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

Verification of Habitat Creation and Management Plan

13 March 2025

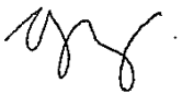
Dear Sir,

We refer to the Habitat Creation and Management Plan under the captioned Project, which was certified on 12 March 2025 by the ecologist appointed under Condition 2.3 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 2.9.

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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Contract No. DC/2022/02 Drainage Improvement Works at Yuen Long

Habitat Creation and Management Plan

Wing Tat Civil Engineering Co. Limited

Reference: P525672

Revision: 6

12-March-2025

aurecon

Bringing ideas to life

Document control record

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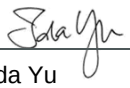
Document control		aurecon				
Report title		Habitat Creation and Management Plan				
Document code			**Project number**		P525672	
File path		DC202202_HabitatCreation&ManagementPlan_Rev6_0_CLEAN.docx				
Client		Wing Tat Civil Engineering Co. Limited				
Client contact			**Client reference**			
Rev	**Date**	**Revision details/status**	**Author**	**Reviewer**	**Verifier** (if required)	**Approver**
0	2023-11-30	First submission for ET's and IEC's comments	Ida Yu	Paul Leader		Paul Leader
0	2023-12-12	Amended HCMP according to the IEC's comment on 7 Dec 2023	Ida Yu	Paul Leader		Paul Leader
0	2023-12-20	Amended HCMP according to the IEC's comment on 18 Dec 2023	Ida Yu	Paul Leader		Paul Leader
1	2024-04-24	Amended HCMP according to EPD's comment on 17 Jan 2024	Ida Yu	Paul Leader		Paul Leader
2	2024-06-12	Amended HCMP according to EPD's comment on 27 May 2024	Ida Yu	Paul Leader		Paul Leader
3	2024-11-22	Amended HCMP due to change of vertical-wall design	Ida Yu	Paul Leader		Paul Leader
4	2024-12-24	Amended HCMP according to EPD's comments on 16 December 2024	Ida Yu	Paul Leader		Paul Leader
4	2024-12-30	Amended HCMP according to the IEC's comment on 30 December 2024	Ida Yu	Paul Leader		Paul Leader
5	2025-02-19	Amended HCMP according to EPD's comments on 11 February 2025	Ida Yu	Paul Leader		Paul Leader
6	2025-03-06	Amended HCMP according to EPD's comments on 27 February 2025	Ida Yu	Paul Leader		Paul Leader
6	2025-03-12	Amended HCMP according to IEC's comment on 12 Mar 2025	Ida Yu	Paul Leader		Paul Leader
Current revision		**6**				

Approval			
Author signature		Approver signature	
Name	Ida Yu	Name	Paul Leader
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1 Introduction

1.1 Project Background

In 1998, The Drainage Master Plan Studies for the Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Basin (YLDMP) recommended drainage improvement works in these rural areas and the works were completed subsequently. However, due to the new development proposals and the new flooding complaints received at the upstream areas of the drainage basins, Drainage Services Department (DSD) further commissioned the "Review of Drainage Master Plans in Yuen Long and North Districts – Feasibility Study" (DMP Review Study) to review and access the effectiveness of the previously recommended works. In 2011, the DMP Review Study identified that some areas in Yuen Long District could not meet the required flood protection level according to the latest land use changes, future rural area development, changes of the associated main channels due to sedimentation, mangrove growth and projected Climate Change and extreme weather impacts, in the hydraulic analysis.

In November 2013, DSD commissioned Atkins China Ltd. (ACL) to commence a consultancy study *Agreement No. CE 22/2013 (DS) Drainage Improvement Works in Yuen Long, Stage 1 – Investigation, Design and Construction*, comprising construction of drainage improvement works to four villages, namely Sung Shan New Village, Tai Wo, Lin Fa Tei and Ha Che, as well as the associated landscaping, waterscaping, utilities diversion, temporary traffic arrangements and other works incidental to the completion of this IDC study. This IDC Study also aimed at alleviating the flooding spots in these villages. The Study is a Designated Project under the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499), and an Environmental Impact Assessment (EIA) Report (Register No.: AEIAR-229/2021) was approved by Environmental Protection Department (EPD) in June 2021. An Environmental Permit (EP No.: EP-596/2021) was granted with condition on 28th September 2021.

1.2 Project Details

The Project *Contract No. DC/2022/02 Drainage Improvement Works at Yuen Long – Stage 2* (hereafter as "The Project") is carried out by DSD to undertake drainage improvement works near the four villages in Sung Shan New Village, Tai Wo, Lin Fa Tei and Ha Che. The Project aims at enhancing the drainage capacity of the existing drainage systems to lower the flood risks in these villages.

According to the Project's Environmental Permit, The Project includes the following scopes in various sites:

- Sung Shan New Village
  - Upgrading of an approximately 610m long existing stream to a rectangular channel;
- Tai Wo
  - Construction of an approximately 290m long rectangular channel;
- Lin Fa Tei
  - Construction of an approximately 150m long rectangular channel connecting to the Shui Tsan Tin stream;
  - Upgrading of an approximately 780m long existing stream to a rectangular channel;
  - Deepening of an approximately 240m long existing rectangular channel;
  - Construction of an approximately 1,650mm diameter drainage pipe along a section of the Kam Sheung Road;
- Ha Che

- Upgrading of an approximately 600m existing stream to a rectangular channel;
- Construction of an additional twin of about 1,500mm diameter drains underneath the Fan Kam Road; and
- Upgrading of an approximately 170m existing stream to a rectangular channel.

According to the approved Project's EIA Report, there will be a temporary and/or permanent habitat loss of 1.1 ha or approximately 2,285m long of riverine habitats arising from the Project, and the loss will be anticipated in Sung Shan New Village, Lin Fa Tei and Ha Che. As recommended in the EIA Report and EM&A Manual, a Habitat Creation and Management Plan (HCMP) should be prepared to detail the design features and approaches of reinstating/ restoring these compensatory green channels, and the plan should be prepared with a collaboration of a Drainage Engineer, an Ecologist and a Landscape Architect to provide a comprehensive design to promote the establishment of the riparian vegetation and colonisation of the freshwater crabs and other wildlife.

The HCMP (Revision 2) was approved by EPD on 9 July 2024. The current revision is to update the use of construction materials, known as concrete formliner, in replacing natural stones embedded into the vertical-walled embankments along the proposed green channels.

2 Permit Requirements and Plan Objectives

2.1 Environmental Permit Requirements

According to Clause 2.9 of the Environmental Permit (EP No.: EP-596/2021), the "Permit Holder shall, no later than 1 month before the commencement of construction of the Project or otherwise approved by the Director, submit to the Director for approval 4 hard copies and 1 electronic copy of a Habitat Creation and Management Plan (HCMP), certified by the ecologist(s) and verified by the IEC". The HCMP shall include the following elements:

- "detailed design of the channel, including but not limited to the use of different bedding/ vertical-surfacing materials to create diversified microhabitats,
- an implementation and monitoring programme, and
- a contingency plan, with a view to restoring and maintaining the biodiversity and ecological functions of the watercourses, and to ensure the created habitats could withstand adverse weather conditions".

These requirements are essentially the guiding concepts for the HCMP of the green channel design to reprovisioning of suitable habitats for the freshwater crabs and other aquatic wildlife. The HCMP recommends and specifies the mitigation measures and requirements that shall be fully implemented by the Permit Holder.

2.2 Plan Objectives

This HCMP is prepared to fulfil the requirements under Clause 2.9 of the Environmental Permit No. EP-596/2021. The primary objectives of this plan are to:

- 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.

3 Description of the Project Areas

3.1 Locations and Environs

The three watercourses at Sung Shan New Village (SSNV), Lin Fa Tei (LFT) and Ha Che (HC) will be reinstated after the completion of the construction of drainage improvement works The drainage improvement works primarily include the construction of rectangular channels (range from 2.5m to 6.4m wide at different sections and works areas), pedestrian and vehicular crossings, and upgrade or reprovision of ancillary works (such as fencing, toilet, metal frame, retaining wall, cat ladder).

The proposed green channel in Ha Che will run from A Kun Tin at the north, pass through Shui Kan Shek and north of Chuk Hang, and finally end at Ha Che at the south. In Lin Fa Tei, the green channel will run from the abandoned farmland in Ngau Keng Village at the east, pass through the village houses and temporary storage in Shui Tsan tin in the middle, and connect with the channelised channel along Kam Shui South Road. The comparatively shorter green channel will run through a mosaic of temporary storage and village houses in Sung Shan New Village.

3.2 Existing Site Conditions of the Three Project Areas

Sung Shan New Village

The proposed green channel at Sung Shan New Village is a segment of channelised watercourse that runs along the village area and depots south of Tai Shu Ha Road East. The stream bed is semi-natural and comprises of muddy and sandy substrates. Common riparian vegetation growing on exposed soil includes herbs such as *Pennisetum purpureum, Cyperus involucratus* and *Alocasia macrorrhizos*, as well as shrubs such as *Boehmeria nivea.* Vegetation found atop channel walls or slopes are dominated by native shrubs such as *Macaranga tanarius* var. *tomentosa, Ficus hispida* as well as exotic *Leucaena leucocephala* and their seedlings. One individual of the protected tree *Aquilaria sinensis* was recorded on the channel slope, which was also recorded in the approved EIA report. **Figure 1a** shows the proposed green channel alignment at Sung Shan New Village with representative site photos taken in October and November 2023.

Lin Fa Tei

Two existing watercourses are present at Lin Fa Tei. The northern watercourse comprises of a section running under the pavement of Kam Sheung Road, starting from the intersection of Kam Shui South Road and Kam Sheung Road until it reaches the CLP Lin Fa Tei Substation, where it becomes a narrow channel running through the village houses in the outskirts of Lin Fa Tei village. The vegetation of the pavement section mainly consists of roadside plantations, with exotic *Leucaena leucocephala* and common native trees such as *Ficus microcarpa* and *Ficus hispida* found commonly above the alignment of the proposed drains. Meanwhile, the section of channel that runs through Lin Fa Tei village is only sporadically vegetated by a few *Macaranga tanarius* var. *tomentosa* while herb species such as *Ludwigia hyssopifolia* and *Cyclosorus interruptus* are found directly within the channel.

The southern watercourse is entirely channelized and starts from the split next to the Pat Heung Shui Tsan Tin Tsuen Village Office, flows through the village area between Lin Fa Tei village and Shui Tsan Tin village until it reaches the wastegrounds southeast of Lin Fa Tei village, where it forks into two channels. The vegetation found on the banks and channel walls of the village section of the watercourse is covered by a mixture of native shrubs such as *Macaranga tanarius* var. *tomentosa* and *Ficus hispida,* herbs such as *Alocasia macrorrhizos* and *Microstegium ciliatum* and exotic climbers such as *Mikania micrantha*. On the other hand, riparian vegetation found next to wastegrounds is dominated by herbs such as *Pennisetum purpureum, Crotalaria pallida* var. *obovata* and *Alocasia macrorrhizos* and climbers such as *Ipomoea cairica*. **Figure 1b – 1c** shows the proposed green channel alignment at Lin Fa Tei with representative site photos taken in October and November 2023.

Ha Che

The existing watercourse in Ha Che comprises both semi-natural and channelised watercourse sections from A Kun Tin to Fu Hing Garden (south of Ha Che), that passes through wasteground, rows of exotic plantation and self-seeded wooded areas (mainly dominated by exotic *Leucaena leucocephala* and common native trees *Celtis sinensis*), villages, open storage and other developed area. Except rows of exotic plantation trees (*Eucalyptus* spp.) that lines along the channelised section to the south of The Arbutus House in Shui Kan Shek, the remaining semi-natural watercourse section are largely covered by self-sown trees (such as *Celtis sinensis*, *Dimocarpus longan*, *Ficus hispida*, *Steculia lanceolata*) in the overstorey, and riparian vegetation (such as wetland herbs *Alternanthera sessilis*, *Cyclosorus interruptus*, *Cyperus surinamensis*, *Commelina diffusa*, *Dracaena sanderiana*, and other herbs *Bidens alba*, *Microstegium ciliatum*, *Wedelia trilobata*) along the natural bottom or stream banks. Weedy climbers such as *Ipomoea cairica* and *Mikania micrantha* were sometimes recorded climbing on the riparian trees and groundcover. **Figure 1d** shows the proposed green channel alignment of Ha Che with representative site photos taken in October and November 2023.

4 Design Requirements in the EIA Report

4.1 Mitigation measures for the loss of watercourses

According to the impact assessment and mitigation measures proposed in the Project's EIA Report, there will be a temporary and/or permanent habitat loss of 1.1 ha or approximately 2,285m long of riverine habitats arising from the Project. The respective habitat loss at Sung Shan New Village, Lin Fa Tei and Ha Che is summarised as below:

- Sung Shan New Village: 0.35 ha of area, or approximately 600m of semi-natural watercourse;
- Lin Fa Tei: 0.45 ha of area, or approximately 960m of semi-natural watercourse; and
- Ha Che: 0.22 ha of area, or approximately 550m of semi-natural watercourse, and 0.08 ha of area or approximately 175m of channelised watercourse.

The habitat loss will be compensated by reinstating and greening the channel bed and embankment, with an overall compensation ratio of about 104 % in area or 101% in length of the compensated river section. The compensated area and length of the green channels are proposed as below with reference to the EIA report:

- Sung Shan New Village: 0.49 ha of area, or approximately 610m of green channel;
- Lin Fa Tei: 0.42 ha of area, or approximately 930m of green channel; and
- Ha Che: 0.23 ha of area, or approximately 770m of green channel.

4.2 Design approaches recommended in the EIA Report

In order to mitigate the loss of riverine habitats and to provide suitable aquatic habitat to encourage the colonisation of aquatic fauna (including freshwater crabs *Somanniathelphusa zanklon* and *Cryptopotamon anacoluthon*) and establishment of the riparian vegetation along the riverbed and embankment. Clause 5.9.13 to 5.9.22 of the approved EIA reports recommended the following ecological enhancement measures in the instream and riparian zone habitats.

4.2.1 Instream habitat

Appropriate ecological enhancement measures along the channel bed could provide an important instream habitat for the (re)colonisation of freshwater fauna (fish, crabs, insects), and encourage sustainable biota assemblages to enrich the aquatic ecosystem and subsequently improve the water quality. The following enhancement measures are recommended in the approved EIA report.

- Original natural substrate from the same channel could be reused for reinstating the channel bed. The substrate comprises a mix of particles of different grain size, including sand, gravels, stones and boulders, that could fit the hydraulic capacity and channel condition after the reinstatement works;
- The reinstated channel bed and toe zone of the embankment could be either lined with natural substrate or vegetated with riparian plants so as to avoid habitat fragmentation and maintain suitable ecological connectivity for wildlife moving along the channel.
- Diversify aquatic microhabitats and enhance the channel configuration by creating pools, riffles and falls. Channel deflector and constrictor (such as gabion, boulder clusters, small vegetated island), weir, and rock vane could be installed in these created microhabitats to modify the hydrological performance (e.g. water turbulence and flow pattern) and physical environment for aquatic life (e.g. trap suspended sediment and organic debris for refugia of the freshwater wildlife);
- The stability and holding capacity of the reinstated natural bedding and the created microhabitats could be enhanced by using round shaped rock or filled with a mixture of pebbles, gravels and sand in the cervices. Large rocks or boulders can be placed randomly on the top layer of the natural bedding to maintain its integrity and minimise the chance for the channel and aquatic plants to be washed away; and
- Ground beams could be built at regular interval along the green channel bed for holding the natural bedding materials in position. The natural bedding should be built at least in 500mm in depth, and width equivalent to the full width of the green channels.

4.2.2 Riparian Zone habitat

Vegetation at the riparian zone along stream bank can provide suitable spawning and feeding grounds and shelter for aquatic fauna. The following ecological enhancement measures are recommended along riparian zone habitat,

- The toe zone of the channel embankment could be planted with aquatic plants regularly submerged in water to provide emergent or submergent vegetated zones as shelter and refuge for amphibians, dragonflies and freshwater crabs (such as *Somanniathelphusa zanklon* recorded in Lin Fa Tei and Ha Che, and *Cryptopotamon anacoluthon* in Ha Che in the approved EIA report);
- Area for riparian planting could be filled either with geobag or a mix of fine particles that could trap settlement of silt particle so as to create a muddy habitat for freshwater crab *Somanniathelphusa zanklon*
- A diverse mix of woody plants and herbaceous vegetation is recommended to be planted along the upper section of the channel embankment for providing detritus input to the freshwater fauna and aquatic ecosystem. These plants should be planted in adequate and suitable planting space to facilitate their sustainable growth;
- Planting tree groups, including deciduous trees, at suitable upper section of the channel embankment can provide adequate detritus input into the green channels. This could create favorable microhabitat (i.e. shallow water accumulated with dense leaf-litter) for the freshwater crab *Cryptopotamon anacoluthon* which was found in the upper section of Ha Che in the approved EIA Report; and
- The existing *in-situ* vegetation recorded along these three watercourses to be reinstated should provide the basis for formulating the plant lists proposed for vegetating their riparian zones. Exotic or invasive plant species should be avoided as far as possible, and the plant lists should consist of a diverse group of plant growth forms to enhance the habitat heterogeneity.

4.2.3 Other Recommended Design Elements

The above recommended measures aim at enhancing and enriching the ecological values and functions of the green channels. Some design elements are also recommended as below to minimise the human disturbance on these green channels, and facilitate wildlife movement within these channels.

- A clear delineation of fencing and boundary along the green channels could minimise human disturbance on the hydrological performance, aquatic wildlife and planted riparian zone habitats along the green channels;

- Establishment of animal escape ramps at appropriate vertical channel embankments to facilitate wildlife movement by allowing the wildlife, which are washed down from upstream, to escape from these channels; and
- Wire mesh to be fixed along the toe of the proposed fencing and railing along the green channels should be recommended to prevent wildlife falling into the waterbody.

5 Proposed Design of these Three Channels

5.1 Design Elements

The three green channels have been designed to incorporate the ecological enhancement and enrichment measures recommended in Section 4.2 above, as well as referencing the recommendations from *Drainage Services Department Practice Note No. 3/2021 Guidelines on Design for Revitalisation of River Channel*. According to the latest layout plans of the three proposed channel alignments (see **Figure 2**), the following key design elements are provided at appropriate sections in these green channels.

5.1.1 Vertical-walled channels with facing stones

All three green channels will be constructed in rectangular, vertical-walled channels. Most of these vertical-walled embankments will be embedded with a layer of concrete formliner. The replacement of natural stone facing by concrete formliner is aimed at speeding up the construction process and reducing safety risk as opposed to the installation of natural stone facing. The pre-cast mould of concrete formliner will be designed to provide mock-up panels that would form a rough textured surface mimicking the natural stones. The artificial facing stones will directly attach onto the vertical-walled embankment formed by reinforcement concrete, and with various random-sized artificial stones (a maximum thickness of about 75mm) formed by the mock-up panels. A typical type and arrangement of facing stones recommended in this channel reinstatement is shown in **Figure 3** (Drawing No. WT/DC/2022/02/CF/SK/001 in **Figure 3**). The mock-up panels of the type and texture of this proposed artificial facing stones will be finalised and accepted at the later stage. The proposed facing stones should be durable, stable, and hard enough to withstand adverse weather condition.

With careful design of the mock-up panels, this method also provides a rough textured wall surface to facilitate establishment of climbing plant species. Self-climbing species *Ficus pumila* will be planted on top of the channel wall. Major benefit for adopting a climber system is that it tends to have less structural impact on the embankment walls as compared to other river embankment lining methods. The presence of climbing plant on the vertical walls can enhance the movement of terrestrial wildlife and amphibians across the green channels.

5.1.2 Natural bedding

Natural bedding is the most preferred option with minimal impact on the environment. The channel beds of all three green channels will be left paved with original bed substrates excavated from natural bedding materials to retain its natural condition. Depending on different channel sections, a maximum of 500mm thick of natural rock/ gravels/ stone/ sand/ soil excavated from the *in-situ* watercourse section will be stored appropriately for later installation (as shown Drawing No.: 5124336-TD-C2-GEN-9007 in **Figure 3**). In addition, in order to retain channel water for aquatic plants and freshwater fauna during the dry season, a layer of geotextile will be placed between the bottom of the maximum 500mm thick natural bedding and the intermediate beams/ another layer of natural bedding materials. Natural stones/ pebbles/ rocks will also be placed irregularly along the instream habitat. Together with the instream aquatic planting along the channel bottom (further details refer to Section 5.1.3 below), this kind of natural bedding and created instream habitat aim to mimic the natural substrates and provide microhabitats (such as fish hole and intermediate rock pools) for wildlife, and facilitate the establishment of the planted aquatic vegetation, and this method is most suitable in locations where the flow velocity and discharge volume are low.

In order to hold the natural bedding materials in position, especially to withstand the strong water flow induced by adverse weather, intermediate ground beams or slabs will be built at regular interval (typically as 5m interval) along the green channels. The dimensions (depth and width) of these ground beams or slabs will vary in different channel sections so as to suit the channel configuration.

5.1.3 Aquatic planting along the channel bottom

Planting of aquatic vegetation along the channel bottom can create microhabitats and maintain suitable microclimates for freshwater fauna, amphibian and dragonflies. A total of five native aquatic plants are proposed along the reinstated channel beds, and these plants will be planted in four different patterns to create habitat heterogeneity (**Table 1 & Figure 4**). The aquatic vegetation will be planted directly into a layer of planting soil spread on top of the natural bedding to facilitate their establishment and colonisation in the planting bays.

***Table 1**. Proposed aquatic plant species and planting patterns in the reinstated channel beds*

Scientific Name[1]	Chinese Name	Native/ Exotic	Life Cycle	Growth Form	Planting Pattern[2]
Acorus gramineus	金錢蒲	Native	Perennial	Emergent herb	T1, T3
Bacopa monnieri	假馬齒莧	Native	Perennial	Emergent herb	T1, T2, T4
Cyperus distans	疏穗莎草	Native	Perennial	Submergent herb	T1, T2, T3
Juncus effusus	燈心草	Native	Perennial	Emergent herb	T1, T2, T3, T4
Lobelia chinensis	半邊蓮	Native	Perennial	Submergent herb	T2

Notes:

1. Alternative plant species of similar ecological functions and values will be proposed if any of the above proposed plant species are not available in the market by the time of actual planting.
2. Proposed plant species and planting patterns are extracted from Drawing No.: 5124336-TD-C2-GEN-9010 in **Figure 3**).

All these native plants, especially *Bacopa monnieri* and *Cyperus distans*, are often found in local semi-natural watercourses with various hydraulic characteristics (such as flow rate). With the combination of different planting patterns along the green channels, a mosaic of emergent and submergent herbaceous plants, together with running water or created water pool on the opposite side in the same planting bay, will be established for aquatic wildlife. The emergent herbs can provide favorable perching and egg-laying spots above water for dragonflies, while the submerged herbs are excellent sheltering place for dragonfly nymphs, reptiles, amphibians, freshwater fish and crabs (such as *Somanniathelphusa zanklon*).

5.1.4 Proposed compensatory tree planting and landscape plans

Landscaping works have been proposed at appropriate planting beds constructed along the crest of the channel embankments. A total of 21 shrub and groundcover species are proposed in the four planting mixes, namely “Naturalistic Shady Shrub Mix”, “Naturalistic Sunny Shrub Mix”, “Ornamental Shady Shrub Mix” and “Ornamental Sunny Shrub Mix”, along these three green channels (**Figure 5**). Except two exotic shrubs *Ficus microcarpa* ‘Golden Leaves’ and *Ligustrum sinense*, the remaining 90% are native plant species which can benefit the overall aesthetic and ecological values after the reinstatement works. The proposed plant combination provides larval food plants (such as shrub *Ligustrum sinense* and groundcover *Alternanthera sessilis*) and nectar plants (such as shrubs *Ixora chinensis*, *Rhaphiolepis indica*, *Maesa perlarius*) for butterflies, as well as fleshy fruits (such as *Eurya chinensis*, *Ixora chinensis*, *Psychotria asiatica*, *Rhodomytrus tomentosa*) for birds. **Table 2** details the planting mixes proposed in these green channels, and **Appendix A** shows the representative photo of each proposed species in the planting mix.

Table 2. *Proposed planting mixes in the green channels in SSNV, LFT and HC*

Planting Mix	Type	Scientific Name[1]	Chinese Name
Naturalistic Shady Shrub Mix	Shrubs	*Camellia oleifera*	油茶
		Maesa perlarius	鯽魚膽
		Melastoma sanguineum	毛稔
		Psychotria asiatica	山大刀
	Groundcover	*Artemisia indica*	五月艾
		Desmodium styracifolium	金錢草
		Dicranopteris pedata	芒萁
		Rhododendron simsii	紅杜鵑
Naturalistic Sunny Shrub Mix	Shrubs	*Eurya chinensis*	米碎花
		Polyspora axillaris	大頭茶
		Rhaphiolepis indica	石斑木
		Rhodomyrtus tomentosa	崗稔
	Groundcover	*Artemisia indica*	五月艾
		Desmodium styracifolium	金錢草
		Dicranopteris pedata	芒萁
		Rhododendron simsii	紅杜鵑
Ornamental Shady Shrub Mix	Shrubs	*Ficus microcarpa* 'Golden Leaves'*	黃金榕
		Ixora chinensis	龍船花
		*Ligustrum sinense**	山指甲
		Rhapis excelsa	棕竹
	Groundcover	*Alternanthera sessilis*	蓮子草
		Asparagus cochinchinensis	天門冬
		Liriope spicata	山麥冬
		Rhododendron simsii	紅杜鵑
Ornamental Sunny Shrub Mix	Shrubs	*Ficus microcarpa* 'Golden Leaves'*	黃金榕
		Gardenia jasminoides	梔子
		Ixora chinensis	龍船花
		Mussaenda pubescens	玉葉金花
	Groundcover	*Alternanthera sessilis*	蓮子草
		Asparagus cochinchinensis	天門冬
		Liriope spicata	山麥冬
		Rhododendron simsii	紅杜鵑

Notes:

1. Alternative plant species of similar ecological functions and values will be proposed if any of the above proposed plant species are not available in the market by the time of actual planting.

* Exotic plant species

A total of 125, 84 and 26 compensatory trees are proposed to be planted among the planting mixes in Sung Shan New Village, Lin Fa Tei and Ha Che green channels (**Figure 5**). All seven trees are native in Hong Kong, with sizes range from small to large at their mature stage. Except *Elaeocarpus chinensis,* the remaining trees could produce plenty fleshy fruits to attract common birds in the rural environs. Tree canopies above the channel body can provide some shading to the aquatic vegetation, mimicking the existing vegetated riparian zones. In addition, plant litter from the tree canopies would provide an important nutrient source into the aquatic ecosystem along the green channels, and the plant detritus accumulated at the shallow water in the channels can enhance the microhabitats to be created for the freshwater crab *Cryptopotamon anacoluthon*. This freshwater crab species was recorded at the upper watercourse section in Ha Che as reported in the EIA Stage. According to Drawing Nos. 5124336-TD-C2-CTREE-HC-8001 to 8002 of **Figure 5C**, seven trees from three native tree species (*Sterculia lanceolata*, *Ilex rotunda* var. *microcarpa*

and *Cleistocalyx operculatus*) are proposed along the upper section of Ha Che. Climbing plant species *Ficus pumila* will be planted on top of the channel wall and then spread along the channel side, and shrub mix planting will be planted along the channel upper embankment. All these plant vegetation could produce leaf litter to the channel. In addition, the upper section of the green channel will still be ecologically and hydrologically linked to the untouched upper stream, and leaf litter from this upper stream can still be carried through water current and accumulated at the upper section of the green channel. **Table 3** summarises the proposed compensatory trees to be planted along the three green channels, and **Appendix A** shows the representative photo of each proposed compensatory tree. Planting specification for the compensatory trees, shrubs and groundcover atop the channel embankment refer to Drawing No. 5124336-TD-C2-GEN-9011 in **Figure 3**.

Table 3. *Proposed compensatory trees and planting quantities along in the green channels in SSNV, LFT and HC*

Scientific Name	**Chinese Name**	**Native/ Exotic**	**Proposed Planting Quantities**		
			SSNV	**LFT**	**HC**
Cleistocalyx operculatus	水翁	Native			6
Elaeocarpus chinensis	中華杜英	Native			3
Ilex rotunda var.*microcarpa*	小果鐵冬青	Native	40	24	13
Pongamia pinnata	水黃皮	Native		19	
Sapium sebiferum	烏桕	Native		17	
Schefflera heptaphylla	鴨腳木	Native	45		
Sterculia landceolata	假蘋婆	Native	40	24	4
Total no. of compensation trees			**125**	**84**	**26**

5.1.5 Installation of animal escape ramp

Animal escape ramps will be built on the vertical-walled channel at the middle and eastern channel sections in Sung Shan New Village, western (close to Park Ridge) and eastern (close to the abandoned agricultural land to the east of Ngau Keng Village) channel sections in Lin Fa Tei, as well as the northern (close to A Kung Tin) and middle (to the north of Chuk Hang) channel sections in Ha Che. The proposed locations are shown in the respective green channels in **Figure 2**. These escape ramps will be built on the vertical-walled channel embankment, with minimum width of 150mm from the nearest concrete or facing stone surfacing. Wire mesh should be installed at the bottom of the railings along the top of the channel embankment with the escape ramps, and to be extended 1m from the bottom of the escape ramp. No wire mesh should be installed in the remaining sections with railing and fencing (refer to Drawing No. 5124336-TD-C2-GEN-9006 in **Figure 3**). Details of the proposed animal escape ramp and wire mesh are presented in **Table 4.**

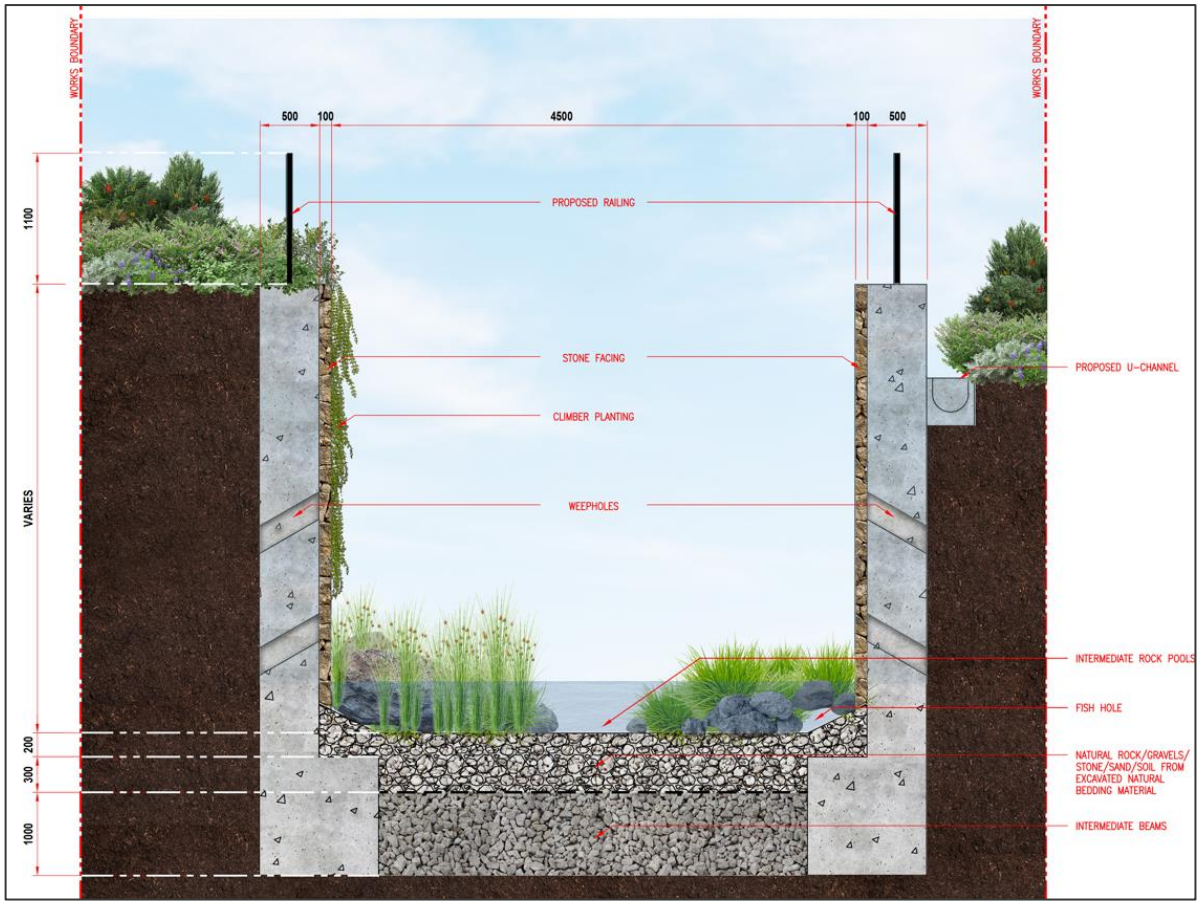
Table 4. *Details of the proposed animal escape ramp and wire mesh*

Animal Escape Ramp				
Location	**Material**	**Gradient**	**Width**	**Length**
1.At the middle and eastern parts of Sung Shan New Village Green Channel 2.At the western (close to Park Ridge) and eastern (close to the abandoned agricultural land to the east of Ngau Keng Village) parts of Lin Fa Tei Green Channel 3. At the northern (close to A Kung Tin) and middle (to the north of Chuk Hang) parts of Ha Che Green Channel	Concrete	Gradient: 1V:2H	Minimum width shall be 150mm from the nearest concrete or stone facing surfacing	Depends on the location and height of the vertical-walled embankment
Wire Mesh				
Size	**Extent**			
100mm wire mesh (hot dip galvanised), 3mm thick, with a maximum of 30.5mm (W) x 12.7mm (H) mesh internal size	Wire mesh on top of the vertical-walled embankment shall be provided at the edge of top of escape ramp and be extended 1m on plan from the bottom of the escape ramp			

5.1.6 Illustration of typical cross-section of green channel

A typical cross-section of the green channel showing ecological enhancement and enrichment measures proposed in **Section 5.1.1 – 5.1.4** is illustrated in Plate 1 below. The implementation of the enhancement and enrichment measures may vary along different channel sections, and the actual locations and extent of the proposed measures should be read in conjunction with **Figures 2 – 5**. Once the aquatic planting is established and the colonisation of other self-seeded aquatic herbs, freshwater ecosystem would progressively form to sustain the biota assemblages along the channels.

Plate 1. *Typical cross-section of the green channel with ecological enhancement and enrichment measures*



6 Implementation, Maintenance, Management and Monitoring Programme

6.1 Implementation Programme

Prior to the commencement of any drainage improvement works, the pre-construction surveys on the colonisation of the two fauna species of conservation importance, namely freshwater crabs *Somanniathelphusa zanklon* (found in Lin Fa Tei and Ha Che) and *Cryptopotamon anacoluthon* (found in Ha Che) will be conducted to translocate any of these crab species to the appropriate receptor site. Details of the translocation methodology refers to “Freshwater Crab Translocation Plan” submitted under Clause 2.8 of the EP.

According to the latest works programme, the proposed drainage improvement works will commence in around mid-January 2024 in Ha Che, and then in mid-May 2024 in Lin Fa Tei and around late-June 2024 in Sung Shan New Village. **Table 5** shows the tentative implementation programme of the drainage

improvement works along different channel sections of each channel, and the proposed planting periods of the proposed aquatic plants, compensatory trees, shrubs and groundcover species of each channel.

Table 5. *Tentative Implementation Programme of Drainage Improvement Works and Planting Works*

Works Location		2024												2025												2026						
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Ha Che	CH.A11.13~ CH.A300.00																															
	CH.A300.00~ CH.A653.949																															
	CH.A653.949~ CH.A905.63																															
	Planting works																															
Lin Fa Tei	CH.A818.86~ CH.A500.00																															
	CH.A500.00~ CH.A200.00																															
	CH.A0.00~ CH.A200.00																															
	CH.B0.00~ CH.B149.77																															
	CH.C117.50~ CH.D239.03																															
	Planting works																															
SSNV	CH.A500.00~ CH.A608.13																															
	CH.A400.00~ CH.A500.00																															
	CH.A300.00~ CH.A400.00																															
	CH.A200.00~ CH.A300.00																															
	CH.A100.00~ CH.A200.00																															
	CH.A0.00~ CH.A100.00																															
	Planting works																															

6.2 Maintenance and Management

After the full implementation of these three green channels, DSD, as the Project Proponent, will be responsible for the long-term maintenance of the green channels after the construction phase.

During the establishment and maintenance period of the planted vegetation, the landscape contractor appointed by DSD will maintain all aquatic planting planted along the channel beds, compensatory trees, shrubs and groundcover planted in the delineated planting areas on top of the channel beds. During this establishment and maintenance period, the landscape contractor will carry out the following maintenance works:

- Conduct regular site inspection to inspect the health condition and growth of the planted vegetation;
- Carry out regular watering on the compensatory trees, shrubs and groundcover (at least daily especially in the dry season (November to March);
- Apply fertiliser to the compensatory trees, shrubs and groundcover (once in dry and once in wet seasons);
- Remove invasive or exotic plants (such as climbers *Mikania micrantha* and tree *Leucaena leucocephala*) climbing or colonising on the planted terrestrial and aquatic plant groups;
- Apply pest control measures, if necessary, at appropriate time during the maintenance period;

- Arrange ad hoc inspection on the planted terrestrial and aquatic vegetation after any flooding, heavy rainfall (Red or Black Rainstorm Warnings), or lowering of typhoon Signal No. 8; and
- Carry out replacement planting of any aquatic plants, compensatory trees, shrubs and groundcovers of poor or unsatisfactory health condition.

In addition, the engineering consultant and/or Contractor will inspect and maintain the hardware of the green channels (e.g. the vertical-walled embankment and the facing stones, railing, fencing, animal escape ramps, cat ladder, etc.) until the whole green channels are formally handed over to the corresponding DSD's district division responsible for the long-term maintenance and management of these channels.

6.3 Monitoring Programme

Since there is no pre-construction baseline ecological monitoring required in the EIA Report, a 3-year post-construction ecological monitoring of the three green channels is recommended to review the health and growth of the planted aquatic plants, and evaluate the use and colonisation of the created aquatic habitats for freshwater assemblages. The ecological monitoring will be conducted by a qualified ecologist of at least 5 years of relevant experience and to be employed by the Contractor or appropriate maintenance party during the post-construction establishment phase of the green channels. According to Section 5.11.5 of the approved EIA Report, it is recommended to conduct a post-construction ecological monitoring by covering the area within 100m upstream and downstream of the green channels during the first and last session of the monitoring. Monitoring of vegetation health of the planted aquatic vegetation, presence of terrestrial fauna groups (including bird, herpetofauna, butterfly, dragonfly, mammal, fireflies) and freshwater fauna (including stream fauna like freshwater fish and crab), and water quality of the green channels will be carried out. Monitoring methodology, frequency and monitoring parameters are proposed below and summarised in **Table 6**. The proposed monitoring transects and points (for water quality and water current) are indicated in **Figure 6**. The actual locations and extent of these monitoring transects and points might be adjusted to suit the on-site condition after the channels are reinstated.

6.3.1 Vegetation Cover and Health

Bi-monthly (i.e. every two months) monitoring on the growth and extent of the planted aquatic vegetation will be undertaken. Two 50m sampling transects will be marked at each of the upper, middle and downstream sections of each green channel. Each sampling transects will be walked along to review the establishment, health condition (good/ fair/ poor) and survival of the planted aquatic vegetation, and self-seeded plants (including herbs and woody plants) established at the channel bottoms will also be recorded. Along each transect, the vegetation coverage by each species (planted and self-seeded), as well as percentage cover of bare ground or natural bedding will be measured. Any excessive colonisation or unwanted/ weedy vegetation (such as climber *Mikania micrantha* and weedy tree *Leucaena leucocephala*), in particular along the channel sections, will be recorded.

6.3.2 Terrestrial Fauna Groups

Bi-monthly (i.e. every two months) day-time monitoring on the below terrestrial fauna groups (except firefly) will be conducted by walking along the whole green channels and/or at the accessible areas (applicable when the site or weather conditions do not allow a safe access). Owning to the nocturnal behavior of most herpetofauna species, bi-monthly night-time survey will also be conducted during the wet season from March to October.

Avifauna

With the aid of a pair of binoculars, bi-monthly avifauna monitoring will be conducted in early morning when birds are most active. All avifauna species will be detected either by direct sighting or by their call. Species recorded will be identified and quantified. A comprehensive list of species and their abundance recorded from the monitoring will be prepared, with conservation and protection status indicated.

Herpetofauna

Bi-monthly day- and night-time monitoring covering March to October will be conducted for herpetofauna group. All potential habitats for amphibians and reptiles will be actively searched along the green channels throughout the monitoring. It would also be necessary to examine or uncover microhabitats (e.g. stones, crevices or rotten log) deliberately to reveal the presence of the amphibians and reptiles hiding under these covers. Active searching for eggs and tadpoles of amphibians in aquatic habitats will be conducted to indicate breeding activities. All life for of amphibians, including adult, tadpole, juvenile and egg, will be recorded to indicate the breeding potential in the green channels. A comprehensive list of herpetofauna species recorded (whether seen or heard) during the day- and night-time monitoring will be prepared, with conservation and protection status indicated.

Butterfly and Odonate

Bi-monthly day-time monitoring covering March to November will be conducted for butterflies and odonates, with species mainly detected by direct observation. The monitoring will be conducted at suitable weather condition to avoid overcast weather when the odonate is less active and less easy to be detected. All species observed along the green channels will be identified to species level and quantified. A comprehensive list of butterfly and odonate species recorded from monitoring will be prepared, with conservation and protection status indicated.

Mammal

Monitoring for mammals will include both direct observation and active searching of mammal occurrence (including potential roost, footprints and droppings) during other terrestrial fauna group monitoring. A comprehensive list of mammal species recorded from the monitoring will be prepared, with conservation and protection status indicated.

Firefly

Monthly monitoring on firefly will be conducted along the green channels by direct observation. The monitoring will be carried out under suitable weather conditions (i.e. without rain or strong wind), and shall commence immediately after sunset and last for approximately 1 hour. The monitoring will be conducted once per month from April to June, and from October to December. All fireflies observed, including adults and larvae, will be quantified and identified to species level as far as possible.

6.3.3 Freshwater Fauna

Bi-monthly day-time monitoring on the freshwater fauna will be conducted to review the fauna utilisation of the three green channels, with particular attention on re-colonisation by the freshwater crabs *Somanniathelphusa zanklon* and *Cryptopotamon anacoluthon*, while bi-monthly night-time monitoring (March to October) on freshwater fish will also be undertaken for nocturnal species. The monitoring will cover the area within 100m upstream and 100m downstream of each green channel, and these sections will be surveyed by bankside observation, hand netting method or deployment of fish traps and gill nets, where applicable to on-site condition. Permit under Cap. 170 will be obtained from AFCD for the use of nets to collect freshwater fauna in the green channels. Potential micro-habitats and hiding spaces that is favoured by the crabs such as rocks, organic debris, leaf litter, and riparian vegetation, etc., should be overturned or raked. The monitoring will be undertaken when the green channel is not in spate and the weather is not too cold. The species observed will be identified and the number will be recorded. A comprehensive list of species recorded from the monitoring will be prepared, with conservation and protection status indicated.

6.3.4 Water Quality and Water Current

Monthly *in situ* water quality monitoring of each green channel will be conducted. At least three monitoring points covering the upper, middle and downstream of each channel should be monitored. Three replicates of

in situ water quality samples will be measured at each monitoring point. Water quality parameters, including temperature, pH, salinity, turbidity, dissolved oxygen, will be measured by a handheld multi-parameter water quality meter. Water current can be measured at the three monitoring points (i.e. at the upper, middle and downstream) of each green channel by using handheld water velocity instruments (such as The Global Water Flow Probes). Both water quality and current measurements will be undertaken when the green channel is not in spate.

6.3.5 Site Inspection

Monthly site inspection will be carried out at the accessible channel sections or by bankside observation to review the general condition of the green channels (e.g. any obvious dieback of aquatic planting, presence of extensive colonisation by weedy vegetation, any contamination or pollution events and blockage of the channels).

Table 6. *Ecological Monitoring Programme for the three green channels.*

Monitoring Parameters	**Establishment Phase Ecological Monitoring**
Vegetation cover and health	• Bi-monthly (i.e. every two months) monitoring on the growth and extent of the planted aquatic vegetation; • Two 50m transects will be set at each of the upper, middle and downstream sections of each green channels; • The ecologist will walk along the transects to review the establishment, health condition and survival of the planted aquatic vegetation; and • Any excessive colonisation of unwanted/ weedy vegetation in particular channel sections will be recorded
Terrestrial fauna groups (birds, herpetofauna, butterfly, dragonfly, mammal, fireflies)	• Bi-monthly day-time monitoring (March to November for butterfly and dragonfly, March to October for herpetofauna) on the terrestrial fauna groups (except firefly) will be conducted to review the fauna utilisation of the green channels; night-time monitoring (March to October) on herpetofauna will also be undertaken; • Monthly monitoring on firefly will be carried out in April – June and October – December; • The ecologist will walk along the whole green channels to conduct the monitoring; and • The species and abundance encountered (and whether seen or heard) will be recorded, and any fauna species of conservation importance will be located and photographed where possible.
Freshwater fauna	• Bi-monthly day-time monitoring on the freshwater fauna will be conducted to review the fauna utilisation of the green channels; with particular attention on re-colonisation by the freshwater crabs *Somanniathelphusa zanklon* and *Cryptopotamon anacoluthon*; bi-monthly night-time monitoring (March to October) on freshwater fish will also be undertaken for nocturnal species; • The ecologist will cover the area within 100m upstream and 100m downstream of each green channel; and • The species and abundance encountered will be recorded, and any freshwater fauna species of conservation importance will be located and photographed where possible
Water Quality (Temperature, pH, salinity, turbidity, dissolved oxygen), and Water Current	• Monthly for *in situ* water quality and water current of each green channel; and • At least three monitoring points, with three replicates at each point, covering the upper, middle and downstream of each channel should be monitored
Site inspection	Monthly inspection along the green channels

6.3.6 Reporting

A Monthly Post-Construction Ecological Monitoring Report will be prepared by the qualified ecologist to summarise the findings from the site inspection, water quality, water current and ecological monitoring. A

Final Report will be prepared by the qualified ecologist to summarise the monitoring findings collected in the 3-year post-construction monitoring period. The reports will be submitted to DSD.

6.3.7 Proposed Contingency Plan

The Contingency Plan (**Table 7**) is proposed for the maintenance party to maintain suitable ecological functions of the green channels, with specific reference to adverse weather condition, during the 3-year post-construction ecological monitoring.

Table 7. *Proposed Contingency Plan*

Parameters	Action
Flooding/ storm damage/ damage by adverse weather	• Site inspection after adverse weather (equal or above Tropical Cyclone Warning Signals No. 8 or Red/ Black Rainstorm Signal) • Review damage (e.g. vegetation condition and channel structures) and propose any necessary mitigation works

The maintenance party will regularly review the channel structure (such as vertical embankment, animal escape ramp, railing, intermediate ground beam, etc.) throughout the 3-year post-construction ecological monitoring period. Should there be any significant damages found that can influence the engineering and the proposed ecological features of the green channel, the maintenance party will determine if any repair works could be taken. Such works are preferably to be carried out in dry season (i.e. to avoid the spawning season of freshwater crabs) as far as practical if they are required.

Should there are any contamination (such as silty runoff after adverse weather) or pollution events (such as illegal dumping of significant amount of construction waste, sewage discharge, spillage of oil or lubricant) that significantly impact the water quality and ecological function of the green channels, such incident will be report to DSD, who would review the problem and determine the need of reporting the contamination and pollution incident to EPD.

6.4 Implementation Schedule

The design and implementation of the proposed mitigation measures in this HCMP are recommended in **Appendix B**.

7 Conclusion

This HCMP has been prepared to fulfil the requirements under Clause 2.9 of the Environmental Permit No. EP-596/2021. This plan has detailed the approach and design features for restoring and reinstating the three green channels proposed at Sung Shan New Village, Lin Fa Tei and Ha Che. Five design elements, namely vertical-walled channels with artificial facing stones constructed by concrete formliner, provision of natural bedding, planting of aquatic vegetation along the channel bottom, compensatory trees, shrubs and groundcovers atop of the channel embankment, and installation of animal escape ramps, have been incorporated into these three green channels, so as to provide suitable instream and riparian zone habitats for the freshwater fauna.

The plan has also detailed the 3-year post-construction ecological monitoring programme to monitor the physical environment of the green channels, including water quality, the establishment of riparian vegetation and the biota assemblage that would recolonise the reinstated channel. A Contingency Plan is proposed for the maintenance party to maintain suitable ecological functions of the green channels, with specific reference to adverse weather condition, during the 3-year post-construction ecological monitoring.

8 References

Atkins China Ltd. (ACL) 2021. Drainage Improvement Works Near Four Villages in Yuen Long – Sung Shan New Village, Tai Wo, Lin Fa Tei and Ha Che. Environmental Impact Assessment Report.

Appendices

Appendix A

Appendix A Photographic examples of the proposed plant species for compensatory trees, shrubs, groundcovers and aquatic planting

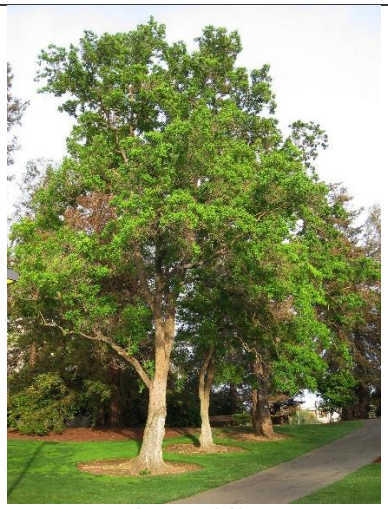
Compensatory Trees

Cleistocalyx operculatus
水翁

Elaeocarpus chinensis
中華杜英

Ilex rotunda var.*microcarpa*
小果鐵冬青

Pongamia pinnata
水黃皮



Sapium sebiferum
烏桕

Schefflera heptaphylla
鴨腳木

Sterculia lanceolata
假蘋婆

Proposed shrub and groundcover species for landscape planting

 *Artemisia indica* 五月艾	 *Polyspora axillaris* 大頭茶	 *Asparagus cochinchinensis* 天門冬
 *Psychotria asiatica* 山大刀	 *Ligustrum sinense* 山指甲	 *Liriope spicata* 山麥冬
 *Rhodomyrtus tomentosa* 崗稔	 *Gardenia jasminoides* 梔子	 *Rhapis excelsa* 棕竹
 *Melastoma sanguineum* 毛稔	 *Camellia oleifera* 油茶	 *Mussaenda pubescens* 玉葉金花

 *Rhaphiolepis indica* 石斑木	 *Eurya chinensis* 米碎花	 *Rhododendron simsii* 紅杜鵑
 *Dicranopteris pedata* 芒萁	 *Alternanthera sessilis* 蓮子草	 *Desmodium styracifolium* 金錢草
 *Maesa perlarius* 鯽魚膽	 *Ficus microcarpa* ‘Golden Leaves’ 黃金榕	 *Ixora chinensis* 龍船花
 *Ficus pumila* 薜荔		

Aquatic Planting

 *Bacopa monnieri* 假馬齒莧	 *Lobelia chinensis* 半邊蓮	 *Juncus effusus* 燈心草
 *Cyperus distans* 疏穗莎草	 *Acorus gramineus* 金錢蒲	

Appendices

Appendix B

Appendix B Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	Updated EM&A Manual Ref.	HCMP Ref.	Recommended Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement/ maintain the measures?	Location of measures	When to implement the measures
Construction Phase							
S.5.9.10 - S.5.9.22	S.5.2.10 - S.5.2.18	S.5.1	The three green channels have been designed to incorporate the ecological enhancement and enrichment measures recommended in Section 4.2 of this HCMP, as well as referencing the recommendations from *Drainage Services Department Practice Note No. 3/2021 Guidelines on Design for Revitalisation of River Channel*. Key design elements are provided at appropriate sections in these green channels.	Ecological – to compensate for the loss of wildlife habitat especially the two endemic freshwater crab species	Contractor(s)	Sung Shan New Village, Lin Fa Tei and Ha Che	During construction phase
S.5.9.12 & S.5.9.17	S.5.2.12 - S.5.2.14 & S.5.2.16	S.5.1.1	<u>*Vertical-walled channels with facing stones*</u> All three green channels will be constructed in rectangular, vertical-walled channels. Most of these vertical-walled embankment will be embedded with a layer of concrete formliner, with various random-sized artificial stones (a maximum thickness of about 75mm) formed by the mock-up panels. Self-climbing species *Ficus pumila* will be planted on top of the channel wall.	Ecological – to provide suitable instream habitat and riparian zone habitat for freshwater fauna and wildlife	Contractor(s)	Sung Shan New Village, Lin Fa Tei and Ha Che	During construction phase
S.5.9.12 - S.5.9.15	S.5.2.12 - S.5.2.14	S.5.1.2	<u>*Natural bedding*</u> The channel beds of all three green channels will be left paved with original bed substrates excavated from natural bedding materials to retain its natural condition. Depending on different channel sections, a maximum of 500mm thick of natural rock/ gravels/ stone/ sand/ soil excavated from the *in situ* watercourse section will be stored appropriately for later installation. A layer of geotextile will be placed between the bottom of the maximum 500mm thick natural bedding and the intermediate beams/ another layer of natural bedding materials. Natural stones/ pebbles/ rocks will be placed irregularly along the instream habitat.	Ecological – to provide suitable instream habitat and riparian zone habitat for freshwater fauna and wildlife	Contractor(s)	Sung Shan New Village, Lin Fa Tei and Ha Che	During construction phase

EIA Ref.	Updated EM&A Manual Ref.	HCMP Ref.	Recommended Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement/ maintain the measures?	Location of measures	When to implement the measures
			Intermediate ground beams or slabs will be built at regular interval (typically as 5m interval) along the green channels.				
S.5.9.16 & S.5.9.19	S.5.2.15 & S.5.2.18	S.5.1.3	*Aquatic planting along the channel bottom* A total of five native aquatic plants will be planted along the reinstated channel beds. They will be planted in four different patterns to create habitat heterogeneity.	Ecological – to provide suitable riparian zone habitat for freshwater fauna and wildlife	Contractor(s)	Sung Shan New Village, Lin Fa Tei and Ha Che	During construction phase
S.5.9.17 - S.5.9.19	S.5.2.16 - S.5.2.18	S.5.1.4	*Proposed compensatory tree planting and landscape plans* A total of 21 shrub and groundcover species are proposed in four planting mixes to be planted at appropriate planting beds constructed along the crest of the channel embankment. A total of 7 native compensatory tree species are proposed among the planting mixes in these three green channels.	Ecological – to provide suitable riparian zone habitat for freshwater fauna and wildlife	Contractor(s)	Sung Shan New Village, Lin Fa Tei and Ha Che	During construction phase
S.5.9.22	-	S.5.1.5	*Installation of animal escape ramp* Animal escape ramps will be built on the vertical-walled channel at the selected channel sections in the three green channels. Wire mesh should be installed at the bottom of the railings along the top of the channel embankment with the escape ramps, and to be extended 1m from the bottom of the escape ramp.	Ecological – to facilitate wildlife movement by allowing the wildlife, which are washed down from upstream, to escape from the green channel, while the installed wire mesh aims to prevent wildlife failing into the waterbody	Contractor(s)	Sung Shan New Village, Lin Fa Tei and Ha Che	During construction phase
Operation Phase							
S.5.11.6	S.5.3.2	S.6.2	During the establishment and maintenance period of the aquatic plant planted along the channel beds and other vegetation planted in the delineated planting areas on top of the channel beds, the following maintenance works should be conducted: • Conduct regular site inspection to inspect the health condition and growth of the planted vegetation; • Carry out regular watering on the compensatory trees, shrubs and groundcover (at least daily especially in the dry season (November to March);	Ecological – to review and maintained the planted aquatic plants, shrubs, groundcover and compensatory trees	Landscape contractor appointed by DSD	Sung Shan New Village, Lin Fa Tei and Ha Che	Upon completion of the staged reinstatement work

EIA Ref.	Updated EM&A Manual Ref.	HCMP Ref.	Recommended Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement/ maintain the measures?	Location of measures	When to implement the measures
			• Apply fertiliser to the compensatory trees, shrubs and groundcover (once in dry and once in wet seasons); • Remove invasive or exotic plants (such as climbers *Mikania micrantha* and tree *Leucaena leucocephala*) climbing or colonising on the planted terrestrial and aquatic plant groups; • Apply pest control measures, if necessary, at appropriate time during the maintenance period; • Arrange ad hoc inspection on the planted terrestrial and aquatic vegetation after any flooding, heavy rainfall (Red or Black Rainstorm Warnings), or lowering of typhoon Signal No. 8; and • Carry out replacement planting of any aquatic plants, compensatory trees, shrubs and groundcovers of poor or unsatisfactory health condition.				
S.5.11.6	S.5.3.2	S.6.2	Inspect and maintain the hardware of the green channels (e.g. the vertical-walled embankment and the facing stones, railing, fencing, animal escape ramps, cat ladder, etc.).	Ecological – to inspect and maintain the hardware of the green channels	Engineering consultant and/or Contractor(s)	Sung Shan New Village, Lin Fa Tei and Ha Che	Upon completion of the staged reinstatement works and before handing over to the corresponding DSD's district division

S.5.11.4 - 5.11.6	S.5.3.2	S.6.3.1-6.3.6	Conduct a 3-year post-construction ecological monitoring on the establishment of the riverine habitat in accordance with monitoring programme proposed in the approved HCMP once the staged reinstatement works of the work section completed.
			The monitoring will cover
			• Bi-monthly (i.e. every two months) monitoring on vegetation cover and health;
			• Bi-monthly day-time monitoring on terrestrial fauna groups including
			  ○ birds;
			  ○ herpetofauna (March to October; including day- and night-time monitoring);
				Ecological – to review the health and growth of the planted aquatic plants, and evaluate the use and colonisation of the created aquatic habitats for freshwater assemblages	ET	Sung Shan New Village, Lin Fa Tei and Ha Che	Upon completion of the staged reinstatement work

EIA Ref.	Updated EM&A Manual Ref.	HCMP Ref.	Recommended Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement/ maintain the measures?	Location of measures	When to implement the measures
			○ butterfly and dragonfly (March to November); and ○ mammal. • Monthly monitoring on firefly (April to June and October to December); • Bi-monthly day-time monitoring on freshwater fauna with particular attention on re-colonisation by freshwater crabs *Somanniathelphusa zanklon* and *Cryptopotamon anacoluthon*; • Bi-monthly night-time monitoring (March to October) on freshwater fish; • Monthly *in situ* water quality and water current of each green channel; and • Monthly site inspection along the green channels.				
S.5.11.4 – 5.11.6	S.5.3.2	S.6.3.7	Conduct site inspection of the green channels after adverse weather conditions (i.e. equal or above Tropical Cyclone Warning Signals No. 8 or Red/ Black Rainstorm Signal) during the 3-year post-construction ecological monitoring period.	Ecological – to maintain ecological functions of the green channels	DSD	Sung Shan New Village, Lin Fa Tei and Ha Che	After adverse weather condition

Figures

Figure 1

Project Area with Site Photos
1a – Sung Shan New Village
1b -1c – Lin Fa Tei
1d – Ha Che

821800 E
822100 E
831800 N
831400 N

VP01

VP02

VP03

VP04

VP05

VP06

VP07

LEGEND

VPXX — VIEW POINT

REV	AMENDMENT	BY	CHK.	APP.	DATE

PROJECT & ASSET OWNER :

渠務署
Drainage Services Department

DESIGN CONSULTANT :

aurecon
www.aurecongroup.com

PROJECT :

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

DRAWING TITLE :

SUNG SHAN NEW VILLAGE - PROJECT AREA WITH SITE PHOTOS

DRAWN THL	CHECKED IY	APPROVED IY	
SCALE 1:1000	CAD FILE [illegible]	DATE 29 Nov 2023	
FIRST ISSUED	DRAWING No. Figure 1a		REV.

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LEGEND

VPXX VIEW POINT

REV	AMENDMENT	BY	CHK.	APP.	DATE

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渠務署
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DESIGN CONSULTANT :

aurecon
www.aurecongroup.com

PROJECT :

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

DRAWING TITLE :

LIN FA TEI - PROJECT AREA WITH SITE PHOTOS 01

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SCALE 1:1250	CAD FILE [redacted]	DATE 29 Nov 2023	
FIRST ISSUED	DRAWING No. Figure 1b		REV.

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826600 E
826700 E
826800 E
826900 E
827000 E
827100 E
827200 E
832200 N
832000 N
831800 N
831600 N

KAM SHEUNG ROAD

LIN FA TEI

SHUI TSAN TIN

ANIMAL ESCAPE RAMP

CAT LADDER

ANIMAL ESCAPE RAMPS

VP08

VP09

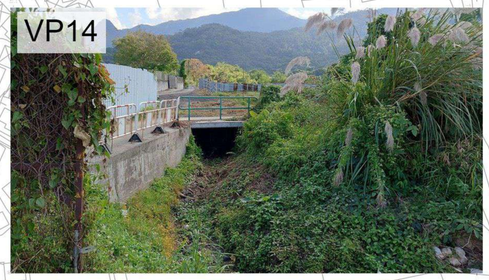
VP10

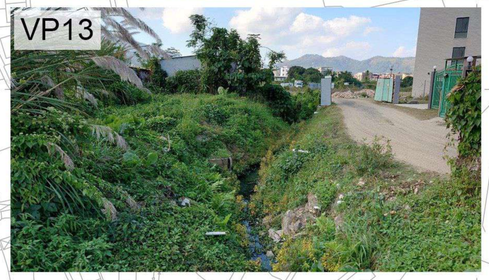
VP11

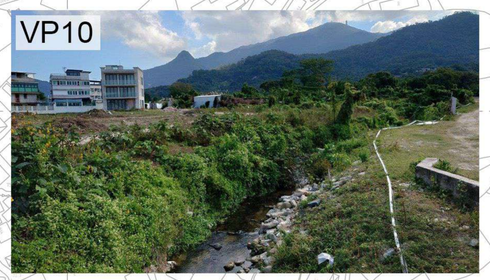
VP12

VP13

VP14







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LEGEND

VPXX — VIEW POINT

REV	AMENDMENT	BY	CHK.	APP.	DATE

PROJECT & ASSET OWNER :

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DESIGN CONSULTANT :

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DRAINAGE IMPROVEMENT
WORKS AT YUEN LONG -
STAGE 2

DRAWING TITLE :

LIN FA TEI - PROJECT AREA WITH SITE PHOTOS 02

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827700 E

834800 N

834600 N

834400 N

HA CHE

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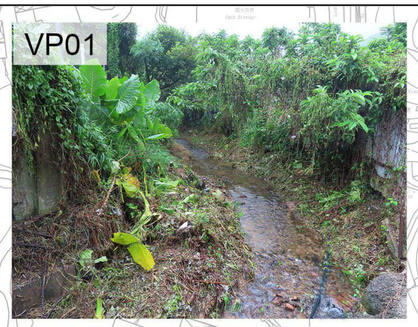
VP01



VP03

VP08

VP06

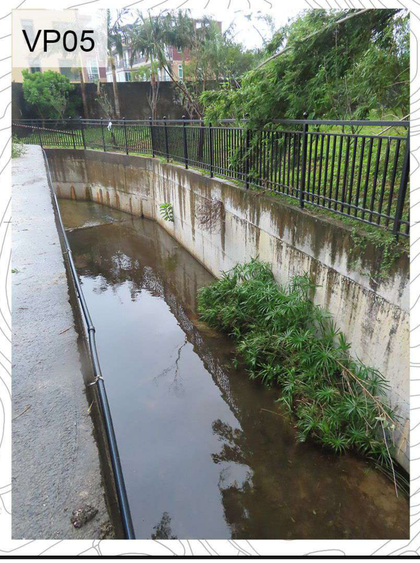
VP09

VP07

VP02

VP04

VP05



LEGEND

VPXX — VIEW POINT

REV	AMENDMENT	BY	CHK.	APP.	DATE

PROJECT & ASSET OWNER :

渠務署
Drainage Services Department

DESIGN CONSULTANT :

aurecon
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PROJECT :

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

DRAWING TITLE :

HA CHE -
PROJECT AREA
WITH SITE PHOTOS

DRAWN THL	CHECKED IY	APPROVED IY
SCALE 1:1250	CAD FILE [illegible]	DATE 29 Nov 2023
FIRST ISSUED	DRAWING No. Figure 1d	REV.

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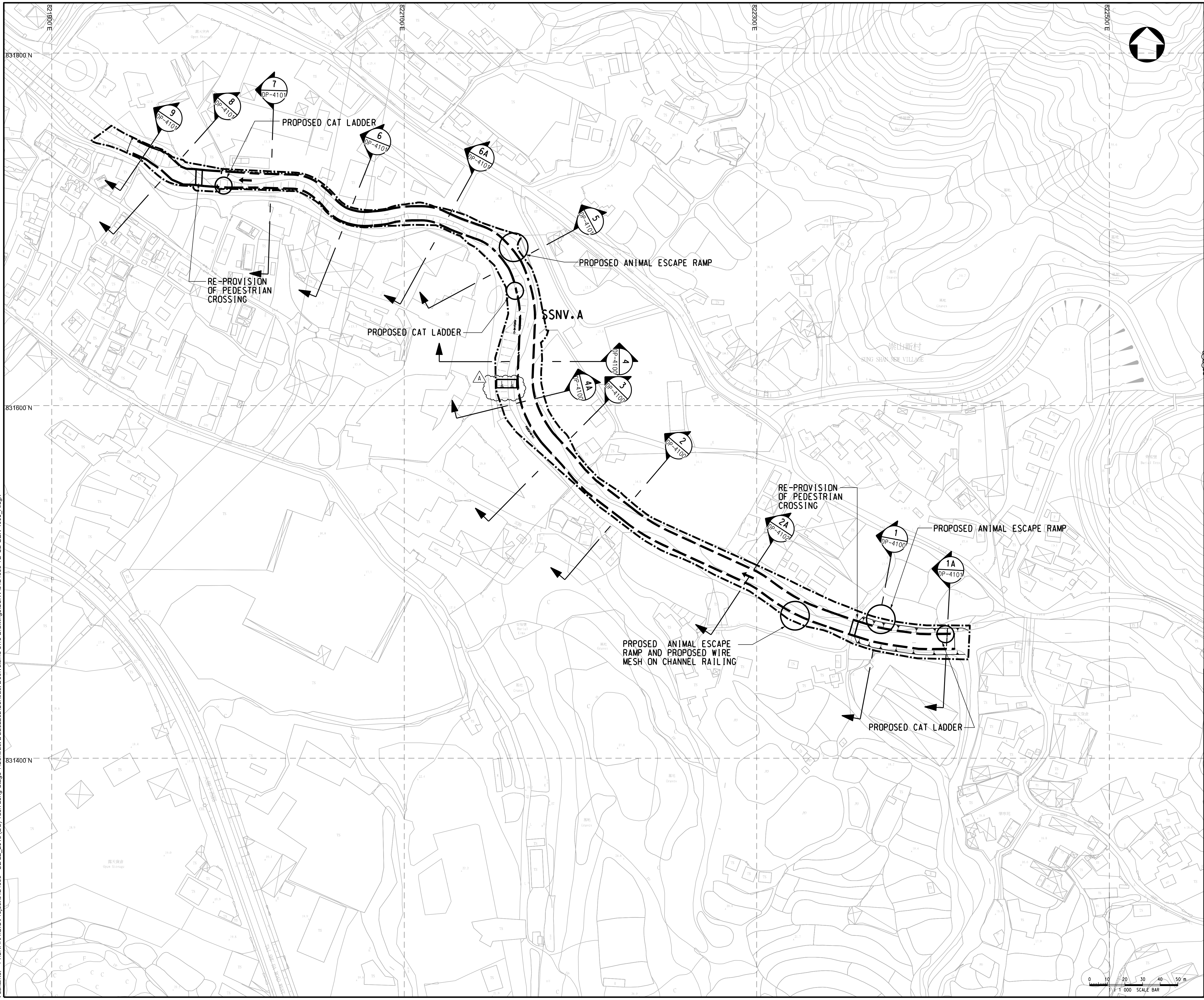
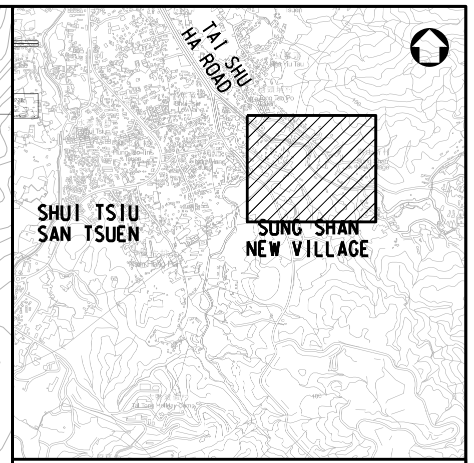
Figures

Figure 2

Proposed Alignments with Proposed Works and Green Channel Design
2a – Sung Shan New Village (Drawing Nos.: 5124336-TD-C2-GEN-4000 to 4002)
2b – Lin Fa Tei (Drawing Nos.: 5124336-TD-C2-GEN-6001 to 6005)
2c – Ha Che (Drawing Nos.: 5124336-TD-C2-GEN-8001 to 8004)





KEY PLAN

N.T.S.

NOTES:

1. FOR KEY PLAN, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0000.
2. FOR GENERAL NOTES, REFER TO DRAWING NOS. 5124336-TD-C2-GEN-0001 & 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. FOR PROPOSED ALIGNMENT, REFER TO DRAWING NOS. 5124336-TD-C2-GEN-4001 & 4002.
5. FOR DETAILS OF THE PROPOSED ANIMAL ESCAPE RAMP AND WIRE MESH ON CHANNEL, REFER TO DRAWING NO. 5124336-TD-C2-GEN-9006.

A

Rev.	Date	Description	By	Chk'd	App'd
A	OCT 2022	TENDER ADDENDUM NO.3	SHC	WCTT	KP
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Drawing Status: CONTRACT

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

Drawing Title

SUNG SHAN NEW VILLAGE -
GENERAL LAYOUT PLAN

Scale	Designed	Drawn	Checked	Authorised
1 : 1000	SHC	AC	WCTT	KP
Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-GEN-4000

Revision: A

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User name: LEUN3329 Date:07/02/2023 Time: 17:15:16

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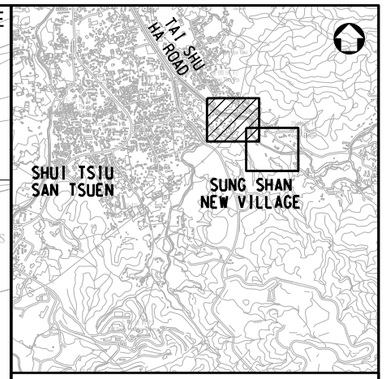

KEY PLAN
N.T.S.

NOTES:

1. FOR GENERAL LAYOUT PLAN, REFER TO DRAWING NO. 5124336-TD-C2-GEN-4000.
2. FOR GENERAL NOTES, REFER TO DRAWING NOS. 5124336-TD-C2-GEN-0001 & 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. EXACT LENGTH OF SURFACE CHANNEL SHALL BE MEASURED ON SITE AND AGREE WITH THE *SUPERVISOR*.
5. FOR LONGITUDINAL PROFILE REFER TO DRAWING NO. 5124336-TD-C2-DP-4000 AND 4001.
6. THE *CONTRACTOR* SHALL CARRY OUT SITE SURVEYS AND IDENTIFY THE EXISTING DRAIN PIPES, CHANNELS DISCHARGING TO THE EXISTING CHANNEL AND CONNECTION TO THE PROPOSED CHANNEL SHALL BE PROVIDED USING THE SAME PIPE/CHANNEL MATERIAL FOR THE AFFECTED EXISTING DRAIN PIPES AND CHANNELS.
7. THE CONTRACTOR SHALL PROVIDE WEEP HOLES TO THE PROPOSED CHANNEL WALLS AS FOLLOWS: 75mm DIA. uPVC PIPE WITH VERTICAL SPACING 1000mm c/c. AND HORIZONTAL SPACING 2000mm c/c. THE FIRST ROW OF WEEP HOLES SHALL BE 1m ABOVE TOP OF EDGE BEAM OR BASE SLAB LEVEL . THE FALL OF WEEP HOLES SHALL BE 1 IN 50 FROM CHANNEL TOWARD SOIL/BACKFILL DIRECTION. TOP LAYER OF THE WEEP HOLES SHALL BE 500mm BELOW THE TOP LEVEL OF THE PROPOSED WALL. GEOTEXTILE DRAINAGE FILTER SHALL BE PROVIDED AT THE END OF EACH WEEPHOLE.
8. ALL COVERED U-CHANNEL AND PIPES SHALL HAVE A MIN. FALL OF 1:150 UNLESS STATED OTHERWISE.
9. PROPOSED DRAIN PIPE INLETS WHICH REQUIRE FLAP VALVE AT THE PROPOSED CHANNEL ARE INDICATED ON DRAWING.
10. FOR THE PROPOSED CHANNEL BEDDING DETAILS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-9007.
11. SETTING OUT OF EXISTING TEMPORARY STRUCTURE IS FOR INDICATIVE ONLY. THE *CONTRACTOR* SHALL VERIFY THE EXACT LOCATION ON SITE.

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

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

Drawing Title:
SUNG SHAN NEW VILLAGE -
PROPOSED ALIGNMENT
(SHEET 1 OF 2)

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: 5124336-TD-C2-GEN-4001
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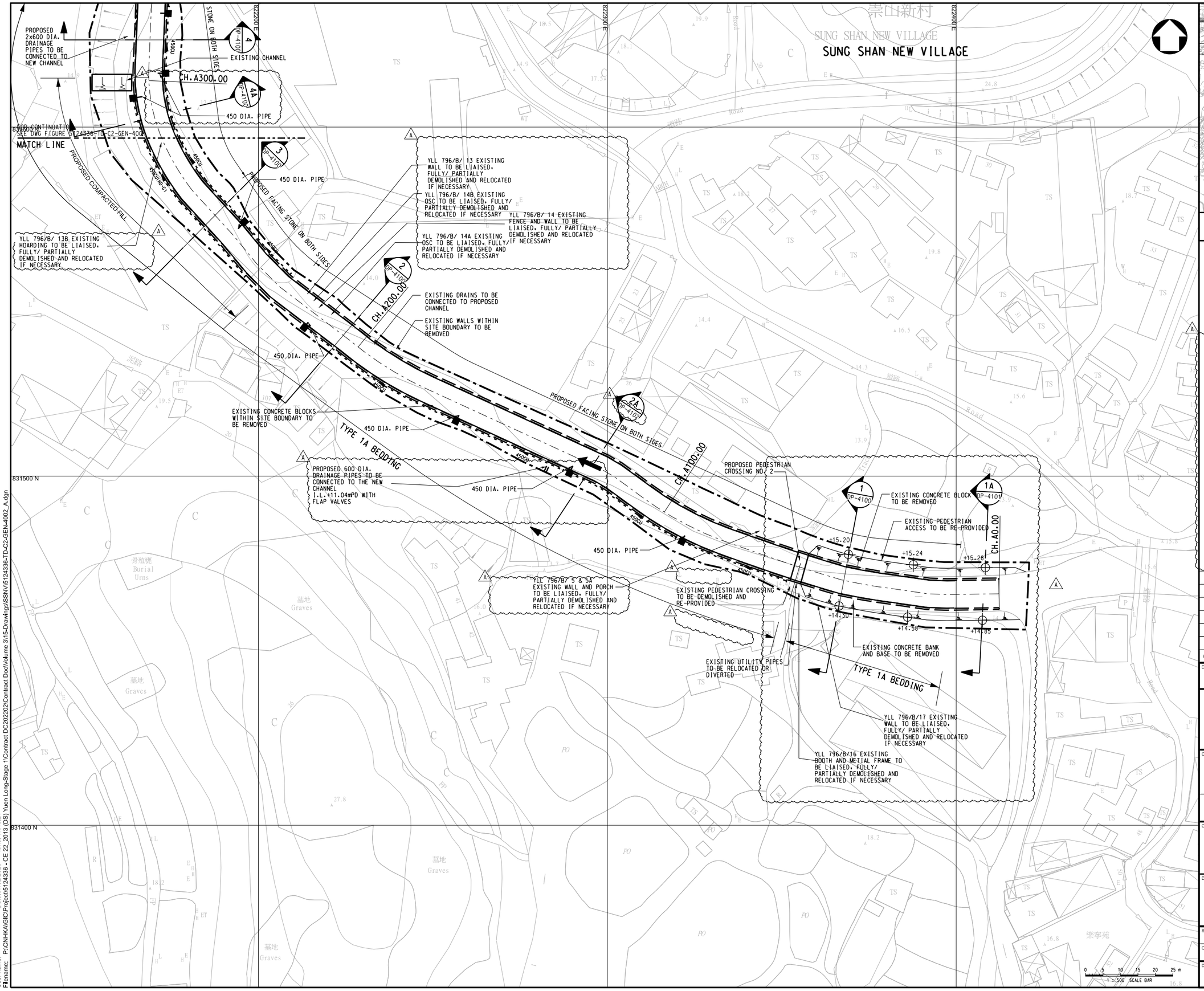

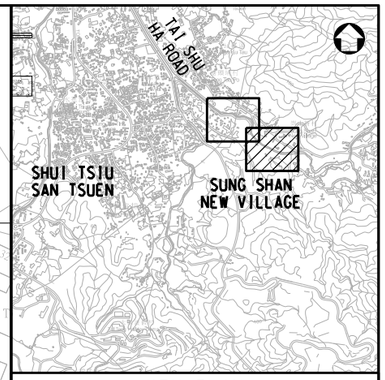

KEY PLAN
N.T.S.

NOTES:

1. FOR GENERAL LAYOUT PLAN, REFER TO DRAWING NO. 5124336-TD-C2-GEN-4000.
2. FOR GENERAL NOTES, REFER TO DRAWING NOS. 5124336-TD-C2-GEN-0001 & 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. EXACT LENGTH OF SURFACE CHANNEL SHALL BE MEASURED ON SITE AND AGREE WITH THE *SUPERVISOR*.
5. FOR LONGITUDINAL PROFILE REFER TO DRAWING NO. 5124336-TD-C2-DP-4000 AND 4001.
6. THE *CONTRACTOR* SHALL CARRY OUT SITE SURVEYS AND IDENTIFY THE EXISTING DRAIN PIPES AND CHANNELS DISCHARGING TO THE EXISTING CHANNEL. CONNECTION TO THE PROPOSED CHANNEL SHALL BE PROVIDED USING THE SAME PIPE/CHANNEL MATERIAL FOR THE AFFECTED THE EXISTING DRAIN PIPES AND CHANNELS.
7. THE *CONTRACTOR* SHALL PROVIDE WEEP HOLES TO THE PROPOSED CHANNEL WALLS AS FOLLOWS: 75mm DIA. uPVC PIPE WITH VERTICAL SPACING 1000mm c/c AND HORIZONTAL SPACING 2000mm c/c. THE FIRST ROW OF WEEP HOLES SHALL BE 1m ABOVE TOP OF EDGE BEAM OR BASE SLAB LEVEL . THE FALL OF WEEP HOLES SHALL BE 1 IN 50 FROM CHANNEL TOWARD SOIL/BACKFILL DIRECTION. TOP LAYER OF THE WEEP HOLES SHALL BE 500mm BELOW THE TOP LEVEL OF THE PROPOSED WALL. GEOTEXTILE DRAINAGE FILTER SHALL BE PROVIDED AT THE END OF EACH WEEPHOLE.
8. ALL COVERED U-CHANNEL AND PIPES SHALL HAVE A MIN. FALL OF 1:150 UNLESS STATED OTHERWISE.
9. PROPOSED DRAIN PIPE INLETS WHICH REQUIRE FLAP VALVE AT THE PROPOSED CHANNEL ARE INDICATED ON DRAWING.
10. FOR THE PROPOSED 450 U-CHANNEL PRECAST CONCRETE CELL REFER TO SECTIONAL DRAWINGS.
11. FOR THE PROPOSED CHANNEL BEEDING, REFER TO DRAWING NO. 5124336-TD-C2-GEN-9007.
12. SETTING OUT OF EXISTING TEMPORARY STRUCTURE IS FOR INDICAVTIVE ONLY. *THE CONTRACTOR* SHALL VERIFY THE EXACT LOCATION ON SITE.

Rev.	Date	Description	By	Chk'd	App'd
A	OCT 2022	TENDER ADDENDUM NO.3	SHC	WCTT	KP
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Project Management Division

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

Drawing Title
SUNG SHAN NEW VILLAGE -
PROPOSED ALIGNMENT
(SHEET 2 OF 2)

Scale	Designed	Drawn	Checked	Authorised
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Drawing Number: 5124336-TD-C2-GEN-4002
Revision: A

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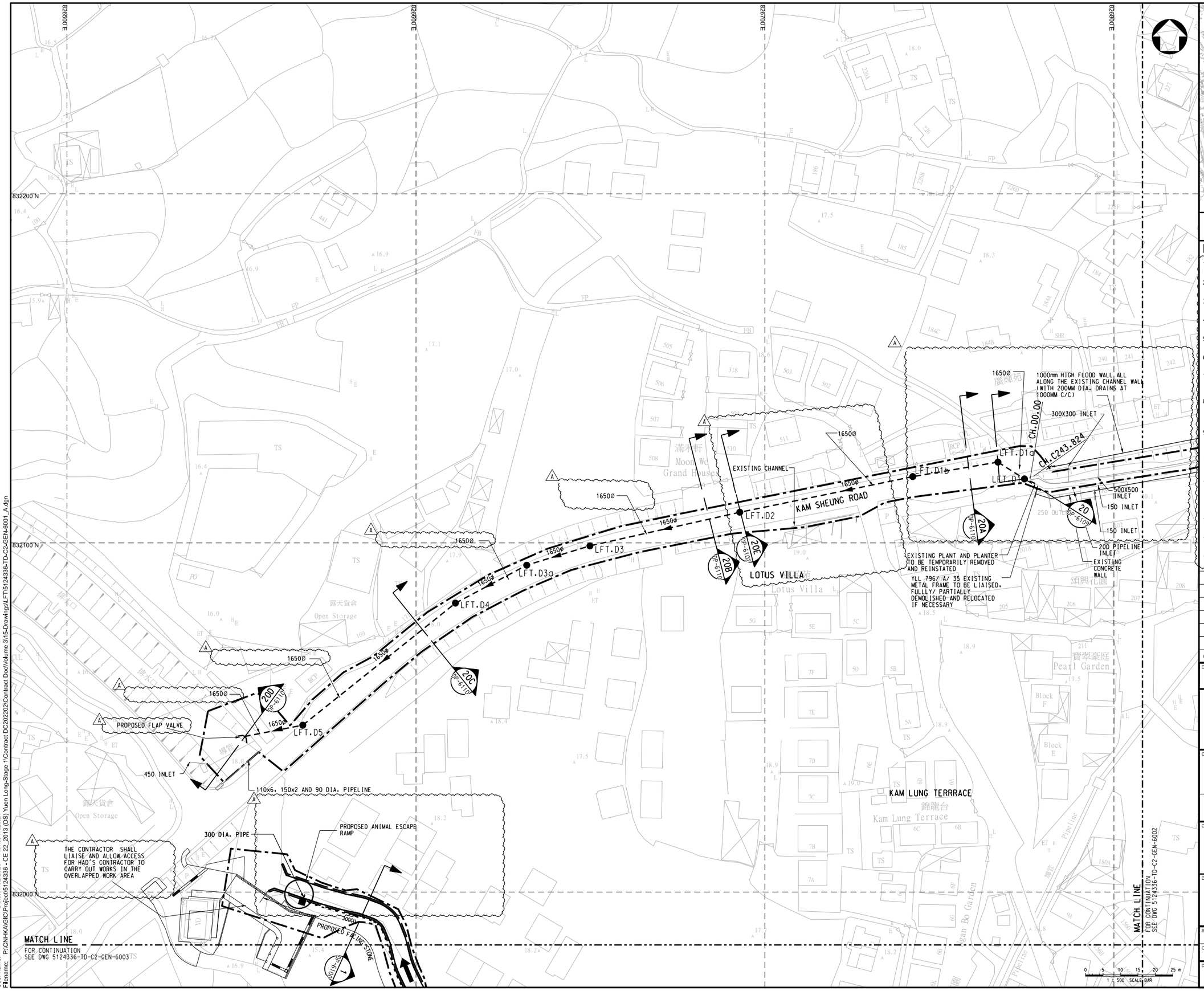

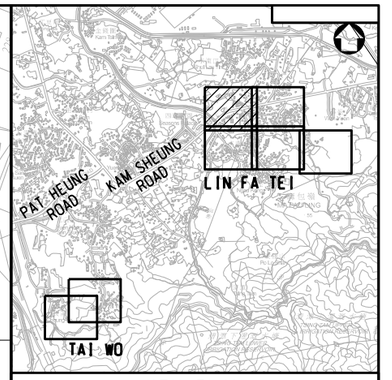

KEY PLAN
N.T.S.

NOTES:

1. FOR GENERAL NOTES, REFER TO DRAWING NOS. 5124336-TD-C2-GEN-0001 & 0002.
2. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
3. EXACT LENGTH OF SURFACE CHANNEL SHALL BE MEASURED ON SITE AND AGREE WITH THE *SUPERVISOR*.
4. FOR LONGITUDINAL PROFILE, REFER TO DRAWING NO 5124336-TD-C2-DP-6000 TO 6002.
5. FOR NOTES ON CONNECTION TO PROPOSED CHANNEL, SEE DRAWING NO. 5124336-TD-C2-GEN-0001.
6. FOR NOTES ON WEEPHOLES, SEE DRAWING NO. 5124336-TD-C2-GEN-0001.
7. SETTING OUT OF EXISTING TEMPORARY STRUCTURE IS FOR INDICATIVE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION ON SITE.
8. THE METHODS OF CONSTRUCTION SHOWN ON DRAWING ARE FOR REFERENCE ONLY. THE *CONTRACTOR* MAY PROPOSE OTHER CONSTRUCTION METHOD FOR ACCEPTANCE BY THE *SUPERVISOR* IF NECESSARY.
9. FOR CONSTRUCTION OF DRAINAGE PIPE IN KAM SHEUNG ROAD, THE CONTRACTOR SHALL MODIFY THE EXISTING CARRIAGEWAY, FOOTPATHS, KERBLINES, SERVICE COVERS, ETC AS NECESSARY FOR THE TEMPORARY TRAFFIC ARRANGEMENT (TTA). THE *CONTRACTOR* SHALL OBTAIN THE APPROVAL FROM TD, HyD, SUPERVISOR AND RELEVANT PARTIES FOR THE TTA PRIOR TO CONSTRUCTION.
10. THE *CONTRACTOR* SHALL CARRY OUT SITE SURVEYS AND IDENTIFY THE EXISTING DRAIN PIPES, CHANNELS DISCHARGING TO THE EXISTING CHANNEL AND CONNECTION TO THE PROPOSED CHANNEL SHALL BE PROVIDED USING THE SAME PIPE/CHANNEL MATERIAL FOR THE AFFECTED EXISTING DRAIN PIPES AND CHANNELS.
11. ALL COVERED U-CHANNEL AND PIPES SHALL HAVE A MIN. FALL OF 1:150 UNLESS STATED OTHERWISE.
12. FOR THE PROPOSED CHANNEL BEDDING DETAILS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-9007.
13. PROPOSED DRAIN PIPE INLETS WHICH REQUIRE FLAP VALVE AT THE PROPOSED CHANNEL ARE INDICATED ON DRAWING.

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

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Suitability: =

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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
LIN FA TEI -
PROPOSED ALIGNMENT
(SHEET 1 OF 5)

Scale	Designed	Drawn	Checked	Authorised
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Revision: A

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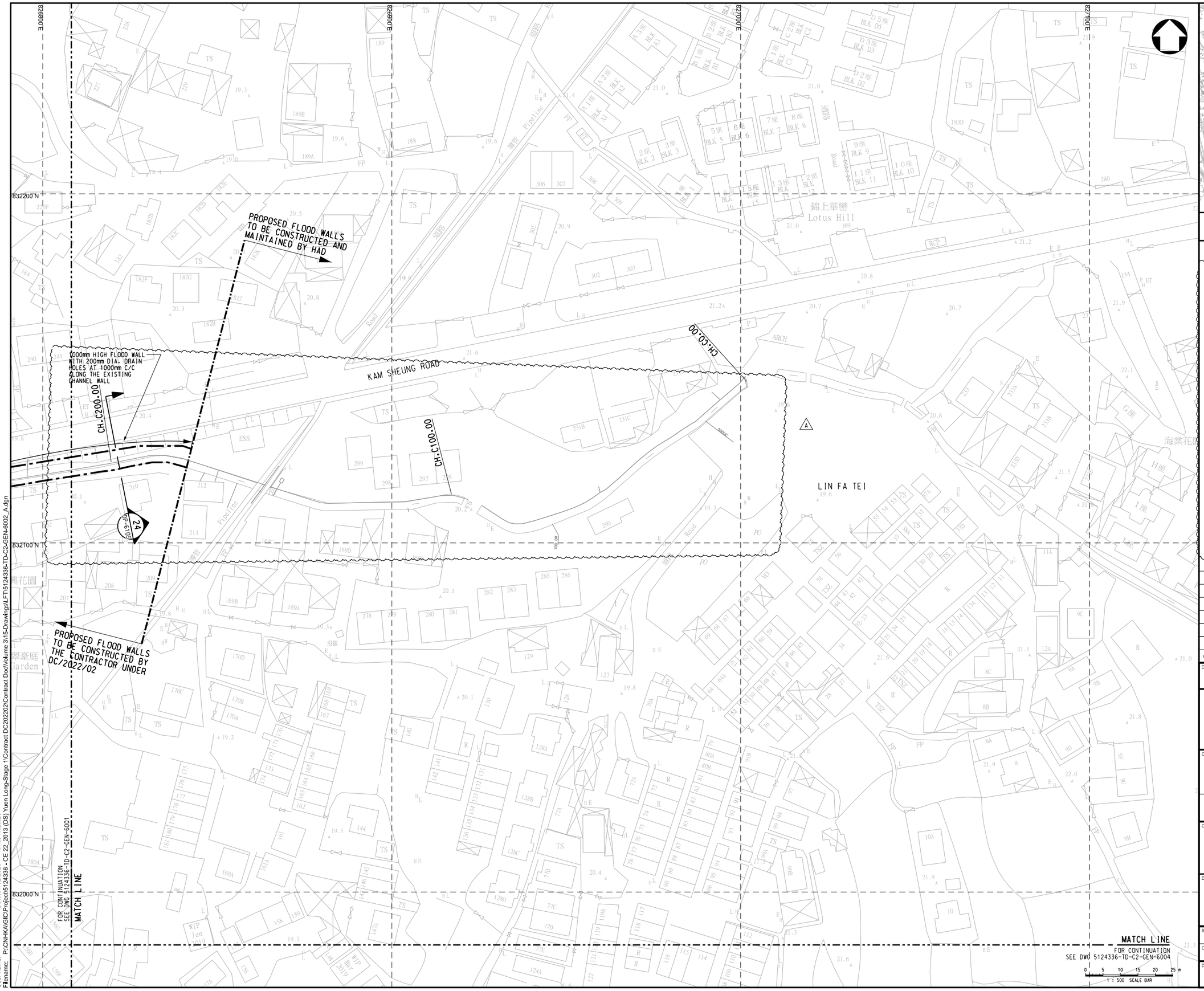

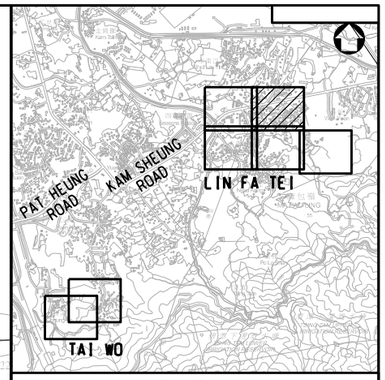

KEY PLAN
N.T.S.

NOTES:

1. FOR GENERAL NOTES, REFER TO DRAWING NOS. 5124336-TD-C2-GEN-0001 & 0002.
2. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
3. EXACT LENGTH OF SURFACE CHANNEL SHALL BE MEASURED ON SITE AND AGREE WITH THE *SUPERVISOR*.
4. FOR LONGITUDINAL PROFILE, REFET TO DRAWING NO 5124336-TD-C2-DP-6000 TO 6002.
5. FOR NOTES ON CONNECTION TO PROPOSED CHANNEL, SEE DRAWING NO. 5124336-TD-C2-GEN-0001.
6. FOR NOTES ON WEEPHOLES, SEE DRAWING NO. 5124336-TD-C2-GEN-0001.
7. SETTING OUT OF EXISTING TEMPORARY STRUCTURE IS FOR INDICATIVE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION ON SITE.
8. THE METHODS OF CONSTRUCTION SHOWN ON DRAWING ARE FOR REFERENCE ONLY. THE CONTRACTOR MAY PROPOSED OTHER CONSTRUCTION METHOD FOR ACCEPTANCE BY THE SUPERVISOR IF NECESSARY.
9. THE CONTRACTOR SHALL CARRY OUT SITE SURVEYS AND IDENTIFY THE EXISTING DRAIN PIPES, CHANNELS DISCHARGING TO THE EXISTING CHANNEL AND CONNECTION TO THE PROPOSED CHANNEL SHALL BE PROVIDED USING THE SAME PIPE/CHANNEL MATERIAL FOR THE AFFECTED EXISTING DRAIN PIPES AND CHANNELS.
10. ALL COVERED U-CHANNEL AND PIPES SHALL HAVE A MIN. FALL OF 1:150 UNLESS STATED OTHERWISE.
11. FOR THE PROPOSED CHANNEL BEDDING DETAILS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-9007.
12. PROPOSED DRAIN PIPE INLETS WHICH REQUIRE FLAP VALVE AT THE PROPOSED CHANNEL ARE INDICATED ON DRAWING.

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
Suitability: -

ATKINS
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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:
LIN FA TEI -
PROPOSED ALIGNMENT
(SHEET 2 OF 5)

Scale	Designed	Drawn	Checked	Authorised
1 : 500	SHC	AC	WCTT	KP
Original Size: A1	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022

Drawing Number: 5124336-TD-C2-GEN-6002
Revision: A

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User name: LEUN3329 Date:07/02/2023 Time:17:25:23
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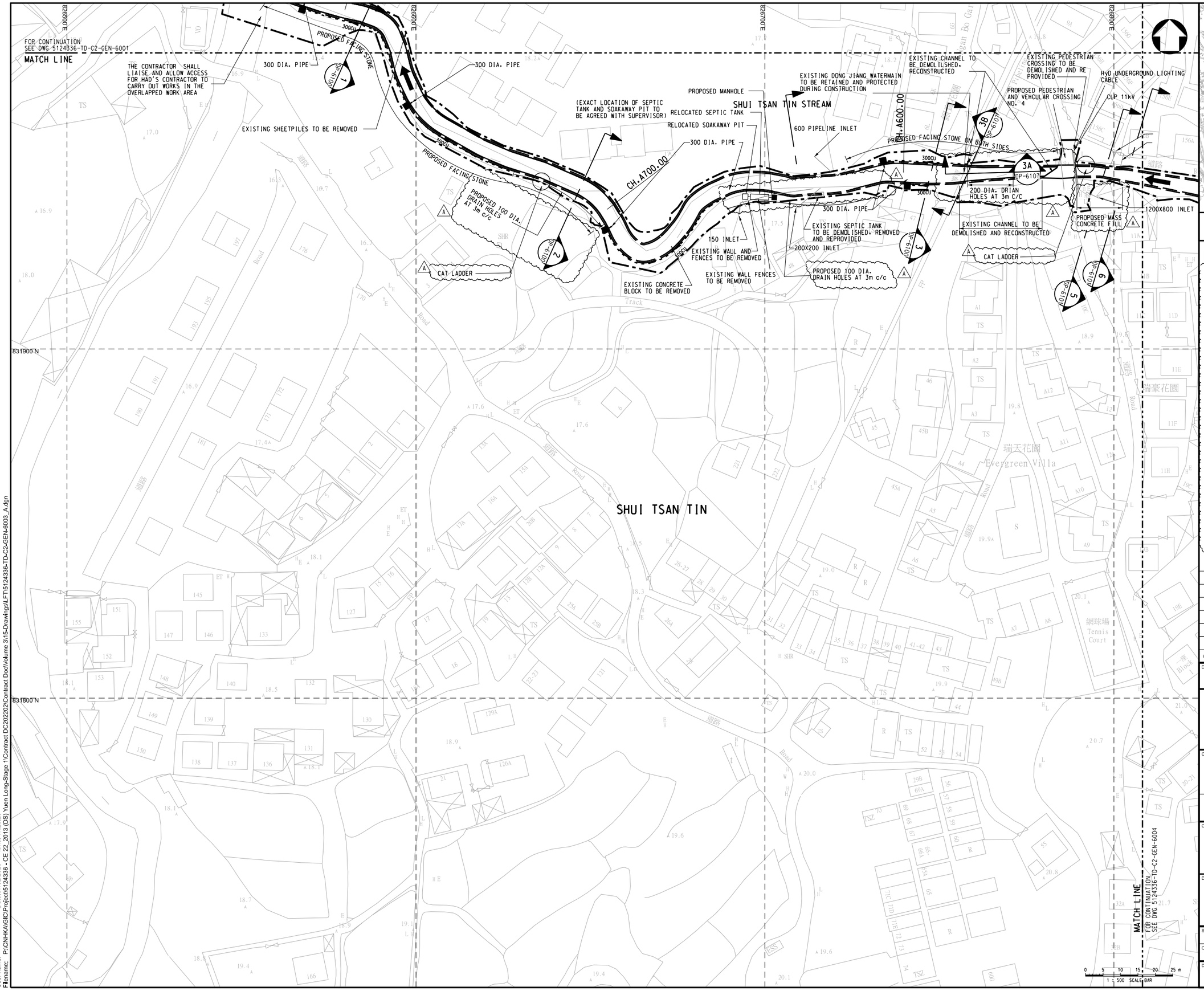

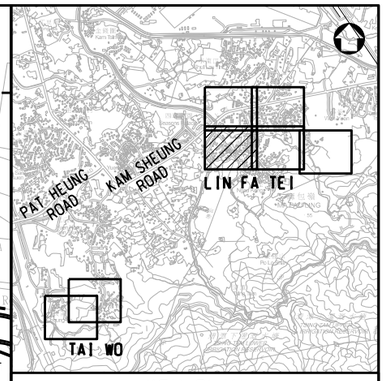

KEY PLAN
N.T.S.

NOTES:

1. FOR GENERAL NOTES, REFER TO DRAWING NOS. 5124336-TD-C2-GEN-0001 & 0002.
2. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
3. EXACT LENGTH OF SURFACE CHANNEL SHALL BE MEASURED ON SITE AND AGREE WITH THE SUPERVISOR.
4. FOR LONGITUDINAL PROFILE, REFET TO DRAWING NO 5124336-TD-C2-DP-6000 TO 6002.
5. FOR NOTES ON CONNECTION TO PROPOSED CHANNEL, SEE DRAWING NO. 5124336-TD-C2-GEN-0001.
6. FOR NOTES ON WEEPHOLES, SEE DRAWING NO. 5124336-TD-C2-GEN-0001.
7. SETTING OUT OF EXISTING TEMPORARY STRUCTURE IS FOR INDICATIVE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION ON SITE.
8. THE METHODS OF CONSTRUCTION SHOWN ON DRAWING ARE FOR REFERENCE ONLY. THE *CONTRACTOR* MAY PROPOSE OTHER CONSTRUCTION METHOD FOR ACCEPTANCE BY THE SUPERVISOR IF NECESSARY.
9. THE C*ONTRACTOR* SHALL CARRY OUT SITE SURVEYS AND IDENTIFY THE EXISTING DRAIN PIPES, CHANNELS DISCHARGING TO THE EXISTING CHANNEL AND CONNECTION TO THE PROPOSED CHANNEL SHALL BE PROVIDED USING THE SAME PIPE/CHANNEL MATERIAL FOR THE AFFECTED EXISTING DRAIN PIPES AND CHANNELS.
10. ALL COVERED U-CHANNEL AND PIPES SHALL HAVE A MIN. FALL OF 1:150 UNLESS STATED OTHERWISE.
11. FOR THE PROPOSED CHANNEL BEDDING DETAILS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-9007.
12. PROPOSED DRAIN PIPE INLETS WHICH REQUIRE FLAP VALVE AT THE PROPOSED CHANNEL ARE INDICATED ON DRAWING.

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
Suitability: -

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
LIN FA TEI -
PROPOSED ALIGNMENT
(SHEET 3 OF 5)

Scale	Designed	Drawn	Checked	Authorised
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Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-GEN-6003
Revision: A

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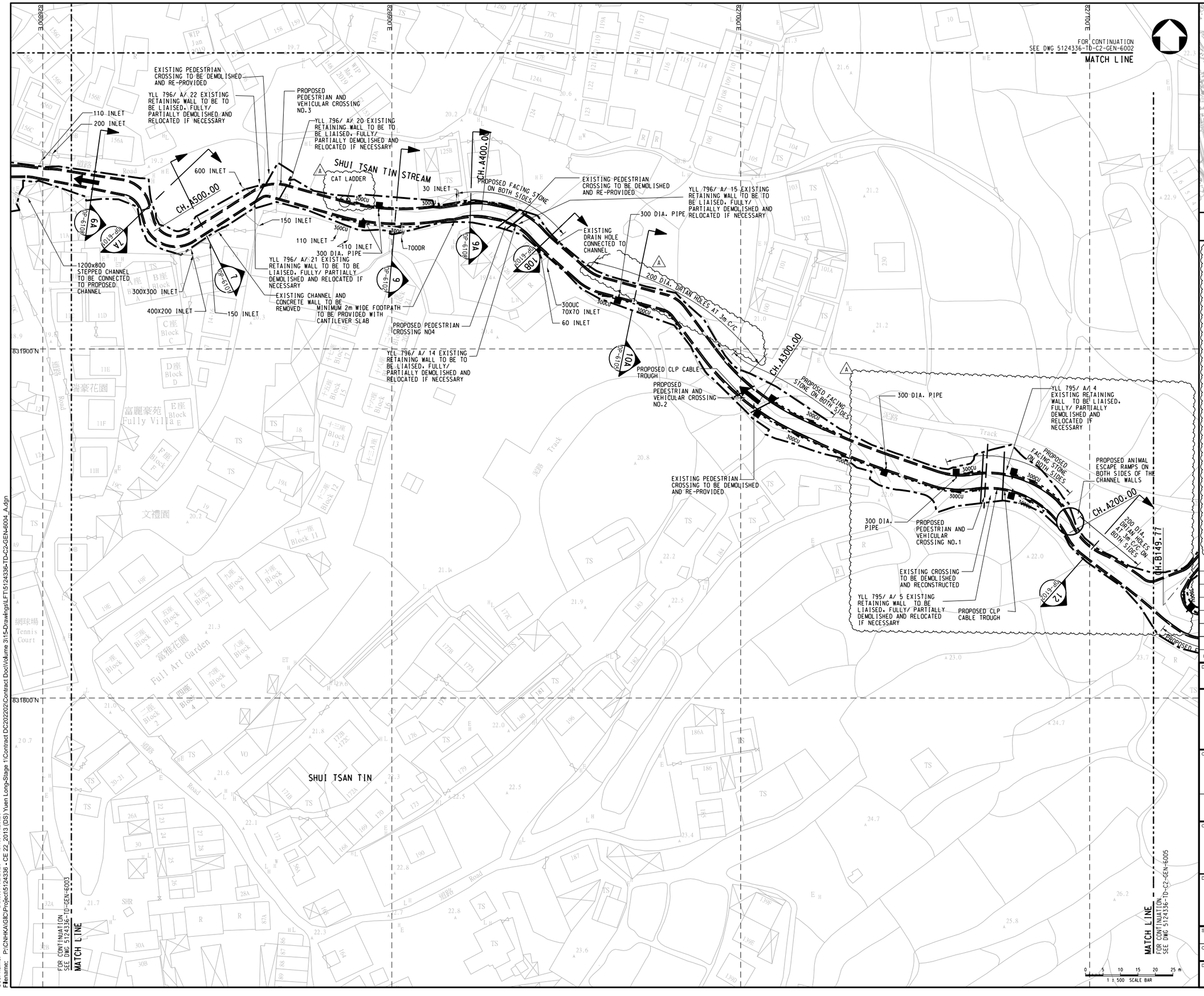

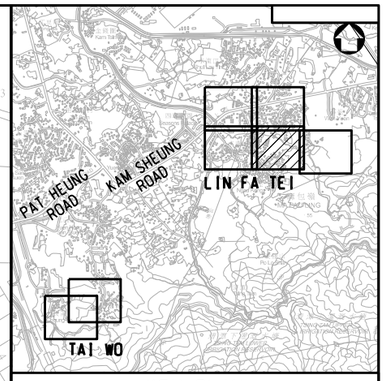

KEY PLAN
N.T.S.

NOTES:

1. FOR GENERAL NOTES, REFER TO DRAWING NOS. 5124336-TD-C2-GEN-0001 & 0002.
2. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
3. .EXACT LENGTH OF SURFACE CHANNEL SHALL BE MEASURED ON SITE AND AGREE WITH THE SUPERVISOR.
4. FOR LONGITUDINAL PROFILE, REFET TO DRAWING NO 5124336-TD-C2-DP-6000 TO 6002.
5. FOR NOTES ON CONNECTION TO PROPOSED CHANNEL, SEE DRAWING NO. 5124336-TD-C2-GEN-0001.
6. FOR NOTES ON WEEPHOLES, SEE DRAWING NO. 5124336-TD-C2-GEN-0001.
7. SETTING OUT OF EXISTING TEMPORARY STRUCTURE IS FOR INDICATIVE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION ON SITE.
8. THE METHODS OF CONSTRUCTION SHOWN ON DRAWING ARE FOR REFERENCE ONLY. THE CONTRACTOR MAY PROPOSED OTHER CONSTRUCTION METHOD FOR ACCEPTANCE BY THE SUPERVISOR IF NECESSARY.
9. THE CONTRACTOR SHALL CARRY OUT SITE SURVEYS AND IDENTIFY THE EXISTING DRAIN PIPES, CHANNELS DISCHARGING TO THE EXISTING CHANNEL AND CONNECTION TO THE PROPOSED CHANNEL SHALL BE PROVIDED USING THE SAME PIPE/CHANNEL MATERIAL FOR THE AFFECTED EXISTING DRAIN PIPES AND CHANNELS.
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11. FOR THE PROPOSED CHANNEL BEDDING DETAILS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-9007.
12. PROPOSED DRAIN PIPE INLETS WHICH REQUIRE FLAP VALVE AT THE PROPOSED CHANNEL ARE INDICATED ON DRAWING.

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
Suitability: -

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Drainage Services Department
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Project Management Division

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

Drawing Title
LIN FA TEI -
PROPOSED ALIGNMENT
(SHEET 4 OF 5)

Scale	Designed	Drawn	Checked	Authorised
1 : 500	SHC	AC	WCTT	KP
Original Size: A1	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022

Drawing Number: 5124336-TD-C2-GEN-6004
Revision: A

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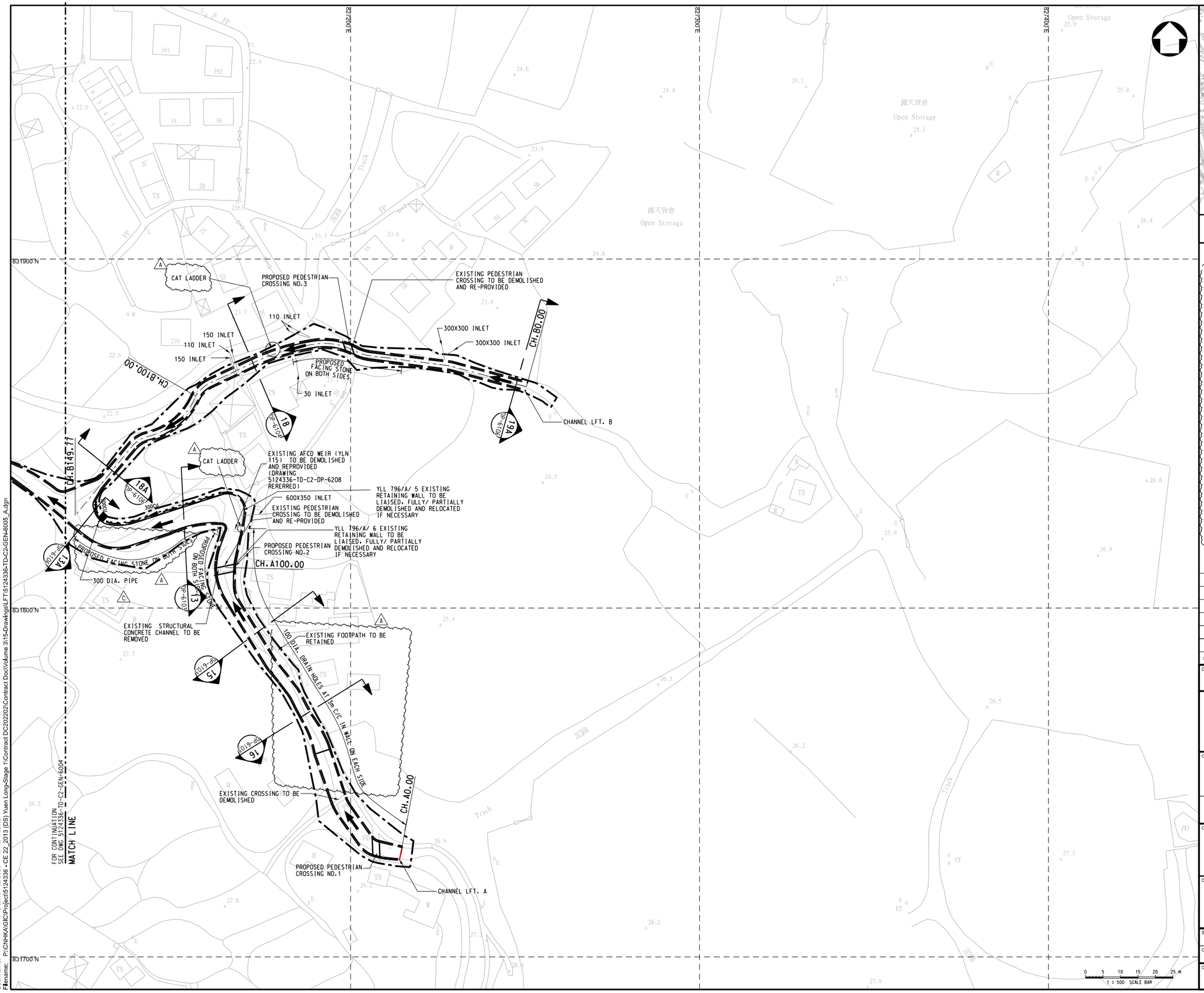

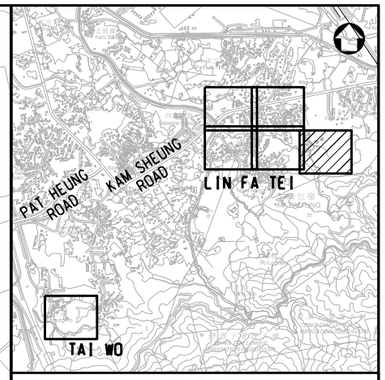

KEY PLAN
N.T.S.

NOTES:

1. FOR GENERAL NOTES, REFER TO DRAWING NOS. 5124336-TD-C2-GEN-0001 & 0002.
2. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
3. EXACT LENGTH OF SURFACE CHANNEL SHALL BE MEASURED ON SITE AND AGREE WITH THE SUPERVISOR.
4. FOR LONGITUDINAL PROFILE, REFET TO DRAWING NO 5124336-TD-C2-DP-6000 TO 6002.
5. FOR NOTES ON CONNECTION TO PROPOSED CHANNEL, SEE DRAWING NO. 5124336-TD-C2-GEN-0001.
6. FOR NOTES ON WEEPHOLES, SEE DRAWING NO. 5124336-TD-C2-GEN-0001.
7. SETTING OUT OF EXISTING TEMPORARY STRUCTURE IS FOR INDICATIVE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION ON SITE.
8. THE METHODS OF CONSTRUCTION SHOWN ON DRAWING ARE FOR REFERENCE ONLY. THE CONTRACTOR MAY PROPOSED OTHER CONSTRUCTION METHOD FOR ACCEPTANCE BY THE SUPERVISOR IF NECESSARY.
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11. FOR THE PROPOSED CHANNEL BEDDING DETAILS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-9007.
12. PROPOSED DRAIN PIPE INLETS WHICH REQUIRE FLAP VALVE AT THE PROPOSED CHANNEL ARE INDICATED ON DRAWING.

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

Suitability: -

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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:
LIN FA TEI -
PROPOSED ALIGNMENT
(SHEET 5 OF 5)

Scale	Designed	Drawn	Checked	Authorised
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Original Size	Date	Date	Date	Date
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Drawing Number: 5124336-TD-C2-GEN-6005

Revision: A

User name: LEUN3329 Date:07/02/2023 Time:17:25:27
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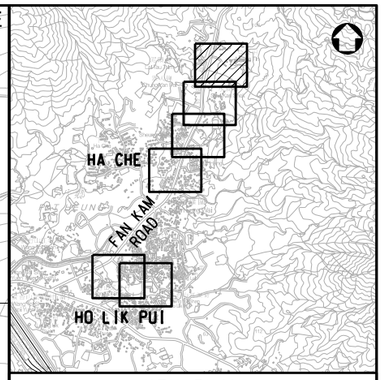
DO NOT SCALE



KEY PLAN
N.T.S.

NOTES:

1. FOR LOCATION PLAN, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0000.
2. FOR GENERAL NOTES, REFER TO DRAWING NOS. 5124336-TD-C2-GEN-0001 & 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. EXACT LENGTH OF SURFACE CHANNEL SHALL BE MEASURED ON SITE AND AGREE WITH THE *SUPERVISOR*.
5. THE *CONTRACTOR* SHALL LIAISE WITH RELEVANT PARTIES FOR THE REMOVAL OF AFFECTED STRUCTURES WITHIN WORKS BOUNDARY.
6. SETTING OUT OF EXISTING TEMPORARY STRUCTURES IS FOR INDICATIVE ONLY. THE *CONTRACTOR* SHALL VERIFY THE EXACT LOCATION ON SITE.

A

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
Suitability: -

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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
HA CHE -
GENERAL LAYOUT PLAN
(SHEET 1 OF 4)

Scale	Designed	Drawn	Checked	Authorised
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Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-GEN-8001
Revision: A

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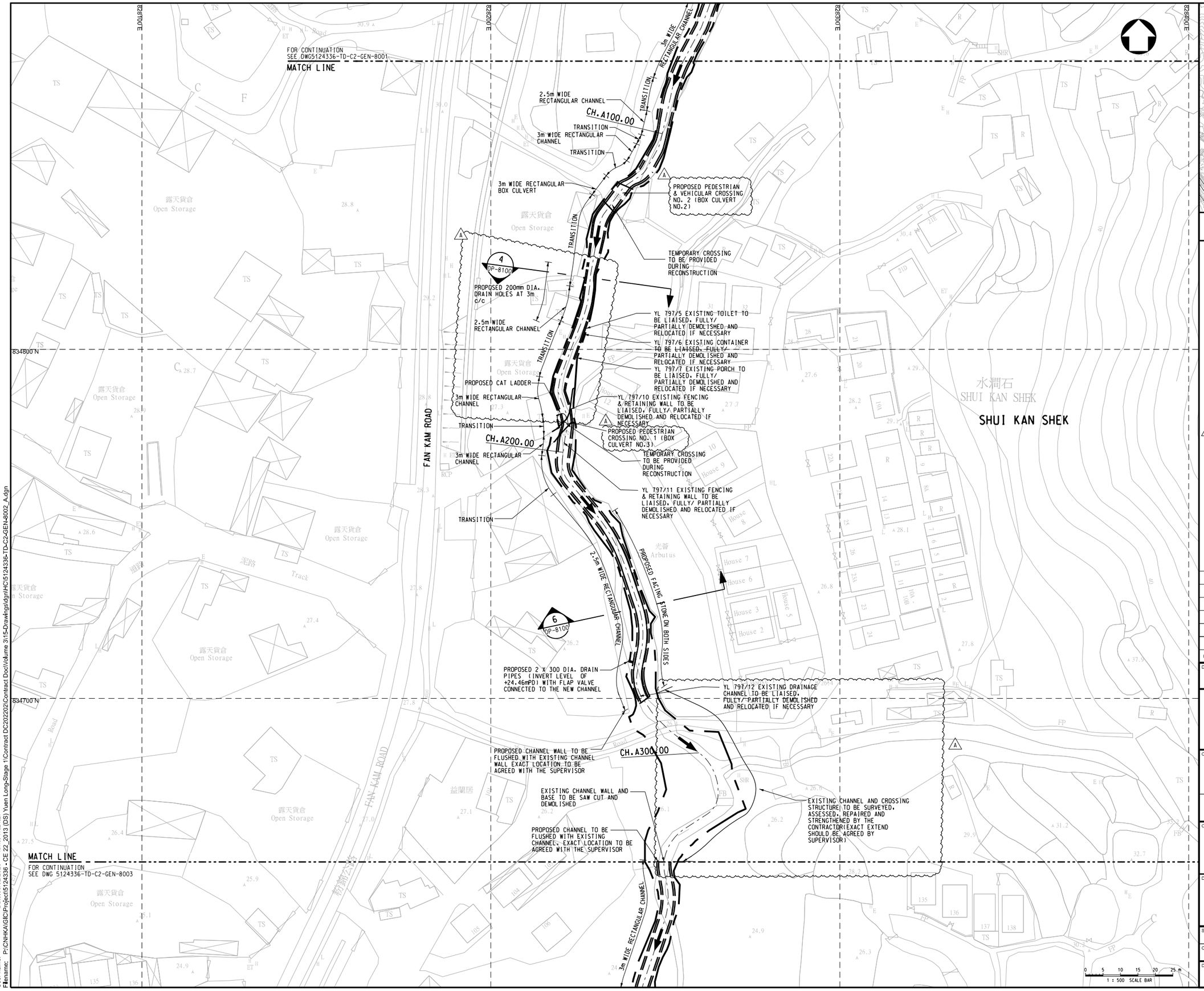

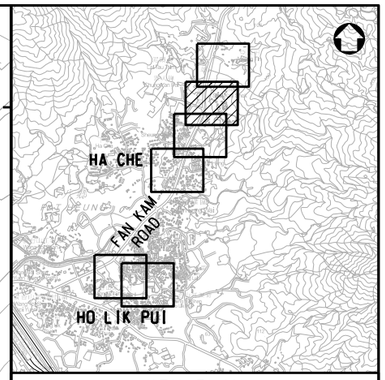

KEY PLAN
N.T.S.

NOTES:

1. FOR GENERAL LAYOUT PLAN, REFER TO DRAWING NO. 5124336-TD-C2-GEN-8000.
2. FOR GENERAL NOTES, REFER TO DRAWING NOS. 5124336-TD-C2-GEN-0001 & 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. EXACT LENGTH OF SURFACE CHANNEL SHALL BE MEASURED ON SITE AND AGREE WITH THE *SUPERVISOR*.
5. THE *CONTRACTOR* SHALL LIAISE WITH RELEVANT PARTIES FOR THE REMOVAL OF AFFECTED STRUCTURES WITHIN WORKS BOUNDARY.
6. SETTING OUT OF EXISTING TEMPORARY STRUCTURES IS FOR INDICATIVE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION ON SITE.

A

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
Suitability: -

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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
AT HA CHE -
GENERAL LAYOUT PLAN
(SHEET 2 OF 4)

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: 5124336-TD-C2-GEN-8002
Revision: A

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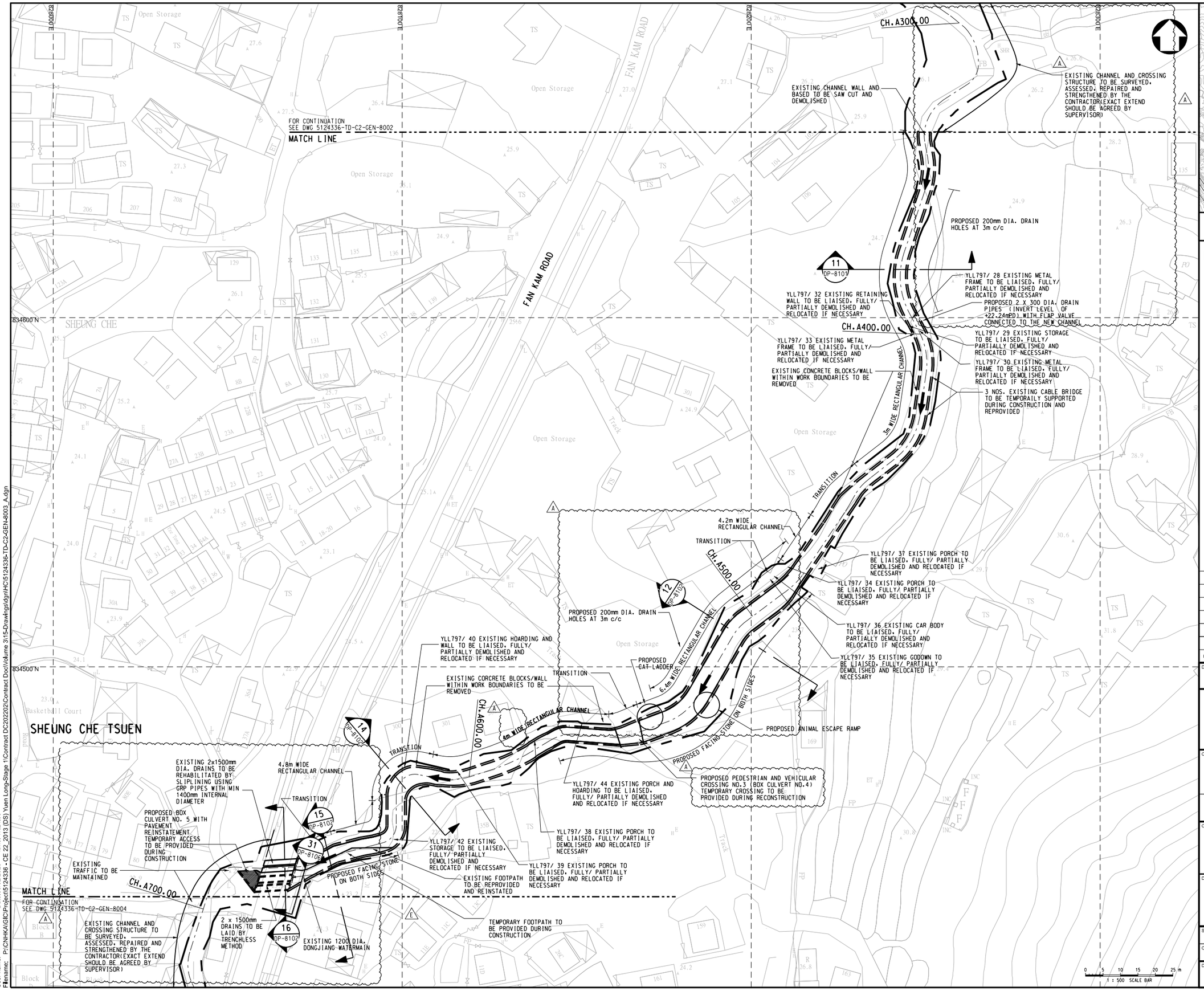

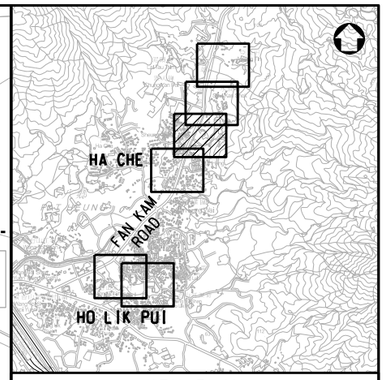

KEY PLAN
N.T.S.

NOTES:

1. FOR GENERAL LAYOUT PLAN, REFER TO DRAWING NO. 5124336-TD-C2-GEN-8000.
2. FOR GENERAL NOTES, REFER TO DRAWING NOS. 5124336-TD-C2-GEN-0001 & 0002.
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5. THE *CONTRACTOR* SHALL LIAISE WITH RELEVANT PARTIES FOR THE REMOVAL OF AFFECTED STRUCTURES WITHIN WORKS BOUNDARY.
6. SETTING OUT OF EXISTING TEMPORARY STRUCTURES IS FOR INDICATIVE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION ON SITE.

7. (A) *THE CONTRACTOR* SHALL CARRY OUT SURVEY ON THE EXISTING PIPES ACROSS FAN KAM ROAD AT EARLY STAGE AND PROPOSE ALTERNATIVE MATERIAL FOR REHABILITATION.

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
Suitability: —

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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: HA CHE - GENERAL LAYOUT PLAN (SHEET 3 OF 4)

Scale	Designed	Drawn	Checked	Authorised
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Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-GEN-8003
Revision: A

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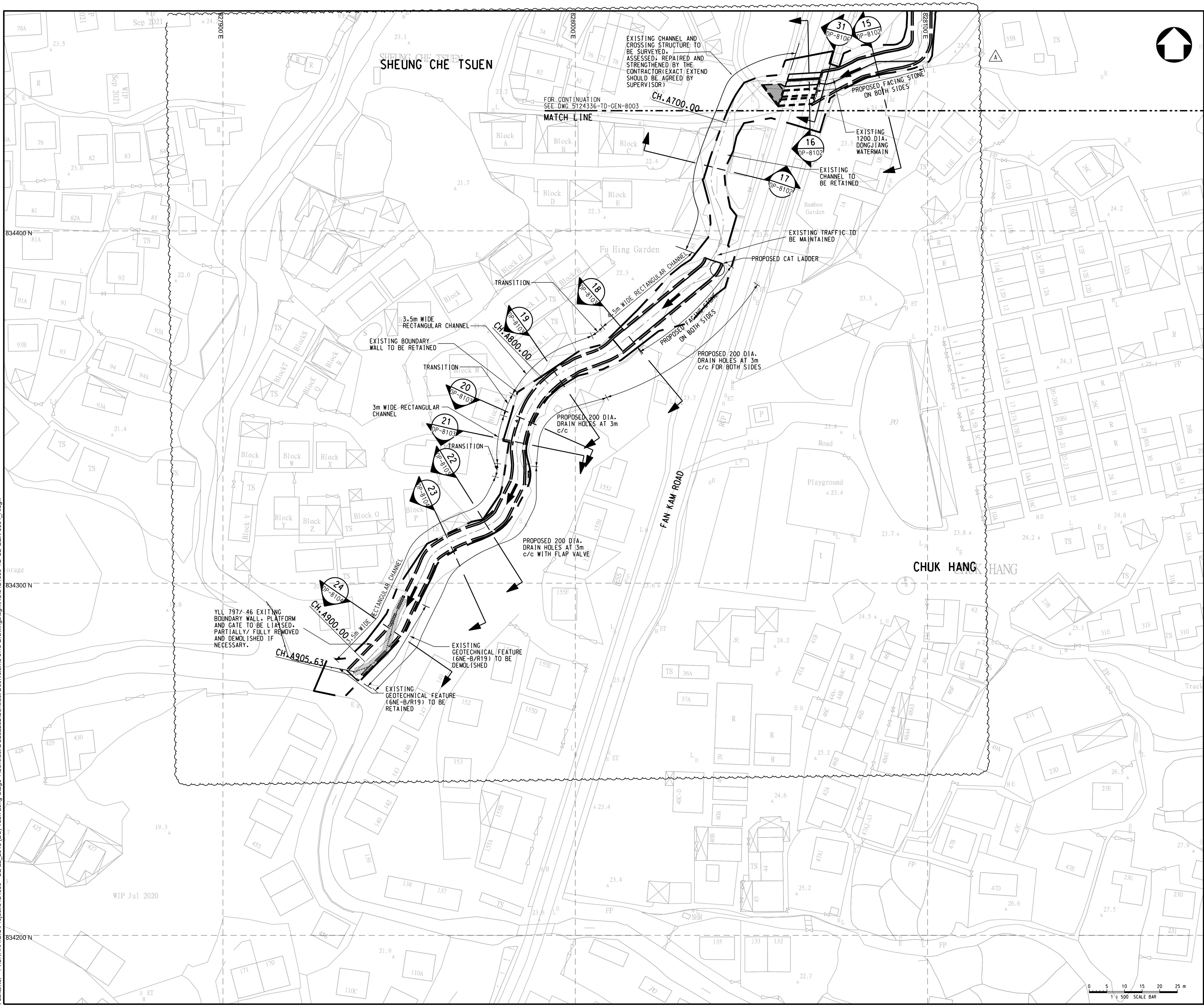

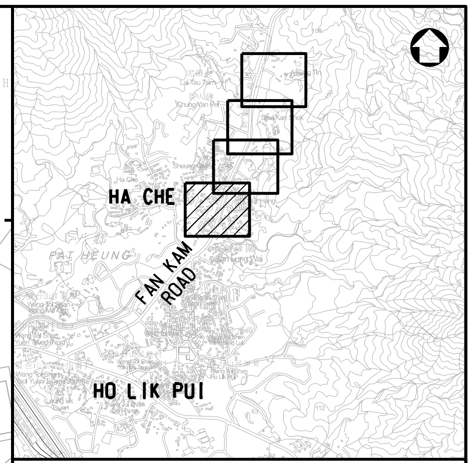

KEY PLAN

N.T.S.

NOTES:

1. FOR GENERAL LAYOUT PLAN, REFER TO DRAWING NO. 5124336-TD-C2-GEN-8000.
2. FOR GENERAL NOTES, REFER TO DRAWING NOS. 5124336-TD-C2-GEN-0001 & 0002.
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Rev.	Date	Description	By	Chk'd	App'd
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A	NOV 2022	TENDER ADDENDUM NO.4	SHC	WCTT	KP
-	JUL 2022	ISSUE FOR TENDER	SHC	WCTT	KP

Drawing Status: CONTRACT

Suitability: -

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

HA CHE -
GENERAL LAYOUT PLAN
(SHEET 4 OF 4)

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: 5124336-TD-C2-GEN-8004

Revision: A

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Figures

Figure 3

General Notes and Typical Details of all Proposed Ecological Enhancement and Enrichment Measures
(Drawing Nos.: 5124336-TD-C2-GEN-0001 to 0003)
(Drawing Nos.: 5124336-TD-C2-GEN-9006, 9009, 9010 & 9011)
(Drawing No.: WT/DC/2022/02/CF/SK/001)

A. GENERAL NOTES

THE GENERAL NOTES APPLY TO ALL DRAWINGS UNLESS OTHERWISE STATED.

GENERAL

1. ALL DIMENSIONS SHALL BE VERIFIED ON SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
2. ALL LEVELS REFER TO HONG KONG PRINCIPAL DATUM AND ARE IN METRES.
3. CO-ORDINATES AND GRID LINES ARE REFERRED TO THE HONG KONG 1980 GEODETIC DATUM.
4. DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED.
5. EXACT TIE-IN WITH THE EXISTING FEATURES TO BE AGREED WITH THE *SUPERVISOR*.
6. FOR PROJECT SIGNBOARD AND NOTICE BOARD DETAILS REFER TO DSD STANDARD DRAWINGS UNLESS OTHERWISE STATED.
7. THE *CONTRACTOR* IS RESPONSIBLE TO CHECK THE STABILITY OF THE EXISTING SLOPES WHEN DESIGNING TEMPORARY WORKS.
8. MAP DATA REPRODUCED WITH PERMISSION OF THE DIRECTOR OF LAND (C) HONGKONG.
9. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE SPECIFICATION AND THE PARTICULAR REQUIREMENTS WHICH ARE SHOWN ON THIS INDIVIDUAL DRAWING.
10. THE *CONTRACTOR* SHALL ENSURE THAT ALL THE TEMPORARY WORKS ARE STABLE AT ALL STAGES.
11. ALL CALCULATIONS AND DESIGNS SUBMITTED BY THE *CONTRACTOR* SHALL BE CERTIFIED BY AN INDEPENDENT CHECKING ENGINEER.
12. SETTING OUT DIMENSIONS, LEVELS & COORDINATES ARE TO BE CALCULATED BY THE *CONTRACTOR* AND AGREED BY THE *SUPERVISOR* BASED ON THE BASIC SETTING OUT INFORMATION PROVIDED AND THE INITIAL TOPOGRAPHICAL SURVEY CARRIED OUT AT THE COMMENCEMENT OF THE CONTRACT. NO INFORMATION SHOULD BE SCALED PHYSICALLY OR ELECTRONICALLY FROM THE DRAWINGS OR FILES.
13. THE *CONTRACTOR* SHALL SUBMIT THE SETTING OUT INFORMATION, WHICH SHALL COMPLY WITH ALL REQUIREMENTS IN THE CONTRACT, TO THE *SUPERVISOR* FOR ACCEPTANCE, AT LEAST TWO WEEKS PRIOR TO ANY CONSTRUCTION AND FABRICATION OF THE PERMANENT WORKS.
14. ABBREVIATIONS:

FFL	FINISHED FLOOR LEVEL	HAD	HOME AFFAIRS DEPARTMENT
SFL	STRUCTURAL FLOOR LEVEL	HyD	HIGHWAY DEPARTMENT
MAX	MAXIMUM	CEDD	CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT
MIN	MINIMUM		
DRG / DWG	DRAWING	STD	STANDARD
DSD	DRAINAGE SERVICES DEPARTMENT		

15. OTHER THAN THOSE SHOWN ON STRUCTURAL DRAWINGS.
(a). NO PENETRATION SHALL BE ALLOWED THROUGH BEAMS.
(b). NO OPENING EXCEEDING 150mm DIA SHALL BE ALLOWED THROUGH SLABS AND WALLS.
(c). NO OPENING EXCEEDING 200X200mm SHALL BE ALLOWED THROUGH SLABS AND WALLS.
16. NO TEMPORARY OPENING SHALL BE ALLOWED IN STRUCTURAL MEMBERS WITHOUT ADVANCED WRITTEN ACCEPTANCE FROM THE *SUPERVISOR*.
17. CHAINAGES ARE GIVEN IN METERS.
18. PROPOSED WORKS AS SHOWN ON DRAWINGS SHALL BE CONSTRUCTED BY *CONTRACTOR* UNLESS STATED OTHERWISE.
19. PEDESTRIAN AND VEHICULAR ACCESSES SHALL BE MAINTAINED AT ALL TIMES.TEMPORARY ACCESSES SHALL BE PROVIDED DURING CONSTRUCTION.
20. DRAINAGE FLOW SHALL BE MAINTAINED AT ALL TIME DURING CONSTRUCTION. METHOD STATEMENT FOR ALL PROPOSED WORKS SHALL BE SUBMITTED BY THE *CONTRACTOR* TO THE *SUPERVISOR* FOR ACCEPTANCE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION WORKS.
21. EXISTING TREES SHALL BE PRESERVED UNLESS OTHERWISE STATED.
22. INTERFACING WORKS WITH THE EXISTING FEATURES SHALL BE AGREED WITH THE *SUPERVISOR*.
23. THE *CONTRACTOR* SHALL NOTIFY THE *SUPERVISOR* OF ANY DISCREPANCY FOUND AMONG THE CONTRACT DOCUMENTS AT LEAST 14 DAYS PRIOR TO THE CONSTRUCTION OF THE CONCERNED PART OF WORKS.
24. THE *CONTRACTOR* SHALL NOTE THAT THE EXISTING RIVER AND DRAINS ARE SUBJECT TO VARYING WATER LEVELS DUE TO HIGH/LOW TIDE, VARYING FLOW, ETC. THE *CONTRACTOR* SHALL TAKE THIS INTO ACCOUNT IN DEVISING A SUITABLE METHOD STATEMENT AND TEMPORARY WORKS FOR ALL WORKS.
25. DETAILED REQUIREMENTS OF ALL PROPOSED WORKS SHALL REFER TO GENERAL AND PARTICULAR SPECIFICATIONS.

B. ROAD DETAILS

1. FOR PAVEMENT DETAILS REFER HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H1110B, H1111 & H1112 UNLESS STATED OTHERWISE.
2. FOR KERBS DETAILS, REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H1101, H1102A, H1103D, H1118, H1119 & H1120 UNLESS STATED OTHERWISE.
3. FOR FOOTPATHS DETAILS REFER TO HIGHWAYS DEPARTMENT STANDARD DRAWING NO. H1104 UNLESS STATED OTHERWISE.
4. REINSTATEMENT OF ROADWAYS AND FOOTWAYS SHOULD BE IN ACCORDANCE WITH HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H1123 TO H1131A UNLESS STATED OTHERWISE.
5. FOR RUN-IN DETAILS REFER HIGHWAYS DEPARTMENT STANDARD DRAWING NOS. H1113B & H1114A UNLESS STATED OTHERWISE.

C. DRAINAGE

1. THE LOCATIONS OF THE PROPOSED MANHOLES AND DRAINAGE ALIGNMENTS SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS AND ALIGNMENTS ARE TO BE DETERMINED ON SITE BY THE SUPERVISOR.
2. UNLESS STATED OTHERWISE ALL DRAINAGE PIPES AND FITTINGS NOT EXCEEDING 150mm SHALL BE POLYETHYLENE (PE) TO BS EN 12201.
3. .UNLESS STATED OTHERWISE ALL DRAINAGE PIPES AND FITTINGS SHALL BE PRECAST CONCRETE PIPES. THE PRECAST CONCRETE PIPES AND FLEXIBLE JOINTS SHALL CONFORM TO BS EN 1916 AND BS 5911 PART 1.
4. PIPE BEDDING SHALL REFER TO STANDARD DRAWING NO. 5124336-TD-C2-GEN-9002.
5. ALL MATERIALS FOR PIPEWORK SHALL BE AS SPECIFIED OR AS APPROVED BY THE SUPERVISOR.
6. FLEXIBLE JOINTS FOR PIPES WITH CONCRETE BEDDING OR SURROUND ARE TO CONFORM TO THE REQUIREMENTS OF DSD STANDARD DRAWING NO. DS 1050B AND 5124336-TD-C2-GEN-9002.
7. MANHOLES AND COVERS SHALL BE AS DSD STANDARD DRAWINGS UNLESS STATED OTHERWISE.
8. THE GROUND LEVELS SHOWN ON MANHOLE SCHEDULE ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING THE GROUND LEVELS AND AGREED WITH THE *SUPERVISOR* PRIOR TO CONSTRUCTION OF THE WORKS.
9. FOR ALL PROPOSED CONNECTION INTO THE EXISTING MANHOLES AND CHANNELS, THE EXACT LOCATION OF CONNECTION POINT AND INVERT LEVELS SHALL BE VERIFIED ON SITE PRIOR TO CONSTRUCTION BY THE *CONTRACTOR*.
10. PRECAST CONCRETE PIPES AND FITTING SHALL HAVE FLEXIBLE SPIGOT AND SOCKET JOINTS.
11. ORIGINAL GROUND LEVELS, INVERT LEVELS OF THE EXISTING RIVER AND WATER LEVELS SHOWN ARE FOR REFERENCE ONLY AND SHALL BE VERIFIED ON SITE BY THE CONTRACTOR.
12. THE *CONTRACTOR* SHALL MAINTAIN THE PROPER FUNCTIONING OF THE EXISTING RIVER WITHIN THE SITE AND CARRY OUT DESILTING WORKS MONTHLY OR REPAIR WORKS WHEN NECESSARY OR AS INSTRUCTED BY THE *SUPERVISOR*.
13. THE LOCATIONS OF EXPANSION JOINTS IN THE PROPOSED CHANNELS ARE INDICATED ON THE DRAWINGS. THE MAXIMUM SPACING OF THE PROPOSED EXPANSION JOINTS SHALL BE 30m ALONG THE CHANNEL.
14. PROPOSED DRAIN HOLES WITH THE INTERNAL DIAMETERS ARE INDICATED ON THE DRAWINGS. THE DRAIN HOLES SHALL BE PROVIDED IN UPVC PIPE UNLESS STATED OTHERWISE.
15. THE *CONTRACTOR* SHALL PROVIDE WEEP HOLES TO PROPOSED CHANNEL WALLS AS FOLLOWS:
75mm DIA. uPVC PIPE WITH VERTICAL SPACING 1000mm c/c. AND HORIZONTAL SPACING 2000mm c/c. THE FIRST ROW OF WEEP HOLES SHALL BE 1m ABOVE TOP OF EDGE BEAM OR BASE SLAB LEVEL . THE FALL OF WEEP HOLES SHALL BE 1 IN 50 FROM CHANNEL TOWARD SOIL/BACKFILL DIRECTION. TOP LAYER OF THE WEEP HOLES SHALL BE 500mm BELOW THE TOP LEVEL OF THE PROPOSED WALL. GEOTEXTILE DRAINAGE FILTER SHALL BE PROVIDED AT END OF EACH WEEPHOLE.
16. THE *CONTRACTOR* SHALL CARRY OUT SITE SURVEYS AND IDENTIFY EXISTING DRAIN PIPES, CHANNELS DISCHARGING TO EXISTING CHANNEL. CONNECTION TO THE PROPOSED CHANNEL SHALL BE PROVIDED USING THE SAME PIPE/CHANNEL MATERIAL FOR THE AFFECTED EXISTING DRAIN PIPES AND CHANNELS.
17. NO CONCRETE BLINDING SHALL BE PROVIDED BETWEEN THE PROPOSED NATURAL BEDDING MATERIAL AND EXISTING GROUND.
18. FOR THE LONGITUDINAL PROFILE DRAWINGS, THE LEFT AND RIGHT SIDES ARE DEFINED AS THE LEFT AND RIGHT SIDES OF EXISTING OR PROPOSED CHANNELS WHEN LOOKING DOWNSTREAM AT THE CHANNELS.
19. THE PROPOSED CHANNEL BEDDING SHALL BE TYPE 1A UNLESS STATED OTHERWISE.
20. REINFORCEMENTS SHALL BE PROVIDED FOR ALL THE STRUCTURAL WORKS INCLUDING BUT NOT LIMITED TO MANHOLES, CATCHPITS, CHAMBERS, CHANNELS, U-CHANNELS, BOX CULVERTS, ETC.

B

D. UTILITIES

1. THE *CONTRACTOR* SHOULD VERIFY THE EXACT LOCATION OF ALL EXISTING AND PROPOSED UTILITIES PRIOR TO CONSTRUCTION.

E. CONCRETE WORKS DETAILS

1. CONCRETE GRADES SHALL BE AS FOLLOWS UNLESS STATED OTHERWISE:

LOCATION	GRADE	MIX
BLINDING	20/20	S
MANHOLE AND CATCHPIT	40/20	D
CHAMBER	40/20	D
FRAMEWORK STRUCTURES	40/20	D
GROUND BEAMS, CROSS BEAMS AND EDGE BEAMS	40/20	D
RETAINING WALLS	40/20	D
SLABS	40/20	D
FOUNDATIONS	40/20	D

MIX : D- DESIGNED, S- STANDARD

#1. CONCRETE FOR EACH INDIVIDUAL ELEMENT SHALL BE OF THE FOLLOWING GRADES UNLESS STATED OTHERWISE

20/20 BLINDING LAYER
40/20 FRAMEWORK STRUCTURES
40/20 GROUND BEAMS, CROSS BEAMS AND EDGE BEAMS

CONCRETE GRADES SPECIFY THE REQUIRED MINIMUM 28 DAYS CHARACTERISTIC STRENGTH IN MPA AND THE MAXIMUM SIZE OF AGGREGATE IN MM. THE REACTIVE ALKALI OF CONCRETE EXPRESSED AS THE EQUIVALENT SODIUM OXIDE PER CUBIC METER OF CONCRETE SHALL NOT EXCEED 3KG.

#2. CONSTITUENT MATERIALS, MIX DESIGN AND TESTING REQUIREMENTS ARE DEFINED IN THE HONG KONG GOVERNMENT GENERAL SPECIFICATION FOR CIVIL SUPERVISORING WORKS 2020 EDITION.

2. ALL CONCRETE IN CONTACT WITH THE GROUND SHALL BE LAID ON A 75mm THICK BLINDING CONCRETE UNLESS STATED OTHERWISE.
3. NOMINAL COVER FROM THE FACE OF THE CONCRETE TO THE OUTERMOST REINFORCEMENT, INCLUDING LINKS, SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:

MANHOLE	40mm
CHAMBER	40mm
REINFORCED CONCRETE ELEMENTS	40mm

MINIMUM COVER SHALL BE NOMINAL COVER MINUS 5mm THE MINIMUM COVER SHALL NOT BE LESS THAN THE ADJACENT REINFORCEMENT DIAMETER.

FULL COVER IS TO BE MAINTAINED AT GROOVES AND OTHER ARCHITECTURAL FEATURES TO THE CONCRETE SURFACE.

4. ANCHORAGES IN CONCRETE

(1) DRILL AND FIX TYPE ANCHORAGE SYSTEMS SHALL NOT GENERALLY BE ALLOWED UNLESS STATED OTHERWISE.

(2) UNLESS STATED OTHERWISE, THE MATERIALS FOR THE ANCHORAGES SHALL BE IN GRADE 316L STAINLESS STEEL. STAINLESS STEEL BOLTS AND NUTS SHALL COMPLY WITH BS 6105, STEEL GRADE A4 & PROPERTY CLASS 80.

(3) CARE SHALL BE EXERCISED IN THE DESIGN AND INSTALLATION OF THE ANCHORAGE SYSTEMS TO PRESERVE THE DURABILITY INTEGRITY OF THE SUBSTRATE CONCRETE AND REINFORCEMENTS.

(4) CAST IN ANCHORAGES AND SOCKETS SHALL BE USED WHERE INSPECTION / MAINTENANCE OR ANCHORAGE REPLACEMENT / SUBSTRATE REPAIR IS DIFFICULT AS DETERMINED BY THE *SUPERVISOR*. USE OF CAST IN ANCHORAGE SYSTEMS SHALL ALLOW LOCATION FLEXIBILITY TO COPE WITH THE FIXING AND INSTALLATION TOLERANCES. THE DESIGN DETAILS SHALL ALLOW NO DIRECT CONTACT BETWEEN DISSIMILAR METALS WHICH MAY CAUSE GALVANIC CORROSION, IN PARTICULAR BETWEEN ANCHORAGE METALS WITH REINFORCEMENT.

(5) THE *CONTRACTOR* SHALL ENSURE THE DETAILS AND POSITIONS OF EACH ANCHORAGE ARE FULLY COORDINATED WITH ALL RELEVANT PARTS OF THE WORKS.

5. UNLESS OTHERWISE SPECIFIED THE FOLLOWING CLASS OF FINISH SHALL BE APPLICABLE TO SURFACES AS DESCRIBED BELOW:

MANHOLES, CHAMBERS	EXTERNAL BELOW FGL	F1	U1
	EXTERNAL ABOVE FGL	F2	U2
	INTERNAL	F3	U3
CHANNEL WALLS	BELOW FGL	F1	U1
	ABOVE FGL, NOT EXPOSED TO DIRECT PUBLIC VIEW	F4	U5
	ABOVE FGL, EXPOSED TO DIRECT PUBLIC VIEW	F5	U5
	INTERNAL, NOT EXPOSED TO DIRECT PUBLIC VIEW	F2	U1

6. LOCATION OF ALL CONSTRUCTION JOINTS TO BE AGREED WITH THE *SUPERVISOR*.
7. INTERNAL TIE RODS OR STRUTS FOR FALSEWORKS ARE NOT ALLOWED TO BE LEFT WITHIN STRUCTURES UNLESS APPROVED BY THE *SUPERVISOR*.
8. BACKFILLING OF SOIL AROUND CONCRETE STRUCTURES IS NOT ALLOWED UNTIL THE DESIGN CONCRETE STRENGTH IS REACHED AND APPROVED BY THE *SUPERVISOR*.
9. ALL EXPOSED CONCRETE EDGES TO HAVE 25x25 CHAMFER UNLESS STATED OTHERWISE .KICKERS SHALL BE 100mm HIGH UNLESS STATED OTHERWISE.

F. REINFORCEMENT

1. STEEL REINFORCEMENT SHALL COMPLY WITH CONSTRUCTION STANDARD CS2 : 2012 OF HONG KONG.

SYMBOL	TYPE
R	MILD STEEL BAR OF GRADE 250
B	HIGH YIELD DEFORMED BAR OF GRADE 500B.
F	FABRIC TO BS4483. SPECIFIED CHARACTERISTIC STRENGTH OF STRUCTURAL MESH FABRIC fy TO BE 500N/mm² SPECIFIED CHARACTERISTIC STRENGTH OF WRAPPING MESH FABRIC fy TO BE 250N/mm²

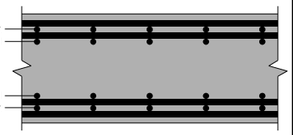
2. ALL REINFORCEMENT SHALL BE CUT AND BENT TO COMPLY WITH BS 8666.
3. ALL REINFORCEMENT SHALL COMPLY WITH BS 8666.
4. NOTATION OF BAR REINFORCEMENT IS AS FOLLOWS:

5 B 16 - 01 - 200 T1

- 5 — No. OF BARS
- B — TYPE OF BAR
- 16 — BAR DIAMETER IN mm
- 01 — BAR MARK
- 200 — BAR SPACING IN mm
- T1 — BAR POSITION

REFER TO TYPE OF BAR
R FOR GRADE 250 TO CS2 PLAIN ROUND BAR.
B FOR GRADE 500B TO CS2 DEFORMED BAR TYPE 2.

SUFFIX
T1,T2,T3,T4 = TOP LAYER AS SHOWN
B1,B2,B3,B4 = BOTTOM LAYER AS SHOWN
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
RL = RANDOM LAP
LV = LENGTH VARIES
AR = ALTERNATIVE BAR REVERSED
AS = ALTERNATIVE BAR STAGGERED
AP = ALTERNATIVELY PLACED
PAS = PITCH AS SHOWN
LB = L-BAR
UB = U-BAR
LLT = LONG LEG TOP
LLB = LONG LEG BOTTOM



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Rev.	Date	Description	By	Chk'd	App'd
B	NOV 2022	TENDER ADDENDUM NO.4	SHC	WCTT	KP
A	OCT 2022	TENDER ADDENDUM NO.3	SHC	WCTT	KP
-	JUL 2022	ISSUE FOR TENDER	SHC	WCTT	KP

Drawing Status: CONTRACT
Suitability: -

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: GENERAL NOTES (SHEET 1 OF 2)

Scale	Designed	Drawn	Checked	Authorised
	SHC	AC	WCTT	KP
Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-GEN-0001
Revision: B

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5. LAPS SHALL BE STAGGERED WHEREVER POSSIBLE.

6. LAPS OTHER THAN THOSE INDICATED ON THE DRAWINGS SHALL BE MADE ONLY WITH THE CONSENT OF THE *SUPERVISOR*, THE *CONTRACTOR* SHALL PREPARE THE BENDING SCHEDULE TO THE *SUPERVISOR*'S ACCEPTANCE.

7. LAP AND ANCHORAGE LENGTHS AS PER BS EN1992-1-1, AS FOLLOWS:

CONCRETE GRADE 40 (OR GREATER) FY=500 TYPE 2 DEFORMED BARS

EN1992-1-1 MINIMUM LAP LENGTHS (mm)

BOND CONDITION \ DIAMETER	8	10	12	16	20	25	32	40
GOOD BOND, SMALLER THAN OR EQUAL TO 50% STEEL LAPPED AT ONE PLACE	450	550	650	875	1100	1350	1750	2325
GOOD BOND, SMALLER THAN 50% STEEL LAPPED AT ONE PLACE	475	575	700	925	1150	1425	1825	2500
POOR BOND, MORE THAN OR EQUAL TO 50% STEEL LAPPED AT ONE PLACE	625	775	925	1225	1525	1900	2450	3325
GOOD BOND, MORE THAN 50% STEEL LAPPED AT ONE PLACE	650	825	975	1300	1625	2025	2600	3575

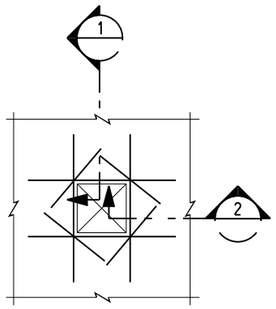
EN1992-1-1 ANCHORAGE LENGTHS FOR STRAIGHT BARS (mm)

BOND CONDITION \ DIAMETER	8	10	12	16	20	25	32	40
GOOD BOND CONDITION	325	400	475	625	775	950	1225	1650
POOR BOND CONDITION	450	550	650	875	1100	1350	1750	2325

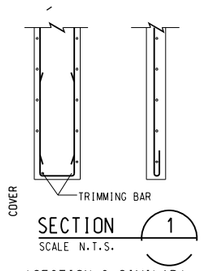
NOTES: UNLESS STATED OTHERWISE, THE LAP LENGTH SHALL NOT BE LESS THAN 40 x DIAMETER OF BAR. FOR BARS IN DIFFERENT SIZES, THE LAP LENGTH SHALL NOT BE LESS THAN 40 x DIAMETER OF THE SMALLEST BARS.

8. CRANKED REINFORCEMENT BARS ARE NOT ALLOWED UNLESS STATED OTHERWISE. ALL LAPS FOR MAIN REINFORCEMENT SHALL BE STAGGERED.

9. THE POSITION OF CONSTRUCTION JOINTS SHALL BE SUBMITTED AND APPROVED BY *SUPERVISOR* PRIOR TO WORK ON SITE.



ELEVATION



SECTION 1
SCALE N.T.S.

(SECTION 2 SIMILAR)

TRIMMING DETAILS AT WALL AND SLAB OPENING

NOTES:

1. DIAMETER OF TRIMMING BAR IS ONE SIZE LARGER THAN THE VERTICAL BAR.
2. THE LARGEST DIMENSION OF OPENING SHALL BE 600mm x 600mm WITH MINIMUM CLEAR SPACING 1000mm.
3. FOR NON-LOADING BEARING WALL WITH AN OPENING EXCEEDING THE ABOVE LIMIT, AND FOR ALL STRUCTURAL WALL OPENINGS ARE SUBJECT TO APPROVAL BY THE STRUCTURAL ENGINEER.

G. STRUCTURAL STEEL WORKS DETAILS

1. ALL STRUCTURAL STEEL SECTIONS SHALL BE GRADE S275 JO COMPLIED WITH BS EN 10025:2004.
2. ALL WORKS SHALL COMPLY WITH THE HONG KONG CODE OF PRACTICE FOR STRUCTURAL USE OF STEEL 2011 AND HONG KONG BUILDING (CONSTRUCTION) REGULATIONS 1990.
3. FABRICATION, ERECTION, SURFACE PREPARATION AND CORROSION PROTECTION OF STEELWORK SHALL BE IN ACCORDANCE WITH THE GENERAL SPECIFICATION, THE PARTICULAR SPECIFICATION AND THE STRUCTURES DESIGN MANUAL FOR HIGHWAYS AND RAILWAYS. STEELWORK SHALL BE DESIGNED TO BS EN 1993.
4. TOLERANCES ARE TO BE IN ACCORDANCE WITH THE SPECIFICATION.
5. THE *CONTRACTOR* SHALL BE RESPONSIBLE FOR THE PROVISION OF ALL PACKING TO ACHIEVE THE ADEQUATE TOLERANCE AT THE CONNECTIONS.
6. PROTECTION OF STEELWORK AGAINST CORROSION SHALL COMPLY WITH BS 5493 WITH A "LONG", 10-20 YEARS OR MORE PERIOD TO FIRST MAINTENANCE.

THE CONTRACTOR SHALL USE EITHER OF THE FOLLOWING PROTECTIVE SYSTEMS AS SPECIFIED IN THE STRUCTURES DESIGN MANUAL FOR HIGHWAYS AND RAILWAYS.:

PROTECTIVE PAINT SYSTEM II - APPLIED TO STRUCTURAL STEELWORK

PRETREATMENT : TWO-PACK ETCH PRIMER; OR BRITISH RAIL "T-WASH" AS SPECIFIED IN BS 5493, SECTION2, CLAUSE 11.3.2
PRIMER : TWO-PACK EPOXY ZINC PHOSPHATE PRIMER, 70um MINIMUM TOTAL DRY-FILM THICKNESS
UNDERCOAT : TWO-PACK MICACEOUS IRON OXIDE EPOXY UNDERCOAT, 150um MINIMUM TOTAL DRY-FILM THICKNESS
FINISH : TWO-PACK POLYURETHANE FINISH COAT, 100um MINIMUM TOTAL DRY-FILM THICKNESS

PROTECTIVE PAINT SYSTEM III - APPLIED TO METAL SPRAYED SURFACES

PRETREATMENT : TWO-PACK ZINC TETROXYCHROMATE POLYVINYL BUTYRAL PRETREATMENT
SEALER : TWO-PACK EPOXY SEALER APPLIED BY BRUSH UNTIL ABSORPTION IS COMPLETE
PRIMER : TWO-PACK EPOXY ZINC PHOSPHATE PRIMER, 70um MINIMUM TOTAL DRY-FILM THICKNESS
UNDERCOAT : TWO-PACK MICACEOUS IRON OXIDE EPOXY UNDERCOAT, 150um MINIMUM TOTAL DRY-FILM THICKNESS
FINISH : TWO-PACK POLYURETHANE FINISH COAT, 100um MINIMUM TOTAL DRY-FILM THICKNESS

THE PROPOSED COLOUR FOR THE FINISH SHALL BE AGREED WITH THE *SUPERVISOR* AND TRIAL SAMPLES SHALL BE PROVIDED BY THE *CONTRACTOR* FOR ACCEPTANCE.

7. ALL STEELWORK SHALL BE TRIAL ERECTED TO THE SATISFACTION FROM THE *SUPERVISOR* PRIOR TO PERMANENT ON SITE ERECTION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, FABRICATION, ERECTION AND REMOVAL OF ALL TEMPORARY WORKS AND TEMPORARY BRACING NECESSARY TO MAINTAIN STRUCTURAL STABILITY OF THE STEELWORK DURING CONSTRUCTION.
9. THE *CONTRACTOR* IS RESPONSIBLE FOR ENSURING THAT THE STEEL HAS AN ADEQUATE THROUGH THICKNESS PROPERTIES TO SATISFY THE THROUGH THICKNESS PROPERTIES AND WELDING SEQUENCE, AT OR ADJACENT TO WELDED LOCATIONS, AND IS FREE OF LAMINATIONS, CENTERLINE SEGREGATION, OR OTHER CRACK LINE INDICATIONS ON COMPLETION OF WELDING. THE *CONTRACTOR* IS RESPONSIBLE FOR DETERMINING THE QUALITY CLASS OF STEEL WITH ENHANCED THROUGH THICKNESS PROPERTIES (EN 10164) WHICH MAY BE REQUIRED TO BE COMPATIBLE WITH THE SELECTED METHOD OF WORKING.

NOT LESS THAN THREE WEEKS PRIOR TO ORDERING THE STEEL, THE *CONTRACTOR* SHALL SUBMIT A REPORT FOR REVIEW, WHICH DOCUMENTS THE SUBGRADE SELECTION AND THE STRATEGY (MATERIAL SELECTION, WELDING PROCEDURE AND INSPECTION) WHICH WILL BE IMPLEMENTED FOR CONTROLLING THE THROUGH THICKNESS STRESS DURING WELDING AND ENSURING THAT THE ABOVE CRITERIA ARE SATISFIED.

10. ALL FASTENERS, WELDS & SHIMS WHICH ARE USED WITH GALVANISED STEELWORK SHALL BE HOT DIP GALVANISED TO COMPLY WITH BS EN ISO 1461:2015 UNLESS NOTED OTHERWISE.
11. STEEL WHICH IS CAST-IN SHALL REMAIN UNPAINTED. THE STEEL SHALL BE BLAST CLEANED (EITHER PRIOR TO OR AFTER FABRICATION) TO SWEDISH STANDARD $SA2^{1}/_{2}$.
12. ALL STRUCTURAL STEEL SHALL BE HOT-DIP GALVANISED TO COMPLY WITH BS EN ISO 1461:2015 WITH MINIMUM THICKNESS OF 85µm UNLESS STATED OTHERWISE.
13. ALL WELDING SHALL BE 4mm MIN. ALL ROUND FILLET WELD AND ALL BUTT WELD SHALL BE FULL PENETRATION BUTT WELD, ELECTRODE GRADE CONFORMED TO BS EN 499 AND BS EN 1011-1:2009 UNLESS STATED OTHERWISE.
14. WELDING CONSUMABLE SHALL HAVE MECHANICAL PROPERTIES FOR THE DEPOSITED WELD METAL NOT LESS THAN THE MECHANICAL PROPERTIES OF THE PARENT METAL.
15. ALL WELDS SHALL BE VISUALLY INSPECTED IN ACCORDANCE WITH BS EN ISO 17637:2016.
16. AREA OF GALVANIZED COATING DAMAGED BY WELDING, CUTTING OR ERECTION SHALL BE MADE GOOD BY THE USED OF AT LEAST TWO COATS OF ZINC PAINT TO COMPLY WITH BS 4652.
17. NON-DESTRUCTIVE TESTING SHALL BE CARRIED OUT FOR 10% OF FILLET WELDS LARGER THAN 4mm.
18. ALL BOLTS SHALL BE GRADE 8.8 BOLTS TO COMPLY WITH BS 3692 UNLESS STATED OTHERWISE.
19. ALL HEXAGONAL BOLTS AND NUTS SHALL COMPLY WITH BS 4190 AND SHALL BE PROVIDED WITH WASHERS. ALL BOLTS, NUTS AND WASHER SSHALL BE GRADE 8.8, UNLESS STATED OTHERWISE. AND SPRING WASHERS SHALL COMPLY WITH BS 4464.
20. ALL ANCHOR BOLTS OR EQUIVALENT SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
21. STEEL SPACERS OF SIMILAR DIAMETER TO BARS BUT NOT LESS THAN 25mm DIAMETER SHALL BE PROVIDED BETWEEN ADJACENT LAYERS OF PARALLEL REINFORCEMENT AND SPACED AT NO MORE THAN 60 x THE SMALLER BAR DIAMETER OR 1.5m WHICHEVER IS SMALLER.
22. THE *CONTRACTOR* SHALL PROVIDE ADEQUATE CHAIRS. SPACING LINKS TO SUPPORT THE TOP LATER OF REINFORCEMENT IN THE SLAB AND BARS SHALL BE PROVIDED TO KEEP VERTICAL WALL REINFORCEMENT IN THE CORRECT ALIGNMENT.

A

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Rev.	Date	Description	By	Chk'd	App'd
				SH	M. 24
A	OCT 2022	TENDER ADDENDUM NO.3	SHC	WCTT	KP
-	JUL 2022	ISSUE FOR TENDER	SHC	WCTT	KP

Drawing Status: CONTRACT
Suitability: -

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: GENERAL NOTES (SHEET 2 OF 2)

Scale	Designed	Drawn	Checked	Authorised
N.T.S.	SHC	AC	WCTT	KP
Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-GEN-0002
Revision: A

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User name: LEUN3329 Date:07/02/2023 Time: 10:06:38
Filename: P:\CNHK\GIC\Projects\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC2022\2022\Contract Doc\Volume 3\15-Drawings\General\5124336-TD-C2-GEN-0002_A.dgn

EXISTING FEATURES:

27976-TP4 — EXISTING TRIAL PIT

27976-DH3 — EXISTING DRILLHOLE

6NE-B/C93 — EXISTING REGISTERED FEATURE

EXISTING UTILITIES:

1050 — EXISTING STORM DRAIN

150 — EXISTING SEWERAGE

FW — EXISTING FRESH WATER MAIN

SW — EXISTING SALT WATER MAIN

PL — EXISTING LIGHTING POLE AND CABLE DUCT

EXISTING GAS MAIN

11kV — EXISTING CLP CABLE

PROPOSED DRAINAGE WORKS TO BE CARRIED OUT:

WORKS BOUNDARY

BOX CULVERT

DRAINAGE PIPE

RECTANGULAR CHANNEL

TRAPEZOIDAL CHANNEL

450UC — U-CHANNEL

450CU — COVERED U-CHANNEL WITH NON-HEAVY DUTY PRECAST CONCRETE COVER

450CU(G) — COVERED U-CHANNEL WITH NON-HEAVY DUTY GRATING COVER

A — COVERED U-CHANNEL WITH HEAVY DUTY PRECAST CONCRETE COVER

450CU(HD-G) — COVERED U-CHANNEL WITH HEAVY DUTY GRATING COVER

MANHOLE

CATCHPIT

GULLY

FLAP VALVE

A +0.000 — PROPOSED FINISHED BANK / GROUND LEVEL IN mPD, UNLESS STATED OTHERWISE

EXISTING DRAINAGE SYSTEM:

PIPE / U-CHANNEL

RECTANGULAR CHANNEL

PROPOSED UTILITIES TO BE ABANDONED / REMOVED:

EXISTING PIPE / MANHOLE TO BE REMOVED

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

Drawing Status: CONTRACT

Suitability: -

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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
GENERAL LEGENDS

Scale	Designed	Drawn	Checked	Authorised
N.T.S.	SHC	AC	WCTT	KP
Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-GEN-0003

Revision: A

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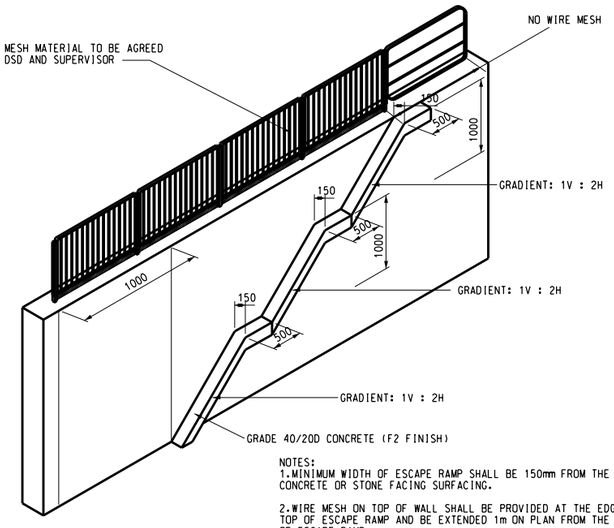
User name: LEUN3329 Date:07/02/2023 Time: 10:08:13
Filename: P:\CNHKAGIC\Projects\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC2022\02\Contract Doc\Volume 3\15-Drawings\General\5124336-TD-C2-GEN-0003_A.dgn

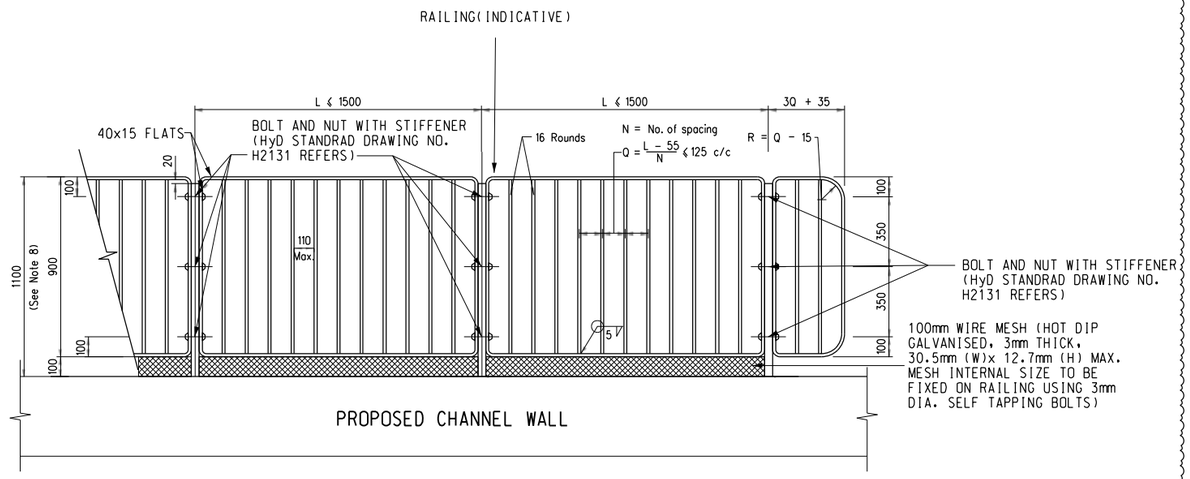


NOTES:
1.MINIMUM WIDTH OF ESCAPE RAMP SHALL BE 150mm FROM THE NEAREST CONCRETE OR STONE FACING SURFACING.

2.WIRE MESH ON TOP OF WALL SHALL BE PROVIDED AT THE EDGE OF TOP OF ESCAPE RAMP AND BE EXTENDED 1m ON PLAN FROM THE BOTTOM OF ESCAPE RAMP.

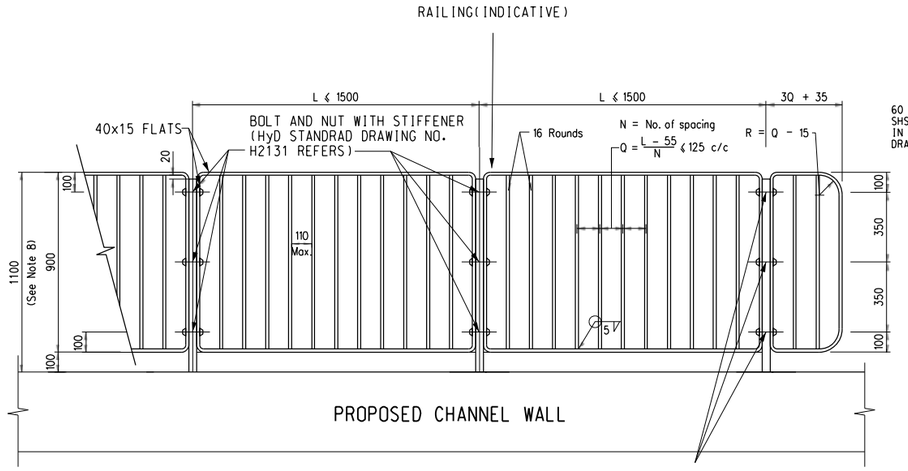
PROPOSED ANIMAL ESCAPE RAMP AND WIRE MESH

N.T.S.



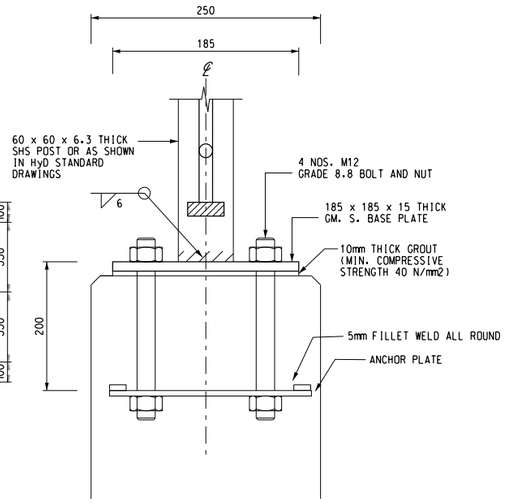
TYPICAL DETAILS SHOWING WIRE MESH

N.T.S.



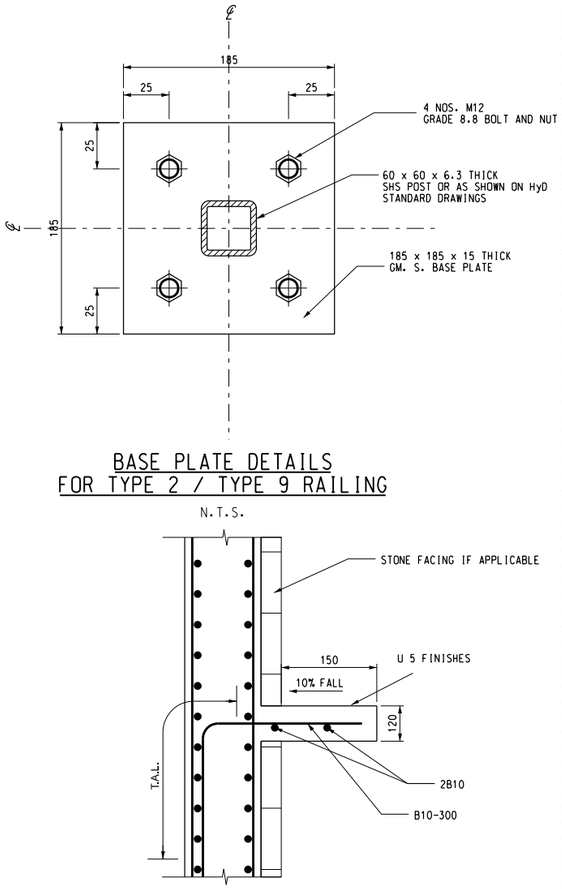
TYPE 2 RAILING

N.T.S.



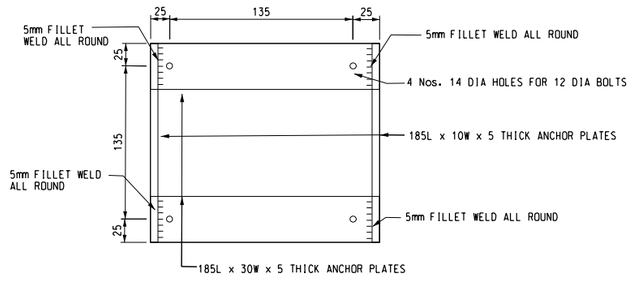
TYPICAL DETAIL FOR TYPE 2 / TYPE 9 RAILING AT CROSSING (ALONG CHANNEL WALL SIMILAR)

N.T.S.



BASE PLATE DETAILS FOR TYPE 2 / TYPE 9 RAILING

N.T.S.



PLAN OF ANCHOR PLATES

N.T.S.

DETAIL OF ANIMAL ESCAPE RAMP

N.T.S.

NOTES:

1. ALL STEEL PLATES SHALL BE GALVANISED MILD STEEL UNLESS STATED OTHERWISE.
2. FOR TYPICAL DETAILS OF TYPE 9 RAILING, REFER TO HyD STANDARD DRAWING NOS. H 2290 AND H 2291.
3. FOR FIXING DETAILS OF TYPE 9 RAILING, REFER TO THIS DRAWING.

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

Drawing Status: CONTRACT
Suitability: -

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
TYPICAL DETAILS OF ANIMAL ESCAPE RAMP, WIRE MESH, RAILING SUPPORT

Scale	Designed	Drawn	Checked	Authorised
N.T.S.	SHC	AC	WCTT	KP
Original Size: A1	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022

Drawing Number: 5124336-TD-C2-GEN-9006
Revision: A

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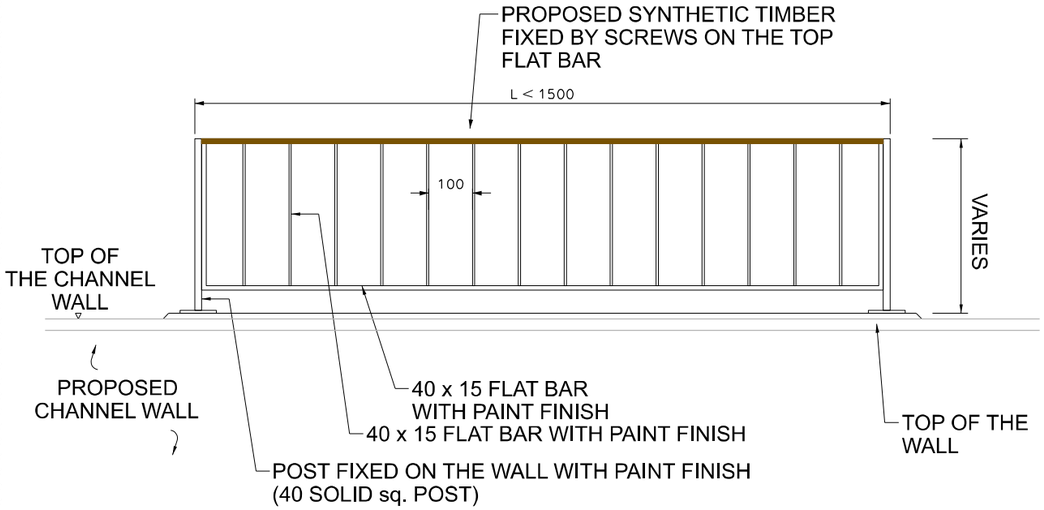
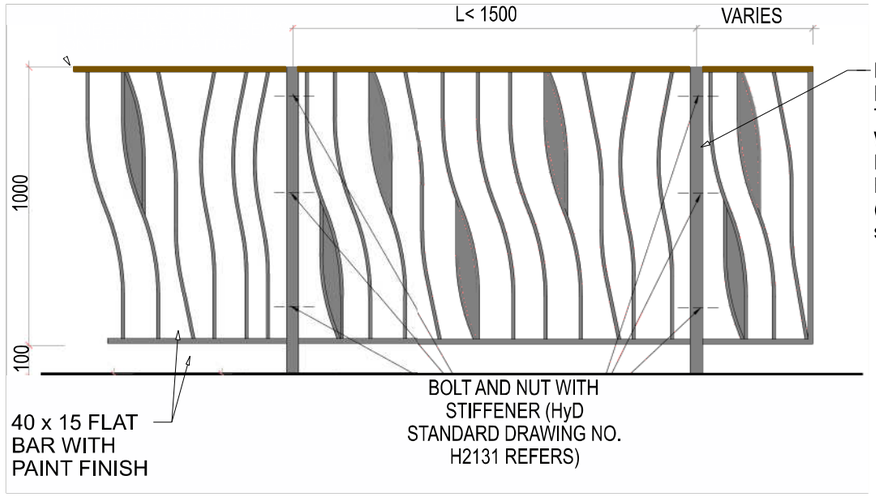
User name: LEUN3329 Date:07/02/2023 Time: 10:15:08
Filename: P:\CNHKA\GIO\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC2022\02\Contract Doc\Volume 3\15-Drawings\General\5124336-TD-C2-GEN-9006_A.dgn



EXAMPLE OF DECORATIVE RAILING TYPE A (INDICATIVE)
N.T.S.



EXAMPLE OF DECORATIVE RAILING TYPE B (INDICATIVE)
N.T.S.

NOTES:

1. THE *CONTRACTOR* SHALL SUBMIT SAMPLE OF DECORATIVE RAILING TO DSD AND *SUPERVISOR* FOR ACCEPTANCE.

2. THE *CONTRACTOR* SHALL OBTAIN THE FOLLOWING FROM THE PROPRIETARY MANUFACTURER REGARDING THE PROPOSED DECORATIVE RAILING AND SUBMIT THE *SUPERVISOR* FOR ACCEPTANCE:
   - TYPE OF MATERIAL, SIZE, COLOUR, DETAILS OF FIXING;
   - DESIGN INCLUDING LAYOUT PLAN, LONGITUDINAL PROFILES, DETAILS AND CALCULATIONS INCLUDING ALL MEMBERS, SUPPORTS, FIXING ETC.OF THE DECORATIVE RAILING

3. THE MINIMUM HEIGHT MEASURED FROM THE TOP OF THE PROPOSED DECORATIVE RAILING TO THE FINISHED GROUND LEVEL SHALL BE 1100MM.

4. *CONTRACTOR* SHALL OBTAIN APPROVAL FROM MAINLAND NORTH DIVISION OF DSD AND HAD FOR THE PROPOSED DECORATIVE RAILING.

5. SAMPLE / CATALOGUE OF DECORATIVE RAILING SHALL BE SUBMITTED FOR ACCEPTANCE BY THE SUPERVISOR PRIOR TO INSTALLATION.

6. TOP LEVEL OF THE RAILING SHALL BE ALIGNED. THE CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWINGS FOR THE SUPERVISOR'S ACCEPTANCE.

7. DTEAILS OF ANCHOR BOLTS, BASEPLATE AND ANCHOR PLATES SHALL FOLLOW TYPICAL DETAILS TO TYPE 2/ TYPE 9 RAILING AS SHOWN IN DRAWING NO. 5124336-TD-C2-GEN-9006.

8. TYPE A DECORATIVE RAILING SHALL BE ADOPTED FOR LOCATIONS WITH CHANNEL WALL 500mm ABOVE FINISHED GROUND LEVEL. THE TOP OF THE RAILING SHALL BE 1100mm ABOVE FINISHED GROUND LEVEL. TYPE B DECORATIVE RAILING SHALL APPLIED TO THE REMAINING AREA.

9. STEEL TO BE GRADE S275 TO BS EN 10025-2.

10. WELDS TO BE SOUND AND CONTINUOUS AVOIDING LOCK-IN SLAG. WELDING SYMBOLS SHALL COMPLY WITH BS 499.

11. WELDING SLAG TO BE REMOVED IMMEDIATELY AFTER WELDING.

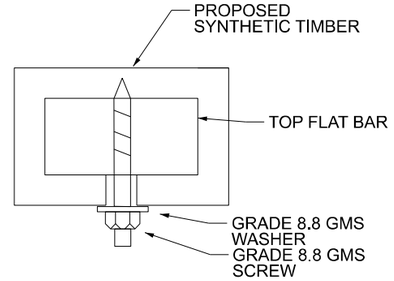
12. RAILING PANELS AFTER FABRICATION AND WELDING, POSTS, NUTS, BOLTS AND WASHERS ARE TO BE HOT DIP GALVANIZED TO BS EN ISO 1461:2009.

13. EXPANSION JOINT DETAILS SEE HyD STANDARD DRAWING No. H2134.

14. IN FABTRICATING THE PERIMETER OF THE RAILING PANEL, A MAX. OF ONE WELDED JOINT IS ALLOWED ON EACH VERTICAL SIDE ADJOINING THE POST. THE WELD SHALL BE SINGLE-V BUTT WELD, AND BE LOCATED IN BETWEEN TWO CONNECTION BOLTS, AT DISTANCE NOT LESS THAN 125mm FROM EITHER BOLT. NO JOINTING FOR THE PERIMETER IS ALLOWED ON THE BOTTOM SIDE.

15. SEE HyD TC No. 2/ 2017 FOR PROVISION AND DESIGN.

16. SCREWS FIXING THE TIMBER ON THE TOP FLAT BAR SHALL BE PROVIDED AT THE BOTTOM SIDE OF THE TOP FLAT BAR.



TYPICAL FIXING DETAILS OF SYNTHETIC TIMBER (INDICATIVE)
N.T.S.

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

Drawing Status: CONTRACT
Suitability: -

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: PROPOSED LANDSCAPE DETAILS

Scale	Designed	Drawn	Checked	Authorised
AS SHOWN	SHC	AC	WCTT	KP
Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-GEN-9009
Revision: A

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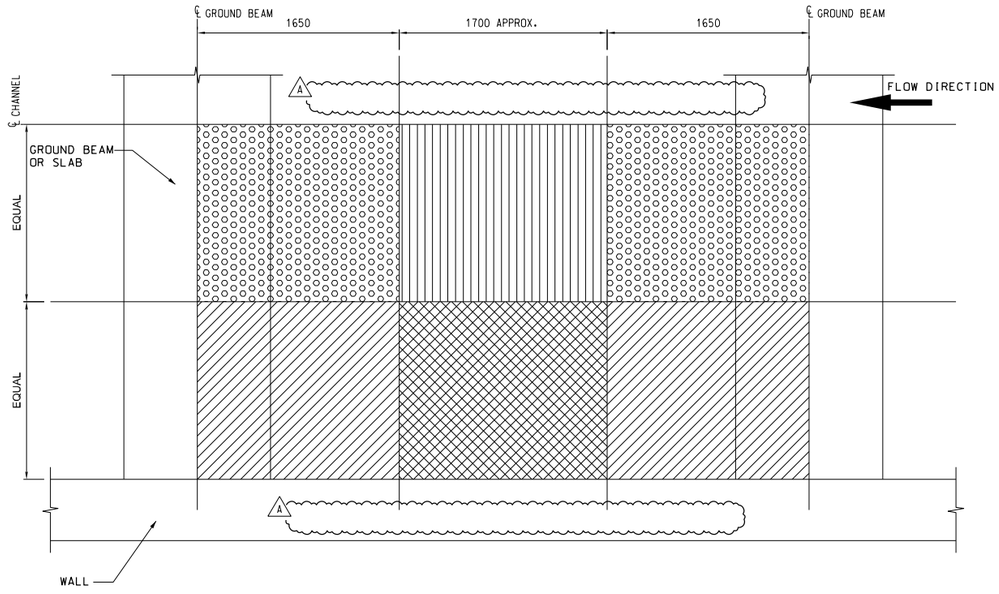
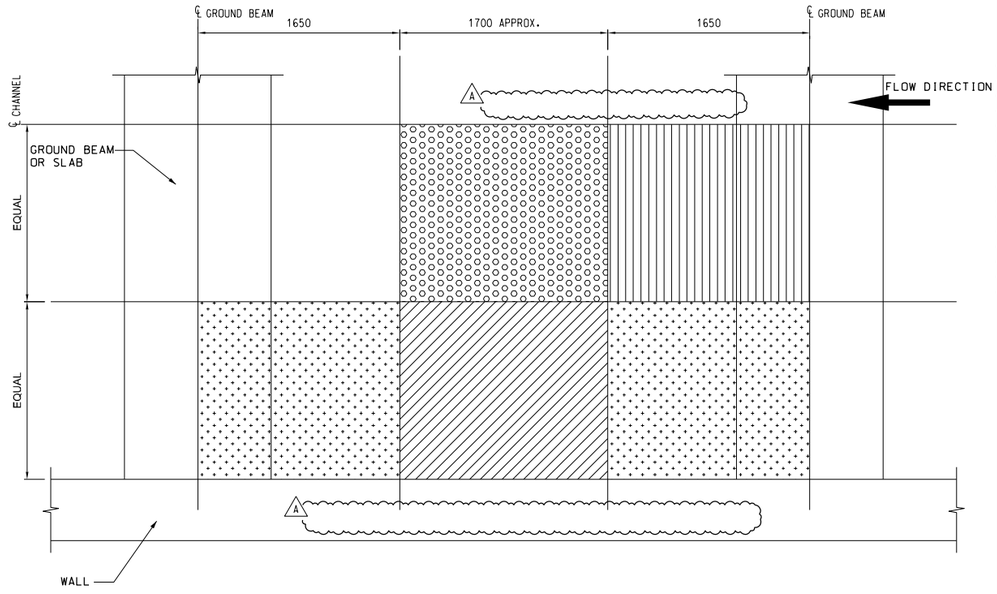
User name: LEUN3329 Date:07/02/2023 Time: 10:16:48
Filename: P:\CNHKA\GIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC/2022/02\Contract Doc\Volume 3\15-Drawings\General\5124336-TD-C2-GEN-9009_A.dgn



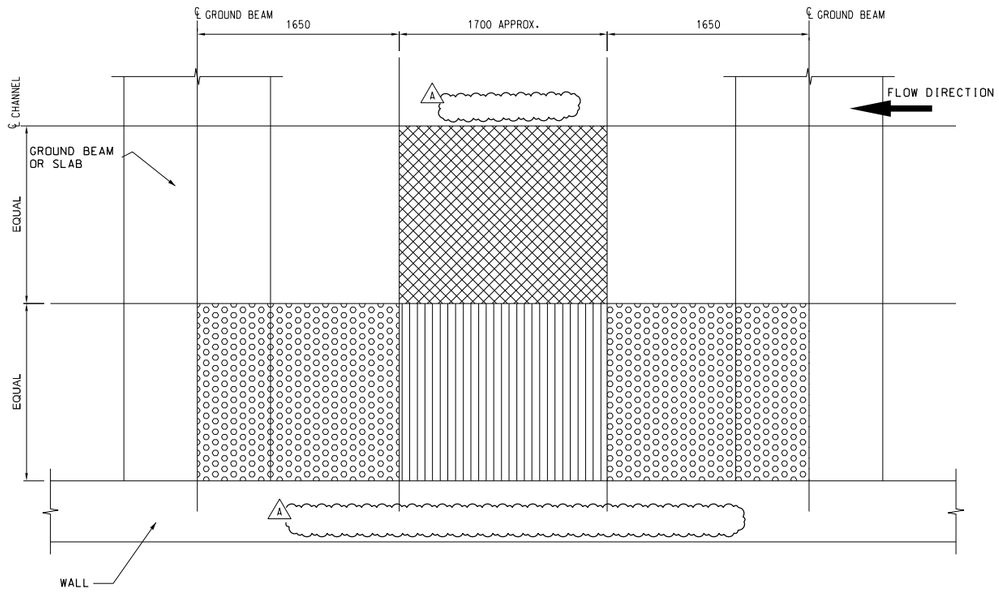
PATTERN 1 (T1)

(T1 IS NOT REQUIRED ON OPPOSITE SIDE IN THE SAME BAY)
SCALE N.T.S.



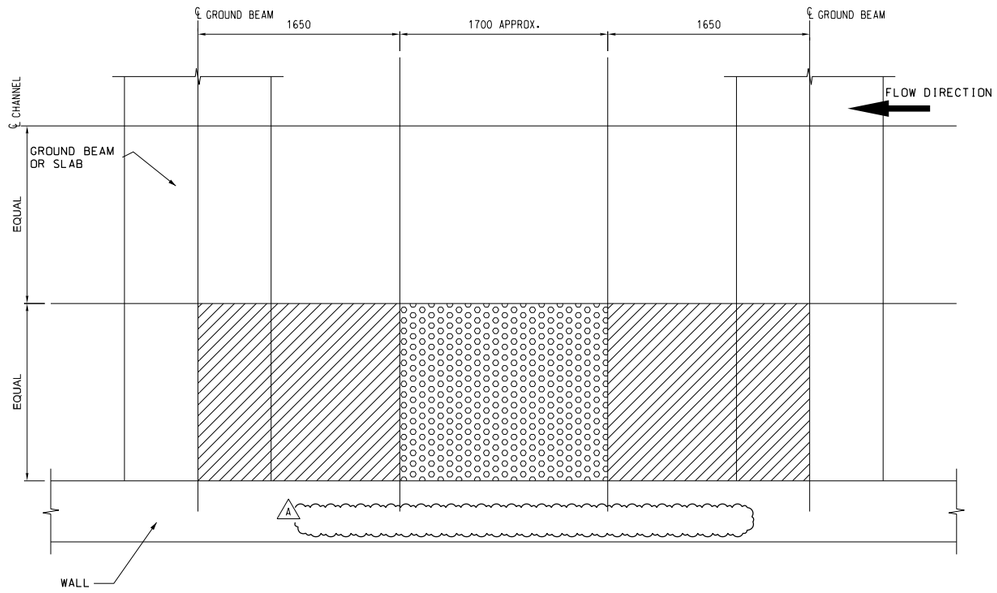
PATTERN 2 (T2)

(T2 IS NOT REQUIRED ON OPPOSITE SIDE IN THE SAME BAY)
SCALE N.T.S.



PATTERN 3 (T3)

(T3 IS NOT REQUIRED ON OPPOSITE SIDE IN THE SAME BAY)
SCALE N.T.S.



PATTERN 4 (T4)

(T4 IS NOT REQUIRED ON OPPOSITE SIDE IN THE SAME BAY)
SCALE N.T.S.

B

Botanical Name	Chinese Name	Minimum Dimensions			Min. Spacing(mm)	Min. Density (nos./m^2)	Origin	Type
		Number of stem	Length of stems (mm)	Spread diameter (mm)				
Acorus gramineus	金錢蒲	1	300	200	200	10	Native	Aquatic herb
Bacopa monnieri	假馬齒莧	1	300	200	200	10	Native	Aquatic herb
Cyperus distans	疏穗沙草	1	200	200	200	10	Native	Aquatic herb
Juncus effusus	燈芯	1	250	200	200	10	Native	Aquatic herb
Lobelia chinensis	半邊蓮	1	250	200	200	10	Native	Aquatic herb

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS OTHERWISE STATED.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 5124336-TD-C2-GEN-9011.
3. PLANTING SHALL BE PROVIDE WITHIN SITE BOUNDARIES ALONG THE TOP OF PROPOSED CHANNEL THROUGHOUT ON GOVERNMENT LAND ONLY.
4. HYDROSEEDING SHALL BE PROVIDED TO THE PLANTING MIX WHEN THE PLANTING AREA HAS A WIDTH LESS THAN 600mm BETWEEN THE SITE BOUNDARY AND THE EDGE OF PLANTING AREA OF CLIMBING PLANTS/ U-CHANNEL.
5. AVERAGE NUMBER OF ROWS CLIMBERS ALONG TOP OF CHANNEL = 2.
6. PLANTING ARRANGEMENT A1 SHALL APPLY TO LANDSCAPE AREA WITH WIDTH (MEASURED FROM CLIMBERS PLANT AREA/ U-CHANNEL EDGE TO SITE BOUNDARY) IN BETWEEN 600MM TO 1500MM.
7. PLANTING ARRANGEMENT A2 SHALL APPLY TO THE LANDSCAPE AREA WITH THE WIDTH BETWEEN MEASURED FROM CLIMBERS PLANT AREA/ U-CHANNEL EDGE AND SITE BOUNDARY MORE THAN 1500mm.
8. ALL PLANTINGS SHALL BE DELIVERED IN POT.

A

LEGEND:

- ACORUS GRAMINEUS (金錢蒲)
- BACOPA MONNIERI (假馬齒莧)
- CYPERUS DISTANS (疏穗沙草)
- JUNCUS EFFUSUS (燈芯)
- LOBELIA CHINENSIS (半邊蓮)

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Rev.	Date	Description	By	Chk'd	App'd
			SHC		
B	NOV 2022	TENDER ADDENDUM NO.4	SHC	WCTT	KP
A	OCT 2022	TENDER ADDENDUM NO.3	SHC	WCTT	KP
-	JUL 2022	ISSUE FOR TENDER	SHC	WCTT	KP

Drawing Status: CONTRACT
Suitability: -

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: AQUATIC PLANT AT CHANNEL BED

Scale	Designed	Drawn	Checked	Authorised
N.T.S.	SHC	AC	WCTT	KP
Original Size: A1	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022

Drawing Number: 5124336-TD-C2-GEN-9010
Revision: B

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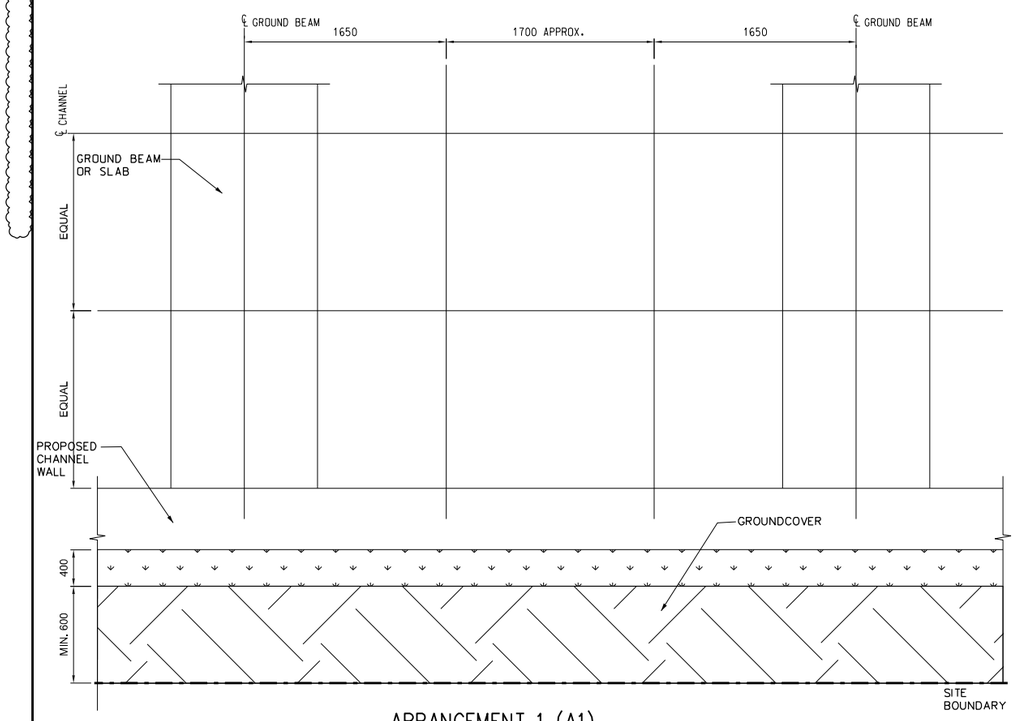
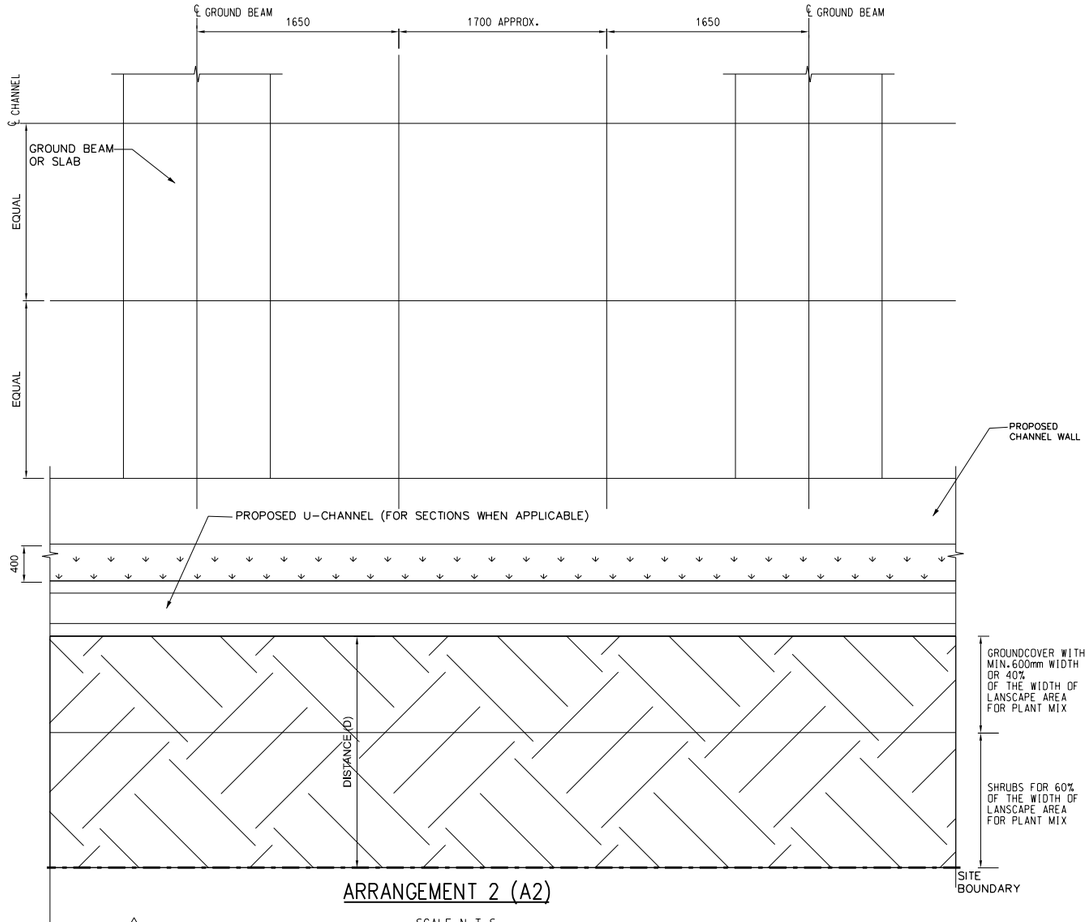
User name: LEUN3329 Date:07/02/2023 Time: 10:17:38
Filename: P:\CIN\HKA\GIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC2022\2022\Contract Doc\Volume 3\15-Drawings\General\5124336-TD-C2-GEN-9010_B.dgn



ARRANGEMENT 1 (A1)

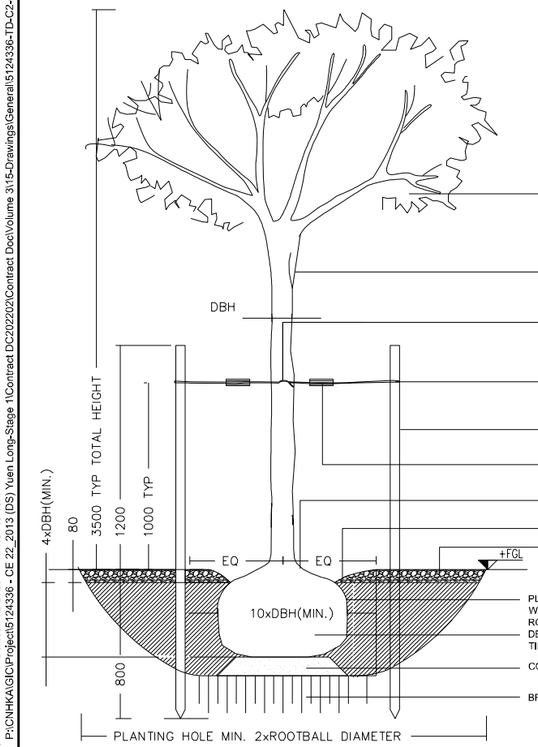
SCALE N.T.S.

ORIGIN	Bontanical Name	Chinese Name	Minimum Dimensions				Spacing(mm)	Type
			Number of stem	Length of stems (mm)	Spread diameter (mm)	Container diameter (mm)		
Native	*FICUS PUMILA*	薜荔	3	1000	200	250	350	Climbers



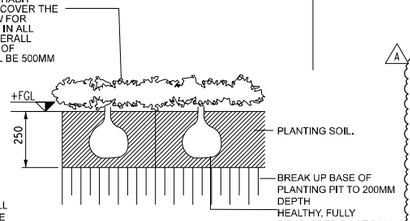
ARRANGEMENT 2 (A2)

SCALE N.T.S.



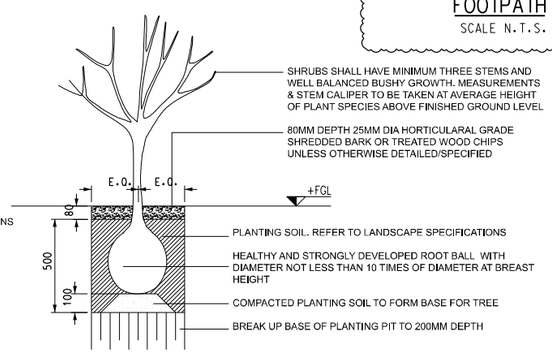
TYPICAL DETAIL FOR COMPENSATORY TREES

SCALE N.T.S.



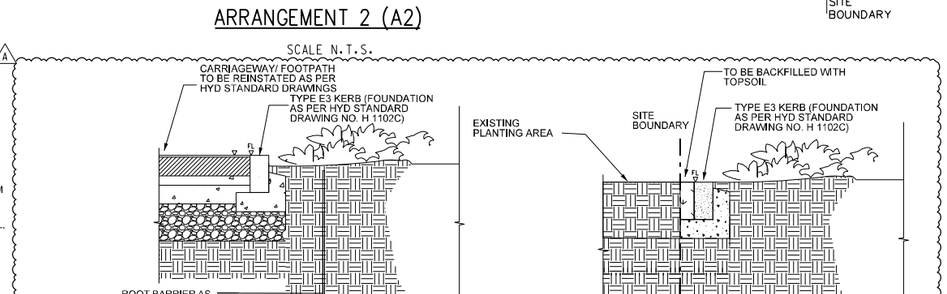
TYPICAL DETAIL OF GROUNDCOVER

SCALE N.T.S.



TYPICAL DETAIL OF SHRUBS

SCALE N.T.S.

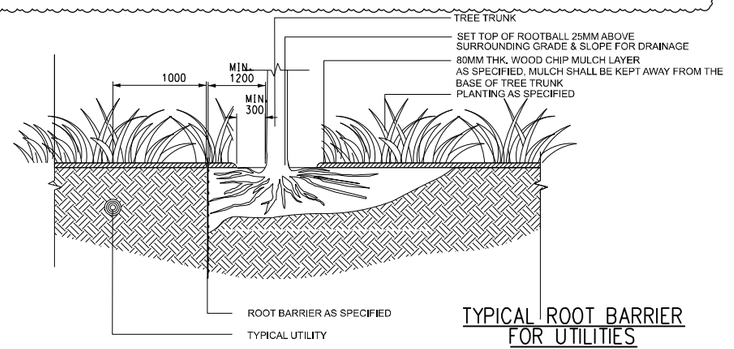


TYPICAL INTERFACING DETAIL FOR PLANTING AREA AND CARRIAGEWAY/ FOOTPATH

SCALE N.T.S.

TYPICAL INTERFACING DETAIL FOR PLANTING AREA

SCALE N.T.S.



TYPICAL ROOT BARRIER FOR UTILITIES

SCALE N.T.S.

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE STATED.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 5124336-TD-C2-GEN-9010.
3. PLANTING SHALL BE PROVIDED WITHIN SITE BOUNDARIES ALONG THE TOP OF PROPOSED CHANNEL THROUGHOUT ON GOVERNMENT LAND ONLY.
4. HYDROSEEDING SHALL BE PROVIDED TO THE PLANTING MIX WHEN THE PLANTING AREA HAS A WIDTH LESS THAN 600mm BETWEEN THE SITE BOUNDARY AND THE EDGE OF PLANTING AREA OF CLIMBING PLANTS/ U-CHANNEL.
5. AVERAGE NUMBER OF ROWS CLIMBERS ALONG TOP OF CHANNEL = 2.
6. PLANTING ARRANGEMENT A1 SHALL APPLY TO LANDSCAPE AREA WITH WIDTH (MEASURED FROM CLIMBERS PLANT AREA/ U-CHANNEL EDGE TO SITE BOUNDARY) IN BETWEEN 600MM TO 1500MM.
7. PLANTING ARRANGEMENT A2 SHALL APPLY TO THE LANDSCAPE AREA WITH THE WIDTH BETWEEN MEASURED FROM CLIMBERS PLANT AREA/ U-CHANNEL EDGE AND SITE BOUNDARY MORE THAN 1500mm.
8. AQUATIC PLANT AT CHANNEL BED IS NOT SHOWN FOR CLARIFY.
9. ALL PLANTINGS SHALL BE DELIVERED IN POT.

LEGEND:

FICUS PUMILA (薜荔)

PLANTING MIX

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

Drawing Status: CONTRACT

Suitability: -

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: PROPOSED CLIMBING PLANT AT TOP CHANNEL AND TYPICAL LANSCAPING DETAILS

Scale	Designed	Drawn	Checked	Authorised
AS SHOWN	SHC	AC	WCTT	KP
Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-GEN-9011

Revision: A

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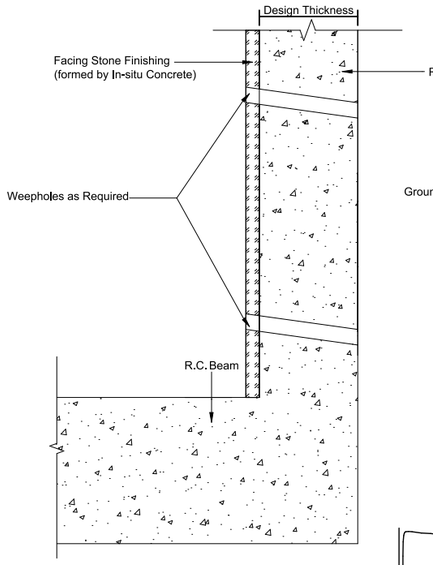
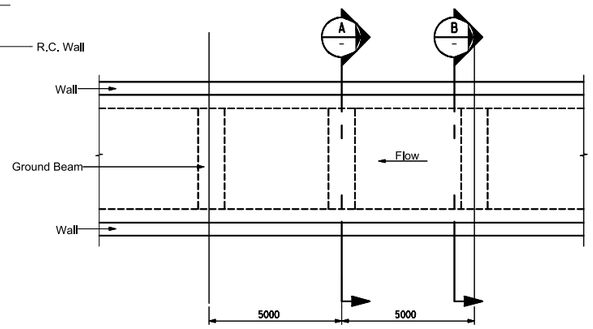
User name: LEUN3329 Date:07/02/2023 Time: 10:19:00
Filename: P:\CNHKA\GIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC2022\2\Contract Doc\Volume 3\15-Drawings\General\5124336-TD-C2-GEN-9011_A.dgn



TYPICAL SECTION

N.T.S.



BEDDING DESIGN TYPE 1A

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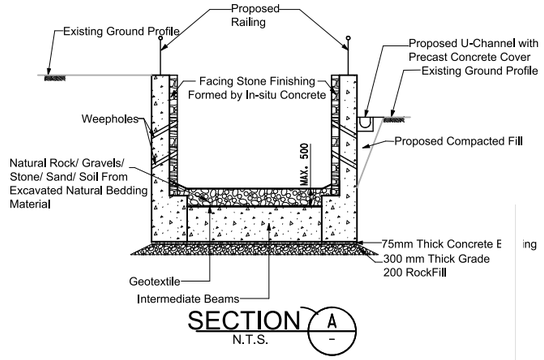


SECTION A

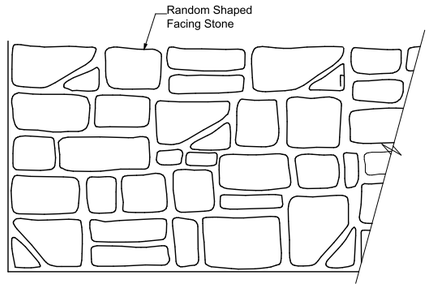
N.T.S.

NOTE:

1. ALL DIMENSION TO BE READ IN mm
2. VARYING AND RANDOM SIZE OF FACING STONE SHALL BE PRODUCED. MAXIMUM THICKNESS OF FACING STONE IS 75mm.
3. THE CONCRETE FINISHING WILL BE APPLIED SOLELY TO THE SECTIONS WITH ELS DUE TO ENGINEERING CONCERN, RATHER THAN TO THE WHOLE GREEN CHANNELS.

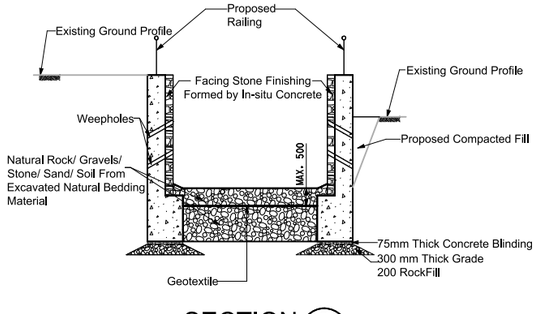
REINFORCEMENT CONCRETE

FACING STONE FINISHING
(FORMED BY IN-SITU CONCRETE)



ELEVATION OF FACING STONE (RANDOM PATTERN)

N.T.S.

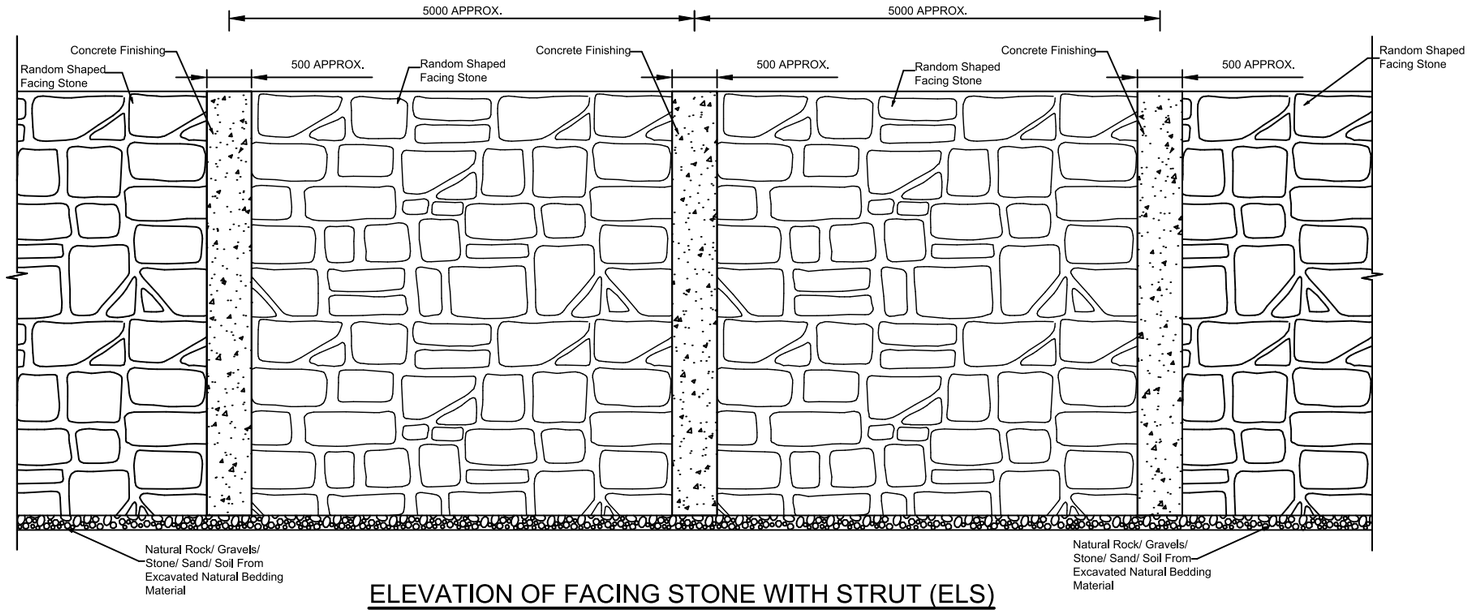


SECTION B

N.T.S.

TYPICAL TYPE AND ARRANGEMENT OF FACING STONE

N.T.S.



ELEVATION OF FACING STONE WITH STRUT (ELS)

N.T.S.

CONTROLLED COPY

Wing Tat Civil Engineering Co. Limited
永達土木工程有限公司

DRAWN	CHECKED	TITLE	SKETCH NO.
WWH	JL	**Contract No. DC/2022/02** **Drainage Improvement Works at Yuen Long-Stage 2** DETAIL OF CONCRETE FACING STONE FINISHING	WT/DC/2022/02/CF/SK/001
DATE: DEC 2024	SCALE: N.T.S.		REV.

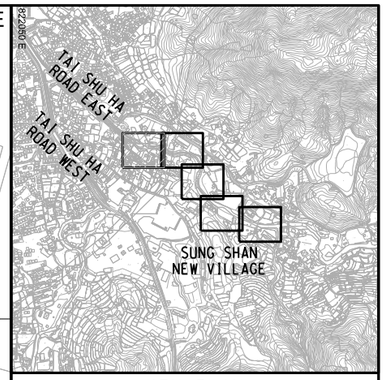
Figures

Figure 4

Proposed Aquatic Planting Layout
4a – Sung Shan New Village (Drawing Nos.: 5124336-TD-C2-DP-4500 to 4504)
4b – Lin Fa Tei (Drawing Nos.: 5124336-TD-C2-DP-6500 to 6506)
4c – Ha Che (Drawing Nos.: 5124336-TD-C2-DP-8500 to 8506)

DO NOT SCALE

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-4501



KEY PLAN
N.T.S.

NOTES:

1. FOR LOCATION PLAN, REFER TO DRAWING NO.5124336-TD-C2-GEN-4000.
2. FOR GENERAL NOTES, REFER TO DRAWING NO.5124336-TD-C2-GEN-0001 AND 0002, 5124336TD-C2-GEO-0001 AND 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. AQUATIC PLANTING PATTERN SHALL REFER DRAWING NO. 5124336-TD-C2-GEN-9010.

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED OPENING AT CHANNEL BASE
- PROPOSED 1000mm(D)x1200mm(W) GROUND BEAM, UNLESS NOTED OTHERWISE
- FR — PROPOSED DECORATIVE RAILING
- EJ — PROPOSED 25mm WIDE EXPANSION JOINT
- IJ — PROPOSED 25mm WIDE ISOLATION JOINT
- T1 — PROPOSED AQUATIC PLANT PATTERN AT CHANNEL BED

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

Drawing Status: CONTRACT
Suitability: -

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:
SUNG SHAN NEW VILLAGE -
AQUATIC PLANTING LAYOUT
(SHEET 1 OF 5)

Scale	Designed	Drawn	Checked	Authorised
1 : 200	SHC	AC	WCTT	KP
Orignal Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-DP-4500
Revision: A

1 : 200 SCALE BAR

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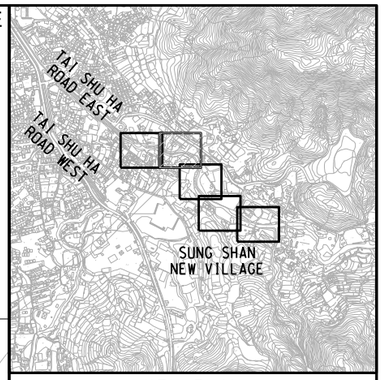
User name: LEUN3329 Date:07/02/2023 Time: 17:14:27
File name: P:\CNHKA\GIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC2022\02\Contract Doc\Volume 3\15-Drawings\SSNV\5124336-TD-C2-DP-4500_A.dgn

DO NOT SCALE



KEY PLAN
N.T.S.

NOTES:

1. FOR LOCATION PLAN, REFER TO DRAWING NO.5124336-TD-C2-GEN-4000.
2. FOR GENERAL NOTES, REFER TO DRAWING NO.5124336-TD-C2-GEN-0001 AND 0002, 5124336TD-C2-GEO-0001 AND 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. AQUATIC PLANTING PATTERN SHALL REFER DRAWING NO. 5124336-TD-C2-GEN-9010.

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED OPENING AT CHANNEL BASE
- PROPOSED 1000mm(D)x1200mm(W) GROUND BEAM, UNLESS NOTED OTHERWISE.
- FR — PROPOSED DECORATIVE RAILING
- EJ — PROPOSED 25mm WIDE EXPANSION JOINT
- T1 — PROPOSED AQUATIC PLANT PATTERN AT CHANNEL BED

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

Drawing Status: CONTRACT
Suitability: -

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:
SUNG SHAN NEW VILLAGE -
AQUATIC PLANTING LAYOUT
(SHEET 2 OF 5)

Scale	Designed	Drawn	Checked	Authorised
1 : 200	SHC	AC	WCTT	KP
Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-DP-4501
Revision: A

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User name: LEUN3329 Date:07/02/2023 Time:17:14:29
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DO NOT SCALE

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-4501

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-4503

832150 E
832200 E
831650 N
831600 N

MAX. 1(VERTICAL) : 2(HORIZONTAL) SLOPE

EXISTING CHANNEL TO BE BACKFILL TO +12.7mPD

T1 T2 T3 T4

FR EJ

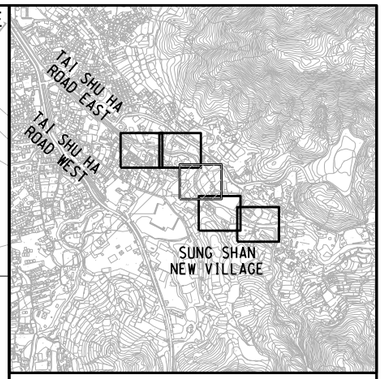
5000 TYP.

13.2 14.6 12.5 13.8 14.9 12.7 16.8 17.1 18.2 14.0

TS Track

0 5 10 m
1 : 200 SCALE BAR

Millimetres 0 10 100



KEY PLAN
N.T.S.

NOTES:

1. FOR LOCATION PLAN, REFER TO DRAWING NO.5124336-TD-C2-GEN-4000.
2. FOR GENERAL NOTES, REFER TO DRAWING NO.5124336-TD-C2-GEN-0001 AND 0002, 5124336TD-C2-GEO-0001 AND 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. AQUATIC PLANTING PATTERN SHALL REFER DRAWING NO. 5124336-TD-C2-GEN-9010.

A

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED OPENING AT CHANNEL BASE
- PROPOSED 1000mm(D)x1200mm(W) GROUND BEAM, UNLESS NOTED OTHERWISE.
- FR — PROPOSED DECORATIVE RAILING
- EJ — PROPOSED 25mm WIDE EXPANSION JOINT
- T1 — PROPOSED AQUATIC PLANT PATTERN AT CHANNEL BED

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

Drawing Status: CONTRACT
Suitability: -

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:
SUNG SHAN NEW VILLAGE - AQUATIC PLANTING LAYOUT (SHEET 3 OF 5)

Scale	Designed	Drawn	Checked	Authorised
1 : 200	SHC	AC	WCTT	KP
Original Size: A1	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022

Drawing Number: 5124336-TD-C2-DP-4502
Revision: A

User name: LEUN3329 Date:07/02/2023 Time: 17:14:30
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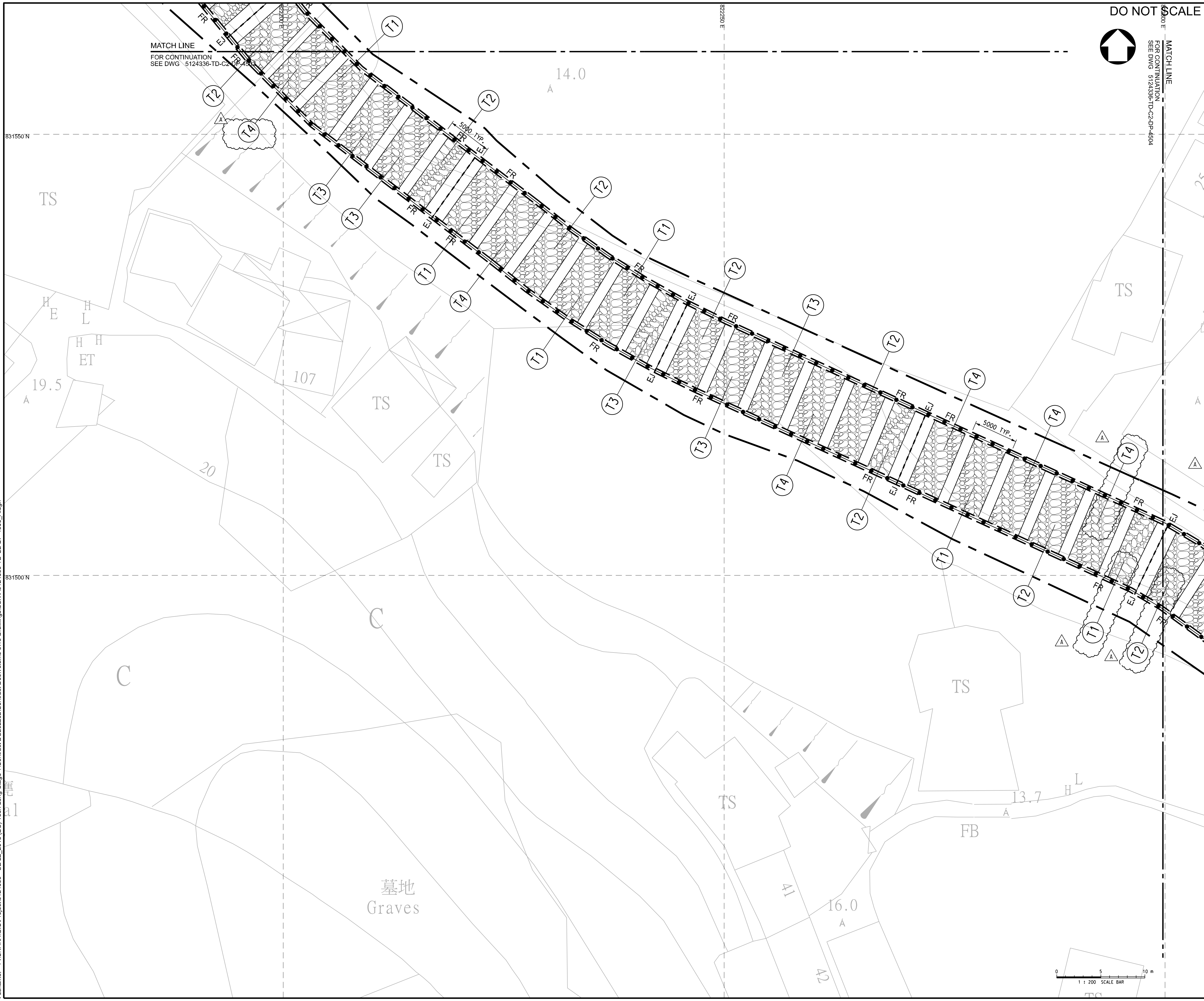
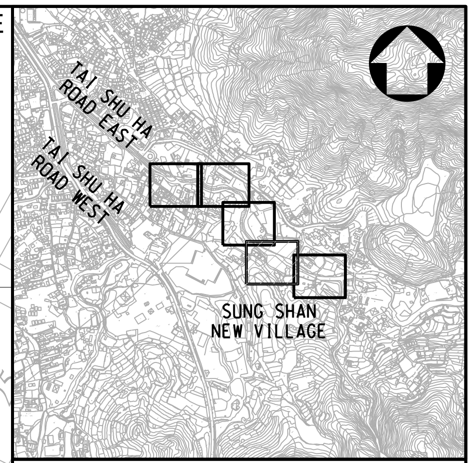
DO NOT SCALE





KEY PLAN
N.T.S.

NOTES:

1. FOR LOCATION PLAN, REFER TO DRAWING NO.5124336-TD-C2-GEN-4000.
2. FOR GENERAL NOTES, REFER TO DRAWING NO.5124336-TD-C2-GEN-0001 AND 0002, 5124336TD-C2-GEO-0001 AND 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. AQUATIC PLANTING PATTERN SHALL REFER DRAWING NO. 5124336-TD-C2-GEN-9010.

LEGEND:

WORKS BOUNDARY
RECTANGULAR CHANNEL
PROPOSED OPENING AT CHANNEL BASE
PROPOSED 1000mm(D)x1200mm(W) GROUND BEAM, UNLESS NOTED OTHERWISE
FR — PROPOSED DECORATIVE RAILING
EJ — PROPOSED 25mm WIDE EXPANSION JOINT
T1 — PROPOSED AQUATIC PLANT PATTERN AT CHANNEL BED

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

Drawing Status: CONTRACT
Suitability: -

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
SUNG SHAN NEW VILLAGE -
AQUATIC PLANTING LAYOUT
(SHEET 4 OF 5)

Scale	Designed	Drawn	Checked	Authorised
1 : 200	SHC	AC	WCTT	KP
Original Size A1	Date JUL 2022	Date JUL 2022	Date JUL 2022	Date JUL 2022

Drawing Number: 5124336-TD-C2-DP-4503
Revision: A

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User name: LEUN3329 Date:07/02/2023 Time: 17:14:34
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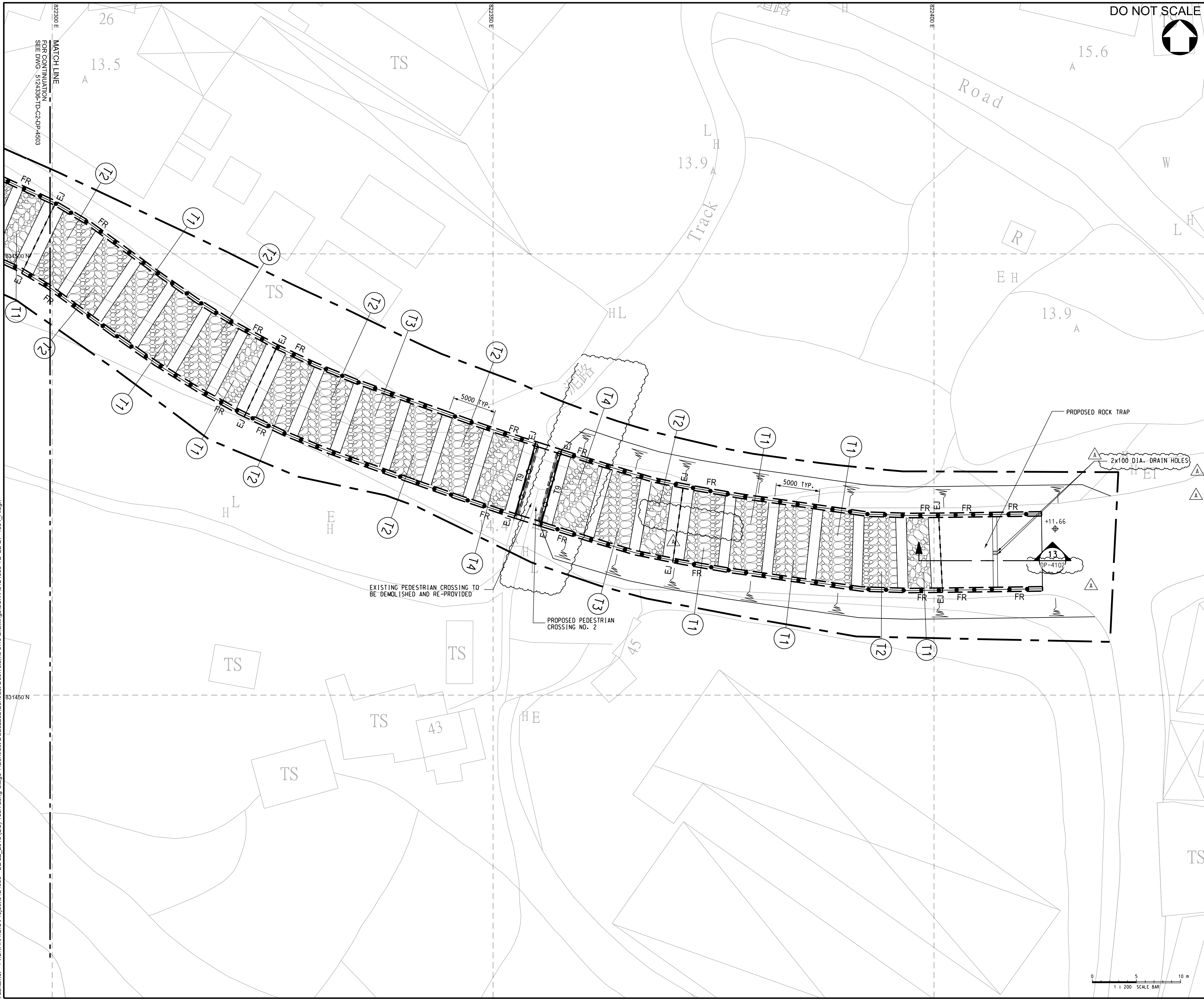

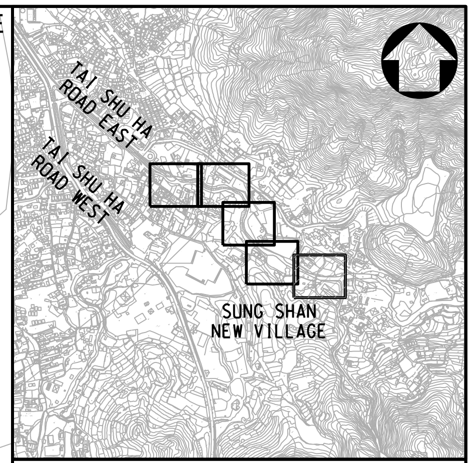

KEY PLAN
N.T.S.

NOTES:

1. FOR LOCATION PLAN, REFER TO DRAWING NO.5124336-TD-C2-GEN-4000.
2. FOR GENERAL NOTES, REFER TO DRAWING NO.5124336-TD-C2-GEN-0001 AND 0002, 5124336TD-C2-GEO-0001 AND 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. AQUATIC PLANTING PATTERN SHALL REFER DRAWING NO. 5124336-TD-C2-GEN-9010.

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED OPENING AT CHANNEL BASE
- PROPOSED 1000mm(D)x1200mm(W) GROUND BEAM, UNLESS NOTED OTHERWISE
- FR — PROPOSED DECORATIVE RAILING
- EJ — PROPOSED 25mm WIDE EXPANSION JOINT
- IJ — PROPOSED 25mm WIDE ISOLATION JOINT
- T1 — PROPOSED AQUATIC PLANT PATTERN AT CHANNEL BED

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

Drawing Status: CONTRACT
Suitability: -

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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
SUNG SHAN NEW VILLAGE -
AQUATIC PLANTING LAYOUT
(SHEET 5 OF 5)

Scale	Designed	Drawn	Checked	Authorised
1 : 200	SHC	AC	WCTT	KP
Original Size: A1	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022

Drawing Number: 5124336-TD-C2-DP-4504
Revision: A

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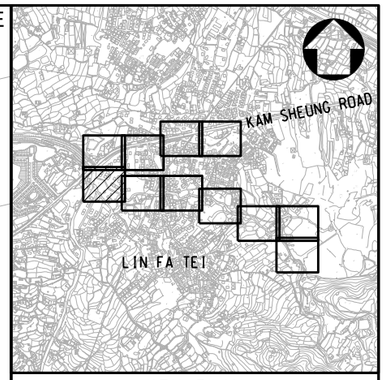
User name: LEUN3329 Date:07/02/2023 Time: 17:14:36
Filename: P:\CNHKA\GIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC202202\Contract Doc\Volume 3\15-Drawings\SSNV\5124336-TD-C2-DP-4504_A.dgn

DO NOT SCALE



KEY PLAN
N.T.S.

NOTES:

1. FOR LOCATION PLAN, REFER TO DRAWING NO.5124336-TD-C2-GEN-6000.
2. FOR GENERAL NOTES, REFER TO DRAWING NO.5124336-TD-C2-GEN-0001 AND 0002, 5124336TD-C2-GEO-0001 AND 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. AQUATIC PLANTING PATTERN SHALL REFER TO DRAWING NO.5124336-TD-C2-GEN-9010.

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED OPENING AT CHANNEL BASE
- PROPOSED GROUND BEAM
- FR — PROPOSED DECORATIVE RAILING
- EJ — PROPOSED 25mm WIDE EXPANSION JOINT
- IJ — PROPOSED 25mm WIDE ISOLATION JOINT
- T1 — PROPOSED AQUATIC PLANT PATTERN AT CHANNEL BED

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-6501

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
Suitability: -

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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
LIN FA TEI -
AQUATIC PLANTING LAYOUT
(SHEET 1 OF 7)

Scale	Designed	Drawn	Checked	Authorised
1 : 200	SHC	AC	WCTT	KP
Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-DP-6500
Revision: A

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User name: LEUN3329 Date:07/02/2023 Time:17:24:35
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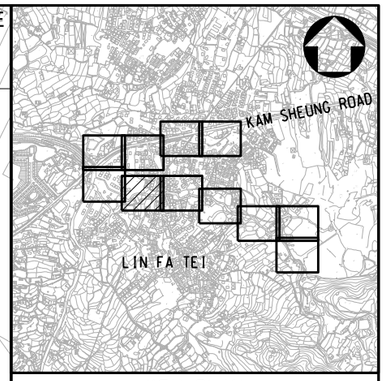
DO NOT SCALE



KEY PLAN
N.T.S.

NOTES:

1. FOR LOCATION PLAN, REFER TO DRAWING NO.5124336-TD-C2-GEN-6000.
2. FOR GENERAL NOTES, REFER TO DRAWING NO.5124336-TD-C2-GEN-0001 AND 0002, 5124336TD-C2-GEO-0001 AND 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. AQUATIC PLANTING PATTERN SHALL REFER TO DRAWING NO.5124336-TD-C2-GEN-9010.

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED OPENING AT CHANNEL BASE
- PROPOSED GROUND BEAM
- FR PROPOSED DECORATIVE RAILING
- A FJ PROPOSED 25mm WIDE EXPANSION JOINT
- T1 PROPOSED AQUATIC PLANT PATTERN AT CHANNEL BED

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
Suitability: -

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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
LIN FA TEI -
AQUATIC PLANTING LAYOUT
(SHEET 2 OF 7)

Scale	Designed	Drawn	Checked	Authorised
1 : 200	SHC	AC	WCTT	KP
Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-DP-6501
Revision: A

1 : 200 SCALE BAR

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User name: LEUN3329 Date:07/02/2023 Time: 17:24:37
Filename: P:\CNHKA\GIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC2022\02\Contract Doc\Volume 3\15-Drawings\LFT\5124336-TD-C2-DP-6501_A.dgn

DO NOT SCALE

Millimetres 100 0 10

832000 N

826800 E

826850 E

826900 E

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-6504

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-6503

831950 N

831900 N

PROPOSED PEDESTRIAN AND VEHICULAR CROSSING NO. 4

PROPOSED PEDESTRIAN AND VEHICULAR CROSSING NO. 3

5000 TYP.

27 DP-6102

21 DP-6102

WIP Jan 2019

WIP Mar 2019

道路 Road

KAM SHEUNG ROAD

LIN FA TEI

KEY PLAN
N.T.S.

NOTES:

1. FOR LOCATION PLAN, REFER TO DRAWING NO.5124336-TD-C2-GEN-6000.
2. FOR GENERAL NOTES, REFER TO DRAWING NO.5124336-TD-C2-GEN-0001 AND 0002, 5124336TD-C2-GE0-0001 AND 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. AQUATIC PLANTING PATTERN SHALL REFER TO DRAWING NO.5124336-TD-C2-GEN-9010.

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED OPENING AT CHANNEL BASE
- PROPOSED GROUND BEAM
- FR PROPOSED DECORATIVE RAILING
- EJ PROPOSED 25mm WIDE EXPANSION JOINT
- T1 PROPOSED AQUATIC PLANT PATTERN AT CHANNEL BED

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

Suitability: -

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:
LIN FA TEI -
AQUATIC PLANTING LAYOUT
(SHEET 3 OF 7)

Scale	Designed	Drawn	Checked	Authorised
1 : 200	SHC	AC	WCTT	KP
Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-DP-6502

Revision: A

0 5 10 m
1 : 200 SCALE BAR

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User name: LEUN3329 Date:07/02/2023 Time: 17:24:39
Filename: P:\CNHKAGIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC2022\02\Contract Doc\Volume 3\15-Drawings\LFT\5124336-TD-C2-DP-6502_A.dgn

DO NOT SCALE

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-6502

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-6504

PROPOSED PEDESTRIAN CROSSING NO.4

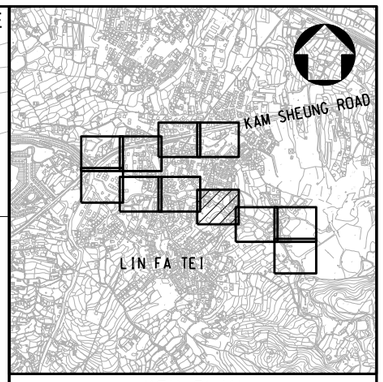
RAILING TO BE PROVIDED ON THE UPSTAND OF CANTILEVER SLAB

5000 TYP.

PROPOSED PEDESTRIAN AND VECHICULAR CROSSING NO.2

5000 TYP.

0 5 10 m
1 : 200 SCALE BAR



KEY PLAN
N.T.S.

NOTES:

1. FOR LOCATION PLAN, REFER TO DRAWING NO.5124336-TD-C2-GEN-6000.
2. FOR GENERAL NOTES, REFER TO DRAWING NO.5124336-TD-C2-GEN-0001 AND 0002, 5124336TD-C2-GE0-0001 AND 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. AQUATIC PLANTING PATTERN SHALL REFER TO DRAWING NO.5124336-TD-C2-GEN-9010.

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED OPENING AT CHANNEL BASE
- PROPOSED GROUND BEAM
- PROPOSED DECORATIVE RAILING
- PROPOSED 25mm WIDE EXPANSION JOINT
- PROPOSED AQUATIC PLANT PATTERN AT CHANNEL BED

Rev.	Date	Description	By	Chk'd	App'd
				SH	M. 24
A	NOV 2022	TENDER ADDENDUM NO.4	SHC	WCTT	KP
-	JUL 2022	ISSUE FOR TENDER	SHC	WCTT	KP

Drawing Status: CONTRACT
Suitability: -

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
LIN FA TEI -
AQUATIC PLANTING LAYOUT
(SHEET 4 OF 7)

Scale	Designed	Drawn	Checked	Authorised
1 : 200	SHC	AC	WCTT	KP
Orignal Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-DP-6503
Revision: A

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User name: LEUN3329 Date:07/02/2023 Time: 17:24:40
FilenameP:\CNHKA\GIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC2022\02\Contract Doc\Volume 3\15-Drawings\LFT\5124336-TD-C2-DP-6503_A.dgn

DO NOT SCALE

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-6503

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-6505

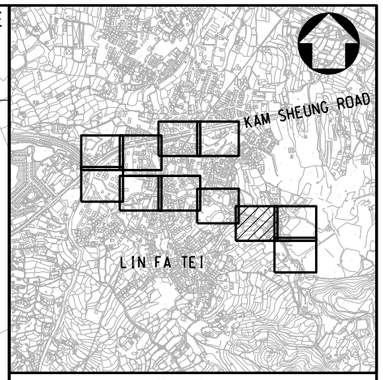
827050 E
827100 E
827150 E
831900 N
831850 N
831800 N

泥路
Track
TS
H W
R
A 22.6
A 22.5
A 22.0
A 23.0
23.7 A
270

5000 TYP.

PROPOSED PEDESTRIAN AND VECHICULAR CROSSING NO.1

27 DP-6107



KEY PLAN
N.T.S.

NOTES:
1. FOR LOCATION PLAN, REFER TO DRAWING NO.5124336-TD-C2-GEN-6000.
2. FOR GENERAL NOTES, REFER TO DRAWING NO.5124336-TD-C2-GEN-0001 AND 0002, 5124336TD-C2-GEO-0001 AND 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. AQUATIC PLANTING PATTERN SHALL REFER TO DRAWING NO.5124336-TD-C2-GEN-9010.

LEGEND:
- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED OPENING AT CHANNEL BASE
- PROPOSED GROUND BEAM
- PROPOSED DECORATIVE RAILING
- PROPOSED 25mm WIDE EXPANSION JOINT
- PROPOSED AQUATIC PLANT PATTERN AT CHANNEL BED

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
Suitability: -

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:
LIN FA TEI -
AQUATIC PLANTING LAYOUT
(SHEET 5 OF 7)

Scale	Designed	Drawn	Checked	Authorised
1 : 200	SHC	AC	WCTT	KP
Orignal Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

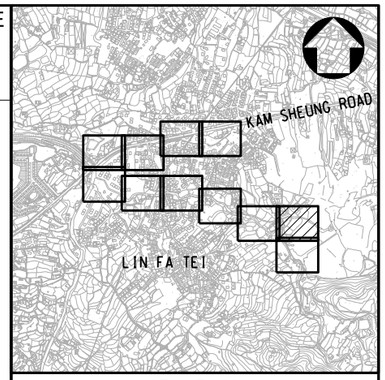
Drawing Number: 5124336-TD-C2-DP-6504
Revision: A

1 : 200 SCALE BAR

Copyright © Atkins Limited (2014)

User name: LEUN3329 Date:07/02/2023 Time:17:24:48
Filename: P:\CNHKAGIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC2022\02\Contract Doc\Volume 3\15-Drawings\LFT\5124336-TD-C2-DP-6504_A.dgn

DO NOT SCALE



KEY PLAN
N.T.S.

NOTES:

1. FOR LOCATION PLAN, REFER TO DRAWING NO.5124336-TD-C2-GEN-6000.
2. FOR GENERAL NOTES, REFER TO DRAWING NO.5124336-TD-C2-GEN-0001 AND 0002. 5124336TD-C2-GEO-0001 AND 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. AQUATIC PLANTING PATTERN SHALL REFER TO DRAWING NO.5124336-TD-C2-GEN-9010.

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED OPENING AT CHANNEL BASE
- PROPOSED GROUND BEAM
- FR — PROPOSED DECORATIVE RAILING
- EJ — PROPOSED 25mm WIDE EXPANSION JOINT
- T1 — PROPOSED AQUATIC PLANT PATTERN AT CHANNEL BED
- IJ — PROPOSED 25mm WIDE ISOLATION JOINT

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
Suitability: -

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
LIN FA TEI -
AQUATIC PLANTING LAYOUT
(SHEET 6 OF 7)

Scale	Designed	Drawn	Checked	Authorised
1 : 200	SHC	AC	WCTT	KP
Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-DP-6505
Revision: A

1 : 200 SCALE BAR

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User name: LEUN3329 Date:07/02/2023 Time: 17:24:50
File name: P:\CNHKAGIC\Projects\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC/2022\02\Contract Doc\Volume 3\15-Drawings\LFT\5124336-TD-C2-DP-6505_A.dgn

DO NOT SCALE

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-6505

831800 N
831750 N
831700 N
827200 E
827250 E

T1 T2 T3 T4 FR EJ 5000 TYP.

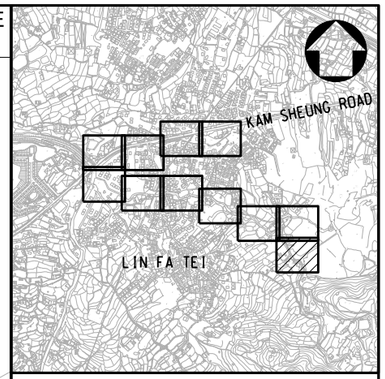
PROPOSED ROCK TRAP
PROPOSED REDESTRAIN CROSSING NO.1
DP-6107

25.4 26.1 26.9 26.2 27.8 27.2 28.4 28

TS R H E L 泥路 Track

0 5 10 m
1 : 200 SCALE BAR

Millimetres 0 10 100



KEY PLAN
N.T.S.

NOTES:

1. FOR LOCATION PLAN, REFER TO DRAWING NO.5124336-TD-C2-GEN-6000.
2. FOR GENERAL NOTES, REFER TO DRAWING NO.5124336-TD-C2-GEN-0001 AND 0002, 5124336TD-C2-GEO-0001 AND 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. AQUATIC PLANTING PATTERN SHALL REFER TO DRAWING NO.5124336-TD-C2-GEN-9010.

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED OPENING AT CHANNEL BASE
- PROPOSED GROUND BEAM
- FR — PROPOSED DECORATIVE RAILING
- EJ — PROPOSED 25mm WIDE EXPANSION JOINT
- (T1) — PROPOSED AQUATIC PLANT PATTERN AT CHANNEL BED

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
Suitability: -

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
LIN FA TEI -
AQUATIC PLANTING LAYOUT
(SHEET 7 OF 7)

Scale	Designed	Drawn	Checked	Authorised
1 : 200	SHC	AC	WCTT	KP
Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-DP-6506
Revision: A

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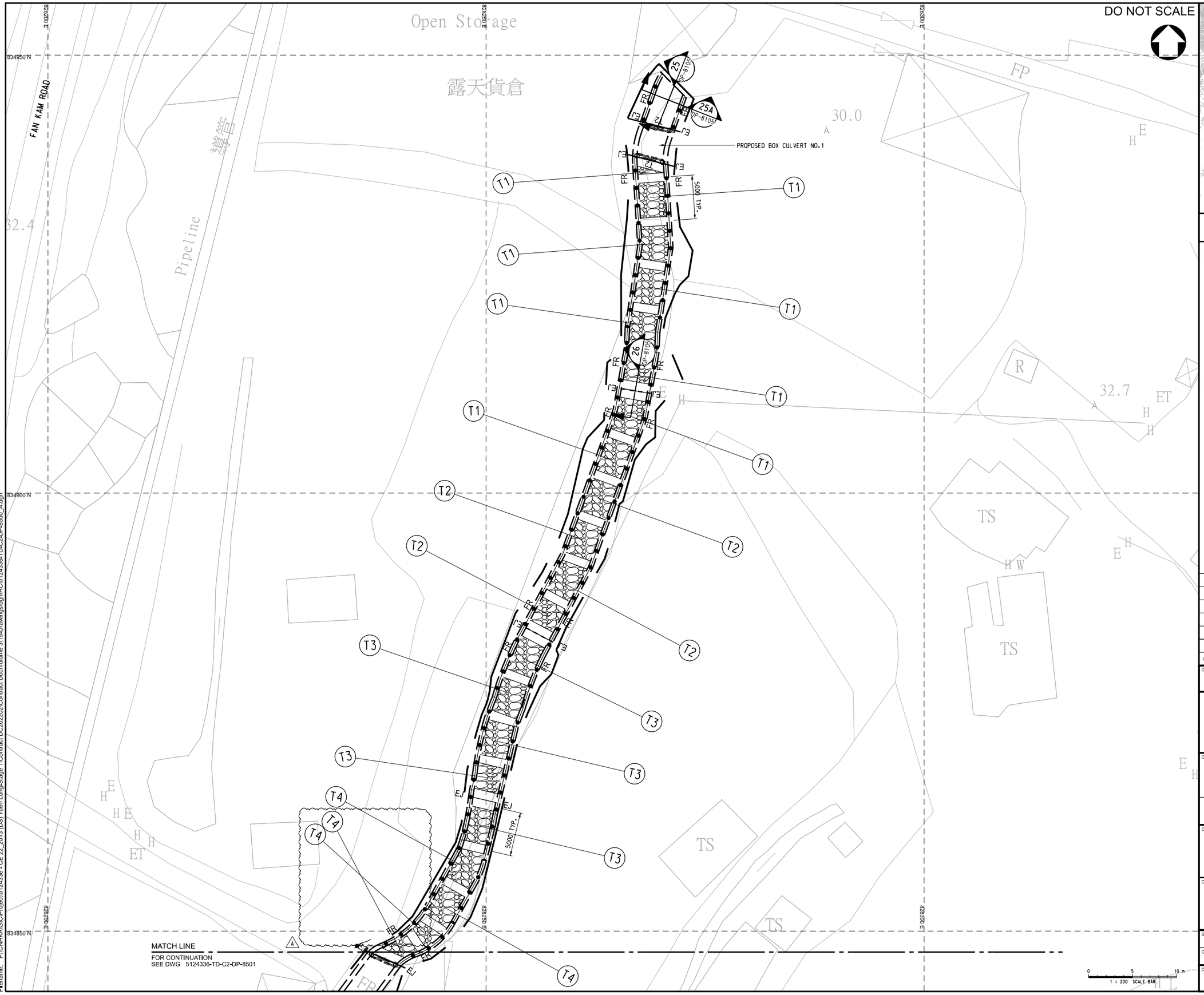
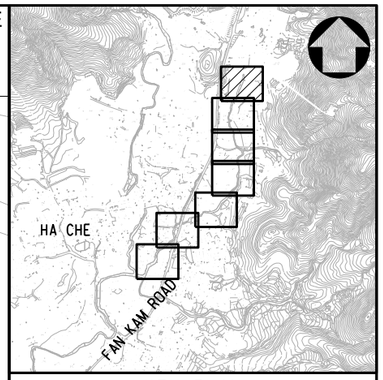
User name: LEUN3329 Date:07/02/2023 Time:17:24:54
Filename: P:\CNHKA\GIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC2022\02\Contract Doc\Volume 3\15-Drawings\LFT\5124336-TD-C2-DP-6506_A.dgn

DO NOT SCALE





KEY PLAN
N.T.S.

NOTES:

1. FOR LOCATION PLAN, REFER TO DRAWING NO.5124336-TD-C2-GEN-8000.
2. FOR GENERAL NOTES, REFER TO DRAWING NO.5124336-TD-C2-GEN-0001 AND 0002, 5124336TD-C2-GE0-0001 AND 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. AQUATIC PLANTING PATTERN SHALL REFER TO DRAWING NO. 5124336-TD-C2-GEN-9010.

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED OPENING AT CHANNEL BASE
- PROPOSED GROUND BEAM (A)
- FR — PROPOSED DECORATIVE RAILING
- EJ (A) — PROPOSED 25mm WIDE EXPANSION JOINT
- T1 — PROPOSED AQUATIC PLANT PATTERN AT CHANNEL BED

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
Suitability: -

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
HA CHE -
AQUATIC PLANTING LAYOUT
(SHEET 1 OF 7)

Scale	Designed	Drawn	Checked	Authorised
1 : 200	SHC	AC	WCTT	KP
Original Size: A1	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022

Drawing Number: 5124336-TD-C2-DP-8500
Revision: A

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User name: LEUN3329 Date:08/02/2023 Time: 17:23:15
Filename: P:\CNHKA\GIC\Project\5124336 - CE 22_2013 (DS) Yuen Long Stage 1\Contract DC/2022/02\Contract Doc\Volume 3\15-Drawings\dgn\HC\5124336-TD-C2-DP-8500_A.dgn

DO NOT SCALE

Millimetres 0 10 100

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-8500

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-8502

834850 N
834800 N
834750 N
822250 E
822300 E

PROPOSED BOX CULVERT NO.2
PROPOSED BOX CULVERT NO.3

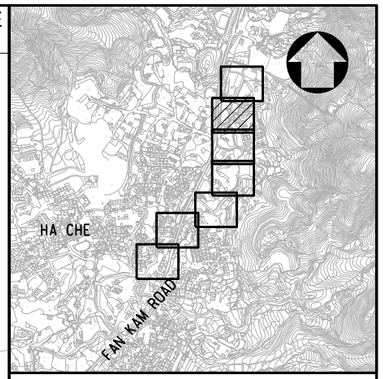
5000 TYP.

露天貨倉
Open Storage

FAN KAM ROAD

House 12
House 11
House 10
House 9
House 8

29.2 A
28.8 A
28.3 A
27.3 A
28.6 A
27.6 A
27.7 A



KEY PLAN
N.T.S.

NOTES:

1. FOR LOCATION PLAN, REFER TO DRAWING NO.5124336-TD-C2-GEN-8000.
2. FOR GENERAL NOTES, REFER TO DRAWING NO.5124336-TD-C2-GEN-0001 AND 0002, 5124336TD-C2-GEO-0001 AND 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. AQUATIC PLANTING PATTERN SHALL REFER TO DRAWING NO. 5124336-TD-C2-GEN-9010.

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED OPENING AT CHANNEL BASE
- PROPOSED GROUND BEAM (A)
- FR — PROPOSED DECORATIVE RAILING
- EJ (A) — PROPOSED 25mm WIDE EXPANSION JOINT
- T1 — PROPOSED AQUATIC PLANT PATTERN AT CHANNEL BED

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
Suitability: -

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:
HA CHE -
AQUATIC PLANTING LAYOUT
(SHEET 2 OF 7)

Scale	Designed	Drawn	Checked	Authorised
1 : 200	SHC	AC	WCTT	KP
Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-DP-8501
Revision: A

0 5 10 m
1 : 200 SCALE BAR

User name: LEUN3329 Date:08/02/2023 Time:17:23:19
Filename: P:\CNHKA\GIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC2022\02\Contract Doc\Volume 3\15-Drawings\dgn\HC\5124336-TD-C2-DP-8501_A.dgn

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DO NOT SCALE

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-8501

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-8503

834750 N
834700 N
834650 N
822600 E
822650 E
822700 E

EXISTING INVERT LEVEL +24.7mPD

EXISTING CHANNEL

EXISTING INVERT LEVEL +24.56mPD

PROPOSED 2X3000 PIPE (Invert level +24.46mPD) WITH FLAP VALVE TO BE CONNECTED TO PROPOSED CHANNEL

EXACT LOCATION OF INTERFACING TO BE AGREED WITH SUPERVISOR

EXISTING CHANNEL TO BE RETAINED

EXISTING WALL AND BASE TO BE CUT CAREFULLY. EXACT LOCATION INTERFACE TO BE AGREED WITH THE SUPERVISOR

5000 TYP.

T1 T2 T3 T4

DP-8102 DP-8103 DP-8104 DP-8105

FR FJ IJ

光薈 The Arbutus
House 7
House 6
House 3
House 5
House 2
House 1
益蘭居
Road
道路
HA CHE
FAN KAM ROAD
TS
SHR
FB

KEY PLAN
N.T.S.

NOTES:

1. FOR LOCATION PLAN, REFER TO DRAWING NO.5124336-TD-C2-GEN-8000.
2. FOR GENERAL NOTES, REFER TO DRAWING NO.5124336-TD-C2-GEN-0001 AND 0002. 5124336TD-C2-GEO-0001 AND 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. AQUATIC PLANTING PATTERN SHALL REFER TO DRAWING NO. 5124336-TD-C2-GEN-9010.

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED OPENING AT CHANNEL BASE
- PROPOSED GROUND BEAM (A)
- FR PROPOSED DECORATIVE RAILING
- FJ (A) PROPOSED 25mm WIDE EXPANSION JOINT
- T1 PROPOSED AQUATIC PLANT PATTERN AT CHANNEL BED

0 5 10 m
1 : 200 SCALE BAR

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
Suitability: -

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
HA CHE -
AQUATIC PLANTING LAYOUT
(SHEET 3 OF 7)

Scale	Designed	Drawn	Checked	Authorised
1 : 200	SHC	AC	WCTT	KP
Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-DP-8502
Revision: A

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User name: LEUN3329 Date:08/02/2023 Time:17:23:22
Filename: P:\CNHKA\GIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC2022\02\Contract Doc\Volume 3\15-Drawings\dgn\HC\5124336-TD-C2-DP-8502_A.dgn

834650 N

DO NOT SCALE

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-8502

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-8504

834600 N

834550 N

828200 E

828250 E

828300 E

TS

104

105

106

301

24.9

24.7

24.5

24.6

29.3

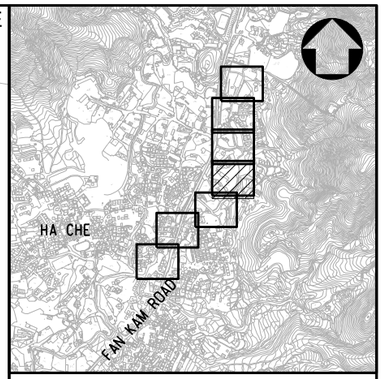
露天貨倉
Open Storage

T1 T2 T3 T4

FR

5000 TYP.

100
Millimetres
0 10



KEY PLAN
N.T.S.

NOTES:

1. FOR LOCATION PLAN, REFER TO DRAWING NO.5124336-TD-C2-GEN-8000.
2. FOR GENERAL NOTES, REFER TO DRAWING NO.5124336-TD-C2-GEN-0001 AND 0002, 5124336TD-C2-GEO-0001 AND 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. AQUATIC PLANTING PATTERN SHALL REFER TO DRAWING NO. 5124336-TD-C2-GEN-9010.

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED OPENING AT CHANNEL BASE
- PROPOSED GROUND BEAM (A)
- FR — PROPOSED DECORATIVE RAILING
- EJ (A) — PROPOSED 25mm WIDE EXPANSION JOINT
- T1 — PROPOSED AQUATIC PLANT PATTERN AT CHANNEL BED

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
Suitability: -

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
HA CHE -
AQUATIC PLANTING LAYOUT
(SHEET 4 OF 7)

Scale	Designed	Drawn	Checked	Authorised
1 : 200	SHC	AC	WCTT	KP
Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-DP-8503
Revision: A

0 5 10 m
1 : 250 SCALE BAR

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User name: LEUN3329 Date:08/02/2023 Time:17:23:26
Filename: P:\CNHKA\GIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC2022\02\Contract Doc\Volume 3\15-Drawings\dgn\HC\5124336-TD-C2-DP-8503_A.dgn

DO NOT SCALE

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-8503

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-8505

E 828150
E 828200
834500 N
834450 N

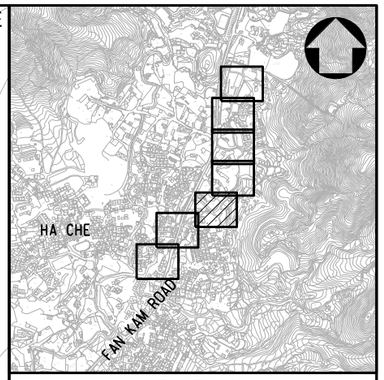
露天貨倉
Open Storage

泥路
Track

PROPOSED BOX CULVERT NO.4

5000 TYP.

T1 T2 T3 T4 FR EJ



KEY PLAN
N.T.S.

NOTES:

1. FOR LOCATION PLAN, REFER TO DRAWING NO.5124336-TD-C2-GEN-8000.
2. FOR GENERAL NOTES, REFER TO DRAWING NO.5124336-TD-C2-GEN-0001 AND 0002, 5124336TD-C2-GEO-0001 AND 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. AQUATIC PLANTING PATTERN SHALL REFER TO DRAWING NO. 5124336-TD-C2-GEN-9010.

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED OPENING AT CHANNEL BASE
- PROPOSED GROUND BEAM (A)
- FR — PROPOSED DECORATIVE RAILING
- EJ (A) — PROPOSED 25mm WIDE EXPANSION JOINT
- T1 — PROPOSED AQUATIC PLANT PATTERN AT CHANNEL BED

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
Suitability: -

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
HA CHE -
AQUATIC PLANTING LAYOUT
(SHEET 5 OF 7)

Scale	Designed	Drawn	Checked	Authorised
1 : 200	SHC	AC	WCTT	KP
Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-DP-8504
Revision: A

0 5 10 m
1 : 200 SCALE BAR

Millimetres 0 10 100

User name: LEUN3329 Date:08/02/2023 Time: 17:23:29
Filename: P:\CNHKA\GIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC2022\02\Contract Doc\Volume 3\15-Drawings\dgn\HC\5124336-TD-C2-DP-8504_A.dgn

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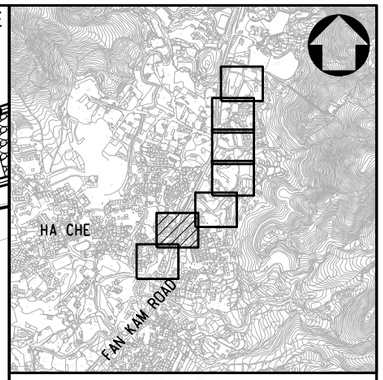
DO NOT SCALE



KEY PLAN
N.T.S.

NOTES:

1. FOR LOCATION PLAN, REFER TO DRAWING NO.5124336-TD-C2-GEN-8000.
2. FOR GENERAL NOTES, REFER TO DRAWING NO.5124336-TD-C2-GEN-0001 AND 0002, 5124336TD-C2-GEO-0001 AND 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. AQUATIC PLANTING PATTERN SHALL REFER TO DRAWING NO. 5124336-TD-C2-GEN-9010.

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED OPENING AT CHANNEL BASE
- PROPOSED GROUND BEAM (A)
- FR — PROPOSED DECORATIVE RAILING
- EJ — PROPOSED 25mm WIDE EXPANSION JOINT (A)
- T1 — PROPOSED AQUATIC PLANT PATTERN AT CHANNEL BED

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 — Suitability: -

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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:
HA CHE -
AQUATIC PLANTING LAYOUT
(SHEET 6 OF 7)

Scale	Designed	Drawn	Checked	Authorised
1 : 200	SHC	AC	WCTT	KP
Original Size: A1	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022

Drawing Number: 5124336-TD-C2-DP-8505
Revision: A

1 : 200 SCALE BAR

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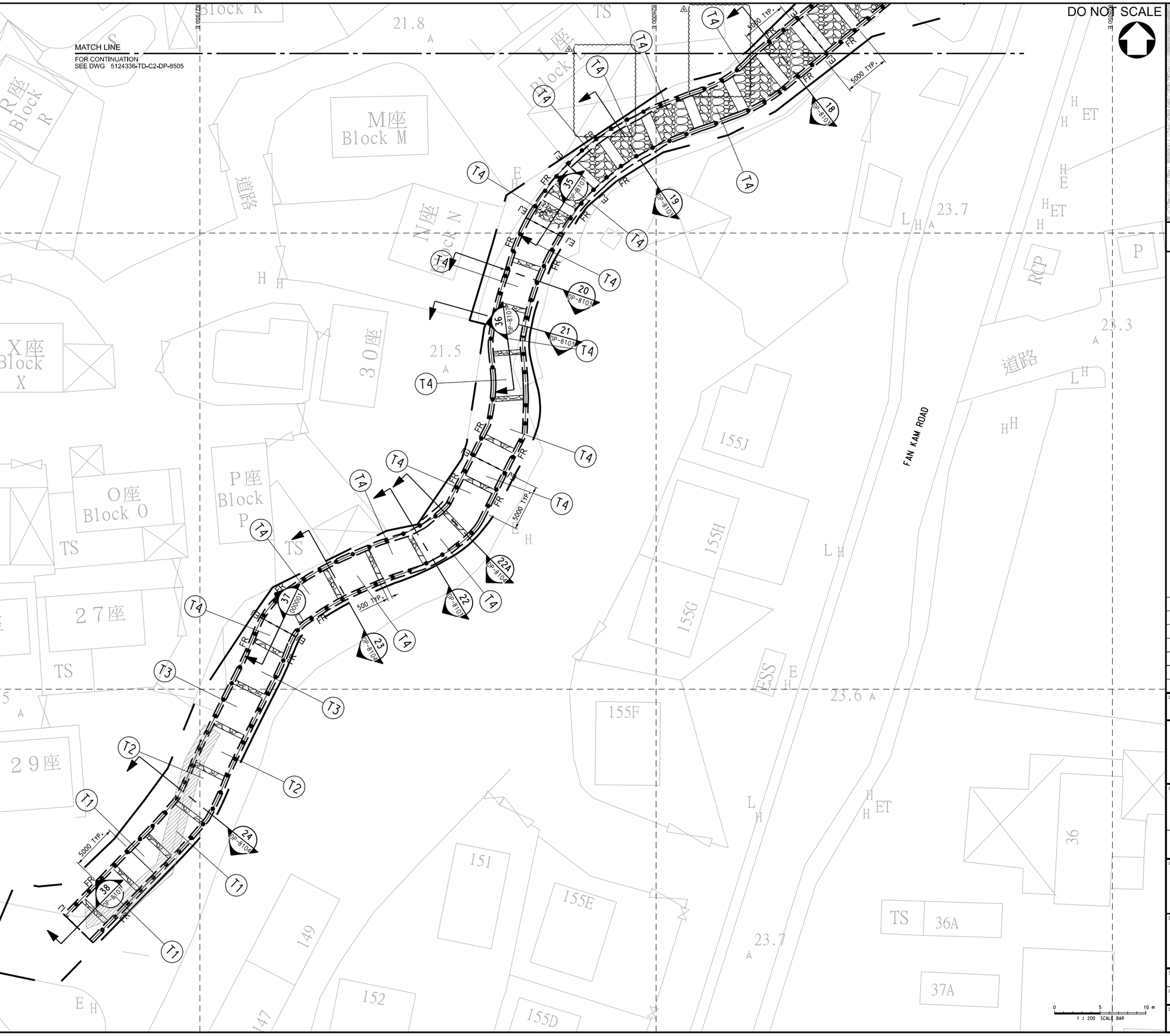
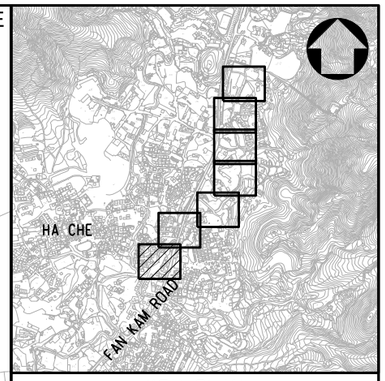
User name: LEUN3329 Date:08/02/2023 Time: 17:23:33
File name: P:\CNHKA\GIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC2022\02\Contract Doc\Volume 3\15-Drawings\dgn\HC\5124336-TD-C2-DP-8505_A.dgn

DO NOT SCALE

MATCH LINE
FOR CONTINUATION
SEE DWG 5124336-TD-C2-DP-8505

834350 N
834300 N





KEY PLAN
N.T.S.

NOTES:

1. FOR LOCATION PLAN, REFER TO DRAWING NO.5124336-TD-C2-GEN-8000.
2. FOR GENERAL NOTES, REFER TO DRAWING NO.5124336-TD-C2-GEN-0001 AND 0002, 5124336TD-C2-GE0-0001 AND 0002.
3. FOR LEGENDS, REFER TO DRAWING NO. 5124336-TD-C2-GEN-0003.
4. AQUATIC PLANTING PATTERN SHALL REFER TO DRAWING NO. 5124336-TD-C2-GEN-9010.

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED OPENING AT CHANNEL BASE
- PROPOSED GROUND BEAM
- PROPOSED DECORATIVE RAILING
- PROPOSED 25mm WIDE EXPANSION JOINT
- PROPOSED AQUATIC PLANT PATTERN AT CHANNEL BED

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
Suitability: -

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
HA CHE -
AQUATIC PLANTING LAYOUT
(SHEET 7 OF 7)

Scale	Designed	Drawn	Checked	Authorised
1 : 200	SHC	AC	WCTT	KP
Orignal Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-DP-8506
Revision: A

0 5 10 m
1 : 200 SCALE BAR

Millimetres 0 10 100

User name: LEUN3329 Date:08/02/2023 Time: 17:23:37
FIlename: P:\CNHKA\GIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC2022\02\Contract Doc\Volume 3\15-Drawings\dgn\HC\5124336-TD-C2-DP-8506_A.dgn

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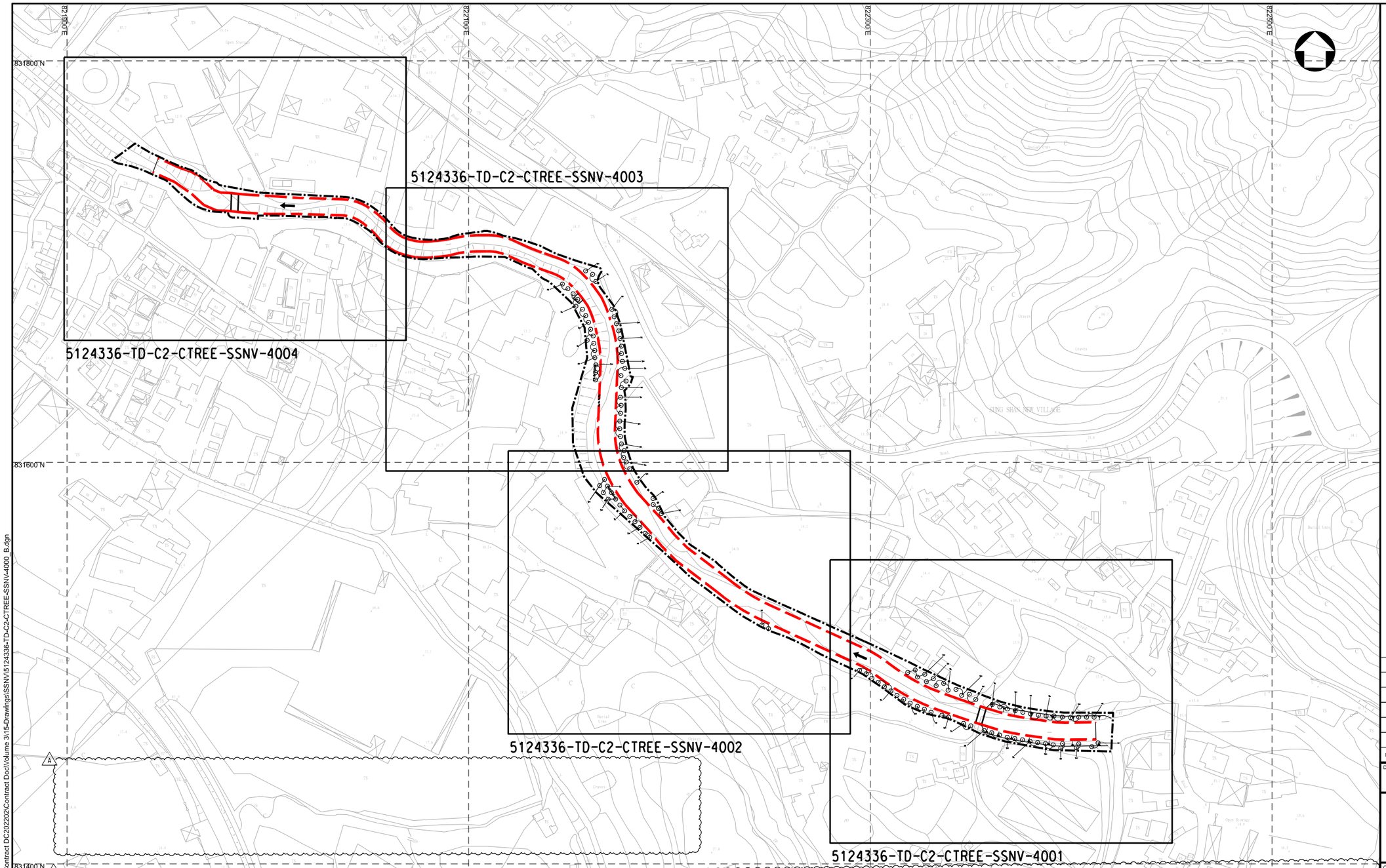
Figures

Figure 5

Proposed Compensatory Planting and Landscape Plan
5a – Sung Shan New Village (Drawing Nos.: 5124336-TD-C2-CTREE-SSNV-4000 to 4004)
5b – Lin Fa Tei (Drawing Nos.: 5124336-TD-C2-CTREE-LFT-6000 to 6007)
5c – Ha Che (Drawing Nos.: 5124336-TD-C2-CTREE-HC-8000 to 8006)



LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL

PROPOSED TREATMENT:

- COMPENSATORY TREES (PATTERN, SPECIES, SPACING & LOCATION AS SHOWN)

Planting Mix	Types	Botanical Name	Chinese Name	Minimum height(mm)	Spread (mm)	Planting Density(nos/m2)	Pattern
Naturalistic Shady Shrub Mix	Shrubs	Camellia oleifera	油茶	600	400	5	Planted in randomly arranged species groups 5-7nos.
		Maesa perlarius	鯽魚膽				
		Melastoma sanguineum	毛稔				
		Psychotria asiatica	山大刀				
	Groundcover	Artemisia indica Willd	五月艾	300	200	10	Planted in randomly arranged species groups 25-30nos.
		Desmodium styracifolium-	金錢草				
		Dicranopteris pedata	芒萁				
		Rhododendron simsii	紅杜鵑				
Naturalistic Sunny Shrub Mix	Shrubs	Eurya chinensis	米碎花	600	400	5	Planted in randomly arranged species groups 5-7nos.
		Polyspora axillaris	大頭茶				
		Rhaphiolepis indica	石斑木				
		Rhodomyrtus tomentosa	崗棯				
	Groundcover	Artemisia indica Willd	五月艾	300	200	10	Planted in randomly arranged species groups 25-30nos.
		Desmodium styracifolium-	金錢草				
		Dicranopteris pedata	芒萁				
		Rhododendron simsii	紅杜鵑				

Planting Mix	Types	Botanical Name	Chinese Name	Minimum height(mm)	Spread (mm)	Planting Density(nos/m2)	Pattern
Ornamental Shady Shrub Mix	Shrubs	Ficus microcarpa Golden Leaves	黃金榕	600	400	5/m²	Planted in randomly arranged species groups 5-7nos.
		Ixora Chinensis	龍船花				
		Ligustrum sinense	山指甲				
		Rhapis excelsa	棕竹				
	Groundcover	Alternanthera sessilis	蓮子草			10/m²	
		Asparagus cochinchinensis	天門冬				
		Liriope spicata	山麥冬				
		Rhododendron simsii	紅杜鵑				
Ornamental Sunny Shrub Mix	Shrubs	Ficus microcarpa Golden Leaves	黃金榕			5/m²	
		Gardenia jasminoides	梔子				
		Ixora Chinensis	龍船花				
		Mussaenda pubescens	玉葉金花				
	Groundcover	Alternanthera sessilis	蓮子草			10/m²	
		Asparagus cochinchinensis	天門冬				
		Liriope spicata	山麥冬				
		Rhododendron simsii	紅杜鵑				

0 10 20 30 40 50 m
1 : 1 000 SCALE BAR

Rev.	Date	Description	By	Chk'd	App'd
B	NOV 2022	TENDER ADDENDUM NO.4	SHC	WCTT	KP
A	OCT 2022	TENDER ADDENDUM NO.3	SHC	WCTT	KP
-	JUL 2022	ISSUE FOR TENDER	SHC	WCTT	KP

Drawing Status: CONTRACT
Suitability: -

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
PROPOSED COMPENSATORY PLANTING AND LANDSCAPING PLAN AT SUNG SHAN NEW VILLAGE

Scale	Designed	Drawn	Checked	Authorised
1 : 1250	SHC	AC	WCTT	KP
Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-CTREE-SSNV-4000
Revision: B

User name: LEUN3329 Date:07/02/2023 Time: 17:13:57
Filename: P:\CNHKA\GIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC2022\02\Contract Doc\Volume 3\15-Drawings\SSNV\5124336-TD-C2-CTREE-SSNV-4000_B.dgn

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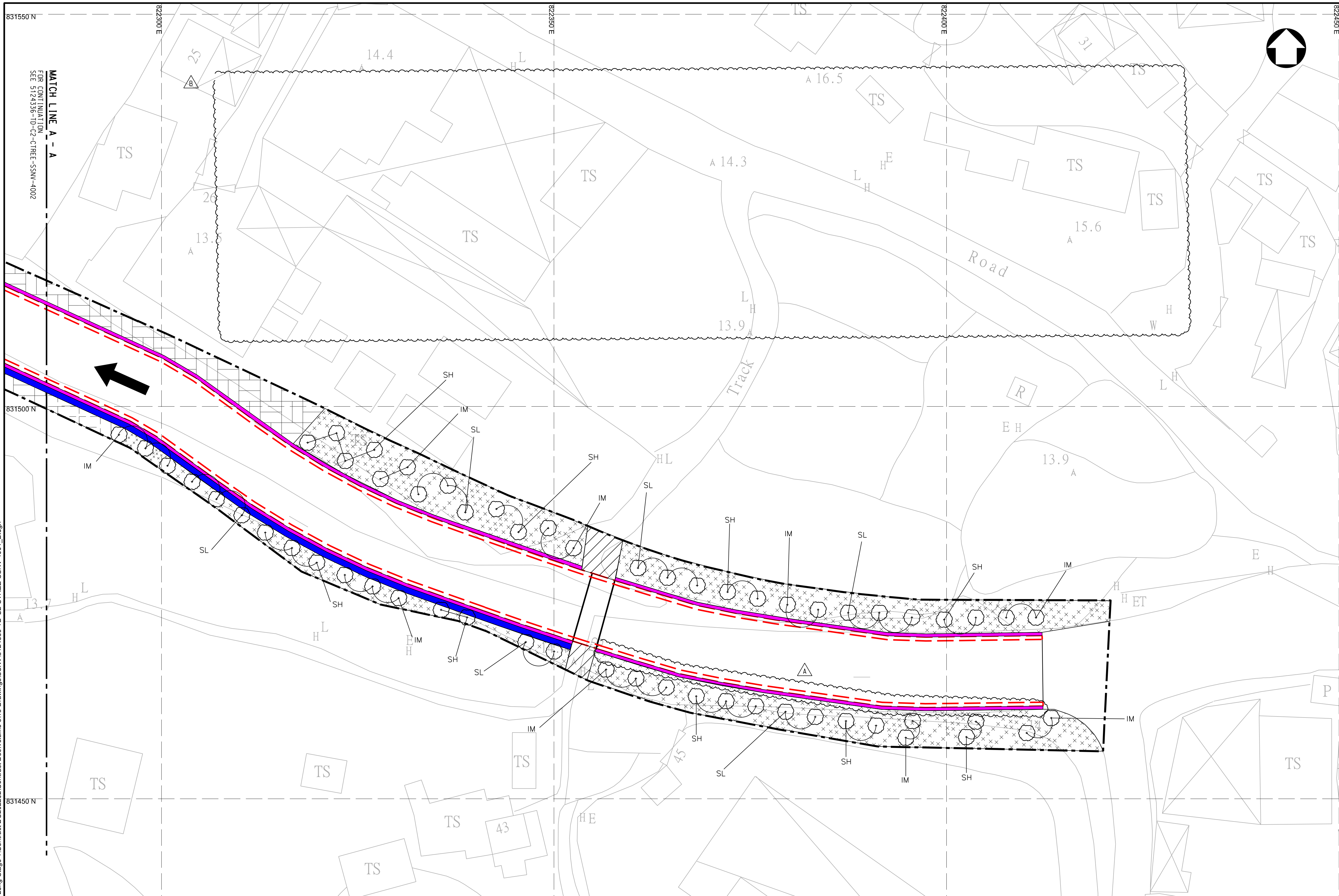
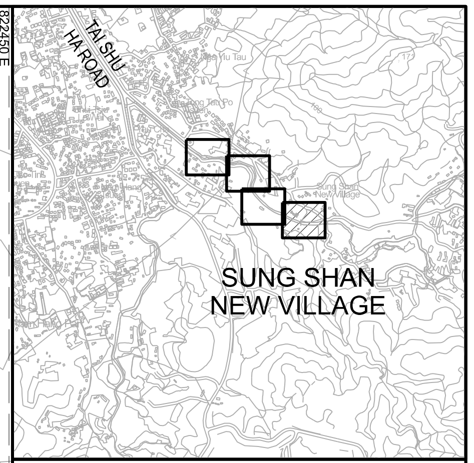


NO.	PLANT		ABBREVIATION	CROWN SPREAD (m)
21	小果鐵冬青	Ilex rotunda var. microcarpa	IM	2
16	假蘋婆	Sterculia lanceolata	SL	2
22	鴨腳木	Scheflera heptaphylla	SH	2
TOTAL	59 NOS.			



KEY PLAN
N.T.S.

NOTES:

1. CLIMBING PLANT SHALL BE PROVIDED ALL ALONG TOP OF THE CHANNEL WALL. DETAILED ARRANGEMENT SHALL REFER DRAWING NO. 5124336-TD-C2-GEN-9011.
2. FOR DENSITY OF SHRUBS, REFER TO DRAWING NO. 5124336-TD-C2-CTREE-SSNV-4000. (B)

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED CLIMBING PLANT
- PROPOSED U-CHANNEL
- PAVEMENT TO BE PROVIDED TO MATCH WITH EXISTING ROAD
- NATURALISTIC SHADY SHRUBS MIX
- NATURALISTIC SUNNY SHRUBS MIX
- ORNAMENTAL SHADY SHRUBS MIX
- ORNAMENTAL SUNNY SHRUBS MIX

PROPOSED TREATMENT:

- COMPENSATORY TREES (PATTERN, SPECIES, SPACING & LOCATION AS SHOWN)

Rev.	Date	Description	By	Chk'd	App'd
B	NOV 2022	TENDER ADDENDUM NO.4	SHC	WCTT	KP
A	OCT 2022	TENDER ADDENDUM NO.3	SHC	WCTT	KP
-	JUL 2022	ISSUE FOR TENDER	SHC	WCTT	KP

Drawing Status: CONTRACT
Suitability: -

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:
COMPENSATORY PLANTING PLAN
AT SUNG SHAN NEW VILLAGE
(SHEET 1 OF 4)

Scale	Designed	Drawn	Checked	Authorised
1 : 250	SHC	AC	WCTT	KP
Original Size: A1	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022

0 5 10 m
1 : 250 SCALE BAR

Drawing Number: 5124336-TD-C2-CTREE-SSNV-4001
Revision: B

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User name: LEUN3329 Date:07/02/2023 Time: 17:14:01
Filename: P:\CNHKA\GIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC202202\Contract Doc\Volume 3\15-Drawings\SSNV\5124336-TD-C2-CTREE-SSNV-4001_B.dgn

MATCH LINE B - B
FOR CONTINUATION
SEE 5124336-TD-C2-CTREE-SSNV-4003

MATCH LINE A - A
FOR CONTINUATION
SEE 5124336-TD-C2-CTREE-SSNV-4001

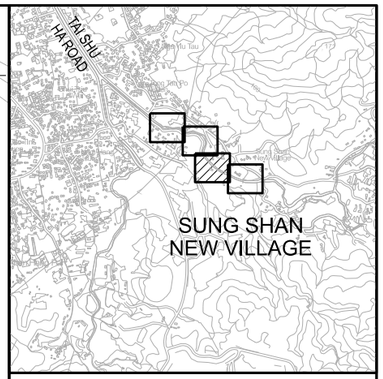
822150 E
822200 E
822250 E
831600 N
831550 N
831500 N

SL
SH
IM
TS
Track
Burial Urns
16.8
14.0
14.1
19.5
17.9
13.7
107

NO.	PLANT		ABBREVIATION	CROWN SPREAD (m)
7	小果鐵冬青	Ilex rotunda var. microcarpa	IM	2
7	假蘋婆	Sterculia lanceolata	SL	2
9	鴨腳木	Scheflera heptaphylla	SH	2
TOTAL	23 NOS.			

B

0 5 10 m
1 : 250 SCALE BAR



KEY PLAN
N.T.S.

NOTES:

1. DETAILED ARRANGEMENT SHALL REFER DRAWING NO. 5124336-TD-C2-GEN-9011.
2. FOR DENSITY OF SHRUBS, REFER TO DRAWING NO. 5124336-TD-C2-CTREE-SSN-4000. B

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED CLIMBING PLANT
- PROPOSED U-CHANNEL
- PAVEMENT TO BE PROVIDED TO MATCH WITH EXISTING ROAD
- NATURALISTIC SHADY SHRUBS MIX
- NATURALISTIC SUNNY SHRUBS MIX
- ORNAMENTAL SHADY SHRUBS MIX
- ORNAMENTAL SUNNY SHRUBS MIX

PROPOSED TREATMENT:

- COMPENSATORY TREES (PATTERN, SPECIES, SPACING & LOCATION AS SHOWN)

Rev.	Date	Description	By	Chk'd	App'd
B	NOV 2022	TENDER ADDENDUM NO.4	SHC	WCTT	KP
A	OCT 2022	TENDER ADDENDUM NO.3	SHC	WCTT	KP
-	JUL 2022	ISSUE FOR TENDER	SHC	WCTT	KP

Drawing Status: CONTRACT
Suitability: -

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
PROPOSED COMPENSATORY PLANTING AND LANDSCAPING PLAN
AT SUNG SHAN NEW VILLAGE
(SHEET 2 OF 4)

Scale	Designed	Drawn	Checked	Authorised
1 : 250	SHC	AC	WCTT	KP
Original Size: A1	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022

Drawing Number: 5124336-TD-C2-CTREE-SSNV-4002
Revision: B

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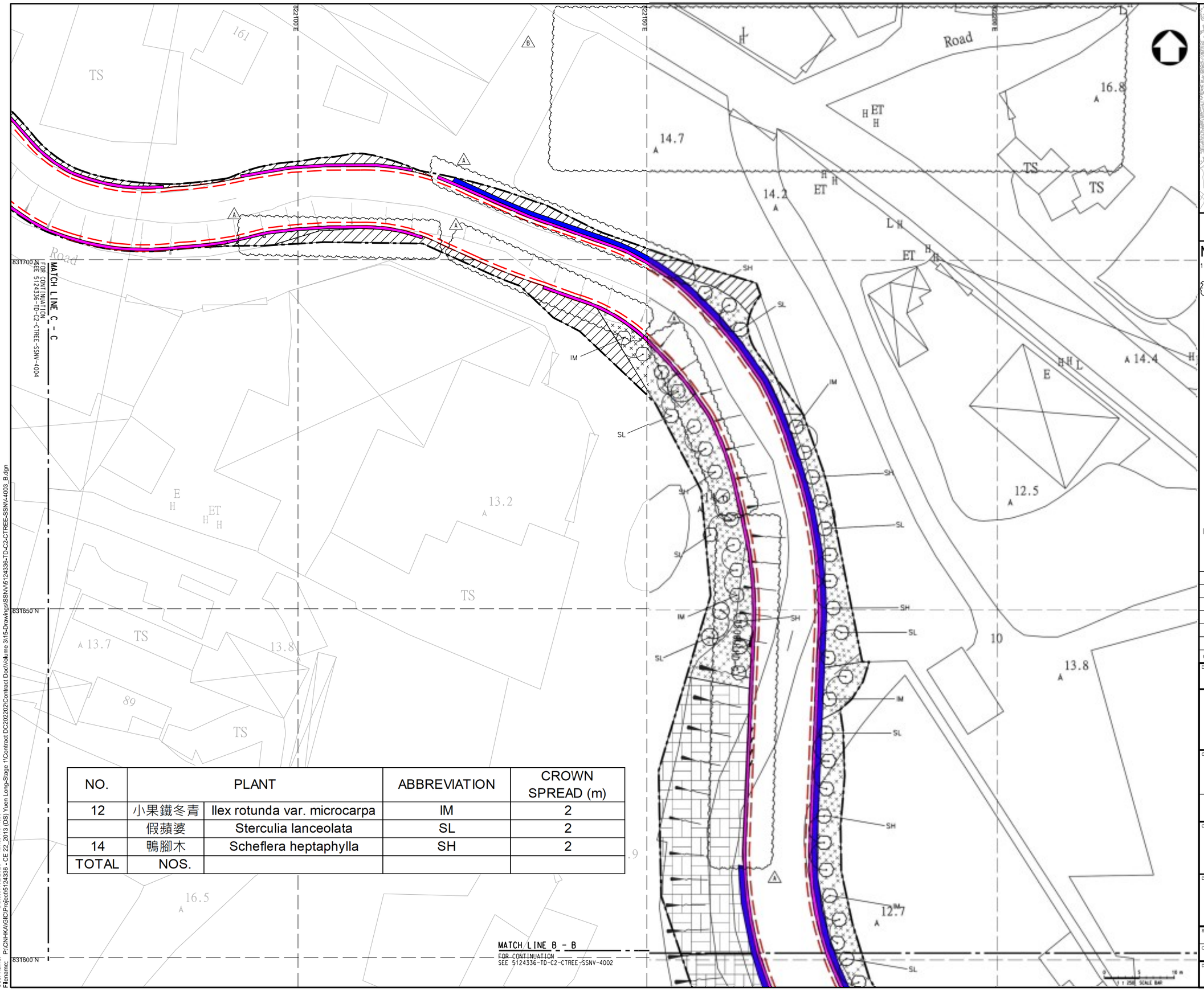
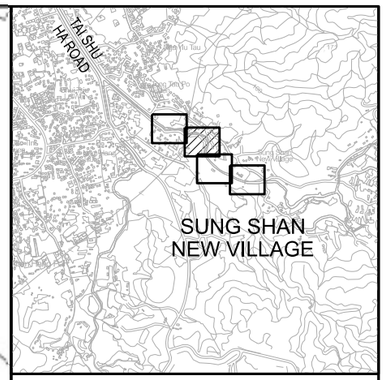
Filename: P:\CNHKAIG\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC2022\02\Contract Doc\Volume 3\15-Drawings\SSNV\5124336-TD-C2-CTREE-SSNV-4002_B.dgn



NO.	PLANT		ABBREVIATION	CROWN SPREAD (m)
12	小果鐵冬青	Ilex rotunda var. microcarpa	IM	2
	假蘋婆	Sterculia lanceolata	SL	2
14	鴨腳木	Scheflera heptaphylla	SH	2
TOTAL	NOS.			



KEY PLAN
N.T.S.

NOTES:

1. DETAILED ARRANGEMENT SHALL REFER DRAWING NO. 5124336-TD-C2-GEN-9011.
2. FOR DENSITY OF SHRUBS, REFER TO DRAWING NO. 5124336-TD-C2-CTREE-SSNV-4000

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED CLIMBING PLANT
- PROPOSED U-CHANNEL
- PAVEMENT TO BE PROVIDED TO MATCH WITH EXISTING ROAD
- NATURALISTIC SHADY SHRUBS MIX
- NATURALISTIC SUNNY SHRUBS MIX
- ORNAMENTAL SHADY SHRUBS MIX
- ORNAMENTAL SUNNY SHRUBS MIX

PROPOSED TREATMENT:

- COMPENSATORY TREES (PATTERN, SPECIES, SPACING & LOCATION AS SHOWN)

Rev.	Date	Description	By	Chk'd	App'd
B	NOV 2022	TENDER ADDENDUM NO.4	SHC	WCTT	KP
A	OCT 2022	TENDER ADDENDUM NO.3	SHC	WCTT	KP
-	JUL 2022	ISSUE FOR TENDER	SHC	WCTT	KP

Drawing Status: CONTRACT

Suitability: -

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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: PROPOSED COMPENSATORY PLANTING AND LANDSCAPING PLAN AT SUNG SHAN NEW VILLAGE (SHEET 3 OF 4)

Scale	Designed	Drawn	Checked	Authorised
1 : 250	SHC	AC	WCTT	KP
Original Size: A1	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022

Drawing Number: 5124336-TD-C2-CTREE-SSNV-4003

Revision: B

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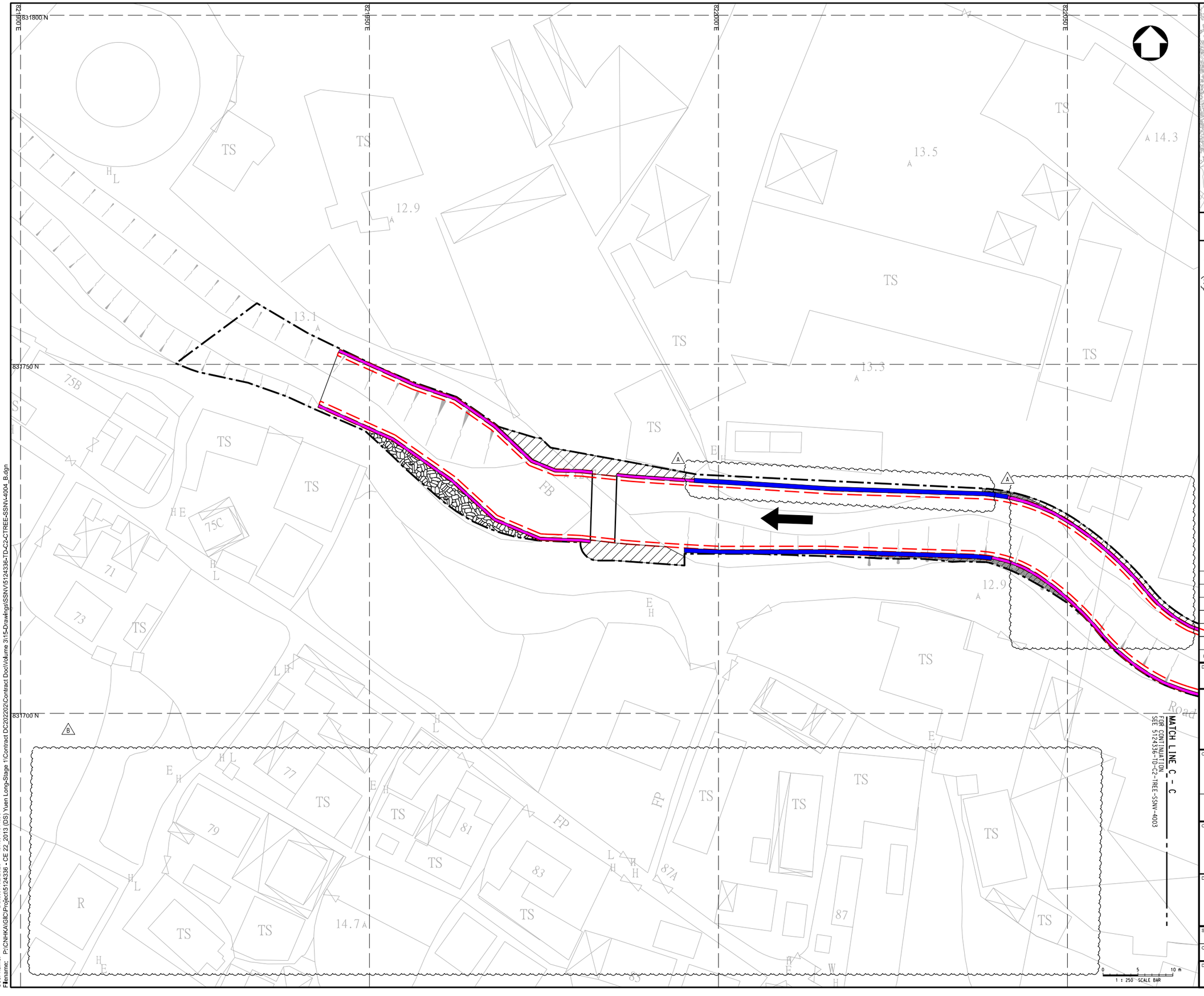
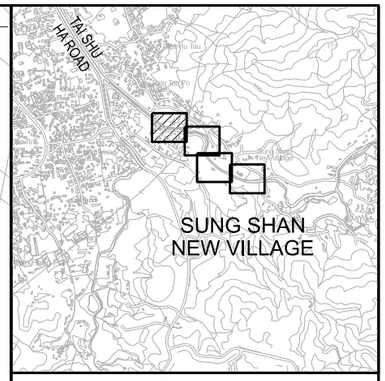
User name: LEUN3329 Date:07/02/2023 Time:17:14:05
Filename: P:\CNHKA\GIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC202202\Contract Doc\Volume 3\15-Drawings\SSNV\5124336-TD-C2-CTREE-SSNV-4003_B.dgn





KEY PLAN
N.T.S.

NOTES:

1. DETAILED ARRANGEMENT SHALL REFER DRAWING NO. 5124336-TD-C2-GEN-9011.
2. FOR DENSITY OF SHRUBS, REFER TO DRAWING NO. 5124336-TD-C2-CTREE-SSNV-4000. (B)

LEGEND:

- WORKS BOUNDARY
- RECTANGULAR CHANNEL
- PROPOSED CLIMBING PLANT
- PROPOSED U-CHANNEL
- PAVEMENT TO BE PROVIDED TO MATCH WITH EXISTING ROAD
- NATURALISTIC SHADY SHRUBS MIX
- NATURALISTIC SUNNY SHRUBS MIX
- ORNAMENTAL SHADY SHRUBS MIX
- ORNAMENTAL SUNNY SHRUBS MIX
- HYDRO SEEDING

PROPOSED TREATMENT:
- COMPENSATORY TREES (PATTERN, SPECIES, SPACING & LOCATION AS SHOWN)

Rev.	Date	Description	By	Chk'd	App'd
B	NOV 2022	TENDER ADDENDUM NO.4	SHC	WCTT	KP
A	OCT 2022	TENDER ADDENDUM NO.3	SHC	WCTT	KP
-	JUL 2022	ISSUE FOR TENDER	SHC	WCTT	KP

Drawing Status: CONTRACT
Suitability: -

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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:
PROPOSED COMPENSATORY PLANTING AND LANDSCAPING PLAN
AT SUNG SHAN NEW VILLAGE
(SHEET 4 OF 4)

Scale	Designed	Drawn	Checked	Authorised
1 : 250	SHC	AC	WCTT	KP
Original Size	Date	Date	Date	Date
A1	JUL 2022	JUL 2022	JUL 2022	JUL 2022

Drawing Number: 5124336-TD-C2-CTREE-SSNV-4004
Revision: B

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User name: LEUN3329 Date:07/02/2023 Time: 17:14:06
Filename: P:\CNHKA\GIC\Project\5124336 - CE 22_2013 (DS) Yuen Long-Stage 1\Contract DC/2022/02\Contract Doc\Volume 3\15-Drawings\SSNV\5124336-TD-C2-CTREE-SSNV-4004_B.dgn

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