

**Plan on Provision of Buffer Zones
for Tung Chung New Town Extension (West)
(EP No. EP-519/2016)**

January 2022

Environmental Permit No. EP- 519/2016

Tung Chung New Town Extension (West)

Environmental Team Leader Certification

Reference Document /Plan

| | |
|---------------------------|-----------------------------------|
| Document to be Certified: | Plan on Provision of Buffer Zones |
| Date of Document: | January 2022 |
| Date received by ETL: | 26 January 2022 |

Reference EP Condition

| | |
|---------------------------------|------|
| Environmental Permit Condition: | 2.18 |
|---------------------------------|------|

The Permit Holder shall, no later than 3 months before the commencement of construction works at Tung Chung Valley, submit a Plan on provision of buffer zones, in the form of either "Conservation Area" zone, "Coastal Protection Area" zone, "Other Specified Uses" zone or other appropriate zonings alongside the eastern and western branches as well as the major tributary of the Tung Chung Stream for its protection, to the Director for approval. The buffer zones shall, as far as practicable, be no less than 30 metres in width on either side of the Stream.

ETL Certification

I hereby certify that the above reference document complies with the above referenced condition of EP-519/2016.



Daniel Sum
Environmental Team Leader

Date: 28 January 2022

Qualified Ecologist Certification

I hereby confirm that the Qualified Ecologist of the ET has been consulted in preparing ecological aspects of the above referenced document/plan.

A handwritten signature in black ink, appearing to read 'Yusei', written in a cursive style.

Yusei Lo
Qualified Ecologist

Date: 28 January 2022

Your Ref.

By Post

Our Ref. 198377-0448

Date 28 January 2022

Sustainable Lantau Office
Civil Engineering and Development Department
13/F, North Point Government Offices
333 Java Road, North Point
Hong Kong

Attention: Mr. Gary YUNG / Ms. Carol LAM

Dear Sir / Madam,

Agreement No. CE 59/2017 (EP)
Independent Environmental Checker for Tung Chung New Town Extension – Investigation Plan on Provision of Buffer Zones (EP condition 2.18)

We refer to the Plan on Provision of Buffer Zones for Tung Chung New Town Extension (West) (TCW) dated January 2022 and certified by the Environmental Team Leader of TCW on 28 January 2022. Please note we have no adverse comments on the captioned submission. The captioned submission is hereby verified in accordance with the requirement stipulated in Condition 2.18 of EP-519/2016.

Should you have any query, please feel free to contact the undersigned at 2608 7314 (chuawo@binnies.com) or our Edward Lau at 6848 5737 (iec.tcnte@gmail.com or lauky@binnies.com).

Yours faithfully,
for and on behalf of
BINNIES HONG KONG LIMITED



MANUEL CHUA
INDEPENDENT ENVIRONMENTAL CHECKER

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1. Project Description

The development of Tung Chung New Town Extension (TCNTE), comprising Tung Chung East (TCE) and Tung Chung West (TCW), is a mega-scale and complex project aiming to provide land to meet the future housing economic and social development needs of Hong Kong. Due to the fact that the proposed works are geographically separated, the implementation of mega-scale Project is divided into two packages, namely TCE and TCW respectively. In accordance with the tight delivery programme, the Project will be implemented in phases under separate contracts for the developments of TCE and TCW.

2. Scope of Works for Tung Chung New Town Extension

The Tung Chung New Town Extension project (the Project) comprises the following elements:

- (i) reclamation of the seabed by a non-dredged method at TCE to form a total of about 130 hectares of land;
- (ii) construction of about 4.9 kilometers of seawalls, with an eco-shoreline, three drainage box culvert outfalls, three circulation drains and a seawater intake at TCE;
- (iii) provision of infrastructure for Tung Chung Area 58, including construction of a single two-lane road with a footpath and the associated utility works;
- (iv) site formation works at TCW;
- (v) construction of the River Park including a visitor centre at TCW;
- (vi) construction of proposed open space;
- (vii) construction of sustainable urban drainage systems at TCW;
- (viii) construction of roads, footpaths, cycle tracks and the associated junction / road improvement works;
- (ix) engineering infrastructure works covering drainage, sewerage, waterworks (including a fresh water service reservoir, a salt water service reservoir and a salt water pumping station), common utility tunnels and landscaping works; and
- (x) implementation of environmental mitigation measures and environmental monitoring and audit programme for the works.

3. Implementation Programme

The Contract No NL/2020/05 – Tung Chung New Town Extension – Site Formation and Infrastructure Works at Ma Wan Chung (i.e. Contract 5) at TCW has been awarded in May 2021 and is scheduled for completion in 2025. The main contractor for Contract No. NL/2020/05 is Build King – Richwell Civil Joint Venture (BKRCJV).

The Contract No NL/2020/06 – Tung Chung New Town Extension – Site Formation and Infrastructure Works at Tung Chung Valley, Phase 1 (i.e. Contract 6) at TCW has been awarded in May 2021 and is scheduled for completion in 2025. The main contractor for Contract No. NL/2020/06 is China Railway Group Limited (CREC).

The detailed design for the first phase of site formation and infrastructure works at TCE and TCW (First Phase development) has been completed, while the detailed design for the remaining phase of site formation and infrastructures works is in progress.



4. Submission under EP

In view that only Contract 6 has construction works within the Tung Chung Stream courses, this submission is prepared based on the latest information of Contract 6 according to the relevant requirements contained in the EM&A Manual, EIA Report and EP. Please find the enclosed Plan on Provision of Buffer Zones below.



Civil Engineering and Development Department
The Government of the Hong Kong Special Administrative Region

PLAN ON PROVISION OF BUFFER ZONES

| | | | |
|-----|---------|---|---|
| J | 20/1/22 |  Simon Mak |  Gregory Lo |
| Rev | Date | Prepared By Environmental Officer | Approved By Project Manager |

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1 Introduction

1.1 General

- 1.1.1 China Railway Group Ltd. (known as CREC) was commissioned by the Civil Engineering and Development Department (CEDD) of the Government of Hong Kong Special Administrative Region (HKSAR) on 31 May 2021 as the contractor to provide construction works for the site formation and infrastructure works at Tung Chung Valley, Phase 1 (Contract NL/2020/06).

1.2 Project Background

- 1.2.1 In mid-1996, the Government completed the Territorial Development Strategy Review (TDSR) which identified housing shortfall in the medium to long term. The TDSR also identified the North Lantau New Town (NLNT) as a strategic growth area, among other areas to meet the territorial housing demand, with a revised population target of 320,000 by 2011.
- 1.2.2 In 2004, the Administration formulated a concept plan for planning initiatives on Lantau (Concept Plan). The Concept Plan was then revised in mid-2007 taking into account comments collected from the public consultation (Revised Concept Plan). Under the Revised Concept Plan, Tung Chung is to remain a comprehensively planned new town for a population of 220,000 with adequate community facilities and regional facilities to serve the whole of Lantau.
- 1.2.3 The CEDD and the Planning Department (PlanD) jointly commissioned Agreement No. CE 32/2011(CE) - Planning and Engineering Study on the Remaining Development in Tung Chung (P&E Study) in 2012. The P&E Study aims at identifying development potentials and opportunities to extend Tung Chung into a distinct community to meet housing, social, economic, environmental and local needs. Under the P&E Study, various planning, engineering and environmental studies were carried out to formulate a development scheme to extend existing Tung Chung to Tung Chung East (TCE) and Tung Chung West (TCW).
- 1.2.4 The P&E Study adopted a three-stage Public Engagement (PE) programme to facilitate public discussions and foster consensus building. Taking into account the public views and

the planning and technical assessments, the Recommended Outline Development Plans (RODPs) for TCE and TCW were finalized under the P&E Study and were endorsed in January 2015. The planned new population of TCE and TCW under the RODPs would be around 120,000 and 25,000 respectively. With the new population in TCE and TCW, the total planned population in Tung Chung will reach about 270,000 upon full development.

- 1.2.5 The development theme of Tung Chung New Town Extension (TCNTE) will pursue a sustainable and balanced approach while taking account of its strategic location and the synergy effect to make Tung Chung a regional commercial hub for retail and office developments. The TCNTE development, comprising TCE and TCW, will provide about 49,600 flats for an additional population of 145,500 and about 877,000m² gross floor area (GFA) for commercial uses. The housing mix for public housing and private housing is of a ratio of 65:35 approximately.
- 1.2.6 The scope of works for Contract No. NL/2020/06 includes site formation and engineering infrastructure works for the development of TCW and engineering infrastructure improvement works for the commercial development at Tung Chung Area 6. The scope of the Project comprises the following principal works components:
- (a) Construction of Road L29 and L30;;
 - (b) Road Improvement of Chung Mun Road and Shek Mun Kap Road;
 - (c) Site formation works for Areas 42 and 46 for public housing development;
 - (d) Construction of Common Utility Tunnel (CUT);
 - (e) Sustainable Urban Drainage System (SUDS) and provision of roadside biowales, attenuation & treatment ponds;
 - (f) Construction of River Park and river revitalization works;
 - (g) Environmental impact mitigation measures including woodland compensation; and
 - (h) Ancillary works including associated civil, geotechnical, structural, electrical and mechanical engineering and landscaping works.

1.3 Purpose of this Plan

- 1.3.1 According to Clause 2.18 of the EP-519/2016, “The Permit Holder shall, no later than 3 months before the commencement of construction works at Tung Chung Valley, submit a Plan on provision of buffer zones, in the form of either “Conservation Area” zone, “Coastal Protection Area” zone, “Other Specified Uses” zone or other appropriate zonings alongside the eastern and western branches as well as the major tributary of the Tung Chung Stream for its protection, to the Director for approval. The buffer zones shall, as far as practicable, be no less than 30 metres in width on either side of the Stream.”.
- 1.3.2 This Plan on Provision of Buffer Zones discusses the methodology and implementation for buffer zones alongside the eastern and western branches as well as the major tributary of the Tung Chung Stream for its protection.

2 Objectives of Provision of Buffer Zones

- 2.1.1 According to approved Environmental Impact Assessment (EIA) report for Tung Chung New Town Extension (AEIAR-196/2016), Tung Chung Stream is well-known of its high ecological value and is recommended to be preserved as intact as possible. Any works within the stream courses such as excavation works for river training may lead to significant impact to its existing conditions and ecology. It is therefore a 30m as far as practicable buffer zone from the stream against any development and impact to the stream is proposed.
- 2.1.2 According to the RODP, buffer zone will be provided for the natural sections of the Tung Chung Stream main branches and the major tributary. The buffer zone aims to minimize trespassing to the habitat and plants of conservation importance close to the site boundary and reduce the potential impact of human disturbance to the stream and associated fauna during operation phase.

3 Habitat of Buffer Zones

- 3.1.1 Habitat types identified within the buffer zone included secondary woodland, fung shui wood, plantation, shrubland/grassland, agricultural lands (dry active, orchard, dry abandoned, and wet abandoned), urbanized/disturbed/wasteland and watercourse. These habitats supported a number of flora and fauna of conservation importance.
- 3.1.2 Fung shui woods were mainly found behind the villages of Shek Mun Kap, Sheung Ling Pei, Mok Ka, Ngau Au-Tung Hing, Nam Che and Shek Lau Po. During field surveys it was found that only fung shui wood at Sheung Ling Pei remained fairly intact probably due to its location which is less accessible. Other fung shui wood (e.g. Shek Mun Kap, Mok Ka) had more or less been cut back for village house construction and farming.
- 3.1.3 Plantation was mainly found on engineered slopes along Shun Tung Road, North Lantau Highway, Yu Tung Court and along Tung Chung Road north of Shek Mun Kap Road.
- 3.1.4 Shrubland-grassland was the dominant habitat on hillsides of the Assessment Area. It was subject to frequent fire. Ravines in shrubland-grassland and woodland habitat are also subject to frequent vegetation clearance probably for mosquito control.
- 3.1.5 Agricultural lands (active and abandoned) included dry vegetable farms, community/organic farms and orchards. A variety of crops including vegetables, fruit trees and flowers were cultivated. Most orchards were densely planted with fruit trees including longan, litchi and wongpei and appeared to be managed (e.g. clearance of understorey vegetation). The dry abandoned agricultural land consisted of remnants of crops and were also colonised by common weeds and herbs, no plant species of conservation importance was recorded in this habitat.

4 Proposed Methodology for Provision of Buffer Zones

- 4.1.1 As recommended in the EIA report (AEIAR-196/2016), buffer zones of the Tung Chung Stream shall be set to minimize trespassing to the habitat and plants of conservation importance close to the site boundary. All natural sections of Tung Chung Stream (including the two main branches and the joined outlet section) and one major tributary at Ngau Au will be provided with buffer zones (30m buffer zones for the natural sections in eastern and western branches and 20m buffer zones for the major tributary at Ngau Au), except where overlapped with the road crossings of local distributors.

The widths of buffer zones are in general 30m, except the areas adjacent to the major tributary at Ngau Au and existence of constraints (such as without sufficient space or adjacent to existing developed areas, e.g. YMCA of Hong Kong Christian College, football fields and villages). The Buffer Zone Plan in **Appendix A** shows the buffer zones from Tung Chung Stream (the width of the buffer zone measured from one side of the stream to its riverbank).

- 4.1.2 Stream bed and stream banks in buffer zones would not be encroached, developments within buffer zone are prohibited, habitats with ecological values shall be preserved, as recommended in EIA report.
- 4.1.3 The majority of buffer zones fall within Conservation Area (“CA”), Coastal Protection Area (“CPA”) and Other Specified Uses (“OU”) zones that fall on the planned River Park, Stormwater Attenuation and Treatment Ponds and polders except where overlapped with road crossings. For “CA” and “CPA” zones, only development needed to support the conservation of the existing landscape of scenic quality of the area or are essential infrastructure projects with overriding public interest may be permitted, such as the outlets of the Stormwater Attenuation and Treatment Ponds. For “OU(Polder)” and “OU(River Park)” zones, mainly polders and river park are proposed. Though construction works will be required for the outlets, the polders and/or the future River Park, the scale of the construction works would not be large and mitigation measures are proposed in the approved EIA to prevent site runoff affecting stream courses. Furthermore, these future polders and River Park would be

managed by Government after construction, and could thus better protect the stream. For “OU (Stormwater Attenuation and Treatment Ponds)” zones, mainly Stormwater Attenuation and Treatment Ponds are proposed which will include wetlands and will provide additional habitats for fauna. Native riparian tree and shrub species will be planted on the earth-line polders and aquatic plants will be planted in biofiltration zone of Stormwater Attenuation and Treatment Ponds.

- 4.1.4 Within the buffer zones, polder is originally proposed along Area 86 (“OU(Polder)” zone) to the east of Mok Ka to protect the proposed development areas and indigenous village from the potential flood risk of Tung Chung Stream. However, it is anticipated that the areas around Tung Chung Stream will have no flood risk under 1 in 200 year event with end-21 century climate change and therefore, it is considered that the original proposed polder sections on the areas of Area 86 next to Mok Ka and Chap Mun Tau are not required. Having said that, other flood preventive measures, including flood wall and U-channel, are proposed on these areas next to Mok Ka and Chap Mun Tau. With respect to the portion of these areas of Area 86 where the existing facility (i.e., village house and car park) to the south of proposed Road L28 currently partially locate, a U-channel is proposed on the existing paved area of the existing car park in Area 96C (“CA” Zone) to the east of Mok Ka to collect surface runoff from the car park.

The main usage of the proposed U-channel is to collect and convey potential surface run-off from the existing car park near Mok Ka and Chap Mun Tau to the proposed Stormwater Attenuation and Treatment Ponds in Area 45B to the north of Road L25 so as to prevent any discharge of surface run-off from the carpark to Tung Chung Stream. Currently, the middle portion of the existing car park falls on “OU(Polder)” zone. If U-channel is located on the area of "OU(Polder)" zone within the car park, it will only divert half of the surface run-off of the car park which is considered not effective. To effectively divert surface run-off from the car park, it is inevitable that the proposed U-channel is to be placed along the edge of the car park which has been located on “CA” zone. Plans and sections of the existing situation and the proposed u-channel are shown in **Annex 1**.

To avoid any potential disturbance to the existing riparian vegetation and the stream, ecological baseline survey will be

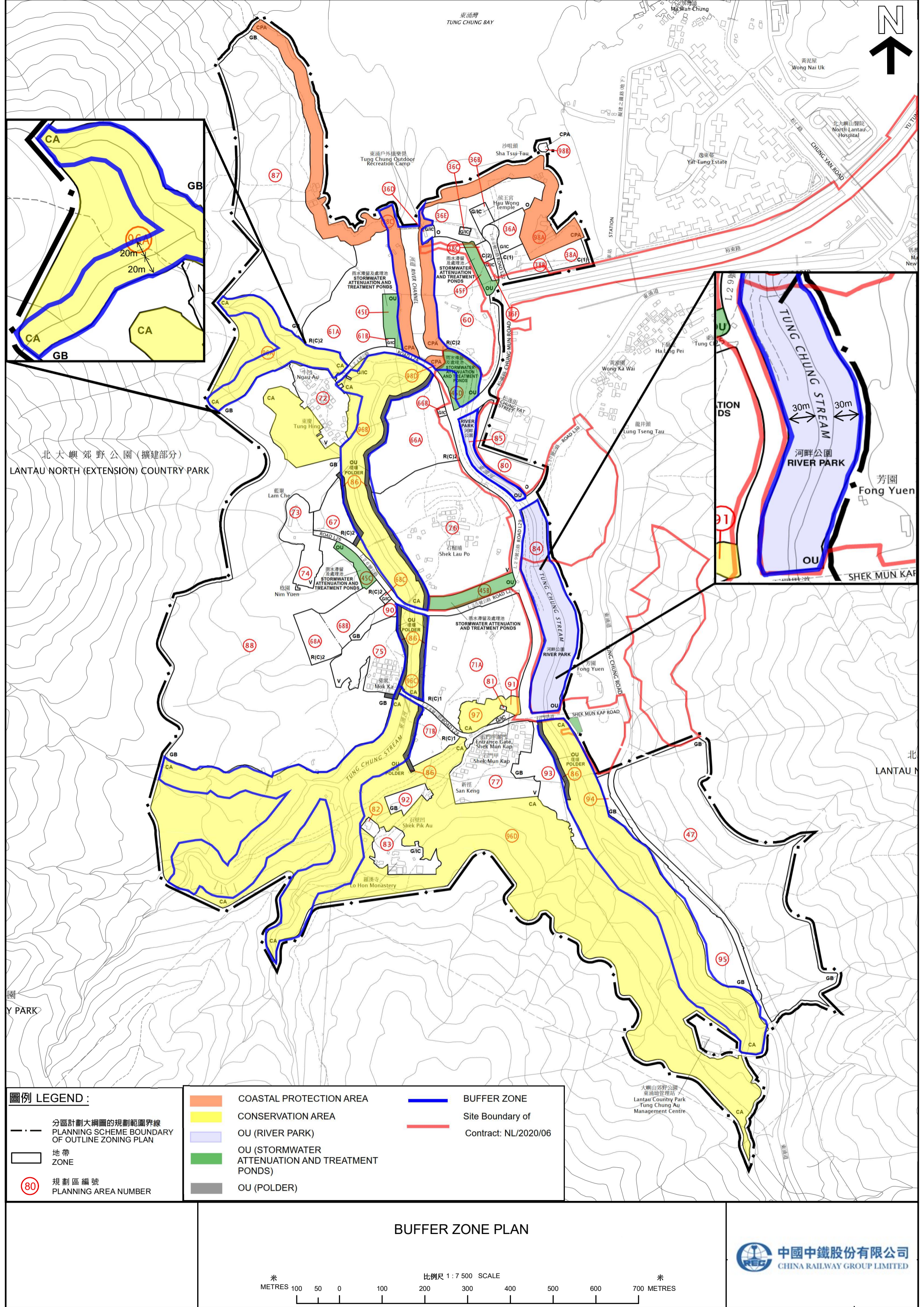
conducted to establish the baseline profile for the habitat and flora and fauna species of conservation importance along Tung Chung Stream prior to construction. CREC shall also carry out different appropriate preventive measures to avoid adverse environmental impact from the U-channel of the car park and prevent wastewater discharge from the car park into the U-channel.

5 Conclusion

- 5.1.1 Pursuant to the Clause 2.18 of EP-519/2016 for the Project, this Plan for Provision of Buffer Zones is submitted prior to the construction commencement. The Contractor shall update and refine this Plan as necessary subject to the site conditions upon possession of the site and re-submit to the EPD for approval prior to the construction.

Appendix A

Buffer Zone Plan



圖例 LEGEND :

分區計劃大綱圖的規劃範圍界線
PLANNING SCHEME BOUNDARY OF OUTLINE ZONING PLAN

地帶
ZONE

80 規劃區編號
PLANNING AREA NUMBER

| | | | |
|--|---|--|---------------------------------------|
| | COASTAL PROTECTION AREA | | BUFFER ZONE |
| | CONSERVATION AREA | | Site Boundary of Contract: NL/2020/06 |
| | OU (RIVER PARK) | | |
| | OU (STORMWATER ATTENUATION AND TREATMENT PONDS) | | |
| | OU (POLDER) | | |

BUFFER ZONE PLAN

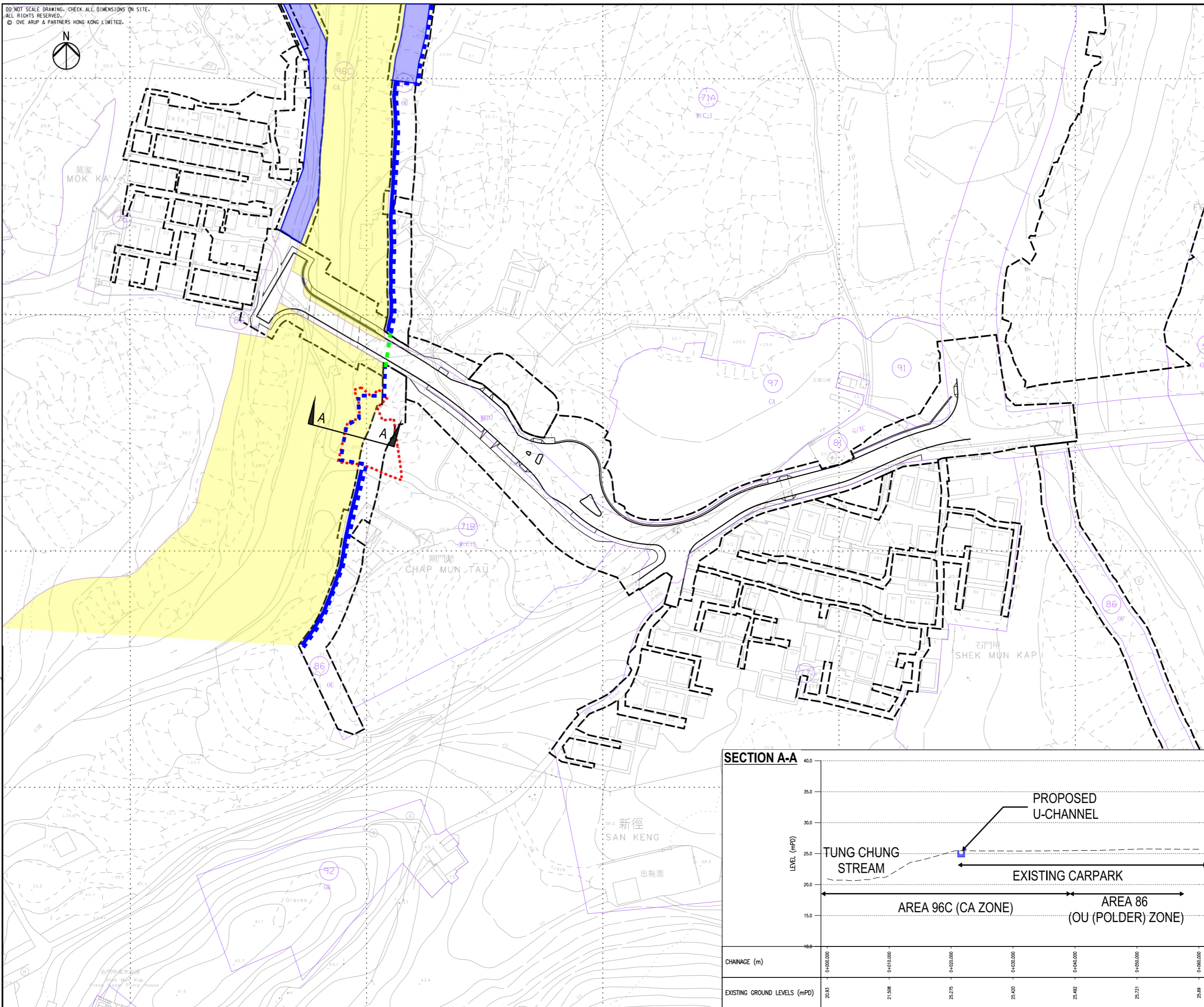
米 METRES 100 50 0 100 200 300 400 500 600 700 METRES

比例尺 1 : 7 500 SCALE

Annex 1

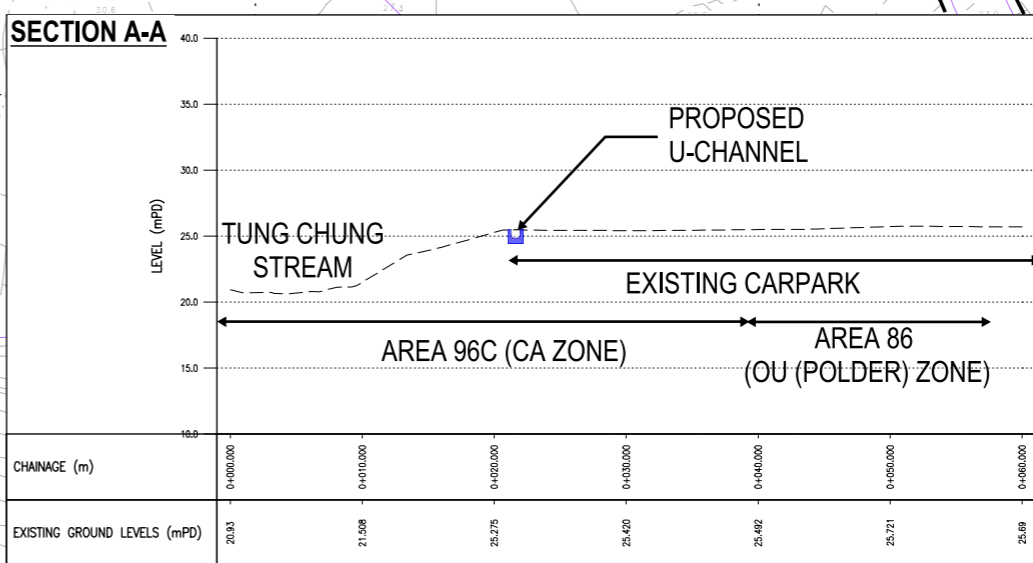
Layout and Section of Existing Carpark and Proposed U-channel at Mok Ka

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- Legend:**
- Polder
 - Flood Wall
 - U-channel
 - Underground Pipe
 - Existing Carpark at Mok Ka
 - Area 96C (CA Zone)
 - OZP Zoning

| | | | |
|--|-------------|---------|----------|
| Rev | Description | By | Date |
| Consultant | | | |
| ARUP | | | |
| Project Title | | | |
| Agreement No. CE 70/2015 (CE) | | | |
| Tung Chung New Town Extension (West) | | | |
| - Design and Construction | | | |
| Drawing title | | | |
| Annex 1: Layout and Section of Existing Carpark and Proposed U-channel at Mok Ka | | | |
| Drawing no. | | Rev. | |
| 251854/SK-C-178-A | | | |
| Drawn | Date | Checked | Approved |
| Scale | Status | | |



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Development Department