

(Planning Application no.: A/YL-KTS/1091)

Drainage Submission in support of

S16 Planning Application for

Temporary Market (Flea Market) and Eating Place for a Period of 3
Years in “Village Type Development” Zone and Area shown as
“Road”, Lots 398(Part), 399SA(Part), 399RP(Part), 400(Part) and
Adjoining Government Land in DD109, Kam Sheung Road, Kam
Tin, Yuen Long, New Territories

(HT25144)

December 2025

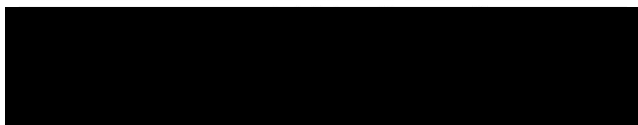
Planning Consultant: Top Bright Consultants Limited

Drainage Consultant:

何田顧問工程師有限公司

HO TIN & ASSOCIATES

CONSULTING ENGINEERS LIMITED



Prepared & approved by	LEE Kwok Cheung <i>RPE(Civil)</i>
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2. The Application Site and Subject Development
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4. Drainage Assessment and Proposal
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FIGURE (Referenced from the same figures enclosed in the Planning Statement of this Application)

Figure 1	<i>‘Not used’</i>
Figure 2	<i>‘Not used’</i>
Figure 3	Plan Showing the General Area
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Figure 5	Layout Plan

PLAN

Plan 1	Existing Drainage Conditions and Flow Directions of the Concerned Areas
Plan 2	Locations of Photo Taking
Plan 3	Site Cross Sections
Plan 4	Proposed Roof Drainage Arrangement Plan

APPENDIX - Hydraulic calculation of the existing 225mm channels

1. Background

- 1.1 With respect to a S16 Planning Application for Temporary Market (Flea Market) and Eating Place for a Period of 3 Years in “Village Type Development” Zone and Area shown as “Road”, Lots 398(Part), 399SA(Part), 399RP(Part), 400(Part) and Adjoining Government Land in DD109, Kam Sheung Road, Kam Tin, Yuen Long, New Territories, Messrs. Ho Tin & Associates Consulting Engineers Limited was appointed to prepare a drainage submission.

2. The Application Site and Subject Development

- 2.1 The Application Site is generally irregular in shape of about 1,581m² comprises of 1,534m² of private land (in Lots 398(Part), 399sA(Part), 399RP(Part) and 400(Part)) and 47m² of adjoining Government land in DD109, Kam Sheung Road, Kam Tin, Yuen Long, New Territories. It is located on the north side of Kam Sheung Road. The site location is shown in **Figure 3**.
- 2.2 The subject development (the ‘Red Brick House’) consists of one main single-storey temporary structure associated with two small single-storey temporary structures located at the northwest corner (collectively named the ‘Red Brick House’). It has been operated as the currently applying use not later than 2008. A plan showing the proposed site layout is in **Figure 5**.

3. Existing Drainage Conditions of the Concerned Area

- 3.1 The Application Site is nearly fully covered under the main temporary structure and is surrounded by adjacent developments (refer to the **aerial photo** below and **Plate 1** and **2**). Its ground levels generally slope downward from the south to the north with its ground levels various from about +6.45mPD to about +5.79mPD.
- 3.2 Surface runoff outside the southern boundary of the Application Site would flow to the further south, i.e. away from the Application Site, due to the ground levels of the concerned area are slightly sloping down towards Kam Sheung Road (refer to **Plate 3** and **4**). Surface runoff outside the eastern and western boundaries of the Application Site would flow towards the north and the south without crossing the Application Site according to the existing ground levels of the areas (refer to **Plate 5** and **6**).

- 3.3 Besides, there are existing 225mm channels running along the eastern and northern sides of the Application Site (refer to **Plate 7** and **8**) and the channels convey stormwater from the Application Site to an existing 375mm channel at the northeast corner which runs towards the north (refer to **Plate 9**) towards Kam Tin Road at which a 1200mm diameter stormwater drainage exists (refer to the **Extract of the Drainage Records from the LandsD’s GeoInfo Map in October 2025**).
- 3.4 A 225mm channel exists between the main building and the associated building of the Application Site at the northwest corner conveying stormwater falling onto the uncovered area to the existing 225mm channel running along the northern boundary of the Application Site (refer to **Plate 10**). At present, gutters are installed at the edges of the roof along the eastern and northern boundaries of the Application Site to collect stormwater falling onto the roof of the existing main building and to discharge into the existing channels along the boundary of the Application Site (refer to **Plate 5, 7 and 8**).
- 3.5 The existing drainage conditions and flow directions of the concerned areas are shown on **Plan 1**. Site sections are shown on **Plan 3**.
- 3.6 With respect to the memory of the operator of the Kam Tin Red Brick House, no flooding incident nor drainage complaint has ever been noted/reported since the occupation of the subject development, i.e. not later than 2008.
- 3.7 Current conditions of the subject site and its existing drainage conditions are shown in the following photos (locations of photo taking are shown on **Plan 2**):



Aerial Photo extract from the LandsD's Website in October 2025



Plate 1 – Main entrance of the ‘Red Brick House’ (existing channels in front diverting surface runoff away from the Application Site).



Plate 2 – Internal view of the ‘Red Brick House’ (generally covered).



Plate 3 – Area outside the southern boundary of the Application Site upon which surface runoff flows away towards Kam Sheung Road.



Plate 4 – Existing channels outside the southern boundary of the Application Site conveying surface runoff away.



Plate 5 – Existing 225mm channel running along the eastern boundary of the Application Site flowing to the north. Existing gutter at the roof edge of the ‘Red Brick House’ with downpipes discharge into the existing channel.



Plate 6 – The adjacent development on the western side of the Application Site.



Plate 7 – Existing 225mm channel running along the eastern boundary of the Application Site flowing to the north.



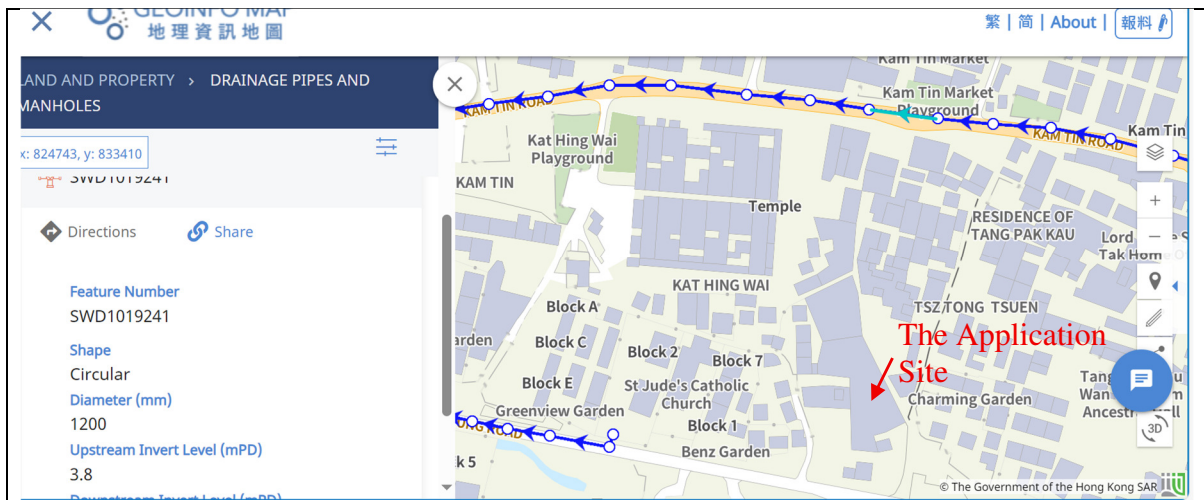
Plate 8 – Existing 225mm channel running along the northern boundary of the Application Site with existing gutter at the roof edge discharging into the existing channel.



Plate 9 – Existing 375mm channel at the downstream of the northeast corner of the Application Site flowing to the north.



Plate 10 – Existing 225mm channel between the existing main building and the associated small building at the northwest corner of the Application Site.



Extract of the Drainage Records from the LandsD's GeoInfo Map in October 2025

4. Drainage Assessment and Proposal

- 4.1 The Application Site is generally covered by the temporary buildings. With respect to the existing levels, surface runoff of the surrounding areas would not flow toward the Application Site boundary in general, and would flow directly to the north or the south respectively. The existing ground levels of the concerned area would not be altered by the Application Site. The existing flow patterns of the surface runoff of the area would remain unchanged.
- 4.2 There are existing 225mm channels running along the eastern and northern boundary of the Application Site and the channels will be maintained to collect and convey the stormwater flow from the Application Site to the existing 375mm channel at the downstream. No site formation nor leveling works of the Application Site is required. The existing site conditions would be maintained.
- 4.3 The existing 225mm channels are assessed based on the recommendation set out in the Stormwater Drainage Manual (Fifth edition, Jan 2018) (SDM) and its Corrigendum No. 1/2022, 1/2024 and 2/2024 issued by DSD. Design Return Period of 10 years (recommended for ‘Village Drainage’ in SDM) is adopted.
- 4.4 The corresponding runoffs under rainfall intensity for various return period are worked out with reference to Rational Method. Brandy-Williams method is used in calculation of the time of concentration. An uniformly distributed rainfall with an intensity is determined by the Intensity-Duration-Frequency. With reference to

Table 3a - Storm Constants for different return periods of HKO Headquarters from SDM, the rainfall profiles are derived based on the following equation:

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

where i = mean rainfall intensity (mm/hr)

t = duration time of concentration (min)

a, b and c = storm constants given in Table below

Table : Storm Constants

Return Period (years)	10
a	485.0
b	3.11
c	0.397

A 16.0% rainfall increase is adopted in the hydraulic calculation to cater for effects due to climate change in accordance with the table 28 with projection to End of 21st Century as stipulated in the item (e) and (k) of the SDM - Corrigendum No. 1/2022. Besides, taking into consideration of design allowance in End of 21st Century, a further 12.1% rainfall increase is incorporated into the hydraulic assessment.

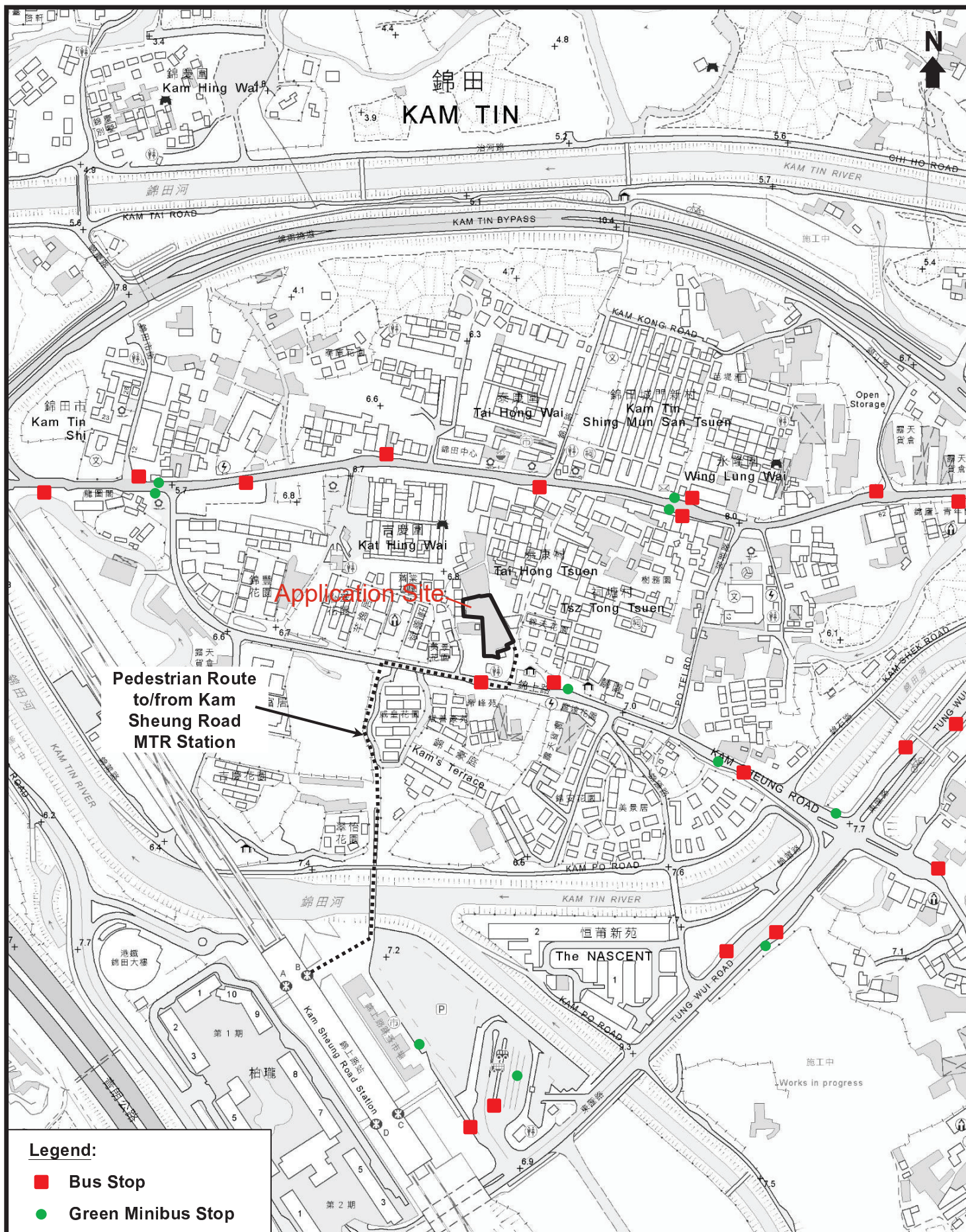
4.5 Hydraulic assessment is enclosed in the **Appendix**. 10% reduction in flow area has been incorporated to cater for potential deposition of sediment in stormwater channels as recommended in the SDM. With respect to the calculation, the existing 225mm channels are capable to collect and convey the surface runoff of the Application Site. It is therefore, no water backup will occur at the upstream under rainstorms of 10-year (or lower) return periods.

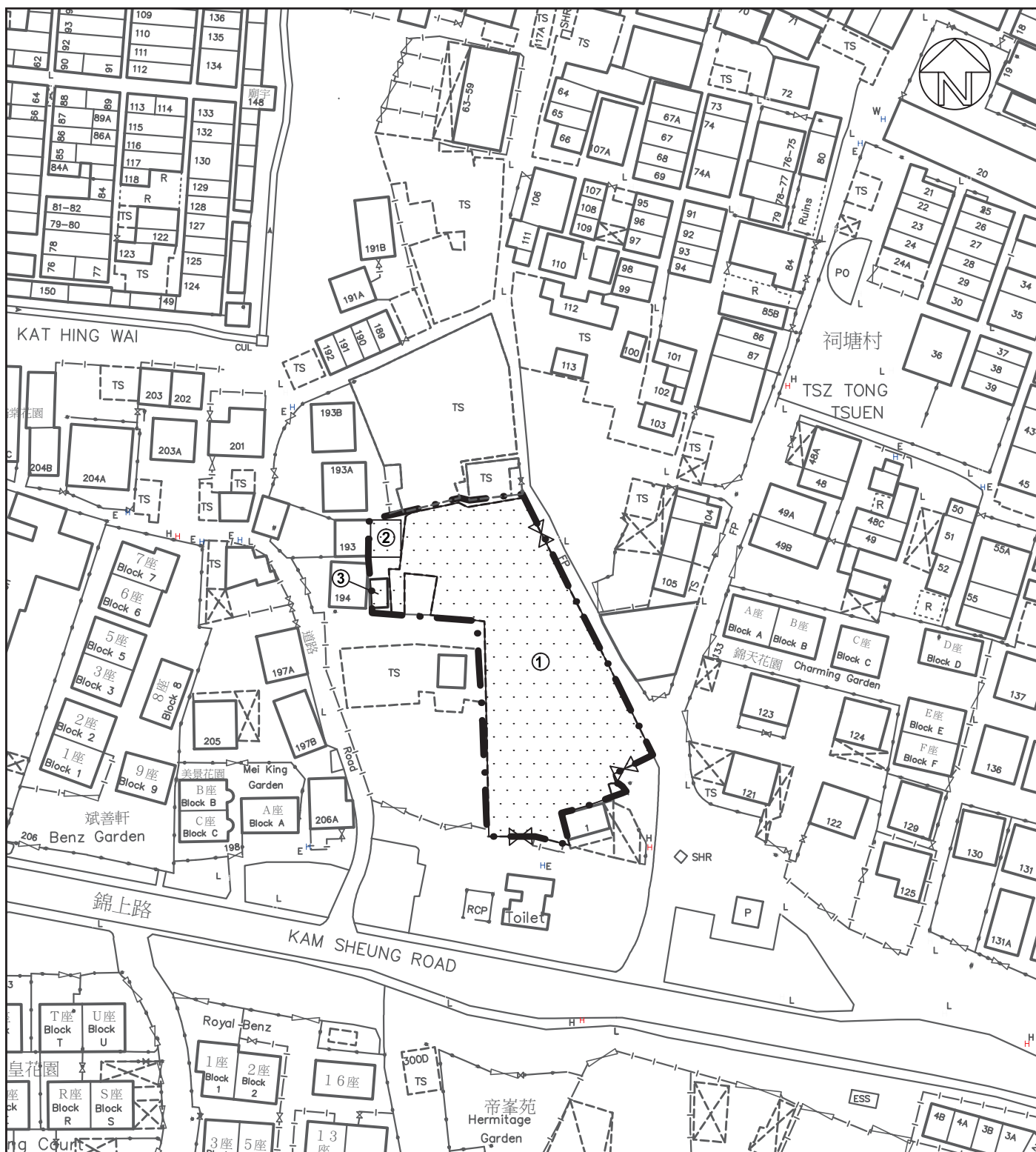
4.6 The drainage concern is to avoid stormwater falling onto the roof of the building of the Application Site to fall directly onto the adjacent areas in particular along the western boundary of the Application Site. It is therefore proposed to install additional gutter at the edge of the roof of the building of the Application Site. The additional gutter will be connected to the downpipe to discharge into the channel as shown on **Plan 4**.

4.7 The Applicant is committed to maintain regularly to avoid blockage of the drainage system to the satisfaction of relevant Government departments.

5. Conclusion and Recommendations

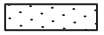
- 5.1 The planning application is for a Temporary Market (Flea Market) and Eating Place for a Period of 3 years. The Application Site has been operated as the currently applying use and built over not later than 2008 without complaints on flooding nor drainage conditions. The existing site and building conditions would be maintained and no site formation/leveling works would be carried out.
- 5.2 Additional gutters are proposed to be installed at the roof edges of the Application Site to collect stormwater from falling directly onto the adjacent development. The gutter will be connected to the downpipe for discharging into the channel at ground level.
- 5.3 Besides, the Applicant is committed to maintain regularly to avoid blockage of the drainage system to the satisfaction of relevant Government departments.
- 5.4 The subject development would not alter the existing drainage conditions and patterns of the area. In addition, additional gutter would be installed at the roof edge. Therefore, in conclusion, the subject development would not cause any unacceptable adverse drainage impact onto the area.





Structure No.	Uses	Floor Area (m ²)	Height (m)
1	Flea Market and Eating Place	1,401	5-5.5
2	Flea Market	36	3
3	Eating Place	15	3

LEGEND:

-  Application Site (Area: about 1,581 sq.m.)
-  Temporary Structures (1-storey)
-  Entrance/Exit



Top Bright Consultants Ltd.

Drawing No. :TB/25/868/05A

Layout Plan

Lots 398(Part), 399SA(Part), 399RP(Part),
400(Part) and Adjoining Government Land
in DD109, Kam Sheung Road, Yuen Long, N.T.

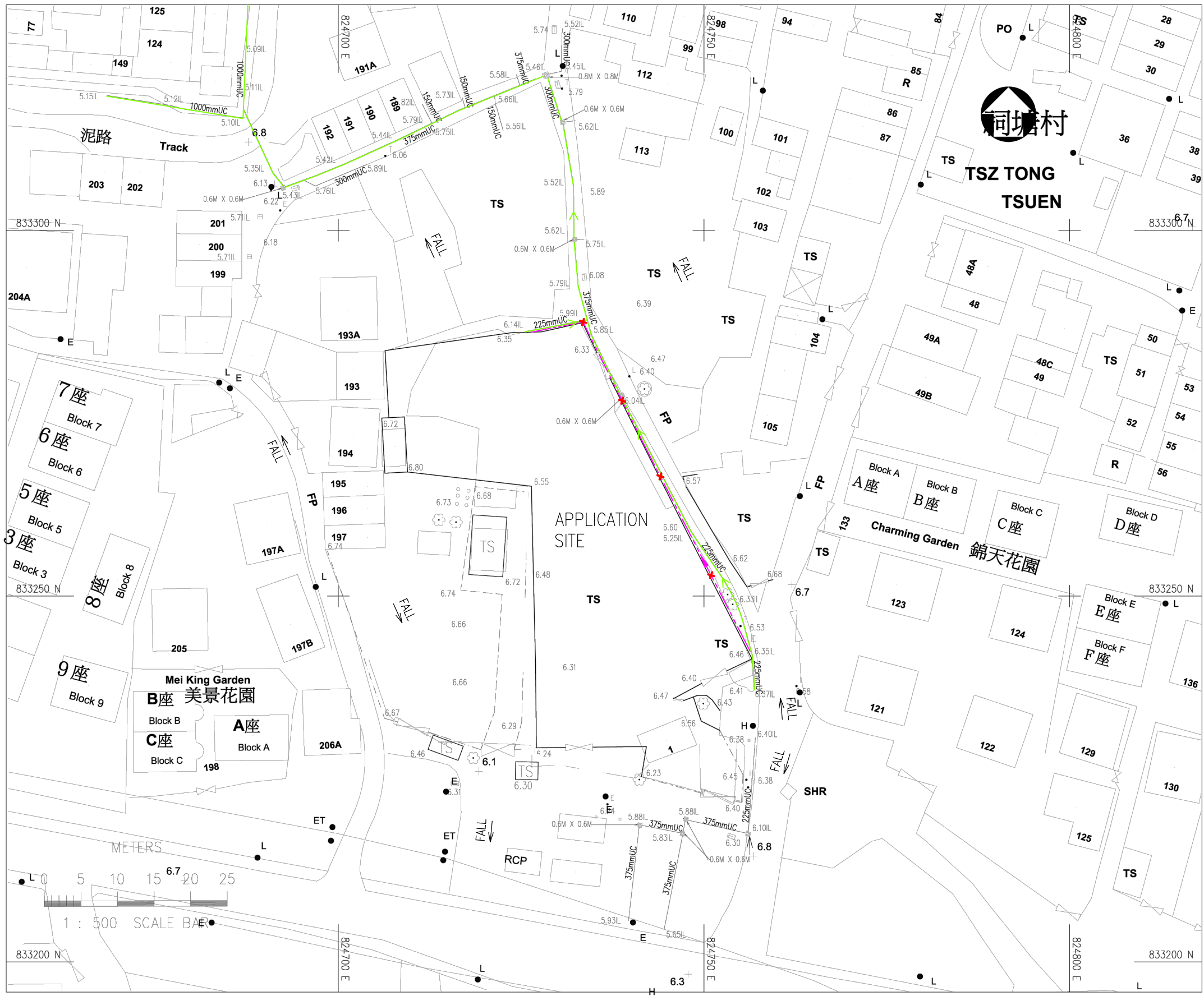
FIGURE 5

FOR IDENTIFICATION PURPOSE

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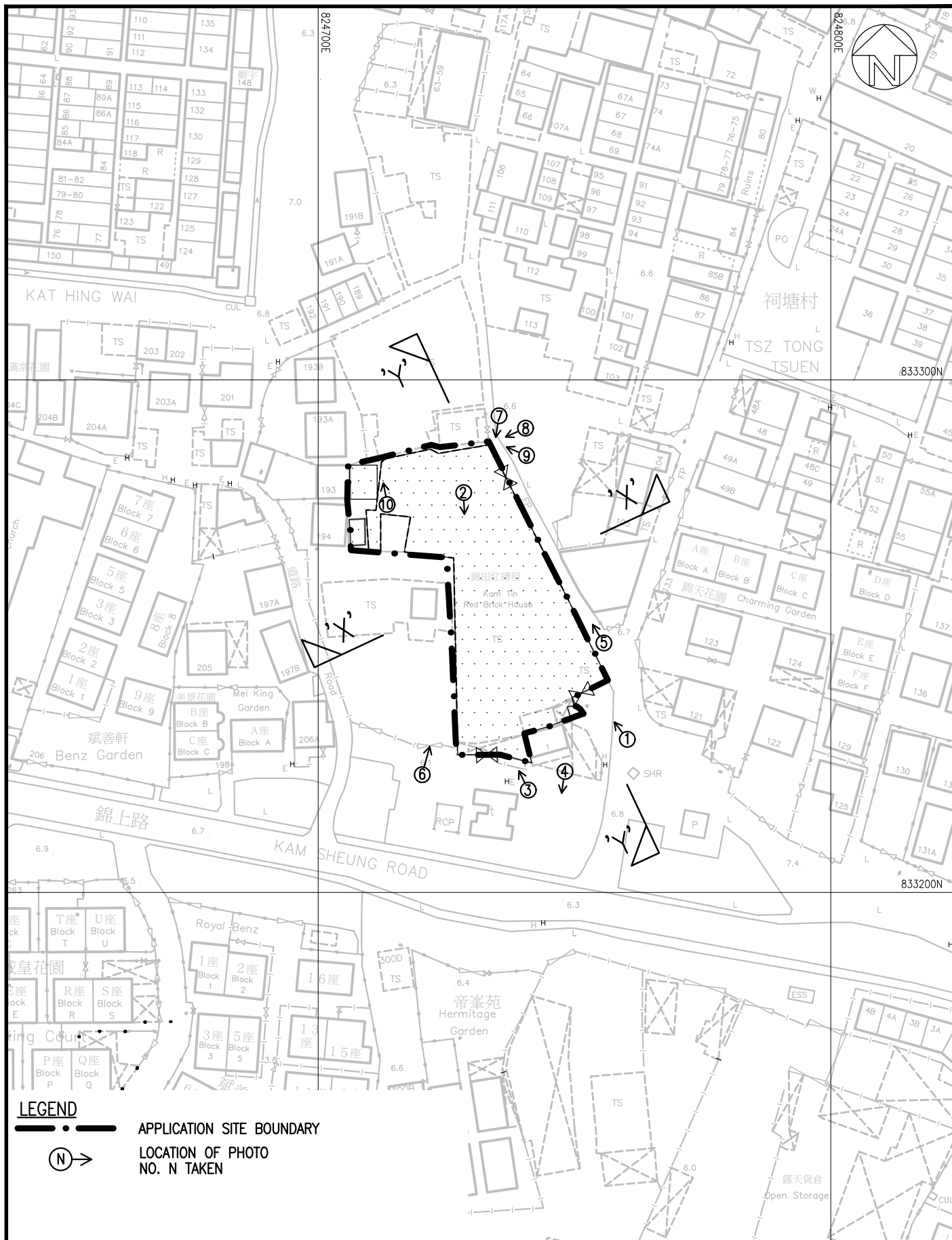
- LEGEND :
- WALL
 - U-CHANNEL
 - FOOTPATH
 - TS
 - FENCE
 - HOARDING
 - FLOWER BED
 - GATE
 - LAMP POST
 - TELEPHONE POLE
 - TREE
 - MANHOLE FOUL WATER
 - MANHOLE TELECOM
 - FIRE HYDRANT
 - ELECTRIC POLE
 - CATCHPIT

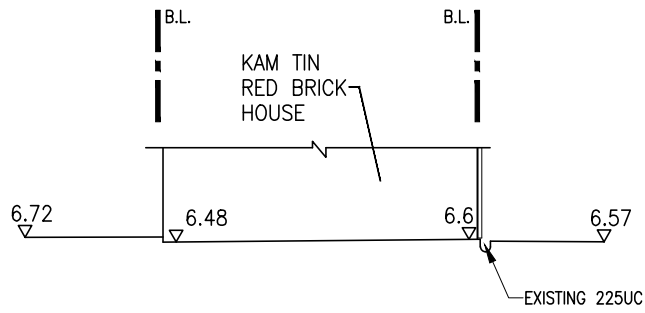
Client	
Project Engineer T.Y.Ho & Partners (HK)	
Consulting Engineers Unit C, 25/F, Capital Centre, Tower II 28 Jordan's Crescent, Causeway Bay, Hong Kong. Telephone : 2528 6421 Facsimile : 2527 4817 E-mail: tyh@tyhpa.com	
Project title DRAINAGE IMPROVEMENT FOR "RED BRICK HOUSE", TEMPORARY MARKET KAM SHEUNG ROAD, KAM TIN SOUTH, YUEN LONG, N.T.	
Drawing title PROPOSED NEW DRAINAGE LAYOUT	
SHEET 1 OF 1	
Drawing no. A663/1	Rev.
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Scale 1 : 125	Checked Original size A1

- LEGEND:
- EXISTING GUTTER AT ROOF LEVEL
 - EXISTING CHANNEL AT GROUND LEVEL
 - EXISTING DOWNPIPE FROM THE ROOF LEVEL

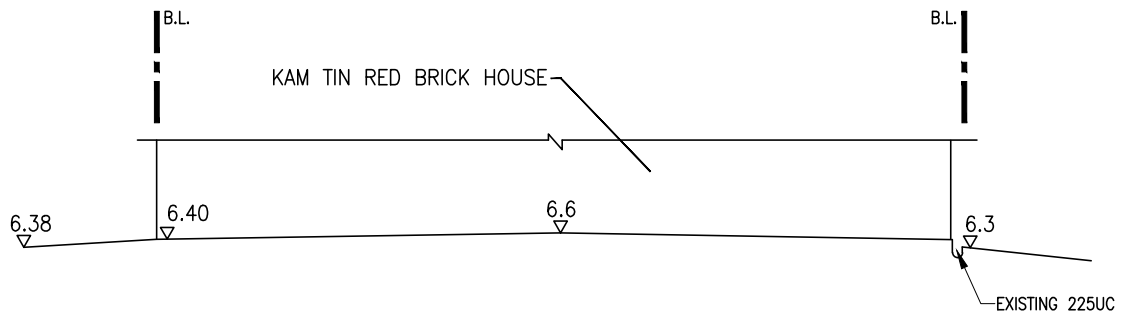
PROJECT		何田顧問工程師有限公司 HO TIN & ASSOCIATES CONSULTING ENGINEERS LIMITED	
TITLE EXISTING DRAINAGE CONDITIONS AND FLOW DIRECTIONS OF THE CONCERNED AREAS		SCALE N.T.S.	DRAWING No. PLAN 1

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SECTION 'X'-'X'



SECTION 'Y'-'Y'

TITLE

SITE CROSS SECTIONS

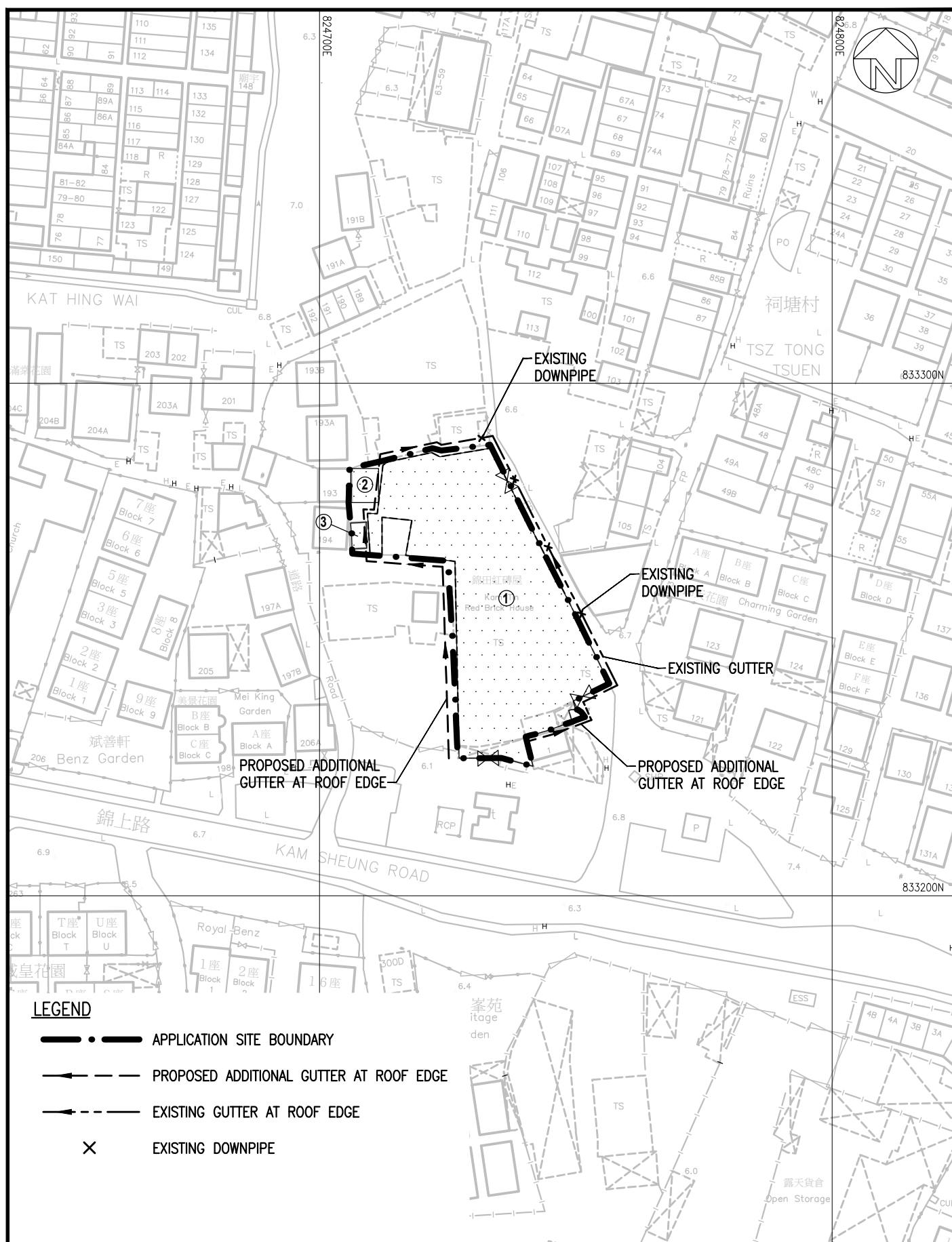
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HO TIN & ASSOCIATES
CONSULTING ENGINEERS LIMITED

SCALE

1 : 500 - A4

DRAWING No.

PLAN 3



TITLE

Assessment of Hydraulic Capacities of the Proposed Drainage System (Village Drainage) for 1 in 10 year design return period

Using Rational Method

Design Flow	=	0.278 C i A	m ³ /s	for roof surface, C =	1.00
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Using Manning Equation

Design Mean Velocity = $R^{1/6}/n(RS_i)^{1/2}$ where $n = 0.016$ for concrete-lined open channel with fair surface

Using GEV distribution model in frequency analysis

Rainfall intensity = $a / (t_0 + b)^c$ where $a = 485$, $b = 3.11$ and $c = 0.397$ in 10 year design return period

referenced from Table 3a in SDM - Storm Constants for Different Return Periods of HKO Headquarters in Corrigendum No. 1/2024

Using Bransby William's Equation (for channel flow)

Inlet time t_0 = $0.14465L / (H^{0.2} A^{0.1})$ or 10 (minimum) from roof of building

[illegible]