

寄件者: Christian Chim [REDACTED]  
寄件日期: 2026年08月20日星期四 18:51  
收件者: tpbpd/PLAND  
副本: Jason Sek Hei WONG/PLAND; Bon Tang; Matthew Ng; Danny Ng; Grace Wong  
主旨: [FI] S.16 Planning Application No. A/YL-SK/454 - Further Information  
附件: FI4 for A\_YL-SK\_454 (20260820).pdf

郵件標幟: 待處理  
標幟狀態: 已標幟

類別: Internet Email

Dear Sir,

We write to submit further information in support of the captioned application.

Should you require more information, please do not hesitate to contact me directly at [REDACTED]. Thank you for your kind attention.

Kind Regards,

Christian CHIM | Town Planner  
R-riches Group (HK) Limited

R-riches Property Consultants Limited | R-riches Planning Limited | R-riches Construction Limited

T: [REDACTED] | F: [REDACTED] | M: [REDACTED] | E: [REDACTED]

A: [REDACTED]

Our Ref. : [REDACTED]  
Your Ref. : TPB/A/YL-SK/454

The Secretary,  
Town Planning Board,  
15/F, North Point Government Offices,  
333 Java Road,  
North Point, Hong Kong

**By E-mail**

20 August 2026

Dear Sir,

**4<sup>th</sup> Further Information (FI)**

**Proposed Temporary Shop and Services and Public Vehicle Park  
(excluding Container Vehicle) with Ancillary Facilities and Associated Filling of Land  
for a Period of 5 Years in "Village Type Development" Zone,  
Lot 354 in D.D. 112, Shui Lau Tin, Shek Kong, Yuen Long, New Territories**

**(S.16 Planning Application No. A/YL-SK/454)**

We write to submit further information in support of the captioned application.

Further to the FI submission dated 27.7.2026 for revision of the site boundary, the applicant submits a technical clarification for the review of the Drainage Services Department in respect of the revised drainage proposal enclosed in the FI submission dated 26.5.2026. Apart from updating the layout plan appended in the drainage proposal, **no changes in the assumptions and methodologies, findings and proposed mitigation measures** have been made.

Should you require more information, please contact the undersigned at [REDACTED] your convenience. Thank you for your kind attention.

Yours faithfully,

For and on behalf of  
**R-riches Planning Limited**



**Christian CHIM**  
Town Planner

cc DPO/FSYLE, PlanD

(Attn.: Mr. Jason WONG

email: jshwong@pland.gov.hk )



Technical Clarifications

**Proposed Temporary Shop and Services and Public Vehicle Park  
(excluding Container Vehicle) with Ancillary Facilities and Associated Filling of Land  
for a Period of 5 Years in “Village Type Development” Zone,  
Lot 354 (Part) in D.D. 112, Shui Lau Tin, Shek Kong, Yuen Long, New Territories**

**(S.16 Application No. A/YL-SK/454)**

- (i) The applicant provides the following information for the reference of the Chief Engineer/Mainland North, Drainage Services Department:
- with reference to the Further Information dated 27.07.2026, the applicant has revised the site boundary to facilitate the preservation of an existing footpath as per the public comments. The site area and the proposed paving area are therefore reduced from 3,763 m<sup>2</sup> to 3,467 m<sup>2</sup>, i.e. - 7.9%;
  - albeit the reduction in site area and proposed paving area, the applicant will follow the same recommendations as proposed in the drainage proposal enclosed in the Further Information dated 26.05.2026 (**enclosed**). The assumption and calculations as demonstrated in the drainage proposal shall remain unchanged;
  - given that the assumption and calculations have already taken into account a larger site area, it is considered that the drainage proposal can cater for a worse scenario; and
  - a revised layout plan illustrating the latest layout is provided at Appendix B of the drainage proposal.

Proposed Temporary Shop and Services and Public Vehicle Park (Excluding Container Vehicle) with Ancillary Facilities and Associated Filling of Land for a Period of 5 Years in “Village Type Development” Zone, Lot 354 in D.D. 112, Shui Lau Tin, Shek Kong, Yuen Long, New Territories

## Drainage Proposal

**May 2026 r1**



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# 1 Introduction

## 1.1 Background

- 1.1.1 The applicant seeks planning permission from the Town Planning Board (the Board) to use Lot 354 in D.D. 112, Shui Lau Tin, Shek Kong, Yuen Long, New Territories (the Site) for ‘Proposed Temporary Shop and Services and Public Vehicle Park (Excluding Container Vehicle) with Ancillary Facilities and Associated Filling of Land for a Period of 5 Years’.
- 1.1.2 This report aims to support the development in drainage aspect.

## 1.2 Application Site

- 1.2.1 The application site is located to the south of Shek Kong Airfield. It has an area of approx. 3,763 m<sup>2</sup>. The site location is shown in **Figure 1**.
- 1.2.2 The existing site is mostly unpaved. Existing levels are various from approximately +18.7 to +19.2 mPD. The site would be paved not more than 200 mm for site formation of the proposed structures, and the provision of parking, loading/unloading (L/UL) and circulation space.
- 1.2.3 There is an approx. 12m width rectangular nullah by the north of the site. It would eventually discharge to Kam Tin River. **Figure 2** indicates the existing drainage system of the area.

## 2 Development Proposal

### 2.1 The Proposed Development

2.1.1 The total site area is approximately 3,763 m<sup>2</sup>. The catchment plan is shown in **Figure 4**.

| Proposed Development Area (Approx.)            |       |
|------------------------------------------------|-------|
| Total Site Area (m <sup>2</sup> )              | 3,763 |
| Paved Area after Development (m <sup>2</sup> ) | 3,763 |

**Table 1 – Site Development Area**

## 3 Assessment Criteria

3.1.1 The Recommended Design Return Period based on Flood Level from SDM (Table 10) is adopted for this report. The recommendation is summarized in **Table 2** below.

| Description                                                               | Design Return Periods |
|---------------------------------------------------------------------------|-----------------------|
| Intensively Used Agricultural Land                                        | 2 – 5 Years           |
| Village Drainage Including Internal Drainage System under a polder Scheme | 10 Years              |
| Main Rural Catchment Drainage Channels                                    | 50 Years              |
| Urban Drainage Trunk System                                               | 200 Years             |
| Urban Drainage Branch System                                              | 50 Years              |

**Table 2– Design Return Periods under SDM**

3.1.2 The proposed drainage system intended to collect runoff from internal site and external catchment. 1 in 50 years return period is adopted.

3.1.3 Stormwater drainage design will be carried out in accordance with the criteria set out in the Stormwater Drainage Manual published by DSD. The proposed design criteria to be adopted for design of this stormwater drainage system and factors which have been considered are summarised below.

1. Intensity-Duration-Frequency Relationship – The Recommended Intensity-Duration-Frequency relationship is used to estimate the intensity of rainfall. It can be expressed by the following algebraic equation.

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

The site is located within the HKO Zone. Therefore, for 50 years return period, the following values are adopted.

|   |   |       |
|---|---|-------|
| a | = | 505.5 |
| b | = | 3.29  |
| c | = | 0.355 |

(Corrigendum No.1/2024)

The development is proposed for temporary use for a period of 5 years. 11.1% rainfall increase due to climate change is considered as per table 28 of corrigendum no.1/2022.

2. The peak runoff is calculated by the Rational Method  
i.e.  $Q_p = 0.278CiA$

|       |       |   |                                    |
|-------|-------|---|------------------------------------|
| where | $Q_p$ | = | peak runoff in m <sup>3</sup> /s   |
|       | C     | = | runoff coefficient (dimensionless) |
|       | i     | = | rainfall intensity in mm/hr        |
|       | A     | = | catchment area in km <sup>2</sup>  |

3. The run-off coefficient (C) of surface runoff are taken as follows:

1. Paved Area: C = 0.95
2. Unpaved Area: C = 0.35

4. Manning’s Equation is used for calculation of velocity of flow inside the channels:

$$\text{Manning's Equation: } v = \frac{R^{\frac{6}{5}}}{n} S_f^{\frac{1}{2}}$$

Where,

V = velocity of the pipe flow (m/s)

S<sub>f</sub> = hydraulic gradient

n = manning’s coefficient

R = hydraulic radius (m)

5. Colebrook-White Equation is used for calculation of velocity of flow inside the pipes:

$$\text{Colebrook-White Equation: } \frac{1}{\sqrt{f}} = -\sqrt{32gRS} \log \log \left( \frac{k_s}{14.8R} + \frac{1.255v}{R\sqrt{32gRS_f}} \right)$$

where,

|                |   |                                 |
|----------------|---|---------------------------------|
| V              | = | velocity of the pipe flow (m/s) |
| S <sub>f</sub> | = | hydraulic gradient              |
| k <sub>f</sub> | = | roughness value (m)             |
| v              | = | kinematics viscosity of fluid   |
| D              | = | pipe diameter (m)               |
| R              | = | hydraulic radius (m)            |

## 4 Proposed Drainage System

### 4.1. Proposed Channels

- 4.1.1 Proposed channels are designed for collection of runoff for application site. It is proposed to discharge to existing approx. 12m width rectangular nullah at the north. According to the checking of existing drains in **Appendix A**, they have enough capacity to carry the flow proposed development.
- 4.1.2 The design calculations of proposed drains are shown in **Appendix A**. Checking of utilization of existing approx. 12m width trapezoidal channel is also indicated in **Appendix A**. It is shown that the utilization is only about 0.07%.
- 4.1.3 The alignment, size, gradient and details of the proposed drains are shown in **Figure 3**. The catchment plan is shown in **Figure 4**.
- 4.1.5 Reference Drawings are shown in **Appendix C** for reference.

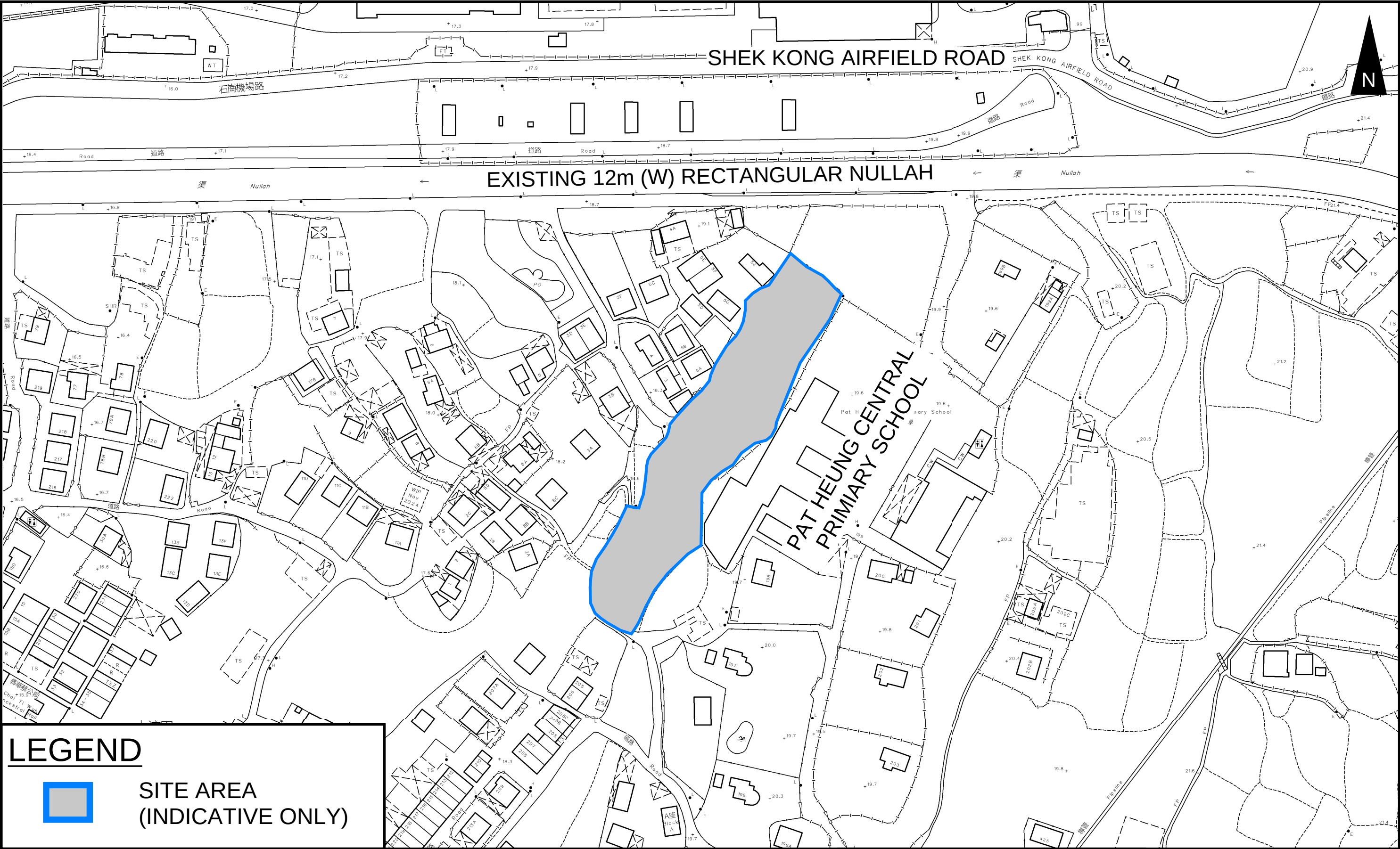
## 5 Conclusion

- 5.1.1 Drainage review has been conducted for the Proposed Development. The surface runoff will be collected by the proposed drains and discharged to existing 12m width nullah.
- 5.1.2 With implementation of the above drainage system, no unacceptable drainage impact is anticipated.

- End of Text -

# FIGURES

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|                                                                                                                                                                                                                                   |                                    |                                  |             |      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------------------|-------------|------|
| <b>PROJECT:</b><br>Proposed Temporary Shop and Services and Public Vehicle Park (Excluding Container Vehicle) with Ancillary Facilities and Associated Filling of Land for a Period of 5 Years in “Village Type Development” Zone | <b>TITLE</b><br>SITE LOCATION PLAN | <b>FIGURE NUMBER</b><br>FIGURE 1 |             |      |
|                                                                                                                                                                                                                                   |                                    | VER                              | DESCRIPTION | DATE |

LEGEND

SITE AREA  
(INDICATIVE ONLY)

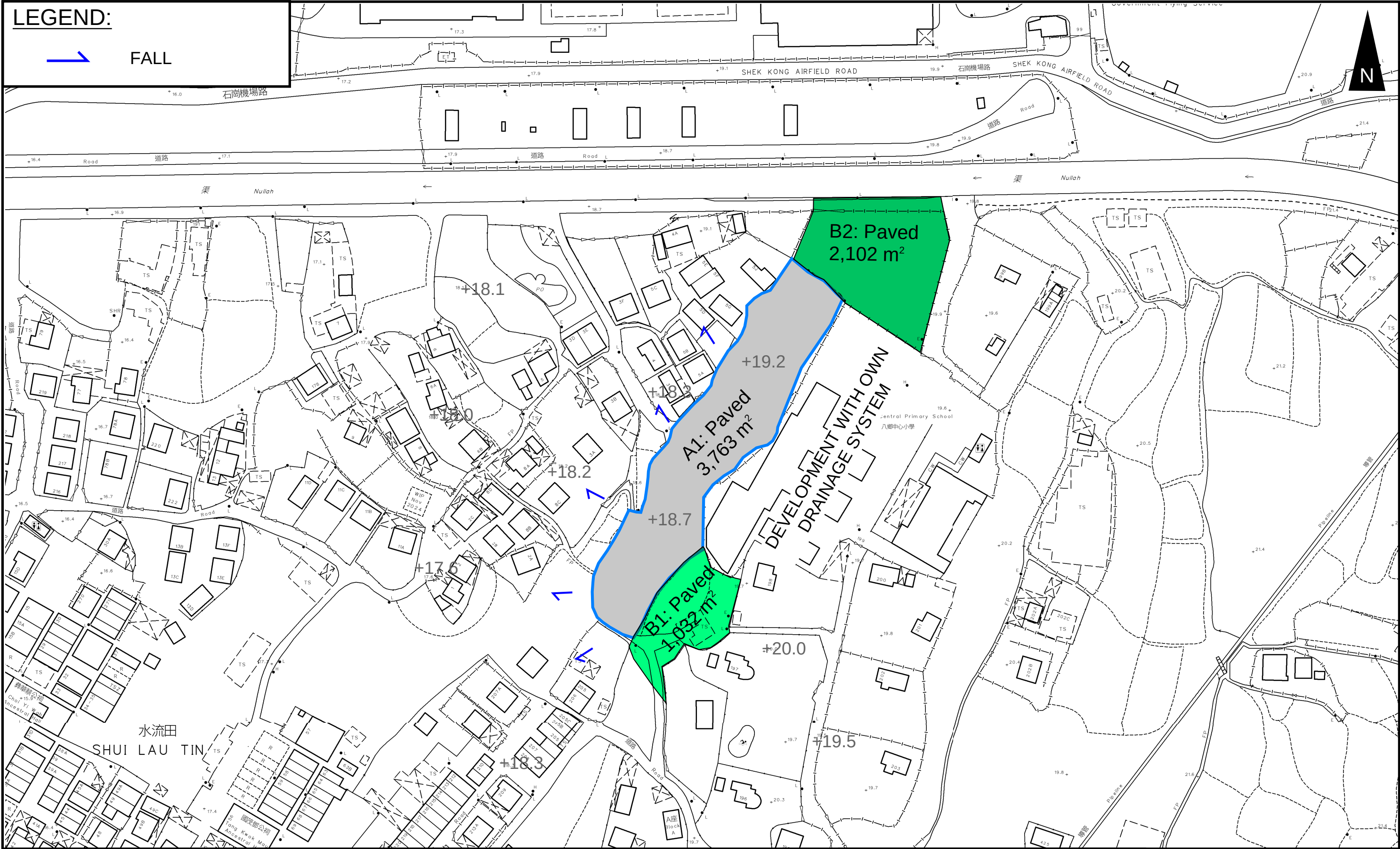


|                                                                                                                                                                                                                            |                                 |                           |             |      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|---------------------------|-------------|------|
| PROJECT:<br>Proposed Temporary Shop and Services and Public Vehicle Park (Excluding Container Vehicle) with Ancillary Facilities and Associated Filling of Land for a Period of 5 Years in “Village Type Development” Zone | TITLE<br>EXISTING DRAINAGE PLAN | FIGURE NUMBER<br>FIGURE 2 |             |      |
|                                                                                                                                                                                                                            |                                 |                           |             |      |
| LOCATION:<br>Lot 354 in D.D. 112, Shui Lau Tin, Shek Kong, Yuen Long, New Territories                                                                                                                                      |                                 |                           |             |      |
|                                                                                                                                                                                                                            |                                 | VER                       | DESCRIPTION | DATE |



LEGEND:

 FALL



PROJECT:

Proposed Temporary Shop and Services and Public Vehicle Park (Excluding Container Vehicle) with Ancillary Facilities and Associated Filling of Land for a Period of 5 Years in “Village Type Development” Zone

TITLE  
CATCHMENT PLAN

FIGURE NUMBER  
FIGURE 4

LOCATION:

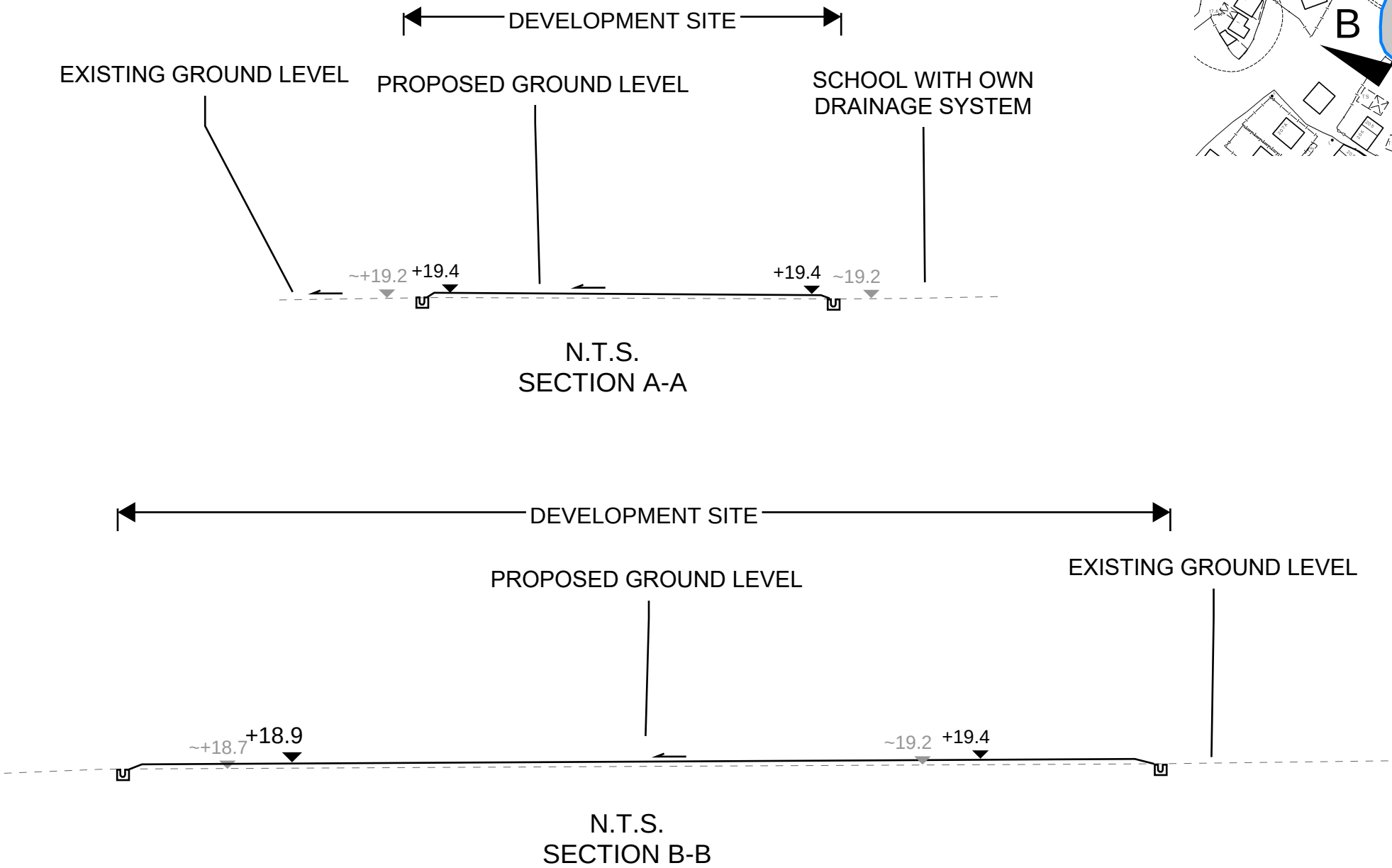
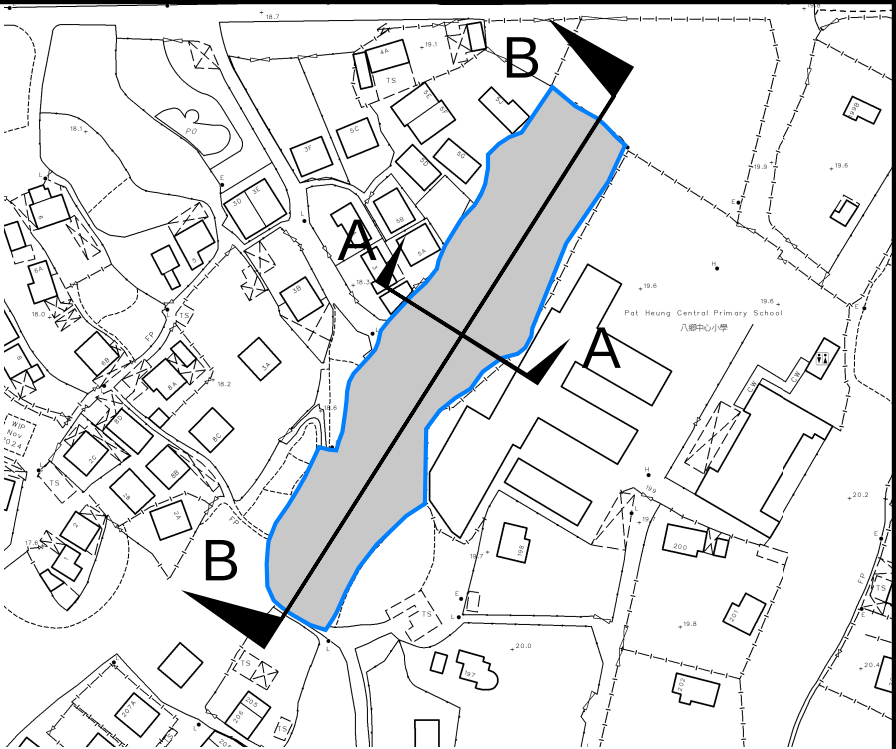
Lot 354 in D.D. 112, Shui Lau Tin, Shek Kong, Yuen Long, New Territories

| VER | DESCRIPTION | DATE |
|-----|-------------|------|
|-----|-------------|------|

LEGEND



SITE AREA  
(INDICATIVE ONLY)



PROJECT:

Proposed Temporary Shop and Services and Public Vehicle Park (Excluding Container Vehicle) with Ancillary Facilities and Associated Filling of Land for a Period of 5 Years in “Village Type Development” Zone

TITLE  
SECTIONS

FIGURE NUMBER  
FIGURE 5

LOCATION:

Lot 354 in D.D. 112, Shui Lau Tin, Shek Kong, Yuen Long, New Territories

| VER | DESCRIPTION | DATE |
|-----|-------------|------|
|-----|-------------|------|

# APPENDIX

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|      |               |      |    |       |           |          |                   |       |       |
|------|---------------|------|----|-------|-----------|----------|-------------------|-------|-------|
| Zone |               |      |    |       | n         | 0.014    | Storm<br>Constant | HKO a | 505.5 |
| HKO  | Return Period | 1 in | 50 | years | Ks        | 0.15     |                   | HKO b | 3.29  |
|      |               |      |    |       | Viscosity | 0.000001 |                   | HKO c | 0.355 |

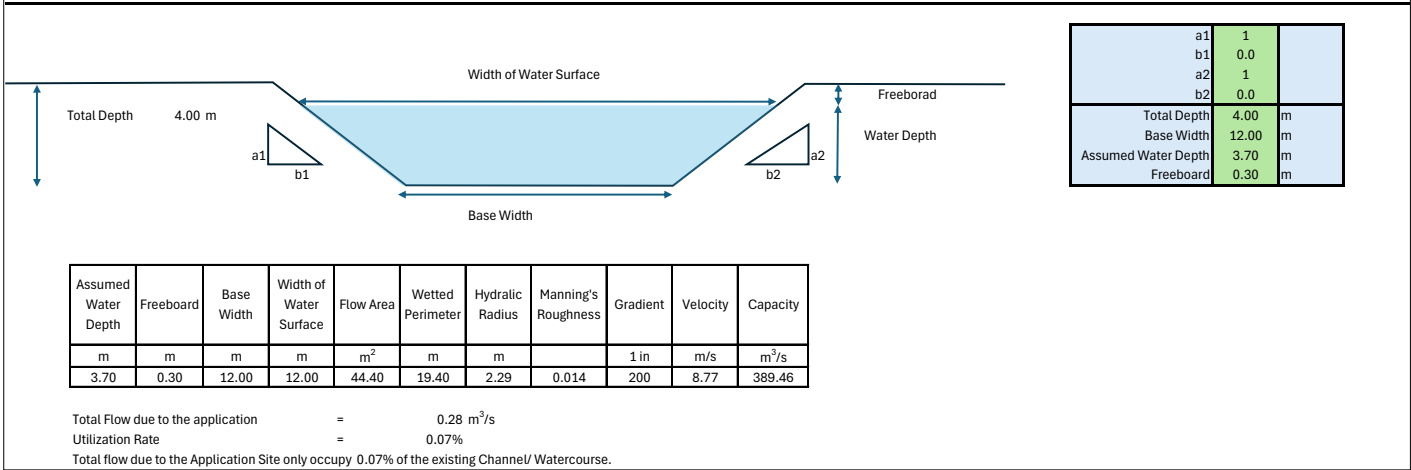
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|                    |            |         |
|--------------------|------------|---------|
| Pavement Type      | Hard Paved | Unpaved |
| Runoff Coefficient | 0.95       | 0.35    |

| US MH/PIT | DS MH/PIT                  | US GL | DS GL | Size<br>mm | Gradient<br>1 in | Type | US IL | DS IL | U/S MH/PIT<br>TYPE* | Length<br>m | V<br>m/s | Capacity<br>m³/s | Catchments | Total Equivalent Area<br>m² | ToC<br>min | Intensity<br>mm/hr ** | Total<br>Discharge<br>m³/s | Utilizatio<br>n | Remark |
|-----------|----------------------------|-------|-------|------------|------------------|------|-------|-------|---------------------|-------------|----------|------------------|------------|-----------------------------|------------|-----------------------|----------------------------|-----------------|--------|
| SP01      | CP1.00a                    | 18.70 | 18.70 | 600        | 200              | UC   | 18.10 | 18.04 | SP                  | 12.6        | 1.78     | 0.57             | A1         | 3574.85                     | 2.30       | 305                   | 0.30                       | 53.1%           |        |
| CP1.00a   | CP1.00                     | 18.70 | 18.70 | 600        | 200              | UC   | 18.04 | 17.96 | CP                  | 14.8        | 1.78     | 0.57             | A1         | 3574.85                     | 2.42       | 303                   | 0.30                       | 52.7%           |        |
| CP1.00    | CP1.01                     | 18.70 | 18.70 | 600        | 200              | UC   | 17.96 | 17.83 | CP                  | 26.3        | 1.78     | 0.57             | A1         | 3574.85                     | 2.56       | 300                   | 0.30                       | 52.3%           |        |
| CP1.01    | CP1.02                     | 18.70 | 18.70 | 600        | 200              | UC   | 17.83 | 17.81 | CP                  | 4.9         | 1.78     | 0.57             | A1         | 3574.85                     | 2.80       | 296                   | 0.29                       | 51.5%           |        |
| CP1.02    | CP1.02a                    | 18.70 | 19.20 | 600        | 200              | UC   | 17.81 | 17.66 | CP                  | 29.4        | 1.78     | 0.57             | A1         | 3574.85                     | 2.85       | 295                   | 0.29                       | 51.4%           |        |
| CP1.02a   | CP1.03                     | 19.20 | 19.20 | 600        | 150              | UC   | 17.66 | 17.27 | CP                  | 58.3        | 2.05     | 0.66             | A1         | 3574.85                     | 3.13       | 290                   | 0.29                       | 43.8%           |        |
| CP1.03    | CP1.04                     | 19.20 | 19.20 | 600        | 150              | UC   | 17.27 | 17.12 | CP                  | 22.8        | 2.05     | 0.66             | A1         | 3574.85                     | 3.60       | 283                   | 0.28                       | 42.7%           |        |
| CP1.04    | CP1.05                     | 19.20 | 19.20 | 675        | 100              | UC   | 17.12 | 16.95 | CP                  | 17.2        | 2.72     | 1.10             | A1,B1,B2   | 6552.15                     | 3.91       | 279                   | 0.51                       | 46.0%           |        |
| CP1.05    | Exsiting 12m (W)<br>Nullah | 19.20 | 19.20 | 675        | 110              | PIPE | 16.95 | 16.88 | CP                  | 7.5         | 2.88     | 1.03             | A1,B1,B2   | 6552.15                     | 4.02       | 277                   | 0.50                       | 49.0%           |        |
| SP02      | CP2.01                     | 18.70 | 18.70 | 600        | 200              | UC   | 18.10 | 17.90 | SP                  | 40.4        | 1.78     | 0.57             | A1,B1      | 4555.25                     | 2.30       | 305                   | 0.39                       | 67.7%           |        |
| CP2.01    | CP2.02                     | 18.70 | 18.70 | 600        | 200              | UC   | 17.90 | 17.80 | CP                  | 18.9        | 1.78     | 0.57             | A1,B1      | 4555.25                     | 2.68       | 298                   | 0.38                       | 66.1%           |        |
| CP2.02    | CP2.02a                    | 18.70 | 19.20 | 600        | 200              | UC   | 17.80 | 17.62 | CP                  | 36.3        | 1.78     | 0.57             | A1,B1      | 4555.25                     | 2.86       | 295                   | 0.37                       | 65.4%           |        |
| CP2.02a   | CP2.03                     | 19.20 | 19.20 | 600        | 200              | UC   | 17.62 | 17.35 | CP                  | 54          | 1.78     | 0.57             | A1,B1      | 4555.25                     | 3.20       | 289                   | 0.37                       | 64.2%           |        |
| CP2.03    | CP1.04                     | 19.20 | 19.20 | 600        | 200              | UC   | 17.35 | 17.24 | CP                  | 22.1        | 1.78     | 0.57             | A1,B1      | 4555.25                     | 3.70       | 282                   | 0.36                       | 62.5%           |        |

## : With 11.1% rainfall increase as per Table 28 of SDM Corrigendum No. 1/2022.

| Catchment | Flow Distance | Highest Level | Lowest Level | Gradient (per 100m)<br>= (H1-H2)/L x 100 | to (min) =<br>0.14465L / (H <sup>0.2</sup> A <sup>0.1</sup> ) | tc =<br>to + tf |
|-----------|---------------|---------------|--------------|------------------------------------------|---------------------------------------------------------------|-----------------|
| A         | L             | H1            | H2           |                                          |                                                               |                 |
| (m2)      | (m)           | (mPD)         | (mPD)        |                                          | (min)                                                         | (min)           |
| 1032      | 26.2          | 19            | 18.9         | 0.382                                    | 2.3                                                           | 2.3             |



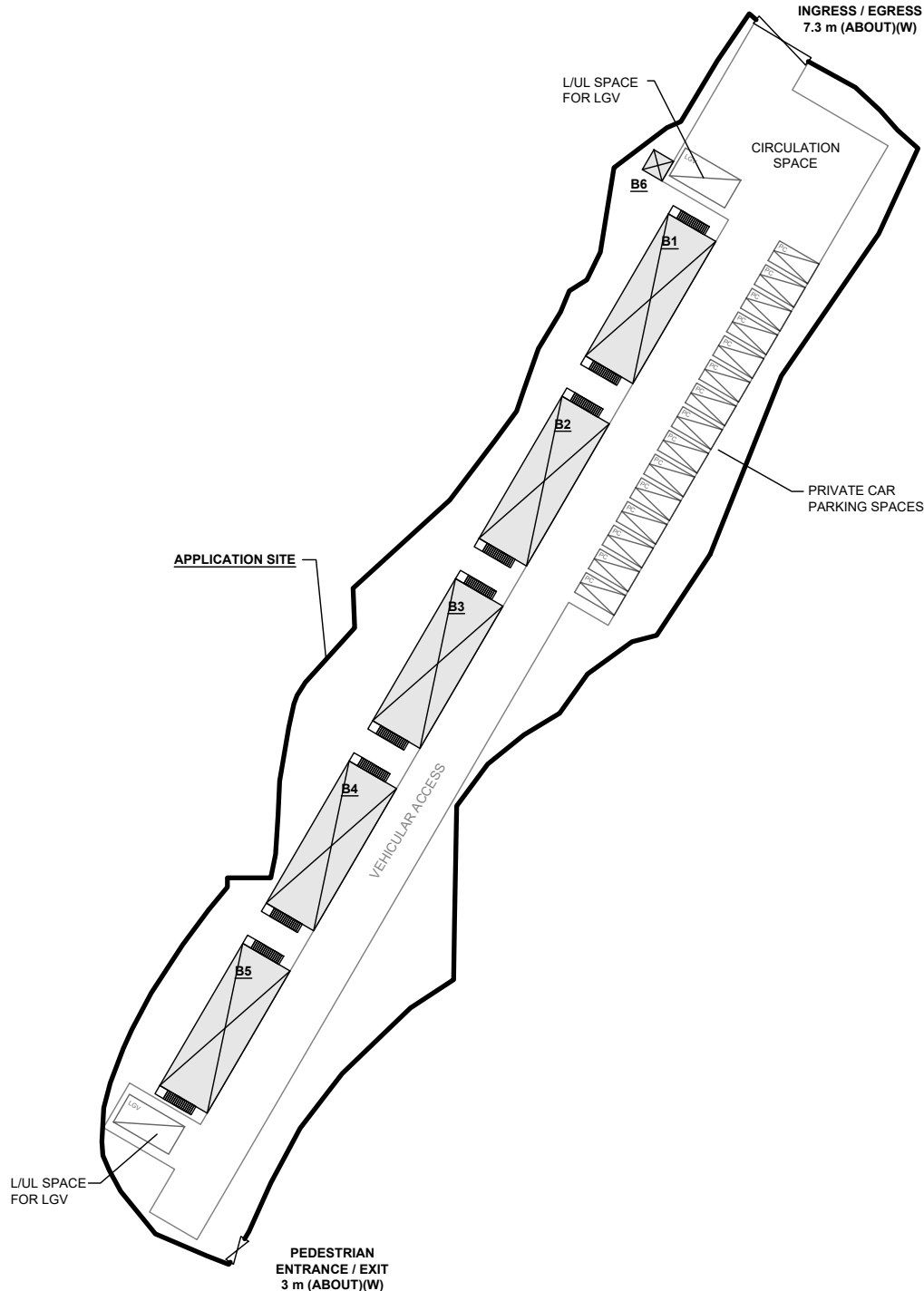
# APPENDIX B - PROPOSED SITE LAYOUT PLAN

## DEVELOPMENT PARAMETERS

|                       |                        |         |
|-----------------------|------------------------|---------|
| APPLICATION SITE AREA | : 3,467 m <sup>2</sup> | (ABOUT) |
| COVERED AREA          | : 597 m <sup>2</sup>   | (ABOUT) |
| UNCOVERED AREA        | : 2,870 m <sup>2</sup> | (ABOUT) |
| PLOT RATIO            | : 0.3                  | (ABOUT) |
| SITE COVERAGE         | : 17 %                 | (ABOUT) |
| NO. OF STRUCTURE      | : 6                    |         |
| DOMESTIC GFA          | : NOT APPLICABLE       |         |
| NON-DOMESTIC GFA      | : 1,137 m <sup>2</sup> | (ABOUT) |
| TOTAL GFA             | : 1,137 m <sup>2</sup> | (ABOUT) |
| BUILDING HEIGHT       | : 3 m - 8 m            | (ABOUT) |
| NO. OF STOREY         | : 1 - 2                |         |

| STRUCTURE | USE                      | COVERED AREA                | GROSS FLOOR AREA                        | BUILDING HEIGHT       |
|-----------|--------------------------|-----------------------------|-----------------------------------------|-----------------------|
| B1        | S&S, OFFICE AND WASHROOM | 118 m <sup>2</sup> (ABOUT)* | 226 m <sup>2</sup> (ABOUT) <sup>#</sup> | 8 m (ABOUT)(2-STOREY) |
| B2        | S&S, OFFICE AND WASHROOM | 118 m <sup>2</sup> (ABOUT)* | 226 m <sup>2</sup> (ABOUT) <sup>#</sup> | 8 m (ABOUT)(2-STOREY) |
| B3        | S&S, OFFICE AND WASHROOM | 118 m <sup>2</sup> (ABOUT)* | 226 m <sup>2</sup> (ABOUT) <sup>#</sup> | 8 m (ABOUT)(2-STOREY) |
| B4        | S&S, OFFICE AND WASHROOM | 118 m <sup>2</sup> (ABOUT)* | 226 m <sup>2</sup> (ABOUT) <sup>#</sup> | 8 m (ABOUT)(2-STOREY) |
| B5        | S&S, OFFICE AND WASHROOM | 118 m <sup>2</sup> (ABOUT)* | 226 m <sup>2</sup> (ABOUT) <sup>#</sup> | 8 m (ABOUT)(2-STOREY) |
| B6        | METER ROOM               | 7 m <sup>2</sup> (ABOUT)    | 7 m <sup>2</sup> (ABOUT) <sup>#</sup>   | 3 m (ABOUT)(1-STOREY) |
| TOTAL     |                          | 597 m <sup>2</sup> (ABOUT)  | 1,137 m <sup>2</sup> (ABOUT)            |                       |

\* COVERED AREA OF STRUCTURE: 108 m<sup>2</sup> (ENCLOSED) + 10 m<sup>2</sup> (STAIRCASES) = 118 m<sup>2</sup> (ABOUT)  
 # GFA OF STRUCTURE: 108 m<sup>2</sup> (G/F) + 108 m<sup>2</sup> (1/F) + 10 m<sup>2</sup> (STAIRCASES) = 226 m<sup>2</sup> (ABOUT)  
 S&S SHOP AND SERVICES



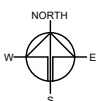
## PARKING PROVISIONS

|                                           |                       |
|-------------------------------------------|-----------------------|
| NO. OF PRIVATE CAR PARKING SPACE          | : 15                  |
| DIMENSION OF PARKING SPACE                | : 5 m (L) X 2.5 m (W) |
| NO. OF L/UL SPACE FOR LIGHT GOODS VEHICLE | : 2                   |
| DIMENSION OF PARKING SPACE                | : 7 m (L) X 3.5 m (W) |

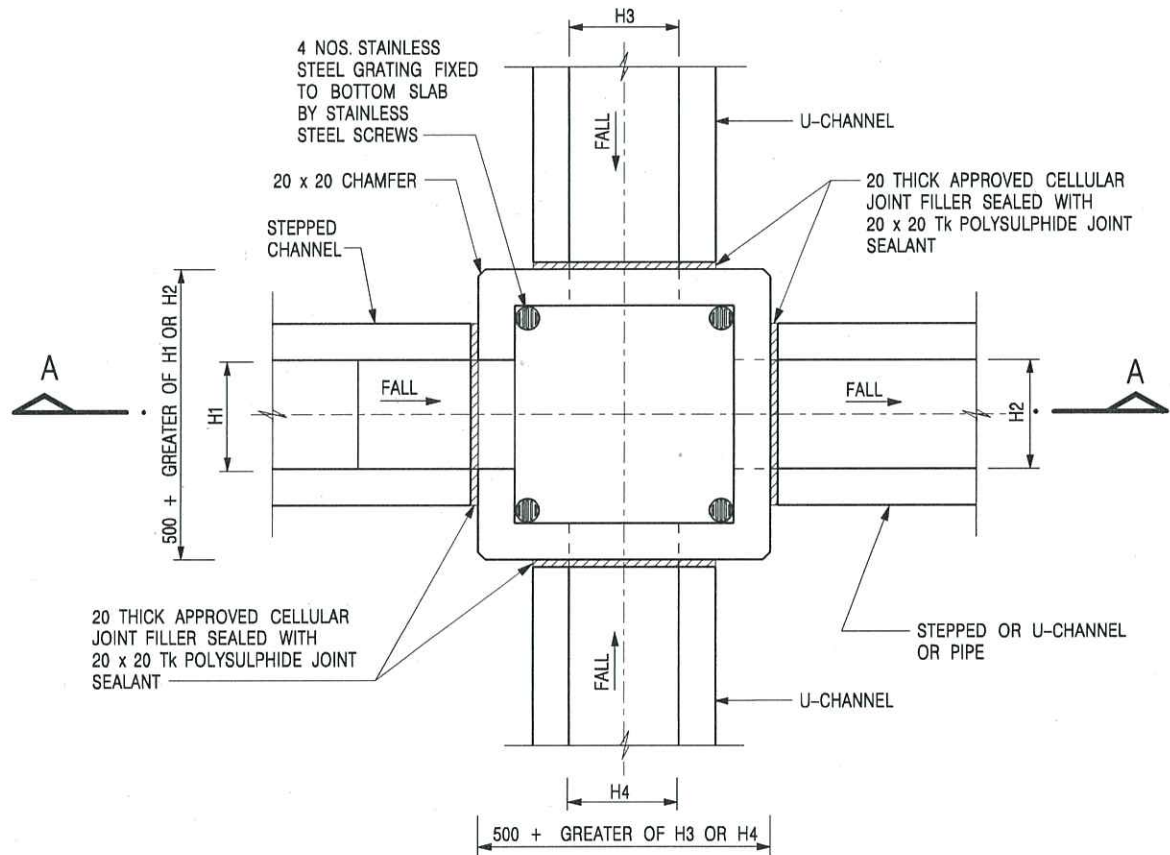
## LEGEND

|  |                    |
|--|--------------------|
|  | APPLICATION SITE   |
|  | STRUCTURE          |
|  | PARKING SPACE (PC) |
|  | L/UL SPACE (LGV)   |
|  | INGRESS / EGRESS   |

|                                |                                                                                                                                                                                               |                                                                                                   |                              |                         |                             |                    |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------|-------------------------|-----------------------------|--------------------|
| <b>PLANNING CONSULTANT</b><br> | <b>PROJECT</b><br>PROPOSED TEMPORARY SHOP AND SERVICES AND PUBLIC VEHICLE PARK (EXCLUDING CONTAINER VEHICLE) WITH ANCILLARY FACILITIES AND ASSOCIATED FILLING OF LAND FOR A PERIOD OF 5 YEARS | <b>ADDRESS</b><br>LOT 354 (PART) IN D.D. 112, SHUI LAU TIN, SHEK KONG, YUEN LONG, NEW TERRITORIES | <b>SCALE</b><br>1 : 750 @ A4 |                         | <b>TITLE</b><br>LAYOUT PLAN |                    |
|                                |                                                                                                                                                                                               |                                                                                                   | <b>DRAWN BY</b><br>MN        | <b>DATE</b><br>9.7.2026 | <b>DWG NO.</b><br>PLAN 4    | <b>VER.</b><br>002 |

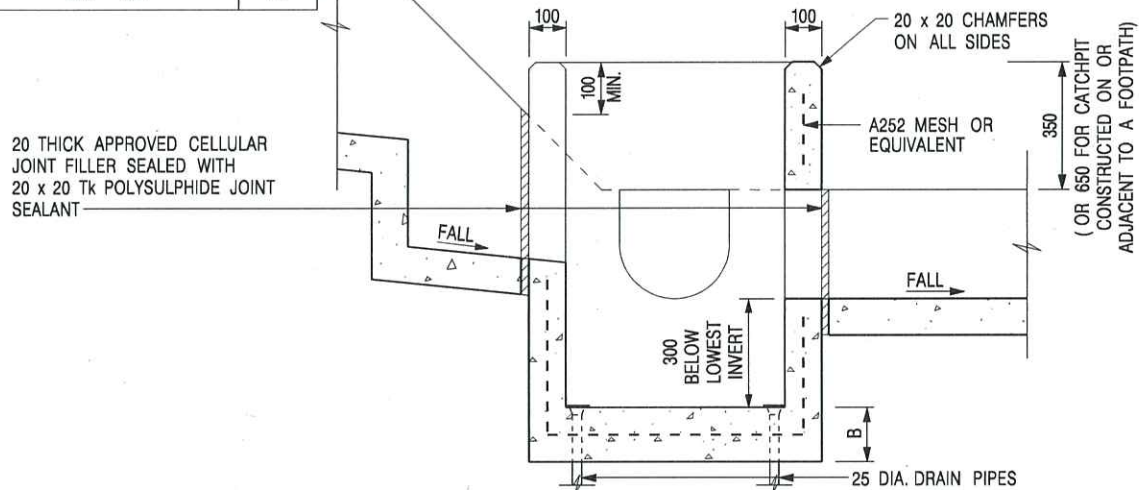


# Appendix C - Reference Drawings



PLAN

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



SECTION A - A

**NOTES:**

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

CATCHPIT WITH TRAP  
(SHEET 1 OF 2)

|      |                         |                 |         |
|------|-------------------------|-----------------|---------|
| -    | FORMER DRG. NO. C2406J. | Original Signed | 03.2015 |
| REF. | REVISION                | SIGNATURE       | DATE    |



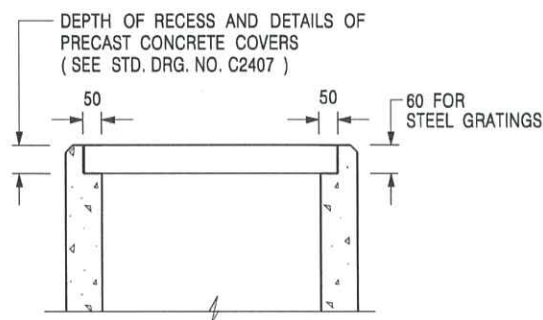
**CIVIL ENGINEERING AND  
DEVELOPMENT DEPARTMENT**

**SCALE** 1 : 20

**DRAWING NO.**

**DATE** JAN 1991

**C2406 /1**



### ALTERNATIVE TOP SECTION FOR PRECAST CONCRETE COVERS / GRATINGS

#### NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL CONCRETE SHALL BE GRADE 20 / 20.
3. CONCRETE SURFACE FINISH SHALL BE CLASS U2 OR F2 AS APPROPRIATE.
4. FOR DETAILS OF JOINT, REFER TO STD. DRG. NO. C2413.
5. CONCRETE TO BE COLOURED AS SPECIFIED.
6. UNLESS REQUESTED BY THE MAINTENANCE PARTY AND AS DIRECTED BY THE ENGINEER, CATCHPIT WITH TRAP IS NORMALLY NOT PREFERRED DUE TO PONDING PROBLEM.
7. UPON THE REQUEST FROM MAINTENANCE PARTY, DRAIN PIPES AT CATCHPIT BASE CAN BE USED BUT THIS IS FOR CATCHPITS LOCATED AT SLOPE TOE ONLY AND AS DIRECTED BY THE ENGINEER.
8. FOR CATCHPITS CONSTRUCTED ON OR ADJACENT TO A FOOTPATH, STEEL GRATINGS (SEE DETAIL 'A' ON STD. DRG. NO. C2405 / 2 ) OR CONCRETE COVERS (SEE STD. DRG. NO. C2407 ) SHALL BE PROVIDED AS DIRECTED BY THE ENGINEER.
9. IF INSTRUCTED BY THE ENGINEER, HANDRAILING (SEE DETAIL 'J' ON STD. DRG. NO. C2405 / 5; EXCEPT ON THE UPSLOPE SIDE ) IN LIEU OF STEEL GRATINGS OR CONCRETE COVERS CAN BE ACCEPTED AS AN ALTERNATIVE SAFETY MEASURE FOR CATCHPITS NOT ON A FOOTPATH NOR ADJACENT TO IT. TOP OF THE HANDRAILING SHALL BE 1 000 mm MIN. MEASURED FROM THE ADJACENT GROUND LEVEL.
10. MINIMUM INTERNAL CATCHPIT WIDTH SHALL BE 1 000 mm FOR CATCHPITS WITH A HEIGHT EXCEEDING 1 000 mm MEASURED FROM THE INVERT LEVEL TO THE ADJACENT GROUND LEVEL. AND, STEP IRONS (SEE DSD STD. DRG. NO. DS1043 ) AT 300 c/c STAGGERED SHALL BE PROVIDED. THICKNESS OF CATCHPIT WALL FOR INSTALLATION OF STEP IRONS SHALL BE INCREASED TO 150 mm.
11. FOR RETROFITTING AN EXISTING CATCHPIT WITH STEEL GRATING, SEE DETAIL 'G' ON STD. DRG. NO. C2405 / 4.
12. SUBJECT TO THE APPROVAL OF THE ENGINEER, OTHER MATERIALS CAN ALSO BE USED AS COVERS / GRATINGS.

|      |                         |                 |         |
|------|-------------------------|-----------------|---------|
| A    | MINOR AMENDMENT.        | Original Signed | 04.2016 |
| -    | FORMER DRG. NO. C2406J. | Original Signed | 03.2015 |
| REF. | REVISION                | SIGNATURE       | DATE    |

**CATCHPIT WITH TRAP**  
**(SHEET 2 OF 2)**



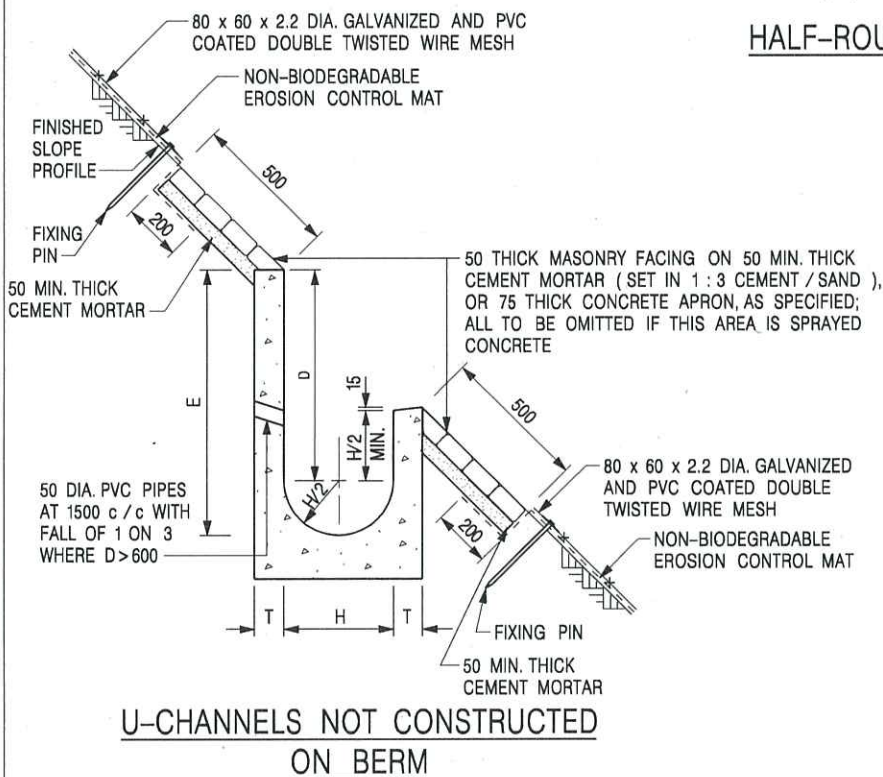
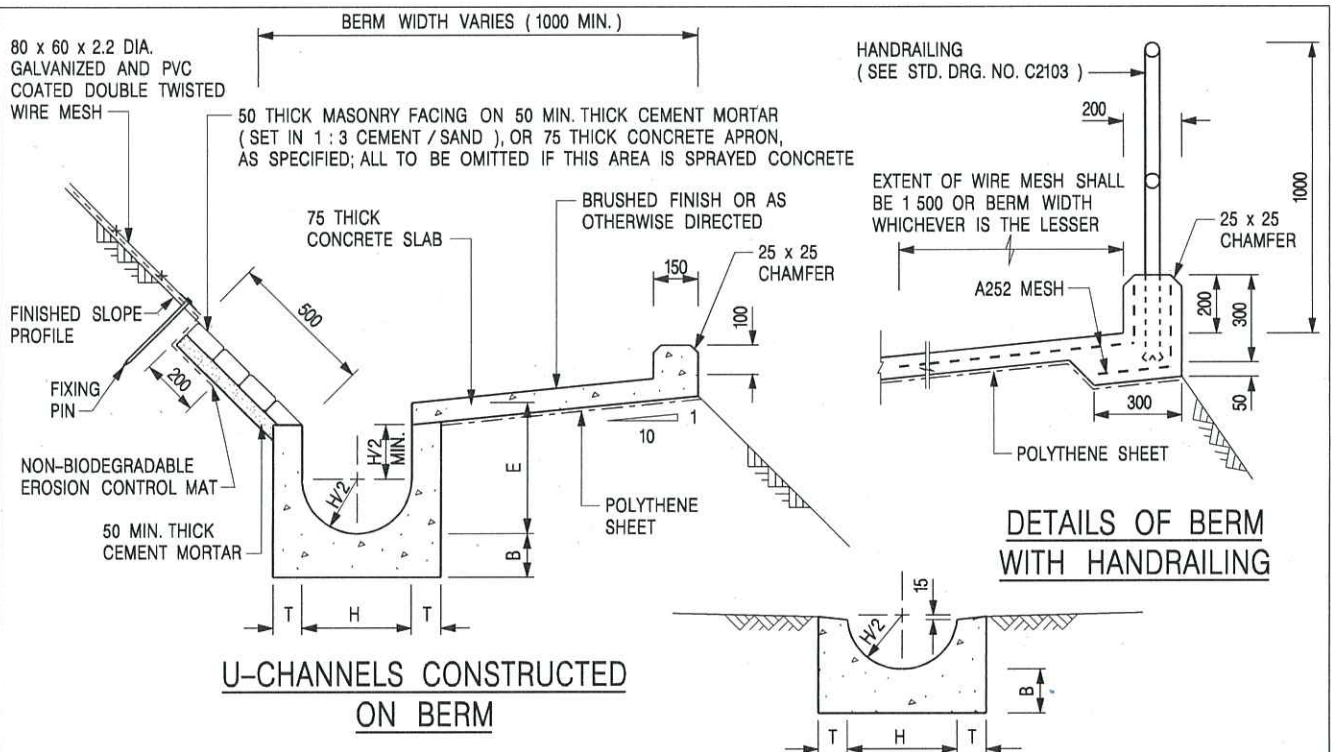
**CIVIL ENGINEERING AND  
DEVELOPMENT DEPARTMENT**

**SCALE** 1 : 20

**DRAWING NO.**

**DATE** JAN 1991

**C2406 / 2A**



#### NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL CONCRETE TO BE GRADE 20 / 20.
3. CONCRETE SURFACE FINISH SHALL BE CLASS U2, F2 OR BRUSHED FINISH AS DIRECTED.
4. SPACING OF EXPANSION JOINT IN CHANNELS, BERM SLABS AND APRONS TO BE 10 METRES MAXIMUM, SEE STD. DRG. NO. C2413 FOR DETAILS.
5. JOINTS FOR CHANNELS, BERM SLABS, APRONS AND WALLS, ETC. TO BE ON THE SAME ALIGNMENT.
6. FOR DIMENSIONS T, H, & B, SEE TABLE BELOW.
7. BIODEGRADABLE EROSION CONTROL MAT IF REQUIRED, SEE STD. DRG. NO. C2511/E.
8. CONCRETE TO BE COLOURED AS SPECIFIED.
9. CONCRETE U-CHANNEL CAN BE CAST IN-SITU OR PRECAST CONCRETE SUBJECT TO THE ENGINEER'S AGREEMENT ON THE DETAILS.
10. DETAILS OF EROSION CONTROL MAT AND WESH MESH ON BERM. (SEE STD DRG. NO. C2511/E)

| NOMINAL SIZE<br>H | T   | B   | REINFORCEMENT                                     |
|-------------------|-----|-----|---------------------------------------------------|
| 300               | 80  | 100 | A252 MESH PLACED CENTRALLY AND T=100 WHEN E > 650 |
| 375 - 600         | 100 | 150 |                                                   |
| 675 - 900         | 125 | 175 | A252 MESH PLACED CENTRALLY                        |

| I    | MINOR AMENDMENT.                     | Original Signed | 07.2018 |
|------|--------------------------------------|-----------------|---------|
| H    | THICKNESS OF MASONRY FACING AMENDED. | Original Signed | 01.2005 |
| G    | MINOR AMENDMENT.                     | Original Signed | 01.2004 |
| F    | GENERAL REVISION.                    | Original Signed | 12.2002 |
| E    | DRAWING TITLE AMENDED.               | Original Signed | 11.2001 |
| D    | MINOR AMENDMENT.                     | Original Signed | 08.2001 |
| C    | 150 x 100 UPSTAND ADDED AT BERM.     | Original Signed | 6.99    |
| B    | MINOR AMENDMENTS.                    | Original Signed | 3.94    |
| REF. | REVISION                             | SIGNATURE       | DATE    |

DETAILS OF HALF-ROUND AND U-CHANNELS (TYPE A - WITH MASONRY APRON)



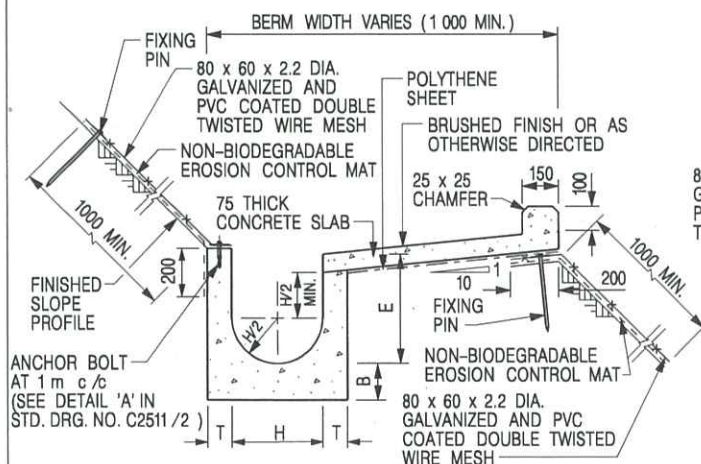
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

SCALE 1 : 25

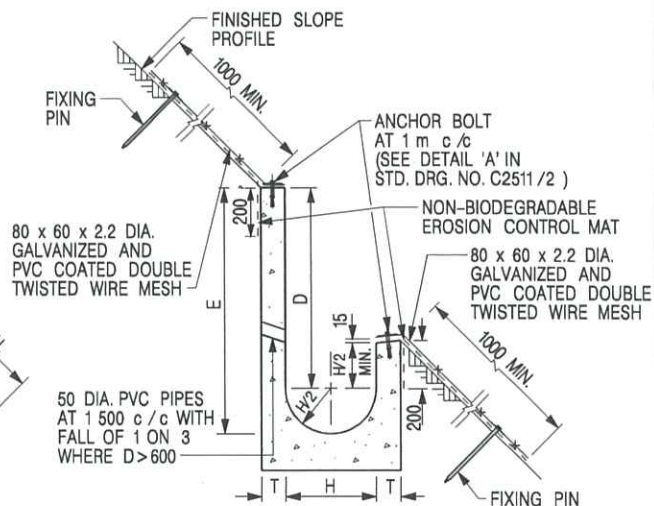
DRAWING NO.

DATE JAN 1991

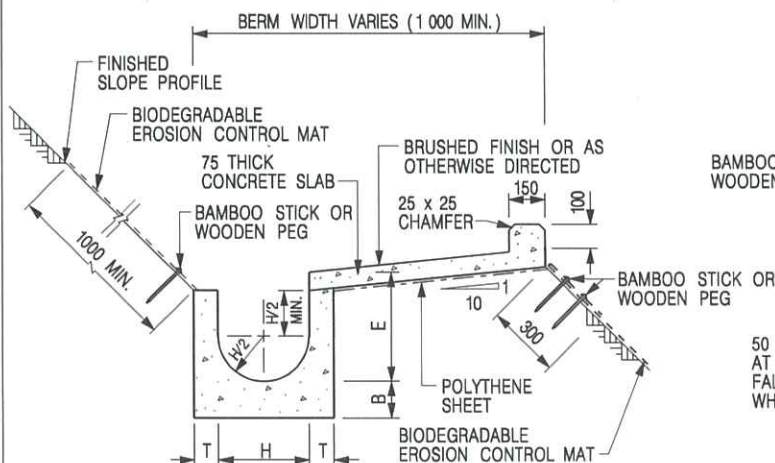
C2409I



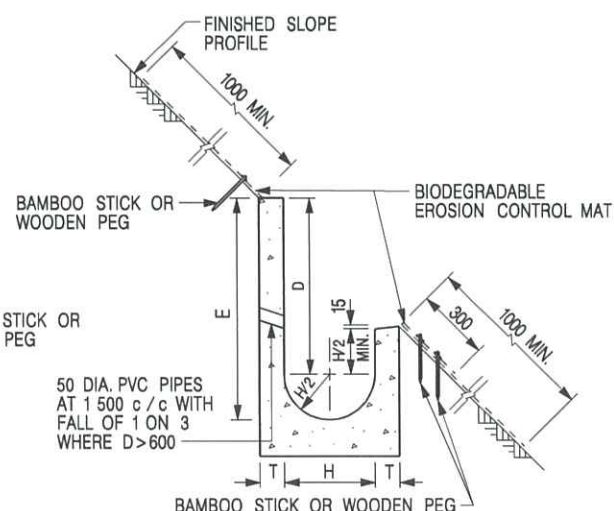
**U-CHANNELS CONSTRUCTED ON BERM  
WITH NON-BIODEGRADABLE  
EROSION CONTROL MAT**



**U-CHANNELS NOT CONSTRUCTED ON BERM  
WITH NON-BIODEGRADABLE  
EROSION CONTROL MAT**



**U-CHANNELS CONSTRUCTED ON BERM  
WITH BIODEGRADABLE  
EROSION CONTROL MAT**



**U-CHANNELS NOT CONSTRUCTED ON BERM  
WITH BIODEGRADABLE  
EROSION CONTROL MAT**

**NOTES:**

- ALL DIMENSIONS ARE IN MILLIMETRES.
- ALL CONCRETE TO BE GRADE 20 /20.
- CONCRETE SURFACE FINISH SHALL BE CLASS U2, F2 OR BRUSHED FINISH AS DIRECTED.
- SPACING OF EXPANSION JOINT IN CHANNELS, BERM SLABS AND APRONS TO BE 10 METRES MAXIMUM, SEE STD. DRG. NO. C2413 FOR DETAILS.
- JOINTS FOR CHANNELS, BERM SLABS, APRONS AND WALLS, ETC. TO BE ON THE SAME ALIGNMENT.
- FOR DIMENSIONS T, H, & B, SEE TABLE BELOW.
- FOR TYPICAL FIXING PIN DETAILS, SEE STD. DRG. NO. C2511/2.
- MINIMUM SIZE OF 25 x 50 x 300mm SHALL BE PROVIDED FOR WOODEN PEG.
- MINIMUM SIZE OF 10mm DIAMETER WITH 200mm LONG SHALL BE PROVIDED FOR BAMBOO STICK.
- THE FIXING DETAILS OF NON-BIODEGRADABLE AND BIODEGRADABLE EROSION CONTROL MATS ON EXISTING BERM SHALL REFER TO STD. DRG. NO. C2511/1.

| NOMINAL SIZE<br>H | T   | B   | REINFORCEMENT                                         |
|-------------------|-----|-----|-------------------------------------------------------|
| 300               | 80  | 100 | A252 MESH PLACED<br>CENTRALLY AND T=100<br>WHEN E>650 |
| 375 - 600         | 100 | 150 |                                                       |
| 675 - 900         | 125 | 175 | A252 MESH PLACED<br>CENTRALLY                         |

| REF. | REVISION                                                   | SIGNATURE       | DATE    |
|------|------------------------------------------------------------|-----------------|---------|
| I    | MINOR AMENDMENT.                                           | Original Signed | 07.2018 |
| H    | FIXING DETAILS OF BIODEGRADABLE EROSION CONTROL MAT ADDED. | Original Signed | 12.2017 |
| G    | DIMENSION TABLE AMENDED.                                   | Original Signed | 01.2005 |
| F    | MINOR AMENDMENT.                                           | Original Signed | 01.2004 |
| E    | GENERAL REVISION.                                          | Original Signed | 12.2002 |
| D    | MINOR AMENDMENT.                                           | Original Signed | 08.2001 |
| C    | 150 x 100 UPSTAND ADDED AT BERM.                           | Original Signed | 6.99    |
| B    | MINOR AMENDMENT.                                           | Original Signed | 3.94    |
| A    | MINOR AMENDMENT.                                           | Original Signed | 10.92   |

**DETAILS OF HALF-ROUND AND  
U-CHANNELS (TYPE B - WITH  
EROSION CONTROL MAT APRON)**



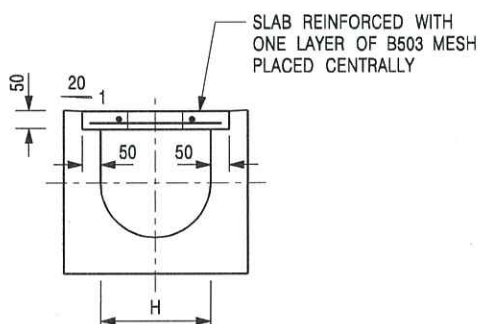
**CIVIL ENGINEERING AND  
DEVELOPMENT DEPARTMENT**

**SCALE** DIAGRAMMATIC

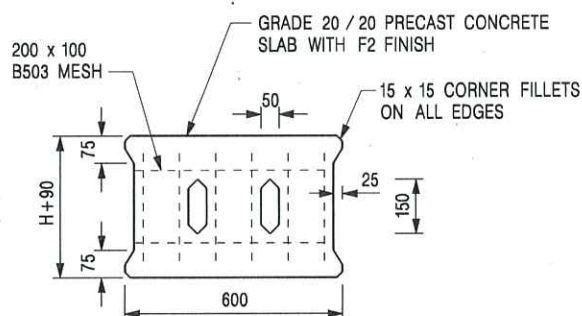
**DRAWING NO.**

**DATE** JAN 1991

**C24101**



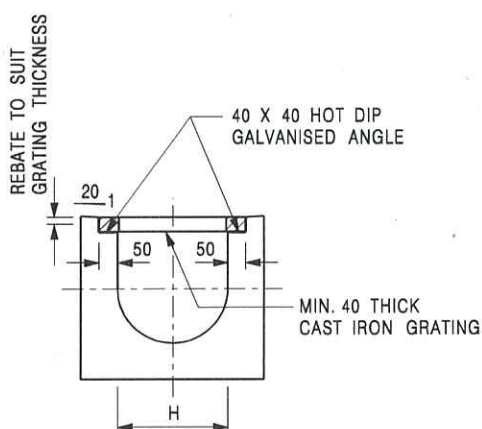
TYPICAL SECTION



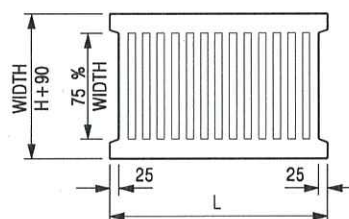
PLAN OF SLAB

### U-CHANNELS WITH PRECAST CONCRETE SLABS

(UP TO H OF 525)



TYPICAL SECTION



L = 600mm FOR H ≤ 375mm  
L = 400mm FOR H > 375mm

CAST IRON GRATING

(DIMENSIONS ARE FOR GUIDANCE ONLY, CONTRACTOR MAY SUBMIT EQUIVALENT TYPE)

### U-CHANNEL WITH CAST IRON GRATING

(UP TO H OF 525)

#### NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. H = NOMINAL CHANNEL SIZE.
3. ALL CAST IRON FOR GRATINGS SHALL BE GRADE EN-GJL-150 COMPLYING WITH BS EN 1561.
4. FOR COVERED CHANNELS TO BE HANDED OVER TO HIGHWAYS DEPARTMENT FOR MAINTENANCE, THE GRATING DETAILS SHALL FOLLOW THOSE AS SHOWN ON HyD STD. DRG. NO. H3156.

| E    | NOTES 3 & 4 AMENDED.           | Original Signed | 12.2014 |
|------|--------------------------------|-----------------|---------|
| D    | NOTE 4 ADDED.                  | Original Signed | 06.2008 |
| C    | MINOR AMENDMENT. NOTE 3 ADDED. | Original Signed | 12.2005 |
| B    | NAME OF DEPARTMENT AMENDED.    | Original Signed | 01.2005 |
| A    | CAST IRON GRATING AMENDED.     | Original Signed | 12.2002 |
| REF. | REVISION                       | SIGNATURE       | DATE    |

COVER SLAB AND CAST IRON  
GRATING FOR CHANNELS



**CIVIL ENGINEERING AND  
DEVELOPMENT DEPARTMENT**

**SCALE** 1 : 20

**DATE** JAN 1991

**DRAWING NO.**

**C2412E**