

Proposed Temporary Shop & Services (Motor-vehicle Showroom) for a Period of 5 Years and Filling and Excavation of Land at Lots 1285 RP, 1286 RP & 1290 (Part) in D.D. 114, Shek Kong, 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 2,050m².

1.1.2 The application site will be occupied for a motor-vehicle showroom.

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

1.1.3 The lowest point of the site is at the southeastern part which is about +32.7mPD. The highest point of the site is at the northwestern part which is about +32.3mPD.

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

1.1.4 According to **Figure 3**, 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 east. Also, the site is surrounded by New Territories Exempted Houses to the north and to the east and it is believed that they have been equipped with drainage facilities. As such, an external catchment has been identified in **Figure 3**.

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

1.1.5 As shown in **Figure 3**, an existing open drain is found to the west 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 3,500m²; (**Figure 3**)
- ii. Though the catchment is predominant rural in character, it is assumed that the value of run-off co-efficient (k) is taken as 1.

$$\text{Difference in Land Datum} = 34.4\text{m} - 32.3\text{m} = 2.1\text{m}$$

$$L = 140\text{m}$$

$$\therefore \text{Average fall} = 2.1\text{m in } 140\text{m} \text{ or } 1\text{m in } 66.67\text{m}$$

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

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

$$t_c = 0.14465 [140 / (1.5^{0.2} \times 3,500^{0.1})]$$

$$t_c = 8.25 \text{ minutes}$$

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 240mm/hr (**Figure 9**)

$$\text{By Rational Method, } Q_1 = 1 \times 240 \times 2,050 / 3,600$$

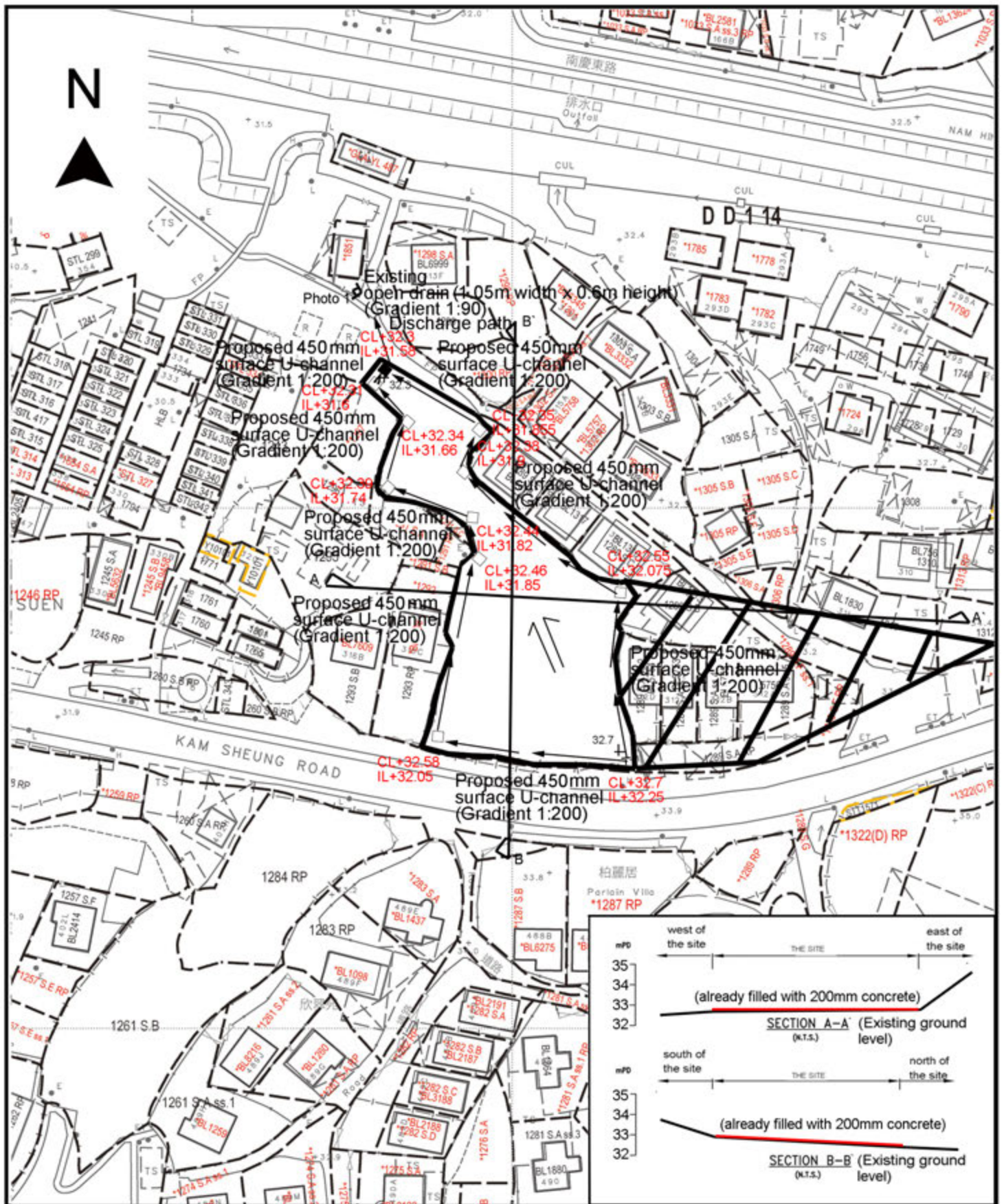
$$\therefore Q_1 = 233.33 \text{ l/s} = 14,000 \text{ l/min} = 0.23\text{m}^3/\text{s}$$

In accordance with the Chart or the Rapid Design of Channels in “Geotechnical Manual for Slopes”, 450mm surface U-channel at 1:200 gradient 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 1:200 along the site periphery is adequate to intercept storm water passing through and generated at the application site (**Figure 3**).
- 1.3.2 The collected stormwater will then be discharged to the existing open drain to the surface U-channel outside the application site.
- 1.3.3 All the proposed drainage facilities will be provided and maintained at the applicant’s own expense. Also, 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 Sand trap or alike will be provided at the terminal catchpit to avoid the addition of load into public drainage.

- 1.3.5 All the proposed drainage facilities will be constructed and maintained at the expense of the applicant.
- 1.3.6 For the drainage works outside the jurisdiction of the applicant, the applicant will seek the consent of land owners or District Lands Office/Yuen Long for works outside application site prior to the commencement of works.
- 1.3.7 The development would neither obstruct overland flow nor adversely affect existing natural streams, village drains, ditches and the adjacent areas, etc.
- 1.3.8 All proposed works at the site periphery would not obstruct the flow of surface runoff from the adjacent areas, the provision of trees and 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 and landscaping. 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) Adequate gap, say 100mm, will be reserved at the toe of the site hoarding to allow free flowing of surface runoff to and from the application site.



Project 項目名稱:

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Drawing Title 圖目:

Proposed Drainage Plan

Drawing No. 圖號:

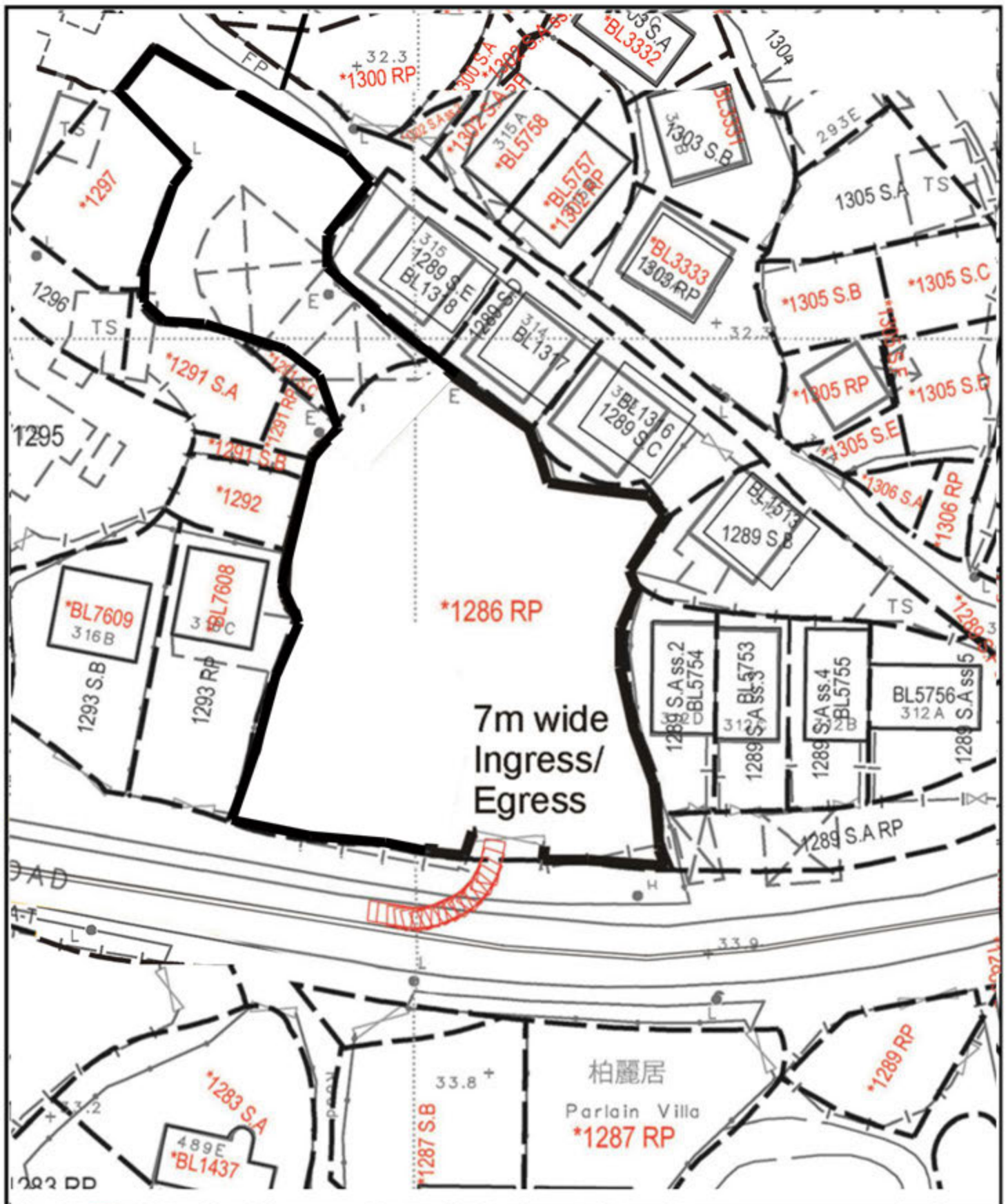
Figure 3


Remarks 備註:

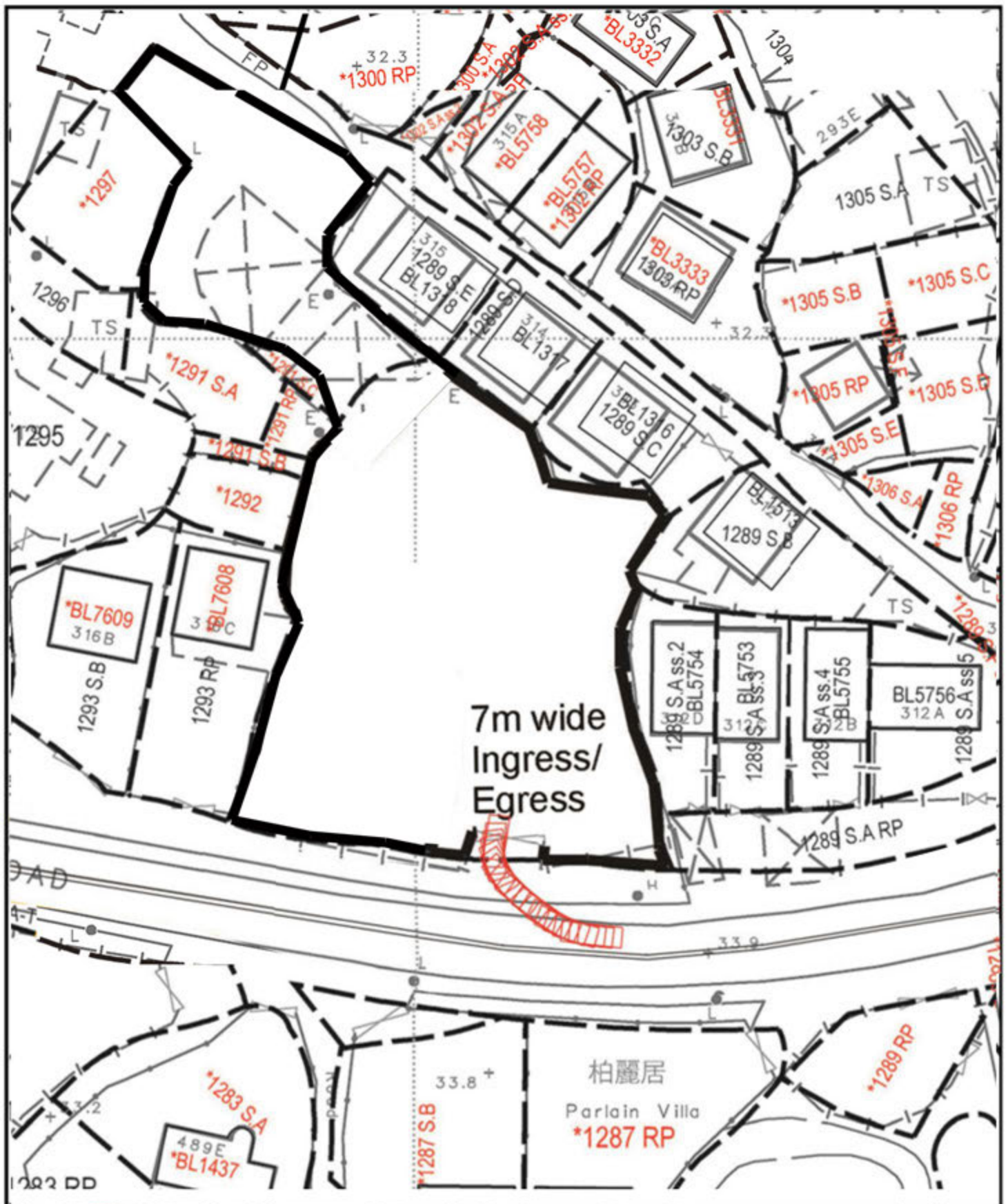
- +32.3 Level (in mPD)
- ◁ Photo viewpoint
- Proposed catchpit
- Catchpit with sand trap
- ⇐ Flow of surface runoff
- ▨ External catchment


Scale 比例:

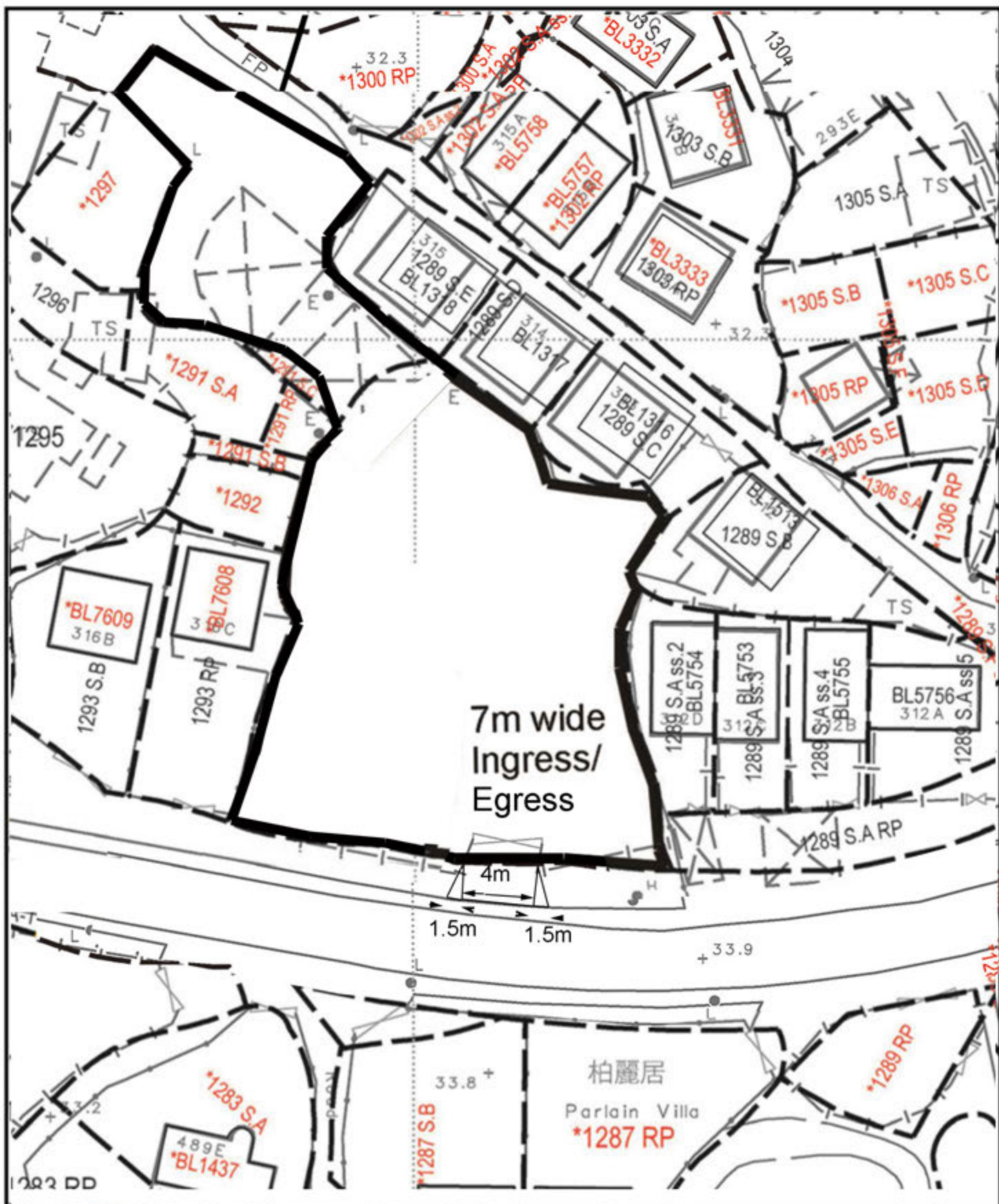
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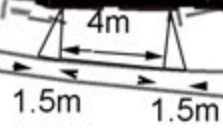
<p>Project 項目名稱: Proposed Temporary Shop & Services (Motor-vehicle Showroom) for a Period of 5 Years and Filling and Excavation of Land at Lots 1285 RP, 1286 RP & 1290 (Part) in D.D. 114, Shek Kong, Yuen Long, N.T.</p>	<p>Drawing Title 圖目: Swept Path Analysis for Private Car Getting Into the Site</p> <p>Drawing No. 圖號: Figure 6</p>	<p>Remarks 備註:  Private car</p> <p>Scale 比例: 1:500</p>
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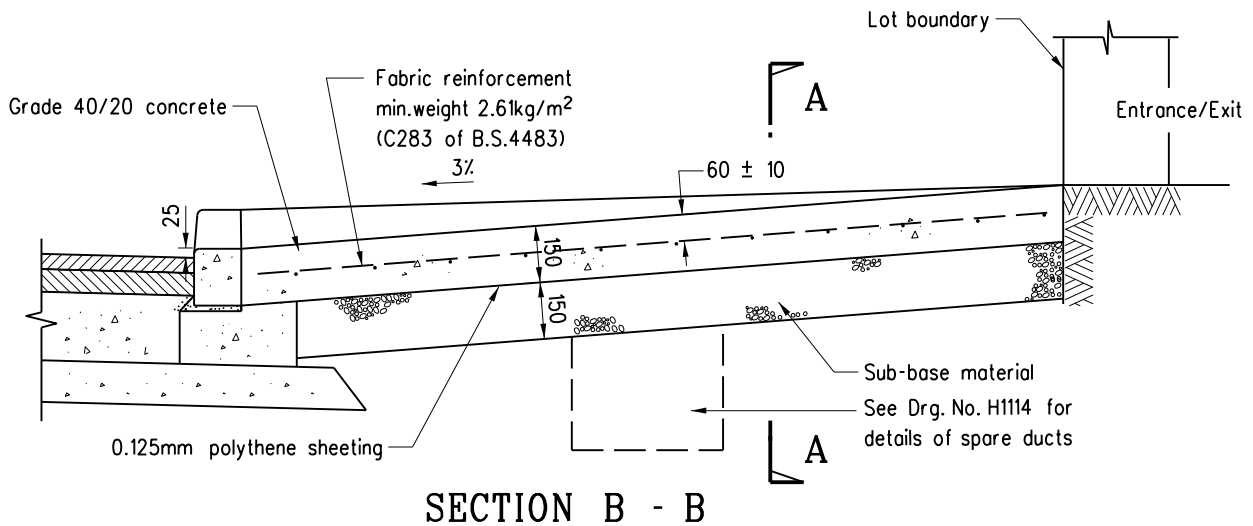
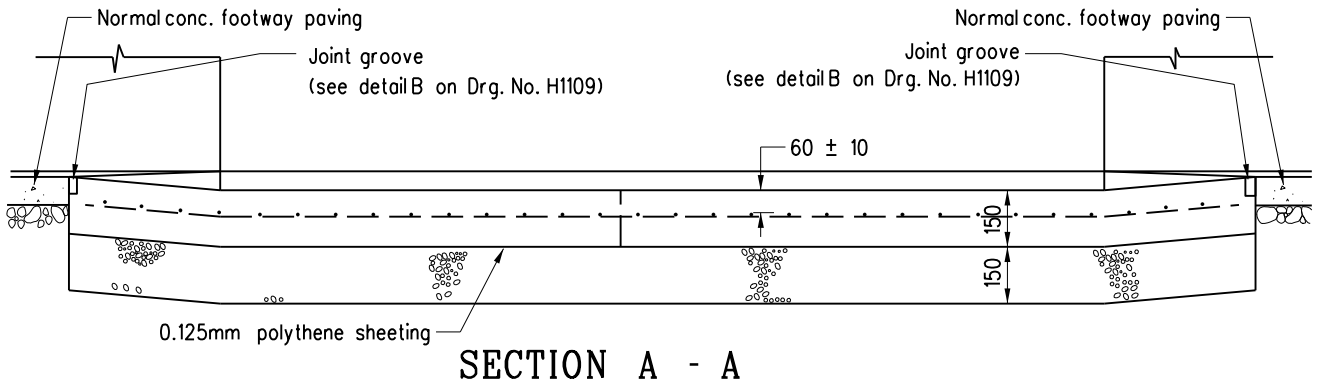
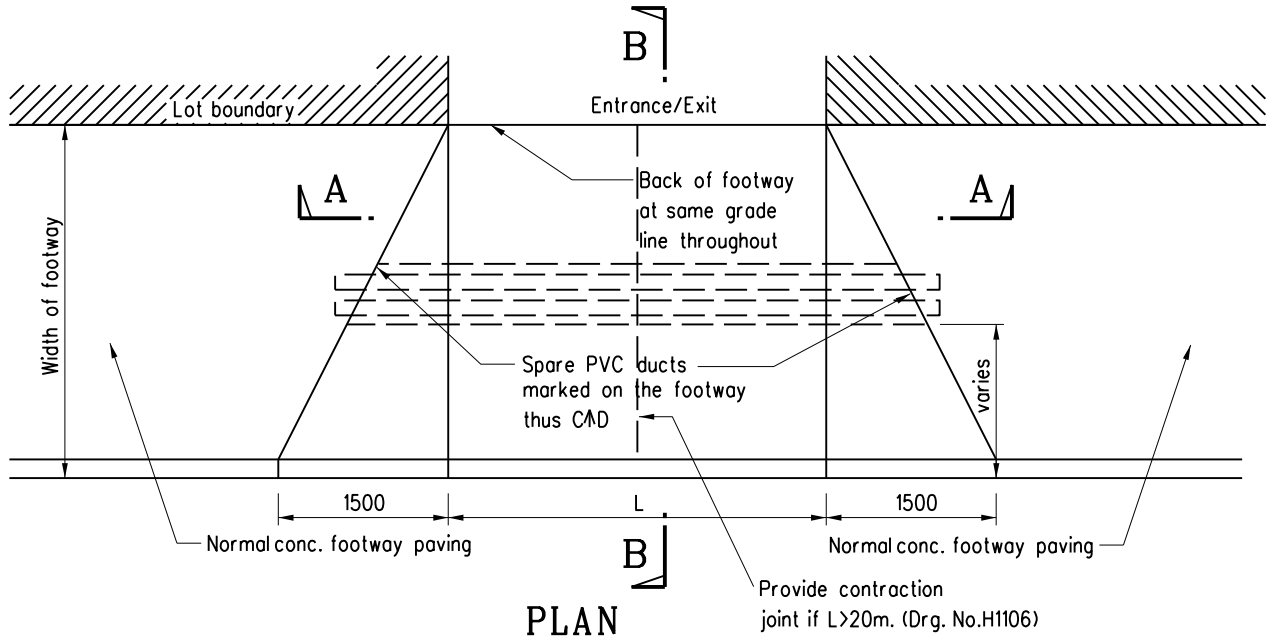


7m wide
Ingress/
Egress



柏麗居
Parlain Villa
*1287 RP

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	<p>Drawing No. 圖號: Figure 8</p>	<p>Scale 比例: 1:500</p>



Note:

1. All dimensions are in millimetres.

REF.	REVISION	SIGNATURE	DATE
C	General revision	Original signed	Oct 19
B	Joint groove details revised	-	Nov 96
A	Grade of concrete revised	-	Sept 96
	Former Drg. No. H1011A with general revision	-	June 94

**TYPICAL DETAILS
OF RUN-IN
(SHEET 1 OF 2)**

HIGHWAYS DEPARTMENT

REFERENCE

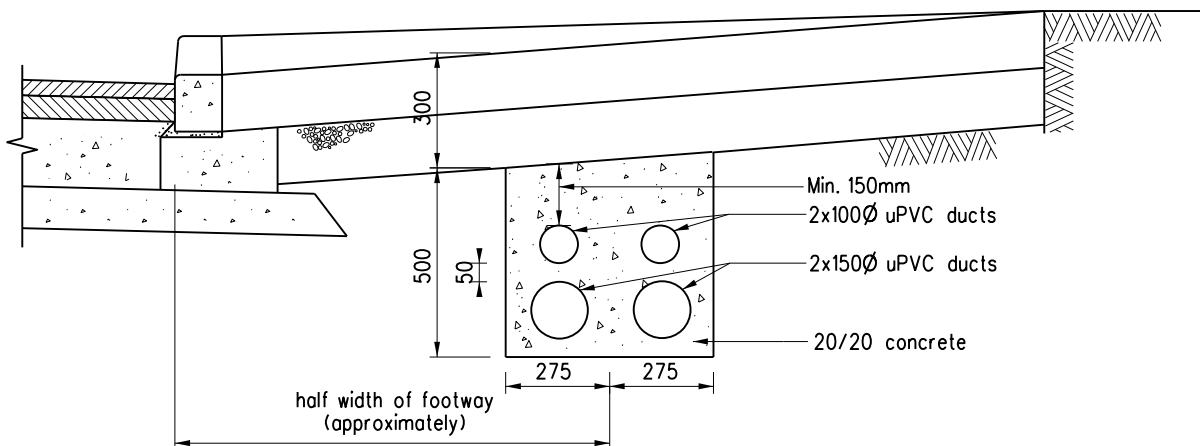
DRAWING No.

CAD

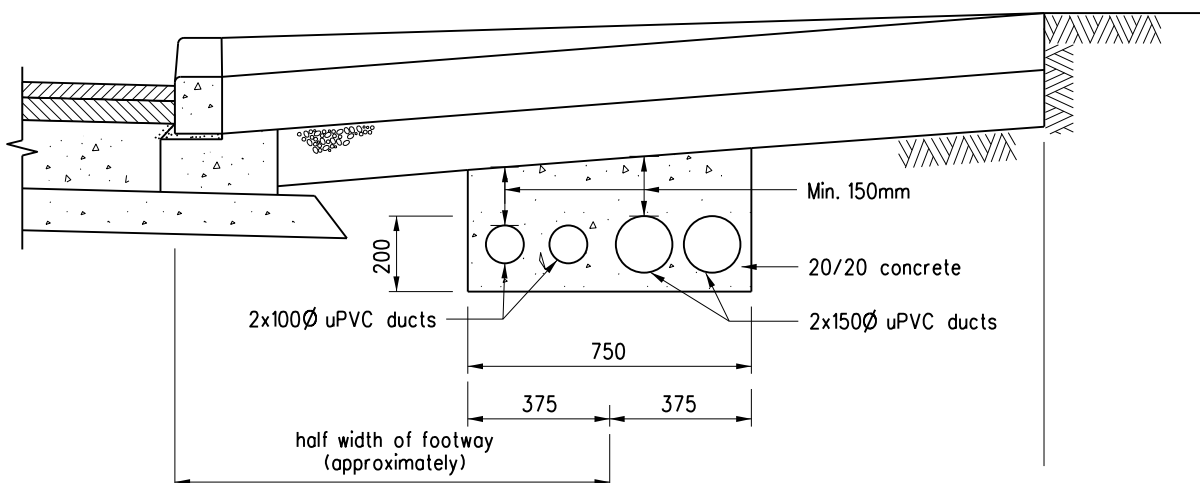
SCALE

1:20

H 1113C



OPTION A



OPTION B

Notes:

1. 100 diameter ducts are provided for cables of ATC or CCTV.
150 diameter ducts are provided for power cables.
2. The choice of option depends on the site situations (e.g. width of footway, existing underground utilities).
3. Position of both ends of the duct bank to be marked on footway thus CAD.

B	General revision	Original signed	Oct 19
A	Concrete cover revised		Sep 96
	Former Drg. No. H1011A with general revision		Jun 94
REF.	REVISION	SIGNATURE	DATE

TYPICAL DETAILS
OF RUN-IN
(SHEET 2 OF 2)

HIGHWAYS DEPARTMENT

REFERENCE

DRAWING No.

CAD

SCALE

1:20

H 1114B

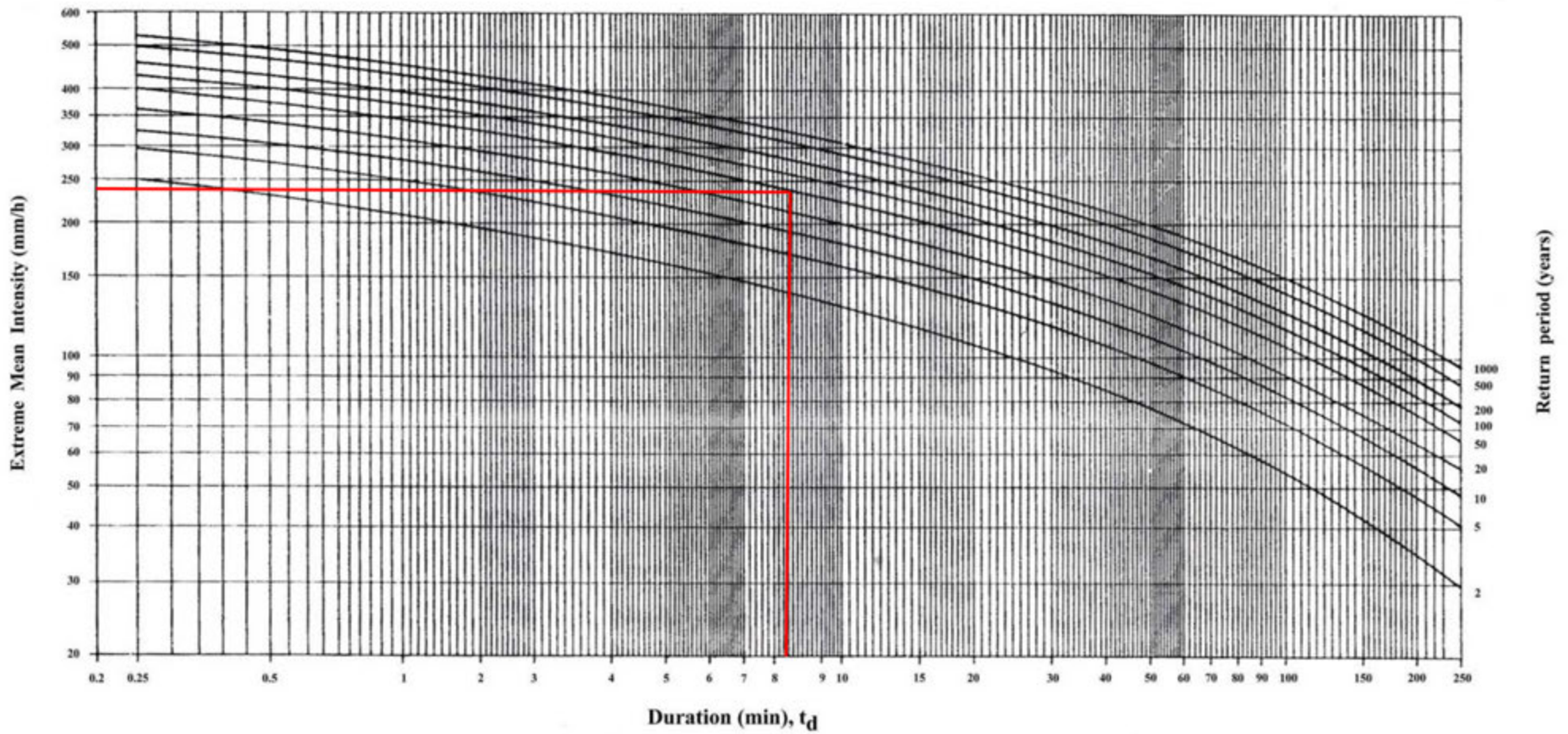
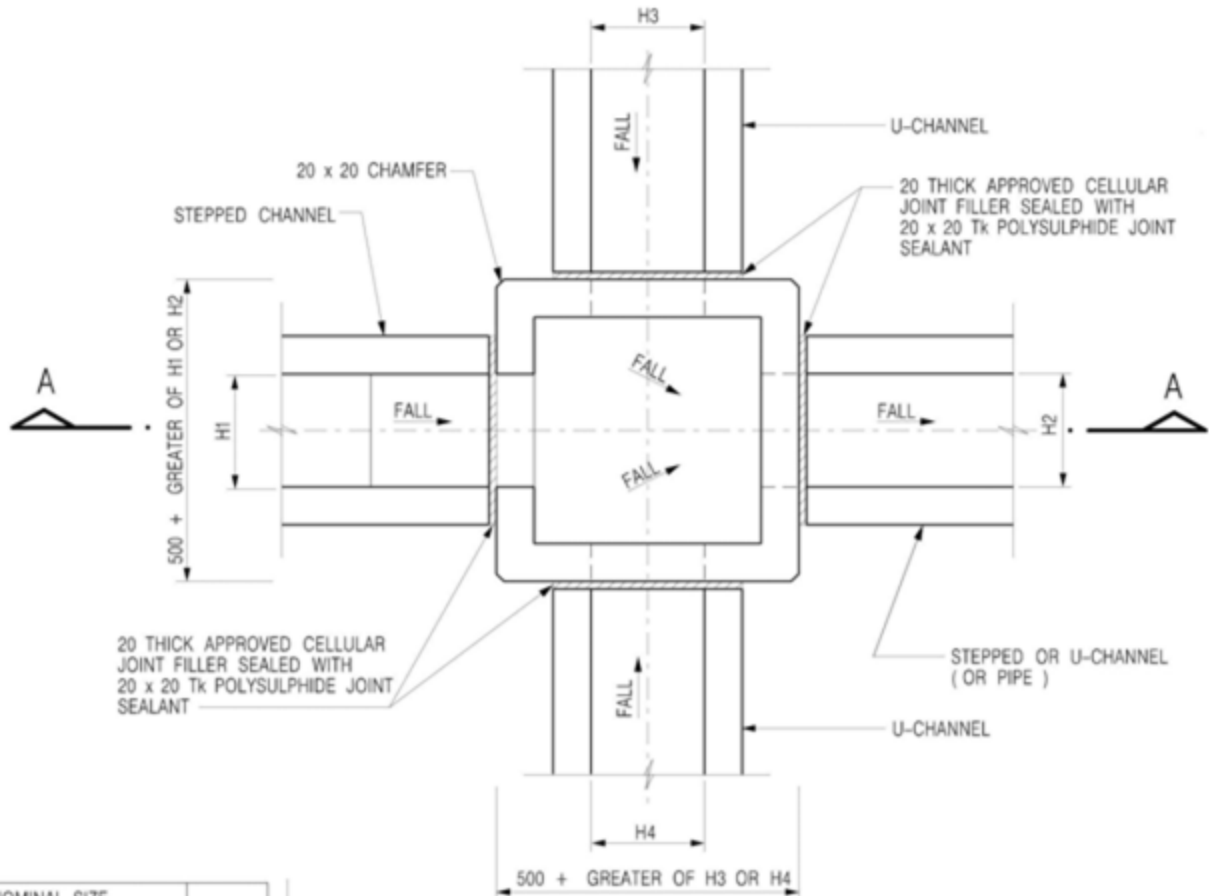


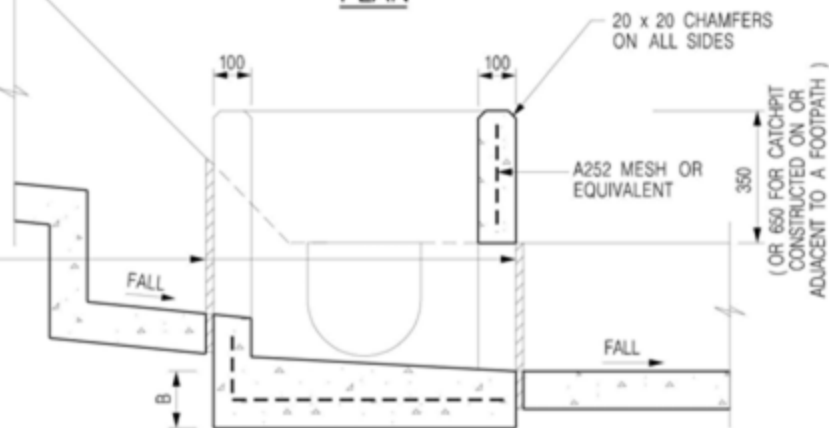
Figure 9 Intensity – Duration – Frequency Curves
(for durations not exceeding 4 hours)



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

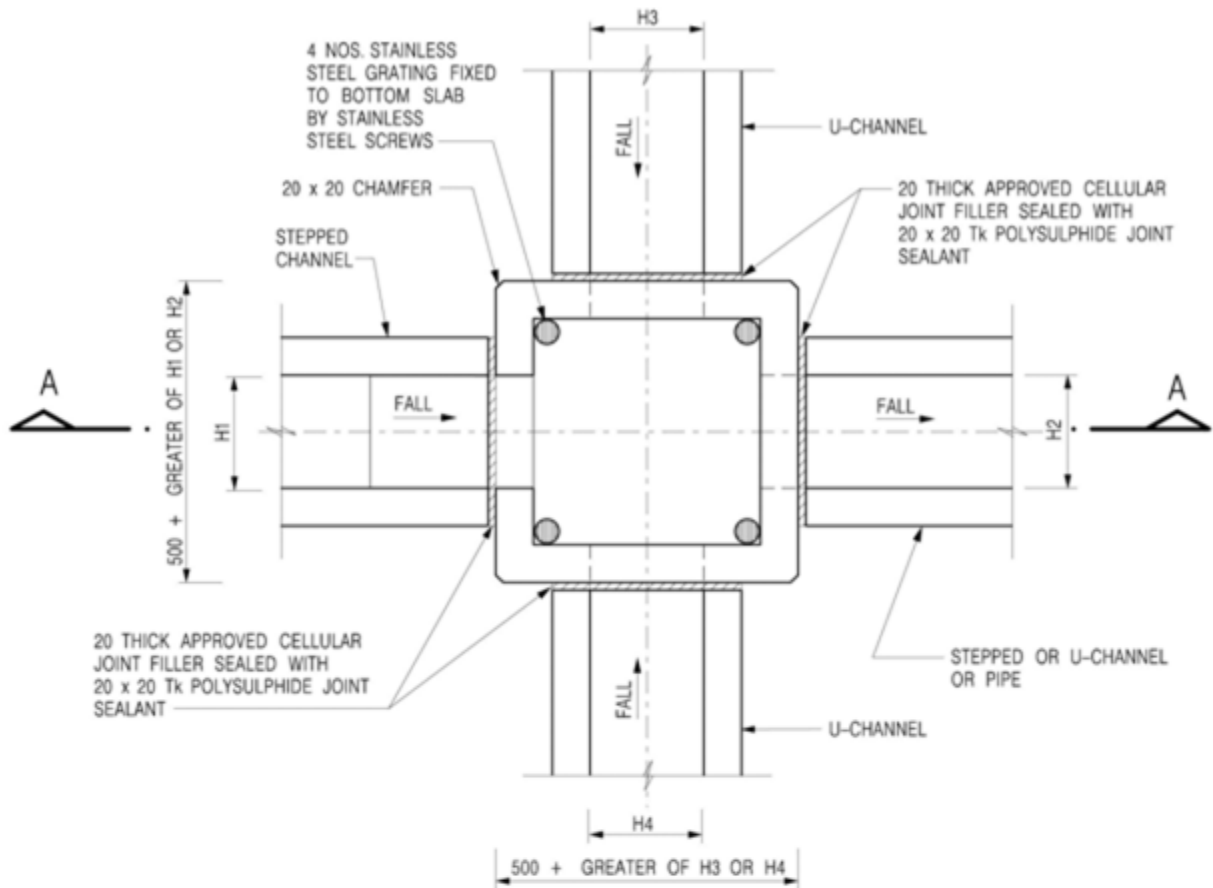
Remarks 備註:

Drawing No. 圖號:

Figure 10

Scale 比例:

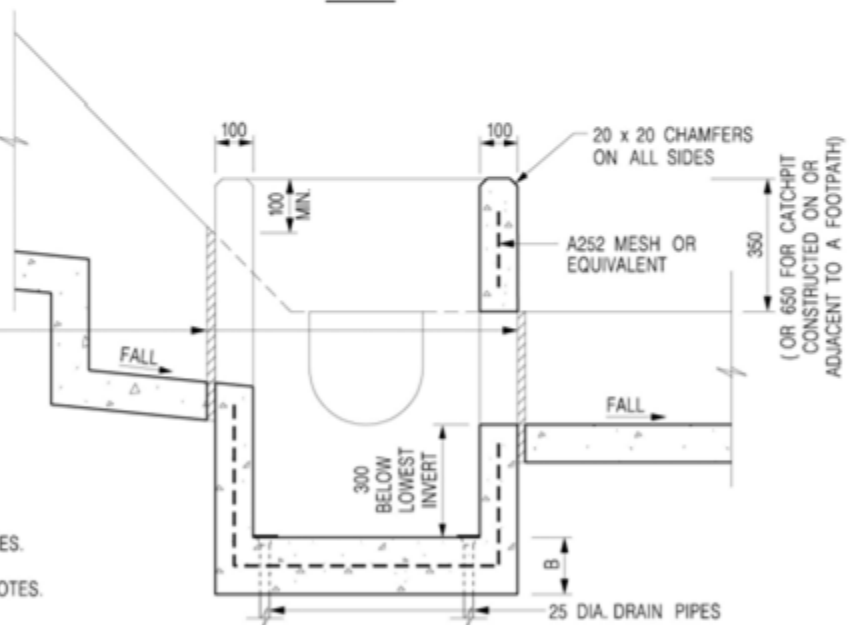
Not to scale



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

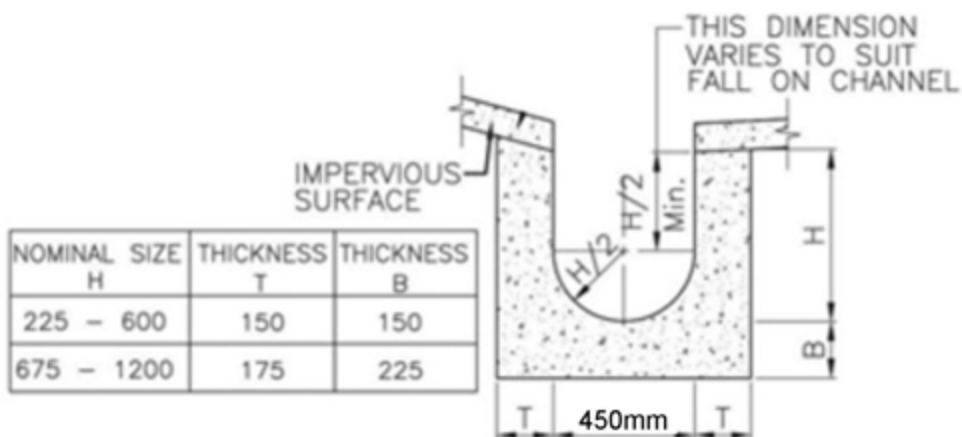
Remarks 備註:

Drawing No. 圖號:

Figure 11

Scale 比例:

Not to scale



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 12

Scale 比例:

Not to scale