Appendix F –

Drainage Impact Assessment

Proposed Amendments to an Approved Comprehensive Residential Development Scheme and Minor Relaxation of Gross Floor Area and Building Height Restrictions at Various Lots in D.D. 385 and Adjoining Government Land, Tai Lam Chung, Tuen Mun

Drainage Impact Assessment

Report Reference: 240010.02

AECOM

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DRAWINGS

APPENDICES

1 INTRODUCTION

1.1 Background

1.1.1 AECOM Asia Company Limited was commissioned to act as the engineering consultants for the preparation of Drainage Impact Assessment (DIA) report for the proposed residential development at Tai Lam Chung, Tuen Mun.

1.1.2 The location of the Site is shown in ***Figure 1.1***. The proposed development situates at the east of Tai Lam Chung Nullah, near Hong Kong Customs College. The location and the existing topography of the Site are shown in ***Figure 1*** and ***Figure 2*** respectively.

1.1.3 This DIA report forms part of the technical supporting documents for the proposed development under Section 16 Application of the Town Planning Ordinance.

1.2 Submission History

1.2.1 The submission history are summarized in the following ***Table 1***.

Table 1 Summary of submission history

Submission Version	Submission Year	Changes
1st Approval	2007	- DIA report of the development was submitted based on 1D analysis tool.
2nd Approval	2016	- DIA report of the development was submitted using 2D analysis tool.
3rd Approval	2023	- DIA was updated further revised and updated according to the requirement stated in the latest Stormwater Drainage Manual Fifth Edition (January 2018) and its Corrigendum No. 1/2022 to account for the effect of climate change.
4th Submission (Current Submission)	2025	- DIA was revised based on latest Master Layout Plan for Section 16 Application under Town Planning Ordinance and the updated requirements in Stormwater Drainage Manual - Corrigendum No. 1/2024 and Stormwater Drainage Manual - Corrigendum No. 2/2024.

1.3 Purposes of this Submission

1.3.1 This report outlines the assessment results of the potential drainage impacts caused by the proposed development in the Site. The main objectives of this assessment include the followings:

a) Review available existing drainage studies in the surrounding catchment area of the development.

b) Review the existing drainage condition and flooding susceptibility of the proposed development.

c) Outline the methodology adopted in this assessment.

d) Outline changes to the drainage characteristics and potential drainage impacts which may arise from the proposed development, especially in the respect of the following:-

- Susceptibility to flooding of neighboring areas upstream or downstream of the proposed development;
- Exacerbation to existing flooding issue during the construction period;
- Exacerbation to existing flooding issue upon completion of the development;
- Effect on existing drainage conditions;
- Propose drainage impact mitigation measures where appropriate to mitigate the potential drainage impact.
- Discuss the responsibility of the maintenance aspects of the proposed drainage system and drainage impact mitigation measures.

2 EXISTING CONDITION AT THE SITE

2.1 Location of the Project

2.1.1 The Application Site and its adjacent area are not classified as a flooding blackspot according to the information promulgated by Land Drainage Division of DSD in March 2022.

2.1.2 The ground levels of the Application Site and its adjacent area range from 3 mPD to 12 mPD. In consideration of high tide condition, the area is relatively low-lying and prone to flooding, in particular Wong Uk Tsuen. News records show that there were precedent flooding incidents due to backwater from the sea during high tide conditions.

2.1.3 The ground profile at Wong Uk Tsuen is gradually sloped from east to west. The western side of Wong Uk Tsuen is bounded by an existing road which has an approximate surface level of 3.2 mPD.

2.1.4 The runoff of the Application Site is currently collected by ditches along both sides of application site which is discharged to Tai Lam Chung Tributary, and then to Tai Lam Chung Nullah and eventually to the sea. The existing drainage network in vicinity of the development site is shown in ***Figure 3***.

3 DEVELOPMENT PROPOSAL

3.1 Overview of Development Proposal

3.1.1 The private residential development at the Application Site comprises 7 residential towers and 17 houses, two club houses, landscaped open spaces, commercial and retail areas, covered transport lay-by, road works, drainage works and sewerage works.

3.1.2 The potential drainage impacts and the corresponding mitigation measures of the proposed development are presented in the paragraphs below.

3.1.3 The proposed residential towers and houses of the development will set on formation level of about +8 mPD, which is about 4 to 5 m above the existing ground level. As a result of the raised ground level, there will be loss in flood storage and may lead to potential drainage impact. The effect of loss in flood storage is assessed by 2D analysis method presented in Section 4.

4 ASSESSMENT METHODOLOGY AND ASSUMPTION

4.1 Overview of Methodology

4.1.1 This DIA is prepared based on available information and requirements under Drainage Services Department (DSD) Stormwater Drainage Manual, Advice Note No. 1 – Application to Drainage Impact Assessment Process to Private Sector Projects. In order to identify, assess and mitigate potential adverse drainage impacts arising from the proposed development at the Site.

4.2 Numerical Simulation Tool

4.2.1 InfoWorks – ICM (Integrated Catchment Modeling) is adopted as the numerical simulation tool of this assessment. It is an integrated modeling platform to incorporate both urban and river catchments. With full integration of 1D and 2D hydrodynamic simulation techniques, both the above- and below-ground elements of catchments can be modelled to represent all flow paths. InfoWorks ICM enables the hydraulics and hydrology of natural and manmade environments to be incorporated into a single model.

4.2.2 In this assessment, a 2D drainage model is developed to assess the potential drainage impact incurred by the proposed development.

4.3 Simulation Extent

4.3.1 The extent of the study area covers the whole catchment area of Tai Lam Chung Tributary, as ***Figure 2*** refers.

4.3.2 2D flood plain model is developed to analyse the drainage condition of low-lying flood prone area. For the uphill area where no flooding is anticipated, no 2D flood analysis is required and therefore no 2D flood plain model is developed therein. As the ground level of the southern portion of the development site will be raised, it will lose the function of flood storage and therefore 2D flood plain will not be simulated therein.

4.4 Hydrological Simulation

4.4.1 4-hr synthetic rainfall profile stipulated in Table 5a of Corrigendum No. 1/2024 is adopted as the design rainfall profile. The synthetic rainfall profile is summarized in ***Appendix C***.

4.4.2 Sub-catchments are delineated according to the topography. SCS method is adopted to simulate rainfall runoff of the catchment basin. No rainfall runoff is generated directly from the 2D grid. The adopted CN values are summarized in the following ***Table 3***.

Table 3 Summary of Adopted CN Values

Surface Type	Curve Number (CN)
Urban	95
Storage	90
Recreational Grass Land	70
Other Upland	65
Pre-Development	**Post Development**

Sub-catchment ID	CN	Area (ha)	Sub-catchment ID	CN	Area (ha)
Catchment B	65	34.715	Catchment B	65	34.715
Catchment I	65	6.758	Catchment I	65	6.758
Catchment C	65	27.707	Catchment C	65	27.707
Catchment D	65	13.068	Catchment D	65	13.068
Catchment E	65	12.735	Catchment E	65	12.735
Catchment F	65	3.074	Catchment F	65	3.074
Catchment G	65	0.724	Catchment G	65	0.390
Catchment A	65	9.694	Catchment Ga	65	0.334
Catchment H	65	1.973	Catchment A	65	9.694
1	65	0.509	Catchment H	65	1.973
6	90	1.092	1	65	0.509
7	95	1.053	6	90	1.092
8	95	1.028	7	95	1.053
9	95	0.766	8	95	1.028
10	95	0.704	9	95	0.766
11	95	0.577	10	95	0.704
12	95	1.713	11	95	0.577
13	95	2.198	12	95	1.713
14	65	1.910	13	95	2.198
15	76.6	2.849	14	65	1.910
16	72.5	1.675	15	76.6	2.849
17	86.2	0.896	16	72.5	1.675
18	73	0.427	17	86.2	0.896
19	90	0.513	18	73	0.427
20	95	0.902	19	90	0.513
10_15	90	0.779	20	95	0.902
10_20	90	1.210	10_15	91.25	0.779
A1	90	0.197	10_20	91.25	1.210
A2	90	0.211	A1	90	0.197
A3	90	0.132	A2	90	0.211
A4	90	0.173	A3	90	0.132
A5	90	0.227	A4	90	0.173
5	65	0.220	A5	90	0.227
3A	65	0.432	5	65	0.220
3B	65	0.243	3A	65	0.432
3C	65	0.224	3B	65	0.243
3D	65	0.252	3C	65	0.224
2A	95	0.491	3D	65	0.252
2B	65	1.030	2A	95	0.491
Catchment J1	65	1.333	2B	65	1.030
Catchment J2	65	0.729	Catchment J	65	1.332
B1	90	0.257	Catchment K	65	0.729

B2	90	0.258	A6	90	0.066
B3	90	0.313	U1	90	0.483
B4	90	0.243	U2	90	0.052
B5	90	0.220	U3	90	0.117
B6	90	0.211	U4	90	1.153
B7	90	0.231	U5	90	0.135
B8	90	0.201	Development Site	91.25	2.509
B9	90	0.181	5_2	91.25	0.106
B10	90	0.145	**Total Area (ha)**		**141.763**
B11	90	0.058			
B12	90	0.256			
5_1	90	1.940			
5_2	90	0.106			
Total Area (ha)		**141.763**			

4.5 Digital Terrain Model

4.5.1 A digital terrain model is developed based on the topography of the site. The average grid size of the 2D layer is 4-5m^2.

4.5.2 The ground level of digital terrain model within the application site under the future scenario duly reflects the proposed formation works of the development.

4.6 Boundary Condition and Assumptions

4.6.1 The boundary water level of the model refers to the design extreme tide levels at North Point/ Quarry Bay, which is the nearest design reference point to the proposed development. Mean sea level rise and storm surge increase due to Climate Change in End 21st Century according to the Corrigendum No. 1/2022 are adopted.

Table 2 Summary of Adopted Boundary Conditions

Return Period	Boundary Water Level (mPD)
10	3.990
50	4.510

4.7 Simulation Scenarios

4.7.1 The following scenarios are simulated according to the requirements stipulated in the advice note.

Table 3 Summary of Simulation Scenarios

Scenarios	Descriptions	Simulated RainstormEvents*
Pre-Development	Pre-Development land use + Existing Drainage Arrangement	50A, 50B * Suffix "A" refers rainfall dominating event & Suffix "B" refers tide dominating event
Post–Development	Post-Development land use + Proposed Drainage Arrangement	

4.8 Surface Roughness

4.8.1 The following values of surface roughness are adopted in this assessment.

Table 4 Summary of Adopted Surface Roughness

Surface Types	Manning's Roughness Coefficient (n)	Ks (mm)
Drain Pipes and Box Culverts	-	3
Plain Concrete Channel	0.018	-
Natural Channel	0.040	-
Overland Flow on 2D Flood Plain	0.018	-

5 POTENTIAL DRAINAGE IMPACTS AND MITIGATION MEASURES

5.1 Change in Land Use

5.1.1 Under Tuen Mun Drainage Master Plan, the land use of the Application Site was assumed to be "Storage", which had a CN value of 90. The aerial photo showing the existing land use condition of the application site is enclosed in ***Appendix A*** for reference.

5.1.2 Upon completion of the development, about 15% of the Application Site will be recreational landscape area. Based on that assumption, the CN value of the proposed development will be increased to 91.25. The Master Layout Plan of the development is enclosed in ***Appendix B*** and the calculation of the CN values is presented in ***Table 5*** below.

Table 5 Summary of Change in Land Use

Scenario	Area (ha)	Curve Number (CN)
Pre-Development Storage	4.669	90
Post-Development Total Area (Assume 85% urban with CN of 95 and 15% recreational grass land with CN of 70. In the model, CN of 91.25 is applied to all 4.604ha catchments.)	4.604 (the above 4.604ha falls entirely within the existing pre-development 4.669ha)	91.25

5.2 Loss in Flood Storage

5.2.1 The application site involves site formation works that will raise the ground level by approximately 4 to 5m. It will result in loss in flood storage that may incur adverse drainage impact to adjacent area.

5.2.2 To offset the adverse impact incurred by loss in flood storage, existing low-lying area will be served by new drains which have larger drainage capacities than the existing drains. For Wong Uk Tsuen, a 2.20m(W) x 1.72m(H) Box Culvert is proposed as a mitigation measure. The upstream catchment of Wong Uk Tsuen is proposed to be diverted by a 550mm U-channel to the north. Furthermore, the existing toe drainage located at the southern of the development is proposed to be upgraded as 750 – 900mm wide rectangular channel.

5.2.3 As revealed by the InfoWorks-ICM model, the predicted water levels at Wong Uk Tsuen will decrease upon completion of the 2.20m x 1.72m box culvert, 550mm U-channel and 750 - 900mm rectangular channel. The predicted water levels at Wong Uk Tsuen are summarized in ***Table 6a*** and ***6b***.

Table 6a Summary of Predicted Water Levels at Wong Uk

Rainstorm Event*	Predicted Water Level at Wong Uk (mPD) Node RTLc3-ch95 in InfoWorks-ICM		
	Pre-Development (mPD)	Post-Development (mPD)	Change (m) (Post – Pre)
50A	4.461	4.350	
50B	5.003	4.665	
Max	5.003	4.665	-0.338

Table 6b Summary of Predicted Water Levels at Wong Uk

Rainstorm Event*	Predicted Water Level at Wong Uk (mPD) Node RTLc3-ch0 in InfoWorks-ICM		
	Pre-Development (mPD)	Post-Development (mPD)	Change (m) (Post – Pre)
50A	4.326	4.303	
50B	4.858	4.645	
Max	4.858	4.645	-0.213

5.2.4 The loss in flood storage as mentioned above will lead to increase in peak flow of Tai Lam Chung Tributary as well. Apart from the mitigation measures mentioned above, the project proponent is also required to conduct a once-off construction dredging works at Tai Lam Chung Tributary according to the accepted basic term offer. This works is as presented in ***Appendix B1*** which will be simulated in the hydraulic model as well. The estimated water levels at Tai Lam Chung Tributary are presented in ***Table 7a and 7b***.

Table 7a Summary of Predicted Water Levels at Tai Lam Chung Tributary

Rainstorm Event*	Predicted Water Level at Tai Lam Chung Tributary Node RTLC1-ch315 in InfoWorks-ICM		
	Pre-Development (mPD)	Post-Development (mPD)	Change (m) (Post – Pre)
50A	3.993	3.991	
50B	4.514	4.511	
Max	4.514	4.511	-0.003

Table 7b Summary of Predicted Water Levels at Tai Lam Chung Tributary

Rainstorm Event*	Predicted Water Level at Tai Lam Chung Tributary Node C11_1 in InfoWorks-ICM		
	Pre-Development (mPD)	Post-Development (mPD)	Change (m) (Post – Pre)
50A	4.015	4.004	
50B	4.561	4.561	
Max	4.561	4.561	0

5.2.5 For the Tai Lam Chung Tributary, the predicted water level is decreased with the proposed drainage works.

5.2.6 For the Tai Lam Chung Channel, the model results reveal that no increase in water level is predicted. The estimated water levels at confluence point between Tai Lam Chung Channel and Tai Lam Chung Tributary are presented in ***Table 8***.

Table 8 Summary of Predicted Water Levels at Confluence Point betweenTai Lam Chung Channel and Tai Lam Chung Tributary

Rainstorm Event*	Predicted Water Level at Tai Lam Chung Channel Node 300 in InfoWorks-ICM		
	Pre-Development (mPD)	Post-Development (mPD)	Change (m) (Post – Pre)
50A	4.009	4.009	
50B	4.545	4.545	
Max	4.545	4.545	0

5.3 Other Mitigation Measures

5.3.1 Peripheral channels will be provided along the periphery of the proposed Application site. The hydraulic calculations of the peripheral drains are shown in ***Appendix E***.

5.3.2 Runoff generated within the Application site will be collected and discharged to the proposed twin cell box culvert.

5.3.3 The details of the peripheral channels are subject to changes at the later detailed design stage. The detailed design of the peripheral channels will be submitted to DSD for approval.

5.3.4 Detention tank is proposed to collect the part of total runoff within the South Wing of the development to the proposed twin cell box culvert to limit the water level of post-development scenario. In the InfoWorks-ICM model, the invert level of overflow weir within the terminal manhole is +4.9mPD. Once the water level within the terminal manhole of South Wing of Development exceeded +4.9mPD, the part of total runoff within the South Wing of the development will be discharged to the detention tank. The volume of runoff in the detention tank would cater for a 4hr storm event and would be emptied after each storm event immediately within 24 hours. Detailed design and arrangement of the detention tank (approx. 700m^3 in volume) will be submitted separately for vetting in later stage.

6 MAINTENANCE REQUIREMENTS

6.1.1 The maintenance responsibilities of the proposed drainage structures / facilities under previously approved DIA in 2023 have been agreed in the meeting among HAD, DLO, DSD and the applicant on 20 September 2023 and confirmed in the following correspondence:-

- AECOM's letter, ref. no. VPPW:TMCY:wtsk:60281828-2023016671L dated 20 October 2023

The aforesaid correspondence is enclosed in ***Appendix D*** for reference.

6.1.2 Based on the agreed maintenance arrangement as mentioned above, the proposed maintenance arrangement is delineated accordingly using the agreed principle above, as ***Figure 7*** of the enclosed drawings refers.

6.1.3 Drainage Reserve with nominal width of 3m will be provided on both sides of the proposed twin cell box culvert.

6.1.4 Proposed drainage structures/facilities in **Figure 6** will be constructed by the developer at his own cost and proposed drainage structures/facilities solely serving the development will be maintained by the developer at his own cost. If such facilities serve areas outside the development, agreement and comments would be sought from Drainage Services Department (DSD) before handing over to them for operation and maintenance. Details of these facilities will be agreed with DSD in advance during the detailed design stage so that the proposed drainage works would meet the requirement of DSD in the aspects of design, construction, operation and maintenance as recommended in Stormwater Drainage Manual.

7 TEMPORARY DRAINAGE ARRANGEMENTS DURING CONSTRUCTION

7.1.1 The temporary drainage arrangements during the construction of the proposed development will be the responsibility of the contractor. The temporary drainage arrangement proposed by the contractor will be vetted to the satisfaction of the AP/RSE. The following conditions will be incorporated into the relevant construction contracts to ensure the drainage characteristics in the area will not be worsened during the construction stages:

- Any temporary diversions of streams or rivers during construction shall have to be sized to provide the equivalent hydraulic capacity as the existing drainage systems;

- Runoff from the construction site shall pass through settling ponds before discharging into existing drainage systems. This will mitigate silting of the existing drainage system during construction of the development; and

- Construction works that may affect existing drains shall only be conducted in dry seasons.

8 CONCLUSION

8.1.1 The application site is located adjacent to Tai Lam Chung Channel and at the upstream of Tai Lam Chung Tributary. The site connects to Tai lam Chung Road and Castle Peak Road – Tai Lam by a local access road and occupies an area of about 4.7ha.

8.1.2 The Application site was identified as “Open Storage” under land use plan of TMDMP, which had a CN value of 90. Upon completion of the development, the CN Value of the development site will increase to 91.25.

8.1.3 The TMDMP has already considered the development in the application area and assume the area is paved under the ultimate scenario. Moreover, the Application Site has already been paved. In these regards, there will be no increase in runoff incurred by the proposed development.

8.1.4 The development will involve site formation works that will raise the ground level and may subsequently reduce flood storage of the area. As revealed by the modelling results of InfoWorks ICM, along with the proposed drainage mitigation works and the construction dredging works at Tai Lam Chung Tributary, the proposed development will not incur adverse drainage impact. At Wong Uk Tsuen, the predicted water levels under extreme rainfall events will decrease when the 2.20m x 1.72m box culvert, 550mm U-channel and 750-900mm wide rectangular channel are completed and in operation.

8.1.5 The potential impacts of the Application site will be mitigated by providing the following mitigation measures:-

- Re-construction of the existing open channel to a twin cell box culvert. Nominal 3m wide drainage reserve will be provided at both sides of the proposed box culvert to facilitate maintenance operation.
- Peripheral Drains will be constructed to collect runoff around the Application Site.
- Existing drains in conflict with the proposed development will be demolished and re-constructed. The capacity of the re-constructed drains should be at least equivalent to the original.
- Construction of a new 2.20m x 1.72m box culvert from Wong Uk to Tai Lam Chung Tributary for replacement of existing channel.
- Construction of 550mm U-channel at Wong Uk Village and 525-900mm wide rectangular toe channel at the southern of the development
- Construction of detention tank in South Wing of Development

8.1.6 The temporary drainage arrangements during the construction of the proposed development will be the responsibility of the contractor. The temporary drainage arrangement proposed by the contractor will be vetted to the satisfaction of the AP/RSE.

8.1.7 From this assessment it can be concluded that the proposed development can be completed without aggravating the flooding conditions within, upstream or

downstream of the site. With implementation of the proposed mitigation measures, the proposed development would be acceptable in drainage terms.

8.1.8 Proper desilting facilities, such as desilting openings and man access openings, will be provided at the proposed twin cell box culvert to facilitate maintenance works. The details of the proposed drainage works to be handed over to DSD will be submitted to DSD for approval under a separate submission.

END OF TEXT

Drawings

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PROJECT 項目

SECTION 16 PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO AN APPROVED COMPREHENSIVE RESIDENTIAL DEVELOPMENT SCHEME AND MINOR RELAXATION OF GROSS FLOOR AREA AND BUILDING HEIGHT RESTRICTIONS AT VARIOUS LOTS IN D.D. 385 AND ADJOINING GOVERNMENT LAND, TAI LAM CHUNG, TUEN MUN

CLIENT 業主

SUN HUNG KAI REAL ESTATE AGENCY LTD. 新鴻基

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I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 核校

STATUS 階段

DIA-SUBMISSION

SCALE 比例

A1 1 : 6000

DIMENSION UNIT 尺寸單位

METRES

KEY PLAN 索引圖

PROJECT NO. 項目編號

60281828

CONTRACT NO. 合約編號

SHEET TITLE 圖紙名稱

LOCATION PLAN

SHEET NUMBER 圖紙編號

FIGURE 1

ISO A1 594mm x 841mm

Project Management Initials: Designer: Checked: Approved:

826000 N

825000 N

824000 N

820000 E

821000 E

LEGEND:

APPLICATION SITE BOUNDARY

DIA STUDY BOUNDARY

N

TAI LAM CORRECTIONAL INSTITUTION

TAI LAM CHUNG

TAI LAM COUNTRY PARK

WATER TUNNEL LEADING TO TAI LAM CHUNG RESERVOIR

TAI LAM CHUNG CHANNEL

WONG UK

WU UK

TAI LAM CHUNG TRIBUTARY

CATCHWATER

TAI LAM COUNTRY PARK

TUEN MUN ROAD

CASTLE PEAK ROAD – TAI LAM

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SECTION 16 PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO AN APPROVED COMPREHENSIVE RESIDENTIAL DEVELOPMENT SCHEME AND MINOR RELAXATION OF GROSS FLOOR AREA AND BUILDING HEIGHT RESTRICTIONS AT VARIOUS LOTS IN D.D. 385 AND ADJOINING GOVERNMENT LAND, TAI LAM CHUNG, TUEN MUN

CLIENT
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階段

DIA-SUBMISSION

SCALE
比例

A1 1 : 4000

DIMENSION UNIT
尺寸單位

METRES

KEY PLAN
索引圖

PROJECT NO.
項目編號

60281828

CONTRACT NO.
合約編號

SHEET TITLE
圖紙名稱

DIA STUDY BOUNDARY

SHEET NUMBER
圖紙編號

FIGURE 2

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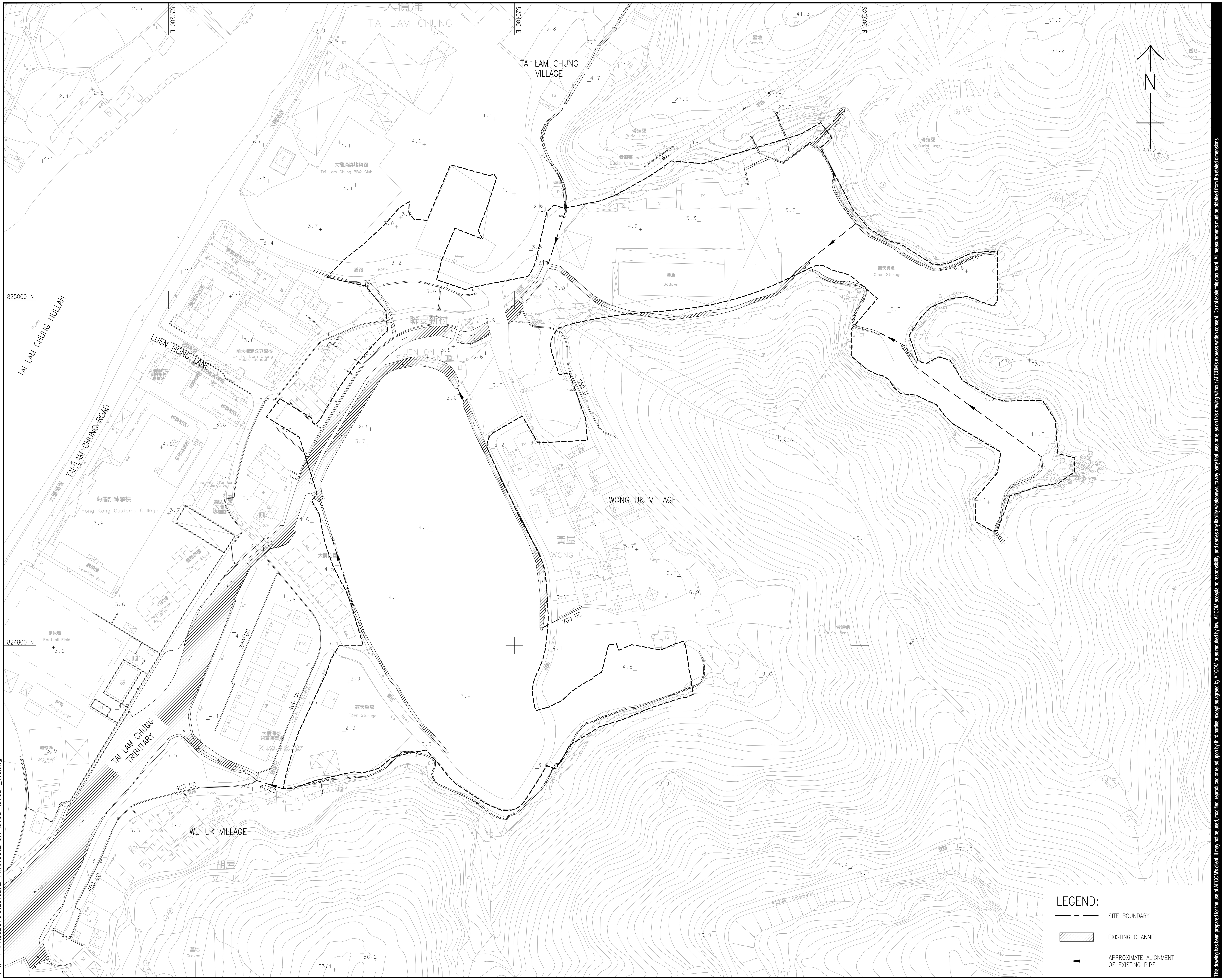
Approved:

Checked:

Designer:

Project Management Initials:



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SECTION 16 PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO AN APPROVED COMPREHENSIVE RESIDENTIAL DEVELOPMENT SCHEME AND MINOR RELAXATION OF GROSS FLOOR AREA AND BUILDING HEIGHT RESTRICTIONS AT VARIOUS LOTS IN D.D. 385 AND ADJOINING GOVERNMENT LAND, TAI LAM CHUNG, TUEN MUN

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STATUS 階段

DIA-SUBMISSION

SCALE 比例: A1 1 : 1000

DIMENSION UNIT 尺寸單位: METRES

KEY PLAN 索引圖

PROJECT NO. 項目編號: 60281828

CONTRACT NO. 合約編號

SHEET TITLE 圖紙名稱

EXISTING DRAINAGE ARRANGEMENT

SHEET NUMBER 圖紙編號

FIGURE 3

ISO A1 594mm x 841mm

Project Management Initials: Designer: Checked: Approved:

LEGEND:

APPLICATION SITE BOUNDARY

DEVELOPMENT BOUNDARY

FORMATION SITE FOR VILLAGE HOUSING

N

TAI LAM CHUNG VILLAGE

EAST WING OF DEVELOPMENT

SOUTH WING OF DEVELOPMENT

TAI LAM CHUNG NULLAH

TAI LAM CHUNG TRIBUTARY

WONG UK VILLAGE

WU UK VILLAGE

T1 (22 s) +84.00

T2 (22 s) +82.50

T3 (20 s) +72.70

T4 (20 s) +72.70

T5 (22 s) +84.00

T6 (23 s) +84.00

T7 (6 s) +29.65

HOUSE 1 - HOUSE 17 (2 s)

+13.15

+18.15

+8.15

+3.60

+6.00

+8.00

+10.00

+11.50

RAMP 1:10

RAMP 1:12.5

EVA

825050 N

824800 N

825000 E

825250 E

825500 E

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PROJECT 項目

SECTION 16 PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO AN APPROVED COMPREHENSIVE RESIDENTIAL DEVELOPMENT SCHEME AND MINOR RELAXATION OF GROSS FLOOR AREA AND BUILDING HEIGHT RESTRICTIONS AT VARIOUS LOTS IN D.D. 385 AND ADJOINING GOVERNMENT LAND, TAI LAM CHUNG, TUEN MUN

CLIENT 業主

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ISSUE/REVISION 修訂

I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 核核

STATUS 階段

SCALE 比例

A1 1 : 1000

DIMENSION UNIT 尺寸單位

METRES

KEY PLAN 索引圖

PROJECT NO. 項目編號

60281828

CONTRACT NO. 合約編號

SHEET TITLE 圖紙名稱

MASTER LAYOUT PLAN

SHEET NUMBER 圖紙編號

FIGURE 4

Plot File by: ZHILZ 06/05/2025
PATH: P:\PROJECTS\60281828\DRAWING\REPORT\SIA\SIA_402.dwg

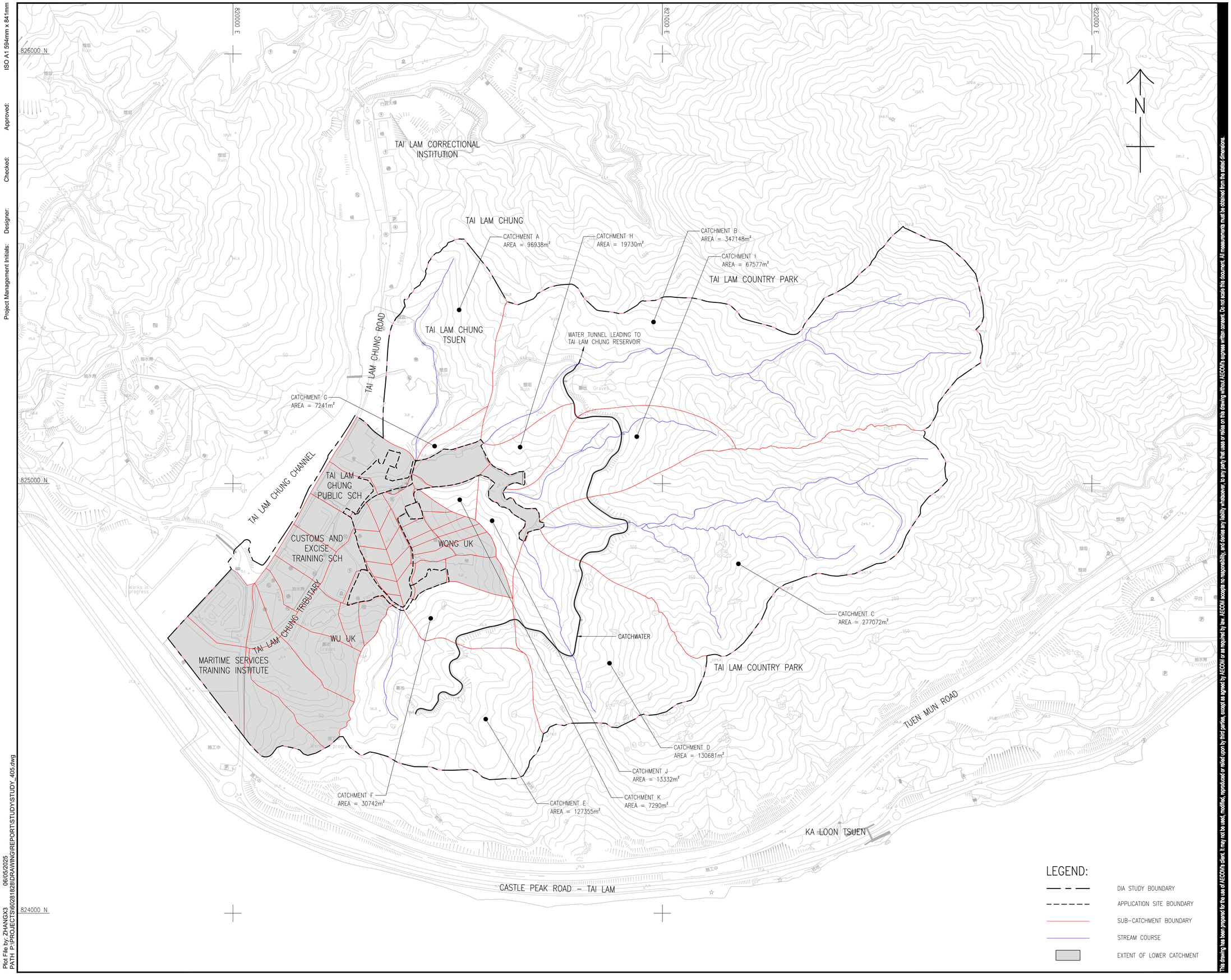
ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:



Plot File by: ZHANGX3 06/05/2025
PATH: P:\PROJECTS\60281828\DRAWING\REPORT\STUDY\STUDY_405.dwg

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PROJECT
項目

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修訂

I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 核狀

STATUS
用途

DIA-SUBMISSION

SCALE 比例
A1 1 : 4000

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號
60281828

CONTRACT NO. 合約編號

SHEET TITLE
圖紙名稱

PRE-DEVELOPMENT
SUB-CATCHMENT PLAN

SHEET NUMBER
圖紙編號

FIGURE 5

ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

826000 N

825000 N

824000 N

820000 E

821000 E

822000 E

TAI LAM CORRECTIONAL INSTITUTION

TAI LAM CHUNG

CATCHMENT A
AREA = 96938m²

CATCHMENT H
AREA = 19730m²

CATCHMENT B
AREA = 347148m²

CATCHMENT I
AREA = 67577m²

TAI LAM COUNTRY PARK

TAI LAM CHUNG ROAD

TAI LAM CHUNG TSUEN

WATER TUNNEL LEADING TO TAI LAM CHUNG RESERVOIR

CATCHMENT G
AREA = 3900m²

CATCHMENT Ga
AREA = 3340m²

TAI LAM CHUNG CHANNEL

TAI LAM CHUNG PUBLIC SCH

CUSTOMS AND EXCISE TRAINING SCH

WONG UK

TAI LAM CHUNG TRIBUTARY

WU UK

MARITIME SERVICES TRAINING INSTITUTE

CATCHMENT C
AREA = 277072m²

CATCHWATER

TAI LAM COUNTRY PARK

TUEN MUN ROAD

CATCHMENT D
AREA = 130681m²

CATCHMENT J
AREA = 13332m²

CATCHMENT K
AREA = 7290m²

CATCHMENT E
AREA = 127355m²

CATCHMENT F
AREA = 30742m²

KA LOON TSUEN

CASTLE PEAK ROAD – TAI LAM

N

LEGEND:

DIA STUDY BOUNDARY

APPLICATION SITE BOUNDARY

SUB-CATCHMENT BOUNDARY

STREAM COURSE

Plot File by: Satcf
PATH: P:\PROJECTS\60281828\DRAWING\REPORT\STUDY\STUDY_408.dwg
06/05/2025

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PROJECT
項目

SECTION 16 PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO AN APPROVED COMPREHENSIVE RESIDENTIAL DEVELOPMENT SCHEME AND MINOR RELAXATION OF GROSS FLOOR AREA AND BUILDING HEIGHT RESTRICTIONS AT VARIOUS LOTS IN D.D. 385 AND ADJOINING GOVERNMENT LAND, TAI LAM CHUNG, TUEN MUN

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STATUS
用段

DIA-SUBMISSION

SCALE 比例

A1 1 : 4000

DIMENSION UNIT 尺寸單位

METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號

60281828

CONTRACT NO. 合約編號

SHEET TITLE
圖紙名稱

POST-DEVELOPMENT SUB-CATCHMENT PLAN

SHEET NUMBER
圖紙編號

FIGURE 5.1

ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

819000 E

820000 E

820500 E

825300 N

825000 N

824700 N

TAI LAM CHUNG TSUEN

大欖涌
TAI LAM CHUNG

TAI LAM CHUNG VILLAGE

TAI LAM CHUNG NULLAH

聯安新村
LUEN ON SAN TSUEN

LUEN HONG LANE

TAI LAM CHUNG ROAD

TAI LAM CHUNG TRIBUTARY

WONG UK VILLAGE

WU UK VILLAGE

1.8m(W)X1.2m(H) CHANNEL TO REPLACE EXISTING 1m(W)x1m(H) CHANNEL

600 U

750 U

525 U

525 U

1.6m(W)X1.8m(H) CHANNEL

DISCHARGE OF STP – EAST

EXISTING 2m(W)x1m(H) CHANNEL TO BE REPLACED BY 1.65m(W)X1.65m(H)

TWIN 3.5m(W)x2.5m(H) BOX CULVERT

Ø1650

Ø1650

2.0m(W)x2.0m(H) CHANNEL

1.65m(W)X1.65m(H) CHANNEL

TWIN 2.5m(W)x2.5m(H) BOX CULVERT

1.9m(W)x1.9m(H) CHANNEL

PROPOSED PIPE TO DISCHARGE THE STORED RUNOFF TO BOX CULVERT EITHER BY PUMP OR GRAVITY FLOW SUBJECT TO DETAILED DESIGN

PROPOSED LOCATION FOR DETENTION TANK WITH 700m³ CAPACITY

OVERFLOW WEIR AT +4.9mPD TO CONNECT TO DETENTION TANK

PROPOSED STORMWATER TERMINAL MANHOLE FOR SOUTHERN PORTION OF DEVELOPMENT

DISCHARGE OF STP – SOUTH

EXISTING 550 U

550 U

2.20m(W)x1.72m(H) BOX CULVERT

1.4m(W)x1.4m(H) CHANNEL

375 U

PERIPHERAL CHANNEL, 3000UC, SIZE TO BE REVIEWED IN BD SUBMISSION TO SUIT INTERNAL DRAINAGE DESIGN

0.75m(W)x1.0m(H) CHANNEL

0.525m(W)x1.0m(H) CHANNEL

0.75m(W)x1.0m(H) CHANNEL

0.525m(W)x1.0m(H) CHANNEL

1.3m (W) X 2.0m (H) CHANNEL

1750 DIA.

1.3m (W) X 2.0m (H) CHANNEL

N

NOTES:

1. EXACT PUMP PIT LOCATIONS AND ADJOINTING U-CHANNEL DIMENSIONS TO BE ADDRESSED IN DETAILED DESIGN STAGE.
2. FOR 2.20m(W)x1.72m(H) BOX CULVERT ACCESSING OPENINGS AND MULTI-COVER OPENINGS SIZES SHOULD BE 675x675 AND 1500x2000 RESPECTIVELY. RESPECTIVE DESIGN TO BE ADDRESSED IN DETAILED DESIGN STAGE.

LEGEND:

- DEVELOPMENT BOUNDARY
- ø600 STORMWATER DRAIN
- CATCHPIT
- STORMWATER MANHOLE
- PUMP PIT
- OPEN CHANNEL
- 300 U U-CHANNEL
- BOX CULVERT
- EXISTING CHANNEL
- PROPOSED CHANNEL TO DIVERT EXISTING CHANNEL

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PROJECT 項目

PROPOSED AMENDMENTS TO AN APPROVED COMPREHENSIVE RESIDENTIAL DEVELOPMENT SCHEME AND MINOR RELAXATION OF GROSS FLOOR AREA AND BUILDING HEIGHT RESTRICTIONS AT VARIOUS LOTS IN D.D. 385 AND ADJOINING GOVERNMENT LAND, TAI LAM CHUNG, TUEN MUN

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DIA-SUBMISSION

SCALE 比例

A1 1 : 1500

DIMENSION UNIT 尺寸單位

METRES

KEY PLAN 索引圖

PROJECT NO. 項目編號

60281828

CONTRACT NO. 合約編號

SHEET TITLE 圖紙名稱

DRAINAGE ARRANGMENT

SHEET NUMBER 圖紙編號

60281828/STUDY/FIGURE 6

Plot File by: Liul 06/05/2025
PATH: P:\PROJECTS\60281828\DRAWING\REPORT\STUDY\STUDY_406.dwg

ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

819000 E

820200 E

820550 E

825300 N

825000 N

824700 N

N

NOTES:

1. EXACT PUMP PIT LOCATIONS AND ADJOINTING U-CHANNEL DIMENSIONS TO BE ADDRESSED IN DETAILED DESIGN STAGE.
2. FOR 2.20m(W)x1.72m(H) BOX CULVERT ACCESSING OPENINGS AND MULTI-COVER OPENINGS SIZES SHOULD BE 675x675 AND 1500x2000 RESPECTIVELY. RESPECTIVE DESIGN TO BE ADDRESSED IN DETAILED DESIGN STAGE.

LEGEND:

- DEVELOPMENT BOUNDARY
- ø600 — STORMWATER DRAIN
- CATCHPIT
- STORMWATER MANHOLE
- PUMP PIT
- OPEN CHANNEL
- 300 U — U-CHANNEL
- BOX CULVERT
- EXISTING CHANNEL
- PROPOSED CHANNEL TO DIVERT EXISTING CHANNEL
- MAINTAINED BY DSD
- MAINTAINED BY DISTRICT OFFICE
- TEMPORARILY MAINTAINED BY THE GRANTEE AND HANDED OVER TO GOVERNMENT WHEN DEMANDED
- MAINTAINED BY GRANTEE
- DREDGING AREA AND MAINTAINED BY DSD
- PINK AREA
- STIPPLED BROWN AREA
- GREEN / GREEN CROSS-HATCHED BLACK / GREEN STIPPLED BLUE / GREEN STIPPLED RED AREA

TAI LAM CHUNG VILLAGE

TAI LAM CHUNG NULLAH

WONG UK VILLAGE

WU UK VILLAGE

TAI LAM CHUNG TRIBUTARY

LUEN HONG LANE

TAI LAM CHUNG ROAD

1.8m(W)x1.2m(H) CHANNEL TO REPLACE EXISTING 1m(W)x1m(H) CHANNEL

600 U

750 U

525 U

525 U

525 U

1.6m(W)x1.8m(H) CHANNEL

EXISTING 2m(W)x1m(H) CHANNEL TO BE REPLACED BY 1.65m(W)X1.65m(H)

TWIN 3.5m(W)x2.5m(H) BOX CULVERT

PROPOSED LOCATION FOR DETENTION TANK WITH 700m³ CAPACITY

PROPOSED STORMWATER TERMINAL MANHOLE FOR SOUTHERN PORTION OF DEVELOPMENT

ø600

ø1650

1.65m(W)X1.65m(H) CHANNEL

TWIN 2.5m(W)x2.5m(H) BOX CULVERT

EXISTING 550 U

550 U

2.0m(W)x2.0m(H) CHANNEL

1.9m(W)x1.9m(H) CHANNEL

1.4m(W)x1.4m(H) CHANNEL

2.20m(W)x1.72m(H) BOX CULVERT

375 U

PERIPHERAL CHANNEL, 3000UC, SIZE TO BE REVIEWED IN BD SUBMISSION TO SUIT INTERNAL DRAINAGE DESIGN

0.75m(W)x1.0m(H) CHANNEL

0.525m(W)x1.0m(H) CHANNEL

0.75m(W)x1.0m(H) CHANNEL

1.3m (W) X 2.0m (H) CHANNEL

1750 DIA.

1.3m (W) X 2.0m (H) CHANNEL

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PATH: P:\PROJECTS\60281828\DRAWING\REPORT\STUDY\STUDY_407.dwg
06/05/2025

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PROJECT
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STATUS
階段

DIA-SUBMISSION

SCALE 比例
A1 1 : 1500

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號
60281828

CONTRACT NO. 合約編號

SHEET TITLE
圖紙名稱

MAINTENANCE ARRANGEMENT OF PROPOSED DRAINAGE FACILITIES

SHEET NUMBER
圖紙編號

60281828/STUDY/FIGURE 7

Appendix A

Aerial Photo of Application Site

Aerial Photo of the Application Site

Appendix B

Master Layout Plan of the Proposed Development

N

Note:
- All spot levels marked on the building structures refer to the main roof levels
- All levels, blockings and building structures are subject to detailed design
- No. of storeys marked on plan refers to total no. of storeys above ground, excluding transfer plate

Legend

- Application Site Boundary
- Development Site Boundary
- Drainage Reserve
- Reserved Site for Public Facilities
- Formation Site for Village Housing
- Formation of the Future Public Roads
- Covered Walkway
- Residential
- Private Garden
- Landscape Area (Covered or Uncovered)
- Podium
- EVA / Driveway
- Management Facility

SUN HUNG KAI
ARCHITECTS AND ENGINEERS LIMITED
SUN HUNG KAI CENTRE, WANCHAI, HONGKONG
TEL. 28278111 FAX. 28272884

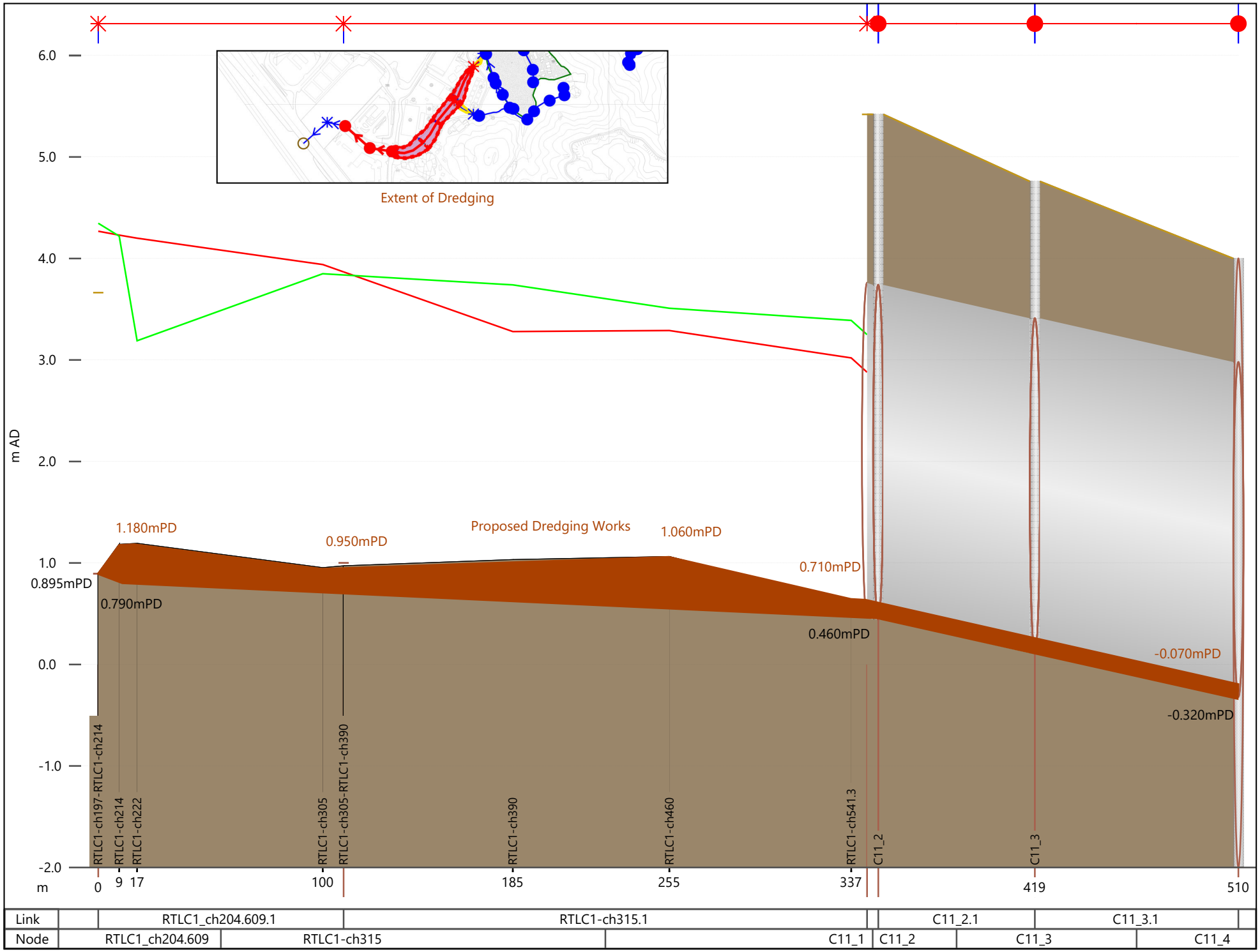
Title

Indicative Master Layout Plan

Rev.	Date
SK02	APRIL 2025
Scale	Figure
N/A	01

Appendix B1

Proposed Dredging Works in Tai Nam Chung Tributary


Extent of Dredging
m AD
6.0
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
1.180mPD
0.950mPD
Proposed Dredging Works
1.060mPD
0.710mPD
0.895mPD
0.790mPD
0.460mPD
-0.070mPD
-0.320mPD
RTLC1-ch197-RTLC1-ch214
RTLC1-ch214
RTLC1-ch222
RTLC1-ch305
RTLC1-ch305-RTLC1-ch390
RTLC1-ch390
RTLC1-ch460
RTLC1-ch541.3
C11_2
C11_3
m
0
9
17
100
185
255
337
419
510
Link
RTLC1_ch204.609.1
RTLC1-ch315.1
C11_2.1
C11_3.1
Node
RTLC1_ch204.609
RTLC1-ch315
C11_1
C11_2
C11_3
C11_4

Appendix C

Summary of Rainfall Profile in InfoWorks-ICM Model (with CD containing InfoWorks-ICM model)

Summary of synthetic rainfall profile

Time	Rate of Rainfall (mm/hr) for 50-yr return period based on Corr 01/2024 HKO, A, B, C value	Rate of Rainfall with 28.1% increase for climate change to End Century according to Corr 1/2022 (mm/hr)
00::00:00	46.85156	60.01684836
00::00:01	46.99316	60.19823796
00::00:02	47.1377	60.3833937
00::00:03	47.28125	60.56728125
00::00:04	47.42773	60.75492213
00::00:05	47.57715	60.94632915
00::00:06	47.72559	61.13648079
00::00:07	47.87891	61.33288371
00::00:08	48.03271	61.52990151
00::00:09	48.18848	61.72944288
00::00:10	48.3457	61.9308417
00::00:11	48.50537	62.13537897
00::00:12	48.66748	62.34304188
00::00:13	48.83105	62.55257505
00::00:14	48.99658	62.76461898
00::00:15	49.16504	62.98041624
00::00:16	49.33496	63.19808376
00::00:17	49.5083	63.4201323
00::00:18	49.68262	63.64343622
00::00:19	49.85986	63.87048066
00::00:20	50.03955	64.10066355
00::00:21	50.22217	64.33459977
00::00:22	50.40674	64.57103394
00::00:23	50.59375	64.81059375

00::00:24	50.78418	65.05453458
00::00:25	50.97705	65.30160105
00::00:26	51.17188	65.55117828
00::00:27	51.37109	65.80636629
00::00:28	51.57227	66.06407787
00::00:29	51.77734	66.32677254
00::00:30	51.98486	66.59260566
00::00:31	52.19531	66.86219211
00::00:32	52.40967	67.13678727
00::00:33	52.62744	67.41575064
00::00:34	52.84863	67.69909503
00::00:35	53.07324	67.98682044
00::00:36	53.30127	68.27892687
00::00:37	53.53369	68.57665689
00::00:38	53.76953	68.87876793
00::00:39	54.00928	69.18588768
00::00:40	54.25391	69.49925871
00::00:41	54.50244	69.81762564
00::00:42	54.75488	70.14100128
00::00:43	55.0127	70.4712687
00::00:44	55.2749	70.8071469
00::00:45	55.54102	71.14804662
00::00:46	55.81348	71.49706788
00::00:47	56.09033	71.85171273
00::00:48	56.37207	72.21262167
00::00:49	56.66113	72.58290753
00::00:50	56.95361	72.95757441

00::00:51	57.25342	73.34163102
00::00:52	57.55908	73.73318148
00::00:53	57.87012	74.13162372
00::00:54	58.18896	74.54005776
00::00:55	58.51416	74.95663896
00::00:56	58.84619	75.38196939
00::00:57	59.18506	75.81606186
00::00:58	59.53271	76.26140151
00::00:59	59.8877	76.7161437
00::01:00	60.25049	77.18087769
00::01:01	60.62207	77.65687167
00::01:02	61.00293	78.14475333
00::01:03	61.39258	78.64389498
00::01:04	61.79199	79.15553919
00::01:05	62.20166	79.68032646
00::01:06	62.62158	80.21824398
00::01:07	63.05273	80.77054713
00::01:08	63.49561	81.33787641
00::01:09	63.9502	81.9202062
00::01:10	64.41748	82.51879188
00::01:11	64.89844	83.13490164
00::01:12	65.39258	83.76789498
00::01:13	65.90186	84.42028266
00::01:14	66.42627	85.09205187
00::01:15	66.96826	85.78634106
00::01:16	67.52539	86.50002459
00::01:17	68.10254	87.23935374

00::01:18	68.69775	88.00181775
00::01:19	69.31299	88.78994019
00::01:20	69.95068	89.60682108
00::01:21	70.61084	90.45248604
00::01:22	71.29541	91.32942021
00::01:23	72.00562	92.23919922
00::01:24	72.74414	93.18524334
00::01:25	73.51172	94.16851332
00::01:26	74.31128	95.19274968
00::01:27	75.14478	96.26046318
00::01:28	76.01538	97.37570178
00::01:29	76.92505	98.54098905
00::01:30	77.87769	99.76132089
00::01:31	78.87695	101.041373
00::01:32	79.92603	102.3852444
00::01:33	81.03125	103.8010313
00::01:34	82.19531	105.2921921
00::01:35	83.42651	106.8693593
00::01:36	84.72974	108.5387969
00::01:37	86.1145	110.3126745
00::01:38	87.58838	112.2007148
00::01:39	89.1626	114.2172906
00::01:40	90.84937	116.378043
00::01:41	92.66309	118.7014183
00::01:42	94.62134	121.2099365
00::01:43	96.74585	123.9314339
00::01:44	99.06104	126.8971922

00::01:45	101.5994	130.1488314
00::01:46	104.4001	133.7365281
00::01:47	107.5138	137.7251778
00::01:48	111.0048	142.1971488
00::01:49	114.9592	147.2627352
00::01:50	119.4923	153.0696363
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00::02:00	244.0028	312.5675868
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00::02:02	176.9097	226.6213257
00::02:03	160.201	205.217481
00::02:04	147.9908	189.5762148
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00::02:06	131.0082	167.8215042
00::02:07	124.7653	159.8243493
00::02:08	119.4923	153.0696363
00::02:09	114.9592	147.2627352
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00::02:12	104.4001	133.7365281
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00::02:42	67.52539	86.50002459
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00::02:57	60.62207	77.65687167
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00::03:34	50.78418	65.05453458
00::03:35	50.59375	64.81059375
00::03:36	50.40674	64.57103394
00::03:37	50.22217	64.33459977
00::03:38	50.03955	64.10066355
00::03:39	49.85986	63.87048066
00::03:40	49.68262	63.64343622
00::03:41	49.5083	63.4201323
00::03:42	49.33496	63.19808376
00::03:43	49.16504	62.98041624
00::03:44	48.99658	62.76461898
00::03:45	48.83105	62.55257505
00::03:46	48.66748	62.34304188
00::03:47	48.50537	62.13537897
00::03:48	48.3457	61.9308417
00::03:49	48.18848	61.72944288
00::03:50	48.03271	61.52990151
00::03:51	47.87891	61.33288371
00::03:52	47.72559	61.13648079
00::03:53	47.57715	60.94632915
00::03:54	47.42773	60.75492213
00::03:55	47.28125	60.56728125
00::03:56	47.1377	60.3833937
00::03:57	46.99316	60.19823796
00::03:58	46.85156	60.01684836
00::03:59	0	0

Appendix D

Correspondence in relation to Demarcation of Maintenance Responsibility

AECOM
12/F, Grand Central Plaza, Tower 2
138 Shatin Rural Committee Road
Shatin, Hong Kong
香港新界沙田鄉事會路 138 號
新城市中央廣場第 2 座 12 樓
www.aecom.com

+852 3922 9000 tel
+852 3922 9797 fax

Our Ref : VPPW:TMCY:wtsk:60281828-2023016671L

20 October 2023

By Hand

<Distribution List>

Dear Sir/Madam,

Proposed Residential Development at Various TMTL 417 in Tai Lam Chung, Tuen Mun

Submission of Revised Maintenance Arrangement Plan for Proposed Drainage Works

Refer to our letter ref.: MCY:TMCY:wtsk:60281828-2022015276L dated 12 October 2022, our discussion forum held among Home Affairs Department, Lands Department and Drainage Services Department on 20 September 2023 and your subsequent replies (Annex A refers).

In response to the abovementioned replies, we are pleased to submit herewith the revised maintenance arrangement plan (Sheet Number: 60281828/STUDY/FIGURE 7) for your comment. The drainage works mentioned in the maintenance arrangement plan are referenced from the approved Drainage Impact Assessment dated 23 May 2023.

We would be grateful if you could provide your comments or a nil reply on or before 26 October 2023. Should you have any queries, please feel free to contact our Mr. Thomas Miu at 8191 2848 or the undersigned at 3729 0799.

Thank you very much for your attention.

Yours faithfully,
For and on behalf of
AECOM Asia Co. Ltd.

Vic Pun
Technical Director
Land Supply / Municipal

Encl.

cc SHK - Mr. Johnson Yau] w/e

AECOM
12/F, Grand Central Plaza, Tower 2
138 Shatin Rural Committee Road
Shatin, Hong Kong
香港新界沙田鄉事會路 138 號
新城市中央廣場第 2 座 12 樓
www.aecom.com

+852 3922 9000 tel
+852 3922 9797 fax

Proposed Residential Development at Various TMTL 417 in Tai Lam Chung, Tuen Mun

Submission of Revised Maintenance Arrangement Plan for Proposed Drainage Works

Distribution List

1. Home Affairs Department Tuen Mun District Office Community and Development Section (TMDO) 2nd floor, Tuen Mun Government Offices, 1 Tuen Hi Road, Tuen Mun, New Territories Attn: Mr. TSANG Chi Shing, Patrick (EO(Dev))	2. Lands Department Lands Administration Office Land Supply Section Units 3702 - 10, 37th Floor, Tower 1 Millennium City 1, 388 Kwun Tong Road Kwun Tong, Kowloon Attn: Ms. WONG Lai Yan, Ida (Estate Surveyor/Land Supply 3(1) (Land Supply Section))
3. Drainage Services Department Operations & Maintenance Branch Mainland North Division Tuen Mun Section 11/F, Kowloon Government Offices 405 Nathan Road, Kowloon Attn: Ms. CHEUNG MC April (TM/TM)	4. Lands Department Lands Administration Office District Lands Office, Tuen Mun 7/F, Tuen Mun Government Offices, 1 Tuen Hi Road, Tuen Mun, New Territories Attn: Mr. LEE Tung Sing (Estate Surveyor/E1 (District Lands Office, Tuen Mun))

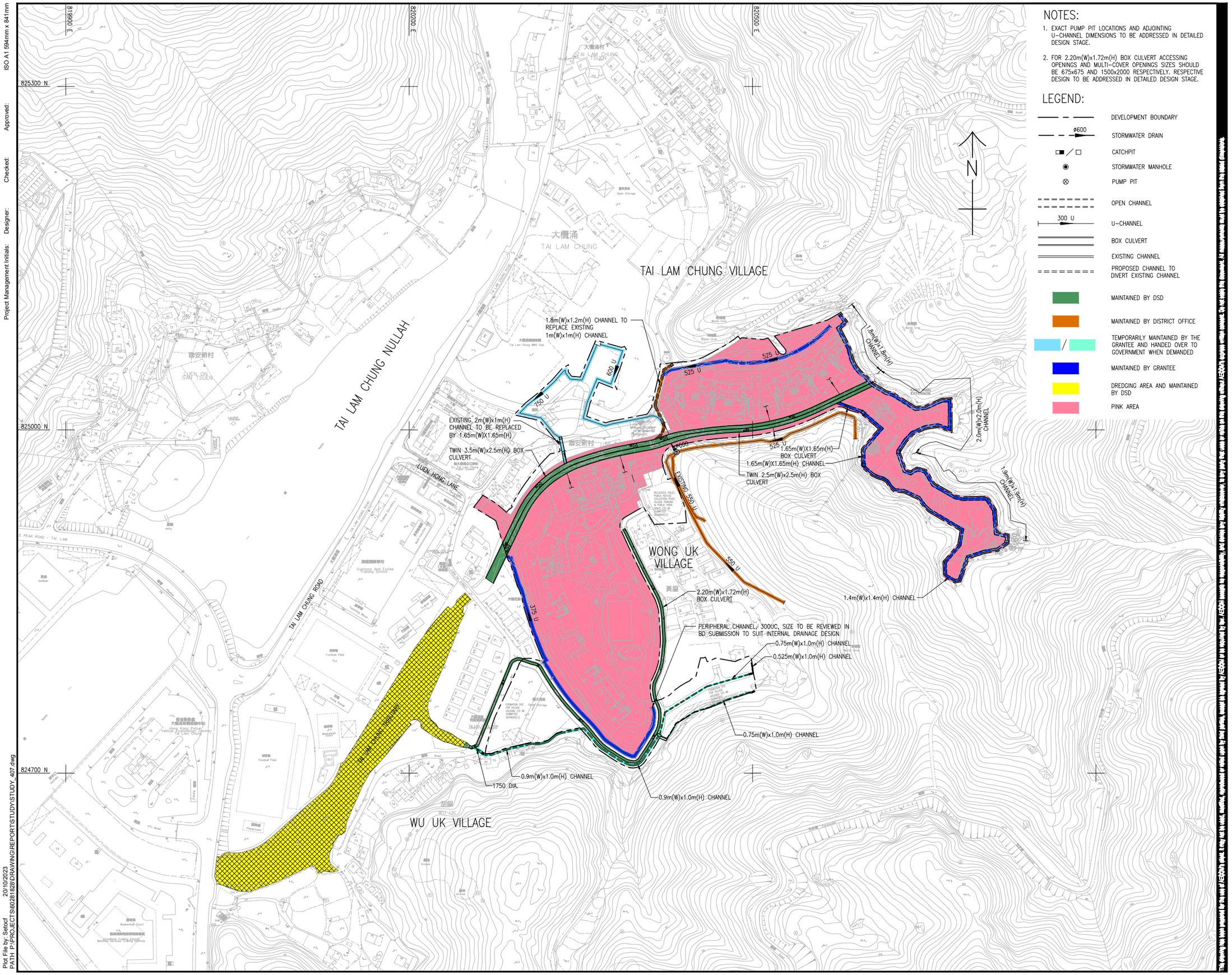
ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:



NOTES:

1. EXACT PUMP PIT LOCATIONS AND ADJOINTING U-CHANNEL DIMENSIONS TO BE ADDRESSED IN DETAILED DESIGN STAGE.
2. FOR 2.20m(W)x1.72m(H) BOX CULVERT ACCESSING OPENINGS AND MULTI-COVER OPENINGS SIZES SHOULD BE 675x675 AND 1500x2000 RESPECTIVELY. RESPECTIVE DESIGN TO BE ADDRESSED IN DETAILED DESIGN STAGE.

LEGEND:

- DEVELOPMENT BOUNDARY
- ø600 — STORMWATER DRAIN
- CATCHPIT
- STORMWATER MANHOLE
- PUMP PIT
- OPEN CHANNEL
- 300 U — U-CHANNEL
- BOX CULVERT
- EXISTING CHANNEL
- PROPOSED CHANNEL TO DIVERT EXISTING CHANNEL
- MAINTAINED BY DSD
- MAINTAINED BY DISTRICT OFFICE
- TEMPORARILY MAINTAINED BY THE GRANTEE AND HANDED OVER TO GOVERNMENT WHEN DEMANDED
- MAINTAINED BY GRANTEE
- DREDGING AREA AND MAINTAINED BY DSD
- PINK AREA

AECOM

PROJECT

RESIDENTIAL DEVELOPMENT AT TAI LAM CHUNG, TUEN MUN, NEW TERRITORIES

CLIENT

SUN HUNG KAI REAL ESTATE AGENCY LTD.

CONSULTANT

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS

ISSUE/REVISION

I/R	DATE	DESCRIPTION	CHK

STATUS

DIA-SUBMISSION

SCALE A1 1 : 1500

DIMENSION UNIT METRES

KEY PLAN

PROJECT NO. 60281828

CONTRACT NO.

SHEET TITLE

MAINTENANCE ARRANGEMENT OF PROPOSED DRAINAGE FACILITIES

SHEET NUMBER

60281828/STUDY/FIGURE 7

Plot File by: Satcf 20/10/2023
PATH: P:\PROJECTS\60281828\DRAWING\REPORT\STUDY\STUDY_407.dwg

ANNEX A

From: patrick_cs_tsang@had.gov.hk
Sent: Wednesday, October 4, 2023 3:41 PM
To: esls3_1@landsd.gov.hk
Cc: anguscheung@shkp.com; aprilmccheung@dsd.gov.hk; Wong, Ben; chho02@dsd.gov.hk; llkcheuk@shkp.com; Yuen, Ming Chung; sesls3@landsd.gov.hk; Miu, Thomas; Pun, Pak Wing Vic; wongwanchi@shkp.com; shun_king_chan@had.gov.hk; king_man_ip@had.gov.hk
Subject: RE: Proposed Land Exchange for Comprehensive Residential Development of Various Lots in D.D. 385, Tai Lam Chung, Tuen Mun, New Territories (New Lot to be known as TMTL417) - Drainage Works Maintenance Responsibility

Dear Ida,

This office will take up the ad-hoc maintenance responsibility of the proposed 525 and 550 u-channels. Thanks.

Regards,
Patrick Tsang
EO(D)/TMDO
Tel. 2451 3049

From: Ida Lai Yan WONG/LAO/LANDSD/HKSARG@LANDSD
To: "Miu, Thomas" <Thomas.Miu@aecom.com>, "aprilmccheung@dsd.gov.hk" <aprilmccheung@dsd.gov.hk>, "patrick_cs_tsang@had.gov.hk" <patrick_cs_tsang@had.gov.hk>
Cc: "sesls3@landsd.gov.hk" <sesls3@landsd.gov.hk>, "chho02@dsd.gov.hk" <chho02@dsd.gov.hk>, "anguscheung@shkp.com" <anguscheung@shkp.com>, "wongwanchi@shkp.com" <wongwanchi@shkp.com>, "llkcheuk@shkp.com" <llkcheuk@shkp.com>, "Wong, Ben" <ben.wong@aecom.com>, "Yuen, Ming Chung" <ming.yuen@aecom.com>, "Pun, Pak Wing Vic" <vic.pun@aecom.com>
Date: 20.09.2023 07:21 PM
Subject: RE: Proposed Land Exchange for Comprehensive Residential Development of Various Lots in D.D. 385, Tai Lam Chung, Tuen Mun, New Territories (New Lot to be known as TMTL417) - Drainage Works Maintenance Responsibility

Dear Thomas (AECOM), April (DSD) and Patrick (HAD),

I refer to the meeting held among us today regarding the revised DIA report dated 4.5.2023 for the captioned land exchange proposal.

2. Concerning the 2.20m x 1.72m box culvert which is proposed to be maintained by HAD under DIA, DSD in the meeting raised concern on (i) whether the proposed box culvert solely serve Wong Uk Village, (ii) whether it can be replaced by other simpler designs such as u-channels, and (iii) its future maintenance difficulties foreseen by DSD. As discussed with AECOM over phone after the meeting today, they advised the proposal in question was formulated based on their discussions with DSD over the past few months. As such, grateful if **AECOM** could reach out to **DSD** for further discussion of the proposal details these days and update us any modifications to the proposal or recommended maintenance measures for the box culvert based on your discussions.

3. On the other hand, AECOM explained the designs of the proposed 525 and 550 u-channels and the rationales behind such proposal during the meeting. Noting the proposed u-channels aim to serve the existing and future village houses in the vicinity (as elaborated by AECOM today) and will wholly be located on Government land after completion of land exchange in the future, grateful if **HAD** would re-consider taking up the maintenance responsibility of the concerned u-channels.

4. I would be very grateful if I could have your reply and update on the above **by 29.9.2023**. Shall you have any queries, please feel free to contact me. Thank you very much.

Regards,
Ida WONG
ES/LS3(1)
Land Supply Section, LandsD
Tel.: 2155 2443

ANNEX A

From: aprilmccheung@dsd.gov.hk
Sent: Thursday, October 19, 2023 4:48 PM
To: Miu, Thomas
Cc: esls3_1@landsd.gov.hk; sesls3@landsd.gov.hk; chho02@dsd.gov.hk
Subject: Re: [Internet]RE: [Internet]RE: [Internet]RE: [Internet]RE: Proposed Land Exchange for Comprehensive Residential Development of Various Lots in D.D. 385, Tai Lam Chung (TMTL417) - Swept Path for S200 Box Culvert O&M

Dear Thomas,

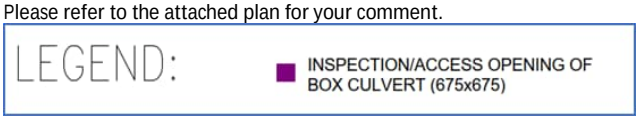
We have no further comments. Please be reminded the followings:-
1. The inspection chamber should be designed to inspect the conditions of connections between the stormwater pipes and the proposed box culvert.
2. The inspection chamber/ manhole should be designed according to DSD's standard drawings.
3. If the above requirements could not be satisfied, this no in-principle objection to the proposed box culvert (2.2m (W) x 1.72m (H)) will be invalid.

Regards,
April CHEUNG
TM/TM, MND, DSD
Tel.: 2300 1542

From: "Miu, Thomas" <Thomas.Miu@aecom.com>
To: "aprilmccheung@dsd.gov.hk" <aprilmccheung@dsd.gov.hk>
Cc: "sesls3@landsd.gov.hk" <sesls3@landsd.gov.hk>, "esls3_1@landsd.gov.hk" <esls3_1@landsd.gov.hk>, "chho02@dsd.gov.hk" <chho02@dsd.gov.hk>
Date: 19/10/2023 16:31
Subject: [Internet]RE: [Internet]RE: [Internet]RE: [Internet]RE: Proposed Land Exchange for Comprehensive Residential Development of Various Lots in D.D. 385, Tai Lam Chung (TMTL417) - Swept Path for S200 Box Culvert O&M
Serial No.:

Dear April,

Since its too small on plan to mark the opening dimensions, I have added a legend instead.
Please refer to the attached plan for your comment.



Regards,
Thomas Miu
(Tel.: 8191 2848)

From: aprilmccheung@dsd.gov.hk <aprilmccheung@dsd.gov.hk>
Sent: Thursday, October 19, 2023 4:20 PM
To: Miu, Thomas <Thomas.Miu@aecom.com>
Cc: sesls3@landsd.gov.hk; esls3_1@landsd.gov.hk; chho02@dsd.gov.hk
Subject: Re: [Internet]RE: [Internet]RE: [Internet]RE: Proposed Land Exchange for Comprehensive Residential Development of Various Lots in D.D. 385, Tai Lam Chung (TMTL417) - Swept Path for S200 Box Culvert O&M

Dear Thomas,

Could you please indicate the size of inspection chamber or manhole provided at location of the box culvert where the proposed stormwater pipe will be connected to? Thanks.

Best Regards,
April CHEUNG
TM/TM, MND, DSD
Tel.: 2300 1542

ANNEX A

From: "Miu, Thomas" <Thomas.Miu@aecom.com>
To: "aprilmccheung@dsd.gov.hk" <aprilmccheung@dsd.gov.hk>
Cc: "sesls3@landsd.gov.hk" <sesls3@landsd.gov.hk>, "esls3_1@landsd.gov.hk" <esls3_1@landsd.gov.hk>, "Yuen, Ming Chung" <ming.yuen@aecom.com>, "Pun, Pak Wing Vic" <vic.pun@aecom.com>, "Wong, Ben" <ben.wong@aecom.com>
Date: 19/10/2023 16:12
Subject: [Internet]RE: [Internet]RE: [Internet]RE: Proposed Land Exchange for Comprehensive Residential Development of Various Lots in D.D. 385, Tai Lam Chung (TMTL417) - Swept Path for S200 Box Culvert O&M
Serial No.:

Dear April,

May I refer to your further comments given and our subsequent discussion, please below our response to your comment.

Grateful if you could provide your further comment or a nil reply on the current box culvert design layout, as to facilitate the maintenance party allocation with respect to our meeting on 20 September 2023.

Please feel free to reach me at 8191 2848.
Thank you.

Regards,
Thomas Miu
(Tel.: 8191 2848)

From: aprilmccheung@dsd.gov.hk <aprilmccheung@dsd.gov.hk>
Sent: Tuesday, October 17, 2023 12:33 PM
To: Miu, Thomas <Thomas.Miu@aecom.com>
Cc: sesls3@landsd.gov.hk; esls3_1@landsd.gov.hk; Yuen, Ming Chung <ming.yuen@aecom.com>; Pun, Pak Wing Vic <vic.pun@aecom.com>; Wong, Ben <ben.wong@aecom.com>; chho02@dsd.gov.hk
Subject: Re: [Internet]RE: [Internet]RE: Proposed Land Exchange for Comprehensive Residential Development of Various Lots in D.D. 385, Tai Lam Chung (TMTL417) - Swept Path for S200 Box Culvert O&M

Dear Thomas,

Please update the swept plan according to comments item 2 & 3 in my previous email.

Further to the comment item 1 in my previous email, please find the comments for your reference:-
1. An inspection chamber or manhole should be provided at location of the box culvert where the proposed stormwater pipe will be connected to for ease of future pipe inspection and maintenance works. (Noted, the locations for pipes inlets and openings are marked on plan)
2. Please provide RC details for the opening of the culvert side-wall in order to prevent concrete cracking. (Noted, please refer to the attached.)

Regards,
April CHEUNG
TM/TM, MND, DSD
Tel.: 2300 1542

From: "Miu, Thomas" <Thomas.Miu@aecom.com>
To: "aprilmccheung@dsd.gov.hk" <aprilmccheung@dsd.gov.hk>
Cc: "sesls3@landsd.gov.hk" <sesls3@landsd.gov.hk>, "chho02@dsd.gov.hk" <chho02@dsd.gov.hk>, "esls3_1@landsd.gov.hk" <esls3_1@landsd.gov.hk>, "Yuen, Ming Chung" <ming.yuen@aecom.com>, "Pun, Pak Wing Vic" <vic.pun@aecom.com>, "Wong, Ben" <ben.wong@aecom.com>
Date: 11/10/2023 19:53
Subject: [Internet]RE: [Internet]RE: Proposed Land Exchange for Comprehensive Residential Development of Various Lots in D.D. 385, Tai Lam Chung (TMTL417) - Swept Path for S200 Box Culvert O&M
Serial No.:

Dear April,

Further to your comments given below and our subsequent conversation, please find our response in blue and the updated details of the S200 box culvert.
As per your advice, we have reduced the size of the box culvert multi-part cover openings to 2m*1.5m.

Besides, attached please find a typical pipe connection detail to box culvert which extracted from the BD drawings.

Grateful if you could provide your further comment, or a nil reply, on the current design layout with respect to our meeting on 20 September 2023.
Thank you very much.

Regards,
Thomas Miu
(Tel.: 8191 2848)

From: aprilmccheung@dsd.gov.hk <aprilmccheung@dsd.gov.hk>
Sent: Tuesday, October 10, 2023 10:21 AM
To: Miu, Thomas <Thomas.Miu@aecom.com>
Cc: sesls3@landsd.gov.hk; esls3_1@landsd.gov.hk; chho02@dsd.gov.hk
Subject: Re: [Internet]RE: Proposed Land Exchange for Comprehensive Residential Development of Various Lots in D.D. 385, Tai Lam Chung (TMTL417) - Swept Path for S200 Box Culvert O&M

Dear Thomas,

Please find the following comments for your use:-

1. Please clarify the discharge flow from Wong Uk Village to the box culvert and indicate in the plan. (Please refer to the attached plan demarcating the catchment according to the DIA.)
2. Please find the information of our desilting robot for your consideration of the desilting opening: (Noted, please refer to the attached plan illustrating each reaching arm from desilting openings.)
 Size: 1.5m (L) x 1.2m (W) x 1.2m (H)
 Weight: ~1.5 Ton
 Desilting Path: 70m
 Limit of Water Depth in the Box Culvert: 800mm
3. The size of desilting opening could be suit for the size of desilting robot. (Noted, the size of the desilting opening is reduced to 2m*1.5m)

Regards,
April CHEUNG
TM/TM, MND, DSD
Tel.: 2300 1542

From: "Miu, Thomas" <Thomas.Miu@aecom.com>
To: "aprilmccheung@dsd.gov.hk" <aprilmccheung@dsd.gov.hk>
Cc: "sesls3@landsd.gov.hk" <sesls3@landsd.gov.hk>, "esls3_1@landsd.gov.hk" <esls3_1@landsd.gov.hk>, "Pun, Pak Wing Vic" <vic.pun@aecom.com>, "Wong, Ben" <ben.wong@aecom.com>
Date: 04/10/2023 19:27
Subject: [Internet]RE: Proposed Land Exchange for Comprehensive Residential Development of Various Lots in D.D. 385, Tai Lam Chung (TMTL417) - Swept Path for S200 Box Culvert O&M
Serial No.:

Dear April,

As per our discussion yesterday, we are pleased to attached the overlay of the swept path on the proposed maintenance responsibility plan.
An additional desilting opening of 900*750 is also added to the box culvert, at the location between the ESS and House 51A of Luen Tai Street, as per your comment.

Grateful if you could provide your further comment, or a nil reply, on the current design layout with respect to our meeting on 20 September 2023.
Thank you.

ANNEX A

Regards,
Thomas Miu
(Tel.: 8191 2848)

From: Miu, Thomas
Sent: Friday, September 29, 2023 4:49 PM
To: aprilmccheung@dsd.gov.hk
Cc: sesls3@landsd.gov.hk; esls3_1@landsd.gov.hk; Pun, Pak Wing Vic <vic.pun@aecom.com>; Wong, Ben <ben.wong@aecom.com>
Subject: Proposed Land Exchange for Comprehensive Residential Development of Various Lots in D.D. 385, Tai Lam Chung (TMTL417) - Swept Path for S200 Box Culvert O&M

Dear April,

As discussed in previously regarding your concern on the TTM arrangement upon undergoing the box culvert maintenance works.

We are pleased to attach the swept path analysis taking into account both live traffic and the potential maintenance vehicles.
As to facilitate the O&M works, additional desilting openings and their locations are updated.

It is reflected from the analysis that live traffic accessing Wong Uk can be maintained during the S200 O&M works.
Grateful if you could provide your comment, if any, on the current openings layout.

Thank you.

Regards,
Thomas Miu
(Tel.: 8191 2848)

Appendix E

Hydraulic Calculations of Peripheral Drains

ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

819000 E

820000 E

820500 E

825300 N

825000 N

824700 N

NOTES:

1. EXACT PUMP PIT LOCATIONS AND ADJOINTING U-CHANNEL DIMENSIONS TO BE ADDRESSED IN DETAILED DESIGN STAGE.
2. FOR 2.20m(W)x1.72m(H) BOX CULVERT ACCESSING OPENINGS AND MULTI-COVER OPENINGS SIZES SHOULD BE 675x675 AND 1500x2000 RESPECTIVELY. RESPECTIVE DESIGN TO BE ADDRESSED IN DETAILED DESIGN STAGE.

LEGEND:

- DEVELOPMENT BOUNDARY
- ø600 STORMWATER DRAIN
- CATCHPIT
- STORMWATER MANHOLE
- PUMP PIT
- OPEN CHANNEL
- 300 U U-CHANNEL
- BOX CULVERT
- EXISTING CHANNEL
- PROPOSED CHANNEL TO DIVERT EXISTING CHANNEL

N

大欖涌村 TAI LAM CHUNG TSUEN

大欖涌 TAI LAM CHUNG

TAI LAM CHUNG VILLA

TAI LAM CHUNG NULLAH

聯安新村 LUEN ON SAN TSUEN

WONG UK VILLAGE

WU UK VILLAGE

TAI LAM CHUNG ROAD

TAI LAM CHUNG TRIBUTARY

LUEN HONG LANE

PEAK ROAD - TAI LAM

Channel G2

Channel VA2

Channel G1

Channel B

Channel VA1

1.8m(W)X1.2m(H) CHANNEL TO REPLACE EXISTING 1m(W)x1m(H) CHANNEL

525 U

529 U

DISCHARGE OF STP – NORTH

1.8m(W)x1.8m(H) CHANNEL

Channel C1

Pipe D1

750 U

EXISTING 2m(W)x1m(H) CHANNEL TO BE REPLACED BY 1.65m(W)X1.65m(H)

TWIN 3.5m(W)x2.5m(H) BOX CULVERT

2.0m(W)x2.0m(H) CHANNEL

Channel K

X 1.65m(H) CHANNEL

m(W)x2.5m(H) BOX CULVERT

Channel C

Channel D1

1.9m(W)x1.9m(H) CHANNEL

PROPOSED PIPE TO DISCHARGE THE STORED RUNOFF TO BOX CULVERT EITHER BY PUMP OR GRAVITY FLOW SUBJECT TO DETAILED DESIGN

DISCHARGE OF STP – SOUTH

EXISTING 550 U

PROPOSED LOCATION FOR DETENTION TANK WITH 500m³ CAPACITY

OVERFLOW WEIR AT +4.9mPD TO CONNECT TO DETENTION TANK

PROPOSED STORMWATER TERMINAL MANHOLE FOR SOUTHERN PORTION OF DEVELOPMENT

Channel E

550 U

2.20m(W)x1.72m(H) BOX CULVERT

1.4m(W)x1.4m(H) CHANNEL

Channel D

375 U

PERIPHERAL CHANNEL/ 300UC, SIZE TO BE REVIEWED IN BD SUBMISSION TO SUIT INTERNAL DRAINAGE DESIGN

Channel F2

0.75m(W)x1.0m(H) CHANNEL

0.525m(W)x1.0m(H) CHANNEL

Channel F1

0.75m(W)x1.0m(H) CHANNEL

0.525m(W)x1.0m(H) CHANNEL

1.3m (W) X 2.0m (H) CHANNEL

1750 DIA.

1.3m (W) X 2.0m (H) CHANNEL

Plot File by: Satcf
PATH I:\P-PROJECTS\60281828\DRAWING\REPORT\STUDY\STUDY_406.dwg
11/02/2025

AECOM

PROJECT
項目

PROPOSED AMENDMENTS TO AN APPROVED COMPREHENSIVE RESIDENTIAL DEVELOPMENT SCHEME AND MINOR RELAXATION OF GROSS FLOOR AREA AND BUILDING HEIGHT RESTRICTIONS AT VARIOUS LOTS IN D.D. 385 AND ADJOINING GOVERNMENT LAND (LOT TO BE KNOWN AS TMTL NO. 417), TAI LAM CHUNG, TUEN MUN

CLIENT
業主

SUN HUNG KAI REAL ESTATE AGENCY LTD. 新鴻基地產發展有限公司

CONSULTANT
工程顧問公司

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS
分判工程顧問公司

ISSUE/REVISION
修訂

I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 核狀
B	AUG.24	3RD SUBMISSION	MCY
A	OCT.21	2ND SUBMISSION	MCY
-	NOV.13	1ST SUBMISSION	MCY

STATUS
階段

DIA-SUBMISSION

SCALE 比例 — **DIMENSION UNIT** 尺寸單位

A1 1 : 1500 — METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號 — **CONTRACT NO.** 合約編號

60281828

SHEET TITLE
圖紙名稱

DRAINAGE ARRANGMENT

SHEET NUMBER
圖紙編號

60281828/STUDY/FIGURE 6

Hydraulic Calculations for
Tai Lam Chung Development - Peripheral Drains

Channel	Catchment	Area (ha)	Time of Concentration from Infoworks (mins)	Calculated Runoff from InfoWorks-ICM(m^3/s)	Channel Type	Width (mm)	Height (mm)	Flow Area (m^2)	Reduced Flow Area*(m^2)	Hydraulic Radius (m)	Reduced Hydraulic Radius* (m)	Roughness (mm)	Gradient (1 in XXX)	Velocity (m/s)	Capacity (m^3/s)	Checking
Channel D (1400 x 1400 OREC)	Catchment D	13.07	10.6	7.32	Rect Channel	1400	1400	1.96	1.76	0.47	0.42	1.5	90	4.67	7.71	OK
Channel D1 (1650 x 1650 OREC)	Catchment D + J	14.40	10.6	8.10	Rect Channel	1650	1650	2.72	2.45	0.55	0.50	1.5	100	4.90	11.25	OK
Pipe D1 (DN1650)	Catchment D + J	14.40	10.6	8.10	Pipe	1650	1650	2.14	1.92	0.41	0.37	1.5	80	4.59	8.27	OK
Channel C (1800 x 1800 OREC)	Catchment C	27.71	22.8	12.44	Rect Channel	1800	1800	3.24	2.92	0.60	0.54	1.5	100	5.17	14.13	OK
Channel C1 (1900 x 1900 OREC)	Catchment C+I	34.47	14.0	15.95	Rect Channel	1900	1900	3.61	3.25	0.63	0.57	1.5	100	5.35	16.28	OK
Channel C2 (2000 x 2000 OREC)	Catchment C+I+H	36.44	5.4	17.25	Rect Channel	2000	2000	4.00	3.60	0.67	0.60	1.5	100	5.52	18.62	OK
Channel B (1800 x 1800 OREC)	Catchment B	34.72	30.7	14.18	Rect Channel	1800	1800	3.24	2.92	0.60	0.54	1.5	95	5.31	14.50	OK
Channel G1 (525 OU)	Catchment Ga	0.39	6.8	0.21	U-Channel	525	525	0.25	0.22	0.18	0.16	1.5	150	2.01	0.42	OK
Channel G2 (525 OU)	Catchment G	0.39	6.8	0.24	U-Channel	525	525	0.25	0.22	0.18	0.16	1.5	150	2.01	0.42	OK
Channel K (525 OU)	Catchment K	0.73	5.0	0.49	U-Channel	525	525	0.25	0.22	0.18	0.16	1.5	100	2.46	0.51	OK
Channel F1 (750 x 1000 OREC)	Catchment F	3.07	7.9	1.86	Rect Channel	750	1000	0.75	0.68	0.27	0.25	1.5	100	3.17	2.00	OK
Channel F2 (525 x 1000 OREC)	Catchment 2B	1.03	5.0	0.69	Rect Channel	525	1000	0.53	0.47	0.21	0.19	1.5	150	2.18	0.96	OK
Channel E (550UC)	Catchment 3A + 3B + 3C	0.90	11.0	0.50	U-Channel	550	550	0.27	0.24	0.19	0.17	1.5	64	3.16	0.72	OK
Channel VA1	Catchment U2 + U3 + U4	1.32	5.0	1.06	U-Channel	750	750	0.50	0.45	0.26	0.23	1.5	100	3.08	1.30	OK
Channel VA2	Catchment U1	0.48	5.0	0.39	U-Channel	600	600	0.32	0.29	0.21	0.19	1.5	100	2.67	0.72	OK
Channel VA3	Catchment U2 + U3 + U4 + U5	1.46	5.0	1.17	Rect Channel	1650	1650	2.72	2.45	0.55	0.50	1.5	100	4.90	11.25	OK

*Flow Area and hydraulic radius is reduced by 10% to take into account of the sediment

Appendix F

Previous Record for Responses to Comments

Drainage Services Department
Mainland North Division
14/F, Kowloon Government Offices,
405 Nathan Road, Kowloon

渠務署
新界北渠務部
九龍彌敦道 405 號
九龍政府合署 14 樓

本署檔號 Our Ref : (290937) in MN10/TMTL/417/
來函檔號 Your Ref : MCY:WWKW:wtsk:60281828/1-2015012213W
電 話 Telephone : (852) 2781 4107
傳 真 Fax : (852) 2770 4761

BY POST & FAX
Fax No.: 3922 9797

23 November 2015

AECOM
8/F Grand Central Plaza, Tower 2,
138 Shatin Rural Committee Road,
Shatin, Hong Kong.
(Attn.: Mr. Ming Yuen)

Dear Sir,

Proposed Residential Development at
Various Lots in DD385, Tai Lam Chung, Tuen Mun
Response to Comments on Drainage Impact Assessment (DIA) Report

I refer to your above referenced letter enclosing the revised Drainage Impact Assessment (DIA) version 1.7 for the captioned development. Our comments on your DIA submission are listed as follows:-

(a) The previous comments provided to you on 26 November 2013 has not been incorporated into the latest report and modelling. A copy of the comments (see enclosed Appendix 1) are attached for your reference. Please review the report and modelling accordingly.

(b) Paragraph 4.2.1 of the Report refers. Please provide more details on how the baseline model file is built up including how the overflow of the Tai Lam Chung Reservoir is modelled. Please also advise the version of the InfoWorks - ICM model adopted in the modelling.

(c) Table 1 of the report refers. Please provide the CN values and the area for each sub - catchment for easy reference.

(d) In Drawing with title sub-catchment plan, the area for each sub - catchment is not consistent with the ones shown in the modelling. Please clarify.

(e) In the network file of the modelling, the total catchment area in "Existing Scenario" and the "Proposed Scenario" are not consistent. Please clarify whether there is any change in the catchment area under two scenario.

(f) The report should include a manhole schedule showing all manholes to be provided. The schedule should include all sizes of drains to be connected to, the invert levels of the drains and the approximate ground level before and after the development.

(g) The head loss type for some downstream pipe is adopted as "fixed" or "none". Please provide justifications for the choices.

(h) The report should clearly demonstrate whether the free board requirement as described in clause 6.5 of the Storm water Design Manual for all drains can be achieved.

/2...

(i) In the modelling, some of the existing structures such as the village houses in Wong Uk and the proposed structures have not been surrounded by void objects which can prevent inflow of water into these structures. Please review.

(j) The flood depth at Wong Uk with coordinate (824864N, 820423E) in existing and proposed scenarios are 0.662m and 0.845m respectively. (see enclosed Appendix 2) There is 0.183m increase of flood depth. This will aggravate drainage conditions. Please revise the scheme.

(k) Please propose mitigation measures to address the issue that even with the installation of flap valves and flood wall, flooding would still occur in the low-lying areas where adjacent to the flood wall as stormwater would not be able to be discharged into the stream during high tide scenarios. Please explore the feasibility of providing low-level surface channel for collection of excessive runoff from the low-lying areas and pump pit(s) with permanent pump set(s) and pumping mains to allow discharge of collected runoff into the stream.

(l) Please provide measures for maintenance purpose of the proposed box culvert, eg. inspection chambers, stoplogs with suitable storage area.

(m) Please clarify the maintenance responsibility/ parties of the propsed drainage system including the proposed box culverts.

(n) Further to our discussion on the meeting held in June 2014, storm water storage tank maybe one of the mitigation measure to cater the additional discharges generated from your development site. Please consider and study the feasibility for the above.

2. This is a coordinated reply of MND and LDD of DSD.

Yours faithfully,

(S. M. YUNG)
for Chief Engineer/Mainland North
Drainage Services Department

Encl.

c.c.
CE/LD (Attn: Mr. Michael YIP) – by eDMS

Appendix 1

or Engineer
+852 3922 9756
illie.wan@aecom.com

AECOM
13/F, Tower 2, Grand Central Plaza, 138 Shatin Rural Committee Road, Shatin, New Territories, Hong Kong
T: +852 3922 9000 F: +852 2317 7609
www.aecom.com

From: Yuen, Ming Chung
Sent: Tuesday, November 26, 2013 11:56 AM
To: wymchung02@dsd.gov.hk
Cc: denniscchiu@dsd.gov.hk; Wan, Willie; Man, Ka Ho Wilson
Subject: RE: Comment on PRD at Various Lots DD385 Tai Lam Chung, Tuen Mun

Dear Wilson,

Your comments are noted and we'll arrange to revise the DIA Report asap. We'll supersede the previous submission accordingly.
I apologize for the inconvenience caused.

Regards,
Ming (Tel. 3922-9327)

From: wymchung02@dsd.gov.hk [mailto:wymchung02@dsd.gov.hk]
Sent: Tuesday, November 26, 2013 11:52 AM
To: Yuen, Ming Chung
Cc: denniscchiu@dsd.gov.hk
Subject: Comment on PRD at Various Lots DD385 Tai Lam Chung, Tuen Mun

Dear Ming,

After reviewing your submission, I have the following comments,
1) Please provide the results of hydraulic model in attached CD (Appendix D);
2) Please provide hydraulic assessment at outfall of 1900 (W) x 1900 (H) box culvert when flap valve is installed because the original design, submitted by BV, proposed a flap valve to mitigate back water flow to Wong Uk. Please provide justification on omission of flap valve in this submission;
3) The ground level of proposed development will be raised. Please provide drainage arrangement to prevent any additional surface runoff drained into surrounding areas;
4) Catchment 2 consists of green area and large amount of paved area. However CN value 65, normally used for green area, simulated rainfall runoff characteristics of Catchment 2. Please clarify.
5) Catchment 3 is located at the back of Wong Uk Villlage and runoff will discharge at manole node 80_70. Please justify why runoff from catchment 3 is not evenly distributed into manhole node 80_50, RTLC3-ch95, 80_60, 80_70 and 80_75;
6) Please justify the runoff on portion of proposed site formation for village in catchment 2 would not discharge into the proposed 1900mm (W) x 1900mm (H) box culvert which is closer to the catchment 2;
7) Please justify the delineation of catchments 2 and 3 as a boundary between catchments 2 and 3 is located at the outfall of natural stream not at ridge of hill;
7) The model contains 3 different proposed network versions in your hydraulic simulation. The proposed network for version 11, 16 and 17 simulated the rainstorm event under 50A, 50B and other situations respectively. Please clarify;
8) SCS curve number approach is used for choosing rainfall runoff curve. However, an averaged CN value is calculated to determine the rainfall runoff curve for proposed development. Please consider to delineate subcatchments for paved area and green area in proposed development in

hydraulic simulation;

? 9) RTC9_10_60.1 is assumed as 800x800 rectangular channel in simulation. Please justify;

? 10) OC1_10.1 is set as 1900x1900 rectangular channel in hydraulic model. However, the channel shown in Figure 6 is 1800x1800 rectangular channel. Please clarify;

? 11) Please delineate clearly for proposed twin 2.5m (W) x 2.5m (H) box culvert and proposed twin 3.5m (W) x 2.5m (H) box culvert in Figure 6;

? 12) Please provide drainage calculation for 450U-channel and 600 U-channel for justification.

Regards,
Wilson Chung
E/SD(D)
Flood Control Section
Land Drainage Division
Drainage Services Department
Tel: 2300 1376

Zero Accident we Build we Care

Appendix 2

The flood depth at Wong Uk with coordinate (824864N, 820423E) in existing and proposed scenarios are 0.662m and 0.845m respectively. There is 0.183m increase of flood depth. This will aggravate drainage conditions. Please revise the scheme.

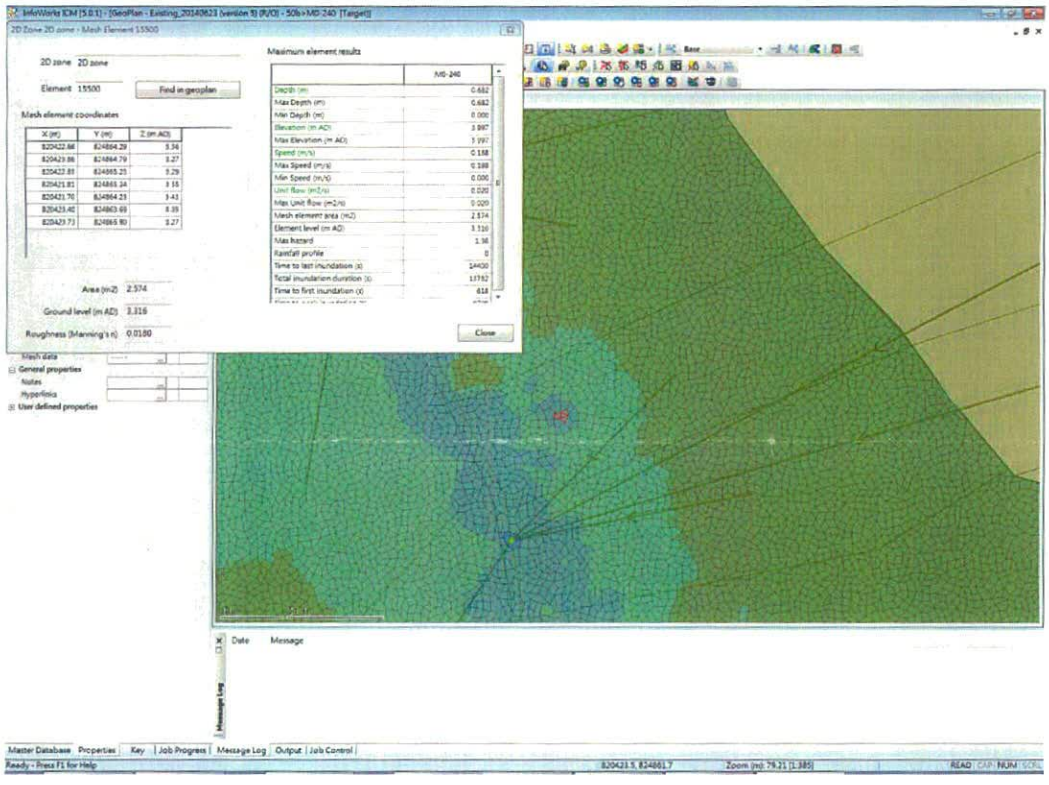


Figure 1: Existing Scenario at Wong Uk

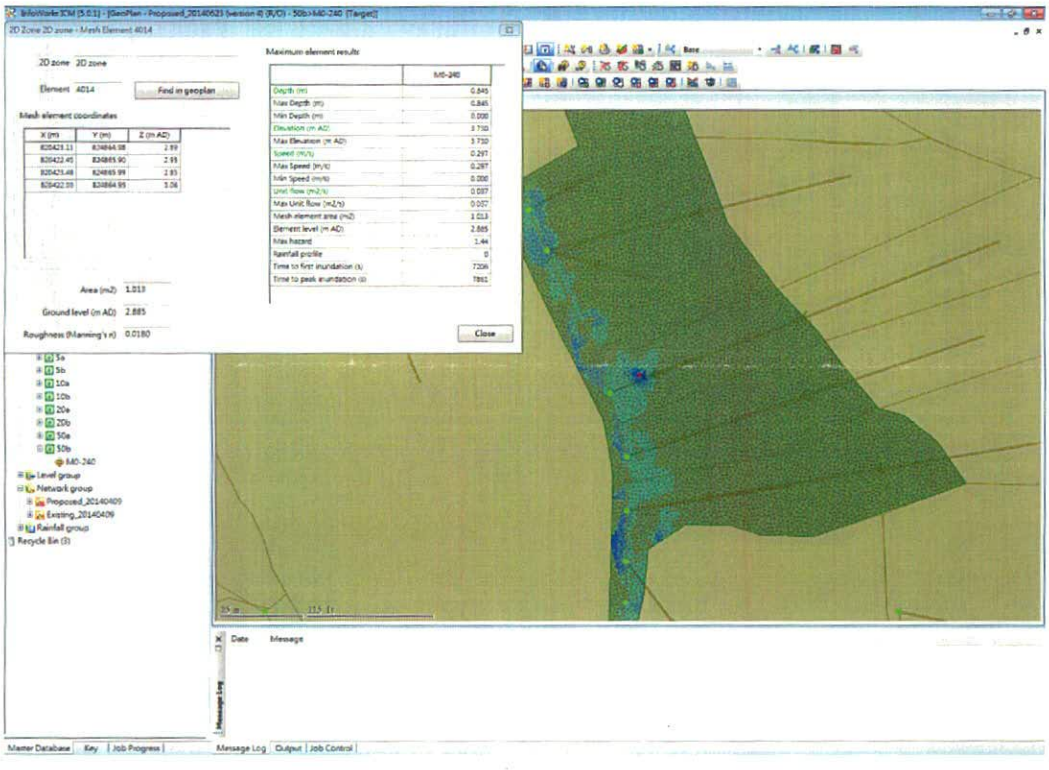


Figure 2 Proposed Scenario at Wong Uk

Proposed Residential Development on Various Lots in D.D. 385, Tai Lam Chung, Tuen Mun

Responses to Comments
Drainage Impact Assessment (v1.7)

No.	Comments	Responses
1.	**From: DSD – Mainland North Division** **Mr. S. M. Yung** **Ref: (290937) in MN10/TMTL/417/** **Date: 23 November 2015**	
	I refer to your above referenced letter enclosing the revised Drainage Impact Assessment (DIA) version 1.7 for the captioned development. Comments on your submitted DIA submission are listed as follows:-	
	(a) The previous comments provided to you on 26 November 2013 has not been incorporated into the latest report and modelling. Please review the report and modelling accordingly;	Comments given on 26 November 2013 have been incorporated in the revised DIA report version 1.4. Responses to comments were sent via e-mail to DSD's Mr. Wilson Chung on 5 December 2013. (See attached e-mail in Annex A).
	(b) Paragraph 4.2.1 of the Report refers. Please provide more details on how the baseline model file is built up including how the overflow of the Tai Lam Chung Reservoir is modelled. Please also advise the version of the InfoWorks - ICM model adopted in the modelling;	Downstream box culverts and TLC Channel were built up according to the DSD's drainage records. TLC tributary and upstream channels were built up based on topo survey and site visits. According to Section 5.2.6 of the DIA Report, water level in TLC Channel is not affected by the development, thus the upstream of TLC channel including the overflow from TLC reservoir is not modelled. ICM model version is 6.5.
	(c) Table 1 of the report refers. Please provide the CN values and the area for each sub - catchment for easy reference;	Noted and provided in Table 1.
	(d) In Drawing with title sub-catchment plan, the area for each sub-catchment is not consistent with the ones shown in the modelling. Please clarify;	Sub-catchment plan drawings have been updated to be consistent with the model. (Figure 5 and 5.1 refers)
	(e) In the network file of the modelling, the total catchment area in "Existing Scenario" and the "Proposed Scenario" are not consistent. Please clarify whether there is any change in the catchment area under two scenario;	The total catchment area is checked to be 141.763ha both in "Pre-development" and "Post-development". No change of total area under these two scenarios.

No.	Comments	Responses
	(f) The report should include a manhole schedule showing all manholes to be provided. The schedule should include all sizes of drains to be connected to, the invert levels of the drains and the approximate ground level before and after the development.	Manhole schedule showing all manholes will be provided during detailed design stage, while the major drainage structures with dimensions have been shown in DIA report as well as the hydraulic model.
	(g) The head loss type for some downstream pipe is adopted as "fixed" or "none". Please provide justifications for the choices;	These types of head-loss are adopted at the locations where branches (open channel, box culvert, pipe) connects to river, where “normal type” is not applicable.
	(h) The report should clearly demonstrate whether the free board requirement as described in clause 6.5 of the Storm water Design Manual for all drains can be achieved;	As discussed in the meeting meeting on 23 December 2015 amongst DSD, Applicant and AECOM, the submitted DIA follows the same principle as the previously approved DIA (July 2007 version). The proposed drainage mitigation measures (including construction of box culverts) will alleviate the flooding at Wong Uk compared to pre-development condition.
	(i) In the modelling, some of the existing structures such as the village houses in Wong Uk and the proposed structures have not been surrounded by void objects which can prevent inflow of water into these structures. Please review;	The 2-D zone has been reviewed and revised with void incorporated.
	(j) The flood depth at Wong Uk with coordinate (824864N, 820423E) in existing and proposed scenarios are 0.662m and 0.845m respectively. (see enclosed Appendix 2) There is 0.183m increase of flood depth. This will aggravate drainage conditions. Please revise the scheme.	The 2-D zone has been reviewed and revised. In the updated model, no adverse impact can be observed at the 2-D zone (Wong Uk).
	(k) Please propose mitigation measures to address the issue that even with the installation of flap valves and flood wall, flooding would still occur in the low-lying areas where adjacent to the flood wall as stormwater would not be able to be discharged into the stream during high tide scenarios. Please explore the feasibility of providing low-level surface channel for collection of excessive runoff from the low-lying areas and pump pit(s) with permanent pump set(s) and pumping mains to allow discharge of collected runoff into the stream.	Surface channel adjacent to the flood wall will be provided. Pump pits with pump sets/pumping mains will be provided before the branches (low-lying areas) discharge to the stream. Exact details will be submitted to DSD for comments and approval at detailed design stage. Please also refer to Figure 6 for details.
	(l) Please provide measures for maintenance purpose of the proposed box culvert, e.g. inspection chambers, stoplogs with suitable storage area.	Noted and will be provided at the detailed design stage.

No.	Comments	Responses
	(m) Please clarify the maintenance responsibility / parties of the proposed drainage system including the proposed box culverts.	The proposed maintenance responsibility / parties of the proposed drainage system are shown in Figure 7, and will be submitted to relevant Government Departments for agreement separately.
	(n) Further to our discussion on the meeting held in June 2014, storm water storage tank may be one of the mitigation measures to cater the additional discharges generated from your development site. Please consider and study the feasibility for the above. This is a coordinated reply of MND and LDD of DSD.	As discussed in the meeting meeting on 23 December 2015 amongst DSD, Applicant and AECOM, the submitted DIA, including the proposed drainage mitigation measures, follows the same principle as the previously approved DIA (July 2007 version).

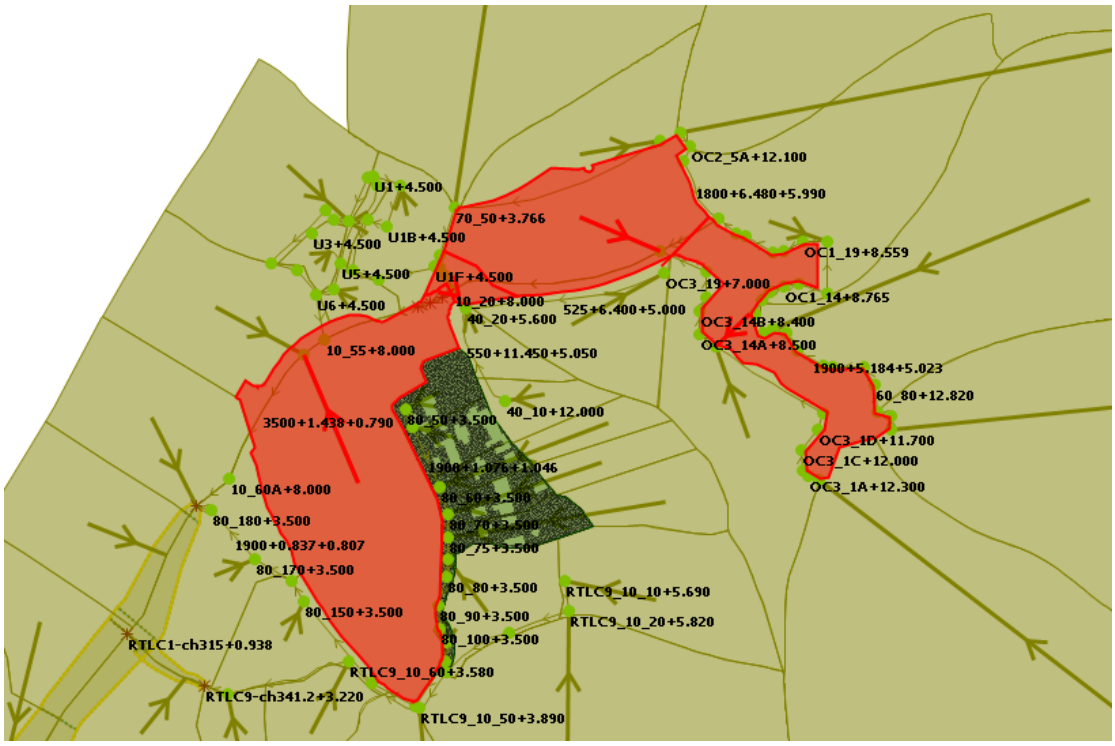
Project: Proposed Residential Development on Various Lots in D.D.385 Tai Lam Chung, Tuen Mun
Re: Responses to Comments on DIA Report v1.8 by email dated 27 May 2016
Date: June 13, 2016

ITEM NO.	NAME OF REVIEWER	COMMENTS	RESPONSES
(1)	Mr. Yip Chor Kiu, Michael DSD/Operations & Maintenance Branch Land Drainage Division Engr/Flood Control 1 Tel: 2300 1376	Please ask the Consultants to provide more information about the submitted models (calibrated?).	The baseline model was built based on site survey and visits. There is no approved drainage model or DMP in the area that can be used for comparison/calibration.
(2)		Please check the area of Catchment J1 in the Table 1.	Noted and revised.
(3)		Please check the Ks value, headloss type and coefficient in the Table 4.	Ks value (1.5) shown in model for those open channels was not used in model. For those open channels, manning's n of 0.018 was adopted. Table 4 is still valid.
(4)		Please clarify the area and CN values in the Table 5.	Table 5 aims to explain the area CN value change due to the residential development. As shown in the Annex A with this responses to comments, in after development scenario, the catchments where residential development falls into have CN value of 87.5 based on 70% urban (CN95) and 30% greenery (CN70) assumption. As a comparison, in before development scenario, the area is storage, so a CN of 90 is assigned.
(5)		The Consultants should provide the Runoff Coefficient in the report.	The fix runoff coefficient was not used in model calculation. All catchments were adopted SCS method, thus only CN value was used in model simulation. The fix coefficient in previous model is just for information only and is deleted in the updated model.
(6)		Please explain the missing catchment.	According to the topography, runoff from the area mentioned shall discharge directly to TLC Channel rather than to the study area.
(7)		Please check the Existing and Proposed catchment plan.	Noted and revised.
(8)		Please check the total area of Catchment in the submitted models.	Noted and revised.
(9)		The submitted model networks do not tally with the DSD Drainage Record.	The small road drains were not simulated. However runoff from the catchments were already accounted for the trunk system, e.g. the 3-cell box culvert.
(10)		Please check the results of Water Level in the Table 6 and Table 7.	Table 6 and 7 are updated based on the lasted model submitted with this revised DIA v1.9.

ITEM NO.	NAME OF REVIEWER	COMMENTS	RESPONSES
(11)		Please clarify the proposed manhole are not enough freeboard within site boundary.	Noted. The development will not have adverse impact to the locations mentioned according to the model results.

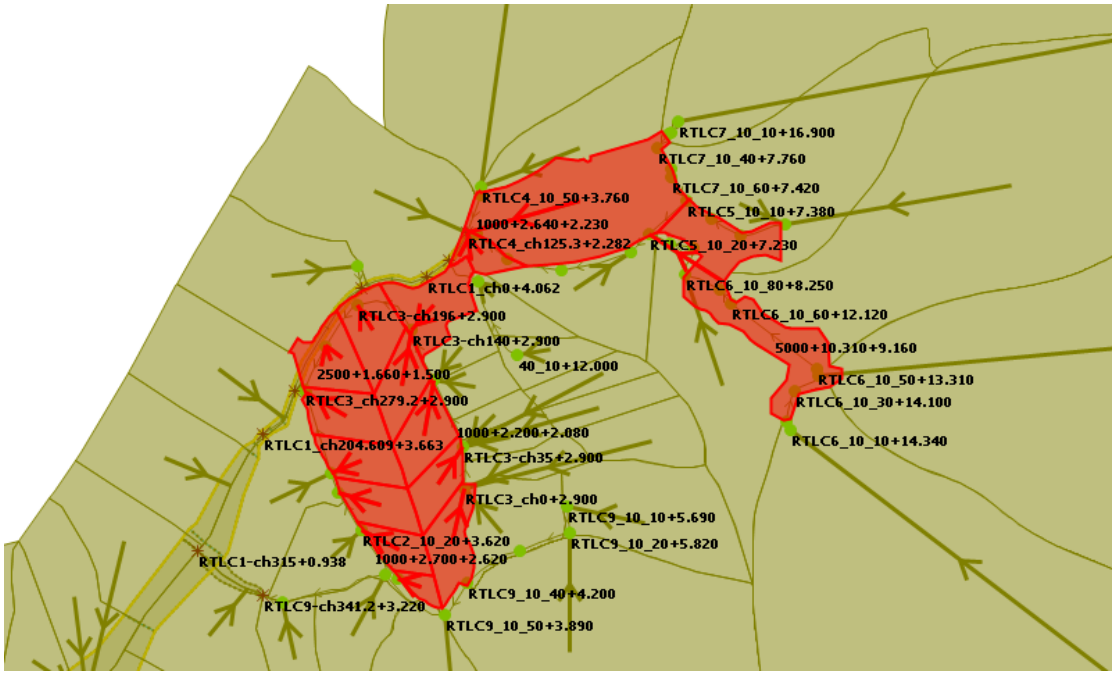
Annex A

After Development Scenario:



Residential Development Area = 4.604 ha. CN value for each sub-catchment is 87.5

Before Development Scenario:



Similar Area where residential development falls = 4.669 ha. CN value for each sub-catchment is 90

DSD COORDINATED REPLY ON
22 JULY 2022

From: joehypun@dsd.gov.hk
Sent: Wednesday, June 22, 2022 3:59 PM
To: Yuen, Ming Chung
Cc: Wong, Ben; Miu, Thomas; Wan, Willie; jlu@dsd.gov.hk
Subject: [EXTERNAL] [Internet] Re: [Internet] RE: Re: [Internet] RE: Residential Development at Various TMTL 417 in Tai Lam Chung, Tuen Mun - Submission of Drainage Impact Assessment (DIA) Report
Attachments: H0264 Tai Lam Chung.docx

Dear Ming,

Please find enclosed our comments on the ICM model of your DIA submission for your review and follow up as needed.

As discussed, please note that the design and submissions for the proposed drainage works and mitigation measures shall conform to DSD's latest standard and requirements as stipulated in the Stormwater Drainage Manual, Sewerage Manual, DSD Standard Drawings, DSD Technical Circulars, Practice Notes and Guidelines, etc.

Regards,
Joe PUN
E/TM1 and Ag E/TM3, MND, DSD
Tel.: 2300 1259

From: "Yuen, Ming Chung" <ming.yuen@aecom.com>
To: "joehypun@dsd.gov.hk" <joehypun@dsd.gov.hk>, "jlu@dsd.gov.hk" <jlu@dsd.gov.hk>
Cc: "Wan, Willie" <Willie.Wan@aecom.com>, "Wong, Ben" <ben.wong@aecom.com>, "Miu, Thomas" <Thomas.Miu@aecom.com>
Date: 22/06/2022 14:47
Subject: [Internet] RE: [EXTERNAL] Re: [Internet] RE: Residential Development at Various TMTL 417 in Tai Lam Chung, Tuen Mun - Submission of Drainage Impact Assessment (DIA) Report
Serial No.:

Proposed Residential Development on Various Lots in D.D. 385, Tai Lam Chung, Tuen Mun
Drainage Impact Assessment
Report Reference: 210010.01

LDD's comment on AECOM's hydraulic model:

1. Boundary conditions are inconsistent with Table 2. Please review.

Level (Time Varying Data) - level-20yr! (Read Only)

	Time	-1 (m AD)
	SUB-EVENT 1	
	00::00:00	3.640000
	00::01:00	3.640000
	00::02:00	3.640000

Level (Time Varying Data) - level-5yr! (Read Only)

	Time	-1 (m AD)
	SUB-EVENT 1	
	00::00:00	3.340000
	00::01:00	3.340000
	00::02:00	3.340000

Level (Time Varying Data) - level-2yr! (Read Only)

	Time	-1 (m AD)
	SUB-EVENT 1	
	00::00:00	3.130000
	00::01:00	3.130000
	00::02:00	3.130000

Table 2 Summary of Adopted Boundary Conditions

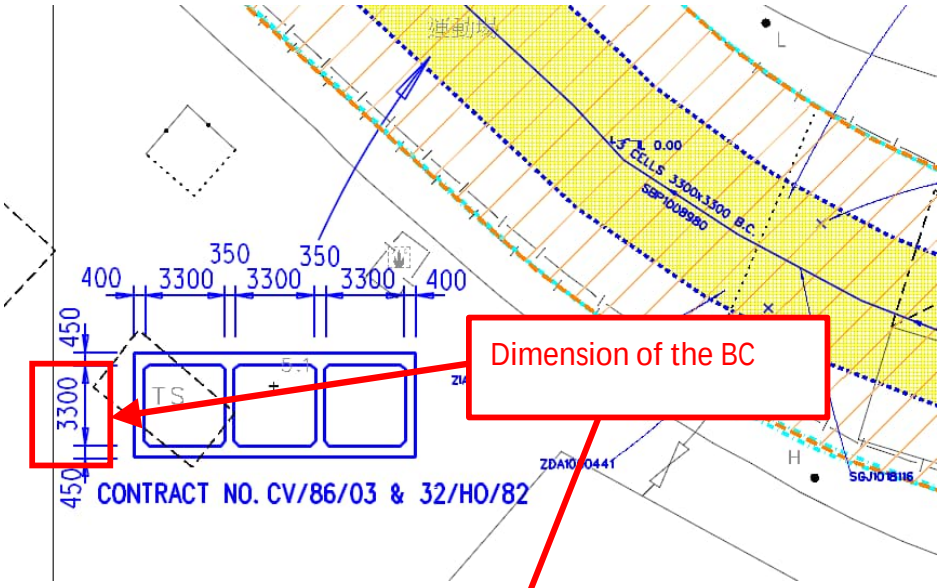
Return Period	Boundary Water Level (mPD)
2	2.96
5	3.17
10	3.32
20	3.47
50	3.68

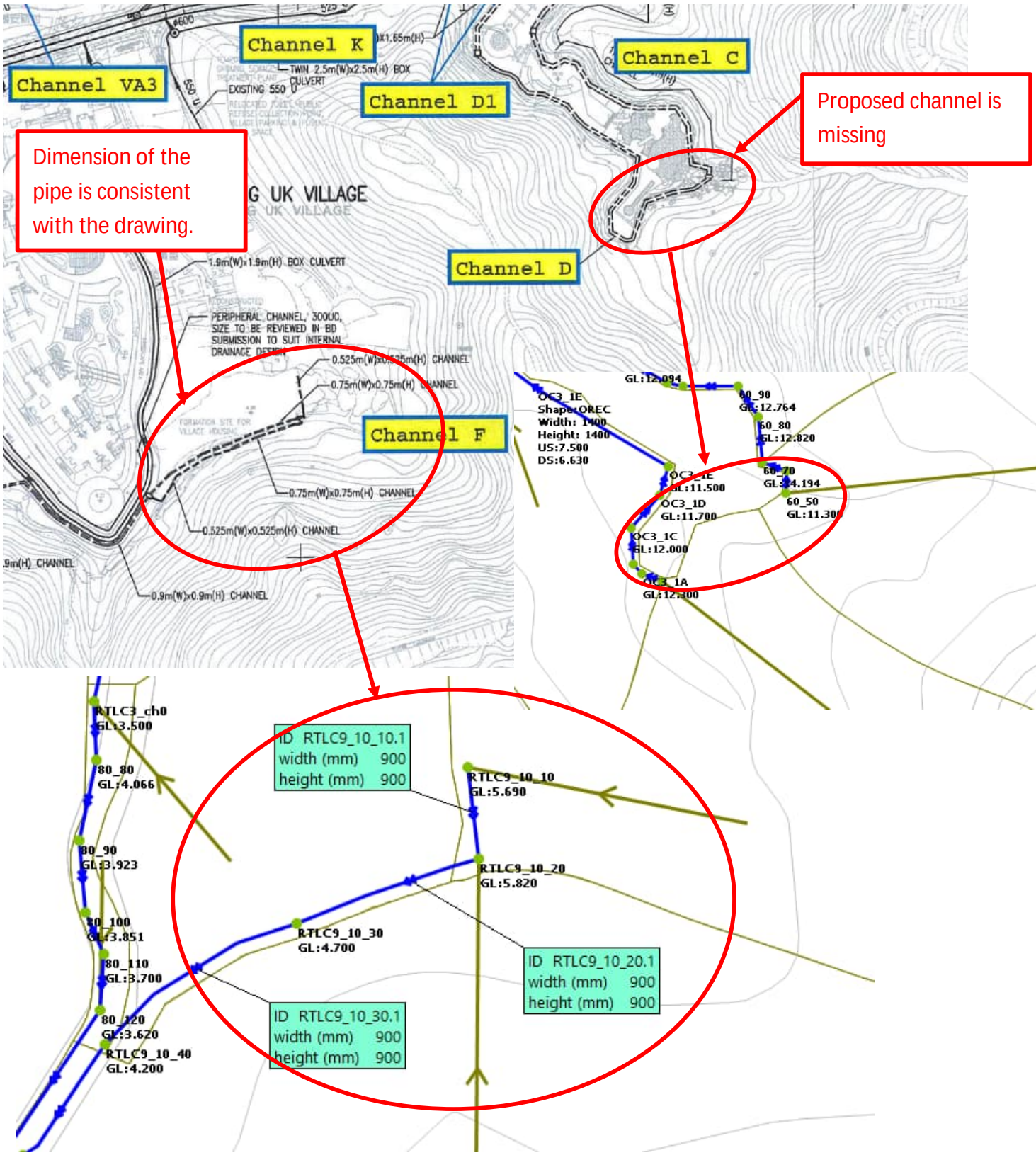
2. Upstream flow of the Tai Lam Chung was ignored. Please review.

3. Value of catchment B2 and U1 in Table 1 are duplicated. Please clarify.

B1	90	0.257	A6	90	0.066
B2	90	0.258	U1	90	0.483
B2	90	0.258	U1	90	0.483
B3	90	0.313	U2	90	0.052

4. Drainage network is inconsistent with our drainage record and the drainage arrangement. Please review.

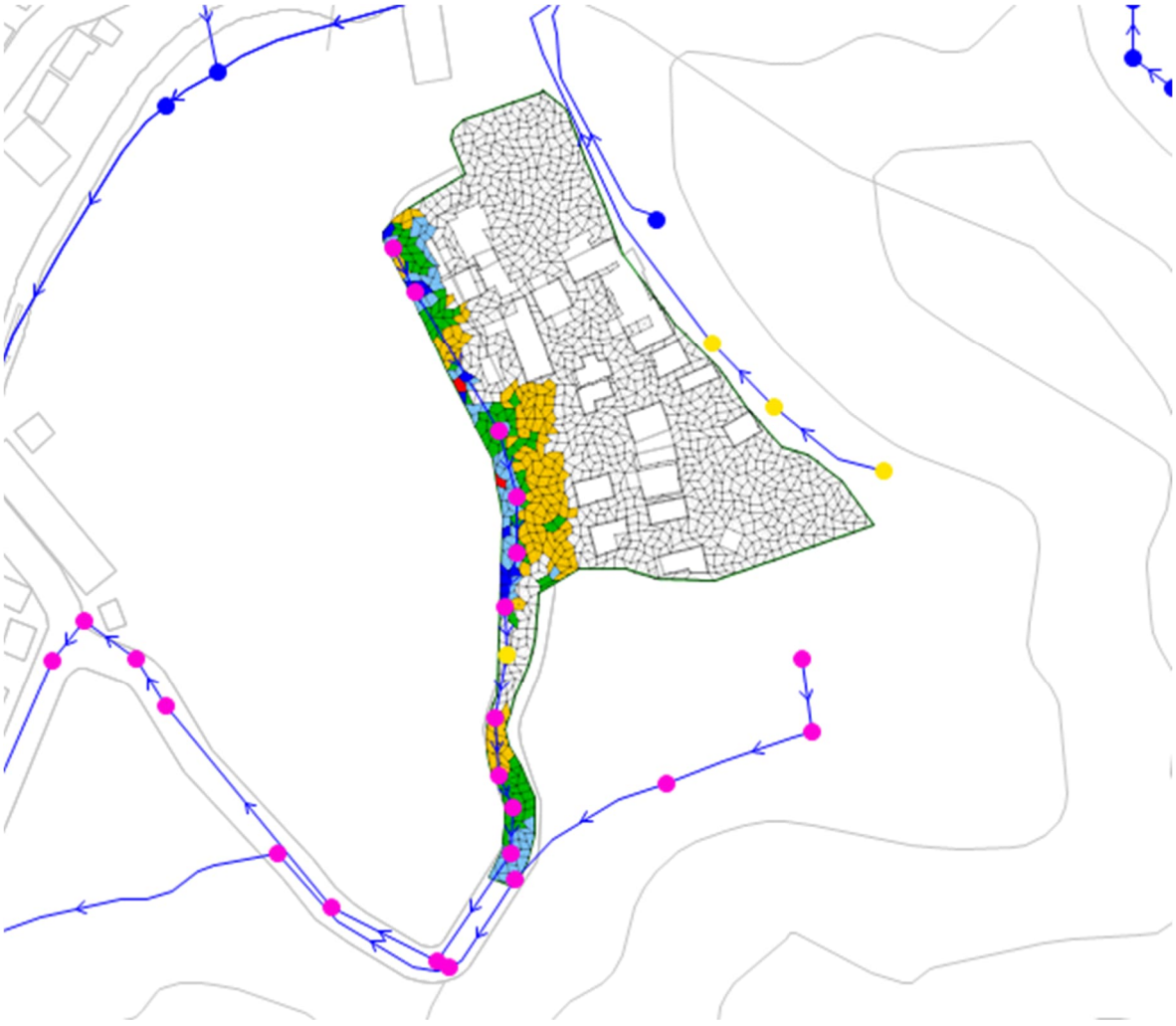



Channel K
Channel VA3
Channel D1
Channel C
Channel D
Channel F
Proposed channel is missing
Dimension of the pipe is consistent with the drawing.
G UK VILLAGE
1.9m(W)x1.9m(H) BOX CULVERT
PERIPHERAL CHANNEL, 3000C, SIZE TO BE REVIEWED IN BD SUBMISSION TO SUIT INTERNAL DRAINAGE DESIGN
0.525m(W)x0.525m(H) CHANNEL
0.75m(W)x0.75m(H) CHANNEL
0.9m(W)x0.9m(H) CHANNEL
TWIN 2.5m(W)x2.5m(H) BOX CULVERT
EXISTING 550 U
OC3_1E
Shape:OREC
Width: 1400
Height: 1400
US:7.500
DS:6.630
GL:12.094
60_90
GL:12.764
60_80
GL:12.820
60_70
GL:12.194
60_50
GL:11.300
OC3_1E
GL:11.500
OC3_1D
GL:11.700
OC3_1C
GL:12.000
OC3_1A
GL:12.300
RTLC3_ch0
GL:3.500
80_80
GL:4.066
80_90
GL:3.923
80_100
GL:3.851
80_110
GL:3.700
80_120
GL:3.620
RTLC9_10_40
GL:4.200
ID RTLC9_10_10.1
width (mm) 900
height (mm) 900
RTLC9_10_10
GL:5.690
RTLC9_10_20
GL:5.820
RTLC9_10_30
GL:4.700
ID RTLC9_10_20.1
width (mm) 900
height (mm) 900
ID RTLC9_10_30.1
width (mm) 900
height (mm) 900

5. The area of 2D zone is very small in the model and flood depth on some nodes is more than 19m. It seems that the overland flow was not fully evaluated. Please review.

Grid [Node Results] - Proposed_202107 (versic

Node ID	Level (m AD)	Flood depth (m)
RTLC9_10_50	23.357	19.467
RTLC9_10_40	23.564	19.364
RTLC9_10_30	23.945	19.245
RTLC9_10_10	24.282	18.592
RTLC9_10_20	24.270	18.450
RTLC9_10_60	15.606	12.026
RTLC1-ch315	3.878	2.940
RTLC9-ch341.2	3.874	0.654
70_70	4.172	0.647



6. Flap gate, pumps and flood walls is not incorporated in the model. Please clarify.

7. The drainage performance of the proposed network may be less than 2year return period. Sample as below. Please review.

	2		5B		10B		20B		50B	
	Level (m AD)	Flood depth (m)	Level (m AD)	Flood depth (m)	Level (m AD)	Flood depth (m)	Level (m AD)	Flood depth (m)	Level (m AD)	Flood depth (m)
70_50	3.564	0.202	3.673	0.093	3.658	0.108	4.155	-0.389	4.354	-0.588
70_70	3.382	0.143	3.559	-0.034	3.539	-0.014	4.013	-0.488	4.172	-0.647
70_80	3.362	0.368	3.543	0.187	3.523	0.207	3.984	-0.254	4.136	-0.406
80_50	3.317	-0.027	3.494	-0.204	3.514	-0.224	3.859	-0.569	3.924	-0.634
80_60	3.316	0.184	3.492	0.008	3.513	-0.013	3.866	-0.366	3.936	-0.436
80_70	3.316	0.184	3.492	0.008	3.513	-0.013	3.868	-0.368	3.939	-0.439

Proposed Residential Development at
Various Lots in DD 385, Tai Lam Chung, Tuen Mun
Submission of Drainage Impact Assessment (DIA)

AECOM RESPONSE TO DSD COMMENTS DATED 22 JULY 2022

Responses to Comments

No.	Comments	Responses
	LDD's comment on AECOM's hydraulic model	
	(1) Boundary conditions are inconsistent with Table 2. Please review	The boundary conditions are revised according to the latest Stomwater Drainage Manual which incorporated the Climate Change Effect in Mid 21st Century.
	(2) Upstream flow of the Tai Lam Chung was ignored. Please review	Latest boundary conditions with upstream flows are incorporated in the hydraulic models.
	(3) Value of catchment B2 and U1 in Table 1 are duplicated. Please clarify	Table 1 is revised.
	(4) Drainage network is inconsistent with our drainage record and the drainage arrangement. Please review.	The hydraulic model is revised accordingly.
	(5) The are of 2D zone is very small in the model and flood depth on some nodes is more than 19m. It seems that the overland flow was not fully evaluated. Please review.	The max water levels at node RTLC9_10_20 and RTLC9_10_60 are 9.836mPD and 7.276mPD in 50-yr rain in the existing scenario. The max water levels at node RTLC9_10_20 and RTLC9_10_60 reduced as 7.080mPD and 5.663mPD with the proposed 900mm wide and 1000mm depth rectangular channel.
	(6) Flap gate, pumps and flood walls is not incorporated in the model. Please clarify.	Dredging with 600mm silt depth in the Tai Lam Chung Tributary is incorporated in the model according to para. 5.2.4.
	(7) The drainage performance of the proposed network may be less than 2year return period. Proposed Drain between nodes 70_50 & 70_80 and 80_50 & 80_70. Please review.	Please be advised that the ground level is below the latest 50-yr sea level with consideration mean sea level rise and storm surge increase due to Climate Change in Mid 21st Century. Nevertheless, the maximum water levels in Wong Uk Village and other low lying areas are reduced after the development and proposed drainage works.