

Proposed Temporary Open Storage for Construction Materials and Warehouse for Storage of Vehicle Body Works Spare Parts and Ancillary Workshop for a Period of 3 Years

at

Lots 486 (Part), 487 (Part), 488 (Part), 489 (Part), 1643 (Part) & 1644 (Part) in D.D. 107 & Adjoining Government Land, Kam Tin, Yuen Long, New Territories

Annex 1 Drainage Proposal

1.1 Existing Situation

A. Site particulars

1.1.1 The application site occupies an area of about 2,300m².

1.1.2 The site is serviced by a vehicular access leading from San Tam Road. The area adjacent to the proposed development is mainly rural in nature and some warehouses and logistic centers were found to the north.

B. Level and gradient of the subject site & proposed surface channel

1.1.3 It has a gradient sloping from northeast to southwest from about +6.6mPD to +5.8mPD. (**Figure 4**)

C. Catchment area of the proposed drainage provision at the subject site

1.1.4 The land to the south, east and west is lower than the application site. Although the land to the north is progressively higher than the southwestern part of the application site, the land to the west of the site is much lower than the application site so that the stormwater flows from the north of the site to southwest direction which is not passing through the application site. As such, no external catchment is identified.

D. Particulars of the existing drainage facilities to accept the surface runoff collected at the application site

1.1.5 As shown in **Figure 4**, an existing manhole is found to the southwest of the application site. There is an existing 1500mm diameter pipe connecting the existing manhole and the outlet of the said pipe is shown in Figure 5.

1.2 Runoff Estimation

1.2.1 Rational method is adopted for estimating the designed run-off

$$Q = k \times i \times A / 3,600$$

Assuming that:

- i. The area of the catchment is approximately 2,300m²; (**Figure 4**)
- ii. It is assumed that the value of run-off co-efficient (k) is taken as 1 for conservative reason.

$$\text{Difference in Land Datum} = 6.6\text{m} - 5.8\text{m} = 0.8\text{m}$$

$$L = 88\text{m}$$

$$\therefore \text{Average fall} = 0.8\text{m in } 88\text{m} = 1\text{m in } 110\text{m}$$

According to the Brandsby-Williams Equation adopted from the “Stormwater Drainage Manual – Planning, Design and Management” published by the Drainage Services Department (DSD),

$$\text{Time of Concentration (t}_c\text{)} = 0.14465 [L / (H^{0.2} \times A^{0.1})]$$

$$t_c = 0.14465 [88 / 0.91^{0.2} \times 2,300^{0.1}]$$

$$t_c = 5.98 \text{ minutes}$$

With reference to the Intensity-Duration-Frequency Curves provided in the abovementioned manual, the mean rainfall intensity (i) for 1 in 50 recurrent flooding period is found to be 265 mm/hr

By Rational Method,

$$Q_1 = 1 \times 265 \times 2,300 / 3,600$$

$$\therefore Q_1 = 169.31 \text{ l/s} = 10,158.33 \text{ l/min} \\ = 0.17\text{m}^3/\text{s}$$

In accordance with the Chart or the Rapid Design of Channels in “Geotechnical Manual for Slopes”, for an approximate gradient of about 1:140 & 1:150 in order to follow the gradient of the application site, 375mm surface channel along the site periphery is considered adequate to dissipate all the stormwater accrued by the application site and adjacent land.

1.3 Proposed Drainage Facilities

- 1.3.1 Subject to the calculations in 1.2 above, it is determined that proposed 375mm concrete surface channel along the site periphery is adequate to intercept storm water passing through and generated at the application site (**Figure 4**).
- 1.3.2 The collected stormwater will then be discharged directly to the 1500mm underground pipe to the southwest of the application site via an existing manhole as shown in **Figure 4**.
- 1.3.3 All the proposed drainage facilities will be provided and maintained at the applicant's own expense. Also, sand trap and surface U-channel will be cleaned at regular interval to avoid the accumulation of rubbish/debris which would affect the dissipation of storm water.
- 1.3.4 The provision of the proposed surface channel will follow the gradient of the application site. All the proposed drainage facilities will be constructed and maintained at the expense of the applicant.
- 1.3.5 Prior to the commencement of the drainage works, the applicant will seek consent from District Lands Office/Yuen Long and relevant land owners for the provision of drainage facilities outside the application site.
- 1.3.6 The proposed development would not affect the existing ditches, drains and obstruct the flow of the flow of surface runoff.
- 1.3.7 100mm gap will be provided at the toe of site hoarding to allow unobstructed flow of surface runoff.

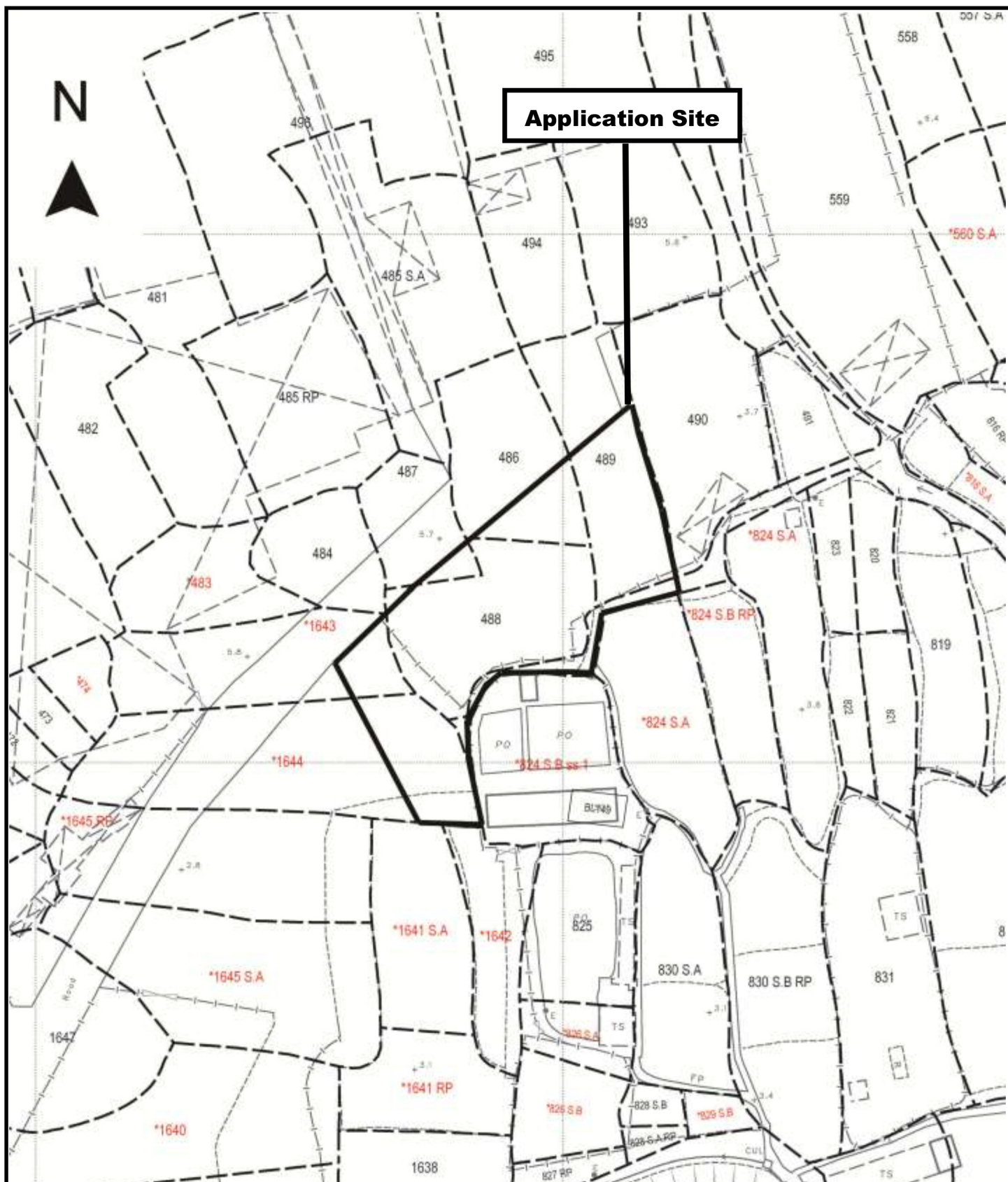
Annex 2 Estimated Traffic Generation

- 2.1 The application site is accessible via a vehicular track leading from San Tam Road. It is intended to serve the long term storage of construction materials and vehicle body works spare parts at the site so that the traffic generated by the proposed development is insignificant.
- 2.2 The proposed loading/unloading space and parking space at the application site would only be opened to staff and no visitors is allowed to visit the proposed development.
- 2.3 There will be 1 loading/unloading bay and 1 parking space for medium/heavy goods vehicle. No container trailer/tractor will access the site. The estimated traffic generation/attraction rate is shown below:

Type of Vehicle	<u>Average</u> Traffic Generation Rate (pcu/hr)	<u>Average</u> Traffic Attraction Rate (pcu/hr)	Traffic Generation Rate at <u>Peak Hours</u> (pcu/hr)	Traffic Attraction Rate at <u>Peak Hours</u> (pcu/hr)
Medium/ Heavy goods vehicle	0.4	0.4	4	2

Note:

1. The operation hours of the proposed development is from 9:00a.m. to 7:00p.m. from Mondays to Saturdays. No operation will be carried out on Sundays and public holidays.
 2. The pcu of medium/heavy goods vehicle is taken as 2; &
 3. Morning peak is defined as 7:00a.m. to 9:00a.m. whereas afternoon peak is defined as 5:00p.m. to 7:00p.m.
- 2.4 In association with the intended purpose, adequate space for manoeuvring would be provided within the application site. Sufficient space within the application site is provided so that no queueing up of vehicle would be occurred outside the application site.



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Drawing Title 圖目:

Site Plan

Drawing No. 圖號:

Figure 1

Remarks 備註:

Scale 比例:

1:1000



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Drawing Title 圖目:

Proposed Vehicular Access Plan

Drawing No. 圖號:

Figure 2

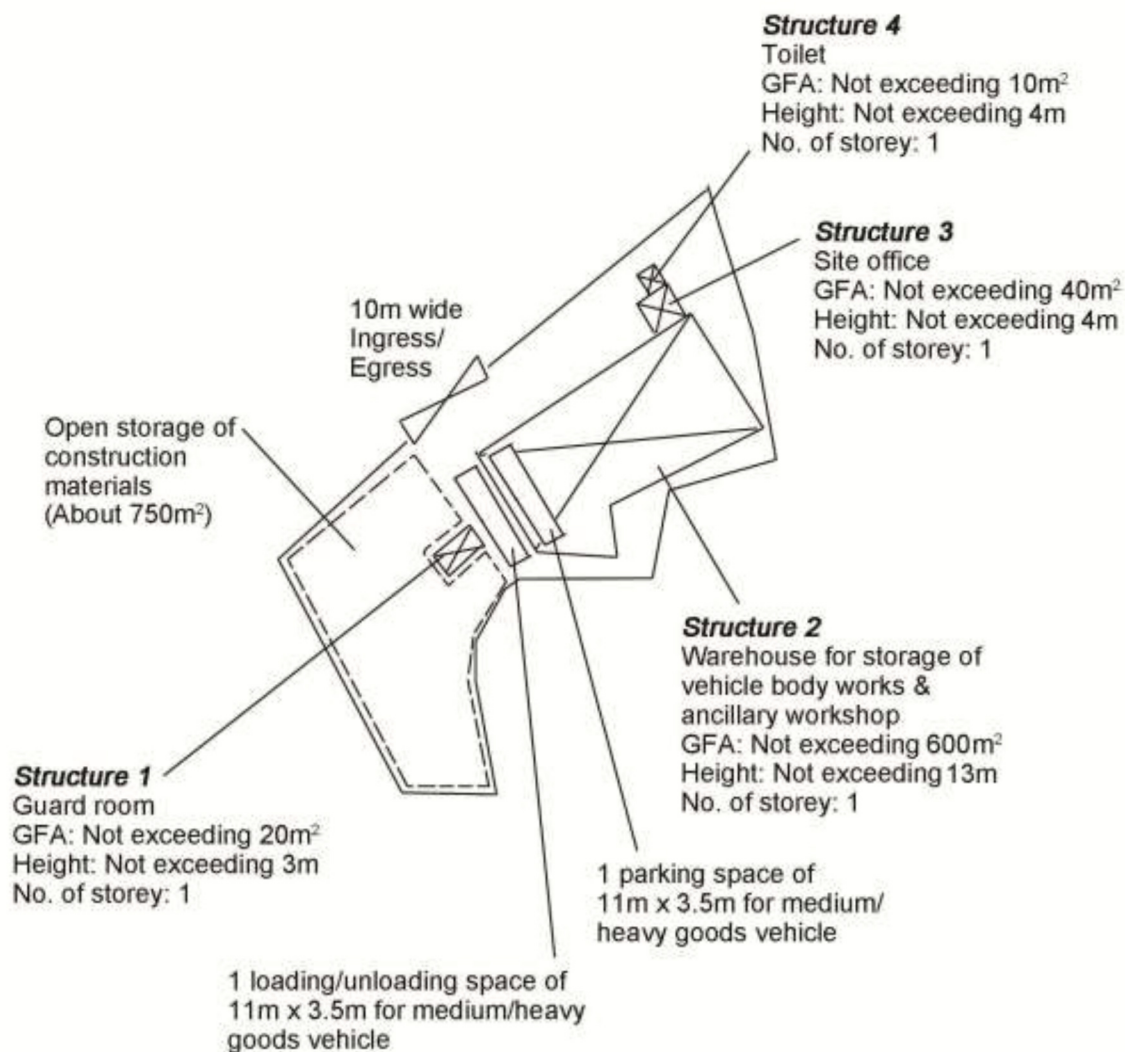
Remarks 備註:

→ Vehicular access leading from San Tam Road

Scale 比例:

Refer to the scale bar

N



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Drawing Title 圖目:

Proposed Layout Plan

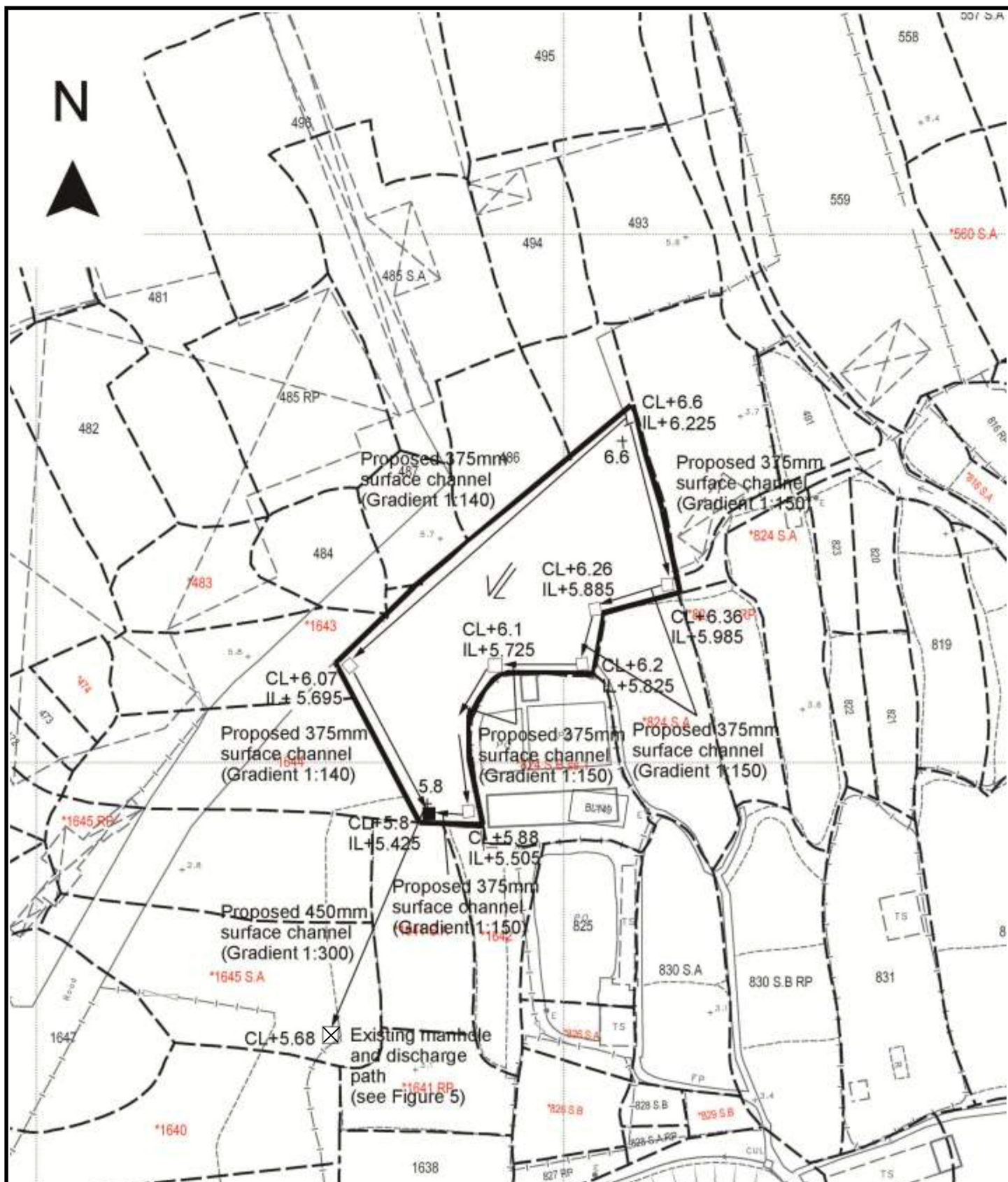
Drawing No. 圖號:

Figure 3

Remarks 備註:

Scale 比例:

1:1000



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Drawing Title 圖目:

Proposed Drainage Plan

Drawing No. 圖號:

Figure 4

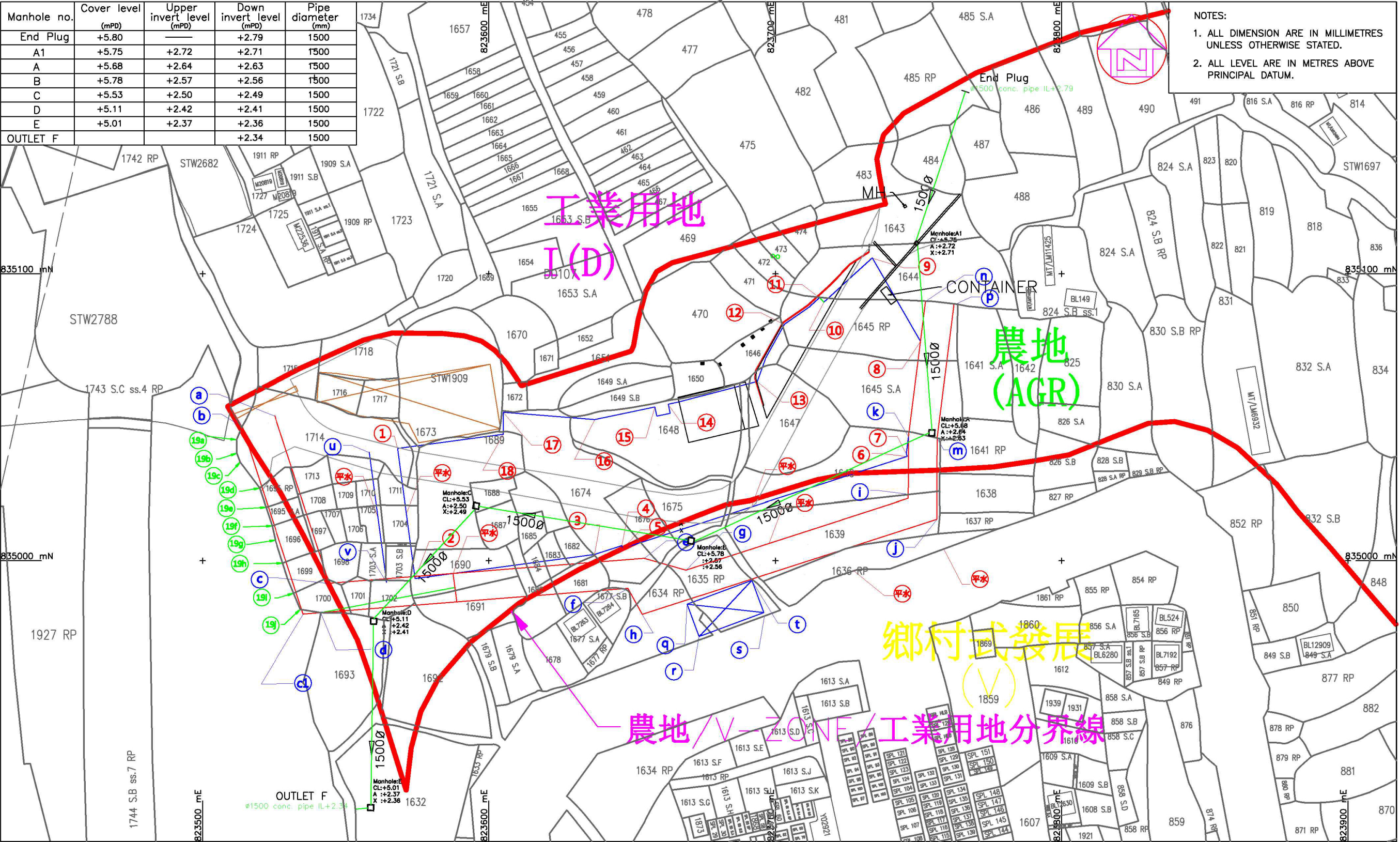
Remarks 備註:

- Proposed catchpit
- Proposed catchpit with Sand trap
- ⇐ Flow of surface runoff
- +6.6 Level (in mPD)
- CL Covered level (mPD)
- IL Invert level (mPD)

Scale 比例:

1:1000

Manhole no.	Cover level (mPD)	Upper invert level (mPD)	Down invert level (mPD)	Pipe diameter (mm)
End Plug	+5.80		+2.79	1500
A1	+5.75	+2.72	+2.71	1500
A	+5.68	+2.64	+2.63	1500
B	+5.78	+2.57	+2.56	1500
C	+5.53	+2.50	+2.49	1500
D	+5.11	+2.42	+2.41	1500
E	+5.01	+2.37	+2.36	1500
OUTLET F			+2.34	1500



PROJECT: DD107

DRAWING TITLE:
Figure 5 Discharge Path of Existing 1500mm Diameter Pipe



大輝測量工程公司
BIG FAI SURVEYING & ENGINEERING CO.

Dwg No : BF-20250809

Design By :

Rev.

Scale : 1:1250 (A3)

Drawn By : LUNG

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