

寄件者: Louis Tse [REDACTED]
寄件日期: 2024年10月17日星期四 12:48
收件者: tpbpd/PLAND
副本:
主旨: [FI] S.16 Application No. A/YL-KTN/1041 - FI to address departmental comments
附件: FI1 for A_YL-KTN_1041 (20241017).pdf
類別: Internet Email

Dear Sir,

Attached herewith the further information to address departmental comments of the subject application.

Should you require more information, please do not hesitate to contact me. Thank you for your kind attention.

Kind Regards,

Louis TSE | Town Planner
R-riches Group (HK) Limited

R-riches Property Consultants Limited | R-riches Planning Limited | R-riches Construction Limited

Our Ref. : DD107 Lot 1750A6 RP & 1905 RP
Your Ref. : TPB/A/YL-KTN/1041

The Secretary,
Town Planning Board,
15/F, North Point Government Offices,
333 Java Road,
North Point, Hong Kong

By Email

17 October 2024

Dear Sir,

1st Further Information

**Proposed Temporary Open Storage of Construction Materials with Ancillary Facilities
for a Period of 3 Years in "Comprehensive Development Area (1)" Zone,
Various Lots in D.D. 107 and Adjoining Government Land, Fung Kat Heung, Kam Tin, Yuen Long**

(S.16 Planning Application No. A/YL-KTN/1041)

We are writing to submit further information to address departmental comments on the subject application (**Appendix I**).

Should you require more information regarding the application, please contact our Mr. Danny NG at [REDACTED] or the undersigned at your convenience. Thank you for your kind attention.

Yours faithfully,

For and on behalf of
R-riches Property Consultants Limited

Louis TSE
Town Planner

cc DPO/FSYLE, PlanD (Attn.: Ms. Andrea YAN email: awyyan@pland.gov.hk)
(Attn.: Ms. Olivia NG email: olyng@pland.gov.hk)

Responses-to-Comments

**Proposed Temporary Open Storage of Construction Materials with Ancillary Facilities
for a Period of 3 Years in "Comprehensive Development Area (1)" Zone,
Various Lots in D.D. 107 and Adjoining Government Land, Fung Kat Heung, Kam Tin, Yuen Long**

(Application No. A/YL-KTN/1041)

(i) A RtoC Table:

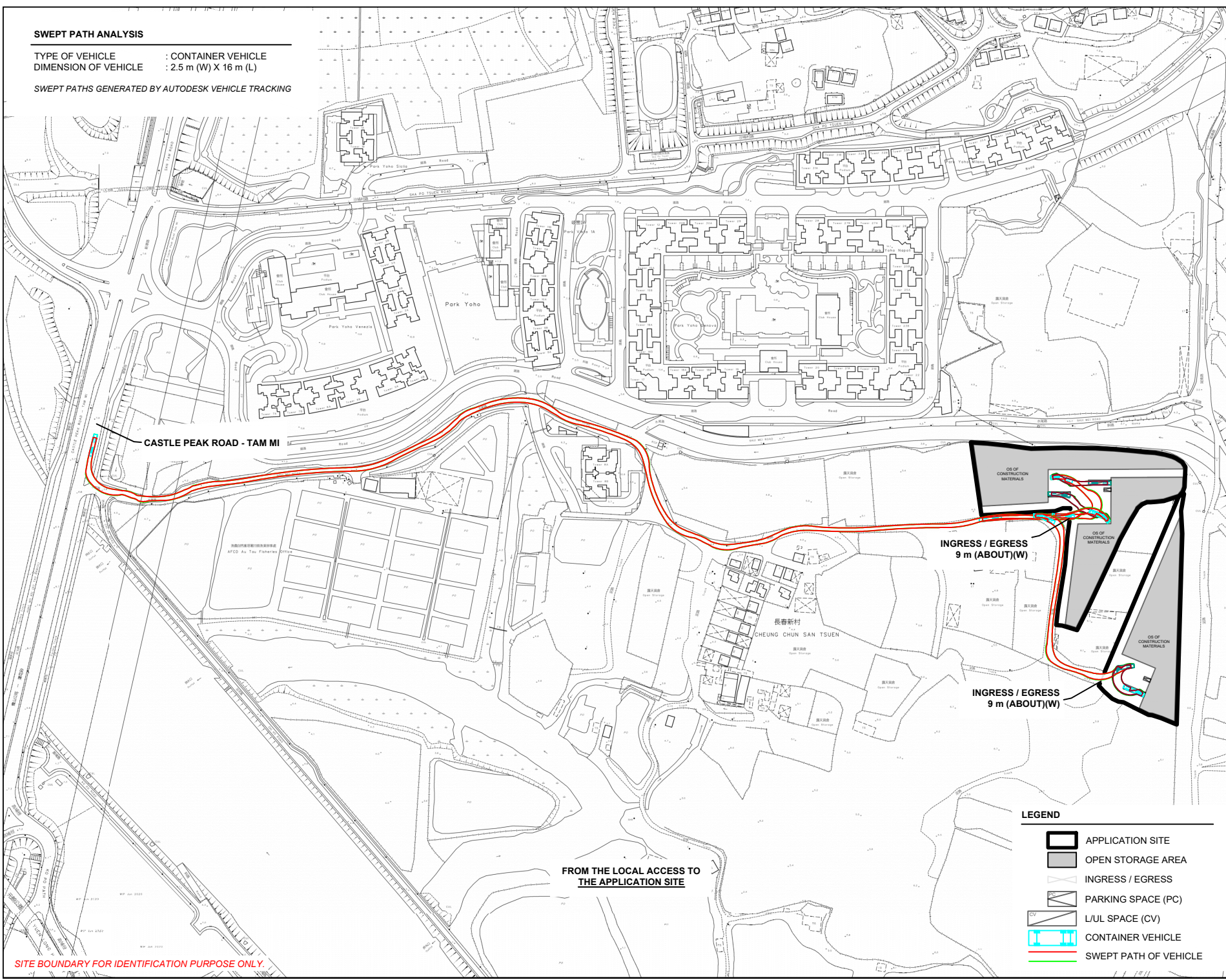
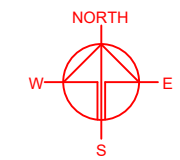
Departmental Comments		Applicant's Responses
1. Comments of the Commissioner for Transport (C for T) (Contact Person: Mr. Phil CAI; Tel.: 2399 2421)		
(a)	The applicant should demonstrate the smooth manoeuvring of vehicles, e.g. container vehicle, to / from Castle Peak Road - Tam Mi, along the local access and within the site.	The swept path demonstrations are shown in Plans 1 and 2 .
(b)	The applicant should provide the routing between Castle Peak Road - Tam Mi and the site.	The routing between Castle Peak Road – Tam Mi and the application site (the Site) is provided (Plan 3).
(c)	The applicant should note the local access between Castle Peak Road - Tam Mi and the site is not managed by this Department.	Noted.
2. Comments of the Director of Fire Services (D of FS) (Contact Person: Mr. CHEUNG Wing-hei; Tel.:2733 7737)		
(a)	In consideration of the design/nature of the proposal, FSIs are required.	A fire service installations (FSIs) proposal is provided for your consideration (Annex I).
3. Comments of the District Lands Officer/Yuen Long, Lands Department (DLO/YL, LandsD) (Contact Person: Ms. S. L. CHENG; Tel.: 2443 1072)		
(a)	<u>Unlawful occupation of Government land adjoining the said private lot(s) covered by the planning application</u> The Government land within the application site (about <u>665</u> m ² as mentioned in the application form) has been unlawfully occupied without any permission. Any occupation of GL without Government's prior approval is an offence under Cap. 28. This office reserves the rights to take necessary	The applicant will submit Short Term Wavier (STW) and Short Term Tenancy (STT) applications to rectify the applied use after planning approval has been obtained from the Board. No structure is proposed for domestic use.

	<p>land control against the unlawful occupation of Government land without further action.</p> <p>If the planning application is approved, the STW holder(s) shall apply to this office for modification of the STW where appropriate and the lot owner(s) shall apply to this office for a Short Term Tenancy (STT) to permit the occupation of the Government land. The application(s) for STW and STT will be considered by the Government in its capacity as a landlord and there is no guarantee that they will be approved. The STW and STT, if approved, will be subject to such terms and conditions including the payment of waiver fee, rent and administrative fee as considered appropriate by LandsD. Besides, given the proposed use is temporary in nature, only erection of temporary structure(s) will be considered.</p>	
<p>4. Comments of the Chief Engineer/Mainland North, Drainage Services Department (CE/MN, DSD) (Contact Person: Mr. Terence TANG; Tel.: 2300 1257)</p>		
(a)	<p>Considering the large area of proposed development, a Drainage Impact Assessment is required for the application.</p>	<p>A Drainage Impact Assessment (DIA) report is submitted by the applicant to review the drainage arrangements for the proposed development, and the DIA concluded that adverse drainage impact from the proposed development should <u>not</u> be anticipated (Annex II).</p>

SWEPT PATH ANALYSIS

TYPE OF VEHICLE : CONTAINER VEHICLE
 DIMENSION OF VEHICLE : 2.5 m (W) X 16 m (L)

SWEPT PATHS GENERATED BY AUTODESK VEHICLE TRACKING



PLANNING CONSULTANT
R-Riches
 Property Consultants Ltd.

PROJECT
 PROPOSED TEMPORARY OPEN STORAGE OF CONSTRUCTION MATERIALS WITH ANCILLARY FACILITIES FOR A PERIOD OF 3 YEARS

SITE LOCATION
 LOTS 1749 RP, 1750A6 RP (PART) AND 1905 RP (PART) IN D.D. 107 AND ADJOINING GOVERNMENT LAND, FUNG KAT HEUNG, KAM TIN, YUEN LONG, NEW TERRITORIES

LEGEND

	APPLICATION SITE
	OPEN STORAGE AREA
	INGRESS / EGRESS
	PARKING SPACE (PC)
	L/UL SPACE (CV)
	CONTAINER VEHICLE
	SWEPT PATH OF VEHICLE

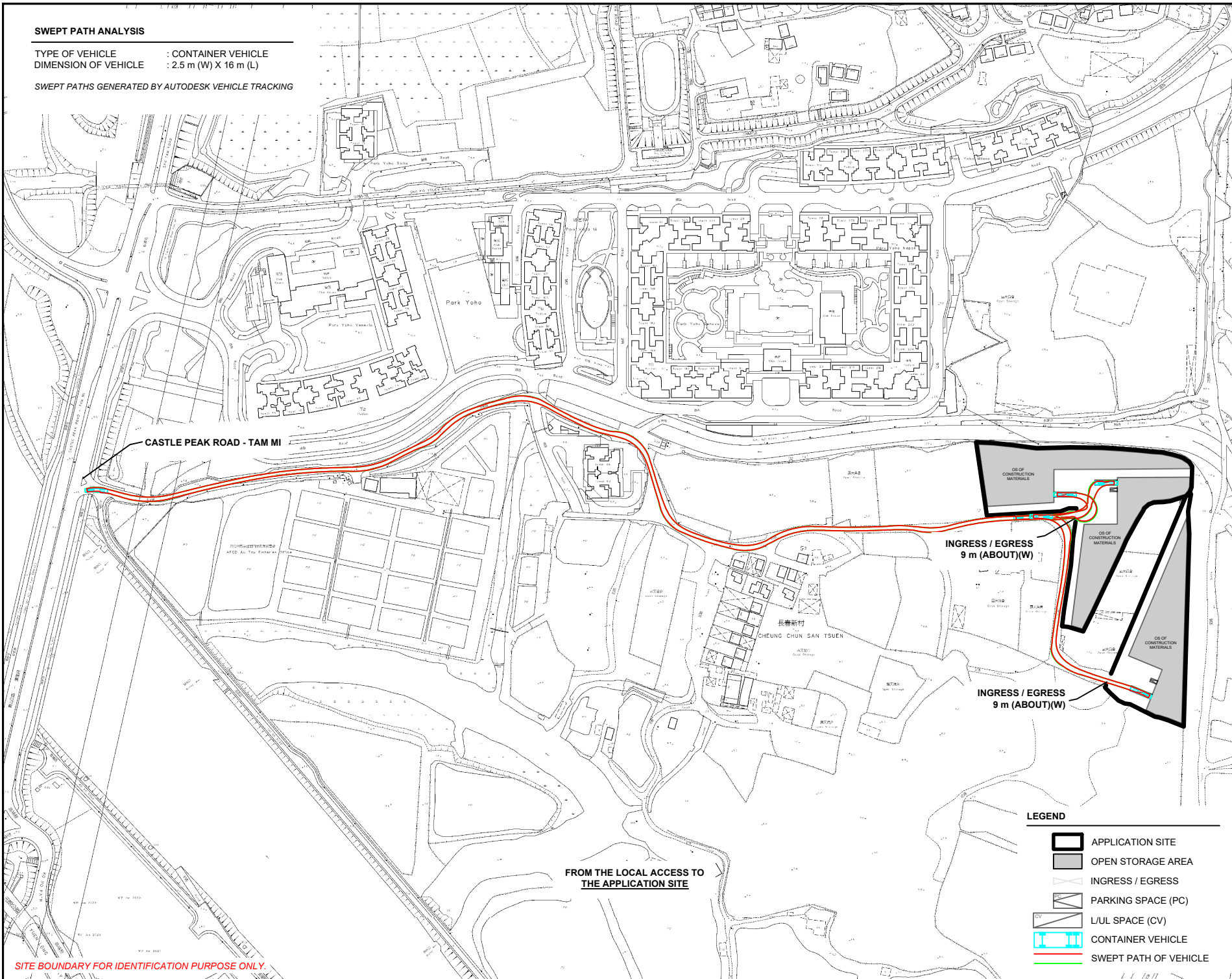
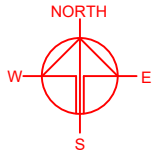
SCALE 1: 1500 @ A4	
DRAWN BY MN	DATE 17.7.2024
CHECKED BY	DATE
APPROVED BY	DATE
DWG. TITLE SWEPT PATH ANALYSIS (1/2)	
DWG NO. PLAN 1	VER. 001

SITE BOUNDARY FOR IDENTIFICATION PURPOSE ONLY.

SWEPT PATH ANALYSIS

TYPE OF VEHICLE : CONTAINER VEHICLE
 DIMENSION OF VEHICLE : 2.5 m (W) X 16 m (L)

SWEPT PATHS GENERATED BY AUTODESK VEHICLE TRACKING



PLANNING CONSULTANT



PROJECT

PROPOSED TEMPORARY OPEN STORAGE OF CONSTRUCTION MATERIALS WITH ANCILLARY FACILITIES FOR A PERIOD OF 3 YEARS

SITE LOCATION

LOTS 1749 RP, 1750A6 RP (PART) AND 1905 RP (PART) IN D.D. 107 AND ADJOINING GOVERNMENT LAND, FUNG KAT HEUNG, KAM TIN, YUEN LONG, NEW TERRITORIES

SCALE

1 : 1500 @ A4

DRAWN BY	DATE
MN	17.7.2024

CHECKED BY	DATE

APPROVED BY	DATE

DWG. TITLE
 SWEEP PATH ANALYSIS (2/2)

DWG NO.	VER.
PLAN 2	001

LEGEND

- APPLICATION SITE
- OPEN STORAGE AREA
- INGRESS / EGRESS
- PARKING SPACE (PC)
- L/UJ SPACE (CV)
- CONTAINER VEHICLE
- SWEEP PATH OF VEHICLE

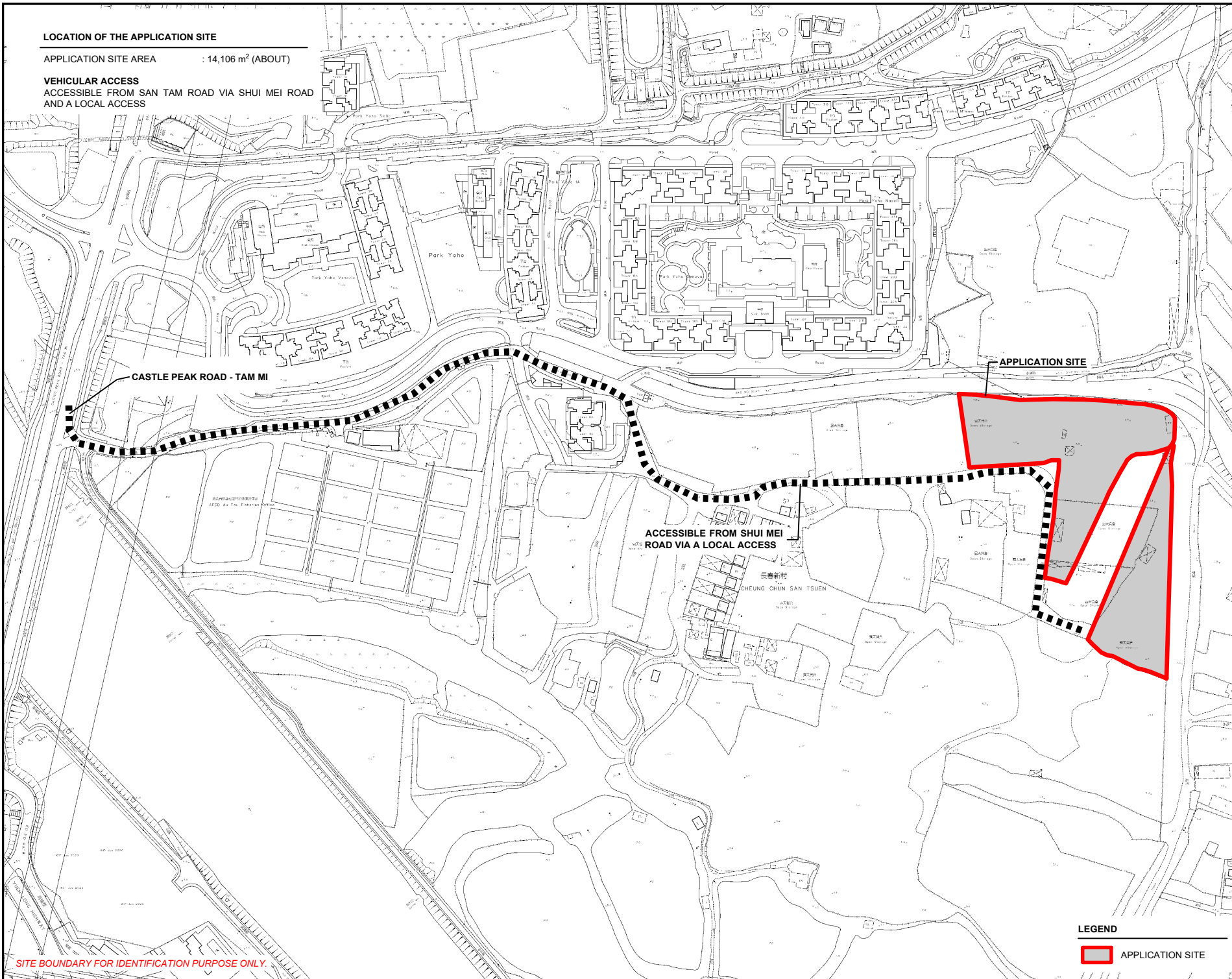
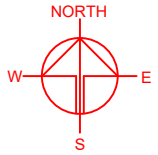
SITE BOUNDARY FOR IDENTIFICATION PURPOSE ONLY.

LOCATION OF THE APPLICATION SITE

APPLICATION SITE AREA : 14,106 m² (ABOUT)

VEHICULAR ACCESS

ACCESSIBLE FROM SAN TAM ROAD VIA SHUI MEI ROAD
AND A LOCAL ACCESS



SITE BOUNDARY FOR IDENTIFICATION PURPOSE ONLY

LEGEND

 APPLICATION SITE

PLANNING CONSULTANT



PROJECT

PROPOSED TEMPORARY OPEN STORAGE OF CONSTRUCTION MATERIALS WITH ANCILLARY FACILITIES FOR A PERIOD OF 3 YEARS

SITE LOCATION

LOTS 1749 RP, 1750A6 RP (PART) AND 1905 RP (PART) IN D.D. 107 AND ADJOINING GOVERNMENT LAND, FUNG KAT HEUNG, KAM TIN, YUEN LONG, NEW TERRITORIES

SCALE

1 : 3000 @ A4

DRAWN BY

MN

DATE

17.7/2024

CHECKED BY

DATE

APPROVED BY

DATE

DWG. TITLE

LOCATION PLAN

DWG. NO.

PLAN 3

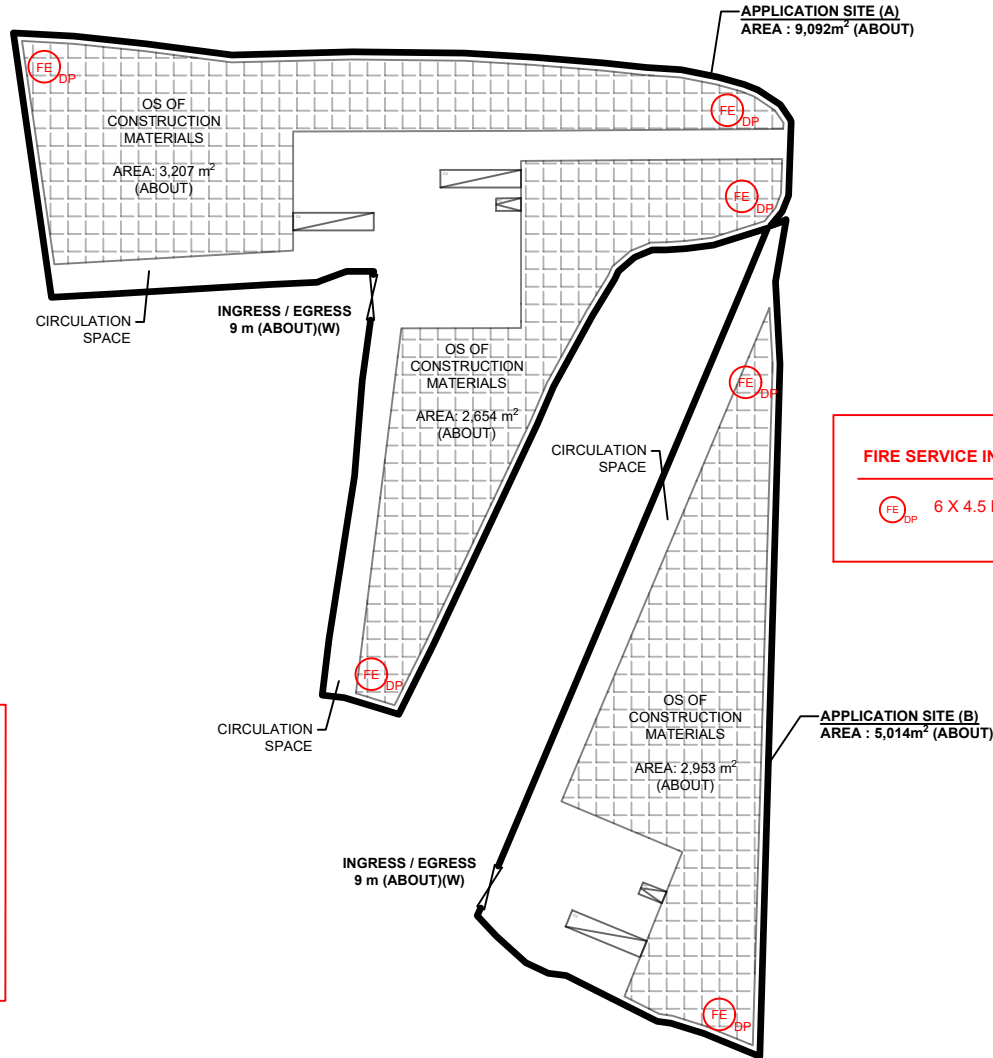
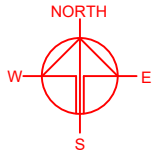
VER.

001

DEVELOPMENT PARAMETERS

APPLICATION SITE AREA : 14,106 m² (ABOUT)
 COVERED AREA : NOT APPLICABLE
 UNCOVERED AREA : 14,106 m² (ABOUT)

NO STRUCTURE IS PROPOSED AT THE APPLICATION SITE.



FIRE SERVICE INSTALLATIONS

6 X 4.5 KG DRY POWDER TYPE FIRE EXTINGUISHER

FIRE SERVICE INSTALLATIONS

4.5 KG DRY POWDER FIRE EXTINGUISHER

FS NOTES:

1. PORTABLE HAND-OPERATED APPROVED APPLIANCE SHALL BE PROVIDED AS REQUIRED BY OCCUPANCY.
2. ACCESS IS PROVIDED FOR EMERGENCY VEHICLE TO REACH 30m OF ALL PART THE APPLICATION SITE.

PARKING AND LOADING / UNLOADING PROVISIONS

NO. OF PRIVATE CAR PARKING SPACE : 2
 DIMENSIONS OF PARKING SPACE : 5 m (L) x 2.5 m (W)

NO. OF L/UL SPACE FOR CONTAINER VEHICLE : 3
 DIMENSION OF L/UL SPACE : 16 m (L) X 3.5 m (W)

LEGEND

- APPLICATION SITE
- OPEN STORAGE AREA
- INGRESS / EGRESS
- PARKING SPACE (PC)
- L/UL SPACE (CV)

PLANNING CONSULTANT



PROJECT

PROPOSED TEMPORARY OPEN STORAGE OF CONSTRUCTION MATERIALS WITH ANCILLARY FACILITIES FOR A PERIOD OF 3 YEARS

SITE LOCATION

LOTS 1749 RP, 1750A6 RP (PART) AND 1905 RP (PART) IN D.D. 107 AND ADJOINING GOVERNMENT LAND, FUNG KAT HEUNG, KAM TIN, YUEN LONG, NEW TERRITORIES

SCALE

1 : 1500 @ A4

DRAWN BY	DATE
LT	14.10.2024
CHECKED BY	DATE
APPROVED BY	DATE

DWG. TITLE
 FSIs PROPOSAL

DWG NO.	VER.
ANNEX I	001

**Application No. A/YL-KTN/1041
Lots 1749 RP, 1750A6 RP (Part) and 1905
RP (Part) in D.D. 107 and Adjoining
Government Land, Fung Kat Heung, Kam
Tin, Yuen Long, New Territories
Drainage Proposal
3 October 2024**

Content:

1.	Introduction.....	1
1.1	Project Title.....	1
1.2	Project Background	1
1.3	Purpose of this Proposal	1
2.	Drainage Flow Evaluation.....	2
2.1	Relevant Guidelines and Classification of the Project Site	4
2.2	Surrounding Environment and Existing Drainage Channel.....	2
2.3	Current Scenario	4
3.	Proposed Drainage Infrastructure	6
3.1	General Specification and Dimension of the Channel.....	6
3.2	Channel Alignment and Components.....	6
3.3	Maintenance	8
4.	Conclusion	8

Figures:

Figure 1.1:	Location of the Site as in Planning Application
Figure 2.1:	Identified Existing Drainage Channels
Figure 2.2:	Site Photos showing the Existing Scenario of the Project Site
Figure 2.3:	Site Photos showing the Existing Scenario of the Project Site
Figure 2.4:	Site Photos showing the Existing Scenario of the Project Site
Figure 3.1:	Identified Catchment Area
Figure 3.2:	Flow Pattern of Stormwater under Existing Scenario
Figure 4.1:	Proposed Layout of the Drainage Channel for the Project Site

Appendices:

Appendix 4.1:	Catchment Runoff Estimation for the Project Site
Appendix 4.2:	Calculation of Pipe Capacity for Existing Discharge Segment
Appendix 4.3:	Calculation of Pipe Capacity for the Proposed Discharge Segment for the Project Site

This Page is Intentionally left Blank

1. Introduction

1.1 Project Title

1.1.1 Application for Permission Under Section 16 of the Town Planning Ordinance Application No. A/YL-KTN/1041.

1.2 Project Background

1.2.1 A Planning Application (No. 1A/YL-KTN/1041) has been submitted to the Town Planning Board on 5 August 2024 to seek planning permission for a proposed temporary open storage of construction materials for a period of 3 years at the application site (the Project Site) in Lots 1749 RP, 1750A6 RP (Part) and 1905 RP (Part) in D.D. 107 and Adjoining Government Land, Fung Kat Heung, Kam Tin, Yuen Long, New Territories.

1.2.2 The Project Site falls within the 'Comprehensive Development Area (1)' ("CDA") zone according to the Approved Kam Tin North Outline Zoning Plan No. S/YL-KTN/11 (the OZP). Comment from the Drainage Services Department (DSD) was received through the Planning Department (PlanD) on 2 September 2024, stated that a Drainage Impact Assessment is required for the application due the large size of the Project Site.

Location of the Project Site

1.2.3 The location of the Project Site is given in **Figure 1.1**.

1.2.4 The Project Site has an area of about 14,106m² and the proposed development involves open storage of construction materials with ancillary facilities.

1.3 Purpose of this Proposal

1.3.1 Pursuant to the comment from DSD received through PlanD on 2 September 2024, submission of a drainage impact assessment to the satisfaction of the Director of Drainage Services is required. This proposal is prepared to supplement the application and the captioned condition to demonstrate no adverse drainage impact will be caused to the adjacent area.

2. Existing Environment of the Project Site

2.1 Overview of Local Terrain and Surrounding Environment

Local Terrain of the Project Site

- 2.1.1 The Project Site is located within Kam Tin. To the north of the Project Site is the main discharge channel that connects to Kam Tin River. This channel serves as the main discharge channel for the surrounding area.
- 2.1.2 To the east of the Project Site is an uncharted water channel. This channel is blocked by vegetations and should not be considered a discharge channel. Further east side of the channel is Shui Mei Road, where an open space that currently used as a parking lot was located east of the road. To the west to southwest of the Project Site is a number of sites being used as open storage areas and carparks. To the south of the Project Site is an unpaved area with vegetation, which was also been used as open storage.
- 2.1.3 The local terrain is general flat and lower at the north near the channel. The area within proximity of the Project Site is fully paved except the area located further south. The local site is bounded by a fringe of vegetation to the east and to the south. Stormwater falls at the south of the Project Site will be discharged to the nearby area through natural terrain, and also soak away through the unpaved area. Uncharted U-channels are also located within the area. The uncharted U-channels directs the stormwater within the area away from the site towards the ponds and Kam Tin River to the south.

Terrain of the Project Site

- 2.1.4 The Project Site is a paved area of about 14,106m². The Project Site is divided into 2 sub-sites. Site 1 is located at the northern side adjacent to the channel, with an area of about 9,117m². This area is a fully paved area and is higher at the southern side at about 6mPD, while the northern side is lower at about 5.5mPD. at the northern edge, adjacent to the channel, the height is about 4.6mPD. Site 2 is located at the southern side adjacent to the track branching off from Shui Mei Road, with an area of about 4,989m². This area is a fully paved area and is higher at the western side at about 6mPD, and lower at the eastern side at about 4.5mPD.
- 2.1.5 Some temporary structures used as office were erected within the Project Site.

2.2 Existing Drainage Channel

- 2.2.1 At the north of the Project Site, U-channels SUP1019865, SUP1019861, SUP1019862, SUP1019853, and SUP1019854 are identified. These channels direct the stormwater westwards or eastwards and ultimately discharges the collected stormwater into the box culvert comprises of SCP1009603, SCP1009604, and SCP1009605.
- 2.2.2 Catchpits SCH1028779, SCH1028777, SCH1028773, and SCH1028772 are available at the northern side of the Project Site for connection. **Figure 2.1** shows the identified channels within the proximity of the Project Site.
- 2.2.3 The area is currently not a flooding prone area. Demonstrated the box culvert at the north of the Project Site has enough discharge capacity to handle the rainwater for the area.

Site Visit and Observation

- 2.2.4 A site visit was conducted on 16 September 2024 to obtain the current condition of the surrounding area and existing drainage system within the Project Site. Photos taken during the site visit showing the features identified in the following sections are given in **Figure 2.2 to Figure 2.4**.

Current Condition of the Project Site

- 2.2.5 A hoarding made with sheet metal have been erected surrounding the Project Site. The Project Site generally has no concrete footing, as such stormwater is generally free to flow into and out of the Project during rainstorm. (Photo 1 and 2 in **Figure 2.2**)
- 2.2.6 A U-channel was found at the entrance of Site 1. The U-channel directs the stormwater northwards and exits the Project Site at the southern end, enters the U-channel SUP1019865 and ultimately discharged via the catchpit SCH1028779. (Photo 1 and 2 in **Figure 2.3**)
- 2.2.7 No existing U-channels were identified within Site 2. (Photo 3 in **Figure 2.3**)
- 2.2.8 Stormwater fall within the Project Site will flow freely towards the north and enters the box culvert, and towards the east, and enters the channel at the east and ultimately enters the box culvert.

Current Condition of the Surrounding Area

- 2.2.9 As there is no established drainage channel for the area, stormwater fall within the proximity of the Project Site will be flowing along the local terrain and ultimately enters the box culvert, which ultimately discharge the stormwater into the Kam Tin River.
- 2.2.10 At the north of the Project Site is the box culvert. The channel provides sufficient discharge capacity for the area, and discharges the stormwater into Kam Tin River. (Photo 1 and 2 in **Figure 2.4**)
- 2.2.11 There is an uncharted channel located at the east of the Project Site. The uncharged channel is blocked by vegetations and should not be considered as a discharge channel. The channel connects to the box culvert that run at the north of the Project Site. (Photo 3 in **Figure 2.4**)
- 2.2.12 At the south of the Project Site is an unpaved area that is currently used as open storage area.
- 2.2.13 At the west of the Project Site is other paved areas serve as open storages, carparks etc. Dedicated drainage channel was identified within the area.

3. Drainage Flow Evaluation

3.1 Relevant Guidelines and Classification of the Project Site

3.1.1 This Drainage Proposal has been carried out in accordance with the guidelines given as follows:

- a) Technical Note to Prepare a Drainage Submission (the TN);
- b) Stormwater Drainage Manual Planning, Design and Management (Fifth Edition, January 2018) (the Manual); and
- c) Relevant standard drawings provided by Civil Engineering and Development Department.

Classification of the Project Site

3.1.2 As the Project Site is approximately 14,106m², which is larger than 1 ha, in accordance with the TN, the Project Site is classified as a Complicated Site. As such, Drainage Impact Assessment would be required for the Project Site in accordance with the standards set out in the Manual. However, as the Site is a combination of 2 major sections, which is classified as Site 1 and Site 2, with site areas of 9,117m² and 4,989m² respectively as discussed in **Section 2.1.4**, discussion on Site 1 and Site 2 will be carried out separately. This Drainage Impact Assessment therefore presented the drainage arrangement for Site 1 and Site 2 within the Project Site respectively.

3.2 Existing Stormwater Flow Path

Catchment Area Near the Project Site

3.2.1 The adjacent area is at similar height at the southern side of the Project Site and lower at the western side of the Project Site. This allows stormwater falls within the proximity of the Project Site to flow northwards and eastwards and enters the box culvert.

3.2.2 There are a number of catchment areas identified and are shown in **Figure 3.1**. They are discussed as follows:

Catchment Area 1

3.2.3 Locates at the eastern side of the Project Site, the Catchment Area 1 is the open space at the east of the Project Site. There is an uncharted channel as discussed in **Section 2.2.11** separating the catchment area from the Project Site, and the box culvert at the north of the catchment area.

Catchment Area 2

3.2.4 Locates at the southern side of the Project Site, the Catchment Area 2 refers to the unpaved area at the southern side of the Project Site. The catchment area has no dedicated channel identified.

Catchment Area 3

3.2.5 Locates at the western side of the Project Site, the Catchment Area 3 refers to the paved areas located at the westside of the Project Site which are currently used as open storage area and car park. The catchment area is located at immediate south of the box culvert.

Catchment Area 4 – Site 1

- 3.2.6 This catchment area refers to the Site 1 of the Project Site. Currently no perimeter concrete footing is located within the catchment area and stormwater will be free flowing from south to north. An existing U-channel also identified at the entrance of Site 1 and directs the drainage northwards.

Catchment Area 5 – Site 2

- 3.2.7 This catchment area refers to the Site 2 of the Project Site. Currently no perimeter concrete footing and existing U-channel are located within the catchment area and stormwater will be free flowing from west to east.

Stormwater Flow Pattern

- 3.2.8 Stormwater falls within Catchment Area 1 will flows northwards and westwards, and intercepted by the box culvert and the uncharted channels and ultimately entering the Kam Tin River. The stormwater falls within this catchment area will not affect the Project Site.
- 3.2.9 Stormwater falls within Catchment Area 2 will either be soaked away through the soil and flowing eastwards following the terrain, and enters the uncharted channel, ultimately discharged into Kam Tin River.
- 3.2.10 Stormwater falls within Catchment Area 3 will be discharged through respective drainage system and enters the box culvert to the north, where the stormwater will be discharged into Kam Tin River.
- 3.2.11 Stormwater falls within Site 1 will be flowing northwards and be intercepted by the public U-channels located at the northern side, and ultimately enters the box culvert. The existing U-channel within Site 1 also directs the stormwater northwards.
- 3.2.12 stormwater falls within Site 2 will be flowing eastwards and enter the uncharted channel as discussed in **Section 2.2.11**. The stormwater will then ultimately enter the box culvert and be discharged into Kam Tin River.

Capacity of Existing Drainage Channel

- 3.2.13 Stormwater falls within the proximity of the Project Site will be directed north by the terrain and enters the box culvert which ultimately enters Kam Tin River.
- 3.2.14 The box culvert comprises of box culverts SCP1009603, SCP1009604, and SCP1009605, with width of 7500mm, 16000mm, and 6500mm respectively. This box culvert channel provides adequate stormwater discharge capacity and consider the area is not a flooding prone area, the current drainage capacity is enough.
- 3.2.15 **Figure 3.2** shows the paths of stormwater under current scenario.

4. Proposed Drainage Infrastructure

4.1 Impact on Local Stormwater Flow Pattern and Discharge Channel Capacity

4.1.1 Stormwater within the project site will be properly collected and discharged into the box culvert at the northern side of the Site and ultimately into Kam Tin River.

4.1.2 Currently the site is fully paved with concrete. As such the project will not change the site runoff coefficient and will not increase the amount of rainwater to be handled by the Kam Tin River. Detail calculations on amount of runoff for 1 in 50 year rainfall are shown in **Appendix 4.1**.

4.2 General Specification and Dimension of the Channel

4.2.1 At each change of direction, a catchpit with cover will be provided. Catchpits with sand trap shall be provided at the outlets of the drainage system before entering the nullah. The covers of the proposed channels should be flush with the existing adjoining ground level.

4.2.2 Catchpit will be provided at all corners of the Project Site where the U-channel changes direction, and a sand trap will be provided to intercept the debris carried by the stormwater. The dimensions of the U-channels, covers of the catchpits will make reference to Civil Engineering and Development Department (CEDD) Drawing Nos. C2409I, C2406/1, C2406/2A and Drainage Services Department (DSD) Drawing No. DS 1025B.

4.2.3 The Project site is divided into 2 sub-sites, Site 1 with an area of about 9,117m², and Site 2 with an area of about 4,989m². Each sub-site will be bounded by perimeter U-channel of 650mm wide, and collected stormwater will be discharged to catchpits SCH1028777 and SCH1028773 respectively. Stormwater collected in these catchpits are discharged to Kam Tin River through underground pipes SWD1065696 and SWD1065690. These pipes will be responsible for the stormwater collected within the Project Site and the respective capacities have been confirmed to be able to take care of the discharge. Detailed calculations are given in **Appendix 4.2**.

4.2.4 Within the Project Site, a series of U-channel has been allocated at the Project Site and the layout is given in **Figure 4.1**. The percentage of maximum of full capacity under the peak flow for the proposed drainage channels have been summarised in **Table 4.1**. Detailed calculation is given in **Appendix 4.3**.

Table 4.1: Technical Details of the Proposed Drainage Channels

Segment	Upstream Manhole	Downstream Manhole	Length (m)	Diameter (mm)	Slope	Full Capacity (l/s)	% of Full Capacity under the Peak Flow of the Proposed Project
Site 1							
DC-1A	Surface U-Channel	CP-1A	15.30	650	1 in 153	738.05	67%
DC-1B	Surface U-Channel	TCP-1	196.60	650	1 in 179	682.19	73%
DC-1C	Surface U-Channel	CP-1B	84.70	650	1 in 169	700.96	71%
DC-1D	Surface U-Channel	CP-1C	64.20	650	1 in 161	720.38	69%
DC-1E	Surface U-Channel	CP-1D	98.40	650	1 in 197	649.69	77%
DC-1F	Surface U-Channel	TCP-1	112.90	650	1 in 188	664.63	75%
Site 2							
DC-2A	Surface U-Channel	CP-2A	62.80	650	1 in 314	512.51	57%
DC-2B	Surface U-Channel	TCP-2	165.10	650	1 in 550	385.06	76%
DC-2C	Surface U-Channel	TCP-2	151.00	650	1 in 503	403.02	72%

4.3 Channel Alignment and Components

Drainage Arrangement for Stormwater Flow within the Project: U-channel, floodwall and catchpit

- 4.3.1 All existing stormwater collection components will be upgraded to 450mm diameter U-channels.
- 4.3.2 Catchpits will be provided at each sharp turn, and at the junctions of drainage channels.
- 4.3.3 A perimeter U-channel will be constructed along the site boundary of Site 1 and Site 2 to intercept stormwater entering and leaving the Project Site. For stormwater falls within

the Project Site, the stormwater will flow southwards following the terrain and be collected by the perimeter U-channels at the southern side of the Project Site. The U-channel will then be connected to the existing catchpits.

- 4.3.4 Two final catchpits, FCP-1 and FCP-2, will be constructed. FCP1 is located at the centre of the northern boundary of the Project Site, and is responsible to discharge stormwater collected within Site 1 into the catchpit SCH1028777 and into Kam Tin River through segment SWD1065696. FCP2 will be located at the northern end of Site 2, and connects to the catchpit SCH1028773 and into Kam Tin River through segment SWD1065690.

4.4 Construction and Maintenance

- 4.4.1 The Applicant shall furnish DSD with this connection proposal for agreement. After obtaining DSD's agreement, the Applicant shall submit a duly completed Form HBP1 with a cross cheque covering the technical audit fee and a plan showing the details of the proposed drainage connection works to DSD (Mainland North Division) for formal application. The Applicant shall also carry out the proposed connection works in accordance with DSD Standard Drawings at the resources of the Applicant.
- 4.4.2 During construction stage, the Applicant shall ensure that no works, including any site formation works, shall be carried out adversely interfere with the free flow condition of the existing drains, channels and watercourses on or in the vicinity of the subject site any time during or after the works.
- 4.4.3 The proposed U-channel will intercept and deliver stormwater into the box culvert at the north of the Project Site and ultimately discharged into Kam Tin River. The maintenance of the proposed U-channels and catchpits shall be undertaken by the project proponent.
- 4.4.4 The project proponent shall rectify the system if it is found to be inadequate or ineffective during operation at his / her own expense, in addition to those within the Project Site.
- 4.4.5 In addition, the application shall also:
- a) make good all adjacent affected areas upon the completion of the drainage works;
 - b) allow all time free access for the Government and its agent to conduct site inspection on his completed drainage works; and
 - c) allow connections from the adjacent lots to be completed drainage works on Government Land when so required.

5. Conclusion

- 5.1.1 Consider the location is not a flooding black spot. Currently the drainage is responsible by a box culvert which diverts the stormwater collected within the area to Kam Tin River. As discussed, the box culvert is adequate to handle the stormwater discharge for the area. As the project will not increase the stormwater load to the drainage system within proximity of the Project Site, the drainage system after the implementation of the project will not be adversely affected.
- 5.1.2 Additional U-channels within the Project Site and catchpits are required to collect the stormwater falls within the Project Site and divert to the public drainage network for discharge. Associated drainage proposal has been presented.
- 5.1.3 The Applicant will ensure the construction works be conducted in a manner that the works will not adversely interfere with the free flow condition of the existing drains, channels and watercourses on or in the vicinity of the subject site any time during or after the works.

Figures

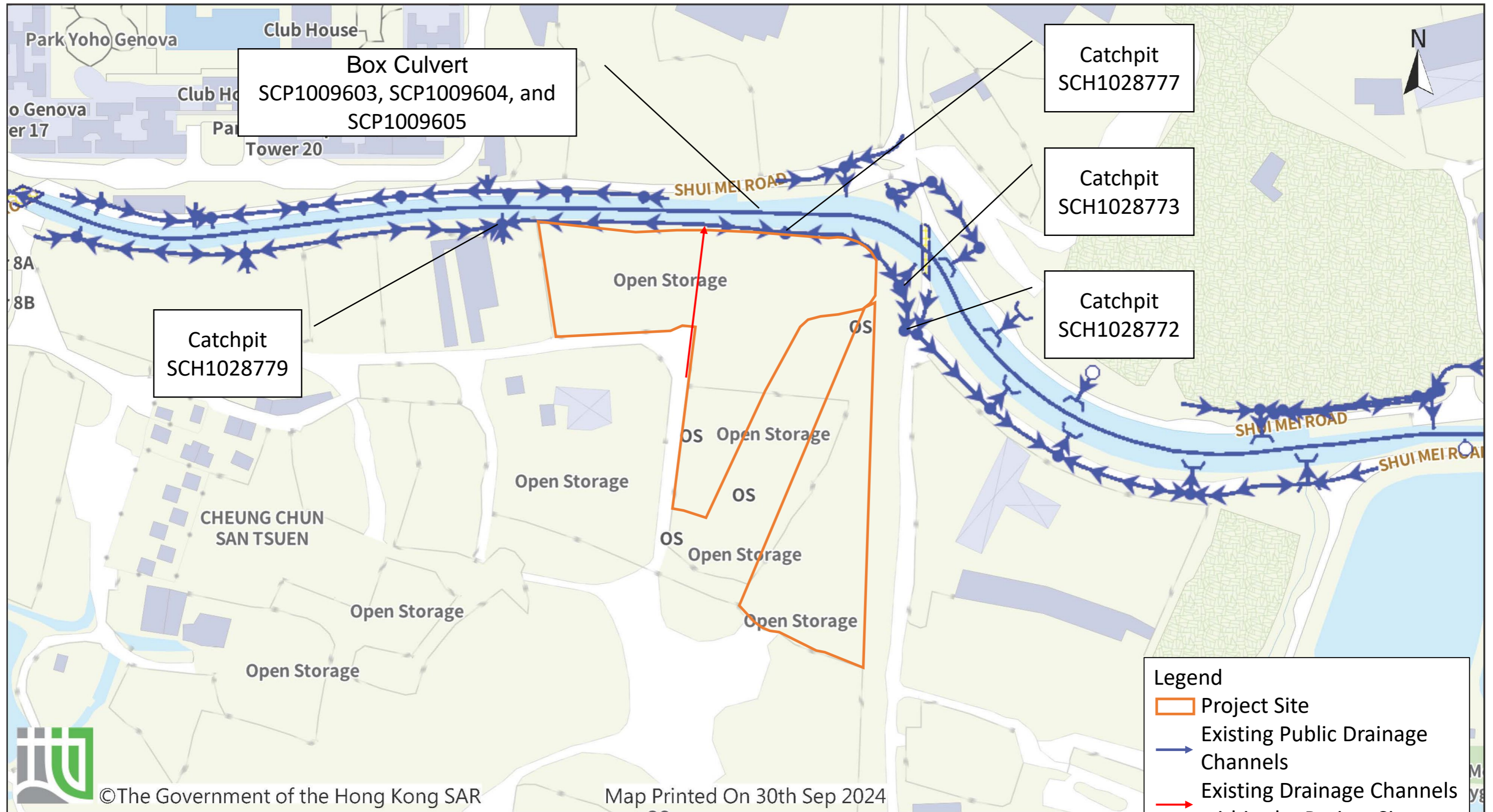


Figure 2.1 – Identified Existing Drainage Channels

Map Source: GeoInfo Map



Photo 1: Hoarding without concrete footing



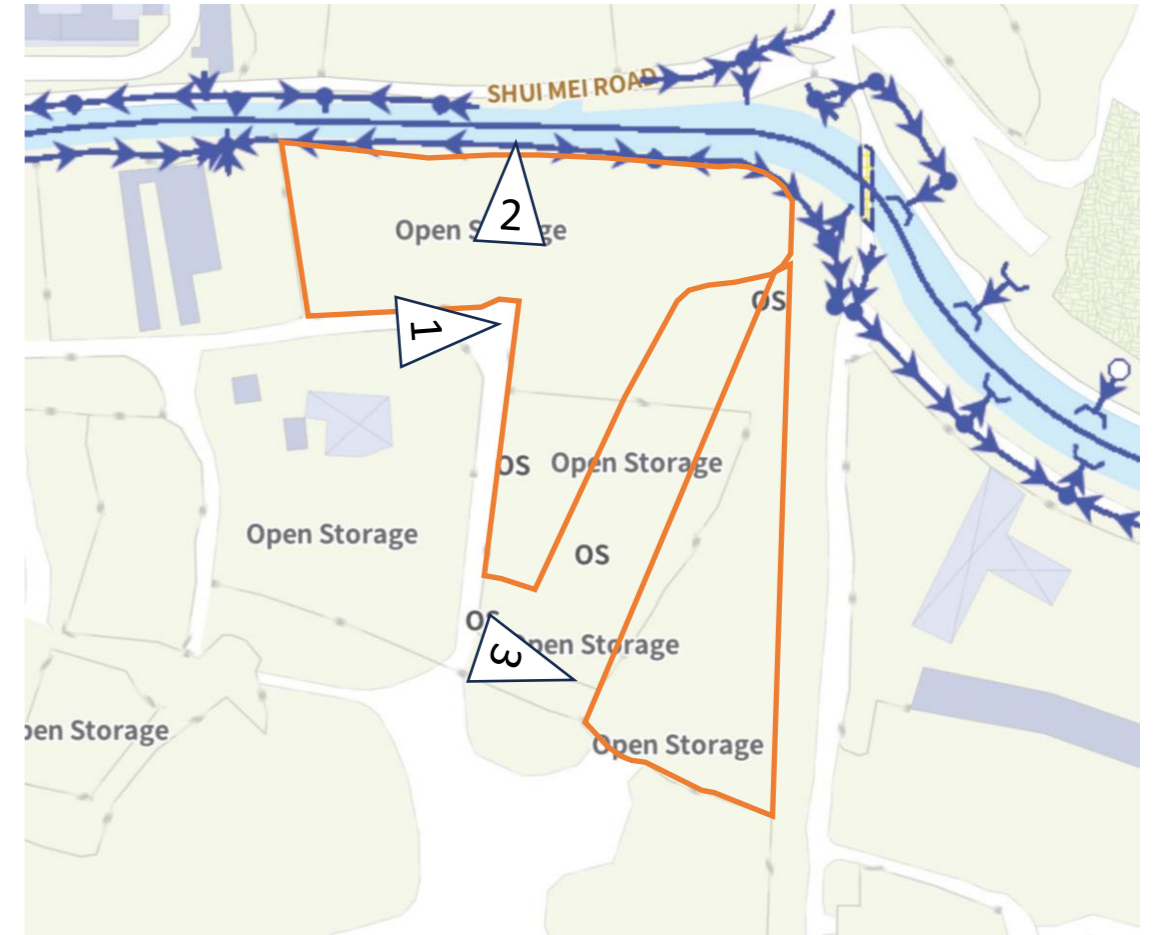
View Angle of the Photos



Photo 2: Hoarding without Concrete Footing



Photo 1: U-Channel at Entrance of Project Site (Site 1)



View Angle of the Photos



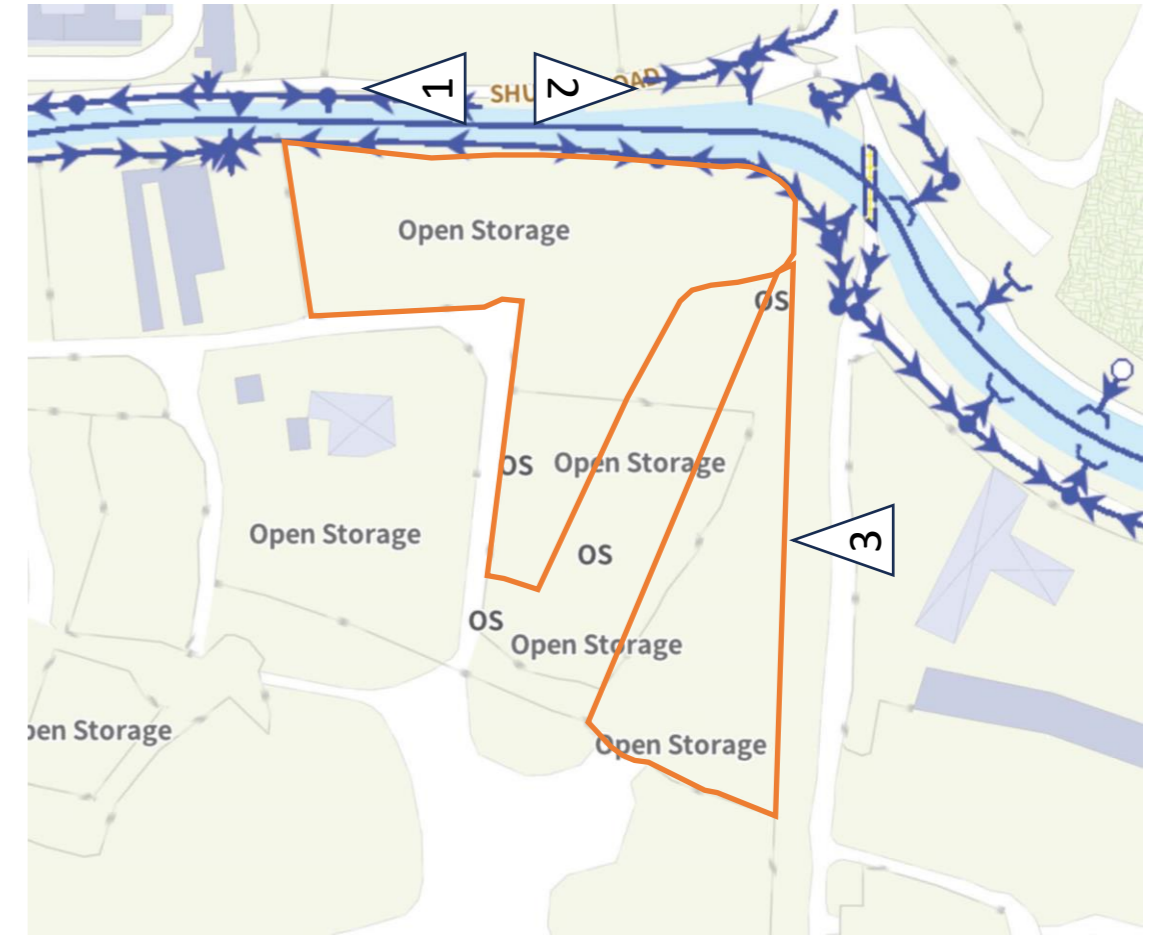
Photo 3: No U-Channel at Site 2 of Project Site



Photo 2: U-Channel at Entrance of Project Site leading north in Site 1



Photo 1: Box Culvert north of the Project Site



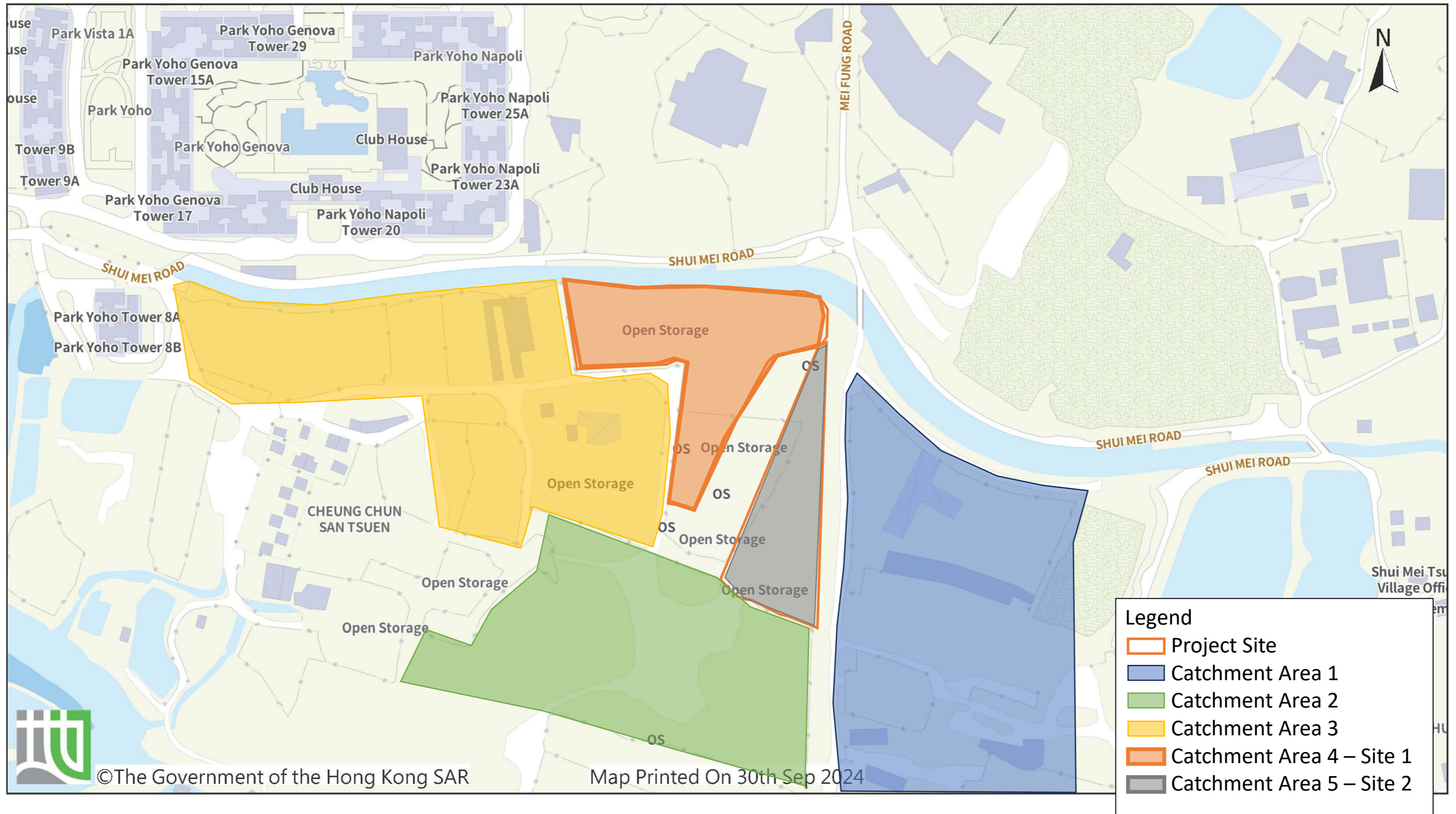
View Angle of the Photos



Photo 3: Channel at east of Project Site Blocked by Vegetations



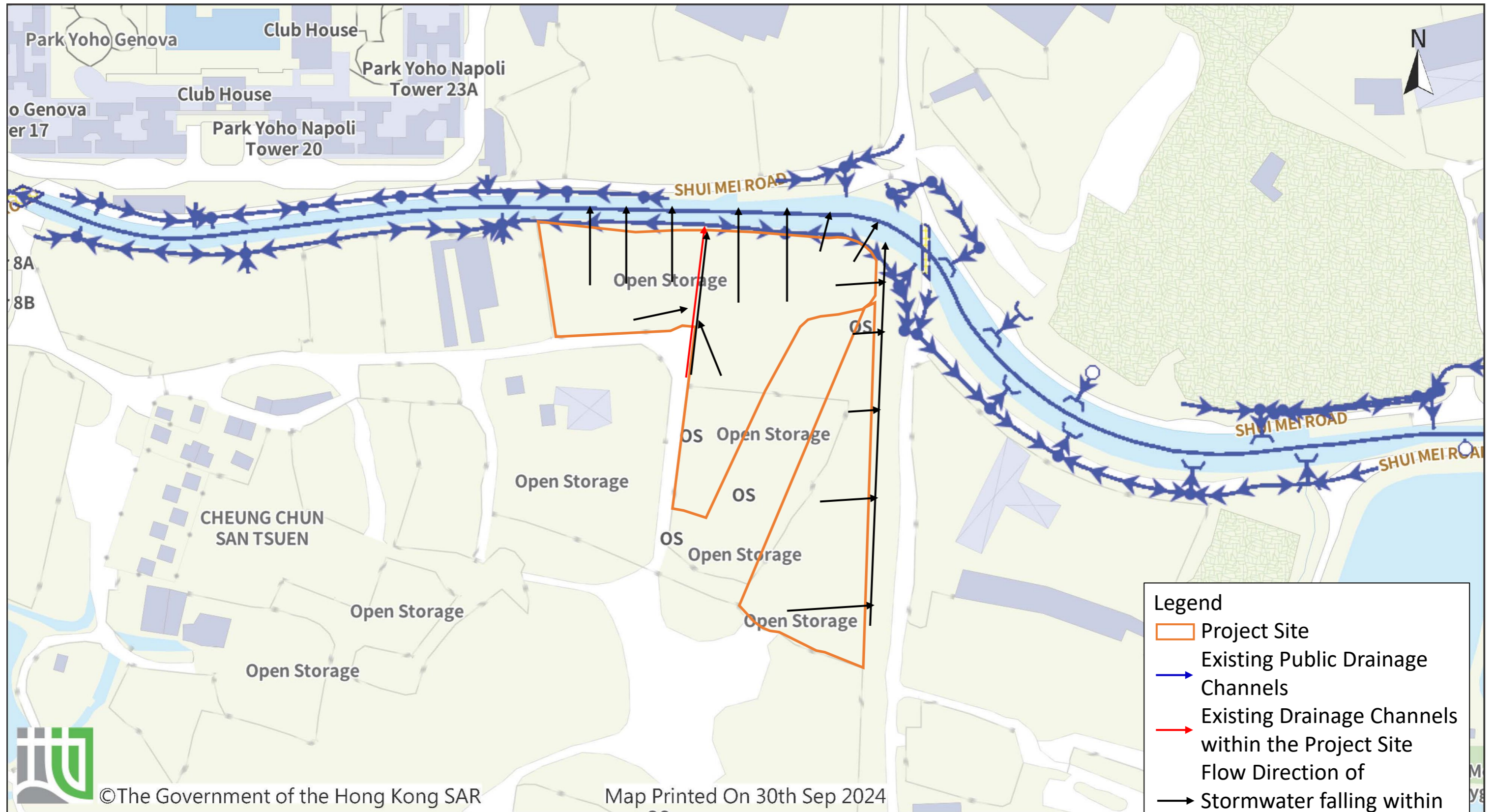
Photo 2: Box Culvert north of the Project Site



©The Government of the Hong Kong SAR

Map Printed On 30th Sep 2024

Figure 3.1 – Identified Catchment Area



©The Government of the Hong Kong SAR

Map Printed On 30th Sep 2024

Legend

- Project Site
- Existing Public Drainage Channels
- Existing Drainage Channels within the Project Site
- Flow Direction of Stormwater falling within the Project Site

Figure 3.2 – Flow Pattern of Stormwater under Existing Scenario

Map Source: GeoInfo Map

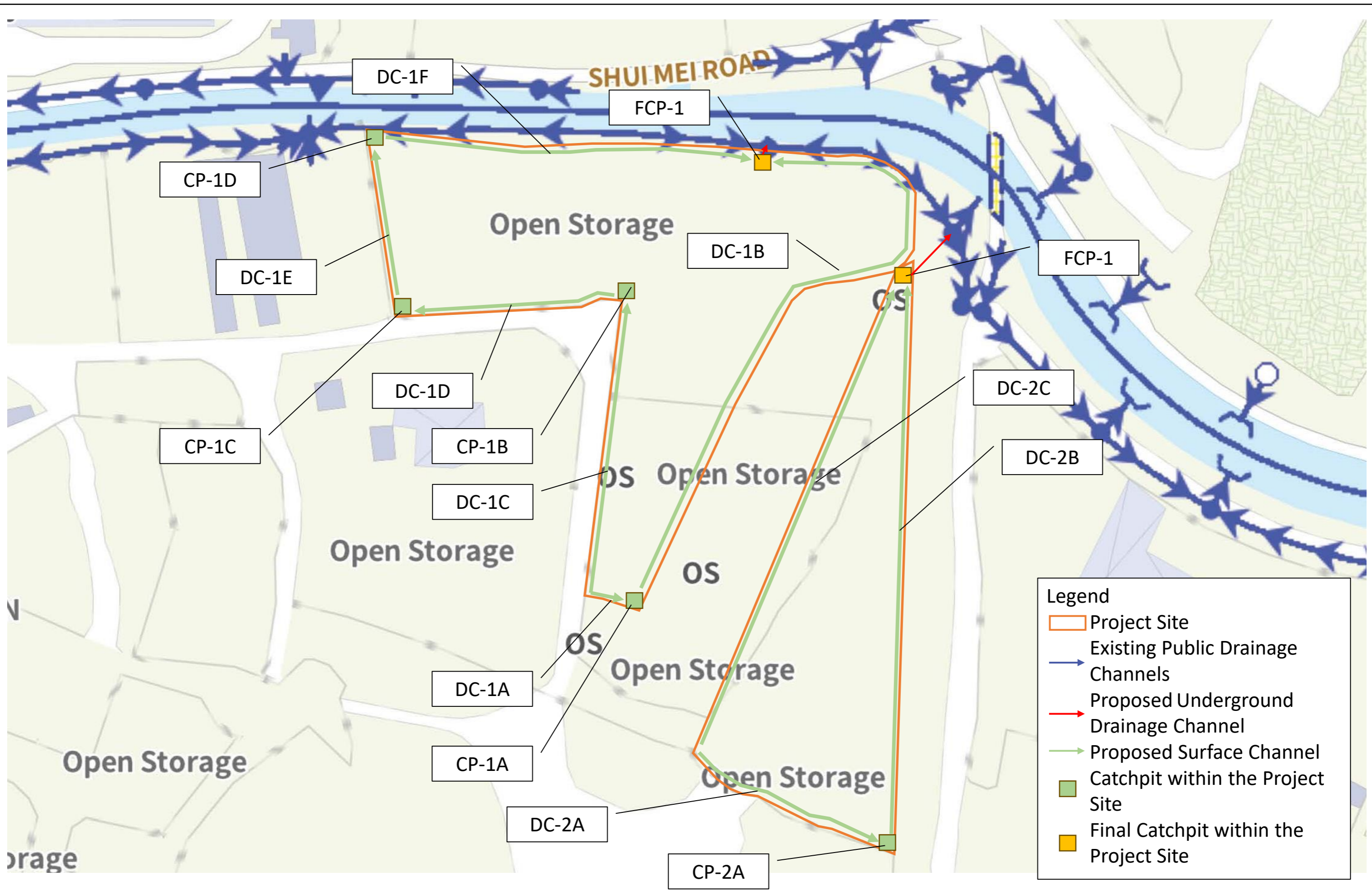


Figure 4.1 – Proposed Layout of the Drainage Channel for the Project Site

Map Source: GeoInfo Map

Appendix 4.1: Catchment Runoff Estimation for the Project Site

**Appendix 4.1:
Catchment Runoff Estimation for the Project Site**

Intensity Calculation:

Intensity-Duration-Frequency Relation:

$$i = \frac{a}{(t_d + b)^c}$$

Site 1

Constants	Value
Return Period T	50 Years
a	1167.6
b	16.76
c	0.561
t _d	5.1 min

iA 206.9 mm/hr

Site 2

Constants	Value
Return Period T	50 Years
a	1167.6
b	16.76
c	0.561
t _d	2.68 min

iB 221.0 mm/hr

NOTE: Storm Constants for Return Periods of 50 Years for North District Area is used in the calculation

Runoff Estimation:

Rational Method

$$Q_p = 0.278i \sum_{j=1}^m C_j A_j$$

Catchment	Site Area, m ²	Percentage of Paved area	Fixed runoff coefficients		Discharge into:	Runoff, m ³ /s	
			Paved	Unpaved		50 Year	
Project Site							
Site 1	9117.0	100%	0.95	0.05	600mm storm drain outfall	0.4982	
Site 2	4989.0	100%	0.95	0.05	600mm storm drain outfall	0.2912	
Total:		14106.0				Total:	0.789

Appendix 4.2: Calculation of Pipe Capacity for Existing Discharge Segment

Appendix 4.2

Calculation of Pipe Capacity for Existing Discharge Segment

Segment	Upstream Manhole	Downstream Manhole	Upstream Invert Level (mPD)	Downstream Invert Level (mPD)	Length (m)	Diameter (mm)	Diameter (m)	Area (m ²)	Hydraulic Radius (m)	Slope	Kinematic Viscosity (m ² /s)	Hydraulic Pipeline Roughness (m) [1]	Full Capacity Velocity (m/s)	Full Capacity (l/s)	% of Full Capacity under the Peak Flow of the Proposed Project	Catchment Area
SWD1065696	SCH1028777	Ng Tung River	3.21	3.17	0.7	600	0.600	0.283	0.15000	0.057	1.140E-06	0.0030	4.701	1329.199	37.48%	Site 1
SWD1065690	SCH1028773	Ng Tung River	1.80	1.75	11.3	600	0.600	0.283	0.15000	0.004	1.140E-06	0.0030	1.306	369.256	78.85%	Site 2

NOTE:

[1] For the existing pipe, the roughness coefficient for slimed concrete drain under poor condition is adopted; the ks values are 3mm for velocities greater than 1.2m/s, otherwise 6mm.

Appendix 4.3:

Calculation of Pipe Capacity for the Proposed Discharge Segment for the Project Site

Appendix 4.3

Calculation of Pipe Capacity for the Proposed Discharge Segment for the Project Site

Segment	Upstream Manhole	Downstream Manhole	Upstream Invert Level (mPD)	Downstream Invert Level (mPD)	Length (m)	Diameter (mm)	Diameter (m)	Area (m ²)	Hydraulic Radius (m)	Slope	Kinematic Viscosity (m ² /s)	Hydraulic Pipeline Roughness (m) [1]	Full Capacity Velocity (m/s)	Full Capacity (l/s)	% of Full Capacity under the Peak Flow of the Proposed Project	Catchment Area
Site 1																
DC-1A	-	CP-1A	5.50	5.40	15.3	650	0.650	0.332	0.16250	0.007	1.140E-06	0.0003	2.224	738.048	67.50%	Site 1
DC-1B	CP-1A	FCP-1	5.40	4.30	196.6	650	0.650	0.332	0.16250	0.006	1.140E-06	0.0003	2.056	682.190	73.02%	Site 1
DC-1C	-	CP-1B	5.50	5.00	84.7	650	0.650	0.332	0.16250	0.006	1.140E-06	0.0003	2.112	700.964	71.07%	Site 1
DC-1D	CP-1B	CP-1C	5.00	4.60	64.2	650	0.650	0.332	0.16250	0.006	1.140E-06	0.0003	2.171	720.383	69.15%	Site 1
DC-1E	CP-1C	CP-1D	4.60	4.10	98.4	650	0.650	0.332	0.16250	0.005	1.140E-06	0.0003	1.958	649.691	76.68%	Site 1
DC-1F	CP-1D	FCP-1	4.10	3.50	112.9	650	0.650	0.332	0.16250	0.005	1.140E-06	0.0003	2.003	664.631	74.95%	Site 1
Site 2																
DC-2A	-	CP-2A	5.00	4.80	62.8	650	0.650	0.332	0.16250	0.003	1.140E-06	0.0003	1.545	512.513	56.81%	Site 2
DC-2B	CP-2A	FCP-2	4.80	4.50	165.1	650	0.650	0.332	0.16250	0.002	1.140E-06	0.0003	1.160	385.062	75.61%	Site 2
DC-2C	-	FCP-2	5.00	4.70	151.0	650	0.650	0.332	0.16250	0.002	1.140E-06	0.0003	1.215	403.018	72.24%	Site 2

NOTE:

[1] For the existing pipe, the roughness coefficient for concrete channels created through Monolithic construction against steel forms under good condition is adopted; the ks values are 0.3mm.