

Your Ref.: A/YL-PH/1077

Our Ref.: P25025/TL25274

17 October 2025

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

By Post and E-mail  
tpbpd@pland.gov.hk

Dear Sir,

**Submission of Further Information**

**Proposed Temporary Warehouse (excluding Dangerous Goods Godown) with  
Ancillary Office and associated Filling of Land for a Period of 3 Years  
Lots 29 (Part), 33 (Part) and 35 (Part) in D.D. 111  
and Adjoining Government Land, Pat Heung, Yuen Long  
(Application No.: A/YL-PH/1077)**

We would like to submit a response-to-comment, drainage proposal (Plans 6.1 and 6.2) and hydraulic calculations to respond to the comments from Transport Department, Drainage Services Department and Lands Department.

An updated executive summary, planning statement and plans (Plans 1a – 5a) are submitted for the captioned application.

Yours faithfully,  
For and on behalf of  
Goldrich Planners & Surveyors Ltd.



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Francis Lau

Encl.

Comments from Transport Department dated 4.8.2025

| Comment                                                                                                                                                                                                                                                                    | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <p>It is noted that container vehicles would access the site. Based on the swept path analysis, it requires a wide run-in/out so as to accommodate the turning movement. Please provide details of modification of run-in/out at footpath of Fan Kam Road accordingly.</p> | <p>The operator will inform container vehicle drivers that they must come to the site from northbound of Fan Kam Road and leave the site through southbound of Fan Kam Road.</p> <p>The operator will manage the traffic flow of the container vehicles. Container vehicles must make an appointment before they come. No two container vehicles will enter or leave the site at the same time.</p> <p>Please refer to updated Swept Path Analysis (Plan 4a) for details.</p> |

## Comments from Drainage Services Department dated 19.8.2025

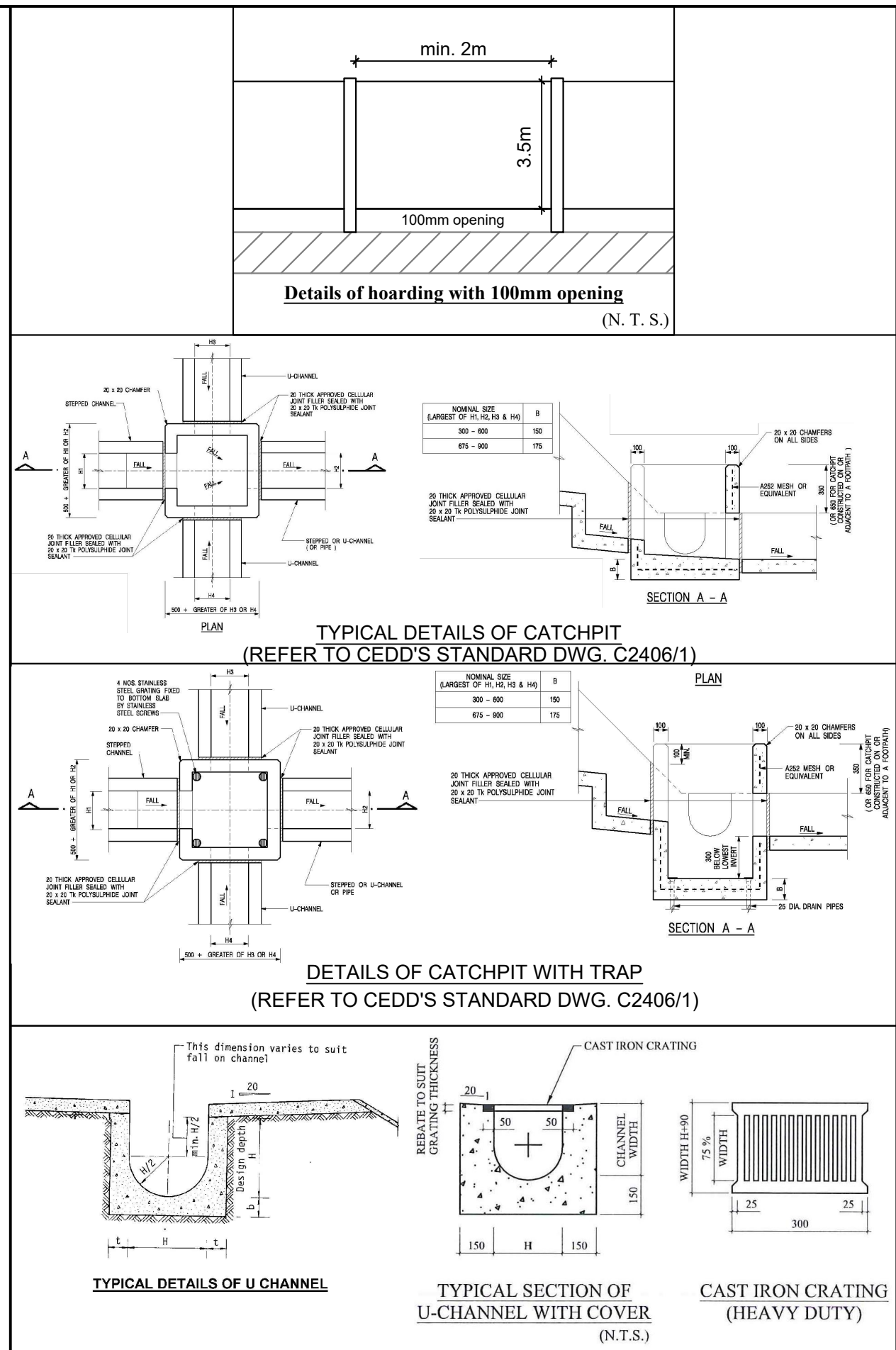
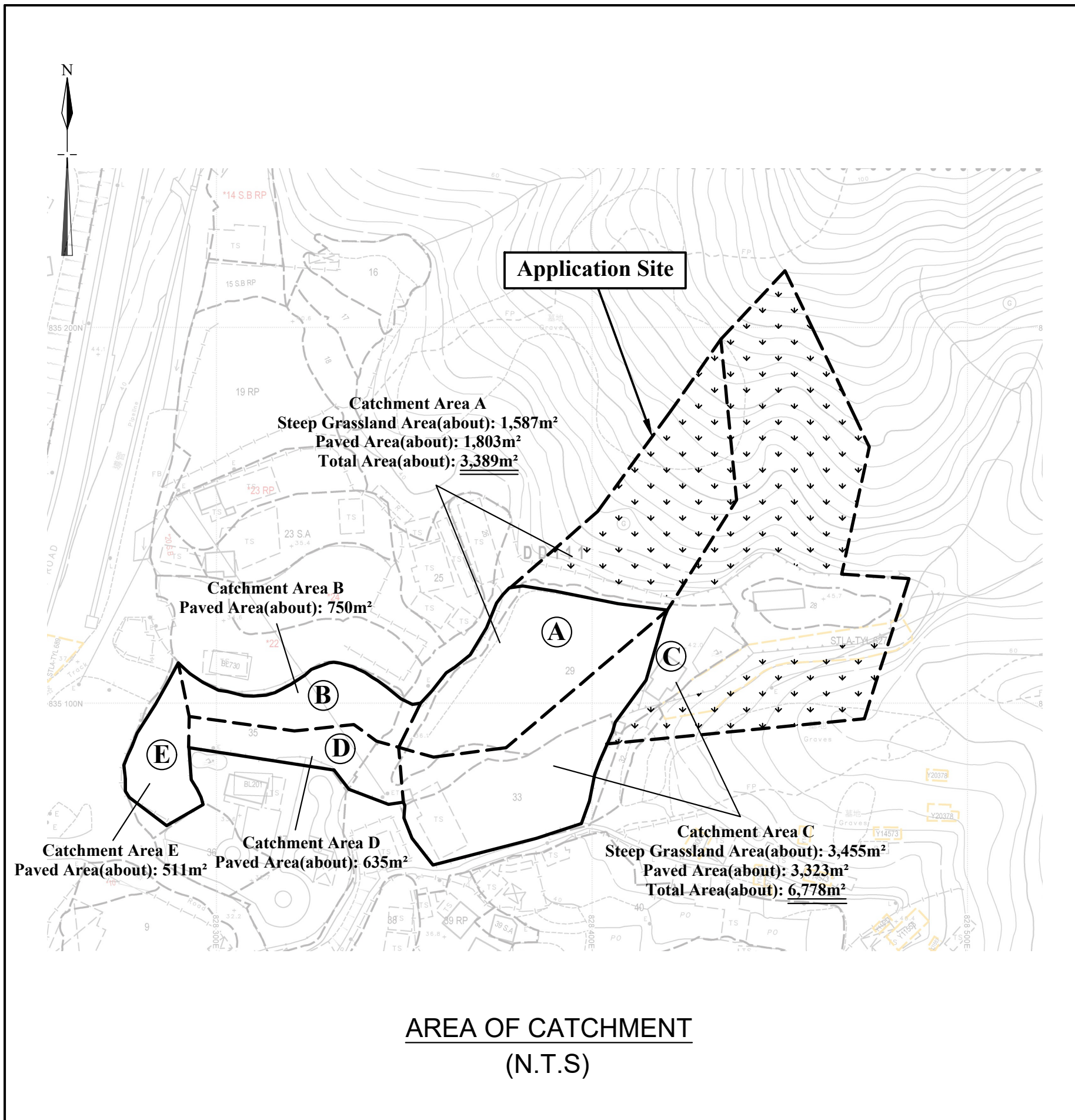
|    | Comments                                                                                                                                                                                                                                                                                                                        | Responses                                                                                                                                                                                                                                                                                                                                                                                                    |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. | According to our record, there are existing streamcourse/channel on government land within the application site that may also serve the adjacent land. There is a potential increase flooding risk to the area if the government land and the streamcourse/channel are disturbed or affected by the operation of the applicant. | <p>The existing streamcourse/channel on government land within the application site will be preserved and maintained. The operation of the applicant will not disturb the existing streamcourse/channel.</p> <p>As the existing streamcourse/channel on government land has all the time been receiving surface runoff from the subject site, there will not be any increase or change in the waterflow.</p> |
| 3. | We are unable to provide comment on drainage aspect of the application at this stage. Comment on drainage aspect will be provided when the drainage proposal as mentioned in paragraph 17 of the planning statement is received.                                                                                                | Please refer to attached drainage proposal for details.                                                                                                                                                                                                                                                                                                                                                      |

Comment from Lands Department dated 17.10.2025

| Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Response                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <p><u>Unauthorised structure(s) within the said private lot(s) covered by the planning application</u></p> <p>There is/are unauthorized structure(s) and/or uses on the Lot No. 29 in D.D. 111. The lot owner(s) should immediately rectify/apply for regularization on the lease breaches and this office reserves the rights to take necessary lease enforcement action against the breaches without further notice.</p> <p>LandsD has reservation on the planning application since there is/are unauthorized structure(s) and uses on the Lot No. 35 in D.D. 111 which is/are already subject to lease enforcement actions according to case priority. The lot owner(s) should rectify/apply for regularization on the lease breaches as demanded by LandsD.</p> <p>No permission is given for occupation of Government Land (about 424 m<sup>2</sup> subject to verification) included in the application site. Any occupation of GL without Government's prior approval is an offence under Cap. 28.</p> <p>If the planning application is approved, the lot owner(s) shall apply to this office for a Short Term Waiver (STW) and/or Short Term Tenancy (STT) to permit the structure(s) erected within the said private lot(s) and the occupation of the Government land. The application(s) for STW and/or STT will be considered by the Government in its capacity as a landlord and there is no guarantee that they will be approved. The STW and/or STT, if approved, will be subject to such terms and conditions including the payment of waiver fee/rent and administrative fee as considered appropriate by LandsD. Besides, given the proposed use is temporary in nature, only erection of temporary structure(s) will be considered.</p> | <p>The applicant will apply for Short Term Waiver and Short Term Tenancy to Lands Department when the application is approved.</p> |







|                                                                                                                                                                                                                                                                                                                                                                 |                      |                                                 |                                    |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------|------------------------------------|--------------------|-----------------------------|-------|--------------------|-------|-----------------|------|--------|--------|--|--|-------|--------|--|---------------|
| 1 For Catchment Area A                                                                                                                                                                                                                                                                                                                                          |                      | Ref.                                            |                                    |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
| Area, A = 3389 m <sup>2</sup><br>Average slope, H = 47.5 m per 100m<br>Distance on the line of natural flow, L = 77 m                                                                                                                                                                                                                                           |                      |                                                 |                                    |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
| Time of concentration, t <sub>o</sub> = 0.14465L / (H <sup>0.2</sup> A <sup>0.1</sup> ) = 0.14465 (77) / (47.5 <sup>0.2</sup> *3389 <sup>0.1</sup> ) = 2.3 min                                                                                                                                                                                                  |                      | SDM 7.5.2 (d)                                   |                                    |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
| 2 For Proposed UC in Catchment Area A                                                                                                                                                                                                                                                                                                                           |                      |                                                 |                                    |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
| <table><tr><td></td><td>From</td><td>To</td></tr><tr><td>Ground level (mPD)</td><td>38.70</td><td>38.30</td></tr><tr><td>Invert level (mPD)</td><td>38.23</td><td>37.36</td></tr></table>                                                                                                                                                                       |                      | From                                            | To                                 | Ground level (mPD) | 38.70                       | 38.30 | Invert level (mPD) | 38.23 | 37.36           |      |        |        |  |  |       |        |  |               |
|                                                                                                                                                                                                                                                                                                                                                                 | From                 | To                                              |                                    |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
| Ground level (mPD)                                                                                                                                                                                                                                                                                                                                              | 38.70                | 38.30                                           |                                    |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
| Invert level (mPD)                                                                                                                                                                                                                                                                                                                                              | 38.23                | 37.36                                           |                                    |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
| Width of u-channel, w = 300 mm<br>Length of u-channel, L <sub>c</sub> = 78.3 m<br>Depth of vertical part of u-channel, d = 790 mm<br>Gradient of u-channel, S <sub>f</sub> = (38.23-37.36)/78.3 = 0.0111                                                                                                                                                        |                      |                                                 |                                    |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
| Cross-Section Area, a = 0.5 π r <sup>2</sup> + w d = 0.5 x 3.14 x 150 <sup>2</sup> + 300 x 790 = 0.272 m <sup>2</sup><br>Wetted Perimeter, p = π r + 2 d = 3.14 x 150 + 2 x 790 = 2.051 m<br>Hydraulic radius, R = a / p = 0.133 m                                                                                                                              |                      | SDM 8.2.1                                       |                                    |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
| 3 Use Manning Equation for estimating velocity of stormwater                                                                                                                                                                                                                                                                                                    |                      |                                                 |                                    |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
| Take n = 0.016 for concrete lined channels:-<br>Allowable velocity, v = R <sup>1/6</sup> x (RS <sub>f</sub> ) <sup>1/2</sup> /n = (0.133) <sup>1/6</sup> x (0.133 x 0.011) <sup>1/2</sup> / 0.016 = 1.71 m/s<br>Time of flow, t <sub>f</sub> = 0.8 min                                                                                                          |                      | SDM Table 13<br>SDM Table 12                    |                                    |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
| 4 Use "Rational Method" for calculation of design flow                                                                                                                                                                                                                                                                                                          |                      |                                                 |                                    |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
| Design intensity, i = a / (t <sub>o</sub> + t <sub>f</sub> +b) <sup>c</sup> = 505.5 / (2.3+0.8+3.29) <sup>0.355</sup> for return period T = 50 years = 262                                                                                                                                                                                                      |                      | SDM 4.3.2<br>Corrigendum 1/2024<br>SDM Table 3a |                                    |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
| <table><tr><td>Type of surface</td><td>Runoff Coefficient C</td><td>Catchment Area A (m<sup>2</sup>)</td><td>C x A</td></tr><tr><td>Steep Glassland(heavy soil)</td><td>0.35</td><td>1587.0</td><td>555.5</td></tr><tr><td>Concrete Paving</td><td>0.95</td><td>1803.0</td><td>1712.9</td></tr><tr><td></td><td></td><td>SUM =</td><td>2268.3</td></tr></table> | Type of surface      | Runoff Coefficient C                            | Catchment Area A (m <sup>2</sup> ) | C x A              | Steep Glassland(heavy soil) | 0.35  | 1587.0             | 555.5 | Concrete Paving | 0.95 | 1803.0 | 1712.9 |  |  | SUM = | 2268.3 |  | SDM 7.5.2 (b) |
| Type of surface                                                                                                                                                                                                                                                                                                                                                 | Runoff Coefficient C | Catchment Area A (m <sup>2</sup> )              | C x A                              |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
| Steep Glassland(heavy soil)                                                                                                                                                                                                                                                                                                                                     | 0.35                 | 1587.0                                          | 555.5                              |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
| Concrete Paving                                                                                                                                                                                                                                                                                                                                                 | 0.95                 | 1803.0                                          | 1712.9                             |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
|                                                                                                                                                                                                                                                                                                                                                                 |                      | SUM =                                           | 2268.3                             |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
| Upstream flow, Q <sub>u</sub> = 0 m <sup>3</sup> /s                                                                                                                                                                                                                                                                                                             |                      |                                                 |                                    |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
| Design flow, Q <sub>d</sub> = 0.278i Σ C <sub>f</sub> A <sub>f</sub> + Q <sub>u</sub> where A <sub>f</sub> is in km <sup>2</sup><br>= 0.278 x 262 x 2268.3 / 1000000 + 0 = 0.166 m <sup>3</sup> /s                                                                                                                                                              |                      | SDM 7.5.2 (a)                                   |                                    |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
| Allowable flow, Q <sub>a</sub> = a x v = 0.272 x 1.71 = 0.467 m <sup>3</sup> /s<br><br>> Q <sub>d</sub> (O.K.)                                                                                                                                                                                                                                                  |                      |                                                 |                                    |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |
| Reference was made to Stormwater Drainage Manual (SDM) by DSD                                                                                                                                                                                                                                                                                                   |                      |                                                 |                                    |                    |                             |       |                    |       |                 |      |        |        |  |  |       |        |  |               |

|                                                               |                      |                                                                                                                                                                         |      |
|---------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 1 For Catchment Area B                                        |                      |                                                                                                                                                                         | Ref. |
| Area, A                                                       | =                    | 750 m <sup>2</sup>                                                                                                                                                      |      |
| Average slope, H                                              | =                    | 0.1 m per 100m                                                                                                                                                          |      |
| Distance on the line of natural flow, L                       | =                    | 15 m                                                                                                                                                                    |      |
| Time of concentration, t <sub>o</sub>                         | =                    | 0.14465L / (H <sup>0.2</sup> A <sup>0.1</sup> ) = 0.14465 (15) / (0.1 <sup>0.2</sup> *750 <sup>0.1</sup> ) = 1.8 min                                                    |      |
| SDM 7.5.2 (d)                                                 |                      |                                                                                                                                                                         |      |
| 2 For Proposed UC in Catchment Area B                         |                      |                                                                                                                                                                         |      |
|                                                               | From                 | To                                                                                                                                                                      |      |
| Ground level (mPD)                                            | 38.30                | 36.50                                                                                                                                                                   |      |
| Invert level (mPD)                                            | 37.36                | 35.58                                                                                                                                                                   |      |
| Width of u-channel, w                                         | =                    | 300 mm                                                                                                                                                                  |      |
| Length of u-channel, L <sub>c</sub>                           | =                    | 71.5 m                                                                                                                                                                  |      |
| Depth of vertical part of u-channel, d                        | =                    | 770 mm                                                                                                                                                                  |      |
| Gradient of u-channel, S <sub>f</sub>                         | =                    | (37.36-35.58)/71.5 = 0.025                                                                                                                                              |      |
| Cross-Section Area, a                                         | =                    | 0.5 π r <sup>2</sup> + w d = 0.5 x 3.14 x 150 <sup>2</sup> + 300 x 770 = 0.266 m <sup>2</sup>                                                                           |      |
| Wetted Perimeter, p                                           | =                    | π r + 2 d = 3.14 x 150 + 2 x 770 = 2.011 m                                                                                                                              |      |
| Hydraulic radius, R                                           | =                    | a / p = 0.132 m                                                                                                                                                         |      |
| SDM 8.2.1                                                     |                      |                                                                                                                                                                         |      |
| 3 Use Manning Equation for estimating velocity of stormwater  |                      |                                                                                                                                                                         |      |
| Take n                                                        | =                    | 0.016 for concrete lined channels:-                                                                                                                                     |      |
| Allowable velocity, v                                         | =                    | R <sup>1/6</sup> x (RS <sub>f</sub> ) <sup>1/2</sup> /n = (0.132) <sup>1/6</sup> x (0.132 x 0.025) <sup>1/2</sup> / 0.016 = 2.56 m/s                                    |      |
| Time of flow, t <sub>f</sub>                                  | =                    | 0.5 min                                                                                                                                                                 |      |
| SDM Table 13<br>SDM Table 12                                  |                      |                                                                                                                                                                         |      |
| 4 Use "Rational Method" for calculation of design flow        |                      |                                                                                                                                                                         |      |
| Design intensity, i                                           | =                    | a / (t <sub>o</sub> + t <sub>f</sub> +b) <sup>c</sup> = 505.5 / (1.8+0.5+3.29) <sup>0.355</sup> for return period T = 50 years = 275                                    |      |
| SDM 4.3.2<br>Corrigendum 1/2024<br>SDM Table 3a               |                      |                                                                                                                                                                         |      |
| Type of surface                                               | Runoff Coefficient C | Catchment Area A (m <sup>2</sup> )                                                                                                                                      |      |
| Steep Glassland(heavy soil)                                   | 0.35                 | 0.0                                                                                                                                                                     |      |
| Concrete Paving                                               | 0.95                 | 750.0                                                                                                                                                                   |      |
|                                                               |                      | SUM = 712.5                                                                                                                                                             |      |
| SDM 7.5.2 (b)                                                 |                      |                                                                                                                                                                         |      |
| Upstream flow, Q <sub>u</sub>                                 | =                    | 0.166 m <sup>3</sup> /s                                                                                                                                                 |      |
| Design flow, Q <sub>d</sub>                                   | =                    | 0.278i Σ C <sub>f</sub> A <sub>j</sub> + Q <sub>u</sub> where A <sub>j</sub> is in km <sup>2</sup><br>= 0.278 x 275 x 712.5 / 1000000 + 0.166 = 0.221 m <sup>3</sup> /s |      |
| Allowable flow, Q <sub>a</sub>                                | =                    | a x v = 0.266 x 2.56 = 0.682 m <sup>3</sup> /s                                                                                                                          |      |
|                                                               | >                    | Q <sub>d</sub> (O.K.)                                                                                                                                                   |      |
| Reference was made to Stormwater Drainage Manual (SDM) by DSD |                      |                                                                                                                                                                         |      |
| SDM 7.5.2 (a)                                                 |                      |                                                                                                                                                                         |      |

|             |                       |                                    |
|-------------|-----------------------|------------------------------------|
| Scale: NA   | Hydraulic Calculation | Goldrich Planners & Surveyors Ltd. |
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|---------------------------------------------------------------------------------------------------------|--|
| Lots 29 (Part), 33 (Part) and 35 (Part) in D.D. 111 and Adjoining Government Land, Pat Heung, Yuen Long |  |
|---------------------------------------------------------------------------------------------------------|--|

|                                                               |                                                                                                         |                                                                                                                            |                                    |
|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| 1 For Catchment Area C                                        |                                                                                                         |                                                                                                                            | Ref.                               |
| Area, A                                                       | =                                                                                                       | 6778 m <sup>2</sup>                                                                                                        |                                    |
| Average slope, H                                              | =                                                                                                       | 48.1 m per 100m                                                                                                            |                                    |
| Distance on the line of natural flow, L                       | =                                                                                                       | 100 m                                                                                                                      |                                    |
| Time of concentration, t <sub>c</sub>                         | =                                                                                                       | 0.14465L / (H <sup>0.2</sup> A <sup>0.1</sup> ) = 0.14465 (100) / (48.1 <sup>0.2</sup> 6778 <sup>0.1</sup> )               | SDM 7.5.2 (d)                      |
|                                                               | =                                                                                                       | 2.8 min                                                                                                                    |                                    |
| 2 For Proposed UC in Catchment Area C                         |                                                                                                         |                                                                                                                            |                                    |
|                                                               | From                                                                                                    | To                                                                                                                         |                                    |
| Ground level (mPD)                                            | 38.70                                                                                                   | 38.30                                                                                                                      |                                    |
| Invert level (mPD)                                            | 38.25                                                                                                   | 37.50                                                                                                                      |                                    |
| Width of u-channel, w                                         | =                                                                                                       | 450 mm                                                                                                                     |                                    |
| Length of u-channel, L <sub>c</sub>                           | =                                                                                                       | 112.4 m                                                                                                                    |                                    |
| Depth of vertical part of u-channel, d                        | =                                                                                                       | 575 mm                                                                                                                     |                                    |
| Gradient of u-channel, S <sub>f</sub>                         | =                                                                                                       | (38.25-37.5)/112.4 = 0.00667                                                                                               |                                    |
| Cross-Section Area, a                                         | =                                                                                                       | 0.5 π r <sup>2</sup> + w d = 0.5 x 3.14 x 225 <sup>2</sup> + 450 x 575                                                     | SDM 8.2.1                          |
|                                                               | =                                                                                                       | 0.338 m <sup>2</sup>                                                                                                       |                                    |
| Wetted Perimeter, p                                           | =                                                                                                       | π r + 2 d = 3.14 x 225 + 2 x 575                                                                                           |                                    |
|                                                               | =                                                                                                       | 1.857 m                                                                                                                    |                                    |
| Hydraulic radius, R                                           | =                                                                                                       | a / p                                                                                                                      |                                    |
|                                                               | =                                                                                                       | 0.182 m                                                                                                                    |                                    |
| 3 Use Manning Equation for estimating velocity of stormwater  |                                                                                                         |                                                                                                                            |                                    |
| Take n                                                        | =                                                                                                       | 0.016 for concrete lined channels:-                                                                                        | SDM Table 13                       |
| Allowable velocity, v                                         | =                                                                                                       | R <sup>1/6</sup> x (RS <sub>f</sub> ) <sup>1/2</sup> / n = (0.182) <sup>1/6</sup> x (0.182 x 0.007) <sup>1/2</sup> / 0.016 | SDM Table 12                       |
|                                                               | =                                                                                                       | 1.64 m/s                                                                                                                   |                                    |
| Time of flow, t <sub>f</sub>                                  | =                                                                                                       | 1.1 min                                                                                                                    |                                    |
| 4 Use "Rational Method" for calculation of design flow        |                                                                                                         |                                                                                                                            |                                    |
| Design intensity, i                                           | =                                                                                                       | a / (t <sub>c</sub> + t <sub>f</sub> + b) <sup>c</sup>                                                                     | SDM 4.3.2                          |
|                                                               | =                                                                                                       | 505.5 / (2.8+1.1+3.29) <sup>0.355</sup> for return period T = 50 years                                                     | Corrigendum 1/2024                 |
|                                                               | =                                                                                                       | 251                                                                                                                        | SDM Table 3a                       |
| Type of surface                                               | Runoff Coefficient C                                                                                    | Catchment Area A (m <sup>2</sup> )                                                                                         | C x A                              |
| Steep Grassland (heavy soil)                                  | 0.35                                                                                                    | 3455.0                                                                                                                     | 1209.3                             |
| Concrete Paving                                               | 0.95                                                                                                    | 3323.0                                                                                                                     | 3156.9                             |
|                                                               |                                                                                                         | SUM =                                                                                                                      | 4366.1                             |
| Upstream flow, Q <sub>u</sub>                                 | =                                                                                                       | 0 m <sup>3</sup> /s                                                                                                        | SDM 7.5.2 (a)                      |
| Design flow, Q <sub>d</sub>                                   | =                                                                                                       | 0.278i Σ C <sub>r</sub> A <sub>i</sub> + Q <sub>u</sub> where A <sub>i</sub> is in km <sup>2</sup>                         |                                    |
|                                                               | =                                                                                                       | 0.278 x 251 x 4366.1 / 1000000 + 0                                                                                         |                                    |
|                                                               | =                                                                                                       | 0.305 m <sup>3</sup> /s                                                                                                    |                                    |
| Allowable flow, Q <sub>a</sub>                                | =                                                                                                       | a x v                                                                                                                      |                                    |
|                                                               | =                                                                                                       | 0.338 x 1.64                                                                                                               |                                    |
|                                                               | =                                                                                                       | 0.555 m <sup>3</sup> /s                                                                                                    |                                    |
|                                                               | >                                                                                                       | Q <sub>d</sub> (O.K.)                                                                                                      |                                    |
| Reference was made to Stormwater Drainage Manual (SDM) by DSD |                                                                                                         |                                                                                                                            |                                    |
| Scale: NA                                                     | Hydraulic Calculation                                                                                   |                                                                                                                            | Goldrich Planners & Surveyors Ltd. |
| August 2025                                                   |                                                                                                         |                                                                                                                            | Page 3<br>(P25025)                 |
|                                                               | Lots 29 (Part), 33 (Part) and 35 (Part) in D.D. 111 and Adjoining Government Land, Pat Heung, Yuen Long |                                                                                                                            |                                    |

|                                                               |                                                                                                                                                                               |                                    |                                                                                           |
|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------|
| 1 For Catchment Area D                                        |                                                                                                                                                                               |                                    | Ref.                                                                                      |
| Area, A                                                       | =                                                                                                                                                                             | 635 m <sup>2</sup>                 | SDM 7.5.2 (d)                                                                             |
| Average slope, H                                              | =                                                                                                                                                                             | 0.1 m per 100m                     |                                                                                           |
| Distance on the line of natural flow, L                       | =                                                                                                                                                                             | 16 m                               |                                                                                           |
| Time of concentration, t <sub>o</sub>                         | = 0.14465L / (H <sup>0.2</sup> A <sup>0.1</sup> ) = 0.14465 (16) / (0.1 <sup>0.2</sup> *635 <sup>0.1</sup> ) = 1.9 min                                                        |                                    |                                                                                           |
| 2 For Proposed UC in Catchment Area D                         |                                                                                                                                                                               |                                    | SDM 8.2.1                                                                                 |
|                                                               | From                                                                                                                                                                          | To                                 |                                                                                           |
| Ground level (mPD)                                            | 38.30                                                                                                                                                                         | 36.50                              |                                                                                           |
| Invert level (mPD)                                            | 37.50                                                                                                                                                                         | 35.92                              |                                                                                           |
| Width of u-channel, w                                         | =                                                                                                                                                                             | 450 mm                             |                                                                                           |
| Length of u-channel, L <sub>c</sub>                           | =                                                                                                                                                                             | 64.1 m                             |                                                                                           |
| Depth of vertical part of u-channel, d                        | =                                                                                                                                                                             | 355 mm                             |                                                                                           |
| Gradient of u-channel, S <sub>f</sub>                         | =                                                                                                                                                                             | (37.5-35.92)/64.1 = 0.025          |                                                                                           |
| Cross-Section Area, a                                         | = 0.5 π r <sup>2</sup> + w d = 0.5 x 3.14 x 225 <sup>2</sup> + 450 x 355 = 0.239 m <sup>2</sup>                                                                               |                                    |                                                                                           |
| Wetted Perimeter, p                                           | = π r + 2 d = 3.14 x 225 + 2 x 355 = 1.417 m                                                                                                                                  |                                    |                                                                                           |
| Hydraulic radius, R                                           | = a / p = 0.169 m                                                                                                                                                             |                                    |                                                                                           |
| 3 Use Manning Equation for estimating velocity of stormwater  |                                                                                                                                                                               |                                    | SDM Table 13<br>SDM Table 12                                                              |
| Take n                                                        | = 0.016 for concrete lined channels:-                                                                                                                                         |                                    |                                                                                           |
| Allowable velocity, v                                         | = R <sup>1/6</sup> x (RS <sub>f</sub> ) <sup>1/2</sup> /n = (0.169) <sup>1/6</sup> x (0.169 x 0.025) <sup>1/2</sup> / 0.016 = 3.00 m/s                                        |                                    |                                                                                           |
| Time of flow, t <sub>f</sub>                                  | = 0.4 min                                                                                                                                                                     |                                    |                                                                                           |
| 4 Use "Rational Method" for calculation of design flow        |                                                                                                                                                                               |                                    | SDM 4.3.2<br>Corrigendum 1/2024<br>SDM Table 3a<br><br>SDM 7.5.2 (b)<br><br>SDM 7.5.2 (a) |
| Design intensity, i                                           | = a / (t <sub>o</sub> + t <sub>f</sub> +b) <sup>c</sup> = 505.5 / (1.9+0.4+3.29) <sup>0.355</sup> for return period T = 50 years = 275                                        |                                    |                                                                                           |
| Type of surface                                               | Runoff Coefficient C                                                                                                                                                          | Catchment Area A (m <sup>2</sup> ) |                                                                                           |
| Steep Glassland(heavy soil)                                   | 0.35                                                                                                                                                                          | 0.0                                |                                                                                           |
| Concrete Paving                                               | 0.95                                                                                                                                                                          | 635.0                              |                                                                                           |
|                                                               |                                                                                                                                                                               | C x A                              |                                                                                           |
|                                                               |                                                                                                                                                                               | 0.0                                |                                                                                           |
|                                                               |                                                                                                                                                                               | 603.3                              |                                                                                           |
|                                                               |                                                                                                                                                                               | SUM = 603.3                        |                                                                                           |
| Upstream flow, Q <sub>u</sub>                                 | = 0.305 m <sup>3</sup> /s                                                                                                                                                     |                                    |                                                                                           |
| Design flow, Q <sub>d</sub>                                   | = 0.278i Σ C <sub>f</sub> A <sub>j</sub> + Q <sub>u</sub> where A <sub>j</sub> is in km <sup>2</sup><br>= 0.278 x 275 x 603.25 / 1000000 + 0.305<br>= 0.351 m <sup>3</sup> /s |                                    |                                                                                           |
| Allowable flow, Q <sub>a</sub>                                | = a x v<br>= 0.239 x 3<br>= 0.717 m <sup>3</sup> /s<br><br>> Q <sub>d</sub> (O.K.)                                                                                            |                                    |                                                                                           |
| Reference was made to Stormwater Drainage Manual (SDM) by DSD |                                                                                                                                                                               |                                    |                                                                                           |

|             |                       |                                    |
|-------------|-----------------------|------------------------------------|
| Scale: NA   | Hydraulic Calculation | Goldrich Planners & Surveyors Ltd. |
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|                                                                                                         |  |
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| Lots 29 (Part), 33 (Part) and 35 (Part) in D.D. 111 and Adjoining Government Land, Pat Heung, Yuen Long |  |
|---------------------------------------------------------------------------------------------------------|--|

## Ref.

SDM 7.5.2 (d)

## 2 For Proposed UC in Catchment Area E

SDM 8.2.1

### 3 Use Manning Equation for estimating velocity of stormwater

SDM Table 13  
SDM Table 12

SDM 4.3.2  
Corrigendum 1/2024  
SDM Table 3a

SDM 7.5.2 (b)

SDM 7.5.2 (a)

Reference was made to Stormwater Drainage Manual (SDM) by DSD

|                                                                                                         |                       |                                                                                                                                                                       |                                                                                           |
|---------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1 For Connection between CP10 and Existing Public 500 UC                                                |                       |                                                                                                                                                                       | Ref.                                                                                      |
| Area, A                                                                                                 | =                     | 0 m <sup>2</sup>                                                                                                                                                      | SDM 7.5.2 (d)                                                                             |
| Average slope, H                                                                                        | =                     | 0.1 m per 100m                                                                                                                                                        |                                                                                           |
| Distance on the line of natural flow, L                                                                 | =                     | 0 m                                                                                                                                                                   |                                                                                           |
| Time of concentration, t <sub>o</sub>                                                                   | =                     | 0.14465L / (H <sup>0.2</sup> A <sup>0.1</sup> ) = 0.14465 (0) / (0.1 <sup>0.2</sup> 0 <sup>0.1</sup> ) = 0.0 min                                                      |                                                                                           |
| 2 For Proposed UC in between CP10 and Existing Public 500 UC                                            |                       |                                                                                                                                                                       | SDM 8.2.1                                                                                 |
|                                                                                                         | From                  | To                                                                                                                                                                    |                                                                                           |
| Ground level (mPD)                                                                                      | 36.50                 | 35.80                                                                                                                                                                 |                                                                                           |
| Invert level (mPD)                                                                                      | 35.58                 | 35.20                                                                                                                                                                 |                                                                                           |
| Width of u-channel, w                                                                                   | =                     | 500 mm                                                                                                                                                                |                                                                                           |
| Length of u-channel, L <sub>c</sub>                                                                     | =                     | 19 m                                                                                                                                                                  |                                                                                           |
| Depth of vertical part of u-channel, d                                                                  | =                     | 350 mm                                                                                                                                                                |                                                                                           |
| Gradient of u-channel, S <sub>f</sub>                                                                   | =                     | (35.58-35.2)/18.8 = 0.020                                                                                                                                             |                                                                                           |
| Cross-Section Area, a                                                                                   | =                     | 0.5 π r <sup>2</sup> + w d = 0.5 x 3.14 x 250 <sup>2</sup> + 500 x 350 = 0.273 m <sup>2</sup>                                                                         |                                                                                           |
| Wetted Perimeter, p                                                                                     | =                     | π r + 2 d = 3.14 x 250 + 2 x 350 = 1.485 m                                                                                                                            |                                                                                           |
| Hydraulic radius, R                                                                                     | =                     | a / p = 0.184 m                                                                                                                                                       | SDM Table 13<br>SDM Table 12                                                              |
| 3 Use Manning Equation for estimating velocity of stormwater                                            |                       |                                                                                                                                                                       |                                                                                           |
| Take n                                                                                                  | =                     | 0.016 for concrete lined channels:-                                                                                                                                   |                                                                                           |
| Allowable velocity, v                                                                                   | =                     | R <sup>1/6</sup> x (RS <sub>f</sub> ) <sup>1/2</sup> /n = (0.184) <sup>1/6</sup> x (0.184 x 0.02) <sup>1/2</sup> / 0.016 = 2.87 m/s                                   |                                                                                           |
| Time of flow, t <sub>f</sub>                                                                            | =                     | 0.1 min                                                                                                                                                               | SDM 4.3.2<br>Corrigendum 1/2024<br>SDM Table 3a<br><br>SDM 7.5.2 (b)<br><br>SDM 7.5.2 (a) |
| 4 Use "Rational Method" for calculation of design flow                                                  |                       |                                                                                                                                                                       |                                                                                           |
| Design intensity, i                                                                                     | =                     | a / (t <sub>o</sub> + t <sub>f</sub> +b) <sup>c</sup> = 505.5 / (0+0.1+3.29) <sup>0.355</sup> = 327 for return period T = 50 years                                    |                                                                                           |
| Type of surface                                                                                         | Runoff Coefficient C  | Catchment Area A (m <sup>2</sup> )                                                                                                                                    |                                                                                           |
| Steep Glassland(heavy soil)                                                                             | 0.35                  | 0.0                                                                                                                                                                   |                                                                                           |
| Concrete Paving                                                                                         | 0.95                  | 0.0                                                                                                                                                                   |                                                                                           |
|                                                                                                         |                       | SUM = 0.0                                                                                                                                                             |                                                                                           |
| Upstream flow, Q <sub>u</sub>                                                                           | =                     | 0.610 m <sup>3</sup> /s                                                                                                                                               |                                                                                           |
| Design flow, Q <sub>d</sub>                                                                             | =                     | 0.278i Σ C <sub>r</sub> A <sub>j</sub> + Q <sub>u</sub> where A <sub>j</sub> is in km <sup>2</sup><br>= 0.278 x 327 x 0 / 1000000 + 0.61<br>= 0.610 m <sup>3</sup> /s |                                                                                           |
| Allowable flow, Q <sub>a</sub>                                                                          | =                     | a x v<br>= 0.273 x 2.87<br>= 0.785 m <sup>3</sup> /s<br><br>> Q <sub>d</sub> (O.K.)                                                                                   |                                                                                           |
| Reference was made to Stormwater Drainage Manual (SDM) by DSD                                           |                       |                                                                                                                                                                       |                                                                                           |
| Scale: NA                                                                                               | Hydraulic Calculation | Goldrich Planners & Surveyors Ltd.                                                                                                                                    |                                                                                           |
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