724244*

## Submitted by:

**Customer:** *Acuity Sustainability Consulting Limited*  
**Address:** *Unit E, 12/F, Ford Glory Plaza,  
Nos. 37-39 Wing Hong Street,  
Cheung Sha Wan, Kowloon,  
Hong Kong*

Upon receipt for calibration, the instrument was found to be:

- Within**  
 **Outside**

the allowable tolerance.

The test equipments used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

**Date of receipt:** 27 July 2023

**Date of calibration:** 3 August 2023

**Date of NEXT calibration:** 2 August 2024

**Calibrated by:** \_\_\_\_\_  
*Calibration Technician*

**Certified by:** \_\_\_\_\_  
*Mr. Ng Yan Wa*  
*Laboratory Manager*

**Date of issue:** 3 August 2023

Certificate No.: APJ23-049-CC004



Page 1 of 2

**1. Calibration Precautions:**

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.

**2. Calibration Specifications:**

Calibration check

**3. Calibration Conditions:**

Air Temperature: 22.6 °C  
Air Pressure: 1006 hPa  
Relative Humidity: 52.9 %

**4. Calibration Equipment:**

Test Equipment	Type	Serial No.	Calibration Report Number	Traceable to
Multifunction Calibrator	B&K 4226	2288467	AV220061	HOKLAS
Sound Level Meter	RION NA-28	30721812	AV220120	HOKLAS

**5. Calibration Results**

## 5.1 Sound Pressure Level

Nominal value dB	Accept lower level dB	Accept upper level dB	Measured value dB
94.0	93.6	94.4	94.0

Note:

The values given in this certification only related to the values measured at the time of the calibration.

# Certificate of Calibration

for

**Description:** *Sound Level Meter*  
**Manufacturer:** *SVANTEK*  
**Type No.:** *971 (Serial No.: 96062)*  
**Microphone:** *13905*  
**Preamplifier:** *SVANTEK SV 18 (Serial No.:C132231)*

**Submitted by:**

**Customer:** *Acuity Sustainability Consulting Limited*  
**Address:** *Unit E, 12/F., Ford Glory Plaza,  
Nos. 37-39 Wing Hong Street,  
Cheung Sha Wan, Kowloon, Hong Kong*

Upon receipt for calibration, the instrument was found to be:

- Within (31.5Hz – 8kHz)**  
 **Outside**

the allowable tolerance.

The test equipment used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

**Date of receipt:** 27 July 2023

**Date of calibration:** 3 August 2023

**Date of NEXT calibration:** 2 August 2024

**Calibrated by:** \_\_\_\_\_  
*Calibration Technician*

**Certified by:** \_\_\_\_\_  
*Mr. Ng Yan Wa  
Laboratory Manager*

**Date of issue:** 3 August 2023

**Certificate No.:** APJ23-049-CC001



Page 1 of 4

**1. Calibration Precaution:**

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.

**2. Calibration Conditions:**

Air Temperature: 22.6 °C  
 Air Pressure: 1006 hPa  
 Relative Humidity: 52.9 %

**3. Calibration Equipment:**

	Type	Serial No.	Calibration Report Number	Traceable to
Multifunction Calibrator	B&K 4226	2288467	AV220061	HOKLAS

**4. Calibration Results**

Sound Pressure Level

Reference Sound Pressure Level

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
25.0-124.2	dBA SPL	Fast	94	1000	94.0	±0.4

Linearity

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
25.0-124.2	dBA SPL	Fast	94	1000	94.0	Ref
			104		104.0	±0.3
			114		114.0	±0.3

Time Weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
25.0-124.2	dBA SPL	Fast	94	1000	94.0	Ref
		Slow			94.0	±0.3

Certificate No.: APJ23-049-CC001



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Frequency Response

Linear Response

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB	
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz			
25.0-124.2	dB	SPL	Fast	94	31.5	94.3	±2.0
					63	94.2	±1.5
					125	94.1	±1.5
					250	94.1	±1.4
					500	94.0	±1.4
					1000	94.0	Ref
					2000	93.7	±1.6
					4000	93.1	±1.6
				8000	91.9	+2.1; -3.1	

A-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB	
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz			
25.0-124.2	dBA	SPL	Fast	94	31.5	55.3	-39.4±2.0
					63	68.2	-26.2±1.5
					125	78.0	-16.1±1.5
					250	85.4	-8.6±1.4
					500	90.8	-3.2±1.4
					1000	94.0	Ref
					2000	94.9	+1.2±1.6
					4000	94.1	+1.0±1.6
				8000	90.9	-1.1+2.1; -3.1	

C-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB	
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz			
25.0-124.2	dBC	SPL	Fast	94	31.5	91.3	-3.0±2.0
					63	93.3	-0.8±1.5
					125	93.9	-0.2±1.5
					250	94.0	-0.0±1.4
					500	94.0	-0.0±1.4
					1000	94.0	Ref
					2000	93.6	-0.2±1.6
					4000	92.4	-0.8±1.6
				8000	89.1	-3.0 +2.1: -3.1	

Certificate No.: APJ23-049-CC001



Page 3 of 4

## 5. Calibration Results Applied

The results apply to the particular unit-under-test only. All calibration points are within manufacture's specification as IEC 61672 Class 1.

Uncertainties of Applied Value:

94 dB	31.5 Hz	± 0.05
	63 Hz	± 0.05
	125 Hz	± 0.05
	250 Hz	± 0.05
	500 Hz	± 0.05
	1000 Hz	± 0.05
	2000 Hz	± 0.05
	4000 Hz	± 0.05
	8000 Hz	± 0.10
104 dB	1000 Hz	± 0.05
114 dB	1000 Hz	± 0.05

The uncertainties are evaluated for a 95% confidence level.

### Note:

The values given in this certification only related to the values measured at the time of the calibration and any uncertainties quoted will not allow for the equipment long-term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the calibration. (A+A)\*L shall not be liable for any loss or damage resulting from the use of the equipment.

## **Appendix 3.2 Event and Action Plan for Noise Exceedance**



## Event and Action Plan for Noise

Event	ET	IEC	ER	Contractor
Action Level	<ol style="list-style-type: none"> <li>1. Notify ER, IEC and Contractor;</li> <li>2. Carry out investigation;</li> <li>3. Report the results of investigation to the IEC, ER and Contractor;</li> <li>4. Discuss with the IEC and the Contractor and formulate remedial measures; and</li> <li>5. Increase monitoring frequency to check the effectiveness of mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review the investigation results submitted by the ET;</li> <li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; and</li> <li>3. Advise the ER on the effectiveness of the proposed remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; and</li> <li>4. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to IEC and ER; and</li> <li>2. Implement noise mitigation proposals.</li> </ol>
Limit Level	<ol style="list-style-type: none"> <li>1. Notify IEC, ER, EPD, and Contractor;</li> <li>2. Identify source and investigate the cause of exceedance;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring frequency;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Discuss with the IEC, Contractor and ER on remedial measures required;</li> <li>7. Assess the effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, and Contractor on the potential remedial actions; and</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise the implementation of remedial measures; and</li> <li>5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Submit further proposal if problem still not under control; and</li> <li>5. Stop the relevant portion of works as determined by ER, until the exceedance is abated.</li> </ol>

## **Appendix 3.3 Impact Noise Monitoring Data**

Contract No. DC/2022/02  
 Drainage Improvement Works at Yuen Long -  
 Sung Shan New Village, Tai Wo, Lin Fa Tei and Ha Che  
 Noise Monitoring Result



**Noise Level Results at HC-M3a**

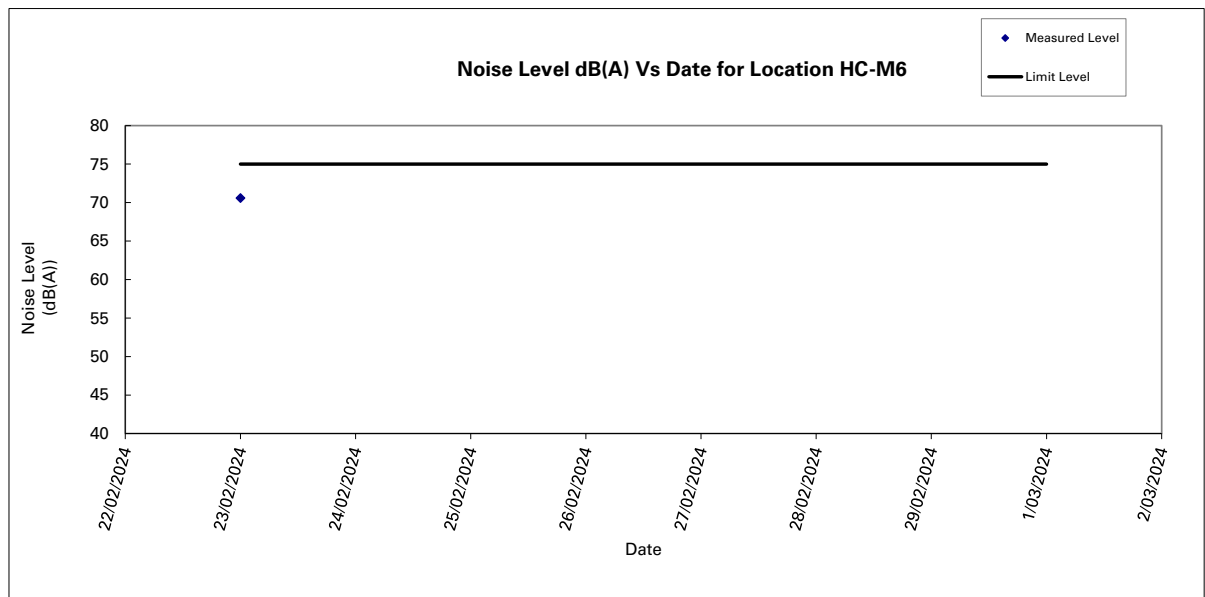
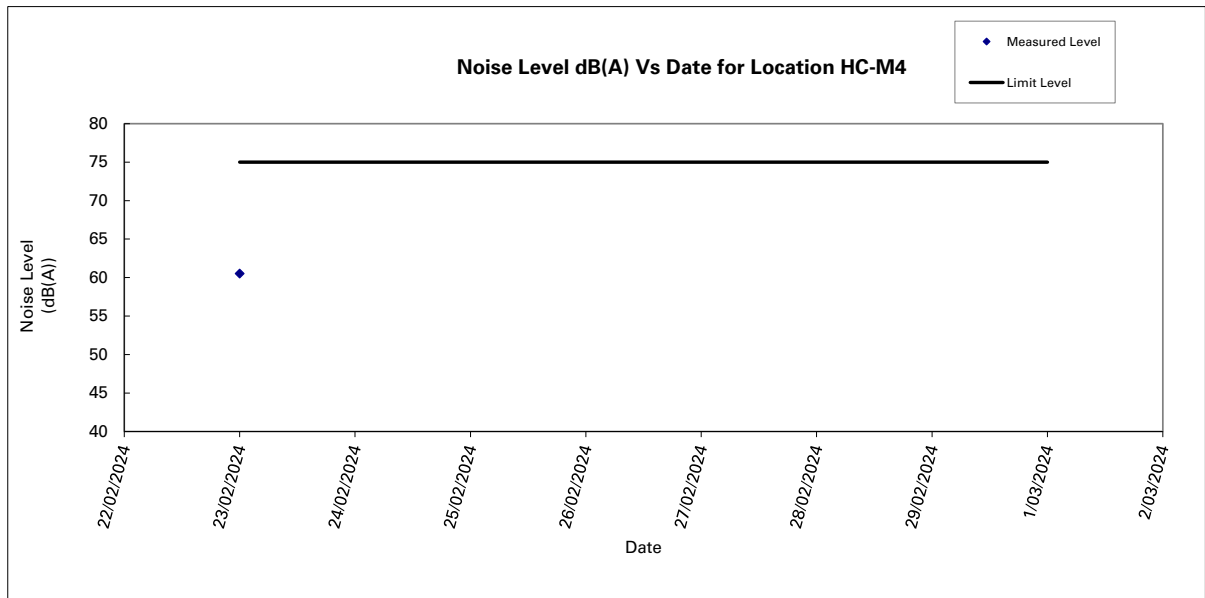
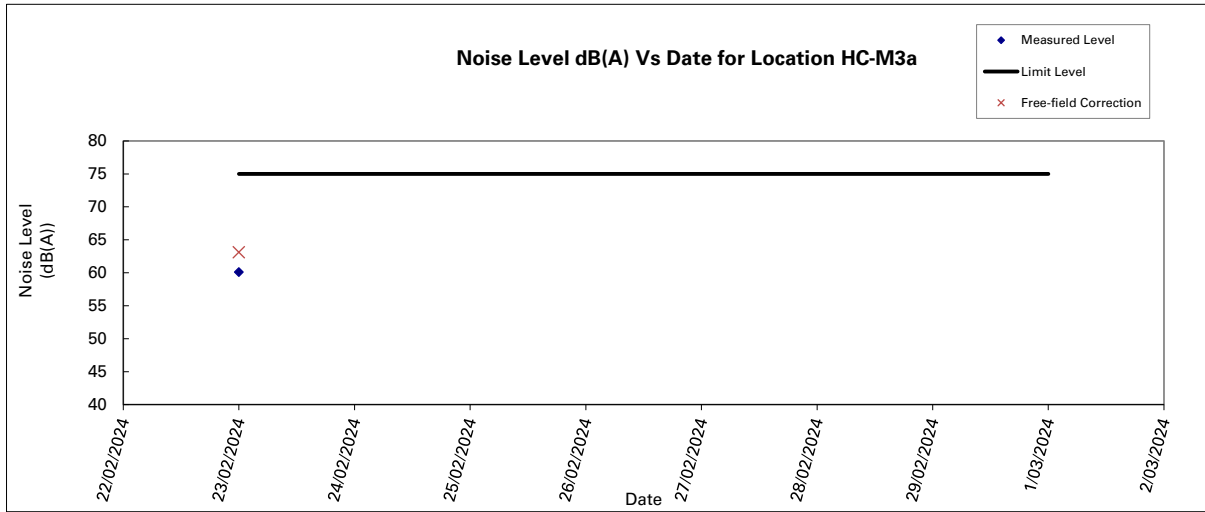
Date	Time		Weather	Leq-5min, dB(A)						Leq-30min, dB(A)	
				Reading (1)	Reading (2)	Reading (3)	Reading (4)	Reading (5)	Reading (6)		
23/2/2024	11:19	-	11:49	Sunny	56.7	58.0	59.8	61.8	60.9	61.2	60.1
										Max	Min
										60.1	60.1

**Noise Level Results at HC-M4**

Date	Time		Weather	Leq-5min, dB(A)						30min, dB(A)	
				Reading (1)	Reading (2)	Reading (3)	Reading (4)	Reading (5)	Reading (6)		
23/2/2024	10:38	-	11:08	Sunny	60.5	60.3	60.2	60.3	61.3	60.5	60.5
										Max	Min
										60.5	60.5

**Noise Level Results at HC-M6**

Date	Time		Weather	Leq-5min, dB(A)						30min, dB(A)	
				Reading (1)	Reading (2)	Reading (3)	Reading (4)	Reading (5)	Reading (6)		
23/2/2024	10:04	-	10:34	Sunny	72.8	70.3	71.8	69.3	69.8	67.7	70.6
										Max	Min
										70.6	70.6



## **Appendix 5.1 Waste Flow Table**

**Monthly Summary Waste Flow Table**

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity of Materials Generated	Hard Rock, Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000 m <sup>3</sup> )	(in '000 m <sup>3</sup> )	(in '000 m <sup>3</sup> )	(in '000 m <sup>3</sup> )	(in '000 m <sup>3</sup> )	(in '000 m <sup>3</sup> )	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 m <sup>3</sup> )
Feb	0.050	0.042	0.000	0.000	0.050	0.000	0.000	0.000	0.000	0.000	0.023
Mar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Apr	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
May	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
June	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Half Year Sub-total</b>	<b>0.050</b>	<b>0.042</b>	<b>0.000</b>	<b>0.000</b>	<b>0.050</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.023</b>
July	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
August	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
September	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
October	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
November	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
December	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>2024 Total</b>	<b>0.050</b>	<b>0.042</b>	<b>0.000</b>	<b>0.000</b>	<b>0.050</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.023</b>
Jan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Feb	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Apr	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
May	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
June	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Half Year Sub-total</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
July	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
August	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
September	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
October	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
November	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
December	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>2025 Total</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
<b>Accumulated Total</b>	<b>0.050</b>	<b>0.042</b>	<b>0.000</b>	<b>0.000</b>	<b>0.050</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.023</b>

Remarks: 1 tonne = 2m<sup>3</sup>

## **Appendix 10.1 Complaint Log**

### Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
20 Feb 2024 - 29 Feb 2024	0	0	N/A

### Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Details
20 Feb 2024 - 29 Feb 2024	0	0	N/A

### Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Details
20 Feb 2024 - 29 Feb 2024	0	0	N/A



## **Appendix 11.1 Impact Monitoring Schedule of Next Reporting Month**

**Impact Noise & Water Monitoring Schedule for Contract No. DC/2022/02 Drainage Improvement Works at Yuen Long Stage 2 (Version 1.0)**

**March 2024**

Sun	Mon	Tue	Wed	Thur	Fri	Sat
					1 Noise monitoring at HC_M3a, HC_M4 and HC_M6 Water quality monitoring at C9 and C10	2
3	4 Water quality monitoring at C9 and C10	5	6 Water quality monitoring at C9 and C10	7	8 Noise monitoring at HC_M3a, HC_M4 and HC_M6 Water quality monitoring at C9 and C10	9
10	11 Water quality monitoring at C9 and C10	12	13 Water quality monitoring at C9 and C10	14	15 Noise monitoring at HC_M3a, HC_M4 and HC_M6 Water quality monitoring at C9 and C10	16
17	18 Water quality monitoring at C9 and C10	19	20 Water quality monitoring at C9 and C10	21	22 Noise monitoring at HC_M3a, HC_M4 and HC_M6 Water quality monitoring at C9 and C10	23
24	25 Water quality monitoring at C9 and C10	26	27 Noise monitoring at HC_M3a, HC_M4 and HC_M6 Water quality monitoring at C9 and C10	28	29	30
31						

Noise Monitoring Locations:  
 Noise monitoring stations at Ha Che: HC\_M3A, HC\_M4, and HC\_M6  
 Noise monitoring stations at Tai Wo: TW\_M2 and TW\_M3  
 Noise monitoring stations at Lin Fa Tei: LFT\_M1, LFT\_M3A, LFT\_M5, LFT\_M7, and LFT\_M11  
 Noise monitoring stations at Sung Shan New Village: SSNV\_M2, SSNV\_M3, and SSNV\_M6

Water Monitoring Locations:  
 Water quality monitoring stations at Ha Che: C9 and C10  
 Water quality monitoring stations at Tai Wo: C4 and C5  
 Water quality monitoring stations at Lin Fa Tei: C6, C7A, and C8  
 Water quality monitoring stations at Sung Shan New Village: C1A, C2, and C3A

Remarks:  
 1. The schedule may be changed due to unforeseen circumstances (e.g. adverse weather, etc.)  
 2. As construction work will only be carried out at Ha Che in March 2024, monitoring works will only be conducted at Ha Che in March 2024

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