Appendix A

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)

March 2026

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

[redacted]

Prepared & Approved by:	LEE Kwok Cheung *MICE, MHKIE(Civil),* *RPE(CVL, ENV, GEL)(Registration No. RP0159301)* *Signature:*

CONTENT

FIGURE (Referenced from the same figures enclosed in the Planning Statement of this Application)

PLAN

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 1,581m^2 comprises of 1,534m^2 of private land (in Lots 398(Part), 399sA(Part), 399RP(Part) and 400(Part)) and 47m^2 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 boundaries of the Application Site would flow towards the north without crossing the Application Site according to the existing ground levels of the areas (refer to **Plate 5**).

3.3 With respect to the aerial photos taken in 2011/2012 (retrieved from Lands Department and shown below), the western area adjoining the Application Site had already been paved and building structures had been erected at the western side of the subject site. At present, a shelter is maintained within the open area along the western boundary of the application site (refer to **Plate 6**). Hence, no surface water would flow toward the Application Site from its western side.

3.4 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**).

3.5 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**).

3.6 The existing drainage conditions and flow directions of the concerned areas are shown on **Plan 1**. Site sections are shown on **Plan 3**.

3.7 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.

3.8 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.

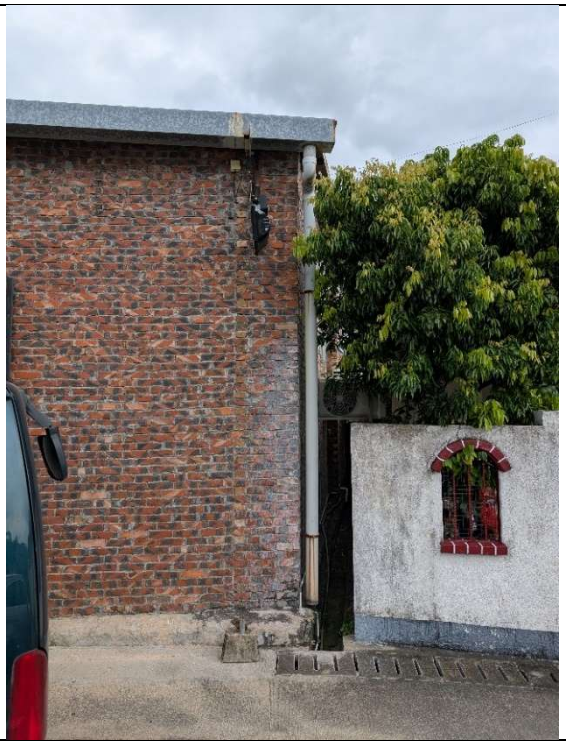


Plate 8 – Existing 225mm channel running along the northern boundary of the Application Site with existing gutter at the roof edge discharging into the existing channel.

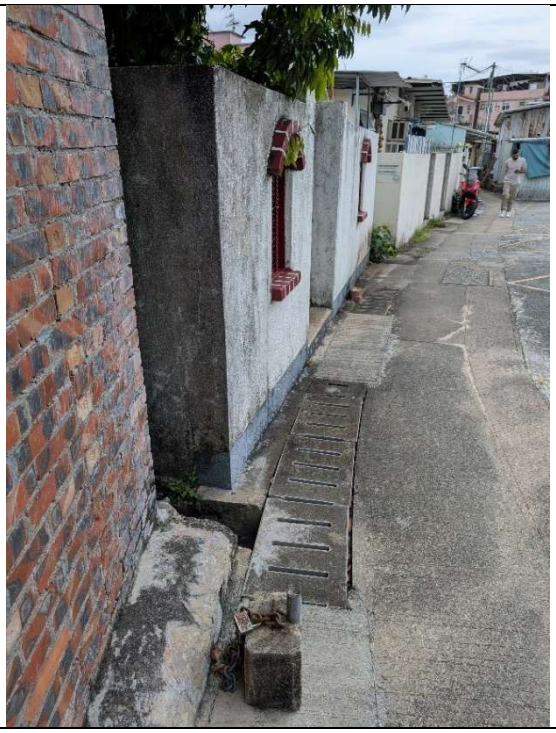


Plate 9 – Existing 375mm channel at the downstream of the northeast corner of the Application Site flowing to the north.

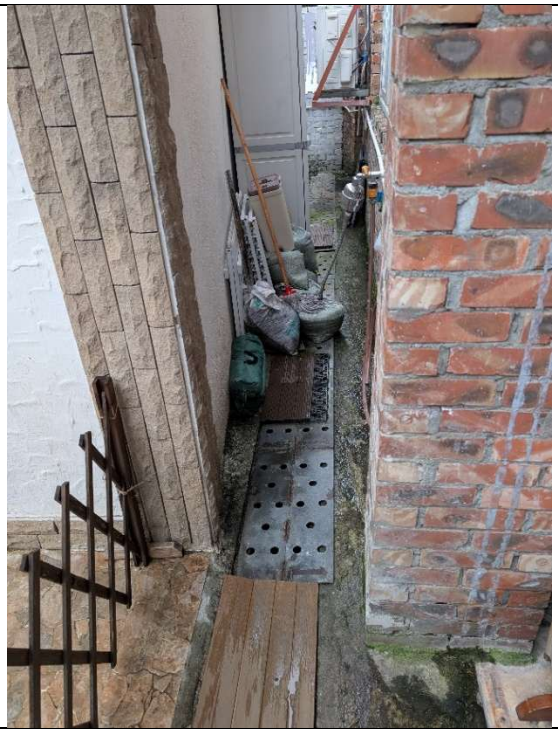
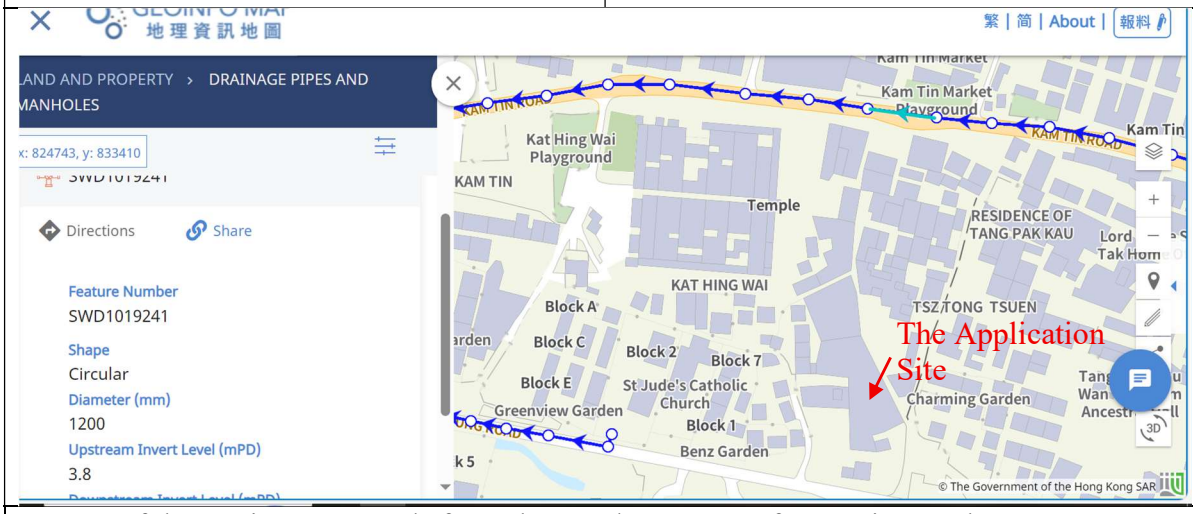


Plate 10 – Existing 225mm channel between the existing main building and the associated small building at the northwest corner of the Application Site.



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.

4.5 Nevertheless, as a precautionary measure, it is proposed to enhance the existing 225mm channel running along the eastern boundary of the Application Site into 375 channel, and 225mm channel is proposed to be constructed along the southern boundary of the Application Site. The proposed channel enhancement works at ground level are shown on **Plan 5**.

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

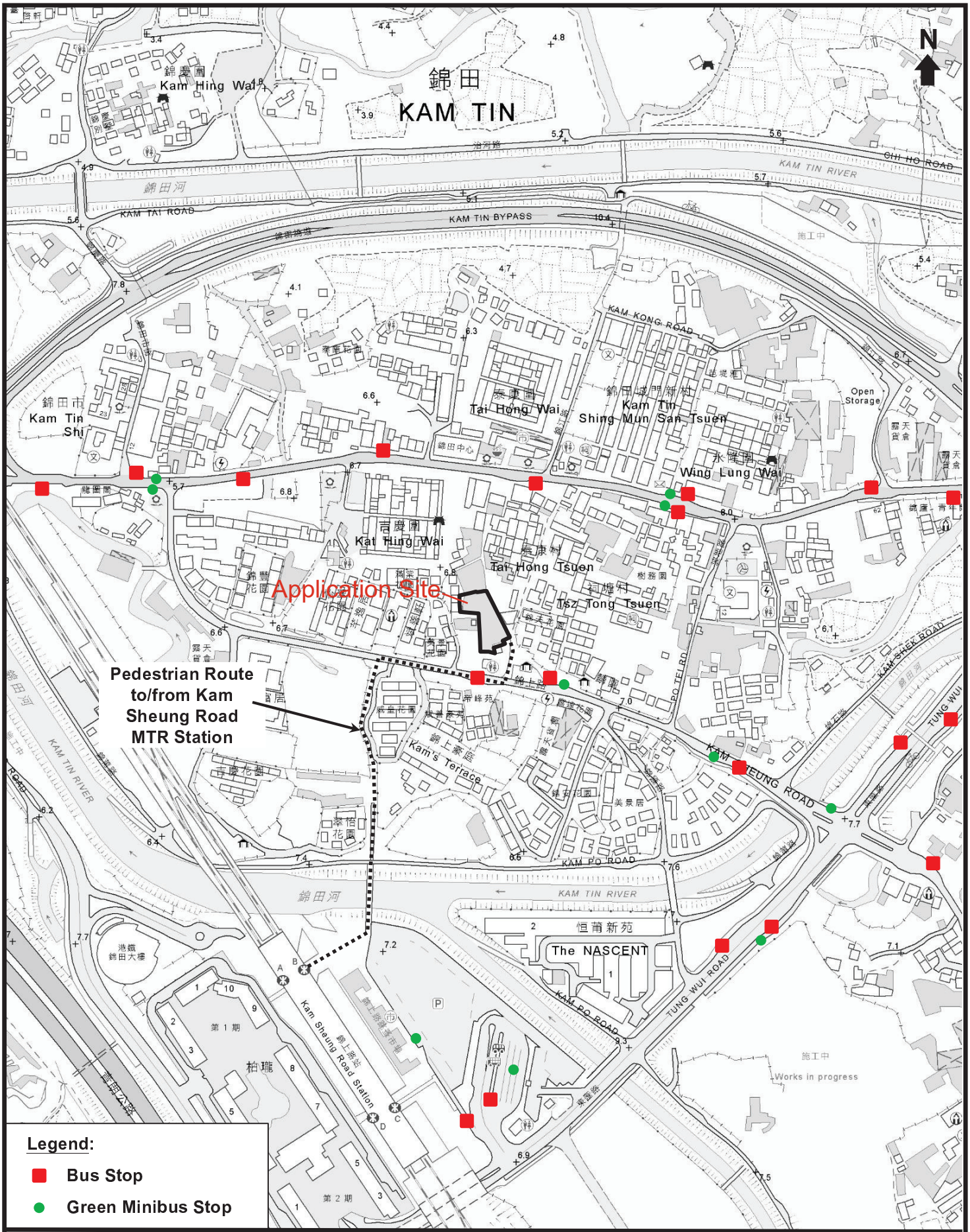
5.1 The planning application is for a Temporary Market (Flea Market) and Eating Place for a Period of 3 years. The Application Site has been operated as the currently applying use and built over not later than 2008 without complaints on flooding nor drainage conditions. The existing site and building 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 Moreover, it is proposed to enhance the existing 225mm channel running along the eastern boundary of the Application Site into 375 channel and to construct 225mm channel along the southern boundary of the Application Site as precautionary measures.

5.4 Besides, the Applicant is committed to maintain regularly to avoid blockage of the drainage system to the satisfaction of relevant Government departments.

5.5 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.



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Extracted Plan Based on Map Series HP5C of Sheet Nos. 6-NE-A & C

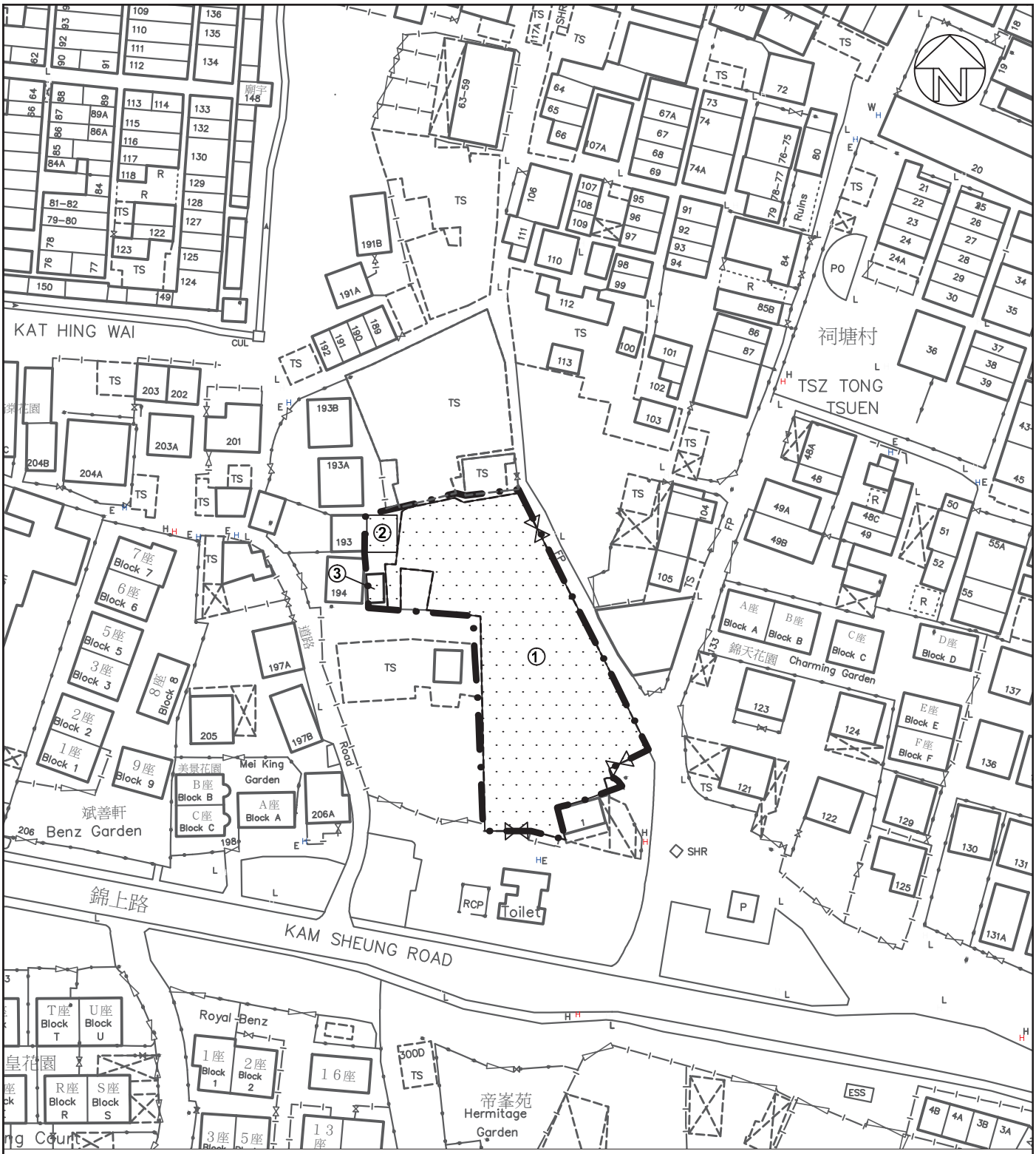
Plan Showing the General Area

Scale 1 : 5 000

FIGURE 3

For Identification Purpose

Date: 4.9.2025



Structure No.	Uses	Floor Area (m²)	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.

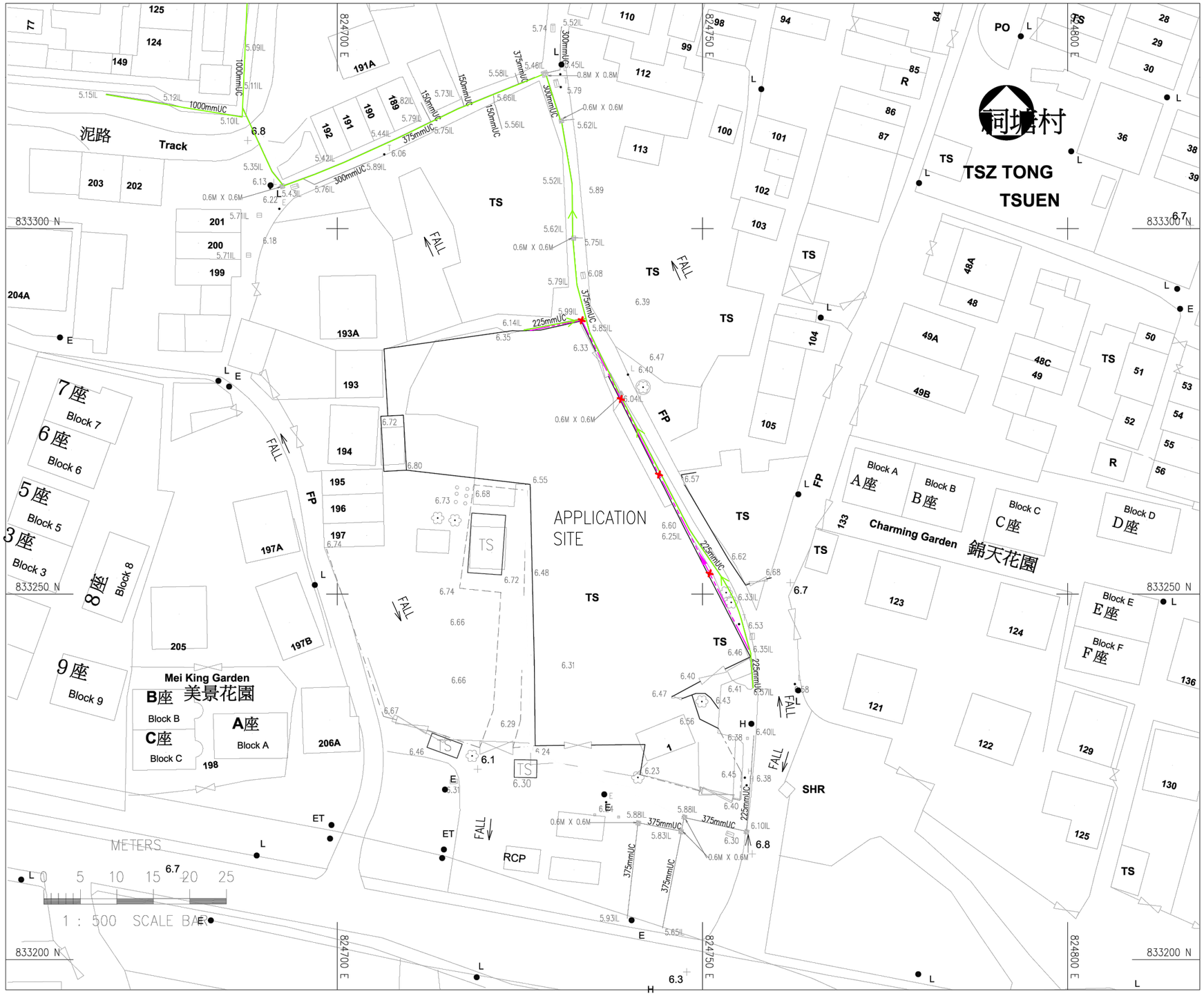
Drawing No. :TB/25/868/05A

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
Date: 4.9.2025
Scale: 1 : 1000 (A4)



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

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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.		Rev.
A663/1		
Drawn: Pui	Date: 12/12/10	Checked	Approved
Scale: 1 : 125	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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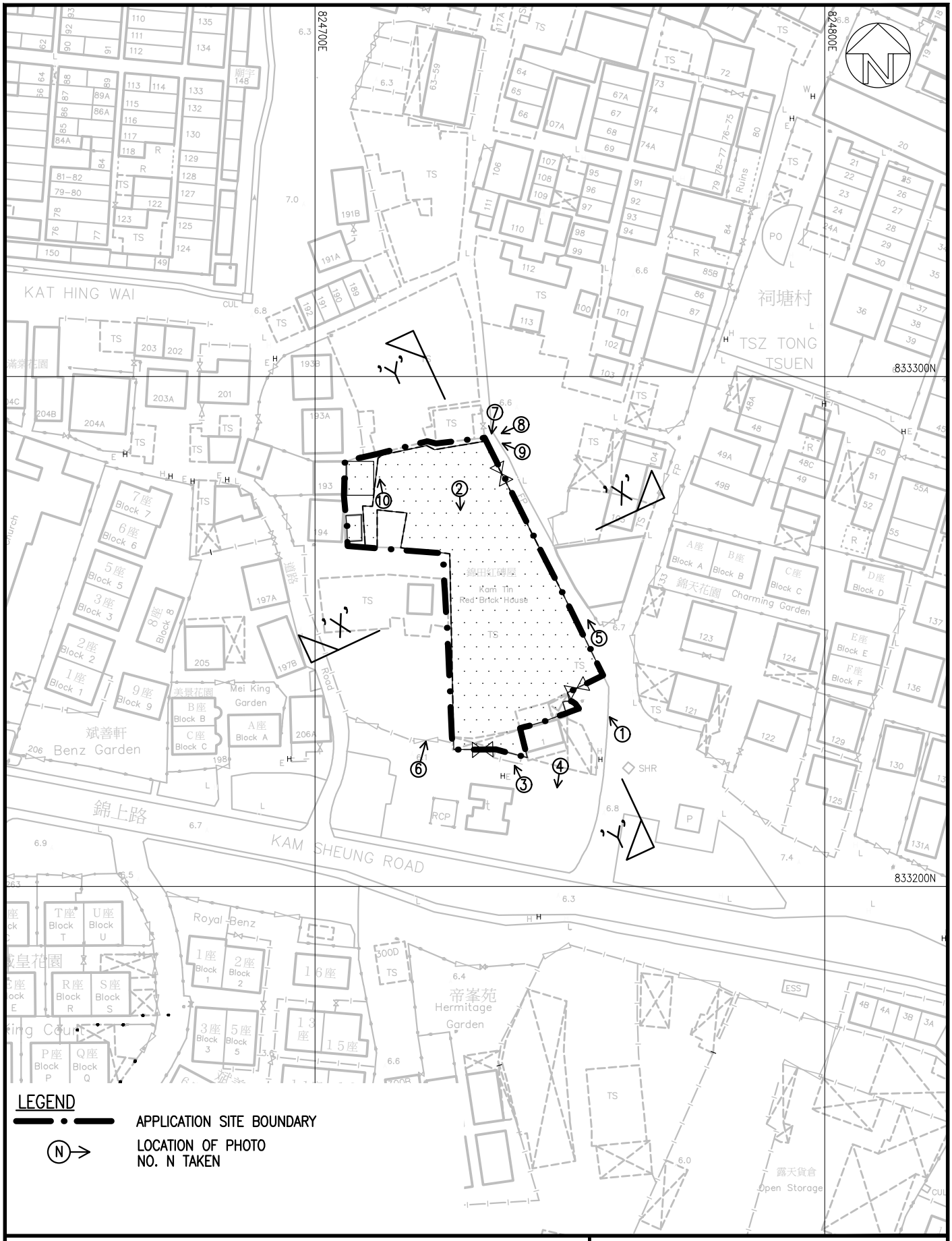

TITLE

LOCATIONS OF PHOTO TAKING

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SCALE	DRAWING No.
1 : 1000 – A4	PLAN 2

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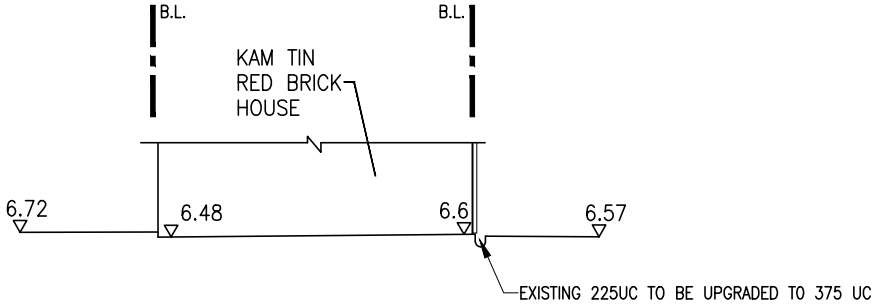
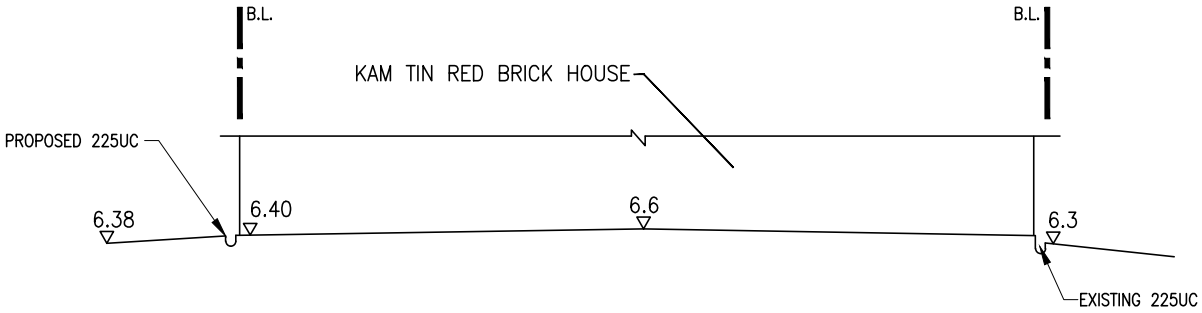


SECTION 'X'–'X'



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

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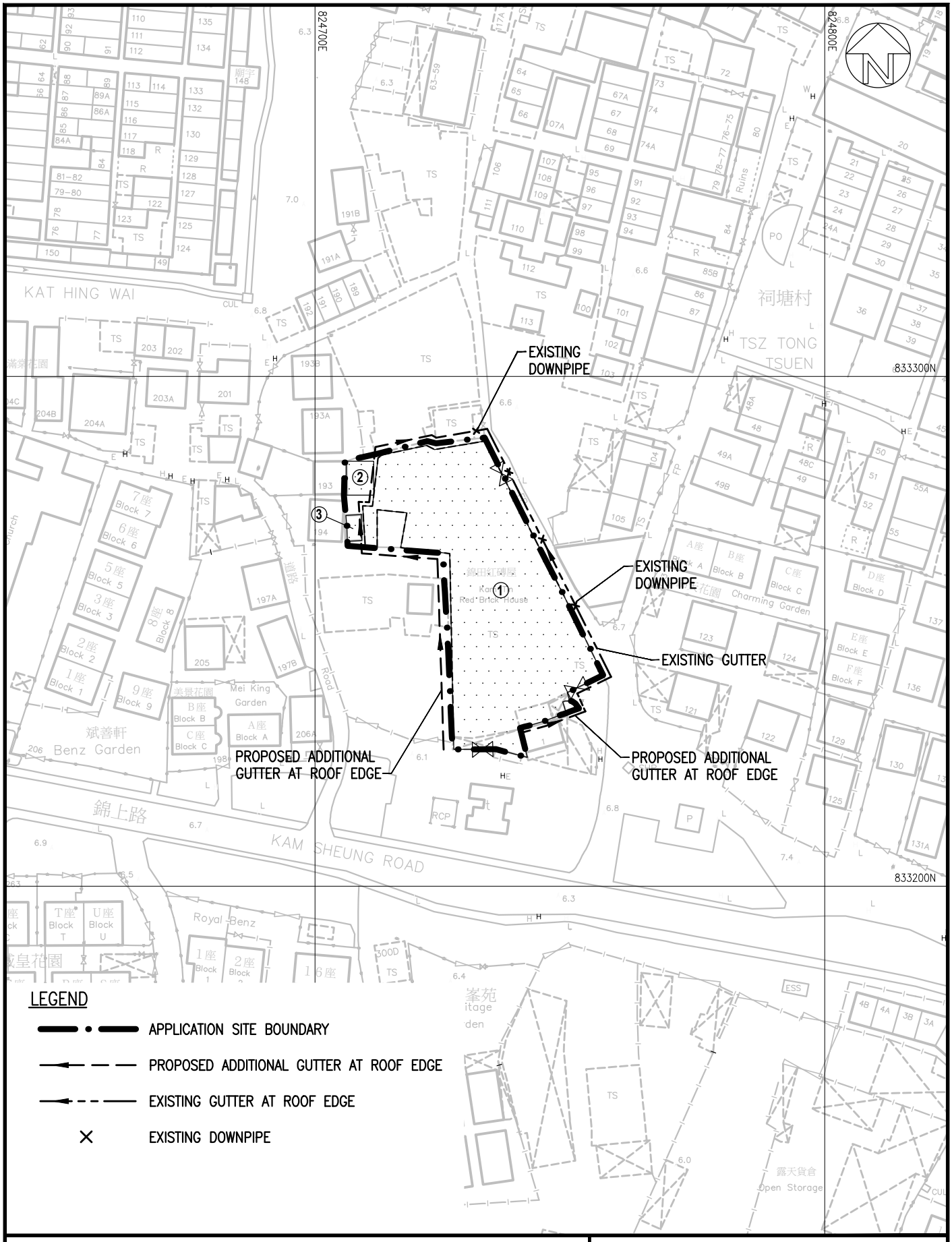

TITLE

PROPOSED ROOF DRAINAGE ARRANGEMENT PLAN

何田顧問工程師有限公司
HO TIN & ASSOCIATES CONSULTING ENGINEERS LIMITED

SCALE	DRAWING No.
1 : 1000 – A4	PLAN 4

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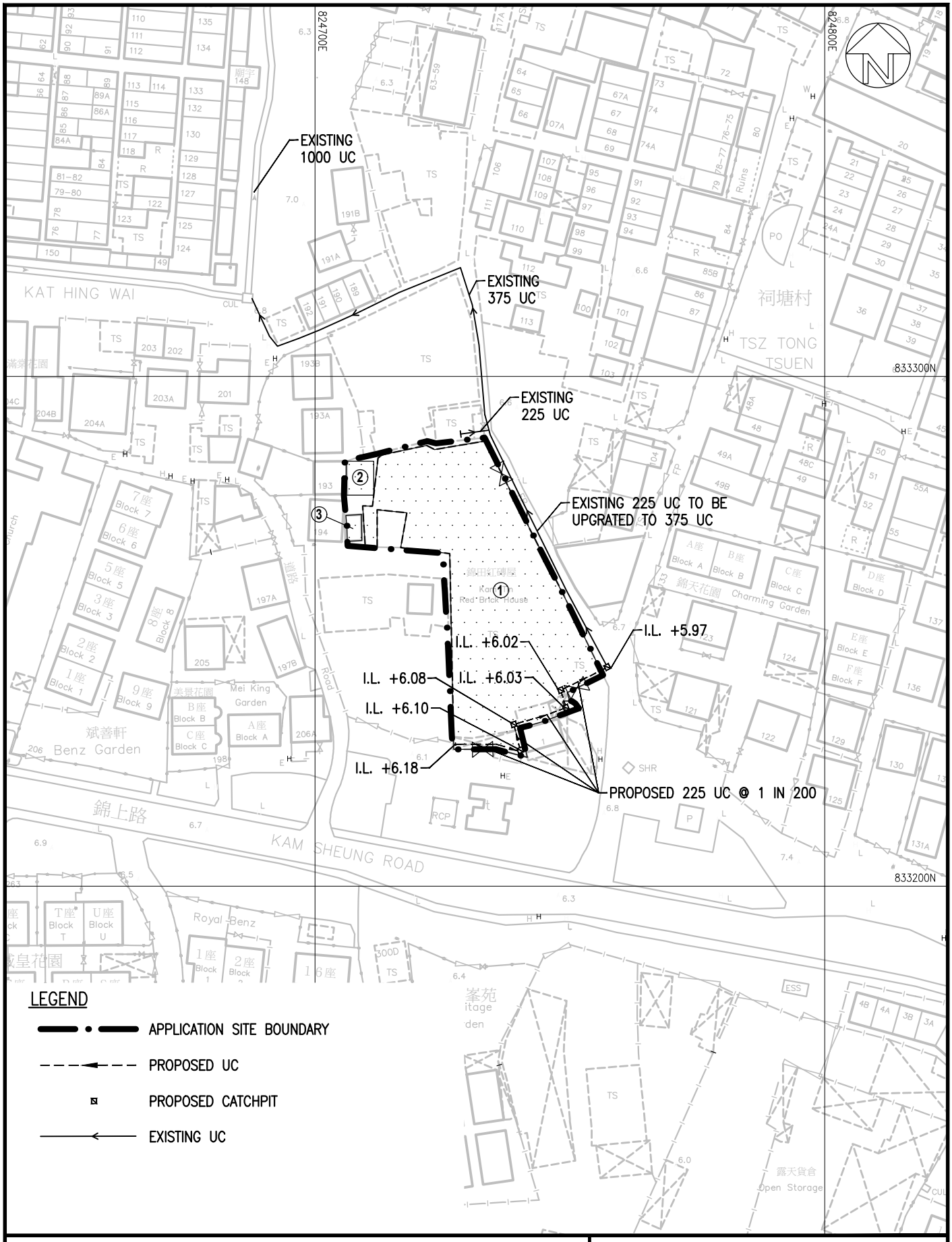

TITLE

PROPOSED DRAINAGE (AT GROUND LEVEL) ARRANGEMENT PLAN

何田顧問工程師有限公司
HO TIN & ASSOCIATES CONSULTING ENGINEERS LIMITED

SCALE
1 : 1000 – A4

DRAWING No.
PLAN 5

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