

Proposed Temporary Warehouse (Non Dangerous Goods) for a Period of 3 Years
at
Lots 835 S.A, 835 S.B (Part), 836 (Part) & 837 (Part) in D.D. 119, Pak Sha Tsuen, Yuen Long, N.T.

Annex 1 DRAINAGE PROPOSAL

1.1 Existing Situation

A. Site particulars

- 1.1.1 The application site had been paved and occupied an area of about 2,700m².
- 1.1.2 The application site will be occupied for eight warehouses for storage of non dangerous goods. Warehouse were found to the south, north, west and east of the application site.

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

- 1.1.3 The lowest point of the site is at the northeastern part which is about +19.0mPD. The highest point of the site is at the southwestern part which is about +21.5mPD.

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

- 1.1.4 According to **Figure 4**, it is noted that the land to surrounding the application site commands a lower level or about the same level as the application site except to the west of the application site. As such, an external catchment has been identified and shown in **Figure 5**.

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 open drain is found to the northeast of the application site.

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 entire catchment is approximately 11,740m²; (**Figure 5**)
- ii. Though the catchment is predominant rural in character, it is assumed that the value of run-off co-efficient (k) is taken as 0.8.

$$\text{Difference in Land Datum} = 62\text{m} - 19.5\text{m} = 42.5\text{m}$$

$$L = 290\text{m}$$

$$\therefore \text{Average fall} = 42.5\text{m in } 290\text{m} \text{ or } 1\text{m in } 6.82\text{m}$$

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

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

$$t_c = 0.14465 [290 / (14.66^{0.2} \times 11,740^{0.1})]$$

$$t_c = 9.61 \text{ minutes}$$

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 225mm/hr

$$\text{By Rational Method, } Q_1 = 0.8 \times 225 \times 11,740 / 3,600$$

$$\therefore Q_1 = 587 \text{ l/s} = 35,220 \text{ l/min} = 0.59\text{m}^3/\text{s}$$

In accordance with the Chart or the Rapid Design of Channels in “Geotechnical Manual for Slopes”, for an approximate gradient of about 1:40 in order to follow the gradient of the application site, 450mm surface U-channel 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 450mm concrete surface U-channel at gradient of about 1:40 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 to the existing open drain to the northeast of the application site. Sand trap or alike will be provided at the terminal catchpit before the stormwater is discharged to the public drainage.
- 1.3.3 All the proposed drainage facilities will be provided and maintained at the applicant's own expense. Also, sand trap and surface 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 All the proposed drainage facilities will be constructed and maintained at the expense of the applicant.
- 1.3.5 All proposed works at the site periphery would not obstruct the flow of surface runoff from the adjacent areas, the provision of surface channel at site boundary is detailed hereunder:
- (a) Soil excavation at site periphery, although at minimal scale, is inevitably for the provision of surface channel. In the reason that the accumulation of excavated soil at the site periphery would obstruct the free flow of the surface runoff from the surroundings, the soil will be cleared at the soonest possible after the completion of the excavation process.
 - (b) In view of that soil excavation may be continued for several working days, surface channel will be dug in short sections and all soil excavated will be cleared before the excavation of another short section.
 - (c) No leveling work will be carried at the site periphery. The level of the site periphery will be maintained during and after the works. As such, the works at the site periphery would not either alter or obstructed the flow of surface runoff from adjacent areas.
 - (d) 100mm openings will be provided at the toe of site hoarding as shown in the proposed drainage plan so as to allow unobstructed flow of surface runoff from adjacent area.

Annex 2 Estimated Traffic Generation

- 2.1 As shown in **Figure 2**, the application site is accessible via a vehicular track leading from Kung Um Road. In view of that the site is intended for warehouse use, traffic generated by the proposed development would be insignificant.
- 2.2 The estimated average traffic generation and traffic generation rate at peak hours are as follow:

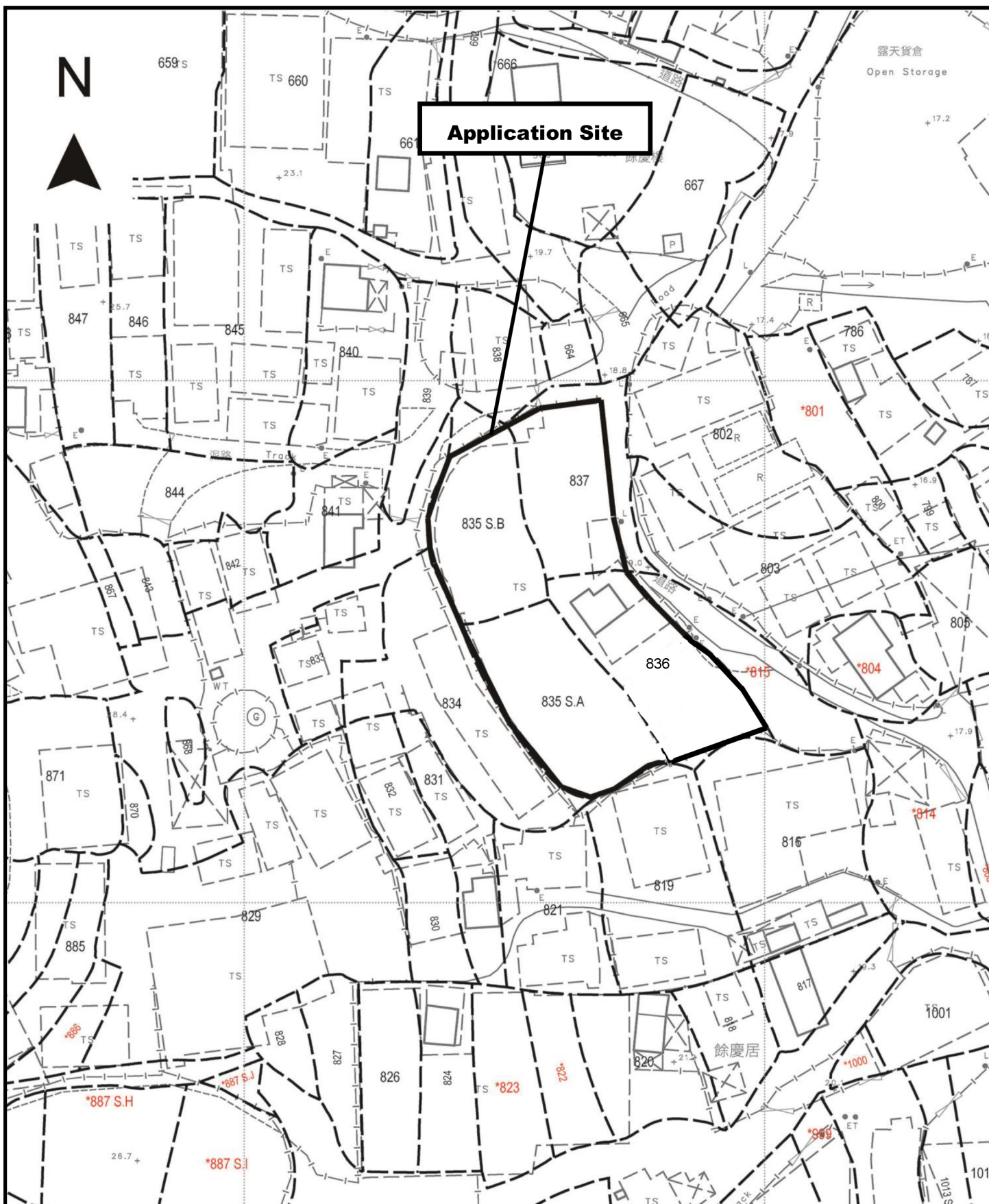
Type of Vehicle	<u>Average</u> Traffic Generation Rate (pcu/hr)	<u>Average</u> Traffic Attraction Rate (pcu/hr)	Traffic Generation Rate at <u>Peak Hours</u> (pcu/hr)	Traffic Attraction Rate at <u>Peak Hours</u> (pcu/hr)
Light goods vehicle (not exceeding 5.5 tones)	0.38	0.38	0	0

Note 1: The opening hour of the proposed development is restricted to 9:00 a.m. to 5:00 p.m. from Mondays to Saturdays. No operation will be held on Sundays and public holidays.

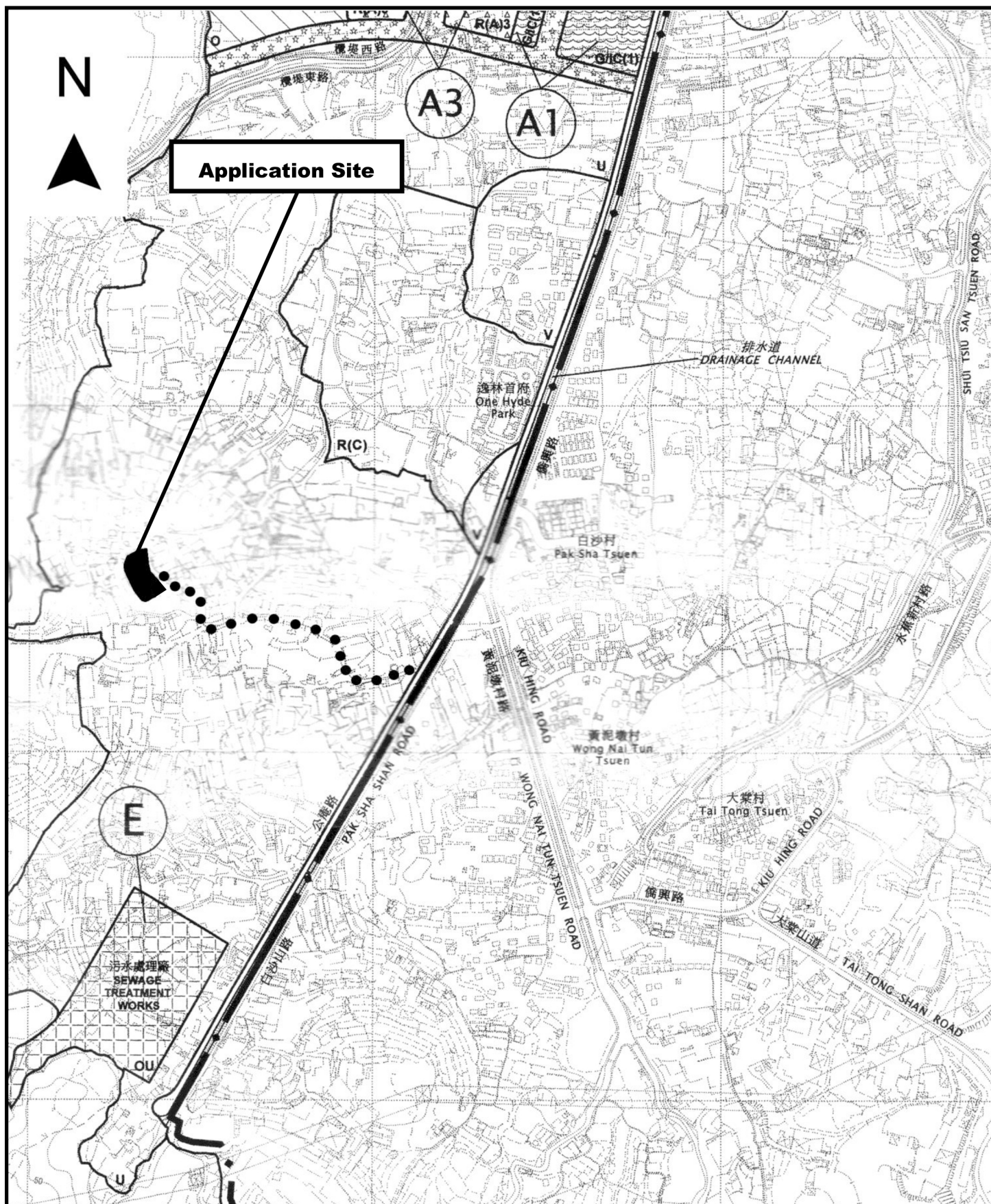
Note 2: The pcu of light goods vehicle is taken as 1.5.

Note 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.

- 2.3 In association with the intended purpose, adequate space for manoeuvring of exhibition materials would be provided and so queueing up of traffic would not be the result especially that the traffic generated is insignificant. The negligible increase in traffic would not aggravate the traffic condition of Kung Um Road and nearby road networks.



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Project 項目名稱:

Proposed Temporary Warehouse (Non Dangerous Goods) for a Period of 3 Years at Lots 835 S.A, 835 S.B (Part), 836 (Part) & 837 (Part) in D.D. 119, Pak Sha Tsuen, Yuen Long, N.T.

Drawing Title 圖目:

Location Plan

Remarks 備註:

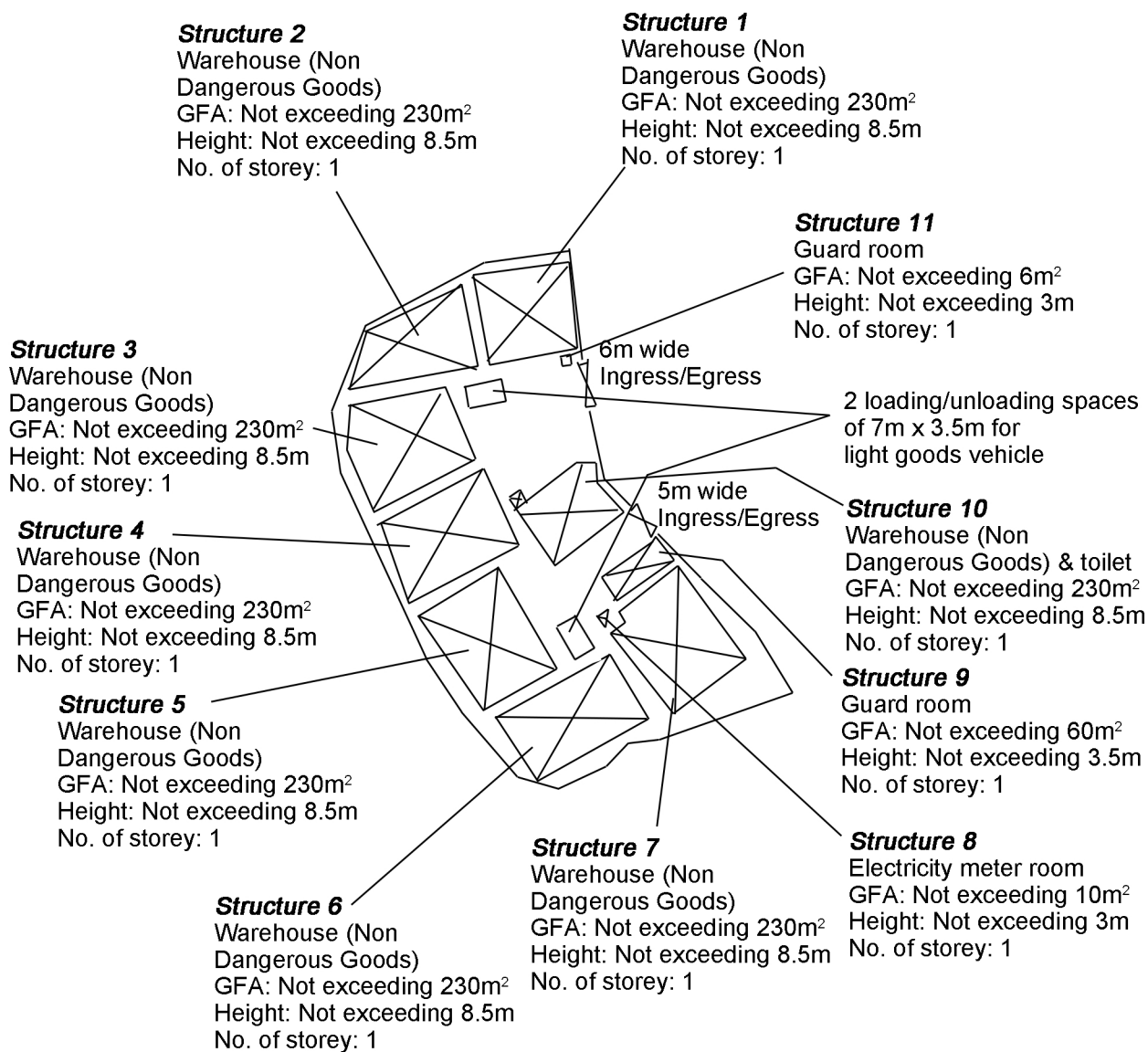
● ● ● Vehicular access leading from Kung Um Road via local track

Drawing No. 圖號:

Figure 2

Scale 比例:

1:7500



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Drawing Title 圖目:

Proposed Layout Plan

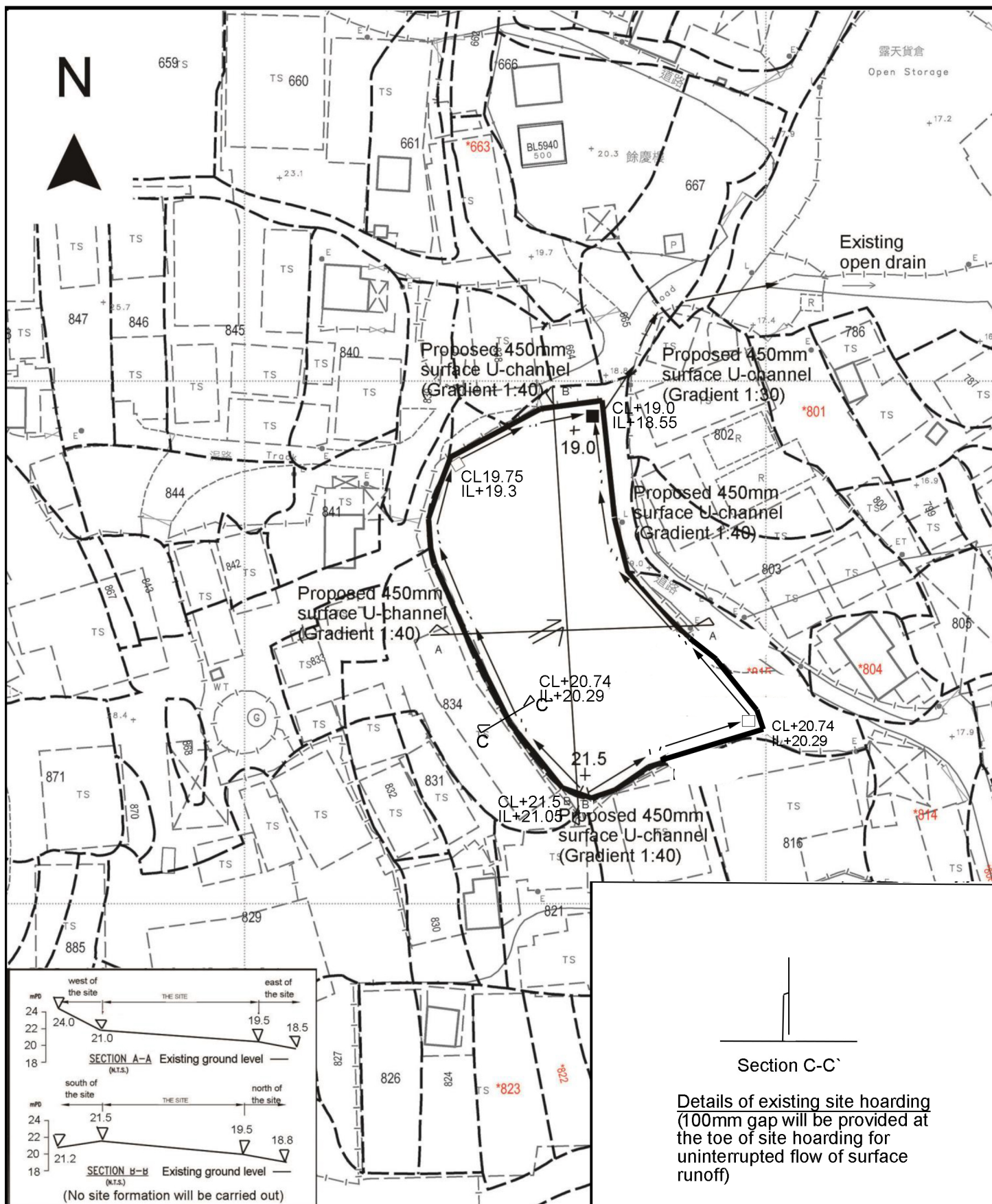
Drawing No. 圖號:

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:

+19.5 Level (in mPD)

Flow of surface runoff

Proposed catchpit

Catchpit with sand trap

Scale 比例:

1:1000



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Drawing Title 圖目:

Catchment Plan

Drawing No. 圖號:

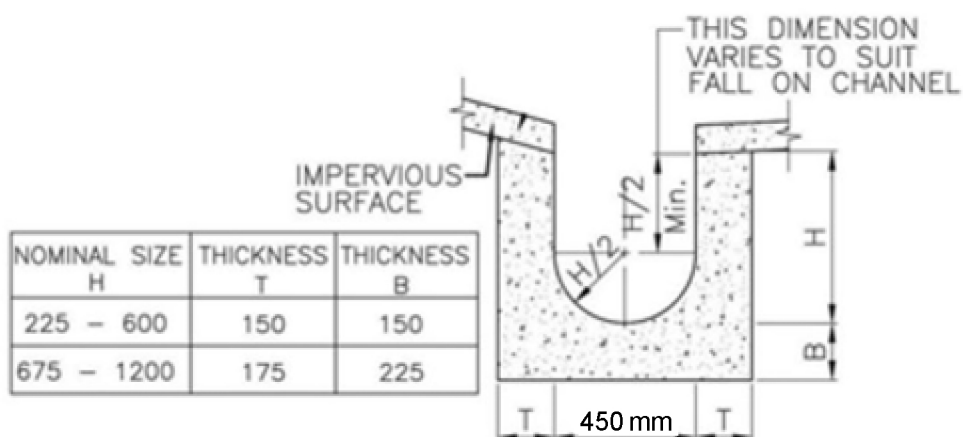
Figure 5

Remarks 備註:

- Application site
- External catchment

Scale 比例:

1:2000



DETAILS OF U-CHANNEL
 (REFERENCE : FIG. 8.11 OF
 GEOTECHNICAL MANUAL FOR SLOPES)
 (N.T.S.)

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Drawing Title 圖目:

Details of Proposed Surface U-channel

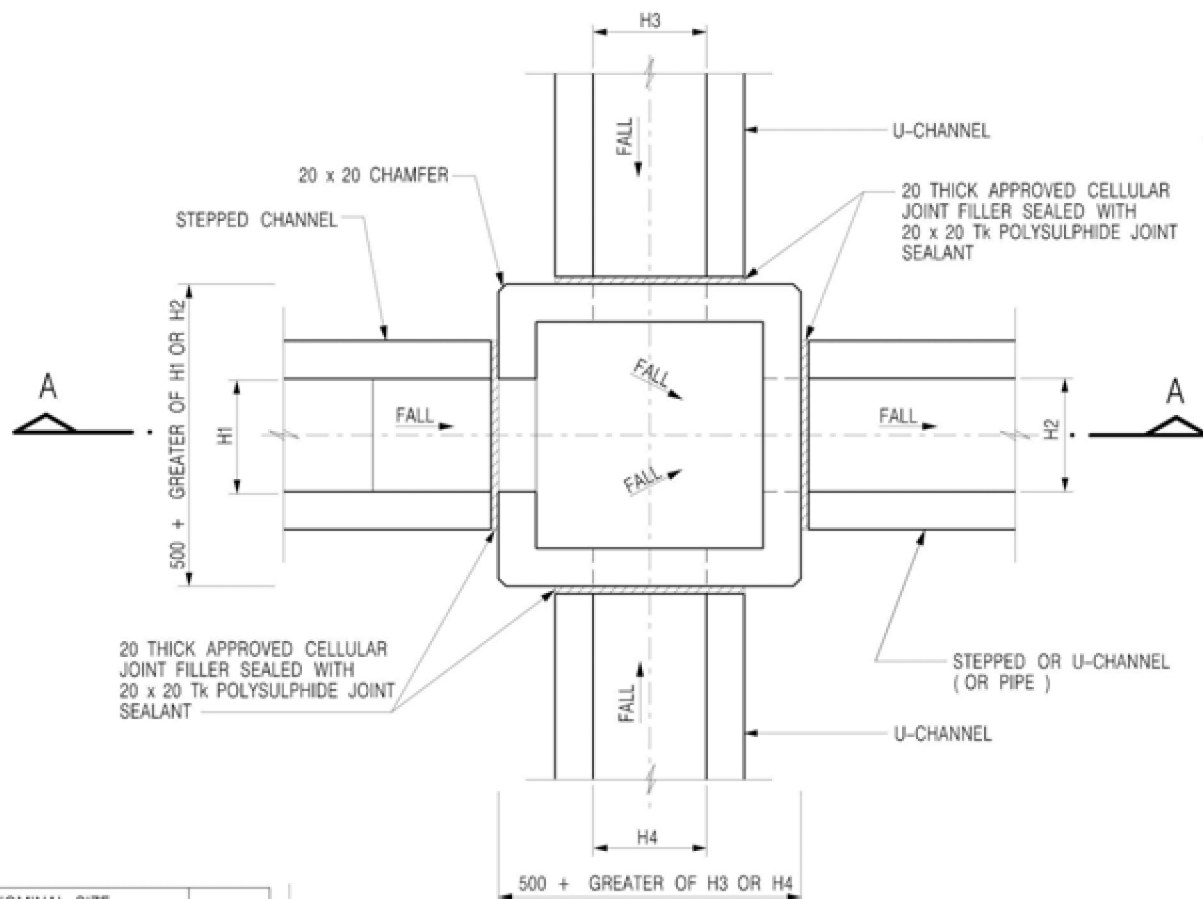
Remarks 備註:

Drawing No. 圖號:

Figure 6

Scale 比例:

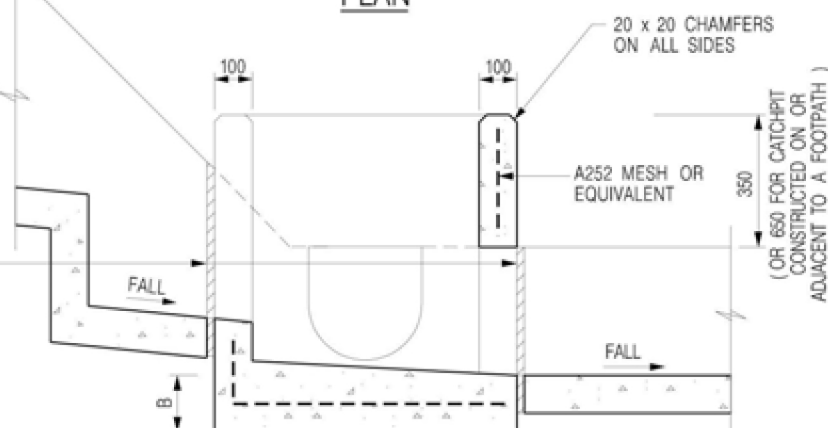
Not to scale



PLAN

NOMINAL SIZE (LARGEST OF H1, H2, H3 & H4)	B
300 - 600	150
675 - 900	175

20 THICK APPROVED CELLULAR JOINT FILLER SEALED WITH 20 x 20 Tk POLYSULPHIDE JOINT SEALANT



SECTION A - A

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. REFER TO SHEET 5 FOR OTHER NOTES.

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Drawing Title 圖目:

The Details of the Proposed Catchpit

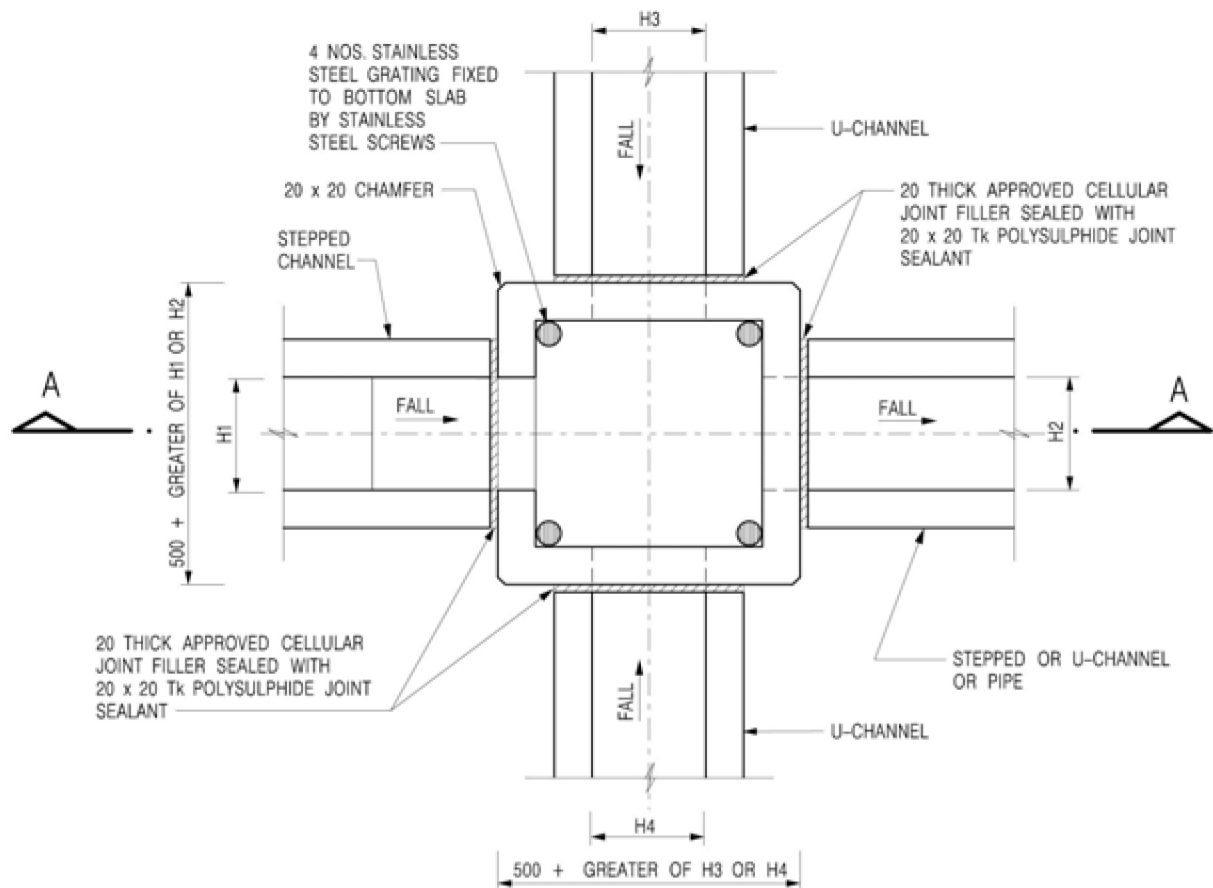
Remarks 備註:

Drawing No. 圖號:

Figure 7

Scale 比例:

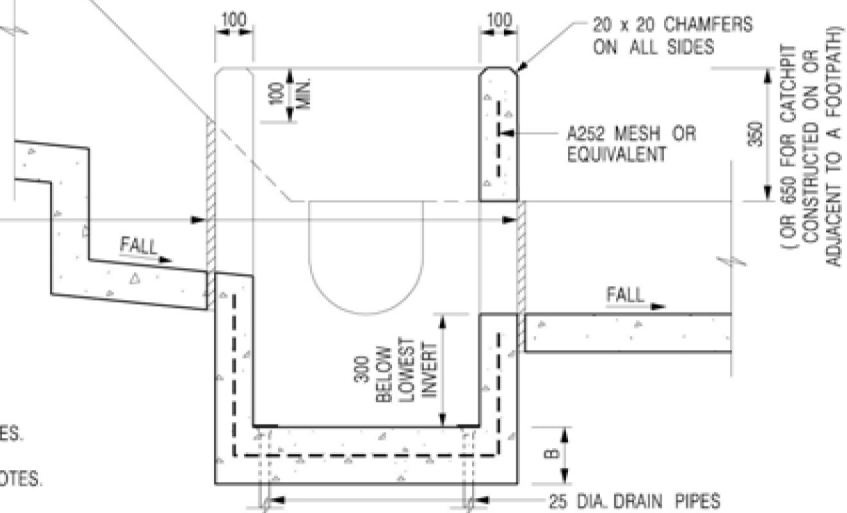
Not to scale



PLAN

NOMINAL SIZE (LARGEST OF H1, H2, H3 & H4)	B
300 - 600	150
675 - 900	175

20 THICK APPROVED CELLULAR JOINT FILLER SEALED WITH 20 x 20 Tk POLYSULPHIDE JOINT SEALANT



SECTION A - A

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. REFER TO SHEET 2 FOR OTHER NOTES.

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Drawing Title 圖名:

The Details of Catchpit with Desilting Function

Drawing No. 圖號:

Figure 8

Remarks 備註:

Scale 比例:

Not to scale