

**Relevant Extracts of Town Planning Board Guidelines No. 10**  
**for “Application for Development within Green Belt Zone**  
**under Section 16 of the Town Planning Ordinance”**  
**(TPB PG-No. 10)**

The relevant assessment criteria for assessing the application include:

- (a) there is a general presumption against development (other than redevelopment) in a “GB” zone. In general, the Board will only be prepared to approve application for development in the context of requests to rezone to an appropriate use;
- (b) an application for new development in a “GB” zone will only be considered in exceptional circumstances and must be justified with very strong planning grounds. The scale and intensity of the proposed development including the plot ratio, site coverage and building height should be compatible with the character of surrounding area;
- (c) the design and layout of any proposed development should be compatible with the surrounding area. The development should not involve extensive clearance of existing natural vegetation, affect the existing natural landscape, or cause any adverse visual impact on the surrounding environment;
- (d) the vehicle access road and parking provision proposed should be appropriate to the scale of the development and comply with relevant standards. Access and parking should not adversely affect existing trees or other natural landscape features. Tree preservation and landscaping proposals should be provided;
- (e) the proposed development should not overstrain the capacity of existing and planned infrastructure such as sewerage, roads and water supply. It should not adversely affect drainage or aggravate flooding in the area;
- (f) the proposed development should not be susceptible to adverse environmental effects from pollution sources nearby such as traffic noise, unless adequate mitigating measures are provided, and it should not itself be the source of pollution; and
- (g) any proposed development on a slope or hillside should not adversely affect slope stability.

致城市規劃委員會秘書：

專人送遞或郵遞：香港北角渣華道 333 號北角政府合署 15 樓

傳真：2877 0245 或 2522 8426

電郵：tpbpd@pland.gov.hk

To: Secretary, Town Planning Board

By hand or post: 15/F, North Point Government Offices, 333 Java Road, North Point, Hong Kong

By Fax: 2877 0245 or 2522 8426

By e-mail: tpbpd@pland.gov.hk

有關的規劃申請編號 The application no. to which the comment relates A/NE-SSH/139

意見詳情（如有需要，請另頁說明）

Details of the Comment (use separate sheet if necessary)

本人贊成城規申請項目 A/NE-SSH/139。申請項目擬議於「綠化地帶」興建符合標準的行車、行人通道連接毗鄰的「政府、機構或社區」用地。擬議通道的規模符合現行相關的規定準則，而該 GIC 地段是「大綱圖」中唯一沒有正規道路連接的 GIC 用地，所以於「綠化地帶」興建通道不會造成不良先例，申請人提供的技術評估顯示，這個發展申請在視覺、園境、環境、生態、交通及地質層面都屬可行。

「提意見人」姓名／名稱 Name of person/company making this comment

簽署 Signature

Lee

日期 Date

李先生

21-6-21





致城市規劃委員會秘書：

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意見詳情（如有需要，請另頁說明）

Details of the Comment (use separate sheet if necessary)

我是西徑村村民，我附近的"G/G"地帶  
沒有高標準道路連接西沙公路，所以  
我支持興建路到"G/G"地帶；申請人已  
在"綠化地帶"建路的損害減到最低，如  
在人工斜坡建路，如增植木對本，所以  
本人十分支持以上工程。

「提意見人」姓名／名稱 Name of person/company making this comment William

簽署 Signature [Signature] 日期 Date 17/06/2024

致城市規劃委員會秘書：

專人送遞或郵遞：香港北角渣華道 333 號北角政府合署 15 樓

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意見詳情（如有需要，請另頁說明）

Details of the Comment (use separate sheet if necessary)

本人居住在西沙官坑村多年，知道政府  
開始大大發展，像以往新市鎮一樣，  
除了住屋，還有其他配套如醫院，學校，  
康樂設施，這些設施都會建在“G/IC”用地，  
但現時鄰近“G/IC”用地沒有高標準道路  
連接西沙路，所以我十分支持建路，當中  
對自然生態，不會有太大影響。

「提意見人」姓名／名稱 Name of person/company making this comment Jacob

簽署 Signature



日期 Date

17/06/2024

致城市規劃委員會秘書：

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意見詳情（如有需要，請另頁說明）

Details of the Comment (use separate sheet if necessary)

我是居住西沙一帶村民，得知政府已開始發展西沙一帶，將來落成必然會人口激增，對政府機構有一些需求，項目附近是一大片“G/IC”地帶，但沒有高標準道路接上現有西沙公路，所以我十分支持項目建路，當然會因建路斬去一些樹，但申請人已確保會土增種木封木，所以我十分支持。

「提意見人」姓名／名稱 Name of person/company making this comment 信君

簽署 Signature 信 日期 Date 21/06/2021



致城市規劃委員會秘書：

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意見詳情（如有需要，請另頁說明）

Details of the Comment (use separate sheet if necessary)

我在企鵝下新圍已居住超過二十五年，鄰近  
的土地已先規劃為「政府機構或社區」，  
但沒有合標準的道路連接而沙路，  
現時只有單程路或小路連至此地，所  
以我支持建行車通道到「G/IC」地帶，  
因有道路才不會浪費「G/IC」的設施。

「提意見人」姓名／名稱 Name of person/company making this comment John Cheung

簽署 Signature Jc 日期 Date 17/06/2024

致城市規劃委員會秘書：

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**Details of the Comment** (use separate sheet if necessary)

申請地盤與毗鄰的「政府、機構或社區」用地因只有單程路連接，並不符合標準通道的要求，而未能發展，唯希望透過支持此項目發展，使上述舊用地得以發揮用途，避免浪費資源。

「提意見人」姓名／名稱 Name of person/company making this comment Kathy Hui  
簽署 Signature Kat 日期 Date 21.6.21





致城市規劃委員會秘書：

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**Details of the Comment** (use separate sheet if necessary)

是次規劃申請是由於該「政府、機構或社區」地帶是  
伙網圍，中唯一沒有預見道路連接的「政府、機構、  
用地，因此於綠化地帶，擬議通道並不會造成  
不良先例，而通道符合城規會規劃指引編號 10  
就綠化地帶進行發展而制定相關的要求，而日  
技術評估顯示為屬可行的，所以贊同是次規劃

「提意見人」姓名／名稱 Name of person/company making this comment

簽署 Signature

隋

日期 Date

隋先生

19-6-2021



致城市規劃委員會秘書：

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**Details of the Comment** (use separate sheet if necessary)

我贊成有关之申請，雖然申請涉及綠化地帶，  
不過其走線已是走生態價值低的人造斜坡，  
也減少涉及面積，揀選了距離私人土地較遠  
的地方，十分支持。

「提意見人」姓名／名稱 Name of person/company making this comment John Ip  
簽署 Signature John 日期 Date 20-6-2021



致城市規劃委員會秘書：

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意見詳情（如有需要，請另頁說明）

Details of the Comment (use separate sheet if necessary)

本人有感，一片土地因道路問題未能盡用相當可惜，  
如能解決這條通道的規劃問題，讓毗鄰的  
政府、機構或社區地帶可實現其用途，將是  
很理想。土地資源運用，故支持發展。

「提意見人」姓名／名稱 Name of person/company making this comment Kevin Law

簽署 Signature Kevin 日期 Date 20/6/20



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意見詳情（如有需要，請另頁說明）

Details of the Comment (use separate sheet if necessary)

我是西徑村村民，我附近的“G/IC”地帶土地已閒置，將來政府在這興建公共設施如老人院，社區中心，會對交通有影響，因現時沒有合標準道路接上西沙公路，而要接上也要經過附近的“綠化地帶”，但也是無可奈何，但深信對自然生態、環保不會有太大影響，所以我十分支持以上項目。

「提意見人」姓名／名稱 Name of person/company making this comment

簽署 Signature

日期 Date

Henry

17/06/2021





致城市規劃委員會秘書：

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有關的規劃申請編號 The application no. to which the comment relates

A/NE-SSH/139

意見詳情（如有需要，請另頁說明）

Details of the Comment (use separate sheet if necessary)

我在西沙官坑村，知道政府會發展西沙，將  
來人口激增，對政府設施也要增加，如學校，  
老人院社；項目在鄰近“G/LC”地道沒有合標準  
道路連接西沙公路，所以只有建合標準的道路  
才可連接“G/LC”地帶用地，而對該區自然生  
態視覺也沒有太大影響，所以我非常贊同！

「提意見人」姓名／名稱 Name of person/company making this comment

簽署 Signature

日期 Date

Carter

2021/06/19





致城市規劃委員會秘書：

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意見詳情（如有需要，請另頁說明）

Details of the Comment (use separate sheet if necessary)

本人支持是項規劃申請。土地是香港重要的資源，每寸土地應該物盡其用。有關「政府、機構或社區」地帶被「綠化地帶」分隔，如要好好使用該地，在綠化地帶，建通道實屬無可避免。該地是「大綱圖」中唯一沒有正規道路連接的政府、機構或社區，用地，因此批准此申請並不會造成不良先例。基於以上理據，懇請當局予以批准。

「提意見人」姓名／名稱 Name of person/company making this comment 葉梓楠

簽署 Signature [Signature] 日期 Date 18/6/21



致城市規劃委員會秘書：

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意見詳情（如有需要，請另頁說明）

Details of the Comment (use separate sheet if necessary)

我是西徑村居民，鄰近的 G/IC 地帶土地  
閒置多年，得悉政府特要發展此地，  
如建學校或老人院等都會對交通構成  
壓力，因現時沒有合標準的道路，所  
以我十分支持建行車道路連接「政府  
樓宇或社區」的政府用地。

「提意見人」姓名／名稱 Name of person/company making this comment Morris

簽署 Signature [Signature] 日期 Date 16/06/2021



tpbpd@pland.gov.hk

寄件者: [REDACTED]  
寄件日期: 2021年06月24日星期四 2:53  
收件者: tpbpd  
主旨: A/NE-SSH/139 DD 209 Sai Keng, Shap Sx Heung GB  
附件: Kei Ling Ha San Wai - Google Maps.pdf

A/NE-SSH/139

Lots 325 S.A (Part), 325 S.B (Part), 325 S.C (Part), 496 (Part), 497 (Part) and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung

Site area : About 4,673sq.m includes Government Land of about 4,366sq.m

Zoning : "Green Belt"

Applied development : Access Road for GIC uses / **Filling and Excavation of Land**

Dear TPB Members,

So the developer wants the community to sacrifice almost 5,000sq.m of verdant GB so that it can develop an international school on the GIC lots behind. No data provided on how many trees to be felled. Presumably the taxpayer is to foot the bill as the access road would be on public land.

In addition Road is a separate zoning and requires a Section 12A application but this is an S.16.

According to the only Shap Sz Hung OZP data available on General Papers, 17 October 2014, RNTPC Paper No 12.14, the GIC in question is intended to meet the future needs of the local population and weekend visitors.

9.3.4 stipulates that GIC related to CDA development '**would need to be provided within the CDA zone**'

This GB connects with CA further along Sai Sha Road. Clearly a road running through it would impact the eco-system of the GB that extends from Tai Tung and turn it into separate zones.

The planning intention of the GIC, set between two villages, is clearly to conserve the natural environment along the road for the pleasure of the community by providing facilities to serve the villages with access from both these nodes.

Far too much has been ceded to the developer already to the detriment of both the local community and the environment. It is time to call a halt before the entire district is slathered in cement.

Mary Mulvihill

tpbpd@pland.gov.hk

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寄件者: EAP KFBG <eap@kfbg.org>  
寄件日期: 2021年06月25日星期五 16:54  
收件者: tpbpd@pland.gov.hk  
主旨: KFBG's comments on one planning application  
附件: 210625 s16 SSH 139.pdf

Dear Sir/ Madam,

Attached please see our comments regarding one application. There is one pdf file attached to this email. If you cannot see/ download this file, please notify us through email.

Best Regards,

Ecological Advisory Programme  
Kadoorie Farm and Botanic Garden



嘉道理農場暨植物園公司  
Kadoorie Farm & Botanic Garden Corporation

The Secretary,  
Town Planning Board,  
15/F, North Point Government Offices,  
333, Java Road, North Point,  
Hong Kong.  
(Email: [tpbpd@pland.gov.hk](mailto:tpbpd@pland.gov.hk))

25th June, 2021.

By email only

Dear Sir/ Madam,

**Proposed Access Road for Government, Institution and Community uses at the  
adjoining “Government, Institution or Community” zone and associated Filling and  
Excavation of Land  
(A/NE-SSH/139)**

1. We refer to the captioned.
2. We urge the Board to investigate the necessity of building the proposed access road with relevant authorities (e.g., is there any proposed/ planned/ approved/ confirmed/ ongoing project or development at the adjoining ‘Government, Institution or Community’ (G/IC) site?).
3. We would also like to remind the Board that the application site is within Green Belt (GB) zone. *There is a general presumption against development within this zone*<sup>1</sup>. Approval of this application would set a precedent for other similar applications in this GB zone and we urge the Board to seriously consider the potential cumulative impacts on the GB zone of approving this application.
4. Thank you for your attention.

Ecological Advisory Programme  
Kadoorie Farm and Botanic Garden

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<sup>1</sup> [https://www2.ozp.tpb.gov.hk/plan/ozp\\_plan\\_notes/en/S\\_NE-SSH\\_11\\_e.pdf#nameddest=GB](https://www2.ozp.tpb.gov.hk/plan/ozp_plan_notes/en/S_NE-SSH_11_e.pdf#nameddest=GB)



Town Planning Board,  
15/F North Point Government offices,  
333 Java road,  
North Point,  
Hong Kong.



23rd June 2021

Dear Sir / Madam,

**Re: Shap Sze Heung Outline Zoning Plan No. S/NE-SSH/11 and Planning Application A/NE-SSH/139**

With reference to the above zoning and planning applications some of us indigenous villagers are very concerned with the imminent highly detrimental impact the zoning and subsequent development will have on the long term future of our village should the zoning and planning application be allowed to proceed.

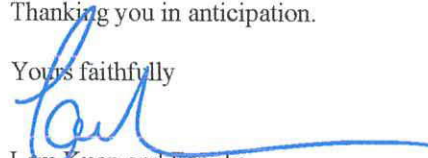
The zoning and planning application will be highly damaging to the village for the following, but not limited to, reasons:-

1. Virtually all parking spaces will cease to exist. Granted it, the land belongs to the developers and they have the right to develop as they wish, subject to obtaining the appropriate relevant government planning permissions. But surely the government in reviewing and considering all applications must consider the collateral impact to the society as a whole in the immediate vicinity of the development. Likewise, when considering such applications the government can and should ensure any damaging impacts be mitigated by obliging the developer to include a 'social responsibility' program (with or without the government participation) to create alternative zero cost parking spaces for indigenous villagers use. Perhaps the seafront could be sympathetically and ecologically developed to provide the desperately needed parking spaces?
- The property values of the entire village will be negatively impacted. No parking and very limited traffic circulation will inevitably make the village a less desirable place to live. In turn, the properties will not attract and retain the middle class demographic that currently make up the population of the village. Why then should one party, 'the developer' be allowed to profit at the expense of many parties (the owners of properties in the village)? Surely the government cannot support such an inequitable situation?
- The villagers' quality of life will also be affected in that those who are looking after their elderly relatives will not be able to easily transport them to their regular medical appointments.
- What about the issue of access and circulation of emergency vehicles (ambulances)? In addition to this, the proposed road access under the planning application was formerly an accident blackspot and there remains rusty carcasses of cars that crashed down the ravines there.
- We are already aware of the effects of the huge development further along the Sai Sha Road from Sai Keng village. There are some very unhappy villagers suffering quietly as traffic circulation and parking is becoming an issue for them. Here we have a chance to plan for the long term, to tackle foreseen issues before they become problematic and ensure an equitable outcome for all concerned and hope the government find the will to engage with the villagers of Sai Keng to find an amiable solution.

We hope our message does not fall on deaf ears and look forward to hearing from you soon.

Thanking you in anticipation.

Yours faithfully

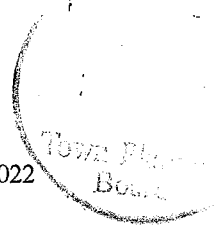
  
Lam Kuen and Family  
**Indigenous villagers**

c.c. Sai Kung North Rural Committee, 2/F Sai Kung Government Offices, 34 Chan Man Street, Sai Kung.

Town Planning Board,  
15/F North Point Government offices,  
333 Java road,  
North Point,  
Hong Kong.



18th February 2022



Dear Sir / Madam,

**Re: Shap Sze Heung Outline Zoning Plan No. S/NE-SSH/11 and Planning Application A/NE-SSH/139**  
***Revised broad development parameters in view of the further information received on 28.1.2022***

With reference to the above zoning and planning applications, and the subsequent 'Revised broad development parameters in view of the further information received on 28.1.2022' and listed as

*On 28.1.2022, the applicant submitted further information which includes a revised Traffic Impact Assessment with major changes in the assumptions (the proposed road will not serve only a proposed school development in the adjacent "Government, Institution or Community" zone but also a proposed public vehicle park), methodologies (revised junction calculations with 2 more junctions) and proposed mitigation measures (proposed public vehicle park); replacement pages of the Geotechnical Planning Review Report and Environmental Assessment; and responses to departmental comments.*

We object to the application because NON of the original reasons of objection we put forward have been addressed, namely:-

1. Virtually all parking spaces will cease to exist. Granted it, the land belongs to the developers and they have the right to develop as they wish, subject to obtaining the appropriate relevant government planning permissions. But surely the government in reviewing and considering all applications must consider the collateral impact to the society as a whole in the immediate vicinity of the development. Likewise, when considering such applications the government can and should ensure any damaging impacts be mitigated by obliging the developer to include a 'social responsibility' program (with or without the government participation) to create alternative zero cost parking spaces for indigenous villagers use. Perhaps the seafront could be sympathetically and ecologically developed to provide the desperately needed parking spaces?
- The property values of the entire village will be negatively impacted. No parking and very limited (zero?) traffic circulation will inevitably make the village a less desirable place to live. In turn, the properties will not attract and retain the middle class demographic that currently make up the population of the village. Why then should one party, 'the developer' be allowed to profit at the expense of many parties (the owners of properties in the village)? Surely the government cannot support such an inequitable situation?
- The villagers' quality of life will also be affected in that those who are looking after their elderly relatives will not be able to easily transport them to their regular medical appointments.
- What about the issue of access and circulation of emergency vehicles (ambulances)? In addition to this, the proposed road access under the planning application was formerly an accident blackspot and there remains rusty carcasses of cars that crashed down the ravines there.
- We are already aware of the effects of the huge development further along the Sai Sha Road from Sai Keng village. There are some very unhappy villagers suffering quietly as traffic circulation and parking is becoming an issue for them. Here we have a chance to plan for the long term, to tackle foreseen issues before they become problematic and ensure an equitable outcome for all concerned and hope the government find the will to engage with the villagers of Sai Keng to find an amiable solution.

**All the points raised seem to have been forgotten and we can only conclude that we, the stake holders, are being completely ignored by the government to forward the agenda of big business and property developers.**

Since my last letter of 23<sup>rd</sup> June 2021, the combined impact of covid and the welcome programmes of HK BNO passport holders by foreign governments has undeniably changed the economic and social status quo somewhat of Hong Kong. The specious argument of the need for an international school in the area to justify the development is becoming more and more implausible and one can only suspect it is yet again the proven strategy of big developers proposing a seemingly 'innocuous' scheme only to change it into some monstrous development once the initial 'fairy tale' application has been passed.

The current application mentions a 'public vehicle park', that would no doubt only benefit the developer as it would undoubtedly eventually be paid parking and not benefit any of the stakeholders and does not address our original concerns whatsoever.

I would like to add that when they started the Sai Sha road development, we noticed in Sai Keng a dramatic influx of wildlife such as snakes, more wild pigs and we have even spotted small deer. It is obvious their loss of habitat is going to eventually shrink their numbers and even result in their extinction in HK, which raises the question of did anyone do a proper environmental impact study before approving the developments? Is that a requirement of this application?

Again we hope our message does not fall on deaf ears but it seems that it already has and we fear that the developers will only keep making repeated application in the hope that one day the stakeholders will not reply in time or be so fatigued that it is eventually passed, perhaps that is the strategy?

To conclude, we strongly oppose this proposed development for the aforementioned reasons and hope that the Town Planning Board sees sense and in turn reject the application, and will not entertain future applications for this proposed 'project' in any shape or form until such time, all the aforementioned reasons have been addressed to the satisfaction of all stakeholders and some independent and comprehensive environmental impact study has been performed.

Yours faithfully



Lam Kuen and Family  
**Indigenous villagers**

**c.c.** Sai Kung North Rural Committee, 2/F Sai Kung Government Offices, 34 Chan Man Street, Sai Kung.

☐ Urgent ☐ Return Receipt Requested ☐ Sign ☐ Encrypt ☐ Mark Subject Restricted ☐ Expand personal&put



**KFBG's comments on two planning applications**

02/03/2022 18:05

From: EAP KFBG <eap@kfbg.org>  
To: "tpbpd@pland.gov.hk" <tpbpd@pland.gov.hk>  
File Ref:

2 attachments



220302 s16 SSH 139.pdf 220302 s12a KTN 2c.pdf

Dear Sir/ Madam,

Attached please see our comments regarding two applications. There are two pdf files attached to this email. If you cannot see/ download/ open these files, please notify us through email.

Best Regards,

Ecological Advisory Programme  
Kadoorie Farm and Botanic Garden

The Secretary,  
Town Planning Board,  
15/F, North Point Government Offices,  
333, Java Road, North Point,  
Hong Kong.  
(Email: [tpbpd@pland.gov.hk](mailto:tpbpd@pland.gov.hk))

2nd March, 2022.

By email only

Dear Sir/ Madam,

**Proposed Access Road for Government, Institution and Community uses at the  
adjoining "Government, Institution or Community" zone and associated Filling and  
Excavation of Land  
(A/NE-SSH/139)**

1. We refer to the captioned.
2. We urge the Board to investigate the necessity of building the proposed access road with relevant authorities (e.g., is there any proposed/ planned/ approved/ confirmed/ ongoing project or development at the adjoining 'Government, Institution or Community' (G/IC) site?).
3. We would also like to remind the Board that the application site is within Green Belt (GB) zone. *There is a general presumption against development within this zone*<sup>1</sup>. Approval of this application would set a precedent for other similar applications in this GB zone and we urge the Board to seriously consider the potential cumulative impacts on the GB zone of approving this application.
4. Thank you for your attention.

Ecological Advisory Programme  
Kadoorie Farm and Botanic Garden

<sup>1</sup> [https://www2.ozp.tpb.gov.hk/plan/ozp\\_plan\\_notes/en/S\\_NE-SSH\\_11\\_e.pdf#nameddest=GB](https://www2.ozp.tpb.gov.hk/plan/ozp_plan_notes/en/S_NE-SSH_11_e.pdf#nameddest=GB)



tpbpd@pland.gov.hk

寄件者: [REDACTED]  
寄件日期: 2022年03月02日星期三 1:51  
收件者: tpbpd  
主旨: Re: A/NE-SSH/139 DD 209 Sai Keng, Shap Sx Heung GB

Dear TPB Members,

International School!!!!!! That boat has sailed. It would be ridiculous to allow the development of yet another school when there has been such a drastic reduction in demand due to expats and more wealthy locals emigrating and the annual decline in births.

*Latest data from the Census and Statistics Department showed that only 38,684 babies were born last year, sliding 8 per cent from 2020*

Retaining the GB will be of far greater benefit to the community than yet another school that would have to cannibalize existing facilities in order to be profitable - and as we well know these schools are nothing more than commercial operations masquerading as community facilities in order to milk the system re tax free status and other perks.

Mary Mulvihill

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**From:** [REDACTED]  
**To:** tpbpd <tpbpd@pland.gov.hk>  
**Date:** Thursday, 24 June 2021 2:52 AM CST  
**Subject:** A/NE-SSH/139 DD 209 Sai Keng, Shap Sx Heung GB

A/NE-SSH/139

Lots 325 S.A (Part), 325 S.B (Part), 325 S.C (Part), 496 (Part), 497 (Part) and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung

Site area : About 4,673sq.m includes Government Land of about 4,366sq.m

Zoning : "Green Belt"

Applied development : Access Road for GIC uses / **Filling and Excavation of Land**

Dear TPB Members,

So the developer wants the community to sacrifice almost 5,000sq.m of verdant GB so that it can develop an international school on the GIC lots behind. No data provided on how many trees to be felled. Presumably the taxpayer is to foot the bill as the access road would be on public land.

In addition Road is a separate zoning and requires a Section 12A application but this is an S.16.

According to the only Shap Sz Hung OZP data available on General Papers, 17 October 2014, RNTPC Paper No 12.14, the GIC in question is intended to meet the future needs of the local population and weekend visitors.

9.3.4 stipulates that GIC related to CDA development '**would need to be provided within the CDA zone**'

This GB connects with CA further along Sai Sha Road. Clearly a road running through it would impact the eco-system of the GB that extends from Tai Tung and turn it into separate zones.

The planning intention of the GIC, set between two villages, is clearly to conserve the natural environment along the road for the pleasure of the community by providing facilities to serve the villages with access from both these nodes.

Far too much has been ceded to the developer already to the detriment of both the local community and the environment. It is time to call a halt before the entire district is slathered in cement.

Mary Mulvihill

Town Planning Board,  
15/F North Point Government offices,  
333 Java road,  
North Point,  
Hong Kong.



6th June 2022

Dear Sir / Madam,

**Re: Shap Sze Heung Outline Zoning Plan No. S/NE-SSH/11 and Planning Application A/NE-SSH/139**

With reference to the yet again resubmission of above zoning and planning applications some of us indigenous villagers remain concerned with the imminent highly detrimental impact the zoning and subsequent proposed development will have on the long term future of our village should the zoning and planning application be allowed to proceed.

This submission has now repeatedly been submitted and stakeholders have repeatedly objected with valid concerns yet the government seems to entertain its repeated submissions; it appears to be that the developers strategy is to repeatedly resubmit until such time stakeholders capitulate in exhaustion from repeatedly responding.

The reasons for our initial objections still stand and they include in brief, but not limited to, :-

- Virtually all parking spaces will cease to exist. Can the government ensure any damaging impacts be mitigated by obliging the developer to include a 'social responsibility' program (with or without the government participation) to create alternative zero cost parking spaces for indigenous villagers use. Perhaps the seafront could be sympathetically and ecologically developed to provide the desperately needed parking spaces?
- The property values of the entire village will be negatively impacted. No parking and very limited traffic circulation will inevitably make the village a less desirable place to live. In turn, the properties will not attract and retain the middle class demographic that currently make up the population of the village. Why then should one party, 'the developer' be allowed to profit at the expense of many parties (the owners of properties in the village)? Surely the government cannot support such an inequitable situation?
- What about the issue of access and circulation of emergency vehicles (ambulances)?
- The proposed road access area under the planning application is an accident blackspot and there remains rusty carcasses of cars that crashed down the ravines there. Development will only encourage more unauthorized car and motorbike racing which is currently intermittently occurring in the early hours.
- We are already suffering the effects of the huge development further along the Sai Sha Road from Sai Keng village. Very unhappy villagers are suffering quietly as traffic circulation and parking is becoming an issue for them. A situation a lot of us in Sai Keng would like to avoid and we have an opportunity to plan for the long term, to address predictable issues before they become problematic and ensure an equitable outcome for all concerned but does the government have the will to engage with the villagers of Sai Keng to find an amicable solution.

- The developers have been claiming the development is for the creation of an 'International School'. With the recent impact of Covid and the UK policy of welcoming BNO passport holders, resulting in an exodus of expatriates and middle class Hong Kong Chinese, the claims are clearly specious as the need for more international school places and their associated fees have today almost all but evaporated.

In summary, from our side nothing has changed and we remain against this development for the aforementioned reasons.

If anything, we are more against the development than ever because we are experiencing first hand the negative impacts of the developments on Sai Sha road today and fear that our way of life will inevitably be further impacted detrimentally with the ever increasing number of visitors to three fathoms cove bringing more pollution through thoughtless discarding of waste such as plastic bottles, bags, and food containers, and their disrespect for the natural environment with their mass thoughtless harvest of molluscs such as oysters and clams which indigenous villagers have been sustainably harvesting since their ancestors settled on the land but find that this natural food source is fast disappearing.

Thanking you in anticipation.

Yours faithfully

A handwritten signature in blue ink, appearing to be 'Lam Kuen', with a long horizontal flourish extending to the right.

Lam Kuen and Family  
**Indigenous villagers**

c.c. Sai Kung North Rural Committee, 2/F Sai Kung Government Offices, 34 Chan Man Street, Sai Kung.

☐ Urgent ☐ Return Receipt Requested ☐ Sign ☐ Encrypt ☐ Mark Subject Restricted ☐ Expand personal&publi



Re: A/NE-SSH/139 DD 209 Sai Keng, Shap Sx Heung GB  
14/06/2022 01:59

From: [REDACTED]  
To: tpbpd <tpbpd@pland.gov.hk>  
Cc: enquiry <enquiry@aud.gov.hk>  
File Ref:

Dear TPB Members,

On 19.5.2022, the applicant submitted further information which includes replacement pages of Environmental Assessment; a revised Traffic Impact Assessment with major changes in the assumptions (revised trip split rate), methodologies (revised traffic forecast and additional construction traffic impact, public transport and pedestrian assessments); and **responses to departmental and public comments**

But the information has not been shared with the community. The site is not only GB but also almost 100% public land.

This is not a legitimate public consultation.

Mary Mulvihill

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From: [REDACTED]  
To: tpbpd <tpbpd@pland.gov.hk>  
Date: Wednesday, 2 March 2022 1:50 AM CST  
Subject: Re: A/NE-SSH/139 DD 209 Sai Keng, Shap Sx Heung GB

Dear TPB Members,

International School!!!! That boat has sailed. It would be ridiculous to allow the development of yet another school when there has been such a drastic reduction in demand due to expats and more wealthy locals emigrating and the annual decline in births.

*Latest data from the Census and Statistics Department showed that only 38,684 babies were born last year, **sliding 8 per cent from 2020***

Retaining the GB will be of far greater benefit to the community than yet another school that would have to cannibalize existing facilities in order to be profitable - and as we well know these schools are nothing more than commercial operations masquerading as community facilities in order to milk the system re tax free status and other perks.

Mary Mulvihill

**From:** [REDACTED]  
**To:** tpbpd <tpbpd@pland.gov.hk>  
**Date:** Thursday, 24 June 2021 2:52 AM CST  
**Subject:** A/NE-SSH/139 DD 209 Sai Keng, Shap Sx Heung GB

A/NE-SSH/139

Lots 325 S.A (Part), 325 S.B (Part), 325 S.C (Part), 496 (Part), 497 (Part) and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung

Site area : About 4,673sq.m includes Government Land of about 4,366sq.m

Zoning : "Green Belt"

Applied development : Access Road for GIC uses / **Filling and Excavation of Land**

Dear TPB Members,

So the developer wants the community to sacrifice almost 5,000sq.m of verdant GB so that it can develop an international school on the GIC lots behind. No data provided on how many trees to be felled. Presumably the taxpayer is to foot the bill as the access road would be on public land.

In addition Road is a separate zoning and requires a Section 12A application but this is an S.16.

According to the only Shap Sz Hung OZP data available on General Papers, 17 October 2014, RNTPC Paper No 12.14, the GIC in question is intended to meet the future needs of the local population and weekend visitors.

9.3.4 stipulates that GIC related to CDA development **'would need to be provided within the CDA zone'**

This GB connects with CA further along Sai Sha Road. Clearly a road running through it would impact the eco-system of the GB that extends from Tai Tung and turn it into separate zones.

The planning intention of the GIC, set between two villages, is clearly to conserve the natural environment along the road for the pleasure of the community by providing facilities to serve the villages with access from both these nodes.

Far too much has been ceded to the developer already to the detriment of both the local community and the environment. It is time to call a halt before the entire district is slathered in cement.

Mary Mulvihill

**就規劃申請/覆核提出意見 Making Comment on Planning Application / Review**

參考編號  
**Reference Number:** 210625-161644-70015

提交限期  
**Deadline for submission:** 25/06/2021

提交日期及時間  
**Date and time of submission:** 25/06/2021 16:16:44

有關的規劃申請編號  
**The application no. to which the comment relates:** A/NE-SSH/139

「提意見人」姓名/名稱  
**Name of person making this comment:** 女士 Ms. Chan Tik Ka

意見詳情  
**Details of the Comment :**

本人為西徑村居民，本人極力反對此項申請！原因如下：  
該工程申請為一陡峭山坡，工程下方極近民居，工程期間可能會影響附近山坡的結構，  
若遇上大雨可能做成山泥傾瀉，極度危險！另工程期間也定必對居民產生極大騷擾，故  
此作為西徑村的居民，本人極力反對此項申請！



就規劃申請/覆核提出意見 Making Comment on Planning Application / Review

參考編號

Reference Number:

220725-141931-46946

提交限期

Deadline for submission:

29/07/2022

提交日期及時間

Date and time of submission:

25/07/2022 14:19:31

有關的規劃申請編號

The application no. to which the comment relates:

A/NE-SSH/139

「提意見人」姓名/名稱

Name of person making this comment:

Dr. Tse

意見詳情

Details of the Comment :

馬鞍山的交通早已達到飽和，早上從西沙路出九龍地區的交通已十分擠塞，還未計算西沙發展工程Site A和Site B已正在興建約9800伙，相信私家車數量亦會增加數千，在交通配套不能容納這麼多的車輛時，請考慮西沙路的居民。雖然工程正在擴闊部份道路，但到了帝琴灣後，到馬鞍山後，也一樣是擠在一起，令這區的交通擠塞情況更嚴重。西沙路工程已令周邊居民受盡困擾，更令郊區環境進一步被破壞，野生動物和鳥類的家園也失去不少，既然現在西沙路工程已有那麼一個龐大屋苑，本人和家人十分希望能給西沙路其他村民一個寧靜的日子，因此反對此A/NE-SSH/139的規劃申請，謝謝。

**就規劃申請/覆核提出意見 Making Comment on Planning Application / Review**

參考編號

Reference Number:

220903-180443-39376

提交限期

Deadline for submission:

16/09/2022

提交日期及時間

Date and time of submission:

03/09/2022 18:04:43

有關的規劃申請編號

The application no. to which the comment relates:

A/NE-SSH/139

「提意見人」姓名/名稱

Name of person making this comment:

先生 Mr. Felix Tang

意見詳情

Details of the Comment :

本人對開拓道路的建議作出反對，理由如下：

「新建道路目的接通私人未來發展地段，茂盛草木山坡首先被砍伐開拓，破壞自然環境，有違全球各國正倡議推動的減碳環保政策大方向。」

另外，新建道路目的接通上述私人地段，合理預測上述私人地段將大興土木和大量增加人流，但是上述私人地址位處非常貼近2015年10月16日城規會公佈資料「十四鄉分區計劃大綱核准圖編號 S/NE-SSH/11」所劃定為「易受影響的自然環境」的紅樹林區域和「綠化地帶」，發展上述私人地段將威脅紅樹林生態和破壞大量山坡綠色植物，有違政府倡議保護自然生態的政策。

根據上述城規會S/NE-SSH/11第9.3段「政府、機構或社區」中9.3.3項中列明位於「西徑與企嶺下新圍之間，再預留四塊「政府、機構或社區」用地，以配合當地居民和周末遊人日後的需要。」就此點「配合當地居民需要」，西徑村人口密集，位置交通不便，居民主要依靠私家車代步，因此居民最需要必定為足夠泊車空間供居民日常生活的泊車安排。因此政府必須先考慮西徑村居民泊車空間的基本生活需求。

另外，「配合周末遊人日後的需要」，就此點更應該保留現時生態環境，皆因城規會早肯定「綠化地帶」的重要性，在城規會S/NE-SSH/11中第9.6「綠化地帶」中清楚闡明「此地帶的規劃意向，主要是利用天然地理環境作為市區和近郊的發展區的界限，以抑制市區範圍的擴展，以提供土地作靜態康樂場地。」現時由西澳至大洞均火速發展為私人巨型住宅發展項目，預計未來十年內，人口稠密將幾何級數倍增，因此「綠化地帶」山坡和企嶺下「紅樹林」更屬珍寶，政府有責任全力保護香港的天然資源，避免偏向放任私人發展項目過度發展，破壞鄉郊居民的基本權益。

最後，本人建議城規會為方便遊人享用西徑和企嶺下新圍附近的天然生態資源，應盡早在西徑村開拓一條行人隧道穿越西沙路，讓遊人和村內居民可以更安全地步行往返西沙路公路的公共交通工具。」

西徑村村民

鄧先生

**就規劃申請/覆核提出意見 Making Comment on Planning Application / Review**

參考編號  
**Reference Number:** 220904-014323-07361

提交限期  
**Deadline for submission:** 16/09/2022

提交日期及時間  
**Date and time of submission:** 04/09/2022 01:43:23

有關的規劃申請編號  
**The application no. to which the comment relates:** A/NE-SSH/139

「提意見人」姓名/名稱  
**Name of person making this comment:** 先生 Mr. Leung Siu Cheung Larry

意見詳情  
**Details of the Comment :**

看不出局部擴闊路面對整段道路可造成的實質效益，再者亦無法證實所擬達至目的存在的真實性。  
在未能達至對公眾整體利益得以充份確立，以及對週邊存在不可逆轉的環境影響下。  
本人謹在此提出反對此項建議的表述。

就規劃申請/覆核提出意見 Making Comment on Planning Application / Review

參考編號

Reference Number:

210606-135510-68800

提交限期

Deadline for submission:

25/06/2021

提交日期及時間

Date and time of submission:

06/06/2021 13:55:10

有關的規劃申請編號

The application no. to which the comment relates:

A/NE-SSH/139

「提意見人」姓名/名稱

Name of person making this comment:

女士 Ms. Kwong

意見詳情

Details of the Comment :

就有關確闊道路工程連接有關設施，希望要考慮西沙路西徑村出入口的運輸流量，繁忙時間出入車極為擠塞。請考慮有關擴建可以連接本村作為另一個出入口。一方面方便村民及有關機構人員到訪本村需要、西徑村人口及車流量的增長以及考慮到緊急情況的需要。

就規劃申請/覆核提出意見 Making Comment on Planning Application / Review

參考編號

Reference Number:

210621-182439-96417

提交限期

Deadline for submission:

25/06/2021

提交日期及時間

Date and time of submission:

21/06/2021 18:24:39

有關的規劃申請編號

The application no. to which the comment relates:

A/NE-SSH/139

「提意見人」姓名/名稱

Name of person making this comment:

先生 Mr. Law

意見詳情

Details of the Comment :

How come a sizable site of government and community uses is lacking a accessible road to serve?

The government should take initiation to rectify the situation rather than by private parties.

致城市規劃委員會秘書：

專人送遞或郵遞：香港北角渣華道 333 號北角政府合署 15 樓

傳真：2877 0245 或 2522 8426

電郵：tpbpd@pland.gov.hk

**To: Secretary, Town Planning Board**

By hand or post: 15/F, North Point Government Offices, 333 Java Road, North Point, Hong Kong

By Fax: 2877 0245 or 2522 8426

By e-mail: tpbpd@pland.gov.hk

有關的規劃申請編號 The application no. to which the comment relates A/NE-SSH/139

意見詳情（如有需要，請另頁說明）

**Details of the Comment** (use separate sheet if necessary)

如果已經有政府規劃了社區設施的用地區，就應要造通道去連接通往來的各區，如果不是就會浪費了社區設施，做成不便。要想到日後用家的方便。

「提意見人」姓名／名稱 Name of person/company making this comment KK Lai

簽署 Signature KK 日期 Date 19-6-2021

RECEIVED  
2021 JUN 24 P 5:28  
TOWN PLANNING BOARD

**就規劃申請/覆核提出意見 Making Comment on Planning Application / Review**

參考編號  
**Reference Number:** 210624-190632-91570

提交限期  
**Deadline for submission:** 25/06/2021

提交日期及時間  
**Date and time of submission:** 24/06/2021 19:06:32

有關的規劃申請編號  
**The application no. to which the comment relates:** A/NE-SSH/139

「提意見人」姓名/名稱  
**Name of person making this comment:** 先生 Mr. Felix Tang

意見詳情  
**Details of the Comment :**

本人建議在開拓以上馬路同時興建一條隧道以接通橫過西沙路, 以方便往後在西徑與企嶺下新圍之間地段興建學校或政府機構後使用公共交通工具等人仕安全地橫過繁忙的西沙路段.



**就規劃申請/覆核提出意見 Making Comment on Planning Application / Review**

參考編號  
**Reference Number:** 210625-140955-96930

提交限期  
**Deadline for submission:** 25/06/2021

提交日期及時間  
**Date and time of submission:** 25/06/2021 14:09:55

有關的規劃申請編號  
**The application no. to which the comment relates:** A/NE-SSH/139

「提意見人」姓名/名稱  
**Name of person making this comment:** 先生 Mr. NG CHO HIM

意見詳情  
**Details of the Comment :**

由於現時車路出入西徑村只有一路口,如有緊急事故容易擠塞,希望如發展新路時預留分支  
分流車輛,供村民及緊急車輛使用

**就規劃申請/覆核提出意見 Making Comment on Planning Application / Review**

參考編號  
**Reference Number:** 210625-151632-67117

提交限期  
**Deadline for submission:** 25/06/2021

提交日期及時間  
**Date and time of submission:** 25/06/2021 15:16:32

有關的規劃申請編號  
**The application no. to which the comment relates:** A/NE-SSH/139

「提意見人」姓名/名稱  
**Name of person making this comment:** 先生 Mr. Mr. Lam

意見詳情  
**Details of the Comment :**

I generally do not oppose to the application, however, only on the basis that Sai Keng Village can benefit from using this new proposed road. Currently Sai Keng Village has an access issue where there is only one way in and the same way out and bottlenecks at certain places. Also on the basis that the design and feel of the new road will not impact the natural scenery too much, I don't see a major issue. While the developers are developing that area, I can suggest they look after the surrounding village and listen to their views and needs.

**Recommended Advisory Clauses**

- (a) to note the comments of the District Lands Officer/Tai Po, Lands Department (DLO/TP, LandsD) that:
- (i) any excavation works on unleased Government land require prior approval. The applicant shall clarify the future maintenance party of the proposed access road and its associated slope work; and
  - (ii) the adjacent “G/IC” zone comprises mainly private lots held under block government lease demised for agricultural uses and infilled with unleased Government land. In the event the lot owner(s) apply for lease modification/land exchange to implement the planning intention, their development proposal including any proposed access road serving the development will be circulated to the concerned departments for comment. The relevant comments will be incorporated into the lease conditions, if approved;
- (b) to note the comments of the Chief Highway Engineer/New Territories East, Highways Department (CHE/NTE, HyD) that:
- (i) the applicant is reminded to provide detailed compensatory planting proposal with relevant information of the proposed plantings i.e. planting plan with locations of compensatory tree, planting schedule, matrix, etc. for consideration. According to the paragraph 40 of Development Bureau (DEVB) Technical Circular (Works) No. 4/2020 and “Proper Planting Practices” promulgated by Greening, Landscape and Tree Management Section of DEVB, feasible receptor locations with adequate space for the compensatory trees considering their mature height and spread should be explored and identified;
  - (ii) with due consideration of the slope gradient, the applicant should review if additional planting of shrubs, groundcovers, ferns or climbers is feasible on these features in addition to the proposed compensatory tree planting with reference to Geotechnical Engineering Office Publication No. 1/2011 - Technical Guidelines on Landscape Treatment for Slopes;
  - (iii) the applicant should take up maintenance responsibility of the entire affected slopes (including its planting works) during construction period;
  - (iv) 12 month Maintenance Period should be provided for the new planting works and the existing vegetation within the slope features to be maintained by HyD. Defects of existing trees, such as dead trees and dead branches, shall be rectified before handing over the slope vegetation maintenance responsibility to HyD. All invasive, parasitic weeds and vines (e.g. *Leucaena leucecephala* 銀合歡, *Pueraria* 野葛, *Cassytha* 無根藤 and *Mikania micrantha* 薇甘菊), if any, should be removed;
  - (v) landscape consultant/tree specialist should be assigned to oversee and monitor the works to ensure proper implementation of preservation and protection to the existing trees before commencement of works. Regular site inspection by the tree Specialist is required to closely monitor the site activities in order to avoid

or minimize any possible adverse impact to the retained trees during construction;

- (vi) upon completion of works, the consultant should arrange site inspection with representatives from HyD to agree on the date of commencement for Establishment Period/Maintenance Period; and
  - (vii) the prevailing version of “Requirements for Handover of Vegetation to Highways Department” (available at: [https://www.hyd.gov.hk/en/technical\\_references/technical\\_document/handover\\_of\\_vegetation/index.html](https://www.hyd.gov.hk/en/technical_references/technical_document/handover_of_vegetation/index.html)) should be complied with;
- (c) to note the comments of the Chief Engineer/Mainland North, Drainage Services Department (CE/MN, DSD) that:
- (i) the applicant should ensure that the internal road has been adequately designed in accordance with the latest HyD Guidance Notes on Road Pavement Drainage design (RD/GN/035A) to which special considerations on double gullies, overflow weir, gullies provisions at sag points and junction design have been duly covered in the submission;
  - (ii) all site formation works should not obstruct any overland flow. All existing flow paths as well as the runoff falling onto and passing through the Site should be intercepted and disposed of via proper discharge points. In addition, sufficient openings should be provided at the bottom of the boundary wall/fence to allow surface runoff to pass through the site if any boundary wall/fence are to be erected. The authorized person/developer shall also ensure that no works, including any site formation works, shall be carried out as may adversely interfere with the free flow condition of the existing drain, channels and watercourses on or in the vicinity of the subject site any time during or after the works;
  - (iii) the applicant should take all precautionary measures to prevent any disturbance, damage and pollution from the development to any parts of the existing drainage facilities in the vicinity of the lot. In the event of any damage to the existing drainage facilities, the applicant would be held responsible for the cost of all necessary repair works, compensation and any other consequences arising therefrom; and
  - (iv) temporary stockpile of excavated materials should be at a location where it will not affect any existing drainage system and the authorized person/ developer is required to ensure that no construction debris, silt and sediments, or cementitious materials will be discharged or washed into any exiting public drains or sewers from the Site;
- (d) to note the comments of Principal Project Coordinator/SDD (PPC/SDD), DSD that the planned village sewerage system under project “Tolo Harbour Sewerage of Unsewered Areas Stage 2” is in vicinity of the proposed access road. The project is currently in design stage and the programme for commencement of construction works is still under review. The applicant should coordinate with his office for interface issues; and

- (e) to note the comments of the Chief Building Surveyor/New Territories West, Buildings Department (CBS/NTW, BD) that the proposed works involve construction of an access road. Formal submission under the Buildings Ordinance (BO) is required for any proposed new works, including site formation works such as filling and excavation of land. Detailed comments under BO will be provided at the building plan submission stage;
- (f) to note the comments of the Director of Fire Services (D of FS) that the applicant is advised to observe the requirements of emergency vehicular access (EVA) as stipulated in Section 6 Part D of Code of Practice for Fire Safety in Buildings 2011 which is administered by BD;hi7
- (g) to note the comments of the Chief Engineer/Construction, Water Supplies Department (CE/C, WSD) that:
  - (i) the applicant is required to either divert or protect the water mains found on site;
  - (ii) if diversion is required, existing water mains within the Site are needed to be diverted outside the site boundary of the proposed development to lie in Government land. A strip of land of minimum 1.5 metres in width should be provided for the diversion of the existing water main(s). The cost of diversion of existing water main(s) upon request will have to borne by the applicant; and the applicant shall submit all the relevant proposal to WSD for consideration and agreement before the works commence; and
  - (iii) if diversion is not required, the applicant should be advised that:
    - 1) existing water main(s) at the Site are affected and no development which requires resiting of water main(s) will be allowed;
    - 2) details of site formation works shall be submitted to WSD for approval prior to commencement of works;
    - 3) no structures shall be built or materials stored within 1.5 metres from the central line(s) of water main(s). Free access shall be made available at all times for WSD's staff or his contractor to carry out construction, inspection, operation, maintenance and repair works;
    - 4) no trees or shrubs with penetrating roots may be planted within the Waterworks Reserve or in the vicinity of the water main(s). No change of existing site condition may be undertaken within the aforesaid area without the prior agreement of WSD. Rigid root barriers may be required if the clear distance between the proposed tree and the pipe is 2.5 metres or less, and the barrier must extend below the invert level of the pipe;
    - 5) no planting or obstruction of any kind except turfing shall be permitted within the space of 1.5 metres around the cover of any valve or within a distance of 1 metre from any hydrant outlet; and
    - 6) tree planting may be prohibited in the event that there is any likelihood of damage being caused to water main(s).

Form No. S16-I  
表格第 S16-I 號

APPLICATION FOR PERMISSION  
UNDER SECTION 16 OF  
THE TOWN PLANNING ORDINANCE  
(CAP.131)

根據《城市規劃條例》(第131章)  
第16條遞交的許可申請

2021年5月28日

此文件在 收到。城市規劃委員會  
只會在收到所有必要的資料及文件後才正式確認收到  
申請的日期。

This document is received on 28 MAY 2021  
The Town Planning Board will formally acknowledge  
the date of receipt of the application only upon receipt  
of all the required information and documents.

Applicable to proposals not involving or not only involving:  
適用於建議不涉及或不祇涉及:

- (i) Construction of "New Territories Exempted House"  
興建「新界豁免管制屋宇」;
- (ii) Temporary use/development of land and/or building not exceeding 3 years in rural areas; and  
位於鄉郊地區土地上及/或建築物內進行為期不超過三年的臨時用途/發展;及
- (iii) Renewal of permission for temporary use or development in rural areas  
位於鄉郊地區的臨時用途或發展的許可續期

Applicant who would like to publish the notice of application in local newspapers to meet one of the Town Planning Board's requirements of taking reasonable steps to obtain consent of or give notification to the current land owner, please refer to the following link regarding publishing the notice in the designated newspapers:  
[https://www.info.gov.hk/tpb/en/plan\\_application/apply.html](https://www.info.gov.hk/tpb/en/plan_application/apply.html)

申請人如欲在本地報章刊登申請通知,以採取城市規劃委員會就取得現行土地擁有人的同意或通知現行土地擁有人所指定的其中一項合理步驟,請瀏覽以下網址有關在指定的報章刊登通知:  
[https://www.info.gov.hk/tpb/tc/plan\\_application/apply.html](https://www.info.gov.hk/tpb/tc/plan_application/apply.html)

**General Note and Annotation for the Form**

**填寫表格的一般指引及註解**

# "Current land owner" means any person whose name is registered in the Land Registry as that of an owner of the land to which the application relates, as at 6 weeks before the application is made  
「現行土地擁有人」指在提出申請前六星期,其姓名或名稱已在土地註冊處註冊為該申請所關乎的土地的擁有人的人

& Please attach documentary proof 請夾附證明文件

^ Please insert number where appropriate 請在適當地方註明編號

Please fill "NA" for inapplicable item 請在不適用的項目填寫「不適用」

Please use separate sheets if the space provided is insufficient 如所提供的空間不足,請另頁說明

Please insert a 「✓」 at the appropriate box 請在適當的方格內上加上「✓」號

For Official Use Only 請勿填寫此欄	Application No. 申請編號	A/NZ-SSA/139
	Date Received 收到日期	28 MAY 2021

- The completed form and supporting documents (if any) should be sent to the Secretary, Town Planning Board (the Board), 15/F, North Point Government Offices, 333 Java Road, North Point, Hong Kong.  
申請人須把填妥的申請表格及其他支持申請的文件 (倘有), 送交香港北角渣華道 333 號北角政府合署 15 樓城市規劃委員會 (下稱「委員會」) 秘書收。
- Please read the "Guidance Notes" carefully before you fill in this form. The document can be downloaded from the Board's website at <http://www.info.gov.hk/tpb/>. It can also be obtained from the Secretariat of the Board at 15/F, North Point Government Offices, 333 Java Road, North Point, Hong Kong (Tel: 2231 4810 or 2231 4835), and the Planning Enquiry Counters of the Planning Department (Hotline: 2231 5000) (17/F, North Point Government Offices, 333 Java Road, North Point, Hong Kong and 14/F, Sha Tin Government Offices, 1 Sheung Wo Che Road, Sha Tin, New Territories).  
請先細閱《申請須知》的資料單張, 然後填寫此表格。該份文件可從委員會的網頁下載 (網址: <http://www.info.gov.hk/tpb/>), 亦可向委員會秘書處 (香港北角渣華道 333 號北角政府合署 15 樓 - 電話: 2231 4810 或 2231 4835) 及規劃署的規劃資料查詢處 (熱線: 2231 5000) (香港北角渣華道 333 號北角政府合署 17 樓及新界沙田上禾輦路 1 號沙田政府合署 14 樓) 索取。
- This form can be downloaded from the Board's website, and obtained from the Secretariat of the Board and the Planning Enquiry Counters of the Planning Department. The form should be typed or completed in block letters. The processing of the application may be refused if the required information or the required copies are incomplete.  
此表格可從委員會的網頁下載, 亦可向委員會秘書處及規劃署的規劃資料查詢處索取。申請人須以打印方式或以正楷填寫表格。如果申請人所提交的資料或文件副本不齊全, 委員會可拒絕處理有關申請。

### 1. Name of Applicant 申請人姓名/名稱

(☐ Mr. 先生 / ☐ Mrs. 夫人 / ☐ Miss 小姐 / ☐ Ms. 女士 / ☒ Company 公司 / ☐ Organisation 機構)

Light Time Investments Limited

### 2. Name of Authorised Agent (if applicable) 獲授權代理人姓名/名稱 (如適用)

(☐ Mr. 先生 / ☐ Mrs. 夫人 / ☐ Miss 小姐 / ☐ Ms. 女士 / ☒ Company 公司 / ☐ Organisation 機構)

Llewelyn-Davies Hong Kong Limited

### 3. Application Site 申請地點

(a) Full address / location / demarcation district and lot number (if applicable) 詳細地址/地點/丈量約份及地段號碼 (如適用)	Lots 325 S.A (Part), 325 S.B (Part), 325 S.C (Part), 496 (Part), 497 (Part) and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, N.T.	
(b) Site area and/or gross floor area involved 涉及的地盤面積及/或總樓面面積	<input checked="" type="checkbox"/> Site area 地盤面積 about 4,673 sq.m 平方米 <input checked="" type="checkbox"/> About 約	[Note 1]
	<input type="checkbox"/> Gross floor area 總樓面面積 ..... sq.m 平方米 <input type="checkbox"/> About 約	
(c) Area of Government land included (if any) 所包括的政府土地面積 (倘有)	about 4,366 sq.m 平方米 <input checked="" type="checkbox"/> About 約	

[Note 1]: Refers to the proposed access road with an area of about 1,844 m<sup>2</sup> and woodland planting area of about 2,829 m<sup>2</sup> that falls within the subject "GB" zone only. The permitted school and / or other permitted uses in the adjacent "G/C" zone shall not form part the Application Site.



(d) Name and number of the related statutory plan(s) 有關法定圖則的名稱及編號	Approved Shap Sz Heung Outline Zoning Plan No. S/NE-SSH/11
(e) Land use zone(s) involved 涉及的土地用途地帶	"Green Belt"
(f) Current use(s) 現時用途	The Application Site is largely vacant.  (If there are any Government, institution or community facilities, please illustrate on plan and specify the use and gross floor area) (如有任何政府、機構或社區設施，請在圖則上顯示，並註明用途及總樓面面積)

#### 4. "Current Land Owner" of Application Site 申請地點的「現行土地擁有人」

The applicant 申請人 –

- ☒ is the sole "current land owner"<sup>#&</sup> (please proceed to Part 6 and attach documentary proof of ownership).  
是唯一的「現行土地擁有人」<sup>#&</sup> (請繼續填寫第 6 部分，並夾附業權證明文件)。
- ☐ is one of the "current land owners"<sup>#&</sup> (please attach documentary proof of ownership).  
是其中一名「現行土地擁有人」<sup>#&</sup> (請夾附業權證明文件)。
- ☐ is not a "current land owner"<sup>#</sup>.  
並不是「現行土地擁有人」<sup>#</sup>。

- ☐ The application site is entirely on Government land (please proceed to Part 6).  
申請地點完全位於政府土地上 (請繼續填寫第 6 部分)。

#### 5. Statement on Owner's Consent/Notification

N/A

就土地擁有人的同意/通知土地擁有人的陳述

- (a) According to the record(s) of the Land Registry as at ..... (DD/MM/YYYY), this application involves a total of ..... "current land owner(s)"<sup>#</sup>.  
根據土地註冊處截至 ..... 年 ..... 月 ..... 日的記錄，這宗申請共牽涉 ..... 名「現行土地擁有人」<sup>#</sup>。

(b) The applicant 申請人 –

- ☐ has obtained consent(s) of ..... "current land owner(s)"<sup>#</sup>.  
已取得 ..... 名「現行土地擁有人」<sup>#</sup>的同意。

Details of consent of "current land owner(s)" <sup>#</sup> obtained 取得「現行土地擁有人」 <sup>#</sup> 同意的詳情		
No. of 'Current Land Owner(s)' 「現行土地擁有人」數目	Lot number/address of premises as shown in the record of the Land Registry where consent(s) has/have been obtained 根據土地註冊處記錄已獲得同意的地段號碼/處所地址	Date of consent obtained (DD/MM/YYYY) 取得同意的日期 (日/月/年)

(Please use separate sheets if the space of any box above is insufficient. 如上列任何方格的空間不足，請另頁說明)

- ☐ has notified ..... "current land owner(s)"<sup>#</sup>  
已通知 ..... 名「現行土地擁有人」<sup>#</sup>。

Details of the "current land owner(s)" <sup>#</sup> notified 已獲通知「現行土地擁有人」 <sup>#</sup> 的詳細資料		
No. of 'Current Land Owner(s)' 「現行土地擁有人」數目	Lot number/address of premises as shown in the record of the Land Registry where notification(s) has/have been given 根據土地註冊處記錄已發出通知的地段號碼／處所地址	Date of notification given (DD/MM/YYYY) 通知日期(日/月/年)

(Please use separate sheets if the space of any box above is insufficient. 如上列任何方格的空間不足，請另頁說明)

- ☐ has taken reasonable steps to obtain consent of or give notification to owner(s):  
已採取合理步驟以取得土地擁有人的同意或向該人發給通知。詳情如下：

Reasonable Steps to Obtain Consent of Owner(s) 取得土地擁有人的同意所採取的合理步驟

- ☐ sent request for consent to the "current land owner(s)" on \_\_\_\_\_ (DD/MM/YYYY)<sup>#&</sup>  
於 \_\_\_\_\_ (日/月/年)向每一名「現行土地擁有人」<sup>#</sup>郵遞要求同意書<sup>&</sup>

Reasonable Steps to Give Notification to Owner(s) 向土地擁有人發出通知所採取的合理步驟

- ☐ published notices in local newspapers on \_\_\_\_\_ (DD/MM/YYYY)<sup>&</sup>  
於 \_\_\_\_\_ (日/月/年)在指定報章就申請刊登一次通知<sup>&</sup>
- ☐ posted notice in a prominent position on or near application site/premises on \_\_\_\_\_ (DD/MM/YYYY)<sup>&</sup>  
於 \_\_\_\_\_ (日/月/年)在申請地點／申請處所或附近的顯明位置貼出關於該申請的通知<sup>&</sup>
- ☐ sent notice to relevant owners' corporation(s)/owners' committee(s)/mutual aid committee(s)/management office(s) or rural committee on \_\_\_\_\_ (DD/MM/YYYY)<sup>&</sup>  
於 \_\_\_\_\_ (日/月/年)把通知寄往相關的業主立案法團/業主委員會/互助委員會或管理處，或有關的鄉事委員會<sup>&</sup>

Others 其他

- ☐ others (please specify)  
其他（請指明）

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Note: May insert more than one 「✓」.

Information should be provided on the basis of each and every lot (if applicable) and premises (if any) in respect of the application.

註：可在多於一個方格內加上「✓」號

申請人須就申請涉及的每一地段（倘適用）及處所（倘有）分別提供資料

## 6. Type(s) of Application 申請類別

- ☐ Type (i) Change of use within existing building or part thereof  
第(i)類 更改現有建築物或其部分內的用途
- ☒ Type (ii) ~~Diversion of stream~~ / excavation of land / filling of land / ~~filling of pond~~ as required under Notes of Statutory Plan(s)  
第(ii)類 根據法定圖則《註釋》內所要求的河道改道／挖土／填土／填塘工程
- ☐ Type (iii) Public utility installation / Utility installation for private project  
第(iii)類 公用事業設施裝置/私人發展計劃的公用設施裝置
- ☐ Type (iv) Minor relaxation of stated development restriction(s) as provided under Notes of Statutory Plan(s)  
第(iv)類 略為放寬於法定圖則《註釋》內列明的發展限制
- ☒ Type (v) Use / development other than (i) to (iii) above  
第(v)類 上述的(i)至(iii)項以外的用途／發展

Note 1: May insert more than one 「✓」.

註1：可在多於一個方格內加上「✓」號

Note 2: For Development involving columbarium use, please complete the table in the Appendix.

註2：如發展涉及靈灰安置所用途，請填妥於附件的表格。

## (c) For Type (i) application 供第(i)類申請

N/A

(a) Total floor area involved 涉及的總樓面面積	sq.m 平方米		
(b) Proposed use(s)/development 擬議用途/發展	(If there are any Government, institution or community facilities, please illustrate on plan and specify the use and gross floor area) (如有任何政府、機構或社區設施，請在圖則上顯示，並註明用途及總樓面面積)		
(c) Number of storeys involved 涉及層數		Number of units involved 涉及單位數目	
(d) Proposed floor area 擬議樓面面積	Domestic part 住用部分 .....		sq.m 平方米 □About 約
	Non-domestic part 非住用部分.....		sq.m 平方米 □About 約
	Total 總計 .....		sq.m 平方米 □About 約
(e) Proposed uses of different floors (if applicable) 不同樓層的擬議用途(如適用) (Please use separate sheets if the space provided is insufficient) (如所提供的空間不足，請另頁說明)	Floor(s) 樓層	Current use(s) 現時用途	Proposed use(s) 擬議用途

(ii) For Type (ii) application 供第(ii)類申請	
(a) Operation involved 涉及工程	<input type="checkbox"/> Diversion of stream 河道改道 <input type="checkbox"/> Filling of pond 填塘 Area of filling 填塘面積 ..... sq.m 平方米 <input type="checkbox"/> About 約 Depth of filling 填塘深度 ..... m 米 <input type="checkbox"/> About 約 <input checked="" type="checkbox"/> Filling of land 填土 Area of filling 填土面積 ..... 1,005 ..... sq.m 平方米 <input checked="" type="checkbox"/> About 約 Depth of filling 填土厚度 ..... 2.5 - 8.5 ..... m 米 <input checked="" type="checkbox"/> About 約 <input checked="" type="checkbox"/> Excavation of land 挖土 Area of excavation 挖土面積 ..... 1,210 ..... sq.m 平方米 <input checked="" type="checkbox"/> About 約 Depth of excavation 挖土深度 ..... 0.8 - 6.2 ..... m 米 <input checked="" type="checkbox"/> About 約 <p>(Please indicate on site plan the boundary of concerned land/pond(s), and particulars of stream diversion, the extent of filling of land/pond(s) and/or excavation of land) (請用圖則顯示有關土地/池塘界線, 以及河道改道、填塘、填土及/或挖土的細節及/或範圍))</p>
(b) Intended use/development 有意進行的用途/發展	Proposed Access Road with Filling and Excavation of Land in "Green Belt" Zone for Permitted uses in adjacent "Government, Institution or Community" Zone

(iii) For Type (iii) application 供第(iii)類申請		N/A												
(a) Nature and scale 性質及規模	<input type="checkbox"/> Public utility installation 公用事業設施裝置 <input type="checkbox"/> Utility installation for private project 私人發展計劃的公用設施裝置 Please specify the type and number of utility to be provided as well as the dimensions of each building/structure, where appropriate 請註明有關裝置的性質及數量, 包括每座建築物/構築物(倘有)的長度、高度和闊度 <table border="1"> <thead> <tr> <th>Name/type of installation 裝置名稱/種類</th> <th>Number of provision 數量</th> <th>Dimension of each installation /building/structure (m) (LxWxH) 每個裝置/建築物/構築物的尺寸 (米) (長 x 闊 x 高)</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table> <p>(Please illustrate on plan the layout of the installation 請用圖則顯示裝置的布局)</p>		Name/type of installation 裝置名稱/種類	Number of provision 數量	Dimension of each installation /building/structure (m) (LxWxH) 每個裝置/建築物/構築物的尺寸 (米) (長 x 闊 x 高)									
Name/type of installation 裝置名稱/種類	Number of provision 數量	Dimension of each installation /building/structure (m) (LxWxH) 每個裝置/建築物/構築物的尺寸 (米) (長 x 闊 x 高)												

(iv) For Type (iv) application 供第(iv)類申請		N/A
<p>(a) Please specify the proposed minor relaxation of stated development restriction(s) and <b>also fill in the proposed use/development and development particulars in part (v) below</b> –            請列明擬議略為放寬的發展限制並填妥於第(v)部分的擬議用途/發展及發展細節 –</p>		
<input type="checkbox"/> Plot ratio restriction 地積比率限制	From 由 ..... to 至 .....	
<input type="checkbox"/> Gross floor area restriction 總樓面面積限制	From 由 .....sq. m 平方米 to 至 .....sq. m 平方米	
<input type="checkbox"/> Site coverage restriction 上蓋面積限制	From 由 .....% to 至 ..... %	
<input type="checkbox"/> Building height restriction 建築物高度限制	From 由 .....m 米 to 至 ..... m 米  From 由 ..... mPD 米 (主水平基準上) to 至 .....mPD 米 (主水平基準上)  From 由 ..... storeys 層 to 至 ..... storeys 層	
<input type="checkbox"/> Non-building area restriction 非建築用地限制	From 由 .....m to 至 ..... m	
<input type="checkbox"/> Others (please specify) 其他 (請註明)	..... .....	

(v) For Type (v) application 供第(v)類申請	
<p>(a) Proposed use(s)/development 擬議用途/發展</p>	<p>Proposed Access Road with Filling and Excavation of Land in "Green Belt" Zone for Permitted uses in adjacent "Government, Institution or Community" Zone</p> <p>(Please illustrate the details of the proposal on a layout plan 請用平面圖說明建議詳情)</p>
<p>(b) <u>Development Schedule</u> 發展細節表</p>	
Proposed gross floor area (GFA) 擬議總樓面面積	..... sq.m 平方米 <input type="checkbox"/> About 約
Proposed plot ratio 擬議地積比率	..... <input type="checkbox"/> About 約
Proposed site coverage 擬議上蓋面積 (above ground level)	..... % <input type="checkbox"/> About 約
Proposed no. of blocks 擬議座數	.....
Proposed no. of storeys of each block 每座建築物的擬議層數	..... storeys 層 <input type="checkbox"/> include 包括 ..... level of basement 層地庫 <input type="checkbox"/> exclude 不包括 ..... storeys of basements 層地庫
Proposed building height of each block	..... mPD 米(主水平基準上) <input type="checkbox"/> About 約 ..... m 米 <input type="checkbox"/> About 約

☐ Domestic part 住用部分

GFA 總樓面面積 ..... sq. m 平方米 ☐ About 約  
 number of Units 單位數目 .....  
 average unit size 單位平均面積 ..... sq. m 平方米 ☐ About 約  
 estimated number of residents 估計住客數目 .....

☐ Non-domestic part 非住用部分

☐ eating place 食肆 ..... sq. m 平方米 ☐ About 約  
☐ hotel 酒店 ..... sq. m 平方米 ☐ About 約

(please specify the number of rooms

請註明房間數目) .....

☐ office 辦公室 ..... sq. m 平方米 ☐ About 約  
☐ shop and services 商店及服務行業 ..... sq. m 平方米 ☐ About 約

☐ Government, institution or community facilities (please specify the use(s) and concerned land  
 政府、機構或社區設施 area(s)/GFA(s) 請註明用途及有關的地面面積/總  
 樓面面積)

.....  
 .....  
 .....

☒ other(s) 其他 (please specify the use(s) and concerned land  
 area(s)/GFA(s) 請註明用途及有關的地面面積/總  
 樓面面積)

Proposed access road with an area of about 1,844 sq. m and  
 woodland planting area of about 2,829 sq. m

.....

☐ Open space 休憩用地 (please specify land area(s) 請註明地面面積)

☐ private open space 私人休憩用地 ..... sq. m 平方米 ☐ Not less than 不少於  
☐ public open space 公眾休憩用地 ..... sq. m 平方米 ☐ Not less than 不少於

(c) Use(s) of different floors (if applicable) 各樓層的用途 (如適用)

N/A

[Block number] [座數]	[Floor(s)] [層數]	[Proposed use(s)] [擬議用途]
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

(d) Proposed use(s) of uncovered area (if any) 露天地方 (倘有) 的擬議用途

Access road and woodland planting areas .....

.....

.....

.....

.....



**7. Anticipated Completion Time of the Development Proposal**  
**擬議發展計劃的預計完成時間**

Anticipated completion time (in month and year) of the development proposal (by phase (if any)) (e.g. June 2023)

擬議發展計劃預期完成的年份及月份 (分期 (倘有)) (例：2023 年 6 月)

(Separate anticipated completion times (in month and year) should be provided for the proposed public open space and Government, institution or community facilities (if any))

(申請人須就擬議的公眾休憩用地及政府、機構或社區設施 (倘有) 提供個別擬議完成的年份及月份)

Anticipated to be completed by 2026.

## 8. Vehicular Access Arrangement of the Development Proposal 擬議發展計劃的行車通道安排

<p>Any vehicular access to the site/subject building?</p> <p>是否有車路通往地盤／有關建築物？</p>	<p>Yes 是</p>    <p>No 否</p>	<div> <input type="checkbox"/> There is an existing access. (please indicate the street name, where appropriate)              有一條現有車路。(請註明車路名稱(如適用))           </div> <hr/> <div> <input checked="" type="checkbox"/> There is a proposed access. (please illustrate on plan and specify the width)              有一條擬議車路。(請在圖則顯示，並註明車路的闊度)  <small>(Please refer to Figure 1.1 of the Traffic Impact Assessment in Appendix C for details)</small> </div>
<p>Any provision of parking space for the proposed use(s)?</p> <p>是否有為擬議用途提供停車位？</p>	<p>Yes 是</p>          <p>No 否</p>	<div> <input type="checkbox"/> (Please specify type(s) and number(s) and illustrate on plan)              (請註明種類及數目並於圖則上顯示)              Private Car Parking Spaces 私家車車位 (for staff) _____              Motorcycle Parking Spaces 電單車車位 _____              Light Goods Vehicle Parking Spaces 輕型貨車泊車位 _____              Medium Goods Vehicle Parking Spaces 中型貨車泊車位 _____              Heavy Goods Vehicle Parking Spaces 重型貨車泊車位 _____              Others (Please Specify) 其他 (請列明) _____              _____              _____           </div> <div> <input checked="" type="checkbox"/> </div>
<p>Any provision of loading/unloading space for the proposed use(s)?</p> <p>是否有為擬議用途提供上落客貨車位？</p>	<p>Yes 是</p>          <p>No 否</p>	<div> <input type="checkbox"/> (Please specify type(s) and number(s) and illustrate on plan)              請註明種類及數目並於圖則上顯示)              Private Car/ Taxi Spaces 私家車/的士車位 _____              Coach Spaces 旅遊巴車位 _____              Light Goods Vehicle Spaces 輕型貨車車位 _____              Medium Goods Vehicle Spaces 中型貨車車位 _____              Heavy Goods Vehicle Spaces 重型貨車車位 _____              Others (Please Specify) 其他 (請列明) _____              _____              _____           </div> <div> <input checked="" type="checkbox"/> </div>

**9. Impacts of Development Proposal 擬議發展計劃的影響**

If necessary, please use separate sheets to indicate the proposed measures to minimise possible adverse impacts or give justifications/reasons for not providing such measures.

如需要的話，請另頁表示可盡量減少可能出現不良影響的措施，否則請提供理據/理由。

<p>Does the development proposal involve alteration of existing building? 擬議發展計劃是否包括現有建築物的改動?</p>	<p>Yes 是          No 否</p>	<p><input type="checkbox"/> Please provide details 請提供詳情</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p><input checked="" type="checkbox"/></p>																													
<p>Does the development proposal involve the operation on the right? 擬議發展是否涉及右列的工程? (Note: where Type (ii) application is the subject of application, please skip this section. 註：如申請涉及第(ii)類申請，請跳至下一條問題。)</p>	<p>Yes 是          No 否</p>	<p><input checked="" type="checkbox"/> (Please indicate on site plan the boundary of concerned land/pond(s), and particulars of stream diversion, the extent of filling of land/pond(s) and/or excavation of land) (請用地盤平面圖顯示有關土地/池塘界線，以及河道改道、填塘、填土及/或挖土的細節及/或範圍)</p> <p><input type="checkbox"/> Diversion of stream 河道改道</p> <p><input type="checkbox"/> Filling of pond 填塘 Area of filling 填塘面積 ..... sq.m 平方米 <input type="checkbox"/> About 約 Depth of filling 填塘深度 ..... m 米 <input type="checkbox"/> About 約</p> <p><input checked="" type="checkbox"/> Filling of land 填土 Area of filling 填土面積 ..... 1,005 ..... sq.m 平方米 <input checked="" type="checkbox"/> About 約 Depth of filling 填土厚度 ..... 2.5 - 8.5 ..... m 米 <input checked="" type="checkbox"/> About 約</p> <p><input checked="" type="checkbox"/> Excavation of land 挖土 Area of excavation 挖土面積 ..... 1,210 ..... sq.m 平方米 <input checked="" type="checkbox"/> About 約 Depth of excavation 挖土深度 ..... 0.8 - 6.2 ..... m 米 <input checked="" type="checkbox"/> About 約</p> <p><input type="checkbox"/></p>																													
<p>Would the development proposal cause any adverse impacts? 擬議發展計劃會否造成不良影響?</p>	<table border="0"> <tr> <td>On environment 對環境</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input checked="" type="checkbox"/></td> </tr> <tr> <td>On traffic 對交通</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input checked="" type="checkbox"/></td> </tr> <tr> <td>On water supply 對供水</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input checked="" type="checkbox"/></td> </tr> <tr> <td>On drainage 對排水</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input checked="" type="checkbox"/></td> </tr> <tr> <td>On slopes 對斜坡</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input checked="" type="checkbox"/></td> </tr> <tr> <td>Affected by slopes 受斜坡影響</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input checked="" type="checkbox"/></td> </tr> <tr> <td>Landscape Impact 構成景觀影響</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input checked="" type="checkbox"/></td> </tr> <tr> <td>Tree Felling 砍伐樹木</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input checked="" type="checkbox"/></td> </tr> <tr> <td>Visual Impact 構成視覺影響</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input checked="" type="checkbox"/></td> </tr> <tr> <td>Others (Please Specify) 其他 (請列明)</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input checked="" type="checkbox"/></td> </tr> </table> <p>.....</p> <p>.....</p> <p>Please state measure(s) to minimise the impact(s). For tree felling, please state the number, diameter at breast height and species of the affected trees (if possible) 請註明盡量減少影響的措施。如涉及砍伐樹木，請說明受影響樹木的數目、及胸高度的樹幹直徑及品種(倘可)</p> <p>Please refer to the technical assessments in Appendices A to F of the attached ..... Planning Statement.</p>	On environment 對環境	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>	On traffic 對交通	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>	On water supply 對供水	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>	On drainage 對排水	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>	On slopes 對斜坡	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>	Affected by slopes 受斜坡影響	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>	Landscape Impact 構成景觀影響	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>	Tree Felling 砍伐樹木	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>	Visual Impact 構成視覺影響	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>	Others (Please Specify) 其他 (請列明)	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>
On environment 對環境	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>																													
On traffic 對交通	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>																													
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Visual Impact 構成視覺影響	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>																													
Others (Please Specify) 其他 (請列明)	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>																													

**10. Justifications 理由**

The applicant is invited to provide justifications in support of the application. Use separate sheets if necessary.  
 現請申請人提供申請理由及支持其申請的資料。如有需要，請另頁說明。

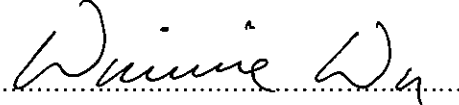
Please refer to Section 9 of the attached Planning Statement.....

**11. Declaration 聲明**

I hereby declare that the particulars given in this application are correct and true to the best of my knowledge and belief.  
本人謹此聲明，本人就這宗申請提交的資料，據本人所知及所信，均屬真實無誤。

I hereby grant a permission to the Board to copy all the materials submitted in an application to the Board and/or to upload such materials to the Board's website for browsing and downloading by the public free-of-charge at the Board's discretion.  
本人現准許委員會酌情將本人就此申請所提交的所有資料複製及/或上載至委員會網站，供公眾免費瀏覽或下載。

Signature  
簽署



Winnie W. Y. WU

Name in Block Letters  
姓名（請以正楷填寫）

☐ Applicant 申請人 / ☐ Authorised Agent 獲授權代理人

Associate Director

Position (if applicable)  
職位（如適用）

Professional Qualification(s) ☒ Member 會員 / ☐ Fellow of 資深會員

專業資格

☒ HKIP 香港規劃師學會 / ☐ HKIA 香港建築師學會 /

☐ HKIS 香港測量師學會 / ☐ HKIE 香港工程師學會 /

☐ HKILA 香港園境師學會 / ☒ HKIUD 香港城市設計學會 /

☐ RPP 註冊專業規劃師

Others 其他 ..MR.T.P.I.....Llewelyn-Davies.....

on behalf of  
代表

Llewelyn-Davies Hong Kong Limited

Hong Kong Limited

Authorized Signature

☒ Company 公司 / ☐ Organisation Name and Chop (if applicable) 機構名稱及蓋章（如適用）

Date 日期

30/04/2021

(DD/MM/YYYY 日/月/年)

**Remark 備註**

The materials submitted in an application to the Board and the Board's decision on the application would be disclosed to the public. Such materials would also be uploaded to the Board's website for browsing and free downloading by the public where the Board considers appropriate.

委員會會向公眾披露申請人所遞交的申請資料和委員會對申請所作的決定。在委員會認為合適的情況下，有關申請資料亦會上載至委員會網頁供公眾免費瀏覽及下載。

**Warning 警告**

Any person who knowingly or wilfully makes any statement or furnish any information in connection with this application, which is false in any material particular, shall be liable to an offence under the Crimes Ordinance.

任何人在明知或故意的情況下，就這宗申請提出在任何要項上是虛假的陳述或資料，即屬違反《刑事罪行條例》。

**Statement on Personal Data 個人資料的聲明**

1. The personal data submitted to the Board in this application will be used by the Secretary of the Board and Government departments for the following purposes:

委員會就這宗申請所收到的個人資料會交給委員會秘書及政府部門，以根據《城市規劃條例》及相關的城市規劃委員會規劃指引的規定作以下用途：

(a) the processing of this application which includes making available the name of the applicant for public inspection when making available this application for public inspection; and

處理這宗申請，包括公布這宗申請供公眾查閱，同時公布申請人的姓名供公眾查閱；以及

(b) facilitating communication between the applicant and the Secretary of the Board/Government departments.

方便申請人與委員會秘書及政府部門之間進行聯絡。

2. The personal data provided by the applicant in this application may also be disclosed to other persons for the purposes mentioned in paragraph 1 above.

申請人就這宗申請提供的個人資料，或亦會向其他人士披露，以作上述第 1 段提及的用途。

3. An applicant has a right of access and correction with respect to his/her personal data as provided under the Personal Data (Privacy) Ordinance (Cap. 486). Request for personal data access and correction should be addressed to the Secretary of the Board at 15/F, North Point Government Offices, 333 Java Road, North Point, Hong Kong.

根據《個人資料(私隱)條例》(第 486 章)的規定，申請人有權查閱及更正其個人資料。如欲查閱及更正個人資料，應向委員會秘書提出有關要求，其地址為香港北角渣華道 333 號北角政府合署 15 樓。

For Developments involving Columbarium Use, please also complete the following: N/A  
如發展涉及靈灰安置所用途，請另外填妥以下資料：

Ash interment capacity 骨灰安放容量<sup>@</sup>

Maximum number of sets of ashes that may be interred in the niches

在龕位內最多可安放骨灰的數量

Maximum number of sets of ashes that may be interred other than in niches

在非龕位的範圍內最多可安放骨灰的數量

Total number of niches 龕位總數

Total number of single niches

單人龕位總數

Number of single niches (sold and occupied)

單人龕位數目 (已售並佔用)

Number of single niches (sold but unoccupied)

單人龕位數目 (已售但未佔用)

Number of single niches (residual for sale)

單人龕位數目 (待售)

Total number of double niches

雙人龕位總數

Number of double niches (sold and fully occupied)

雙人龕位數目 (已售並全部佔用)

Number of double niches (sold and partially occupied)

雙人龕位數目 (已售並部分佔用)

Number of double niches (sold but unoccupied)

雙人龕位數目 (已售但未佔用)

Number of double niches (residual for sale)

雙人龕位數目 (待售)

Total no. of niches other than single or double niches (please specify type)

除單人及雙人龕位外的其他龕位總數 (請列明類別)

Number of niches (sold and fully occupied)

龕位數目 (已售並全部佔用)

Number of niches (sold and partially occupied)

龕位數目 (已售並部分佔用)

Number of niches (sold but unoccupied)

龕位數目 (已售但未佔用)

Number of niches (residual for sale)

龕位數目 (待售)

Proposed operating hours 擬議營運時間

<sup>@</sup> Ash interment capacity in relation to a columbarium means –

就靈灰安置所而言，骨灰安放容量指：

- the maximum number of containers of ashes that may be interred in each niche in the columbarium;  
每個龕位內可安放的骨灰容器的最高數目；
- the maximum number of sets of ashes that may be interred other than in niches in any area in the columbarium; and  
在該靈灰安置所並非龕位的範圍內，總共最多可安放多少份骨灰；以及
- the total number of sets of ashes that may be interred in the columbarium.  
在該骨灰安置所內，總共最多可安放多少份骨灰。

## Gist of Application 申請摘要

(Please provide details in both English and Chinese as far as possible. This part will be circulated to relevant consultees, uploaded to the Town Planning Board's Website for browsing and free downloading by the public and deposited at the Planning Enquiry Counters of the Planning Department for general information.)

(請盡量以英文及中文填寫。此部分將會發送予相關諮詢人士、上載至城市規劃委員會網頁供公眾免費瀏覽及下載及存放於規劃署規劃資料查詢處以供一般參閱。)

Application No. 申請編號	(For Official Use Only) (請勿填寫此欄)		
Location/address 位置/地址	Lots 325 S.A (Part), 325 S.B (Part), 325 S.C (Part), 496 (Part), 497 (Part) and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, New Territories  十四鄉西徑丈量約份第209約地段第325號A分段(部份)、第325號B分段(部份)、第325號C分段(部份)、第496號(部份)、第497號(部份)及毗連的政府土地		
Site area 地盤面積	4,673 sq. m 平方米	<input checked="" type="checkbox"/> About 約	
	(includes Government land of 包括政府土地	4,366 sq. m 平方米	<input checked="" type="checkbox"/> About 約)
Plan 圖則	Approved Shap Sz Heung Outline Zoning Plan No. S/NE-SSH/11 十四鄉分區計劃大綱核准圖編號S/NE-SSH/11		
Zoning 地帶	"Green Belt" 「綠化地帶」		
Applied use/ development 申請用途/發展	Proposed Access Road with Filling and Excavation of Land in "Green Belt" Zone for Permitted uses in adjacent "Government, Institution or Community" Zone 擬議於「綠化地帶」興建通道並進行填土和挖土 以支持毗鄰「政府、機構或社區」地帶發展作經常准許的用途		
(i) Gross floor area and/or plot ratio 總樓面面積及/或地積比率		sq.m 平方米	Plot Ratio 地積比率
	Domestic 住用	N/A <input type="checkbox"/> About 約 <input type="checkbox"/> Not more than 不多於	N/A <input type="checkbox"/> About 約 <input type="checkbox"/> Not more than 不多於
	Non-domestic 非住用	N/A <input type="checkbox"/> About 約 <input type="checkbox"/> Not more than 不多於	N/A <input type="checkbox"/> About 約 <input type="checkbox"/> Not more than 不多於
(ii) No. of block 幢數	Domestic 住用	N/A	
	Non-domestic 非住用	N/A	
	Composite 綜合用途	N/A	

(iii) Building height/No. of storeys 建築物高度／層數 (for Phase 2 Development Only)	Domestic 住用	-	m 米 <input type="checkbox"/> (Not more than 不多於)
		-	mPD 米(主水平基準上) <input type="checkbox"/> (Not more than 不多於)
		-	Storeys(s) 層 <input type="checkbox"/> (Not more than 不多於)  ( <input type="checkbox"/> Include 包括 <input type="checkbox"/> Exclude 不包括 <input type="checkbox"/> Carport 停車間 <input type="checkbox"/> Basement 地庫 <input type="checkbox"/> Refuge Floor 防火層 <input type="checkbox"/> Podium 平台)
	Non-domestic 非住用	-	m 米 <input type="checkbox"/> (Not more than 不多於)
		-	mPD 米(主水平基準上) <input type="checkbox"/> (Not more than 不多於)
		-	Storeys(s) 層 <input type="checkbox"/> (Not more than 不多於)  ( <input type="checkbox"/> Include 包括 <input type="checkbox"/> Exclude 不包括 <input type="checkbox"/> Carport 停車間 <input type="checkbox"/> Basement 地庫 <input type="checkbox"/> Refuge Floor 防火層 <input type="checkbox"/> Podium 平台)
	Composite 綜合用途	-	m 米 <input type="checkbox"/> (Not more than 不多於)
		-	mPD 米(主水平基準上) <input type="checkbox"/> (Not more than 不多於)
		-	Storeys(s) 層 <input type="checkbox"/> (Not more than 不多於)  ( <input type="checkbox"/> Include 包括 <input type="checkbox"/> Exclude 不包括 <input type="checkbox"/> Carport 停車間 <input type="checkbox"/> Basement 地庫 <input type="checkbox"/> Refuge Floor 防火層 <input type="checkbox"/> Podium 平台)
(iv) Site coverage 上蓋面積	-		% <input type="checkbox"/> About 約
(v) No. of units 單位數目	-		
(vi) Open space 休憩用地	Private 私人	-	sq.m 平方米 <input type="checkbox"/> Not less than 不少於
	Public 公眾	-	sq.m 平方米 <input type="checkbox"/> Not less than 不少於



(vii) No. of parking spaces and loading / unloading spaces 停車位及上落客貨車位數目 (for Phase 2 Development Only)	Total no. of vehicle parking spaces 停車位總數  Private Car Parking Spaces (For Staff) 私家車車位 (職員) Motorcycle Parking Spaces 電單車車位 Light Goods Vehicle Parking Spaces 輕型貨車泊車位 Medium Goods Vehicle Parking Spaces 中型貨車泊車位 Heavy Goods Vehicle Parking Spaces 重型貨車泊車位 Others (Please Specify)其他(請列明) _____ _____	
	Total no. of vehicle loading/unloading bays/lay-bys 上落客貨車位／停車處總數  Private Car/Taxi Spaces 私家車/的士車位 Coach Spaces 旅遊巴車位 Light Goods Vehicle Spaces 輕型貨車車位 Medium Goods Vehicle Spaces 中型貨車車位 Heavy Goods Vehicle Spaces 重型貨車車位 Others (Please Specify) 其他 (請列明) _____	

### Submitted Plans, Drawings and Documents 提交的圖則、繪圖及文件

	Chinese 中文	English 英文
<b>Plans and Drawings 圖則及繪圖</b>		
Master layout plan(s)/Layout plan(s) 總綱發展藍圖／布局設計圖	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Block plan(s) 樓宇位置圖	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Floor plan(s) 樓宇平面圖	<input type="checkbox"/>	<input type="checkbox"/>
Sectional plan(s) 截視圖	<input type="checkbox"/>	<input type="checkbox"/>
Elevation(s) 立視圖	<input type="checkbox"/>	<input type="checkbox"/>
Photomontage(s) showing the proposed development 顯示擬議發展的合成照片	<input type="checkbox"/>	<input type="checkbox"/>
Master landscape plan(s)/Landscape plan(s) 園境設計總圖／園境設計圖	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Others (please specify) 其他 (請註明)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

十四鄉分區計劃大綱圖編號S/NE-SSH/11摘要圖Extract of Approved Shap Sz Heung Outline Zoning Plan No. S/NE-SSH/11, 位置圖Location Plan,

申請地點及周圍狀況圖Site and Surrounding Context, 土權圖Landholding Plan, 擬議通道方案對比圖 Comparison of Proposed Access Road Alignment Options

### Reports 報告書

Planning Statement/Justifications 規劃綱領/理據	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Environmental assessment 環境評估	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Traffic impact assessment (on vehicles) 就車輛的交通影響評估	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Traffic impact assessment (on pedestrians) 就行人的交通影響評估	<input type="checkbox"/>	<input type="checkbox"/>
Visual impact assessment 視覺影響評估	<input type="checkbox"/>	<input type="checkbox"/>
Landscape impact assessment 景觀影響評估	<input type="checkbox"/>	<input type="checkbox"/>
Tree Survey 樹木調查	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Geotechnical impact assessment 土力影響評估	<input type="checkbox"/>	<input type="checkbox"/>
Drainage impact assessment 排水影響評估	<input type="checkbox"/>	<input type="checkbox"/>
Sewerage impact assessment 排污影響評估	<input type="checkbox"/>	<input type="checkbox"/>
Risk Assessment 風險評估	<input type="checkbox"/>	<input type="checkbox"/>
Others (please specify) 其他 (請註明)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

園景設計及樹木保育建議Landscape Design and Tree Preservation Proposal, 視覺評估 Visual Appraisal, 生態評估 Ecological Assessment,

岩土工程規劃檢討報告 Geotechnical Planning Review Report

Note: May insert more than one '✓'. 註：可在多於一個方格內加上「✓」號

Note: The information in the Gist of Application above is provided by the applicant for easy reference of the general public. Under no circumstances will the Town Planning Board accept any liabilities for the use of the information nor any inaccuracies or discrepancies of the information provided. In case of doubt, reference should always be made to the submission of the applicant.

註：上述申請摘要的資料是由申請人提供以方便市民大眾參考。對於所載資料在使用上的問題及文義上的歧異，城市規劃委員會概不負責。若有任何疑問，應查閱申請人提交的文件。



17 May 2021

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

**By Hand and E-mail**

Dear Sir

**Section 16 Planning Application for Proposed Access Road with Filling and Excavation of Land in "Green Belt" Zone for Permitted Uses in "Government, Institution or Community" Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, N.T.**

Reference is made to the captioned application submitted to the Town Planning Board (the Board) on 29 April 2021 and our subsequent tele-con (Ngan/Tang) with the Board on 13 May 2021.

In response to verbal comments received from the Board, we would like to provide the following clarifications for the Board's information:

- The Application Site of the subject application is confined to "Green Belt" ("GB") zone only. No part of the Application Site shall fall within area shown as 'Road' on the OZP;
- The subject planning application would involve filling and excavation of land in "GB" zone, as such the submission title should be rectified as follows (rectification underlined and bold):

"Section 16 Planning Application for Proposed Access Road with Filling and Excavation of Land in "Green Belt" Zone for Permitted Uses in "Government, Institution or Community" Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, N.T.";

- As requested, a shortened Executive Summary (both English and Chinese version) of the Planning Statement is provided in the enclosed **Attachment 1**;
- As requested, a replacement page for the Preliminary Section in Appendix F of the Geotechnical Planning Review Report (GPRR) with land filling and exaction level clearly labeling is provided in the enclosed **Attachment 2**; and
- To rectify editorial errors, a replacement page for Indicative Layout Plan in Annex A of the Landscape Design and Tree Preservation Proposal is provided in the enclosed **Attachment 3**.

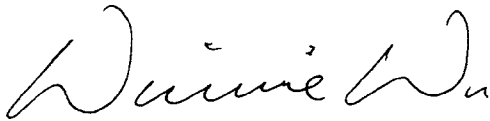
.../2

Town Planning Board  
Page 2 of 2  
17 May 2021

As the enclosed information only serves as clarification with no change to the proposed development parameters submitted on 29 April 2021 the Applicant sincerely requests that the captioned application be processed and considered by the Board at the soonest.

Thank you for your kind attention. Should there be any queries, please do not hesitate to contact the undersigned at 2957 9602 or our Mr Arnold Koon at 2957 9667/ Ms Simone Tang at 2957 9601.

Yours faithfully  
for Llewelyn-Davies Hong Kong Ltd



Winnie Wu  
Associate Director

WW/AK/st

Encl

S:\13457 Sai Keng (S16 for access road in GB zone)\Submission\Clarifications to TPB\20210517\_letter to TPB\_clarification\_r.doc

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## **Appendix 1**

### **Shortened Executive Summary (both English and Chinese version)**

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## **EXECUTIVE SUMMARY**

### **1. Purpose of Submission**

This planning application is submitted to the Town Planning Board (the Board) under Section 16 (S16) of the Town Planning Ordinance (the Ordinance) to seek permission for provision of road with filling and excavation of land in “Green Belt” (“GB”) zone (i.e. hereafter referred to as the Proposed Access Road) for permitted school and/ or other permitted uses in “Government, Institution or Community” (“G/IC”) zone at various lots and adjoining Government land in D.D. 209, Sai Keng, Shap Sz Heung, New Territories (i.e. hereafter referred to as the Application Site).

### **2. Genuine Need for a Proposed Access Road in “GB” Zone to Serve Permitted Development in “G/IC” Zone**

At present, there is no standard and direct road access connecting Sai Sha Road with the “G/IC” zone at Sai Keng on the Approved Shap Sz Heung Outline Zoning Plan No. S/NE-SSH/11 (the OZP) (i.e. hereafter referred to as the subject “G/IC” zone). To facilitate the permitted GIC developments in the subject “G/IC” zone, provision of a standard access road to the subject “G/IC” zone is required. Otherwise, without any proper access, the subject “G/IC” zone will remain sterilized without any development, which could not materialize the planning intention of the subject “G/IC” zone and result in a waste of valuable land resources that is against the government’s land supply policy.

### **3. Alignment and Extent of the Proposed Access Road in “GB” Zone**

The subject matter of this application shall be the Proposed Access Road that falls in the “GB” zone only, whereas the permitted school and/ or other permitted uses (including the access road) in the “G/IC” zone shall not form part of the planning application. Hence, the Application Site refers to the “GB” portion that will be affected by the Proposed Access Road.

The Application Site involves a total area of about 4,673m<sup>2</sup>, comprising the proposed access road with an area of about 1,844m<sup>2</sup> (i.e. only account for a tiny portion (1.1%) of the entire “GB” zone which is of area about 161,840m<sup>2</sup>) and a woodland planting area of about 2,829m<sup>2</sup>. The width of the Proposed Access Road will be of standard 7.3m wide with footpaths on both sides, branching off from Sai Sha Road, providing both vehicular and pedestrian connection to the subject “G/IC” zone.

#### 4. Key Justifications

The Proposed Access Road is supported by the following justifications:

- The subject "G/IC" zone does not have a proper planned/existing access road/ EVA connecting to Sai Sha Road (the only proper public road in the area). To facilitate any permitted use in the subject "G/IC", **provision of a standard access road to serve the subject "G/IC" zone is required;**
- As the subject "G/IC" zone is segregated from Sai Sha Road (the only proper public road in the area) by a "GB" zone, **it is inevitable that the Proposed Access Road will have to pass through the "GB" zone before connecting to Sai Sha Road.** Hence, planning application for provision of road in the "GB" zone is inevitable;
- The proposed alignment is the optimal location for the Proposed Access Road with **minimum encroachment into the "GB" zone as far as practicable and inclusion of man-made slope features with low ecological value**, after taking into account the distance away from the nearby villages and the avoidance of encroaching into any third party lots;
- The Applicant endeavours to **maximise greening opportunity** as far as practicable within the Application Site with the inclusion of existing man-made slope as woodland planting area for additional planting in order to enhance the ecological, landscape and visual value of the Application Site;
- The proposed scale is **minimal to fully comply with the current design standard of access road;**
- The Proposed Access Road with a portion that falls into the subject "GB" zone **would not set an undesirable precedent** for similar developments, as the subject site is the only "G/IC" zone not served by any standard access road on the extant OZP;
- The Proposed Access Road has **met the relevant planning criteria as stipulated under the TPB Guidelines No. 10 for application for development within "GB" zone;** and
- Technical studies have been carried out for the Proposed Access Road and it is concluded that **there will not be insurmountable impacts** in landscape, visual, traffic, environmental, ecological and geological terms.

In light of the justifications presented, the Board is cordially invited to consider the subject application favourably.

## 行政摘要

(聲明：此中文譯本僅供參考，如中文譯本和英文原文有歧異時，應以英文原文為準。)

### 1. 申請目的

申請人現跟據城市規劃條例第 16 條 (第 131 章)，向城市規劃委員會 (下稱「城規會」) 遞交規劃申請，於新界十四鄉西徑丈量約份第 209 約內多個地段以及毗連政府土地的「綠化地帶」內(下稱申請地盤)擬議興建通道並進行填土和挖土(下稱擬議通道)，以支持毗鄰「政府、機構或社區」地帶發展作經常准許的「學校」及 / 或其他經常准許用途。

### 2. 於「綠化地帶」闢設通道前往「政府、機構或社區」地帶的切實需要

現時並無符合標準及直接的通道連接西沙路及位於十四鄉分區計劃大綱核准圖編號 S/NE-SSH/11(下稱「大綱圖」)西徑的一幅被劃作「政府、機構或社區」地帶(下稱「政府、機構或社區」地帶)的地塊。為了促進「政府、機構或社區」地帶的發展，開闢符合標準的擬議通道連接「政府、機構或社區」地帶有其必要性。否則，在沒有通道的情況下，該「政府、機構或社區」地帶將會一直閒置，不能實現土地的規劃意向，不僅浪費土地資源，更加與政府善用土地的政策背道而馳。

### 3. 「綠化地帶」內的擬議通道走線及範圍

本規劃申請的有關事項為「綠化地帶」內的擬議通道路段，位於「政府、機構或社區」地帶上的學校或其他經常准許的發展及其路段均不屬於本規劃申請的有關事項。因此，申請地盤只限於受擬議通道影響的「綠化地帶」範圍。

申請地盤總面積約 4,673 平方米，包括約 1,844 平方米的通道範圍及約 2,829 平方米的林地種植區。其中，擬議通道範圍僅佔整個「綠化地帶」(面積約 161,840 平方米)的 1.1%。擬議通道將闊 7.3 米，並設有兩邊行人路，以連接西沙路及「政府、機構或社區」地帶，作行車及行人通道。



#### 4. 規劃增益及發展理據

以下為支持是次規劃申請的發展理據及增益：

- 申請地盤毗鄰的「政府、機構或社區」地帶並無符合標準的通道/緊急車輛通道連接西沙路(區內唯一符合標準的公用道路)，只有興建符合標準的通道方可有效實現「政府、機構或社區」地帶所規劃的土地用途；
- 「政府、機構或社區」地帶與西沙路被「綠化地帶」分隔，擬議通道必需經過「綠化地帶」方可連接西沙路。因此，於「綠化地帶」上申請通道用途是無可避免的；
- 擬議走線已盡量減少進入「綠化地帶」的面積，儘量利用現有生態價值低的人造斜坡，並顧及遠離附近村落及避免涉及其他私人土地的因素，是關設擬議通道的最佳地點；
- 申請人致力增加綠化機會，特意包含現有的人造斜坡提供林地種植區，並盡量加強種植，以提高生態、園境和視覺質素；
- 擬議通道的規模符合現行相關的規定準則；
- 由於該「政府、機構或社區」地帶是「大綱圖」中唯一沒有正規道路連接的「政府、機構或社區」用地，因此於「綠化地帶」關設擬議通道並不會造成不良先例；
- 擬議通道符合城規會規劃指引編號 10 就綠化地帶進行發展而制定的相關要求；
- 擬議通道的技術評估顯示，發展在園境、視覺、交通、環境、生態及地質層面均屬可行。

基於以上的發展理據，現懇請城規會對是次規劃申請予以贊同。

---

**Appendix 2**

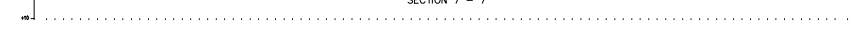
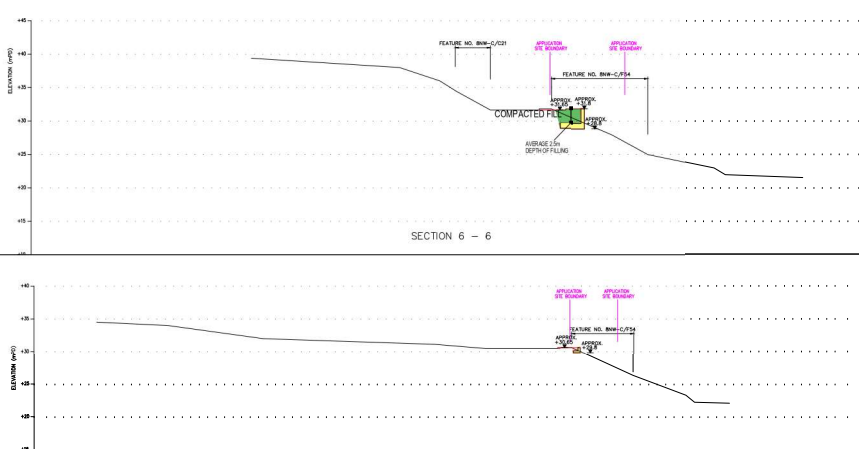
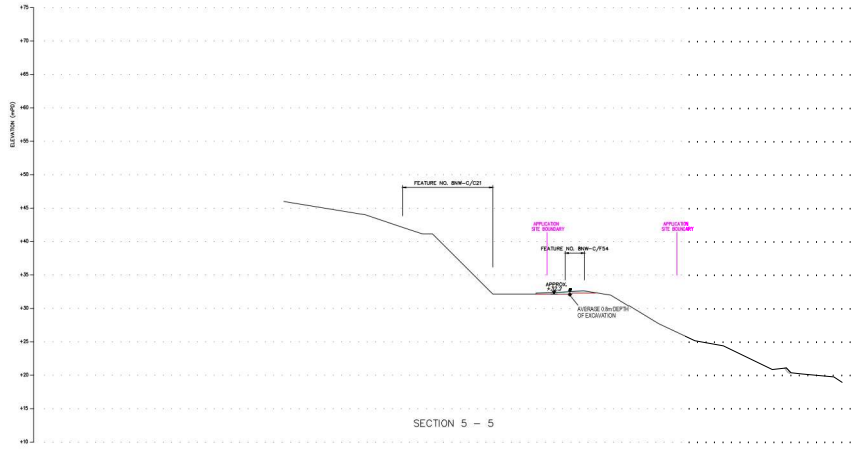
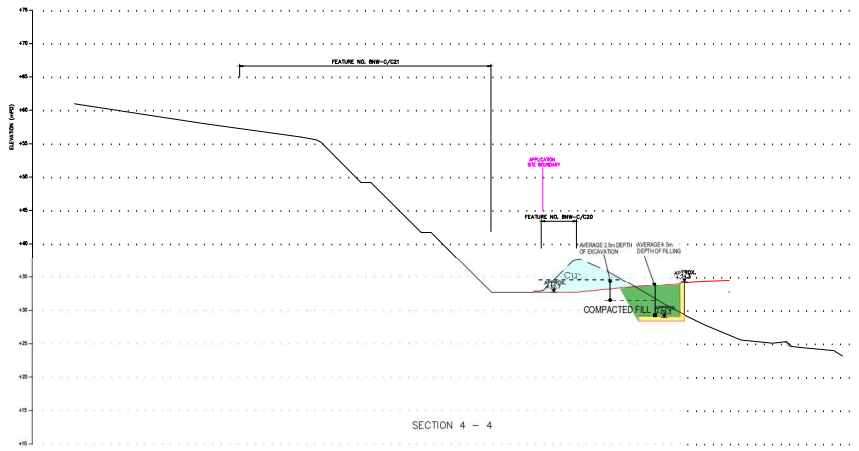
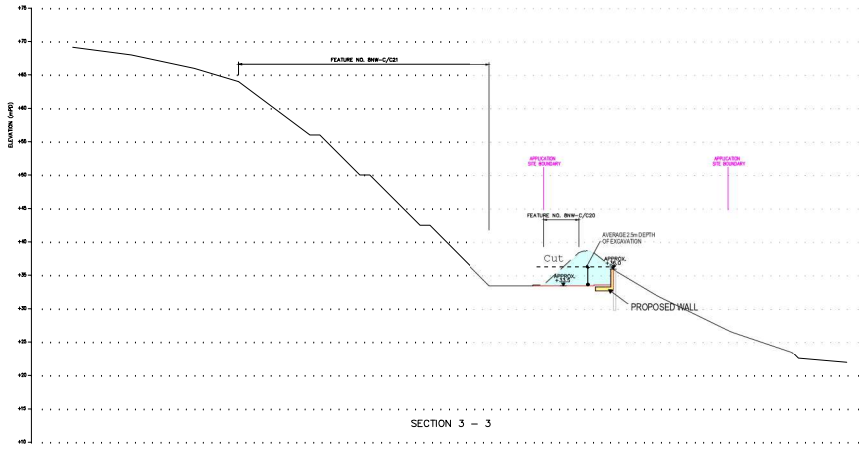
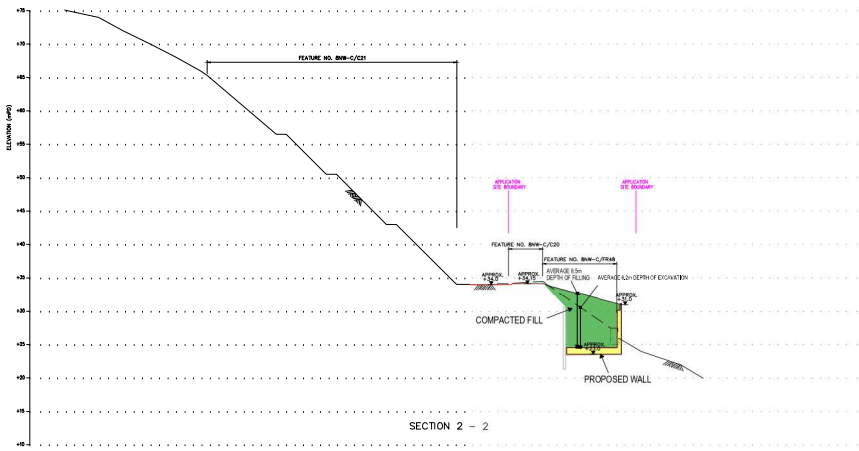
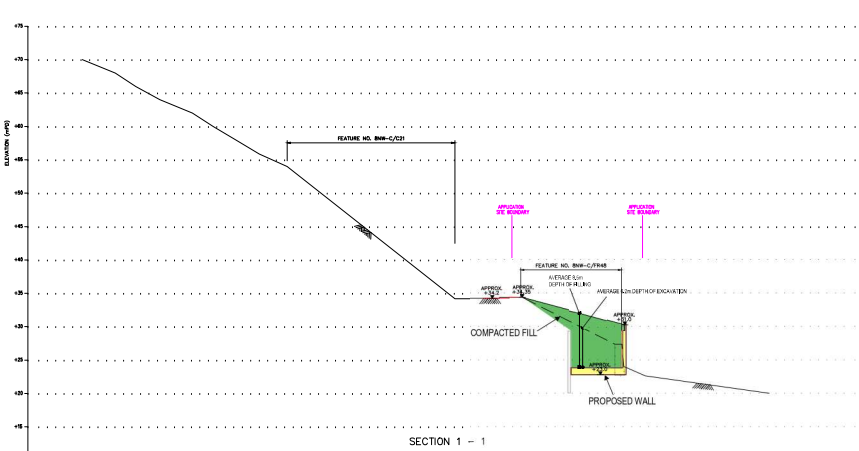
**Replacement Page for**

**Preliminary Section in Appendix F of**

**the Geotechnical Planning Review Report (GPRR)**

**(submitted on 29 April 2021)**

---



**AECOM**

**PROJECT**

PROPOSED ACCESS ROAD IN  
"GREEN BELT" ZONE FOR PERMITTED  
USES IN "GOVERNMENT, INSTITUTION OR  
COMMUNITY" ZONE  
AT VARIOUS LOTS AND ADJOINING  
GOVERNMENT LAND IN D.D. 209,  
SAI KENG, SHAP SZ HEUNG,  
THE NEW TERRITORIES

**CLIENT**

**SUN HUNG KAI**  
REAL ESTATE AGENCY LTD.

**CONSULTANT**

AECOM Asia Company Ltd.  
www.aecom.com

**SUB-CONSULTANTS**

**REVISION**

NO.	DATE	DESCRIPTION	CHK

**STATUS**

**SCALE**

**DISCREPANCY UNIT**

**KEY PLAN**

**PROJECT NO.**

**CONTRACT NO.**

**SHEET TITLE**

PRELIMINARY SECTIONS

**SHEET NUMBER**

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**Appendix 3**

**Replacement Page for**

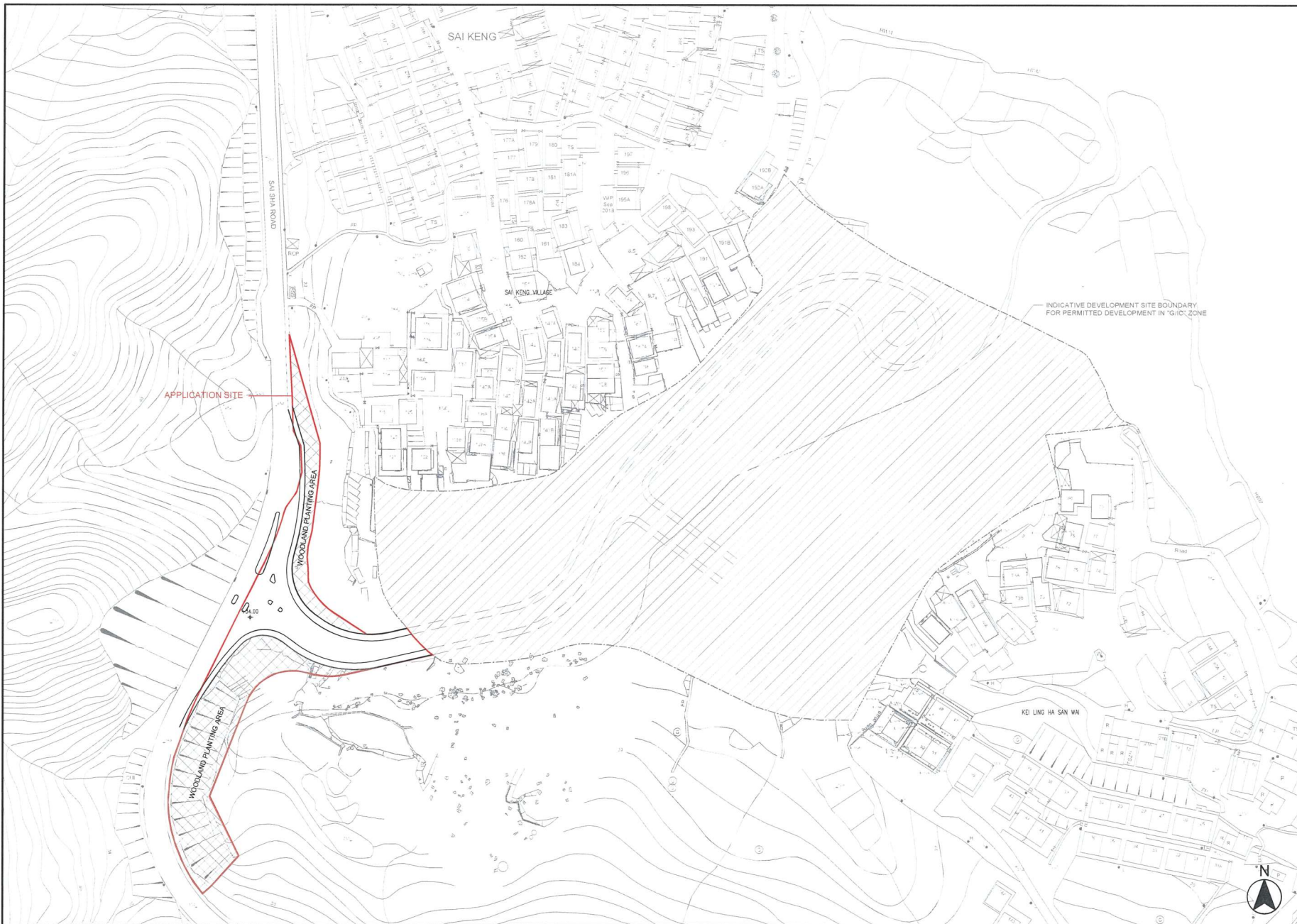
**Indicative Master Plan in Annex A of**

**the Landscape Design and**

**Tree Preservation Proposal**

**(submitted on 29 April 2021)**

---



LEGEND  
APPLICATION SITE BOUNDARY

Remark:

- The Proposed Access Road in the Application Site is to facilitate the permitted school and/or other permitted uses in the adjoining "G/I/C" zone. The permitted school and/or other permitted uses are not the subject matter of this S16 planning application. Any layout and parameters of the development in "G/I/C" zone provided are for general reference and information of the Town Planning Board, and do not form part of this S16 planning application for approval. Layout and parameters of the development in "G/I/C" zone shall be subject to detailed design during GBP submission.
- During the construction stage, the woodland planting area will be used as temporary works area for the Proposed Access Road.



B.D. REF. :		
F.S.D. REF. :		
REVISIONS :		
NO.	DESCRIPTION	DATE

INDICATIVE DEVELOPMENT SITE BOUNDARY FOR PERMITTED DEVELOPMENT IN "G/I/C" ZONE		
--	--	--

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PROJECT:  
PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

DRAWING TITLE:  
INDICATIVE  
MASTER LAYOUT PLAN

DATE: JUL 2020	PAPER SIZE: A3
SCALE: 1:1500	DRAWN: AIL
PROJECT NO.: 952	
DWG. NO.: S16-A-01	

☐ Urgent ☐ Return Receipt Requested ☐ Sign ☐ Encrypt ☐ Mark Subject Restricted ☐ Expand personal&pi



RE: S16 Planning Application for Proposed Access Road with Filling and Excavation of Land in "GB" Zone for Permitted Uses in "G/IC" Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, N.T.

25/05/2021 11:44

From: Simone Tang <simonetang@llewelynd.com>  
To: "mkngan@pland.gov.hk" <mkngan@pland.gov.hk>  
Cc: Winnie Wu <wuwy@llewelynd.com>, Arnold Koon Sun Fai <koonstf@llewelynd.com>  
File Ref:

1 attachment

PDF

2

20210525\_Sai Keng\_Filling and Excavation.pdf

Dear Ms Ngan,

Further to our tele-con on 20 May 2021, attached please find the plans and sections illustrating the area and depth of filling and excavation for your further actions.

Many thanks

Best Regards,

Simone Tang

Town Planner

Tel: (852) 2869 8661

Direct: (852) 2957 9601

Fax: (852) 2526 3281

**llewelyn  
davies**

ARCHITECTS PLANNERS DESIGNERS

Llewelyn Davies Hong Kong Ltd

10/F Cheung Wah Industrial Building, 10-12 Shipyard Lane, Quarry Bay, Hong Kong

[www.llewelynd.com](http://www.llewelynd.com)

2021年 5月 28日

此文件在\_\_\_\_\_收到。城市規劃委員會  
只會在收到所有必要的資料及文件後才正式確認收到  
申請的日期。

This document is received on **28 MAY 2021**  
The Town Planning Board will formally acknowledge  
the date of receipt of the application only upon receipt  
of all the required information and documents.

\*\*\*\*\*  
As part of our ongoing efforts to minimise our company's environmental impact, we kindly ask that you do not print this e-mail unless absolutely necessary.

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\*\*\*\*\*

From: Simone Tang

Sent: Tuesday, 18 May 2021 4:04 PM

To: 'mkngan@pland.gov.hk'

Cc: Winnie Wu; Arnold Koon Sun Fai

Subject: S16 Planning Application for Proposed Access Road with Filling and Excavation of Land in "GB" Zone for Permitted Uses in "G/IC" Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, N.T.

Dear Ms Ngan,

Reference is made to our tele-con last Thurs (13 May 2021), attached please find the soft copies of our clarification and updated Authorisation Letter submitted to the Board earlier today for your information.

The replacement pages of the Application Form (p. 2, 5, 6, 7 and 14) are also herewith attached for your further actions.

Thank you very much for your kind assistance.. Should there be any questions, please do not hesitate to contact me at 2957 9601.

Best Regards,  
Simone Tang  
Town Planner  
Tel: (852) 2869 8661  
Direct: (852) 2957 9601  
Fax: (852) 2526 3281

**Llewelyn  
d Davies**

ARCHITECTS PLANNERS DESIGNERS

Llewelyn-Davies Hong Kong Ltd

10/F Cheung Wah Industrial Building, 10-12 Shipyard Lane, Quarry Bay, Hong Kong

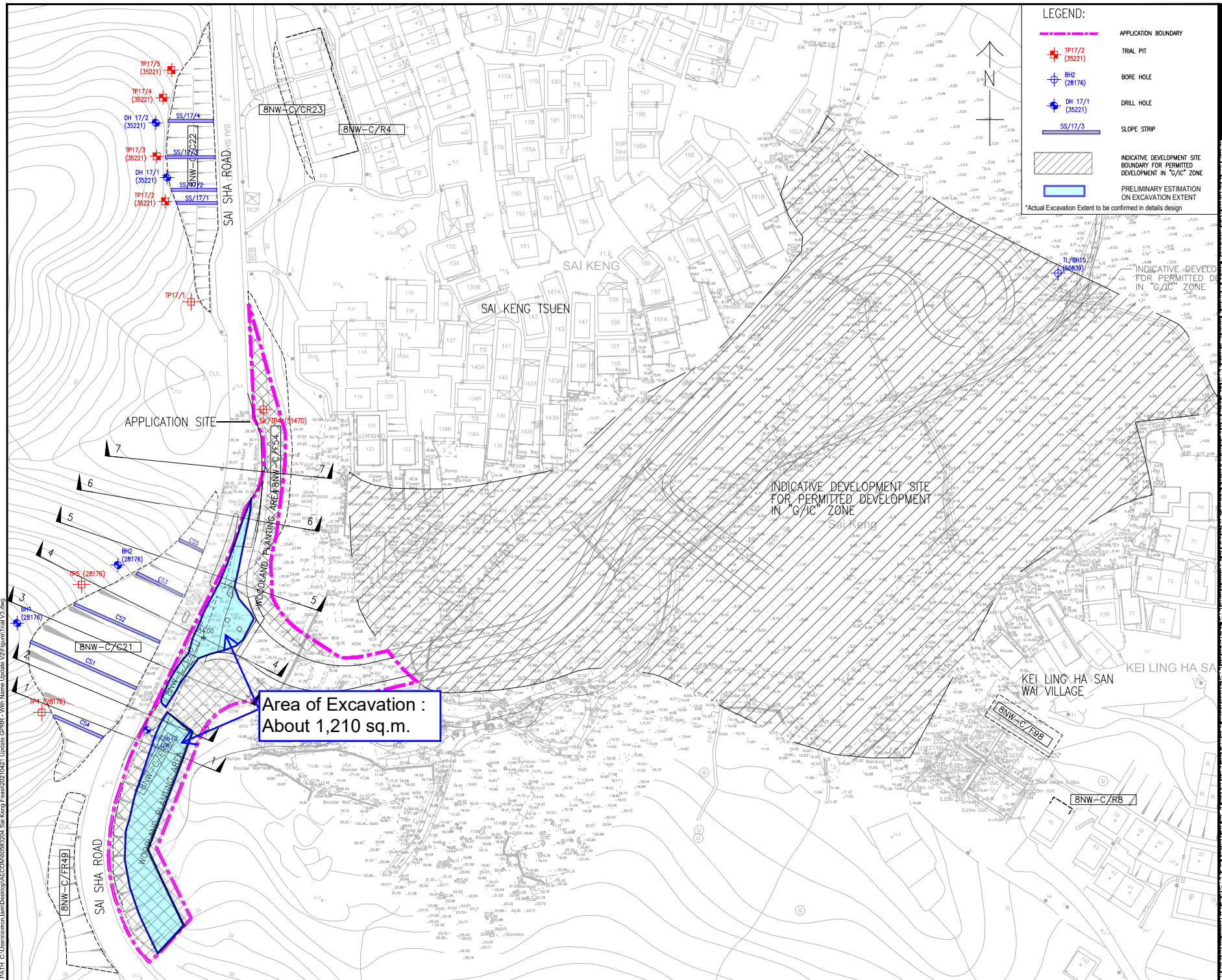
[www.llewelynd.com](http://www.llewelynd.com)

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LEGEND:

- APPLICATION BOUNDARY
- TP17/2 (35221)
- BH2 (28176)
- DH 17/1 (35221)
- SS/17/3
- INDICATIVE DEVELOPMENT SITE BOUNDARY FOR PERMITTED DEVELOPMENT IN "G/C" ZONE
- PRELIMINARY ESTIMATION ON EXCAVATION EXTENT

\*Actual Excavation Extent to be confirmed in details design

AECOM

PROJECT

PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

CLIENT

SUN HUNG KAI REAL ESTATE AGENCY LTD.

CONSULTANT

AECOM Asia Company Ltd.  
www.aecom.com

SUB-CONSULTANTS

REVISION

NO.	DATE	DESCRIPTION	CHK

STATUS

PRELIMINARY

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A3 1: 1200

KEY PLAN

PROJECT NO.

CONTRACT NO.

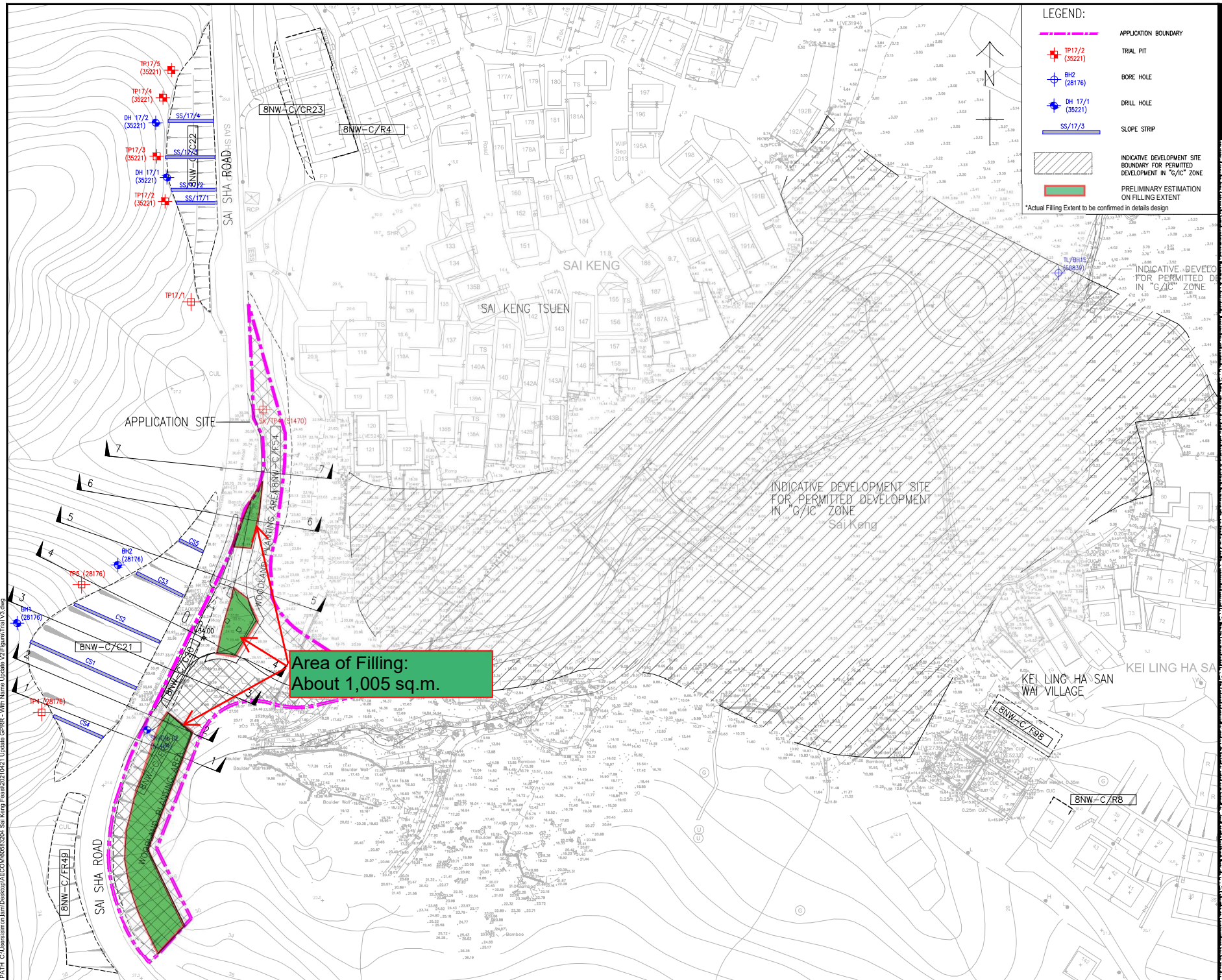
SHEET TITLE

PRELIMINARY SITE FORMATION PLAN (PRELIMINARY ESTIMATION ON EXCAVATION EXTENT)

SHEET NUMBER

FIGURE - C&F - 001





LEGEND:

- APPLICATION BOUNDARY
- TRIAL PIT
- BORE HOLE
- DRILL HOLE
- SLOPE STRIP
- INDICATIVE DEVELOPMENT SITE BOUNDARY FOR PERMITTED DEVELOPMENT IN "G/C" ZONE
- PRELIMINARY ESTIMATION ON FILLING EXTENT

\*Actual Filling Extent to be confirmed in details design

AECOM

PROJECT

PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

CLIENT

SUN HUNG KAI REAL ESTATE AGENCY LTD.

CONSULTANT

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SUB-CONSULTANTS

REVISION

NO.	DATE	DESCRIPTION	CHK.

STATUS

PRELIMINARY

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KEY PLAN

PROJECT NO.

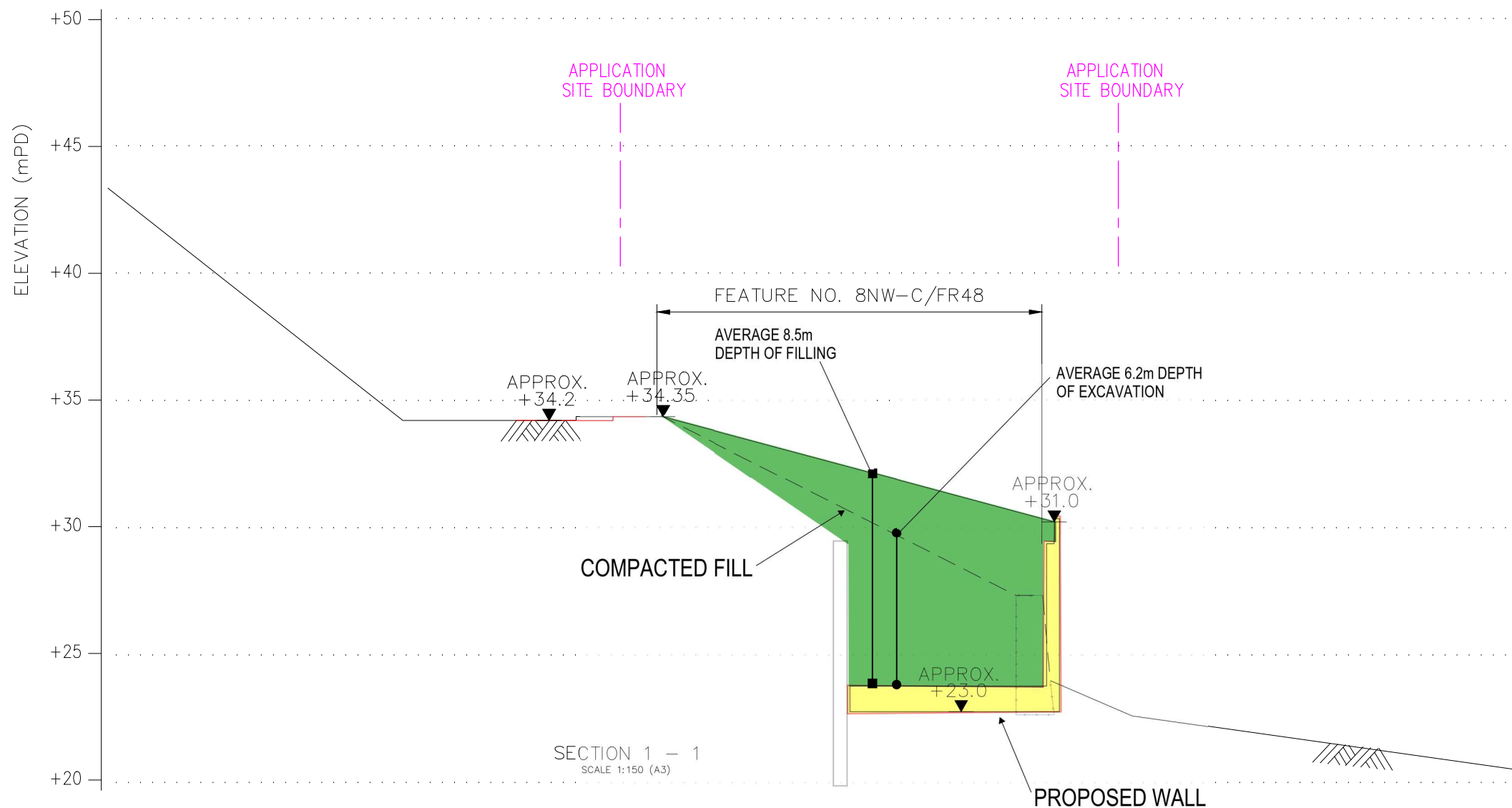
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SHEET NUMBER

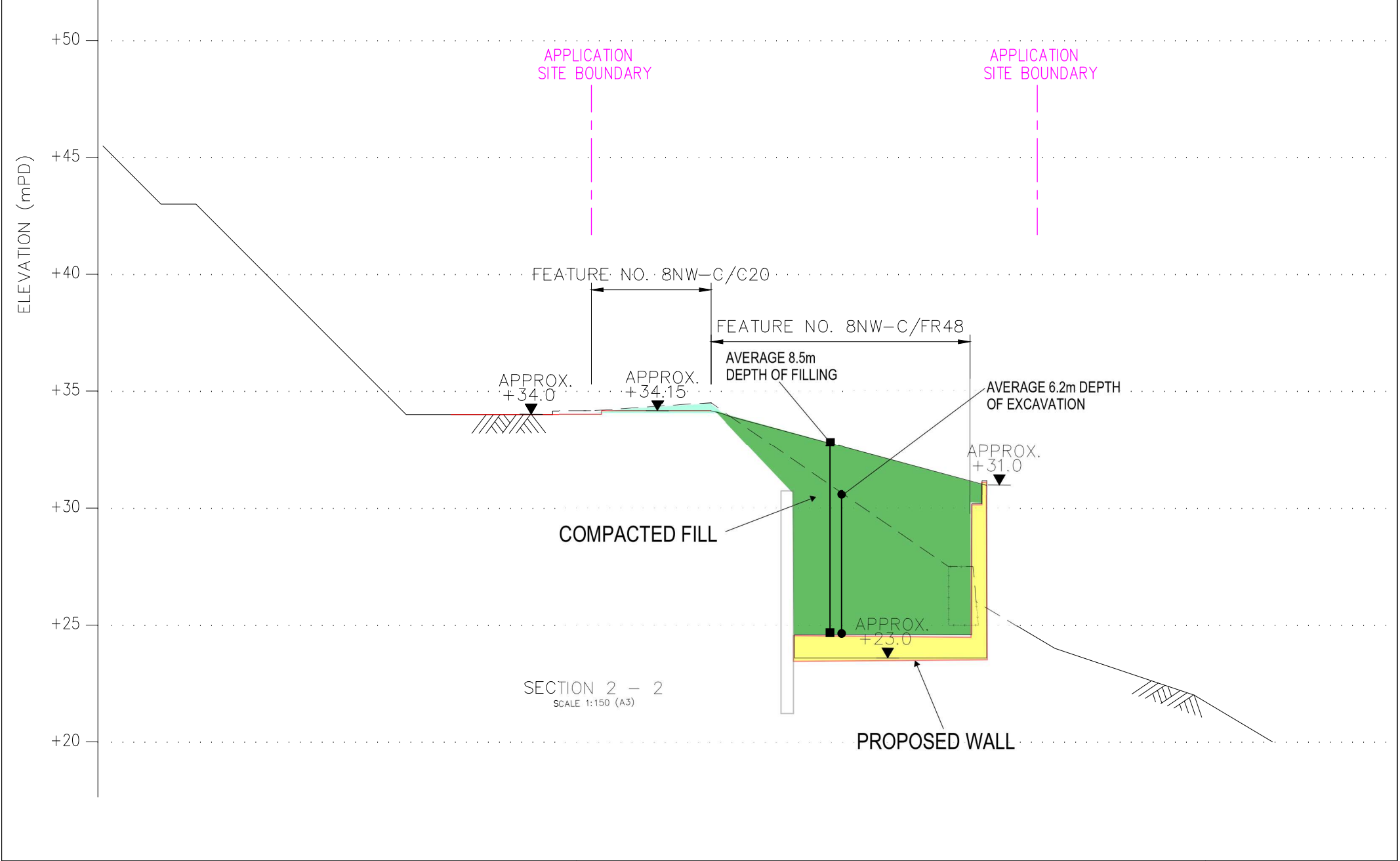
FIGURE - C&F - 002



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 AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209,  
 SAI KENG, SHAP SZ HEUNG,  
 THE NEW TERRITORIES

SHEET NO.  
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 CHK. BY  
 LKC  
 DATE  
 MAY 2021

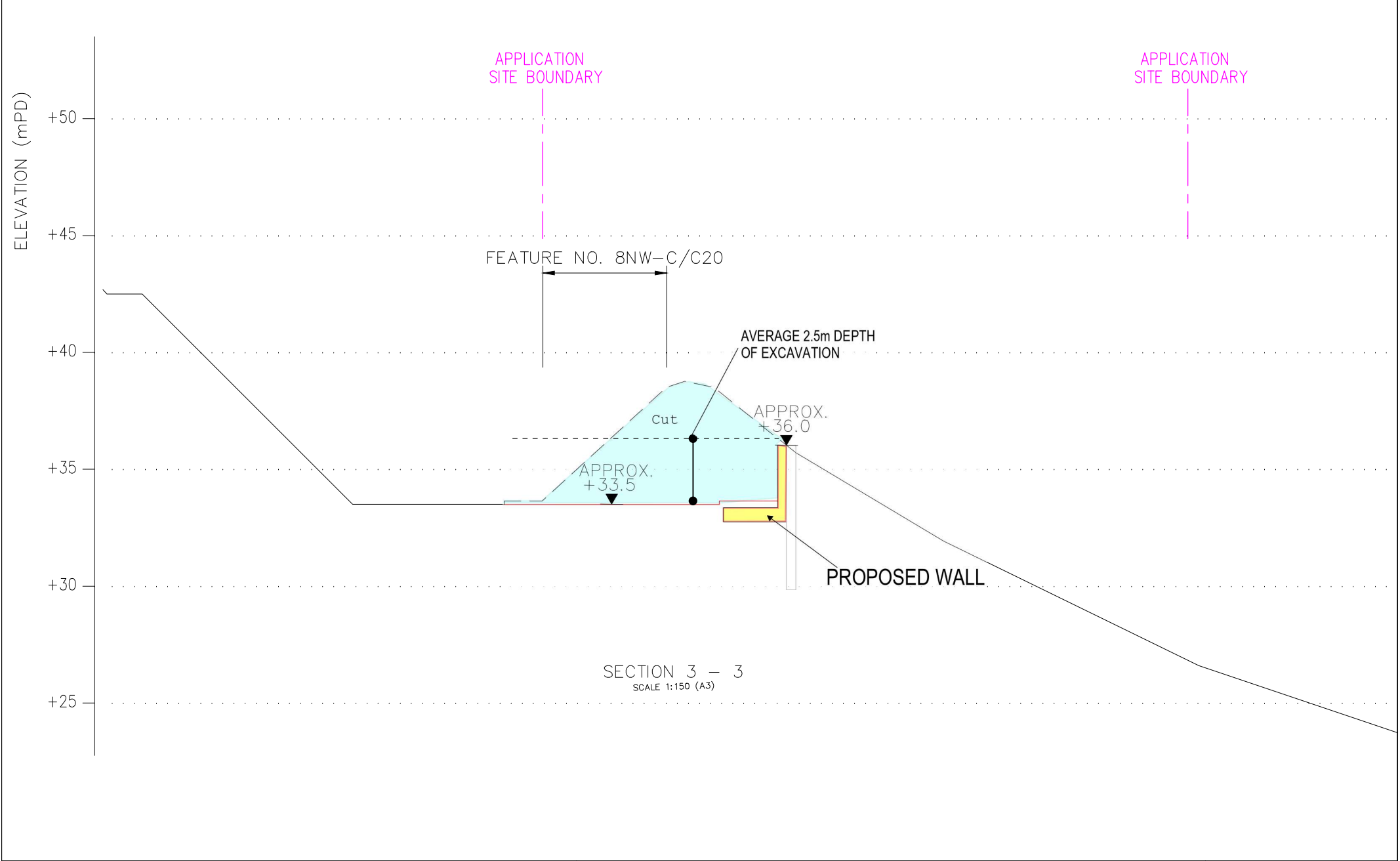
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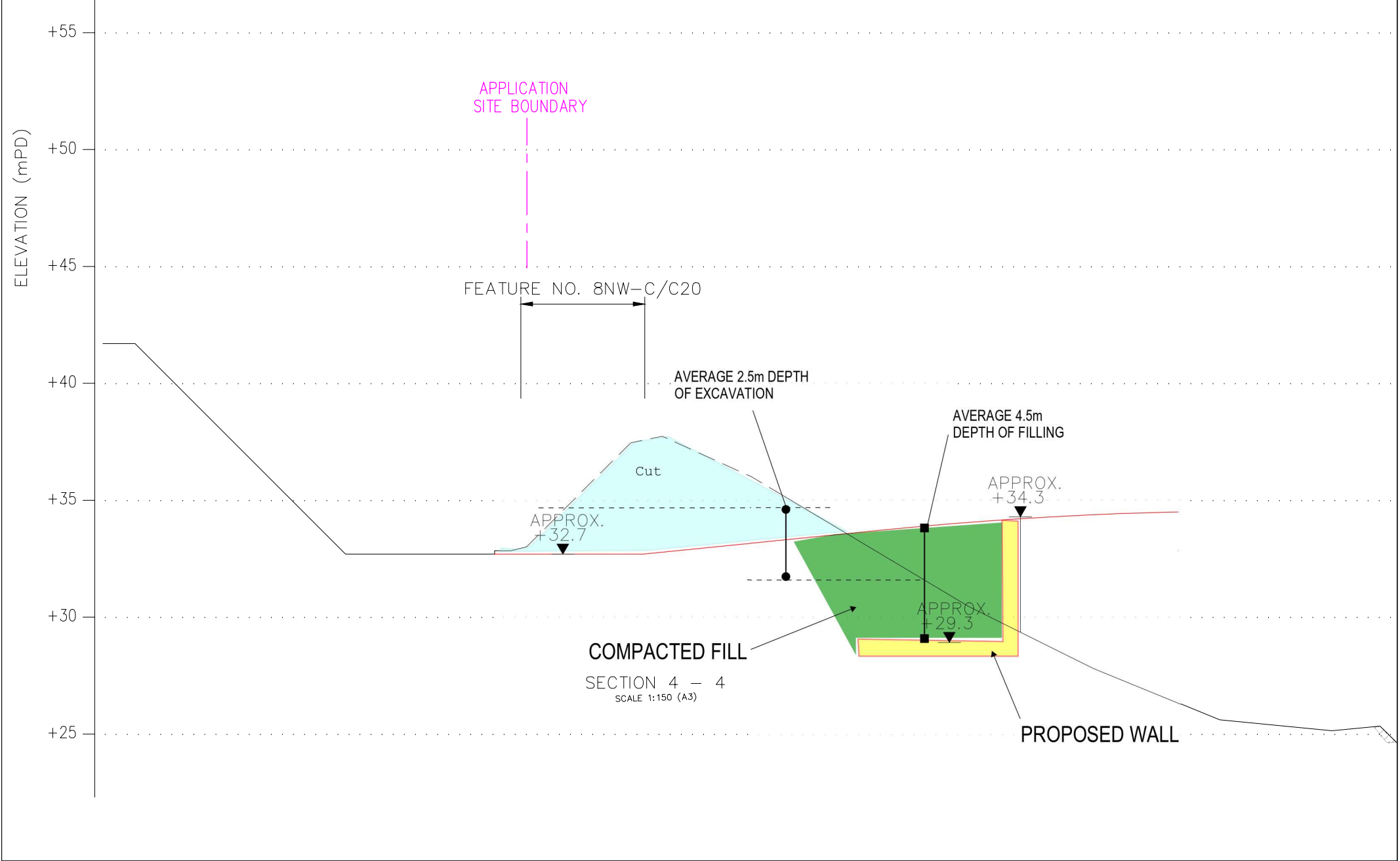
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SAI KENG, SHAP SZ HEUNG,  
THE NEW TERRITORIES

SHEET NO.  
SECTION 2-2  
CHK. BY  
LKC  
DATE  
MAY 2021





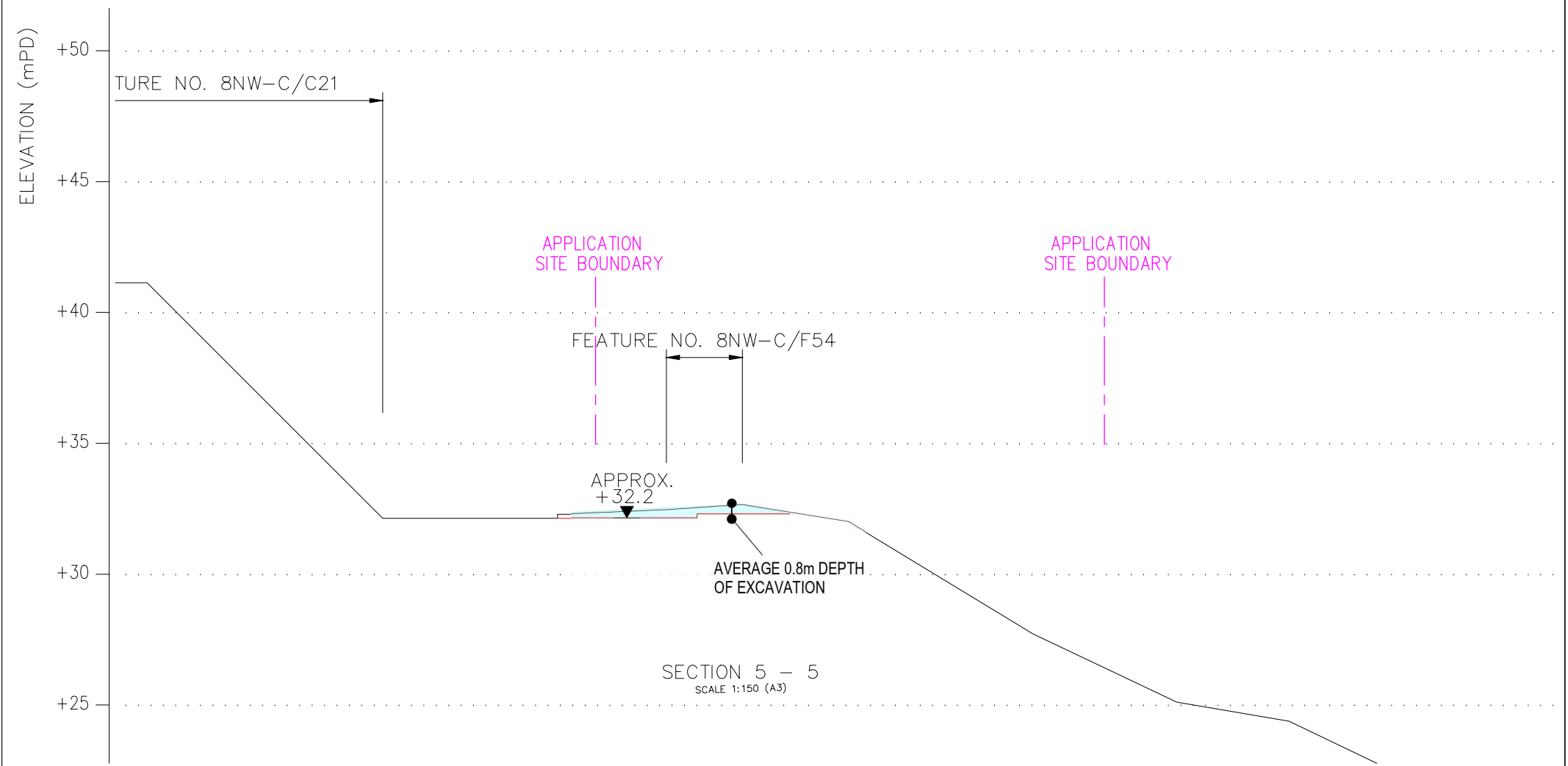
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	DATE	
	MAY 2021	



PROJECT TITLE  
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SAI KENG, SHAP SZ HEUNG,  
THE NEW TERRITORIES

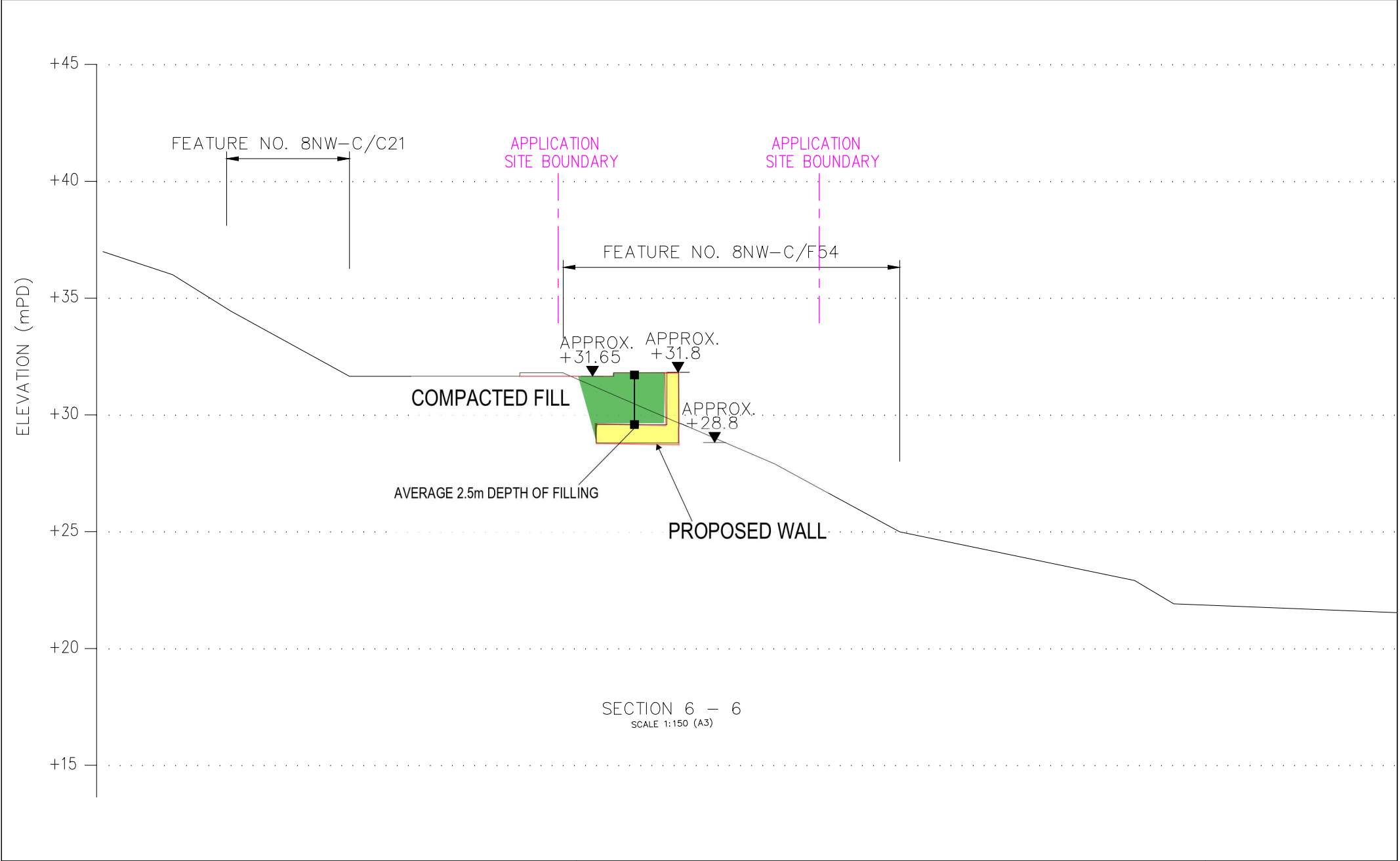
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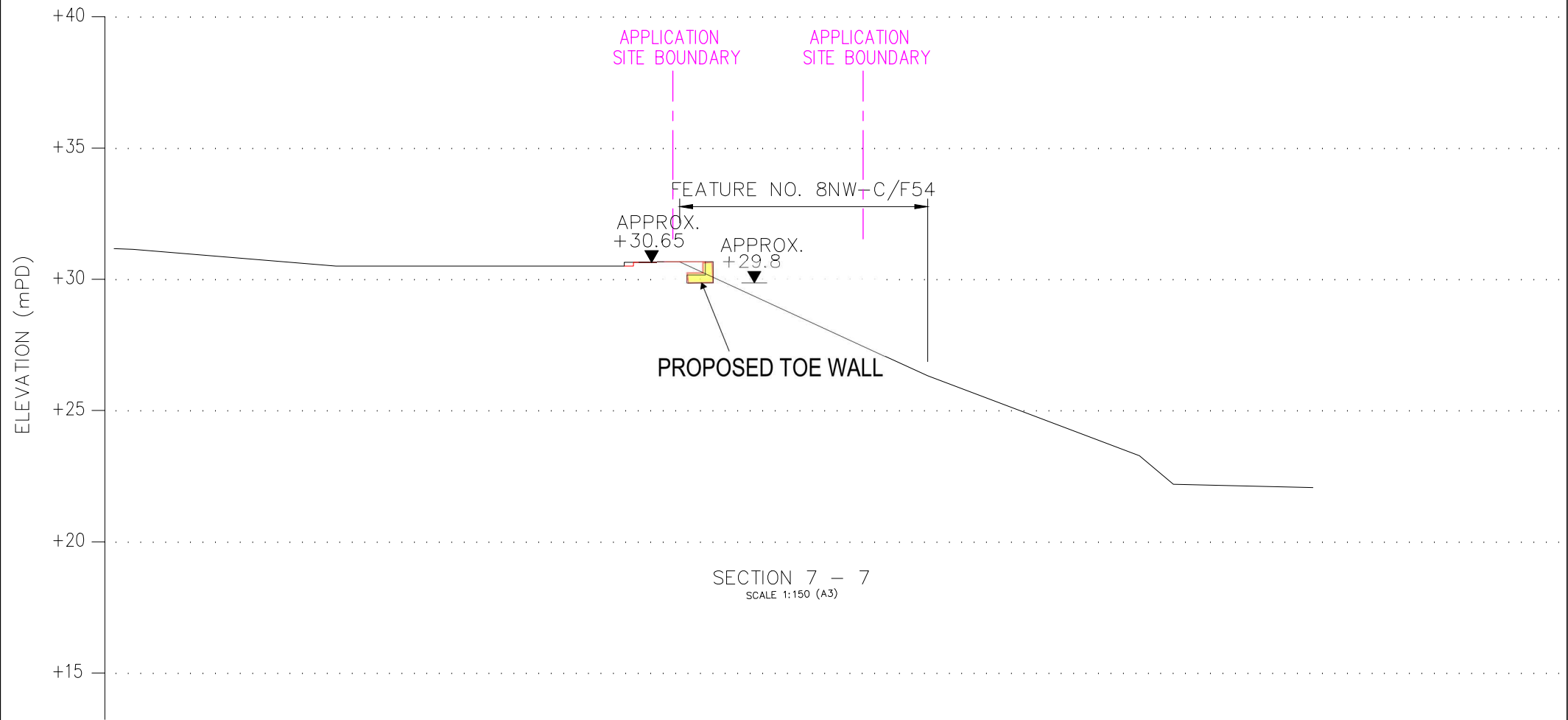


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	DATE	
	MAY 2021	





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	SECTION 6-6	
	CHK. BY	
	LKC	
	DATE	
	MAY 2021	



SECTION 7 — 7  
SCALE 1:150 (A3)

PROJECT TITLE PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES	SHEET NO.	
	SECTION 7-7	
	CHK. BY	
	LKC	
	DATE	
	MAY 2021	



RECEIVED

16 September 2022

2022 SEP 19 A 10:27

By Hand and Email

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

TOWN PLANNING BOARD

Dear Sir

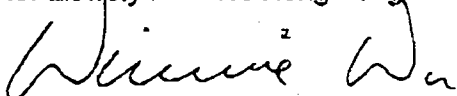
**Section 16 Planning Application for Proposed Access Road with Filling and Excavation of Land in "Green Belt" Zone for Permitted uses in "Government, Institution or Community" Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories  
(Application No.: A/NE-SSH/139)**

Reference is made to the captioned application submitted to the Town Planning Board (the Board) on 30 April 2021, the consideration of which by the Board is now scheduled to be on 14 October 2022.

As requested by the District Planning Office / Sha Tin, Tai Po and North, the Applicant herewith submits 70 hard copies of this consolidated planning statement, which covers all previous submissions in one report and serves to supersede all previous submissions to facilitate processing of this planning application by the Planning Department and for easy reference of the Board. It should be noted that, this enclosed set of documents mainly serves to consolidate all previously submitted Further Information. It does not contain any new information nor make any revisions to the proposed development parameters. As all issues have been satisfactorily addressed, the Board is cordially invited to approve the captioned application at the meeting as scheduled on 14 October 2022.

Thank you for your kind attention. Should there be any queries, please do not hesitate to contact the undersigned at 2957 9602 or our Mr. Arnold Koon at 2957 9667 / Miss Cody Yu at 2957 9615.

Yours faithfully  
for Llewelyn-Davies Hong Kong Ltd



Winnie Wu  
Associate Director

cc w/encl  
DPO/STN

Attn: Mr Harris Liu and Ms Sharon CHAN

(by email)

WW/AK/cy  
S:\13457 Sai Keng (S16 for access road in GB zone)\\_Consolidated report\20220915\_Sai Keng\_Cover Letter\_consolidated  
PS.doc

**Section 16 Planning Application for  
Proposed Access Road with Filling and Excavation of Land in  
“Green Belt” Zone for Permitted uses in  
“Government, Institution or Community” Zone at Various Lots and  
Adjoining Government Land in D.D. 209, Sai Keng,  
Shap Sz Heung, N.T.**

**(Application No. A/NE-SSH/139)**

**Consolidated Planning Statement**

**September 2022**



**AECOM Asia Company Limited  
Archiplus International Limited  
Ecosystems Limited  
Ove Arup & Partners Hong Kong Limited  
Ramboll Hong Kong Limited**

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- C Traffic Impact Assessment
- D Environmental Assessment
- E Ecological Impact Assessment
- F Geotechnical Planning Review Report
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- H Explanatory Statement Providing Background Information of the Planning Application
- I Proposed Work and Construction Sequence
- J Explanatory Statement on Road Alignment Options
- K Plan Showing Existing Condition of Village Tracks
- L Indicative Plans and Development Schedule for School Development
- M Previous Responses-to-Comments
- N Previous Responses-to-Public-Comments

## **EXECUTIVE SUMMARY**

### **1. Purpose of Submission**

This planning application was submitted to the Town Planning Board (the Board) under Section 16 (S16) of the Town Planning Ordinance (the Ordinance) in April 2021 to seek permission for provision of road with filling and excavation of land in “Green Belt” (“GB”) zone (i.e. hereafter referred to as the Proposed Access Road) for permitted school and / or other permitted uses in “Government, Institution or Community” (“G/IC”) zone at various lots and adjoining Government land in D.D. 209, Sai Keng, Shap Sz Heung, N.T. (i.e. hereafter referred to as the Application Site).

Subsequently, Further Information in response to departmental comments were submitted in September 2021, December 2021, January 2022, May 2022, June 2022 and August 2022 respectively. This planning statement serves as a consolidated report to cover all previous submissions in one report to facilitate processing of this planning application by the Planning Department.

### **2. Genuine Need for a Proposed Access Road in “GB” Zone to Serve Permitted Development in “G/IC” Zone**

At present, there is no standard and direct road access connecting Sai Sha Road with the “G/IC” zone at Sai Keng on the Approved Shap Sz Heung Outline Zoning Plan No. S/NE-SSH/11 (the OZP) (i.e. hereafter referred to as the subject “G/IC” zone). To facilitate the permitted GIC developments in the subject “G/IC” zone, provision of a standard access road to the subject “G/IC” zone is required. Otherwise, without any proper access, the subject “G/IC” zone will remain sterilized without any development, which could not materialize the planning intention of the subject “G/IC” zone and result in a waste of valuable land resources that is against the government’s land supply policy.

### **3. Alignment and Extent of the Proposed Access Road in “GB” Zone**

The subject matter of this application shall be the Proposed Access Road that falls in the “GB” zone only, whereas the permitted school and / or other permitted uses (including the access road) in the “G/IC” zone shall not form part of the planning application. Hence, the Application Site refers to the “GB” portion that will be affected by the Proposed Access Road.

The Application Site involves a total area of about 4,640m<sup>2</sup>, comprising the proposed access road with an area of about 1,844m<sup>2</sup> (i.e. only account for a tiny portion (1.1%) of the entire "GB" zone which is of area about 161,840m<sup>2</sup>) and a woodland planting area of about 2,796m<sup>2</sup>. The width of the Proposed Access Road will be of standard 7.3m wide with footpaths on both sides, branching off from Sai Sha Road, providing both vehicular and pedestrian connection to the subject "G/IC" zone.

#### 4. Key Justifications

The Proposed Access Road is supported by the following justifications:

- The subject "G/IC" zone does not have a proper planned / existing access road / EVA connecting to Sai Sha Road (the only proper public road in the area). To facilitate any permitted use in the subject "G/IC", **provision of a standard access road to serve the subject "G/IC" zone is required;**
- As the subject "G/IC" zone is segregated from Sai Sha Road (the only proper public road in the area) by a "GB" zone, **it is inevitable that the Proposed Access Road will have to pass through the "GB" zone before connecting to Sai Sha Road.** Hence, planning application for provision of road in the "GB" zone is inevitable;
- The proposed alignment is the optimal location for the Proposed Access Road with **minimum encroachment into the "GB" zone as far as practicable and inclusion of man-made slope features with low ecological value**, after taking into account the distance away from the nearby villages and the avoidance of encroaching into any third party lots;
- The Applicant endeavours to **maximise greening opportunity** as far as practicable within the Application Site with the inclusion of existing man-made slope as woodland planting area for additional planting in order to enhance the ecological, landscape and visual value of the Application Site;
- The proposed scale is **minimal to fully comply with the current design standard of access road;**
- The Proposed Access Road with a portion that falls into the subject "GB" zone **would not set an undesirable precedent** for similar developments, as the subject site is the only "G/IC" zone not served by any standard access road on the extant OZP;
- The Proposed Access Road has **met the relevant planning criteria as stipulated under the TPB Guidelines No. 10 for application for development within "GB" zone;** and

- Technical studies have been carried out for the Proposed Access Road and it is concluded that **there will not be insurmountable impacts** in landscape, visual, traffic, environmental, ecological and geological terms.

In light of the justifications presented, the Board is cordially invited to consider the subject application favourably.



## 行政摘要

(聲明：此中文譯本僅供參考，如中文譯本和英文原文有歧異時，應以英文原文為準。)

### 1. 申請目的

申請人於 2021 年 4 月根據城市規劃條例第 16 條 (第 131 章)，向城市規劃委員會 (下稱「城規會」) 遞交規劃申請，於新界十四鄉西徑丈量約份第 209 約內多個地段以及毗連政府土地的「綠化地帶」內(下稱申請地盤)擬議興建通道並進行填土和挖土(下稱擬議通道)，以支持毗鄰「政府、機構或社區」地帶發展作經常准許的「學校」及 / 或其他經常准許用途。

之後，申請人分別於 2021 年 9 月、2021 年 12 月、2022 年 1 月、2022 年 5 月、2022 年 6 月以及 2022 年 8 月，遞交補充資料，以回應政府部門的意見。本規劃報告書整合了過往遞交的報告書及補充資料，以便規劃署處理是次規劃申請。

### 2. 於「綠化地帶」闢設通道前往「政府、機構或社區」地帶的切實需要

現時並無符合標準及直接的通道連接西沙路及位於十四鄉分區計劃大綱核准圖編號 S/NE-SSH/11(下稱「大綱圖」)西徑的一幅被劃作「政府、機構或社區」地帶(下稱「政府、機構或社區」地帶)的地塊。為了促進「政府、機構或社區」地帶的發展，開闢符合標準的擬議通道連接「政府、機構或社區」地帶有其必要性。否則，在沒有通道的情況下，該「政府、機構或社區」地帶將會一直閒置，不能實現土地的規劃意向，不僅浪費土地資源，更加與政府善用土地的政策背道而馳。

### 3. 「綠化地帶」內的擬議通道走線及範圍

本規劃申請的有關事項為「綠化地帶」內的擬議通道路段，位於「政府、機構或社區」地帶上的學校或其他經常准許的發展及其路段均不屬於本規劃申請的有關事項。因此，申請地盤只限於受擬議通道影響的「綠化地帶」範圍。

申請地盤總面積約 4,640 平方米，包括約 1,844 平方米的通道範圍及約 2,796 平方米的林地種植區。其中，擬議通道範圍僅佔整個「綠化地帶」(面積約 161,840 平方米)的 1.1%。擬議通道將闊 7.3 米，並設有兩邊行人路，以連接西沙路及「政府、機構或社區」地帶，作行車及行人通道。

#### 4. 規劃增益及發展理據

以下為支持是次規劃申請的發展理據及增益：

- 申請地盤毗鄰的「政府、機構或社區」地帶並無符合標準的通道/緊急車輛通道連接西沙路(區內唯一符合標準的公用道路)，只有興建符合標準的通道方可有效實現「政府、機構或社區」地帶所規劃的土地用途；
- 「政府、機構或社區」地帶與西沙路被「綠化地帶」分隔，擬議通道必需經過「綠化地帶」方可連接西沙路。因此，於「綠化地帶」上申請通道用途是無可避免的；
- 擬議走線已盡量減少進入「綠化地帶」的面積，儘量利用現有生態價值低的人造斜坡，並顧及遠離附近村落及避免涉及其他私人土地的因素，是闢設擬議通道的最佳地點；
- 申請人致力增加綠化機會，特意包含現有的人造斜坡提供林地種植區，並盡量加強種植，以提高生態、園境和視覺質素；
- 擬議通道的規模符合現行相關的規定準則；
- 由於該「政府、機構或社區」地帶是「大綱圖」中唯一沒有正規道路連接的「政府、機構或社區」用地，因此於「綠化地帶」闢設擬議通道並不會造成不良先例；
- 擬議通道符合城規會規劃指引編號 10 就綠化地帶進行發展而制定的相關要求；
- 擬議通道的技術評估顯示，發展在園境、視覺、交通、環境、生態及地質層面均屬可行。

基於以上的發展理據，現懇請城規會對是次規劃申請予以贊同。

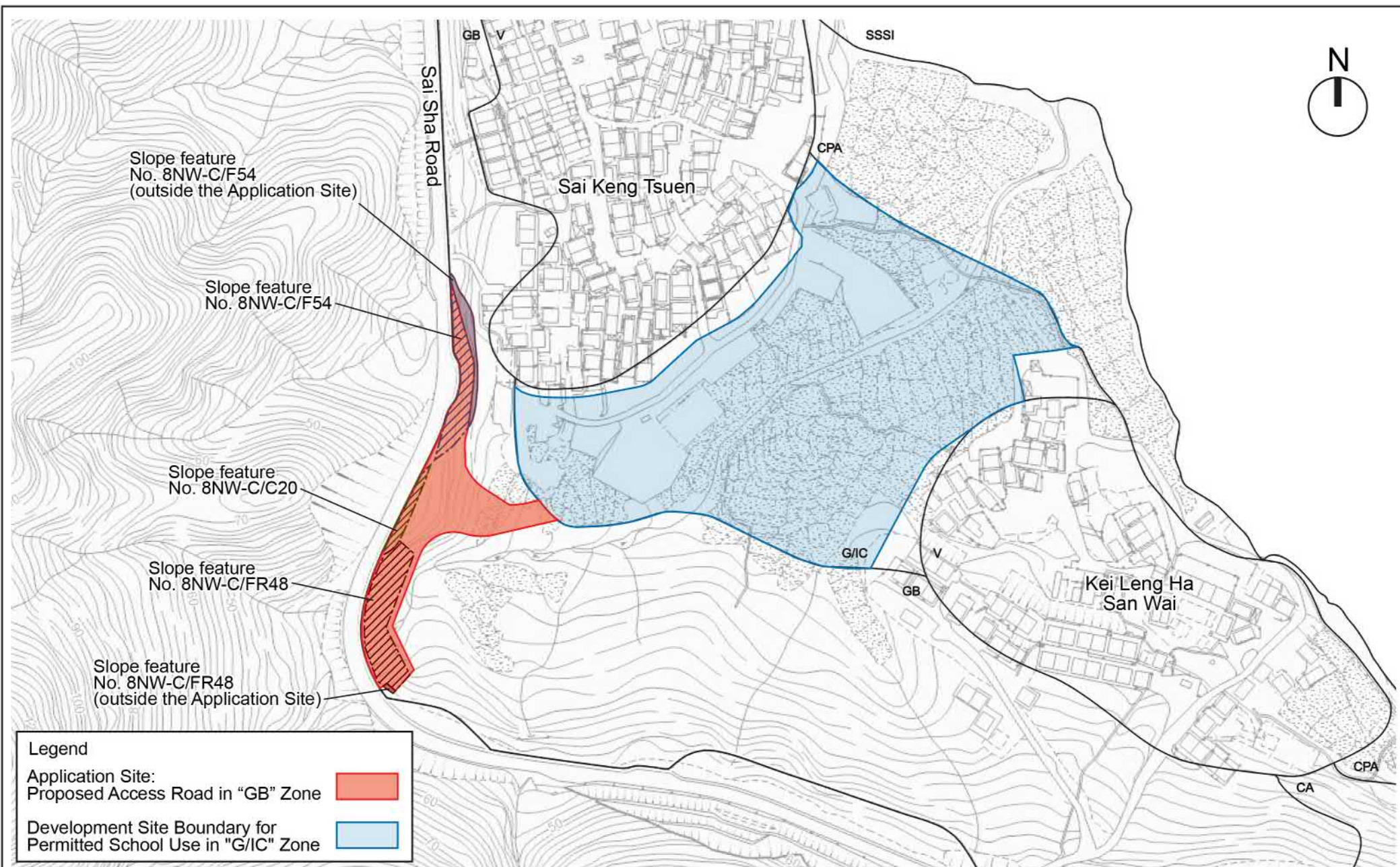
## 1 INTRODUCTION

### 1.1 Background

- 1.1.1 The current submission is intended to serve as a consolidated planning statement in support of the subject planning application (No. A/NE-SSH/139). This consolidated planning statement, based on the indicative scheme submitted on 16.9.2021 with finalised technical assessments submitted previously, serves to supersede the earlier submissions to facilitate processing of this planning application by the Planning Department and for consideration by the Board.
- 1.1.2 There are no material changes to the proposed scheme and other key development parameters, which are enclosed in this consolidated report again for easy reference. Full set of technical assessments are also enclosed in this consolidated report for easy reference.
- 1.1.3 This planning application was submitted to the Town Planning Board (the Board) under Section 16 (S16) of the Town Planning Ordinance (the Ordinance) in April 2021 to seek permission for provision of road with filling and excavation of land in "Green Belt" ("GB") zone (i.e. hereafter referred to as the Proposed Access Road) for permitted school and / or other permitted uses in "Government, Institution or Community" ("G/IC") zone at various lots and adjoining Government land in D.D. 209, Sai Keng, Shap Sz Heung, N.T. (i.e. hereafter referred to as the Application Site).
- 1.1.4 The Application Site falls within an area zoned as "GB" on the Approved Shap Sz Heung Outline Zoning Plan No. S/NE-SSH/11 (the OZP) (**Figure 1.1** refers), which is just a small portion of the whole "GB" zone<sup>1</sup>. There is a piece of land zoned "G/IC" at Sai Keng (i.e. hereafter referred to as the subject "G/IC" zone) being left vacant and undeveloped since the gazettal of the first Shap Sz Heung OZP No. S/NE-SSH/1 on 1 July 1994 (i.e. 27 years). 'School' and / or other permitted uses and their ancillary facilities are always permitted on the subject "G/IC" zone. Yet, despite that the subject "G/IC" zone is situated closely to Sai Sha Road to its west, there is no standard and direct access connecting it to Sai Sha Road at present. It is currently only accessible via two local tracks through the

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<sup>1</sup> The proposed access road with an area of about 1,844m<sup>2</sup> only account to 1.1% of the subject "GB" zone with an area of about 161,840m<sup>2</sup>.



nearby villages which are sub-standard, with village houses constructed closely along the tracks and full of third party lots that constrain any possible widening. The existing tracks are also very steep which are not in compliance with the acceptable gradient for school coaches (see **Appendix K** for details).

- 1.1.5 To facilitate the permitted school and / or other permitted uses in the subject "G/IC" zone, provision of a standard Proposed Access Road to the subject "G/IC" zone is required. Otherwise, without any proper access, the subject "G/IC" zone will remain sterilized without any development, which could not materialize the planning intention of the subject "G/IC" zone and result in a waste of valuable land resources that is against the government's land supply policy.
- 1.1.6 As the subject "G/IC" zone is segregated from Sai Sha Road (the only proper public road in the area) by a "GB" zone, it is inevitable that the Proposed Access Road will have to pass through the "GB" zone before connecting to Sai Sha Road.
- 1.1.7 In September 2019, a set of general building plans (GBPs) for proposed international school with boarding house within the subject "G/IC" zone with proposed access road from Sai Sha Road through the subject "GB" zone was submitted by the Authorized Person of the Applicant and circulated to the Planning Department (PlanD) for comments. Subsequently, it was stated in PlanD's reply on 30 October 2019 that, according to the Notes of the OZP, while 'School' use is always permitted in the subject "G/IC" zone, the Proposed Access Road within the "GB" portion that supports 'School' use is a Column 2 use requiring planning permission from the Board (**Annex 1** refers). The Applicant, hence submitted the subject planning application for Proposed Access Road in the adjoining "Green Belt" zone to materialise school and / or other permitted uses in the subject "G/IC" zone.
- 1.1.8 It should be highlighted that, the subject matter of this application shall be the Proposed Access Road that falls in the "GB" zone only, whereas the permitted uses (including the access road) in the "G/IC" zone shall not form part of the planning application. Hence, the Application Site refers to the "GB" portion that will be affected by the Proposed Access Road.

## **1.2 Report Structure**

- 1.2.1 This planning statement includes the following sections:

- Section 2: describes and analyses the Application Site, its surrounding and planning context, and reports the land status of the Application Site;
- Section 3: depicts the indicative alignment for the Proposed Access Road;
- Sections 4-8: summarise the key findings of various technical assessments on visual, traffic, environmental, ecological and geotechnical aspects;
- Section 9: highlights the justifications of the indicative alignment for the Proposed Access Road; and
- Section 10: concludes the planning statement.

1.2.2 Detailed technical assessments and other supplementary information are attached in **Appendices A to N**.

## 2 SITE AND PLANNING CONTEXTS

### 2.1 Site and Surrounding Context

2.1.1 The Application Site is located in an area known as Sai Keng in Shap Sz Heung area, and is located to the southwest of Sai Keng Tsuen and northwest of Kei Ling Ha San Wai. **Figure 2.1** illustrates the location of the Application Site.

2.1.2 The Application Site is located in a minor portion of the "GB" zone (the proposed access road itself with an area of about 1,844m<sup>2</sup> only accounts for about 1.1% of the subject GB" zone) lies to the east of Sai Sha Road and to the west of the "G/IC" zone which has no existing or planned proper access. The existing access of the "G/IC" zone is via two local tracks, which are connected to Sai Sha Road respectively through Sai Keng Tsuen in the north and through Kei Ling Ha San Wai in the east. These local tracks are sub-standard with village houses deposited very closely along the tracks, which would constrain any upgrading and widening to meet prevailing road standards. The existing tracks are also very steep which are not in compliance with the acceptable gradient for school coaches (see **Appendix K** for details).

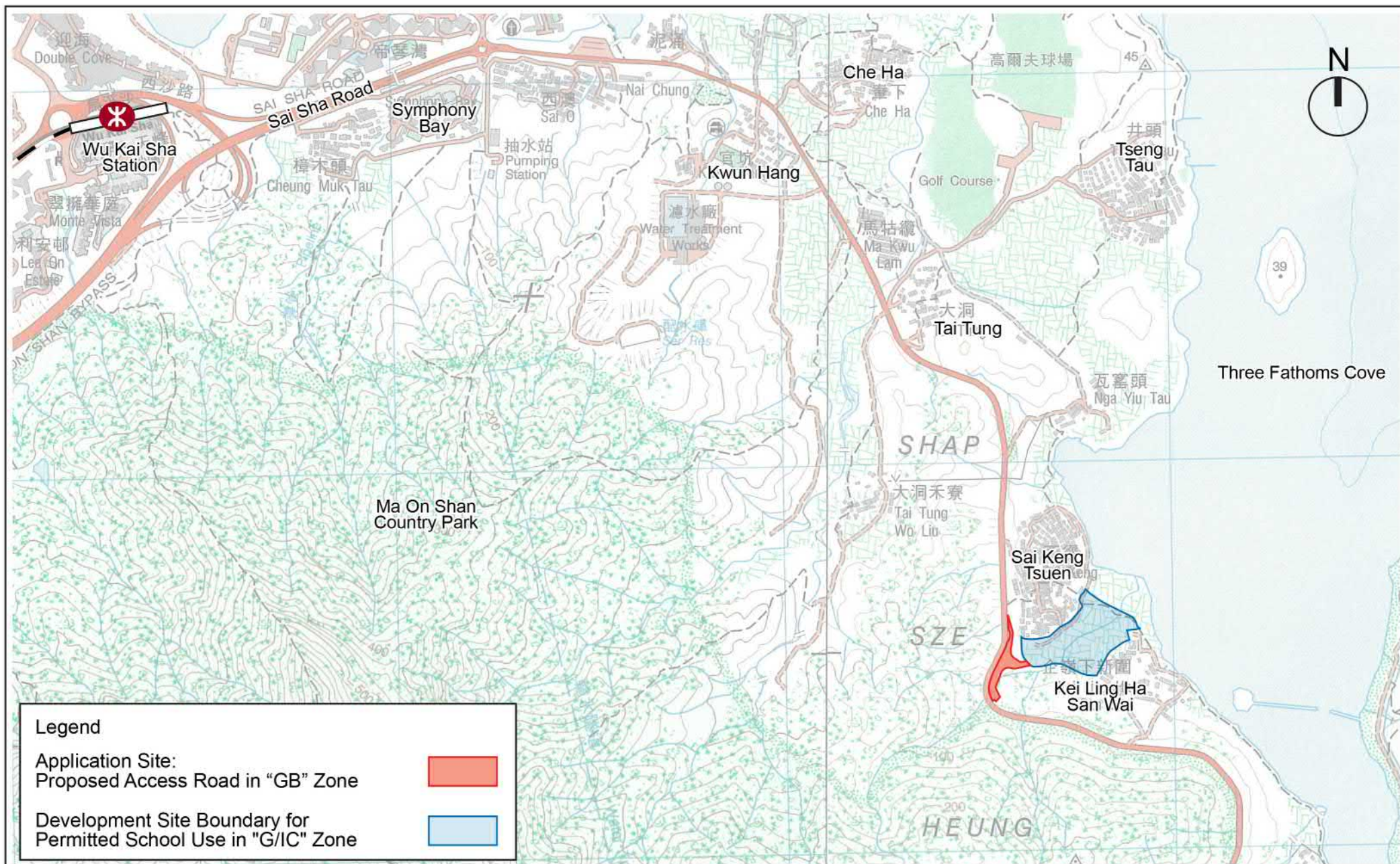
2.1.3 The Application Site with topography stepping gradually downwards from west to east is currently covered with vegetation. **Figure 2.2** illustrates the site and surrounding context of the Application Site.

### 2.2 Planning Context

#### The Approved Shap Sz Heung OZP

2.2.1 The location of the subject Proposed Access Road, as indicated in **Figure 1.1**, currently falls within an area zoned as "GB", which is sandwiched between Sai Sha Road and a "G/IC" zone that lies in a valley with no proper access, on the Approved Shap Sz Heung Outline Zoning Plan No. S/NE-SSH/11. The zoning boundary of the subject "GB" zone and the concerned "G/IC" zone remain largely the same since the gazettal of the first Shap Sz Heung OZP No. S/NE-SSH/1 on 1 July 1994 (i.e. 27 years). According to paragraph 10.1 of the Explanatory Statement of the OZP, "existing van tracks for access to villages would need to be improved while **new access roads are required to be constructed in new development areas**". In view that widening of existing village tracks is considered

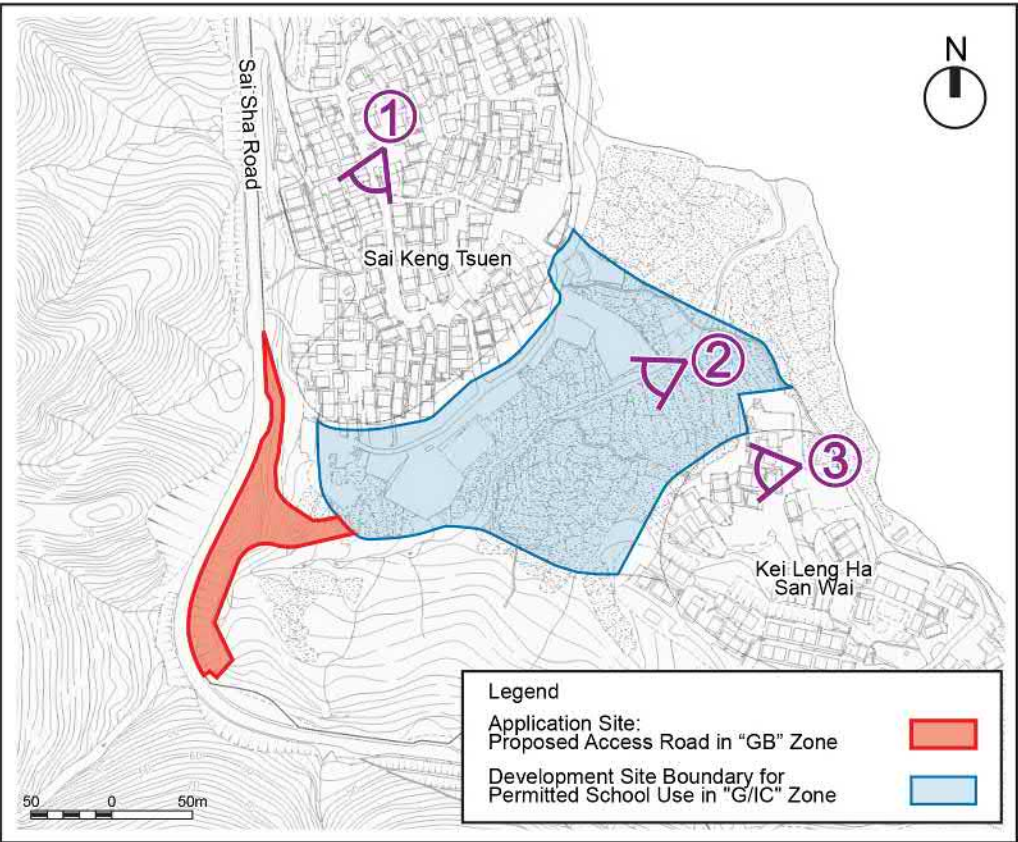








Sai Keng Tsuen to the northeast of the Application Site



View from the adjacent G/IC Zone to the Application Site



Kei Leng Ha San Wai to the southeast of the Application Site



not practical due to site constraints, provision of new access road would be a sensible approach to address the accessibility issue of the "G/IC" site. Detailed history of the "G/IC" zone and the planning context is attached in **Appendix H**.

- 2.2.2 According to the Notes of the OZP, while various uses are always permitted in the subject "G/IC" zone, the Proposed Access Road within the "GB" portion that supports the permitted uses require planning permission from the Board. The subject matter of this application shall be the Proposed Access Road that falls in the "GB" zone only, whereas the permitted uses (including the access road) in the "G/IC" zone shall not form part of the planning application.

*GBP submission for development in the adjacent "G/IC" zone rejected in 2019*

- 2.2.3 In September 2019, a set of general building plans (GBPs) for proposed international school with boarding house within the subject "G/IC" zone with proposed access road from Sai Sha Road through the subject "GB" zone was submitted by the Authorized Person of the Applicant and was circulated to the Planning Department (PlanD) for comments. Subsequently, it was stated in PlanD's reply on 30 October 2019 that, according to the Notes of the OZP, while 'School' use is always permitted in the subject "G/IC" zone, the Proposed Access Road within the "GB" portion that supports 'School' use is a Column 2 use requiring planning permission from the Board (**Annex 1** refers). The Applicant, hence submitted the subject planning application for Proposed Access Road in the adjoining "Green Belt" zone to materialise school and / or other permitted uses in the subject "G/IC" zone and at the same time refined the access road alignment in the GBP submission which would affect relatively large areas of existing woodland in "GB" zone.

*Town Planning Board Guidelines for Application for Development within Green Belt Zone under Section 16 of the Town Planning Ordinance (TPB PG-No. 10)*

- 2.2.4 Despite that there is a general presumption against development in "GB" zone, certain developments may be permitted by the Board based on individual merits. The planning assessment criteria are set out in the TPB PG-No. 10. The relevant criteria are summarised as follows:

- (a) An application for new development in a "GB" zone will only be considered in exceptional circumstances and must be justified with very **strong planning**

**grounds.** The scale and intensity of the proposed development including the plot ratio, site coverage and building height should be **compatible with the character of surrounding areas**;

- (b) Applications for G/IC uses and public utility installations must demonstrate that **the proposed development is essential and that no alternative sites** are available;
- (c) The design and layout of any proposed development should be **compatible with the surrounding area**. The development **should not involve extensive clearance of existing natural vegetation, affect the existing natural landscape, or cause any adverse visual impact** on the surrounding environment;
- (d) The **vehicular access road** and parking provision proposed should be **appropriate to the scale of the development and comply with relevant standards**. Access and parking **should not adversely affect existing trees or other natural landscape features. Tree preservation and landscaping proposals should be provided**;
- (e) The proposed development **should not overstrain the capacity of existing and planned infrastructure** such as sewerage, roads and water supply. It should not adversely affect drainage or aggravate flooding in the area;
- (f) The proposed development **should not be susceptible to adverse environmental effects from pollution sources nearby such as traffic noise, unless adequate mitigating measures are provided**, and it should not itself be the source of pollution; and
- (g) Any proposed development on a slope or hillside **should not adversely affect slope stability**.

2.2.5 The Proposed Access Road under the subject planning application has fully complied with the requirements set out in TPB PG-No. 10. The Application Site is the best and only available location for the development of an access road which is essential for any permitted uses in the adjacent "G/IC" zone. Technical assessments have been conducted to demonstrate the Proposed Access Road is compatible with the surrounding environments and would not bring adverse

impact in all technical aspects.

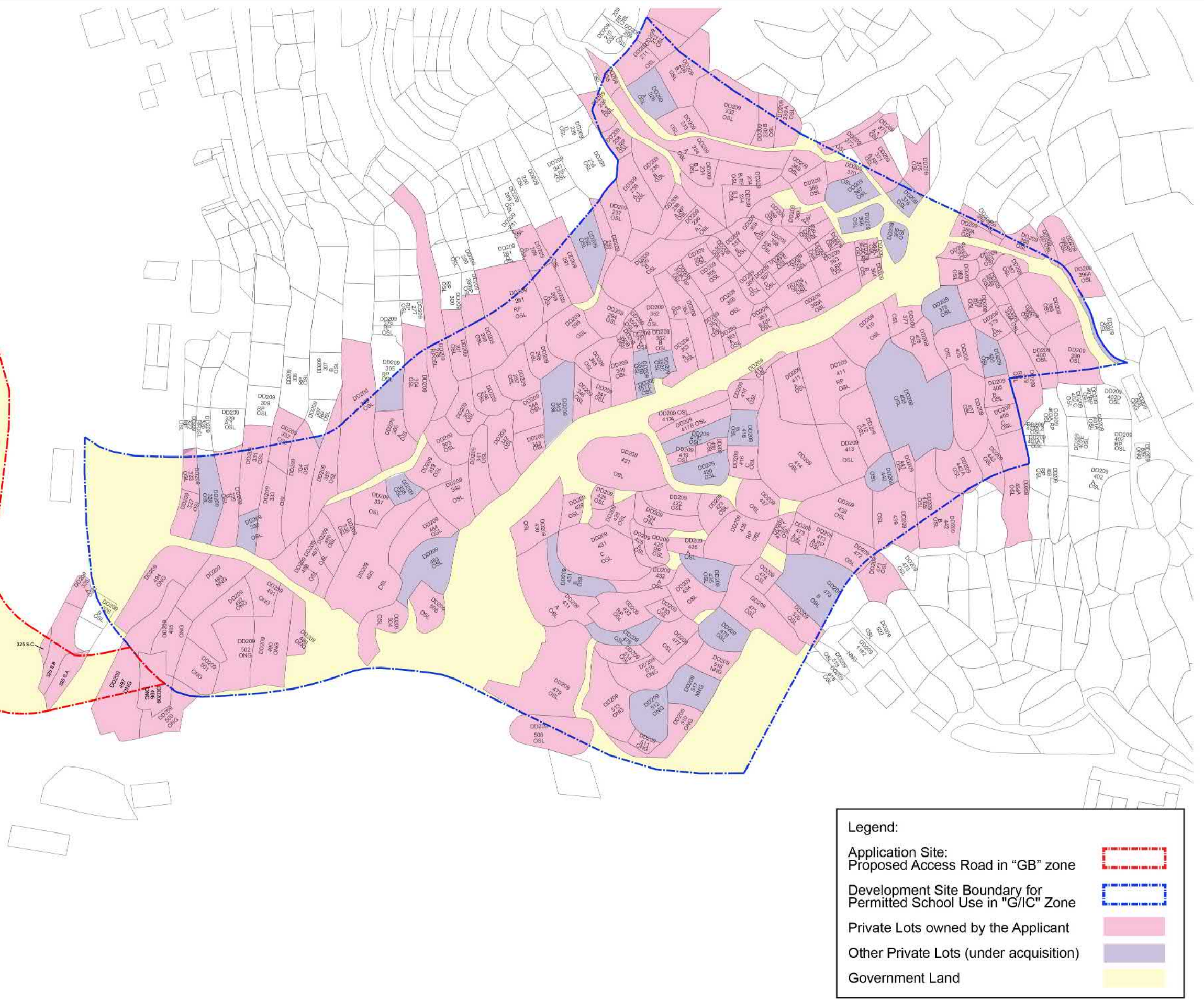
## 2.3 Land Status

2.3.1 **Figure 2.3** illustrates the land status of Application Site whilst **Table 2.1** shows the landholding schedule of the Application Site.

2.3.2 The Application Site covers a total area of about 4,640m<sup>2</sup>, of which about 6.6% are private land solely owned by the Applicant, while the remaining about 93.4% is Government Land.

**Table 2.1 – Landholding Schedule**

Land Status	Lot No in DD 209	Area
Lots under Applicant's Ownership	325 S.A (Part) 325 S.B (Part) 325 S.C (Part) 496 (Part) 497 (Part)	About 307 m <sup>2</sup> (about 6.6% of total Application Site area)
Government Land	-	About 4,333 m <sup>2</sup> (about 93.4% of total Application Site area)





### 3 THE PROPOSED DEVELOPMENT

#### 3.1 The Proposed Access Road

- 3.1.1 The Application Site in "GB" covers a total area of about 4,640m<sup>2</sup>, comprising the Proposed Access Road with an area of about 1,844m<sup>2</sup> and a woodland planting area of about 2,796m<sup>2</sup>.
- 3.1.2 The Proposed Access Road in "GB" zone connecting the permitted school and / or other permitted uses will be of standard with 7.3m wide with footpaths on both sides branching off the east of Sai Sha Road. The Proposed Access Road is a single 2-lane carriageway with footpaths on both sides and forms a T-junction with Sai Sha Road. The Proposed Access Road would also serve as the EVA for the adjacent "G/IC" zone.
- 3.1.3 Landscape enhancement and appropriate woodland planting will be provided within the Application Site. 3 nos. of existing man-made slope features No. 8NW-C/C20, 8NW-C/F54 and 8NW-C/FR48, which are of low ecological value and hence minimal ecological impact, have been incorporated as part of the temporary works area and proposed new junction of the Proposed Access Road and Sai Sha Road. In particular, while the actual temporary works area to the south of the Proposed Access Road would only utilise a minor portion of slope feature No. 8NW-C/FR48, the entire slope feature (except a minor portion falling within the boundary of Ma On Shan Country Park) has been incorporated into the Application Site on which further planting opportunity will be explored and implemented in order to improve its landscape and visual value in a comprehensive manner (**Figure 1.1** refers). The man-made slope features will be transformed into woodland planting areas. The relevant details are presented in Landscape and Tree Preservation Proposals and Ecological Impact Assessment in **Appendices A and E** respectively. It is also worth mentioning that the temporary works area for the Proposed Access Road will only be confined to the woodland planting area so as to minimise the impact on the subject "GB" zone.
- 3.1.4 The Proposed Access Road has fully met the requirements stipulated on the Transport Planning and Design Manual (TPDM) with general gradient of about 8% to 10% gradually stepping downwards from west to east to respect the existing topography.

- 3.1.5 The Indicative Layout Plan of the Proposed Access Road is provided in **Figure 3.1**. The indicative development schedule of the Proposed Access Road is summarised in **Table 3.1** below:

**Table 3.1 - Indicative Development Schedule**

Proposed Access Road in "Green Belt" Portion	
Total Application Site Area <sup>(1)</sup>	About 4,640 m <sup>2</sup>
Area of the Proposed Access Road	About 1,844 m <sup>2</sup> (i.e. 39.7% of the Application Site Area)
Woodland Planting Area	About 2,796 m <sup>2</sup> (i.e. 60.3% of the Application Site Area)

Remarks:

- (1) Refers to the Proposed Access Road and its works area that falls within the subject "GB" zone only. The permitted school and / or other GIC uses in the adjacent "G/IC" zone shall not form part of the planning application.

## 3.2 Formulating the Proposed Access Road Alignment

- 3.2.1 In the course of formulating the Proposed Access Road alignment, the Applicant had first explored and reviewed 2 alignments options, namely (1) the access road alignment under the GBP submission made in 2019 (hereafter referred as Option 1) and (2) the access road alignment adjacent Sai Keng Tsuen connecting Sai Sha Road and the concerned "G/IC" zone (hereafter referred to Option 2) (**Figures 3.2a and 3.2b** refer).
- 3.2.2 Upon review, in order to avoid third part lots and minimise the impacts to the surrounding environment, the Proposed Access Road alignment under the subject planning application has thus been formulated by taking identified merits and avoiding the identified shortcomings of the two abovementioned alignment options. For ease of reference a comparison between the three alignment options is provided in **Table 3.2** below. A detailed explanatory statement comparing the road alignment options are attached in **Appendix J**.





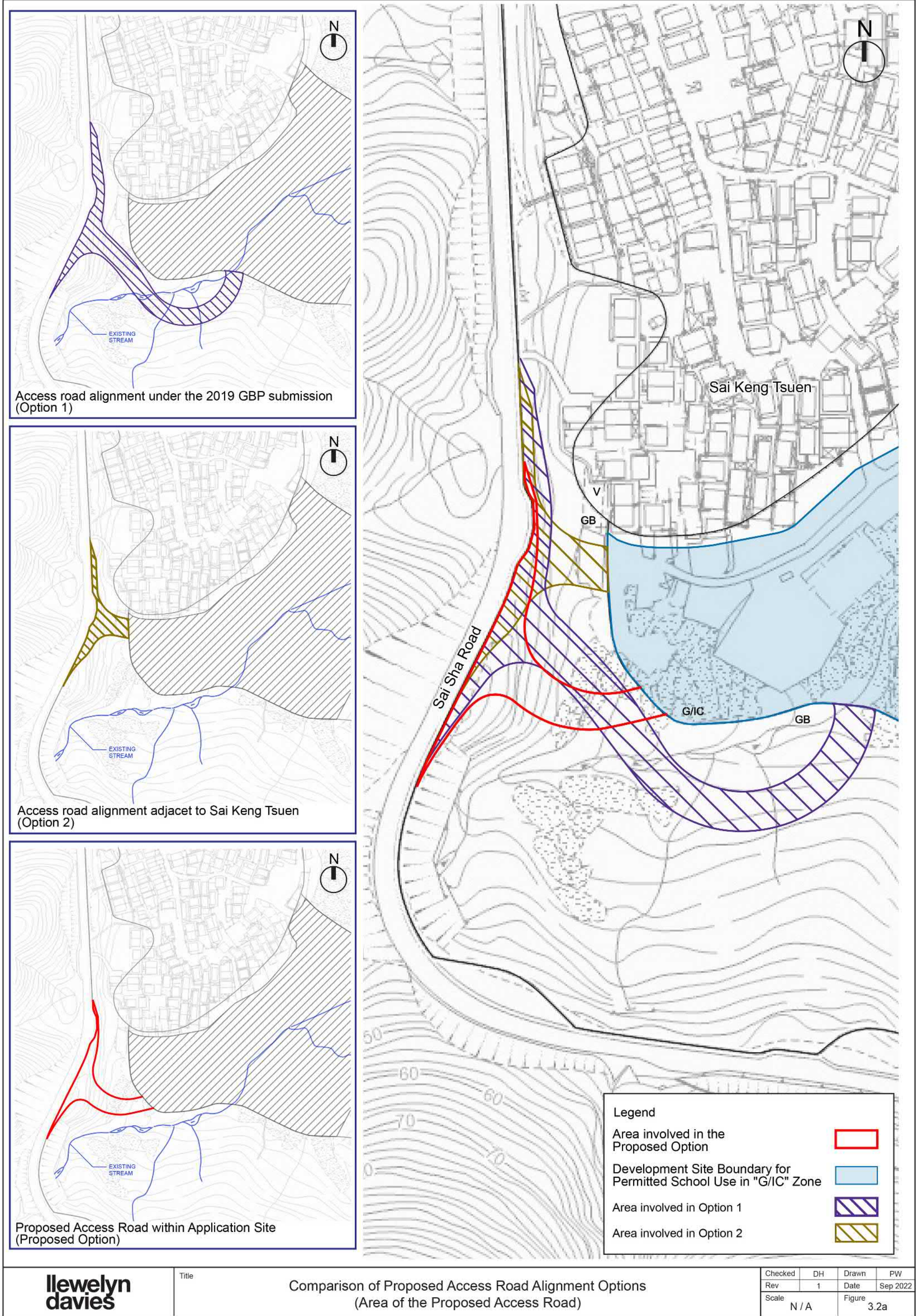
LEGEND

--- APPLICATION SITE BOUNDARY

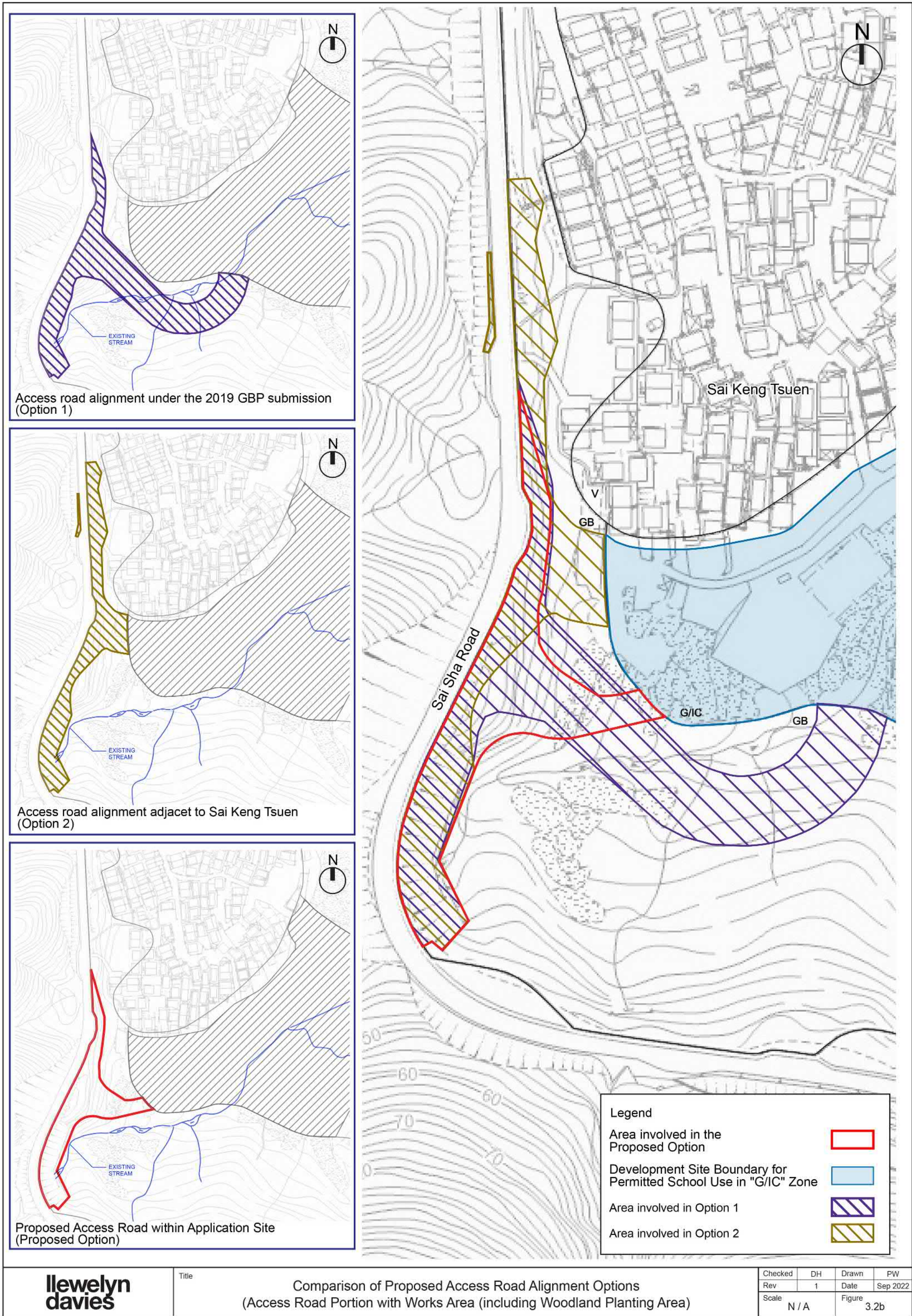
Remark: The Proposed Access Road in the Application Site is to facilitate the permitted school and/or other permitted uses in the adjoining "G/IC" zone. The permitted school and/or other permitted uses are not the subject matter of this S16 planning application. Any layout and parameters of the development in "G/IC" zone provided are for general reference and information of the Town Planning Board, and do not form part of this S16 planning application for approval. Layout and parameters of the development in "G/IC" zone shall be subject to detailed design during GBP submission.  
\* During the construction stage, the woodland planting area will be used as temporary works area for the Proposed Access Road.













**Table 3.2: Comparison of Proposed Access Road Alignment Options**

	<b>Option 1: GBP Access Road Alignment</b>	<b>Option 2: Access Road Alignment Adjacent to Sai Keng Tsuen</b>	<b>The Preferred Option: Proposed Access Road Alignment</b>
<b>Potential Impact on Existing Woodland in GB</b>	<ul style="list-style-type: none"> <li>Affected relatively large areas of existing woodland in "GB" zone due to longer alignment.</li> </ul>	<ul style="list-style-type: none"> <li>Together with works area and land required for re-provisioning of existing village facilities, Option 2 affects slightly larger area of "GB" zone than Proposed Access Road Alignment and thus have similar and limited interference to the existing woodland in "GB" zone.</li> </ul>	<ul style="list-style-type: none"> <li>Involved limited interference to the existing woodland in "GB" zone and existing man-made slope No. 8NW-C/FR48 has been included as woodland planting area to improve its landscape and ecological value.</li> </ul>
<b>Potential Impact to Neighbouring Villages</b>	<ul style="list-style-type: none"> <li>Located further away from both existing village settlements, namely Sai Keng Tsuen and Kei Ling Ha San Wai, this alignment would not have significant interface problem with neighbouring villages.</li> </ul>	<ul style="list-style-type: none"> <li>Located very close to Sai Keng Tsuen, this alignment would create the most nuisances to Sai Keng Tsuen at both construction and operation stages in visual and environmental terms.</li> <li>Some of the existing village facilities of Sai Keng Tsuen are also affected due to</li> </ul>	<ul style="list-style-type: none"> <li>The entrance of the Proposed Access Road has been carefully designated at a location more distant away from both neighbouring villages so as to minimise interface issue as far as possible.</li> </ul>

		construction of Option 2's access road. Although adequate re-provisioning is proposed, the construction and re-provision works will also bring nuisance to the neighbouring Sai Keng Tsuen.	
<b>Potential Impact to Ecologically Sensitive Features</b>	<ul style="list-style-type: none"> <li>This alignment would potentially affect an existing stream as it passes through the stream a few times.</li> </ul>	<ul style="list-style-type: none"> <li>This alignment is the shortest route connecting Sai Sha Road and the concerned "G/IC" zone and does not pass through any ecologically sensitive features.</li> </ul>	<ul style="list-style-type: none"> <li>The alignment of the proposed access road has been meticulously designed to avoid interference and crossing the existing stream and there are no anticipated impacts to any ecologically sensitive features.</li> </ul>

### 3.3 Landscape Design and Tree Preservation Proposal

- 3.3.1 A Landscape Design and Tree Preservation Proposal is provided in **Appendix A** to present the condition of the existing vegetation within the Application Site and provide the indicative landscape design and tree preservation proposal for the development of the Proposed Access Road.
- 3.3.2 Given that there is a genuine traffic need for the Proposed Access Road, existing trees within woodland habitat in the Application Site will be inevitably affected by the associated site formation and construction works. Similarly, trees located on the existing engineered slope Feature No. 8NW-C/FR48 (**Figure 1.1** refers) will also be affected as reprofiling and / or levelling works will be necessary to upgrade the slope to meet modern day standards. Based on the current engineering layout and footprint of the Proposed Access Road, in-situ tree retention will be impractical. Affected existing trees within the Application Site will be transplanted if

they are rare / protected species under the local ordinances (i.e. Cap. 96 or Cap. 586), or are of high or medium suitability for transplantation to maximise tree preservation effort. Tree felling is only considered where a tree is not protected by local ordinances, and where tree retention and transportation are considered impracticable. Affected existing trees within the Application Site will be felled if they are found to be unfit for transplanting or of poor health conditions. Due to the condition of the site (i.e. steep slope), most of these were recorded to be poor form and health and of low amenity value, and will unlikely survive transplantation.

- 3.3.3 To compensate for the loss of woodland habitat within the Application Site, on-site compensatory planting of native plants will be provided based on 1:1 ratio in terms of quantity. The woodland compensation area will be predominantly located in the uncovered area, outside of the footprint of the Proposed Access Road and areas that will be shaded or of steep gradient (i.e.  $>35^\circ$ ).
- 3.3.4 In order to further maximise the overall area for tree planting and enhance the overall ecological value of the compensatory planting, planting of species that are of higher value and provide ecological services (i.e. food and nectar source for insects and wildlife) will be adopted. In addition, the existing slope feature No. 8NW-C/FR48 will be utilised as woodland planting area to maximise greening opportunity.
- 3.3.5 A "Transplantation Zone" (TZ) of approximately 300m<sup>2</sup> in size will be set up in an area within the Application Site to accommodate (a) the 2 nos. proposed transplant trees (i.e. *Aquilaria sinensis* and *Ailanthus fordii*), as well as (b) 10 nos. under-sized *Aquilaria sinensis* and 67 nos. *Pavetta hongkongensis*, which were not assessed under the current assessment due to their small DBH size, but are recommended to be transplanted in the Ecological Impact Assessment for preservation. The indicative extent of the TZ and the location of the transplanted trees in (a) above are marked on the Indicative Landscape Plan. The exact extent and location of the TZ shall be subject to detailed design and technical review at subsequent stage.
- 3.3.6 For details, please refer to the Indicative Landscape Plan provided in **Figure 3.3** and the Landscape Design and Tree Preservation Proposal provided in **Appendix A**.

PROPOSED COMPENSATORY TREE PLANTING SCHEDULE

SPECIES NAME	CHINESE NAME	SPECIES CATEGORY	PLANTING SIZE <sup>(1)</sup>	PLANTING SPACING	MIX RATIO	APPROX. QUANTITY	APPROX. SUM
Ailanthus fordii	常綠臭椿	1	LIGHT -STANDARD	3m STAGGERED	5%	15	299
Canthium dicoccum	魚骨木	2			5%	15	
Celtis sinensis	朴樹	2			15%	45	
Cratoxylum cochinchinense	黃牛木	2			15%	44	
Ficus subpisocarpa	筆管榕	2			2%	6	
Bischofia javanica	秋楓	3			8%	24	
Bridelia tomentosa	土蜜樹	3			8%	24	
Cinnamomum camphora	樟	3			8%	24	
Ficus microcarpa	榕樹	3			2%	6	
Ficus variegata var. chlorocarpa	青果榕	3			2%	6	
Litsea glutinosa	潺槁樹	3			8%	24	
Sapium discolor	山烏桕	3			8%	24	
Schefflera heptaphylla	鵝掌柴	3			8%	24	
Melicope pteleifolia	三椏苦	4			3%	9	
Microcos nervosa	破布葉	4			3%	9	

Note:  
All planting sizes are according to the latest version of General Specification for Civil Engineering Works, 2020 Edition (CEDD, 2021).

CATEGORY 1 TREES TO BE TRANSPLANTED

TREE NO.	SPECIES NAME	CHINESE NAME	DBH(m)*HEIGHT(m)*SPREAD(m)	REMARKS
T0005	Ailanthus fordii	常綠臭椿	0.16*10*4.5	The 2 nos of transplant trees will be planted within the "Transplantation Zone", along with 10 nos. of under-sized Aquilaria sinensis and 67 nos. of the shrub Pavetta hongkongensis.
T0010	Aquilaria sinensis	土沉香	0.15*6*1.5	

- LEGEND:
- APPLICATION SITE
  - DEVELOPMENT SITE FOR PERMITTED SCHOOL USE IN "G/IC" ZONE
  - PROPOSED ACCESS ROAD
  - WOODLAND PLANTING AREA
  - SHADE-TOLERANT PLANTING UNDER THE VIADUCT
  - INDICATIVE TRANSPLANTATION ZONE
  - INDICATIVE LOCATION OF TRANSPLANT TREE

DEVELOPMENT SITE FOR PERMITTED SCHOOL USE IN "G/IC" ZONE

TRANSPLANTATION ZONE  
APPROX. AREA=0.03ha(300m<sup>2</sup>)

WOODLAND PLANTING AREA  
APPROX. AREA=0.24ha(2430m<sup>2</sup>)

### **3.4 Tentative Completion Year**

3.4.1 The Proposed Access Road will be designed, implemented, managed and maintained by the future school operator subject to detailed design and terms with the future school operator.

3.4.2 The Proposed Access Road is anticipated to be completed by year 2028.

#### 4. VISUAL APPRAISAL

- 4.1 A visual appraisal with photomontages prepared at a selection of viewpoints (VPs) has been conducted to assess the potential visual impact that may be induced by the Proposed Access Road in "GB" zone. The details of the Visual Appraisal are provided in **Appendix B**.
- 4.2 Two VPs have been selected to evaluate the potential visual impact of the Proposed Access Road, which include:
- VP 1 – From Sai Sha Road to the future entrance of the Proposed Access Road
  - VP 2 – From Sai Sha Road to the Application Site in "GB" and the concerned "G/IC" zone
- 4.3 Based on the visual appraisal on visual composition, visual obstruction, effects on public viewers and effects on visual resources, the overall visual impact caused by the Proposed Access Road in "GB" is summarised as follows:

**Table 4.1: Summary of Assessment of Visual Impact at the Selected Viewpoints:**

Viewpoint	Location	Overall Visual Impact brought the Proposed Access Road in "GB"
VP1	From Sai Sha Road to the future entrance of the Proposed Access Road	Negligible
VP2	From Sai Sha Road to the Application Site in "GB" and the concerned "G/IC" zone	Slightly adverse

- 4.4 Despite minor portion of the Proposed Access Road would be visible from the two selected viewpoints, the photomontages show that the Proposed Access Road would largely be screened off by existing lush green vegetation and proposed compensatory planting. The Proposed Access Road would blend into the existing landscape setting to form a harmonic view.
- 4.5 The resultant overall visual impact of the Proposed Access Road would be insignificant which is considered compatible with the surrounding visual context.



## 5. TRAFFIC CONSIDERATIONS

5.1 A Traffic Impact Assessment (TIA) has been conducted for the Proposed Access Road development. The details of the TIA are provided in **Appendix C**.

5.2 In order to review the existing traffic condition, traffic count surveys at the identified critical junctions were conducted to investigate the peak hour traffic condition. The critical junctions include: -

- Sai Sha Road / Nin Wah Road / Nin Fung Road (J1)
- Sai Sha Road / Access Road to Sai O (J2)
- Sai Sha Road / Access Road to Kwun Hang (J3a) & Sai Sha Road / Access Road to Che Ha (J3b)
- Sai Sha Road / Access Road to Ma Kwu Lam (J4)
- Sai Sha Road / Access Road to Tseng Tau (J5)
- Sai Sha Road / Proposed Access Road (J6)
- Sai Sha Road / Tai Mong Tsai Road (J7)
- Sai Sha Road / Access Road to Sai Keng Tsuen (J8)
- Sai Sha Road / Access Road to Kei Ling Ha San Wai (J9)

At present, all the critical junctions operate satisfactorily with ample capacity.

5.3 The permitted school and / or other permitted uses in conjunction with the Proposed Access Road is anticipated to be completed in year 2028. Year 2031 is therefore selected as a design year in this TIA for assessment purpose (i.e. 3 years after the anticipated completion year of the Proposed Access Road in 2028).

5.4 A conservative annual growth rate of 0.5% per annum is adopted for projecting the peak hour traffic flows from year 2021 to 2031. Apart from the proposed private school, other committed / planned major developments in the vicinity and Ma On Shan area have been taken into account in the traffic forecast.

5.5 The assessment results show that all the critical junctions will be operating with sufficient capacity in year 2031 under both Reference and Design scenarios; and there will be no insurmountable traffic impacts arising from the Proposed Access Road on these junctions.

5.6 A sensitivity test on directional split has been conducted. Assessment results show that all the assessed junctions operate satisfactorily with ample capacity.

- 5.7 A sensitivity test for increase in traffic generation for 2 primary schools near Che Ha Village has been conducted at the most critical junctions, Sai Sha Road / Nin Wah Road (J1) and Sai Sha Road / Access Road to Che Ha (J3) in 2031 AM peak period. With suggested improvement measures as detailed in the TIA, both junctions J1 and J3 have capacity to cater for the additional traffic demand.
- 5.8 In light of the findings of this TIA, it is concluded that the traffic impact arising from the Proposed Access Road development on the local road network is minimal. The Proposed Access Road is therefore considered sustainable from traffic engineering point of view.

## **6. ENVIRONMENTAL CONSIDERATIONS**

- 6.1 The potential environmental impacts on or arising from the Proposed Access Road development have been appraised. The Environmental Assessment report is enclosed in **Appendix D** of the planning statement.
- 6.2 Potential environmental impacts associated with both operation and construction phases arise from the Proposed Access Road have been assessed. It was found that the extent of these environmental impacts would be acceptable with the recommended mitigation measures implemented.
- 6.3 Regarding the potential air quality impacts, in operation phase the existing sensitive uses will not be subject to unacceptable vehicular emission impacts from the Proposed Access Road with sufficient buffer distance. At construction phase, air quality impact will not be adverse with site management in place.
- 6.4 Regarding the potential traffic noise impacts, with sufficient buffer, the noise impact to the nearby representative Noise Sensitive Receivers (NSRs) is not considered to be significant. Regarding the construction phase noise impacts, it will not be adverse with the construction noise mitigation.
- 6.5 Regarding the potential construction phase environmental impacts, with waste managements in place, the waste generated from the construction work of the Proposed Access Road could be properly controlled and no adverse waste management impacts are anticipated.
- 6.6 Regarding the potential water impacts, with various mitigation measures and managements in place, no adverse impacts from both operation and construction phase are anticipated.
- 6.7 The environmental assessment confirms the feasibility of the Proposed Access Road from an environmental point of view.

## 7. ECOLOGICAL CONSIDERATIONS

- 7.1 The potential ecological impacts on or arising from the Proposed Access Road development have been appraised. The Ecological Impact Assessment report is enclosed in **Appendix E** of the planning statement.
- 7.2 According to the findings of the EcolA, it is reviewed that the direct and indirect ecological impacts on the existing habitats within and adjacent to the Application Site are mostly minor to moderate during construction and operational phases.
- 7.3 To minimise the unavoidable woodland loss within the Application Site, a proposed 0.28ha woodland planting area would fully mitigate the unavoidable woodland loss, i.e. 0.13ha permanent and 0.13ha temporary loss, within the Application Site. The temporary woodland loss due to the temporary works area during construction stage would be fully mitigated by on-site planting of native tree species with ecological functions within the woodland planting area in the Application Site. The nearby man-made slopes, which is currently covered by plantation, would also proposed to be enhanced into a woodland planting area with native trees with ecological functions.
- 7.4 After considering the feasibility of transplantation, survival rates and the species status in Hong Kong, directly impacted law-protected flora species i.e. *Ailanthus fordii*, *Aquilaria sinensis* and *Pavetta hongkongensis* would be transplanted to a Transplantation Zone of about 300 m<sup>2</sup> within the Application Site. Area underneath the proposed access road would also be planted with shade-tolerant plants as a further enhancement to the overall ecological value. To mitigate indirect impacts and disturbances, good site practices would be implemented. Together with other proposed construction phase site measures, the overall ecological impacts and residual impacts due to the proposed access road would be fully mitigated into insignificant level.

## **8. GEOTECHNICAL CONSIDERATIONS**

- 8.1 A Geotechnical Planning Review Report (GPRR) has been conducted to facilitate the Proposed Access Road development at the Application Site. The detailed GPRR report is enclosed in **Appendix F**.
- 8.2 All slopes affecting or being affected by the Proposed Access Road development will be assessed, if necessary, upgrading works will be carried out in the subsequent detailed design upon approval of the planning application.
- 8.3 In conclusion, the Proposed Access Road development and the related works within the Application Site is considered geotechnically feasible.

## **9 DEVELOPMENT JUSTIFICATIONS**

### **9.1 The Proposed Access Road is essential to facilitate the permitted uses in the adjacent "G/IC" zone**

9.1.1 The concerned "G/IC" zone is currently accessible only via two sub-standard local tracks with limited space for widening to cater for the future permitted school and / or other uses in the "G/IC" zone (see **Appendix K** for details). Hence, with no planned access to the site, the potential of any kind of development, would be deprived, which is by no means an optimisation of scarce land resources.

9.1.2 Besides, as stated in para. 10.1 of the Explanatory Statement of the OZP, new access roads are required to be constructed in new development areas, which would be applicable for the permitted school and / or other permitted uses in the adjoining "G/IC" site which is readily available for development to serve the community. To fulfil the purpose of providing standard access from Sai Sha Road (the only proper public road in the area) to the concerned "G/IC" zone, the subject Proposed Access Road is deemed essential to facilitate the development in the "G/IC" zone.

### **9.2 The Application Site is the optimal location for the Proposed Access Road alignment with minimum encroachment onto "GB" zone and ecological impact minimised**

9.2.1 In view that upgrading of existing local village tracks is not practical, and that the subject "G/IC" zone is completely segregated from Sai Sha Road, provision of new access road is necessary to facilitate development in "G/IC" zone. To minimise potential impacts associated with the new access road, it would be reasonable to formulate the shortest and most direct alignment branching off Sai Sha Road, which is the only major public road connecting Shap Sz Heung in the wider context. In this sense, the "GB" area sandwiched between Sai Sha Road and the "G/IC" zone would be the optimal location for the Proposed Access Road.

9.2.2 By refining the access road alignment in the GBP submission which is longer and would affect relatively large areas of existing woodland in "GB" zone, the current Proposed Access Road is a relatively shorter route to connect Sai Sha Road with the "G/IC" site which minimises potential impact on the subject "GB" zone and at the same time minimising the possible nuisances to the dwellers in the nearby Sai Keng Tsuen. The alignment is shifted down south away from the village as well as avoiding

encroachment onto other third party lots within the "GB" area.

9.2.3 It should also be highlighted that notable area in the western portion of the Application Site are man-made slope features with relatively lower ecological value, including slope features No. 8NW-C/C20, 8NW-C/F54 and 8NW-C/FR48 (**Figure 1.1** refers), instead of natural slopes. In this sense, with minimum encroachment into the "GB" zone and ecological impact minimised, the current proposed alignment is a balance of various factors and shall be considered optimal in addressing the accessibility issue of the "G/IC" site. It is noteworthy that the Proposed Access Road itself, with an area of about 1,844m<sup>2</sup>, only accounts to 1.1% of the subject "GB" zone and would not affect the integrity of the entire "GB" zone. In fact, since the Proposed Access Road will be in elevated form above the "GB" zone, upon provision of appropriate plantings to integrate with the adjoining "GB" zone, the area underneath the Proposed Access Road will not be interrupted, warranting continuity within the "GB" zone.

### 9.3 Endeavour to Maximise Greening Opportunity within Application Site

9.3.1 In order to provide the essential access to facilitate the development of the "G/IC" zone, the Proposed Access Road will inevitably affect the existing slope features abutting Sai Sha Road. The Applicant hence endeavours to maximise greening opportunity by formulating appropriate compensatory proposal as well as maximising greening opportunity as far as practicable under the subject planning application.

9.3.2 In particular, the Applicant takes the initiative to maximise planting opportunities by incorporating the entire man-made slope (except a minor portion falling within the boundary of Ma On Shan Country Park) into the Application Site boundary and proposed a woodland planting area there. During the construction stage, the woodland planting area will be used as the temporary works area for the Proposed Access Road. The temporary works area will be confined within the woodland planting area to minimise the impact. As demonstrated in the landscape design and tree preservation proposal (**Appendix A** refers) and the ecological impact assessment report (**Appendix E** refers), landscape and ecological value of the concerned slope could be enhanced.

9.3.3 In addition, to compensate for any loss of woodland habitat within the Application Site arising from the Proposed Access Road, on-site compensatory planting of native plants will be provided based on 1:1 ratio in terms of quantity.

9.3.4 The holistic planting and compensatory strategy could also better visually integrate the man-made features (i.e. the existing man-made slope and the Proposed Access Road) into the surrounding natural landscape in the subject "GB" zone and thus enhancing the visual landscape quality of the area.

#### 9.4 **The Proposed Access Road is with appropriate scale**

9.4.1 The Proposed Access Road is provided as per the current standard stipulated under the Transport Planning and Design Manual (TPDM) with road with of 7.3m with standard footpaths on both sides and general gradient of about 8% to 10% gradually stepping downwards from west to east to respect the existing topography. This ensures access to the "G/IC" zone to be provided in a safe manner.

9.4.2 As per finding in the Visual Appraisal in **Appendix B** of this planning statement, the Proposed Access Road is considered acceptable from visual point of view and is compatible with surrounding environment, hence proving that the Proposed Access Road is with an appropriate development scale.

#### 9.5 **Setting no undesirable precedent for similar development within the subject "GB" zone**

9.5.1 Apart from the concerned "G/IC" zone, all other reserved or undeveloped "G/IC" zones falling within the OZP have been provided with direct access to Sai Sha Road, including the "G/IC" zones to the east of Nai Chung along Sai Sha Road, to the west of Sai Sha Road near Kwun Hang, and to the north-west of Tseng Tau respectively. For other "G/IC" zones on the OZP, which are substantially smaller in size (about 1,000m<sup>2</sup> each), the "G/IC" zoning is to reflect the existing use therein, including Tseng Tau Village Office in Tsuen Tau Tsuen, an abandoned church near Tai Tung and service reservoir near Kei Ling Ha Lo Wai. In view of their small site area and the nature of existing use, large-scale redevelopment is not anticipated. The existing local road connecting the "G/IC" sites with Sai Sha Road is considered sufficient to address the daily operation of the sites. Therefore, the planning circumstance of subject "G/IC" is unique which would not set any undesirable precedent under the OZP.

9.5.2 Besides, other planned / existing developments contiguous to the subject "GB" zone have already been served by planned / existing access arrangements directly



connecting to Sai Sha Road. For instance, access for the comprehensive residential and recreational development with government, institution or community facilities under the approved planning application No. A/NE-SSH/120 will be served directly by Sai Sha Road. The adjacent villages, namely Kei Ling Ha San Wai, Sai Keng, Nga Yiu Tau and Tai Tung, are also currently served by existing village access connecting to Sai Sha Road.

9.5.3 It should also be noted that the existing informal local tracks branching off Sai Sha Road to the adjoining Sai Keng Village and Kei Ling Ha San Wai are indeed falling within "GB" zone. While no prior planning applications are submitted for the village tracks, it is evident that any existing or new developments would have to connect to Sai Sha Road for vehicular and pedestrian access. The provision of access road connecting to Sai Sha Road is necessary and common for developments within Shap Sz Heung OZP. With the same yardstick applied to the permitted uses in the "G/IC" zone, the provision of direct access from Sai Sha Road to address its fundamental need of accessibility as stated clearly in paragraph 10.1 of the Explanatory Statement of the OZP is necessary. As such, the approval of the subject planning application would not set an undesirable precedent for similar development in the surrounding area on a basic need basis.

## 9.6 In general meets TPB Guidelines No. 10 for development in "GB" zone

9.6.1 The relevant criteria for assessing applications for development in "GB" zones as stipulated in the TPB PG-No. 10 have been duly complied with under this planning application (**Table 9.1** refers).

**Table 9.1: Compliance of TPB PG-No. 10**

Criteria	Details of Compliance
a) There is a general presumption against development (other than redevelopment) in a "GB" zone. In general the Board will only be prepared to approve applications for development in the context of requests to rezone to an appropriate use.	<ul style="list-style-type: none"> <li>Despite that there is a general presumption against development in "GB" zone, certain developments under Column 2 uses may be permitted by the Board based on individual merits.</li> <li>The Proposed Access Road is minor in nature and involves only about 1% of the subject "GB" zone. With comprehensive technical</li> </ul>

Criteria	Details of Compliance
	<p>assessment and appropriate mitigation measures adopted, the current mechanism of Section 16 planning application is considered adequate. Section 16 planning application also warrants the Board and relevant government departments to impose relevant approval conditions to monitor and ensure necessary measures be implemented to their satisfaction.</p> <ul style="list-style-type: none"> <li>• The statutory timeline for Section 12A and proposed amendment to OZP is lengthy. With comprehensive technical assessments conducted and approval conditions in place, the Proposed Access Road can expedite implementation of the permitted uses in the "G/IC" zone in order to materialise its planning intention in a timely and proper manner.</li> <li>• As elaborated in details below, the Proposed Access Road has fully complied with the planning assessment criteria which are set out in the TPB Guidelines No. 10 for development in "GB" zone.</li> </ul>
<p>b) An application for new development in a "GB" zone will only be considered in exceptional circumstances and must be justified with very strong planning grounds. The scale and intensity of the proposed development including the plot ratio, site coverage and building height should be compatible with the character of surrounding areas. With</p>	<ul style="list-style-type: none"> <li>• Apart from the concerned "G/IC" zone, all other reserved / undeveloped "G/IC" zones have been provided with direct access to Sai Sha Road. Nonetheless, the subject "G/IC" site is segregated from Sai Sha Road, despite being located in its close proximity, which should be considered an exceptional circumstance.</li> </ul>

Criteria	Details of Compliance
<p>the exception of New Territories Exempted Houses, a plot ratio up to 0.4 for residential development may be permitted.</p>	<ul style="list-style-type: none"> <li>• All other planned / existing developments contiguous to the subject "GB" zone have already been served by planned / existing access arrangements directly connecting to Sai Sha Road. In particular, some of the existing accesses are indeed falling within the subject "GB" zone on the OZP, including Sai Keng Tsuen, Kei Ling Ha San Wai, Nga Yiu Tau Tsuen and Tai Tung Tsuen. It is not uncommon that vehicular road access is provided to serve the developments that are segregated by "GB" zone from Sai Sha Road. The Proposed Access Road is fundamentally of the same nature as other existing accesses on the "GB" zone.</li> <li>• In terms of scale, the Proposed Access Road itself with an area of about 1,844m<sup>2</sup>, only account for 1.1% of the subject "GB" zone and thus would not affect the overall integrity of the "GB" zone. The Proposed Access Road is also a standard road provision and is therefore by no means excessive.</li> <li>• As such, the need of providing a Proposed Access Road in "GB" is a unique and exceptional planning circumstance and approval of the subject planning application would not set any undesirable precedent for similar development in the surrounding area.</li> </ul>

Criteria	Details of Compliance
<p>c) Applications for New Territories Exempted Houses with satisfactory sewerage disposal facilities and access arrangements may be approved if the application sites are in close proximity to existing villages and in keeping with surrounding uses, and where the development is to meet the demand from indigenous villagers.</p>	<ul style="list-style-type: none"> <li>• Not applicable</li> </ul>
<p>d) Redevelopment of existing residential development will generally be permitted up to the intensity of the existing development.</p>	<ul style="list-style-type: none"> <li>• Not applicable</li> </ul>
<p>e) Applications for G/IC uses and public utility installations must demonstrate that the proposed development is essential and that no alternative sites are available. The plot ratio of the development site may exceed 0.4 so as to minimize the land to be allocated for G/IC uses.</p>	<ul style="list-style-type: none"> <li>• The Proposed Access Road supporting the permitted uses is essential. Without proper access to the subject "G/IC" site, it has been left idle for about three decades since the gazettal of the first OZP. It forms an essential part to expedite permitted developments within the site.</li> <li>• There are no better alternative sites to provide a proper access that is up to the current design standard. Upgrading or widening of existing local tracks to connect the concerned "G/IC" site with Sai Sha Road is not possible. As assessed in Section 3.2 and <b>Appendix J</b> of the Planning Statement, the Proposed Access Road alignment is considered optimal amongst other alignments.</li> </ul>

Criteria	Details of Compliance
f) Passive recreational uses which are compatible with the character of surrounding areas may be given sympathetic consideration.	<ul style="list-style-type: none"> <li>• Not applicable.</li> </ul>
g) The design and layout of any proposed development should be compatible with the surrounding area. The development should not involve extensive clearance of existing natural landscape, or cause any adverse visual impact on the surrounding environment.	<ul style="list-style-type: none"> <li>• The design and layout of the Proposed Access Road is compatible with the surrounding environment. As detailed in the Visual Appraisal in <b>Appendix B</b>, the Proposed Access Road is compatible with the existing / planned developments in the surroundings and would induce negligible visual impact to the surrounding environment.</li> <li>• Planting opportunity has been maximised to create a compatible environment with the surroundings. A Landscape Design and Tree Preservation Proposal for the Proposed Access Road have been provided in <b>Appendix A</b> of the current submission to ensure that the development will be subject to proper landscape design and treatment.</li> <li>• In particular, a woodland planting area is provided through enhancement of existing man-made slope features within the Application Site. Appropriate planting species are also proposed underneath the Proposed Access Road. Hence, the integrity of the "GB" zone can be upheld.</li> </ul>
h) The vehicular access road and parking provision proposed should be appropriate to the scale of the	<ul style="list-style-type: none"> <li>• The scale of the Proposed Access Road is appropriate and compatible with the surrounding areas. The</li> </ul>

Criteria	Details of Compliance
<p>development and comply with relevant standards. Access and parking should not adversely affect existing trees or other natural landscape features. Tree preservation and landscaping proposals should be provided.</p>	<p>Proposed Access Road complies with relevant standards.</p> <ul style="list-style-type: none"> <li>• The Proposed Access Road is designed in accordance with the minimum standard stipulated under TPDM (i.e. 7.3m wide with footpaths and general gradient of about 8% - 10%). The scale has been kept minimal and not excessive which the proposed access road itself only involved an area of about 1,844m<sup>2</sup>.</li> <li>• As detailed in the Visual Appraisal in <b>Appendix B</b>, the Proposed Access Road is compatible with the existing / planned developments in the surroundings and would induce minimal visual impact to the surrounding environment.</li> <li>• Landscape Design and Tree Preservation Proposal for the Proposed Access Road have been provided in <b>Appendix A</b> of the current submission to ensure that the development will be subject to proper landscape design and treatment.</li> </ul>
<p>i) The proposed development should not overstrain the capacity of existing and planned infrastructure such as sewerage, roads and water supply. It should not adversely affect drainage or aggravate flooding in the area.</p>	<ul style="list-style-type: none"> <li>• As detailed in the Traffic Impact Assessment in <b>Appendix C</b>, the Proposed Access Road will not overstrain the traffic capacity of the area.</li> <li>• The Proposed Access Road, being the subject matter of this planning application, will not generate any sewerage, drainage and water supply demand.</li> </ul>

Criteria	Details of Compliance
j) The proposed development must comply with the development controls and restrictions of area designated as water gathering grounds.	<ul style="list-style-type: none"> <li>• Not applicable.</li> </ul>
k) The proposed development should not overstrain the overall provision of G/IC facilities in the general area.	<ul style="list-style-type: none"> <li>• Not applicable.</li> </ul>
l) The proposed development should not be susceptible to adverse environmental effects from pollution sources nearby such as traffic noise, unless adequate mitigation measures are provided, and it should not itself be the source of pollution.	<ul style="list-style-type: none"> <li>• The design and layout of the Proposed Access Road would not cause any insurmountable technical impacts on the surrounding environment. The Proposed Access Road itself is not the source of pollution.</li> <li>• A comprehensive set of technical assessments, including traffic, environmental, ecological and geotechnical aspects, have been conducted to ensure that the Proposed Access Road would not induce insurmountable impact on the surrounding environment and would not overstrain the capacity of the existing / planned infrastructure.</li> </ul>
m) Any proposed development on a slope or hillside should not adversely affect slope stability.	<ul style="list-style-type: none"> <li>• Geotechnical Planning Review Report for the Proposed Access Road has been conducted. The results show that no adverse geotechnical impacts are anticipated (Please refer to the Geotechnical Planning Review Report in <b>Appendix F</b> of the current submission for details).</li> </ul>

## **9.7 The alignment of the Proposed Access Road is sustainable in technical terms**

- 9.7.1 Technical assessments have been conducted for the Proposed Access Road. The findings concluded that the Proposed Access Road is sustainable from all major aspects, including visual, landscape, traffic, environmental, ecological and geotechnical aspects.



## **10 CONCLUSION**

- 10.1 This planning application is submitted to the Board under S16 of the Ordinance to seek permission for provision of road with filling and excavation of land in "GB" zone for permitted school and / or other permitted uses in "G/IC" zone at various lots and adjoining Government land in D.D. 209, Sai Keng, Shap Sz Heung, N.T. (i.e. hereafter referred to as the Application Site).
- 10.2 Adjacent to the Application Site is an area zoned "G/IC" for permitted school and / or other permitted uses. While the "G/IC" site is situated closely to Sai Sha Road to its west, it could only be accessible via two sub-standard local tracks through Sai Keng Tsuen and Kei Ling Ha San Wai from Sai Sha Road respectively. To facilitate development in the subject "G/IC" zone, provision of a standard Proposed Access Road to the subject "G/IC" zone is required. Otherwise, without any proper access, the subject "G/IC" zone will remain sterilized without any development, which could not materialize the planning intention of the subject "G/IC" zone and result in a waste of valuable land resources that is against the government's land supply policy.
- 10.3 As the subject "G/IC" zone is segregated from Sai Sha Road (the only proper public road in the area) by a "GB" zone, it is inevitable that the Proposed Access Road will have to pass through the "GB" zone before connecting to Sai Sha Road.
- 10.4 According to the Notes of the OZP, while 'School' and / or other "G/IC" uses are always permitted in the subject "G/IC" zone, the Proposed Access Road within the "GB" portion that supports the permitted uses in the "G/IC" zone requires planning permission from the Board. The subject matter of this application shall be the Proposed Access Road that falls in the "GB" zone only, whereas the permitted uses (including the access road) in the "G/IC" zone shall not form part of the planning application. Hence, the Application Site refers to the "GB" portion that will be affected by the Proposed Access Road.
- 10.5 Relevant technical assessments on visual, landscape, traffic, environmental, ecological and geotechnical impacts of the Proposed Access Road in "GB" have been duly considered and the findings concluded that there will be no insurmountable technical issues, with appropriate mitigation measures implemented.

10.6 The Proposed Scheme is supported by the following development justifications:

- The Proposed Access Road is essential to facilitate the permitted school and / or other permitted uses development in the adjacent "G/IC" zone which does not have a proper planned / existing access road / EVA connecting Sai Sha Road;
- The Application Site, being sandwiched between Sai Sha Road and the adjacent "G/IC" site, is the optimal location for the Proposed Access Road alignment with minimum encroachment onto "GB" zone;
- The Applicant endeavours to maximise greening opportunity as far as practicable within the Application Site with the inclusion of existing man-made slopes which will be enhanced as a woodland planting area in order to enhance ecological, landscape and visual value of the Application Site;
- The Proposed Access Road is with appropriate scale which have fully complied with the current design standard and is compatible with the surrounding area;
- The Proposed Access Road would not set undesirable precedent for similar development as all sites contiguous to the subject "GB" zone have already been well served by planned / existing proper access, only the concerned "G/IC" site required to apply for proposed access road to facilities the development;
- The Proposed Access Road complies with TPB Guidelines No. 10 for development in "GB" zone; and
- The alignment of the Proposed Access Road is sustainable in visual, traffic, environmental, ecological and geological terms.

10.7 In light of the above presented in this Planning Statement, the Board is cordially invited to consider the subject application favourably.

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**Annex 1**

**Comment from Planning Department  
dated 30 October 2019 on  
GBP submission made in September 2019**

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**Urgent by Fax and Email****M E M O**

<i>From</i>	District Planning Officer/STN, PlanD	<i>To</i>	Chief Building Surveyor/NTW, BD
<i>Ref.</i>	( ) in PD/TP1/01/3L	<i>(Attn.:</i>	Ms. LEUNG Yuen-ye, Debby )
<i>Tel. No.</i>	2158 6220	<i>Fax No.</i>	2691 2806
<i>Email</i>	jhfchu@pland.gov.hk	<i>Your Ref:</i>	(3) in BD 2/9188/19
<i>Date</i>	30 October 2019	<i>dated</i>	20.9.2019
		<i>Fax No.</i>	2845 1559
		<i>Total Pages</i>	2

**D.D. 209 Sai Keng, N.T.**  
**Proposed International School and Boarding House**  
**(New Submission)**

I refer to your above-quoted memo enclosing a set of building plans (Drawings No. N-1, P-01 to P-20, E-01 to E-05 and C-01 to C-10) for our comment.

**Statutory Comments**

2. The subject site falls within an area zoned partly "Government, Institution or Community" ("G/IC") and partly "Green Belt" ("GB") on the approved Shap Sz Heung Outline Zoning Plan (OZP) No. S/NE-SSH/11. The proposed development comprises three components, including the main school, a boarding house and a sport hall within the "G/IC" zone and also an access road from Sai Sha Road falling entirely within the "GB" zone. According to the Notes of the OZP, 'School' is always permitted in "G/IC" zone. However, it is a Column 2 use requiring planning permission from the Town Planning Board. As the proposed school comprises a component (the access road) within "GB" zone, planning permission should be sought.

3. According to our record, no planning application has been received on the proposed development. As such, carrying out of the proposed building works as shown on the current building plans submitted will contravene the OZP, thus it is recommended to reject the building plans submission under s16(1)(d) of the Buildings Ordinance.

**Other Comments**

4. It is understood that under the prevailing policy, a new international school would only be recognised by the Education Bureau (EDB) upon successful application under a 'School Allocation Exercise'. There is no information on whether such an application has been approved by the EDB. To ensure that the proposed development falls within the definition of 'school', the AP/ the applicant is advised to liaise with EDB and obtain the relevant approval before further proceeding with the proposal.

5. The above comments on the building plans submitted may be subject to revision should there be a change in circumstances before a decision on the building plans is made by the Building Authority.

- 2 -



( Ms. Jessica CHU )  
for District Planning Officer/  
Sha Tin, Tai Po & North,  
Planning Department

C.C.

AP  
DLO/TP, LandsD  
SED  
C for T  
CHE/NTE, HyD

(Attn.: Mr. C. K. FUNG)  
(Attn.: Ms. M. L. WONG)  
(Attn.: Ms. CHAN Wing-chi)  
(Attn.: Ms. Cynthia KWOK)  
(Attn.: Mr. Y.W. WONG)

(Fax: 2793 2983)  
(Fax: 2650 9896)  
(Fax: 2119 9107 )  
(Fax: 2381 3799)  
Fax No. 2714 5228

Internal

Site Record (SK/93)

JC/TW/SC/sc  
*JS*

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## **Appendix A**

# **Landscape Design and Tree Preservation Proposal**

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(Consolidated Report based on clarifications submitted on 17 May 2021 and Further Information submitted on 16 September 2021, 24 September 2021 & 29 December 2021)

*(No further comments from landscape planning perspective from Urban Design & Landscape Section (Landscape Unit), Planning Department received in February 2022)*



**Section 16 Planning Application for  
Proposed Access Road in “Green Belt” Zone for  
Permitted Uses in “Government, Institution or Community” Zone  
at Various Lots and Adjoining Government Land in D.D. 209,  
Sai Keng, Shap Sz Heung, the New Territories**

**Landscape Design and Tree Preservation Proposal**

**September 2022**

Version: 5

Date: September 2022

**Disclaimer**

This report is prepared for Light Time Investments Limited (the Applicant) and is given for its sole benefit in relation to and pursuant to the Section 16 Planning Application for Proposed Access Road with Filling and Excavation of Land in “Green Belt” Zone for Permitted Uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, New Territories and may not be disclosed to, quoted to or relied upon by any person other than the Applicant without our prior written consent. No person (other than the Applicant) into whose possession a copy of this report comes may rely on this report without our express written consent and the Applicant may not rely on it for any purpose other than as described above.

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- 5 PROPOSED ACTIONS ON THE EXISTING TREES
- 6 COMPENSATORY PLANTING PROPOSAL
- 7 INDICATIVE LANDSCAPE PLAN

## **List of Annexes**

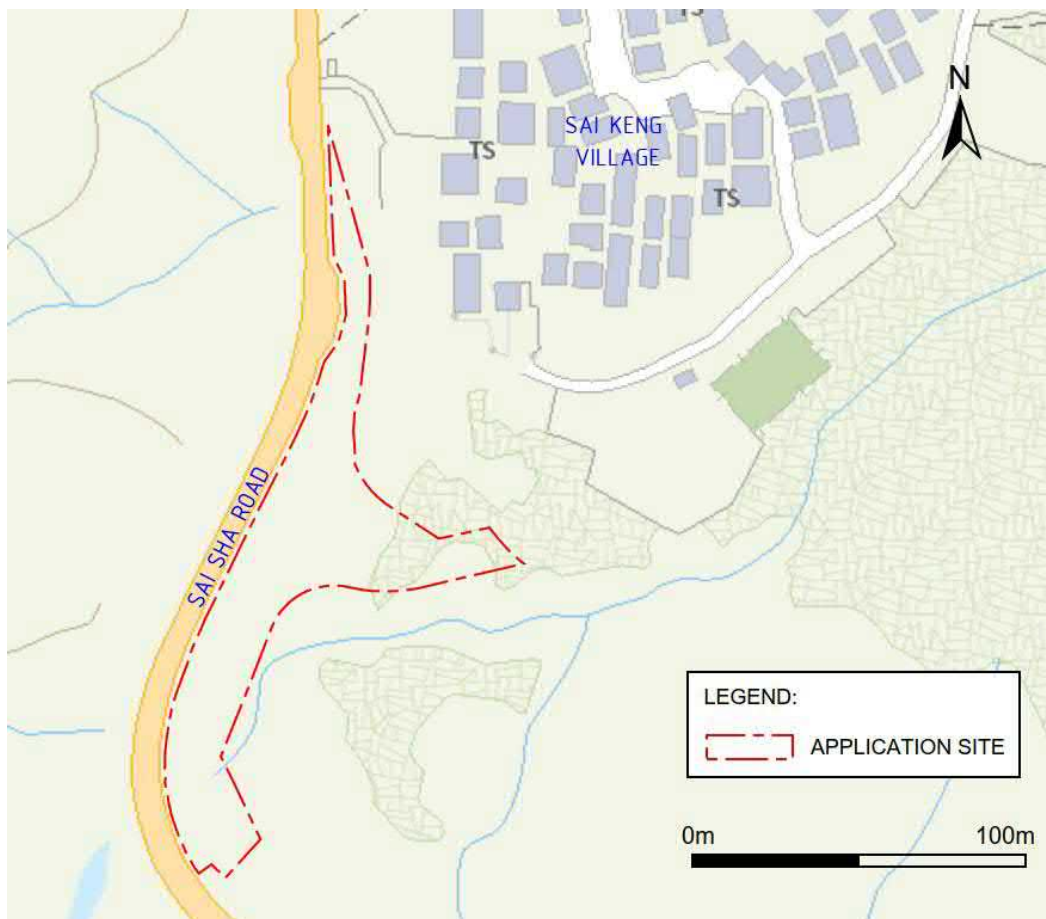
- A. INDICATIVE LAYOUT PLAN
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- F. INDICATIVE LANDSCAPE PLAN

## 1 INTRODUCTION

- 1.1 This planning application is submitted to the Town Planning Board (the Board) under Section 16 (S16) of the Town Planning Ordinance (the Ordinance) to seek permission for the provision of access road in "Green Belt" ("GB") zone (i.e. hereafter referred to as the Proposed Access Road) for permitted uses in "Government, Institution or Community" ("G/IC") zone at various lots and adjoining Government land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories (i.e. hereafter referred to as the Application Site).
- 1.2 The Application Site falls within an area zoned as "GB" on the Approved Shap Sz Heung Outline Zoning Plan No. S/NE-SSH/11 (the OZP), which is directly abutting to a piece of undeveloped land zoned "G/IC" at Sai Keng (i.e. hereafter referred to as the subject "G/IC" zone). Despite that the subject "G/IC" zone is situated closely to Sai Sha Road to its west, the "G/IC" zone is being sandwiched from the Sai Sha Road by the "GB" zone and there is no standard and direct access connecting the "G/IC" zone to Sai Sha Road at present. The "G/IC" zone is currently only accessible via two local tracks through the nearby villages which are sub-standard, with village houses constructed closely along the tracks that constrain any possible widening for standard provision.
- 1.3 To facilitate the permitted use in the subject "G/IC" zone, provision of a standard Proposed Access Road to the subject "G/IC" zone is required. Otherwise, without any proper access, the subject "G/IC" zone will remain sterilized without any development, which could not materialize the planning intention of the subject "G/IC" zone and result in a waste of valuable land resources that is against the government's land supply policy.
- 1.4 As the subject "G/IC" zone is segregated from Sai Sha Road (the only proper public road in the area) by a "GB" zone, it is inevitable that the Proposed Access Road will have to pass through the "GB" zone before connecting to Sai Sha Road.
- 1.5 A General Building Plan (GBP) for permitted 'School' use was submitted to the Buildings Department on September 2019. According to the Notes of the OZP, while 'School' use is always permitted in the subject "G/IC" zone, the Proposed Access Road within the "GB" portion that supports 'School' use is a Column 2 use requiring planning permission from the Board. Therefore, the subject matter of this application shall be the Proposed Access Road that falls in the "GB" zone only, whereas the permitted use (including the access road) in the "G/IC" zone shall not form part of the planning application. Hence, the Application Site refers to the "GB" portion that will be affected by the Proposed Access Road.
- 1.6 After taking into consideration the distance away from nearby villages and the avoidance of encroaching into any third party lots, the proposed alignment has minimised the encroachment into the "GB" zone as far as practicable.
- 1.7 As such, this Landscape Design and Tree Preservation Proposal is formulated to support the Section 16 Planning Application for the proposed access road, and it is prepared in accordance with Appendix A of Planning Department's Practice Note for Professional Persons No. 1/2019 or any latest relevant practice notes and/or technical circulars from the government.

## 2 GENERAL DESCRIPTION OF EXISTING APPLICATION SITE CONDITIONS

**2.1 General** – The proposed access road and woodland planting area (hereinafter referred to as the Application Site) is situated in the south of the village environ of Sai Keng Village. The Application Site falls within the "GB" zone adjacent to Sai Sha Road and is largely covered by trees and other vegetation. It is made up of a series of natural and engineered slopes to the west and shrubby grassland on flatter grounds to the east.



Map source: Lands Department (2020)

## 3 EXISTING AND PROPOSED LEVELS/ PROPOSED WORKS *[refer to Annexes A & B for Indicative Master Layout Plan, Preliminary Site Formation Plan and Sections]*

**3.1 Proposed Access Road** – The levels of the existing sloped terrain vary between approximately +38 mPD to +16 mPD from west to east. Site formation, foundation and construction works for the access road and associated retaining structures (i.e. cut slope, fill slope and retaining walls) will be required along the road junction and road alignment. The completed access road will begin at an estimated level of +34 mPD at its abutment in the west, and continue eastward, in a form of an elevated deck supported by piers, and reach the eastern boundary of the Application Site at a gradient of 8% - 10%.

## 4 EXISTING TREES IDENTIFICATION AND ASSESSMENT [Refer to Annexes C – E for Tree Survey Plan, Tree Assessment Schedule and Photographs of Existing Trees]

### 4.1 Identification and Assessment

**4.1.1 Tree survey within the Application Site:** Tree surveys were conducted in September 2020 and March 2021. All existing trees within the Application Site were surveyed, and as defined in DEVB TC(W) No. 4/2020 and LandsD LAO PN 2/2020, "a tree is a plant with trunk diameter measures 95 mm or more at a height of 1.3 m above ground level". The surveyed trees were then divided into the following five categories:

- Category 1 – rare/protected species protected by local ordinances (i.e. Cap. 96 or Cap. 586) (e.g. *Aquilaria sinensis*, *Ailanthus fordii*)
- Category 2 – secondary woodland species (e.g. *Cratogeomys cochinchinense*, *Canthium dicoccum*)
- Category 3 – primary to secondary woodland species (e.g. *Schefflera heptaphylla*)
- Category 4 – native pioneer species (e.g. *Mallotus paniculatus*, *Macaranga tanarius* var. *tomentosa*)
- Category 5 – exotic pioneer species, planted species or fruit trees (e.g. *Acacia confusa*)

Trees under Category 1 (2 nos.) were assessed individually, while those under Categories 2 to 5 (approx. 299 nos.) were surveyed in tree groups. These trees were assigned into four smaller tree groups (i.e. TG1, TG2, TG3 and TG4) based on the following existing site characteristics and/or general vegetation composition:

- TG1** – Covers the trees in areas adjacent to Sai Sha Road and the slope crest where plantation species are more prominent.
- TG2** – Covers the trees in areas on the steepest area of the slope and away from nearby anthropogenic disturbance (e.g. traffic and members of public), thus vegetation structure and composition in these areas exhibit higher complexity and nativeness, though tree growth, health condition and form of trees in these areas may be adversely influenced by the steep gradient.
- TG3** – Covers the trees on the flatter grounds at the bottom of the slope next to the village environ of Sai Keng. Some of these areas have been fenced off and are actively maintained (e.g. clearance of groundcover herbs).
- TG4** – Covers the trees on the existing engineered slope Feature No. 8NW-C/FR48. This area is generally more open with plantation and pioneer species being the most prominent species present.

### 4.2 Condition of Existing Trees within the Application Site

**4.2.1 Individual tree survey:** A total of 2 nos. of existing trees under Category 1 were identified, including one individual of *Aquilaria sinensis* and one individual of *Ailanthus fordii*. *Aquilaria sinensis* is protected under the Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586) while *Ailanthus fordii* is protected under the Forests and Countryside Ordinance (Cap. 96) (refer to **Annex D** for detailed protection statuses), thus are protected in Hong Kong.

Table 4.1 Summary of Category 1 Trees identified within the Application Site<sup>+</sup>

Tree ID	Species Name	DBH (m)	Height (m)	Spread (m)	Form*	Health*	Other remarks
T0005	<i>Ailanthus fordii</i>	0.16	10	4.5	P	F	Low live crown ratio, co-dominant trunk
T0010	<i>Aquilaria sinensis</i>	0.15	6	1.5	P	P	Heavy leaning trunk, asymmetrical and sparse crown, moderately vined

Notes:

\* "F" = Fair, "P" = Poor and "G" = Good

+ Other "Flora of conservation importance", as reported in the EcolA, with a DBH of less than 95 mm were not included in this tree assessment.

**4.2.2 Tree group survey:** Around 299 nos. of existing trees under Categories 2 to 5 comprising 47 species in four tree groups, were identified.

**TG1** – TG1 is located along Sai Sha Road and at the slope crest. Approximately 75 nos. of existing trees (consisting of 24 species) were assessed in TG1 where the tree composition is dominated by a mix of native and exotic species typically found in roadside plantation or in relatively younger or more disturbed wooded habitats. Most of these trees are locally very common and were found to be of poor to fair condition.

**TG2** – TG2 is located downslope of Sai Sha Road where the gradient is the steepest in comparison to other parts of the Application Site. Approximately 102 nos. of existing trees (consisting of 28 species) were assessed in TG2. Trees found in this tree group comprise predominantly native shrub and tree species standing at a height between 2.5 - 11 m. Since the trees of TG2 grew in a steep woodland with continuous canopy, most of them developed poor to fair tree form with slight leaning and asymmetrical tree crown but generally of fair health. A majority of the species recorded have a common or very common distribution in Hong Kong.

**TG3** – TG3 is located on relatively flatter grounds toward the east of the Application Site. Approximately 41 nos. of existing trees (consisting of 20 species) were assessed in TG3. The tree group comprises mostly native tree species that are commonly or very commonly found in similar habitats in Hong Kong. Trees identified within this tree group were measured at a height varying between 3.5 - 9 m and were recorded to be in poor to fair condition.

**TG4** – TG4 is located on the existing engineered slope Feature No. 8NW-C/FR48 (refer to Tree Survey Plan in **Annex C** for slope location) in the southern part of the Application Site. Approximately 81 nos. of existing trees (consisting of 23 species) were assessed in this tree group. Trees assessed in this tree group share a similar characteristic to that of TG1, but with a higher composition of the plantation species *Acacia confusa* (amounting to 36% of the overall number of trees in TG4). Trees identified in this tree group were noted to be of poor to fair form and health condition.

**Table 4.2 Summary of three most abundant tree species in each tree group**

TG1	TG2	TG3	TG4
<i>Acacia confusa</i> (13 nos, 17.3%)	<i>Aporosa dioica</i> (18 nos, 17.6%)	<i>Cratoxylum cochinchinense</i> (9 nos, 22%)	<i>Acacia confusa</i> (29 nos, 35.8%)
<i>Alangium chinense</i> (10 nos, 13.3%)	<i>Schefflera heptaphylla</i> (11 nos, 10.8%)	<i>Aporosa dioica</i> (4 nos, 9.8%)	<i>Celtis sinensis</i> (7 nos, 8.6%)
<i>Celtis sinensis</i> (7 nos, 9.3%)	<i>Alangium chinense</i> (8 nos, 7.8%)	<i>Rhus succedanea</i> <i>Syzygium levinei</i> (3 nos, 7.3%)	<i>Schefflera heptaphylla</i> (6 nos, 7.4%)

**Table 4.3 Summary of tree species in tree groups within the Application Site**

Species name	Species category	Percentage %	Quantity
<i>Acacia confusa</i>	5	14.0%	42
<i>Aporosa dioica</i>	3	9.0%	27
<i>Schefflera heptaphylla</i>	3	7.7%	23
<i>Alangium chinense</i>	4	6.7%	20
<i>Celtis sinensis</i>	2	5.7%	17
<i>Cratoxylum cochinchinense</i>	2	5.4%	16
<i>Sterculia lanceolata</i>	3	4.3%	13
<i>Syzygium levinei</i>	3	3.7%	11
<i>Viburnum odoratissimum</i>	2	3.3%	10
<i>Acronychia pedunculata</i>	4	3.0%	9
<i>Garcinia oblongifolia</i>	3	3.0%	9
<i>Macaranga tanarius</i> var. <i>tomentosa</i>	4	2.7%	8
<i>Rhus succedanea</i>	4	2.0%	6
<i>Syzygium hancei</i>	3	2.0%	6
<i>Canthium dicoccum</i>	2	2.0%	6



Species name	Species category	Percentage %	Quantity
<i>Cinnamomum parthenoxylon</i>	3	1.7%	5
<i>Mallotus paniculatus</i>	4	1.7%	5
<i>Symplocos glauca</i>	3	1.7%	5
<i>Machilus pauhoi</i>	3	1.7%	5
<i>Endospermum chinense</i>	3	1.3%	4
<i>Ficus microcarpa</i>	3	1.3%	4
<i>Microcos nervosa</i>	4	1.3%	4
<i>Scolopia saeva</i>	3	1.3%	4
<i>Archidendron lucidum</i>	3	1.0%	3
<i>Bauhinia purpurea</i>	5	1.0%	3
<i>Bischofia javanica</i>	3	1.0%	3
<i>Delonix regia</i>	5	1.0%	3
<i>Antidesma bunius</i>	2	0.7%	2
<i>Antirhea chinensis</i>	2	0.7%	2
<i>Bridelia tomentosa</i>	3	0.7%	2
<i>Dimocarpus longan</i>	5	0.7%	2
<i>Diospyros morrisiana</i>	3	0.7%	2
<i>Ficus variegata</i>	3	0.7%	2
<i>Litsea cubeba</i>	4	0.7%	2
<i>Melicope pteleifolia</i>	4	0.7%	2
<i>Adinandra millettii</i>	2	0.3%	1
<i>Aphananthe cuspidata</i>	3	0.3%	1
<i>Elaeocarpus sylvestris</i>	3	0.3%	1
<i>Ficus fistulosa</i>	2	0.3%	1
<i>Ficus hispida</i>	4	0.3%	1
<i>Ilex pubescens</i>	4	0.3%	1
<i>Machilus breviflora</i>	3	0.3%	1
<i>Photinia benthamiana</i>	3	0.3%	1
<i>Sapium discolor</i>	3	0.3%	1
<i>Sinosideroxylon wightianum</i>	2	0.3%	1
<i>Symplocos cochinchinensis</i> var. <i>laurina</i>	2	0.3%	1
<i>Zanthoxylum avicennae</i>	2	0.3%	1
<b>SUM</b>		<b>100 %</b>	<b>299</b>

Table 4.4 Summary of tree composition within the Application Site by species category

Species category	Count	Percentage (%)
Category 1	2	0.7%
Category 2	58	19.3%
Category 3	133	44.2%
Category 4	58	19.3%
Category 5	50	16.6%
<b>SUM</b>	<b>301</b>	<b>100%</b>

## 5 PROPOSED ACTIONS ON THE EXISTING TREES

### 5.1 Existing trees to be affected by proposed works within the Application Site

- 5.1.1 **Affected Area** – Given that there is a genuine traffic need for the proposed access road, existing trees within woodland habitat under and adjacent to the proposed access road and associated works area will be inevitably affected by the site formation and construction works for the proposed access road. Similarly, trees located on the existing engineered slope Feature No. 8NW-C/FR48 will also be affected as reprofiling and/or levelling works will be necessary to upgrade the slope to meet modern day standards. A Workspace Demarcation Plan is presented in **Annex G** to illustrate the spatial conflict between existing trees and proposed construction workspace required based on the preliminary site formation plan.
- 5.1.2 **Tree Retention** – Based on the current engineering layout and footprint of the proposed access road and associated works area, in-situ tree retention will be impractical.
- 5.1.3 **Tree Transplantation** – Affected existing trees will be transplanted if they are categorised as Category 1 trees, or if they are Categories 2 to 5 trees of medium or high amenity value and of medium or high suitability for transplantation (**Table 5.1** refers).

*Table 5.1 Approach to determine transplant vs. fell for affected categories 2-5 trees*

Amenity value \ Suitability for Transplantation	High	Medium	Low
	High	Medium	Low
High	T	T	F
Medium	T	T	F
Low	F	F	F

Note: "T" = to be transplanted and "F" – to be felled

A total of 2 nos. of existing Category 1 trees (i.e. *Aquilaria sinensis* and *Ailanthus fordii*) were identified in this tree assessment. These trees are in poor form, of poor to fair health condition and of low suitability for transplantation. Despite their low suitability for transplanting, transplantation of these individuals will be conducted in order to maximise tree preservation effort, extra caution and careful handling of the trees will be exercised during the transplantation process to maximise the chance of successful transplantation.

- 5.1.4 **Tree Felling** – Tree felling is only considered where a tree is not protected by local ordinances, and where tree retention or transplantation are considered impracticable. Affected existing trees will be felled if they are found to be unfit for transplanting or of poor health conditions. Due to the condition of the site (i.e. steep slope), most of these trees were recorded to be of poor form and health and of low amenity value, and will unlikely survive transplantation. As a result, 299 nos. of existing trees within the Application Site are proposed to be felled.

*Table 5.2 Summary of existing trees to be retained, transplanted and felled*

Action \ Tree category	Nos. to be retained	Nos. to be transplanted	Nos. to be felled	Quantity
Category 1	0	2	0	2
Categories 2-5	0	0	299	299
<b>SUM</b>	0	2	299	<b>301</b>

## 6 COMPENSATORY PLANTING PROPOSAL

- 6.1 As recommended in the EcolA, on-site compensatory planting of native trees will be carried out within the Application Site to compensate for the loss of woodland trees, after completion of the construction works.
- 6.2 A total of 299 nos. existing trees are proposed to be felled whilst 2 nos. existing trees are proposed to be transplanted. A total of no less than 299 nos. new trees are proposed to be planted to compensate for the loss of 299 nos. felled trees (i.e. those of each DBH = or >95 mm\*) in terms of 1:1 in quantity. Compensatory planting will comprise light-standard sized planting at 3 m staggered spacing.
- 6.3 Some areas within the Application Site will be unsuitable for tree planting, such as areas that will be permanently occupied by the road structure, pier caps, as well as areas that will be shaded or of steep gradient (i.e. >35°); the overall area available for tree planting will be predominantly located in the uncovered area, outside of the footprint of the viaduct.
- 6.4 In order to further maximise the overall area for tree planting and enhance the overall ecological value of the compensatory planting, various options have been explored, including planting of species that are of higher value and provide ecological services (i.e. food and nectar source for insects and wildlife), as well as the inclusion of nearby existing engineered slope (Feature No. 8NW-C/FR48) for planting as landscape enhancement to maximise greening opportunity.
- 6.5 A "Transplantation Zone" (TZ) of approximately 0.03 ha in size will be set up in an area within the Application Site to accommodate (a) the 2 nos. proposed transplant tree, (b) 10 nos. under-sized *Aquilaria sinensis* and 67 nos. *Pavetta hongkongensis*, which were not assessed under the current assessment due to their small DBH size, but are recommended to be transplanted in the EcolA for preservation. The indicative extent of the TZ is marked on the Indicative Landscape Plan (**Annex F** refers).
- 6.6 A list of recommended compensatory planting species is proposed and provided in the EcolA. In summary, the selections of tree planting species and strategies adopted for the high-quality compensatory woodland based on the following criteria:
- 6.6.1 **Ecological Value** – GEO PN. 1/2011 and GEO Report No. 259 - *Study on the Application of Various Vegetation Species for Landscaping of Man-made Slopes in Hong Kong* (GEO, 2011) both provide the ecological value of plant species in terms of four provision functions: "flower nectar for insects", "larval foodplants for insects", "fruits for wildlife", and "seeds for wildlife". The compensatory planting categories will not only include species that provide the above-mentioned functions but will also aim to achieve a balance between the four functions.
- 6.6.2 **Existing Species** – Tree species present in the existing woodland within the Application Site and in its surrounding within the "GB" Zone will be used to form the basis of the compensatory planting categories in order to retain the existing composition as far as possible, in particular the species which are more dominant. To further enhance the overall ecological value of the compensatory planting, higher-value species will be added to the species categories, while lower-value species will be reduced. Adding a tree species that is known to have high ecological value but is not found within the existing or nearby woodland should be cautiously considered.
- 6.6.3 **Species Value** – Tree species in the existing woodland are broadly divided into five categories (i.e. Category 1, 2, 3 etc.), with Category 1 being the most valuable and Category 5 being the least. The planting mix will incorporate a higher composition of species from Category 1 to Category 3. Category 4 will also be included but planted at lower density to increase the structural and species diversity of the compensatory planting. Category 5 species (i.e. exotic, plantation species) will not be used.

**6.6.4 Native Species** – The existing woodland comprises some exotic or naturalised tree species, amounting to approximately 16% of the total number of trees identified within the Application Site. The compensatory planting will adopt 100% native tree species.

**6.6.5 Seedling Availability** – The selection of species also takes into account the commercial availability of seeds and seedlings of the species, particularly for Category 1 species, as their seedling supply may be limited due to their rarity and protection status. For instance, trading of *Aquilaria sinensis* is prohibited by Cap. 586, thus its seedlings are not commercially available. Planting of Category 1 species will incorporate seedlings of *Ailanthus fordii* which may be attained commercially.

**6.7** Based on the above, the following tree species are chosen and proposed for compensatory planting within the Application Site.

*Table 6.1 Proposed compensatory tree planting schedule*

Species Name	Chinese Name	Species Category	Planting Size*	Planting Spacing	Mix Ratio	n/m <sup>2</sup>	Approx. Quantity
<i>Ailanthus fordii</i>	常綠臭椿	1	Light-Standard	3 m staggered	5%	0.13	15
<i>Canthium dicoccum</i>	魚骨木	2	Light-Standard	3 m staggered	5%	0.13	15
<i>Celtis sinensis</i>	朴樹	2	Light-Standard	3 m staggered	15%	0.13	45
<i>Cratogeomys cochinchinense</i>	黃牛木	2	Light-Standard	3 m staggered	15%	0.13	44
<i>Ficus subpisocarpa</i>	筆管榕	2	Light-Standard	3 m staggered	2%	0.13	6
<i>Bischofia javanica</i>	秋楓	3	Light-Standard	3 m staggered	8%	0.13	24
<i>Bridelia tomentosa</i>	土蜜樹	3	Light-Standard	3 m staggered	8%	0.13	24
<i>Cinnamomum camphora</i>	樟	3	Light-Standard	3 m staggered	8%	0.13	24
<i>Ficus microcarpa</i>	榕樹	3	Light-Standard	3 m staggered	2%	0.13	6
<i>Ficus variegata</i> var. <i>chlorocarpa</i>	青果榕	3	Light-Standard	3 m staggered	2%	0.13	6
<i>Litsea glutinosa</i>	潺槁樹	3	Light-Standard	3 m staggered	8%	0.13	24
<i>Sapium discolor</i>	山烏柏	3	Light-Standard	3 m staggered	8%	0.13	24
<i>Schefflera heptaphylla</i>	鵝掌柴	3	Light-Standard	3 m staggered	8%	0.13	24
<i>Melicope pteleifolia</i>	三椶苦	4	Light-Standard	3 m staggered	3%	0.13	9
<i>Microcos nervosa</i>	破布葉	4	Light-Standard	3 m staggered	3%	0.13	9
<b>Approx. Total Nos. of Compensatory Trees:</b>							<b>299</b>

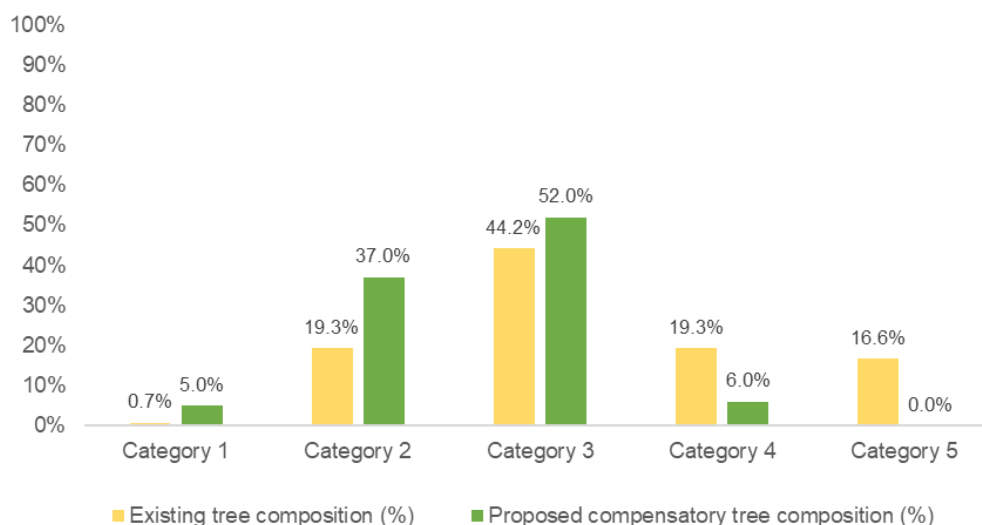
Notes:

\*All planting sizes are according to the latest version of General Specification for Civil Engineering Works, 2020 Edition (CEDD, 2021).

*Table 6.2 Comparison of existing and proposed compensatory tree by species origin*

Origin	Existing trees (%)	Proposed compensatory trees (%)
Native	83.4%	100%
Exotic	16.6%	0%
<b>SUM</b>	<b>100%</b>	<b>100%</b>

*Comparison of existing and proposed compensatory tree composition by species category*



## 7 INDICATIVE LANDSCAPE PLAN *[Refer to Annex F for Indicative Landscape Plan]*

**7.1 Soft Landscape** – In addition to compensatory tree planting, opportunities for maximising floristic and structural diversity, enhancing the overall ecological value and greening of the site will also be adopted through planting of shrubs and groundcovers in the understory of woodland planting area. Planting of shade-tolerant plants underneath the viaduct as well as planting of climbers on boulder walls and in areas unsuitable for tree and shrub planting (i.e. with a gradient >35°) will also be carried out within the Application Site. Selection of plants species for enhancement planting and greening are proposed in the EcolA and follows the same general strategies proposed in **Section 6.6** for compensatory trees.

**7.2 Soil Depth** – Soil depth for planting will follow *GEO PN. 1/2011* (CEDD, 2011):

Vegetation type	Minimum depth of existing soil
Climbers/ Herbs	300 mm
Shrubs	450 mm
Trees	800 mm

**7.3 Drainage and Irrigation** – Planting on the existing natural terrain will be free-draining and self-sustainable. Drainage will be provided, where necessary, at the upgraded engineered slope (Feature No. 8NW-C/FR48) to ensure proper drainage and irrigation for planting.

**7.4 Slopes and Retaining Structures** – The proposed access road will require retaining structures at its abutment and minor slope filling/ cutting works along its connection to the existing Sai Sha Road. Slope reprofiling works and retaining wall will also be required at the engineered slope Feature No. 8NW-C/FR48 as part of its slope improvement works.

**7.5 Management /Maintenance** – Maintenance responsibilities of landscaped areas within the Application Site will be determined and provided further to liaison with relevant authorities.

**7.6 Transplantation of Protected Flora Species** – As mentioned in **Section 6.5**, a Transplantation Zone (TZ) of approximately 0.03 ha in size will be established within the Application Site as a receptor site for the 2 nos. of Category 1 trees proposed to be transplanted, as well as other individuals of protected flora species reported in the EcolA that are undersized (i.e. not meeting DBH of 95 mm). The TZ will be fenced off with controlled access and security measures and will be supplied with irrigation water points. Vegetation transplanted to the TZ will be subject to monthly inspection and quarterly status reports by a qualified person for a period of one year to monitor its proper establishment.

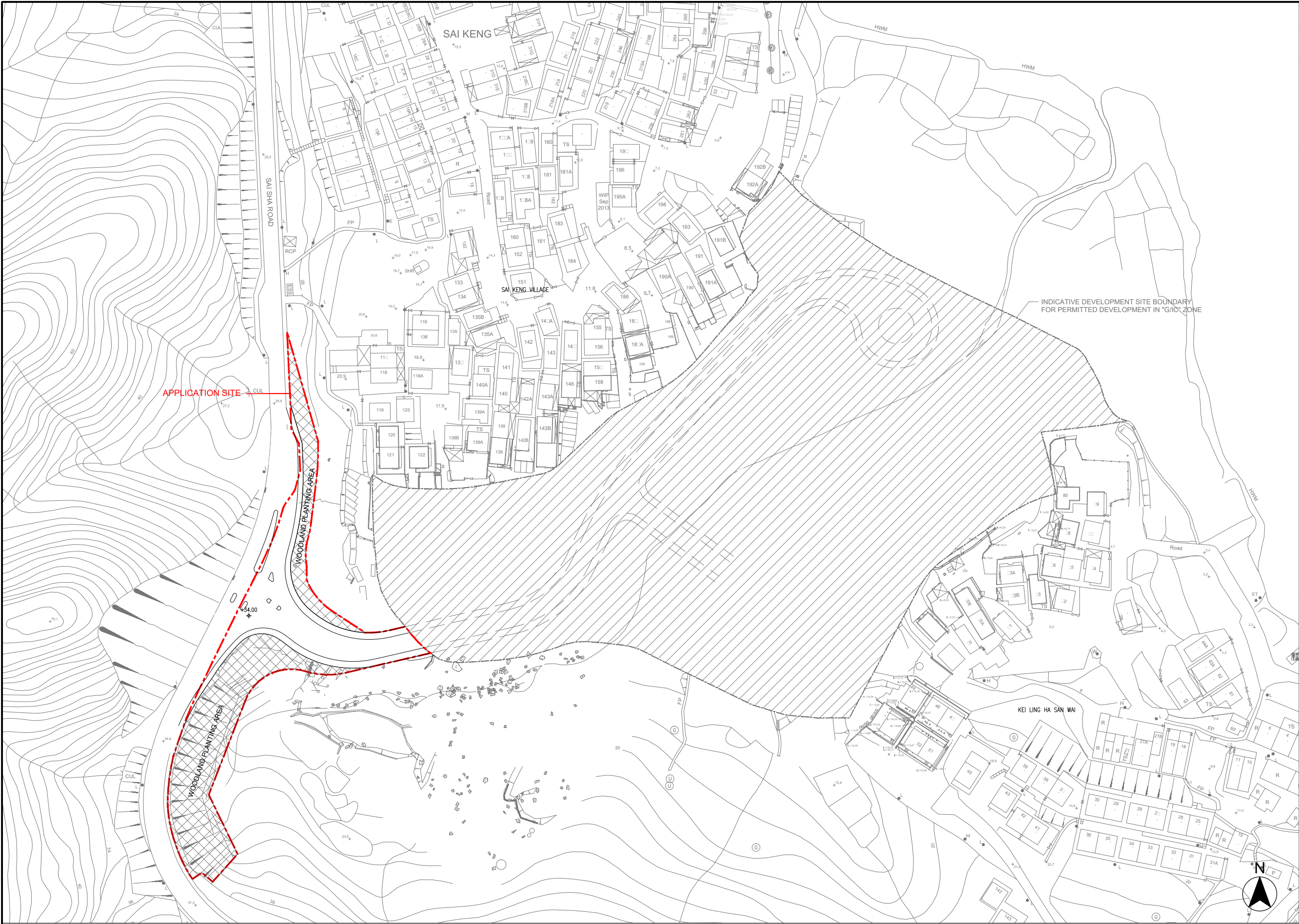
## 8 Conclusion

- 8.1** This planning application is submitted to the Town Planning Board (the Board) under Section 16 (S16) of the Town Planning Ordinance (the Ordinance) to seek permission for the provision of access road in “Green Belt” (“GB”) zone (i.e. hereafter referred to as the Proposed Access Road) for permitted uses in “Government, Institution or Community” (“G/IC”) zone at various lots and adjoining Government land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories (i.e. hereafter referred to as the Application Site).
- 8.2** This Landscape Design and Tree Preservation Proposal is formulated as such to support the Section 16 Planning application for the proposed road, to identify and assess existing trees within the Application Site, to propose actions for tree preservation, transplantation and/ or felling, as well as to provide an indicative landscape plan for woodland compensatory planting in accordance with the recommendations presented in the EcolA.
- 8.3** In summary, a total of 299 nos. existing trees are proposed to be felled whilst 2 nos. existing trees (i.e. *Aquilaria sinensis* and *Ailanthus fordii*) are proposed to be transplanted. A total of no less than 299 nos. new trees (light-standard sized trees at 3 m staggered spacing) are proposed to be planted to compensate for the loss of 299 nos. felled trees.
- 8.4** A “Transplantation Zone” (TZ) of approximately 0.03 ha in size is also proposed to be set up within the Application Site to accommodate the 2 nos. of proposed transplant trees, as well as 10 nos. of under-sized *Aquilaria sinensis* and 67 nos. of the shrub *Pavetta hongkongensis* as recommended in the EcolA.



# **Annex A**

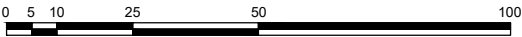
## **INDICATIVE LAYOUT PLAN**



LEGEND

--- APPLICATION SITE BOUNDARY

- Remark:
- The Proposed Access Road in the Application Site is to facilitate the permitted school and/or other permitted uses in the adjoining "G/IC" zone. The permitted school and/or other permitted uses are not the subject matter of this S16 planning application. Any layout and parameters of the development in "G/IC" zone provided are for general reference and information of the Town Planning Board, and do not form part of this S16 planning application for approval. Layout and parameters of the development in "G/IC" zone shall be subject to detailed design during GBP submission.
  - During the construction stage, the woodland planting area will be used as temporary works area for the Proposed Access Road.



B.D. REF. :

F.S.D. REF. :

REVISIONS :

NO.	DESCRIPTION	DATE

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PROJECT :  
PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

DRAWING TITLE :  
INDICATIVE  
MASTER LAYOUT PLAN

DATE : SEP 2022 PAPER SIZE : A3

SCALE : 1:1500 DRAWN : AIL

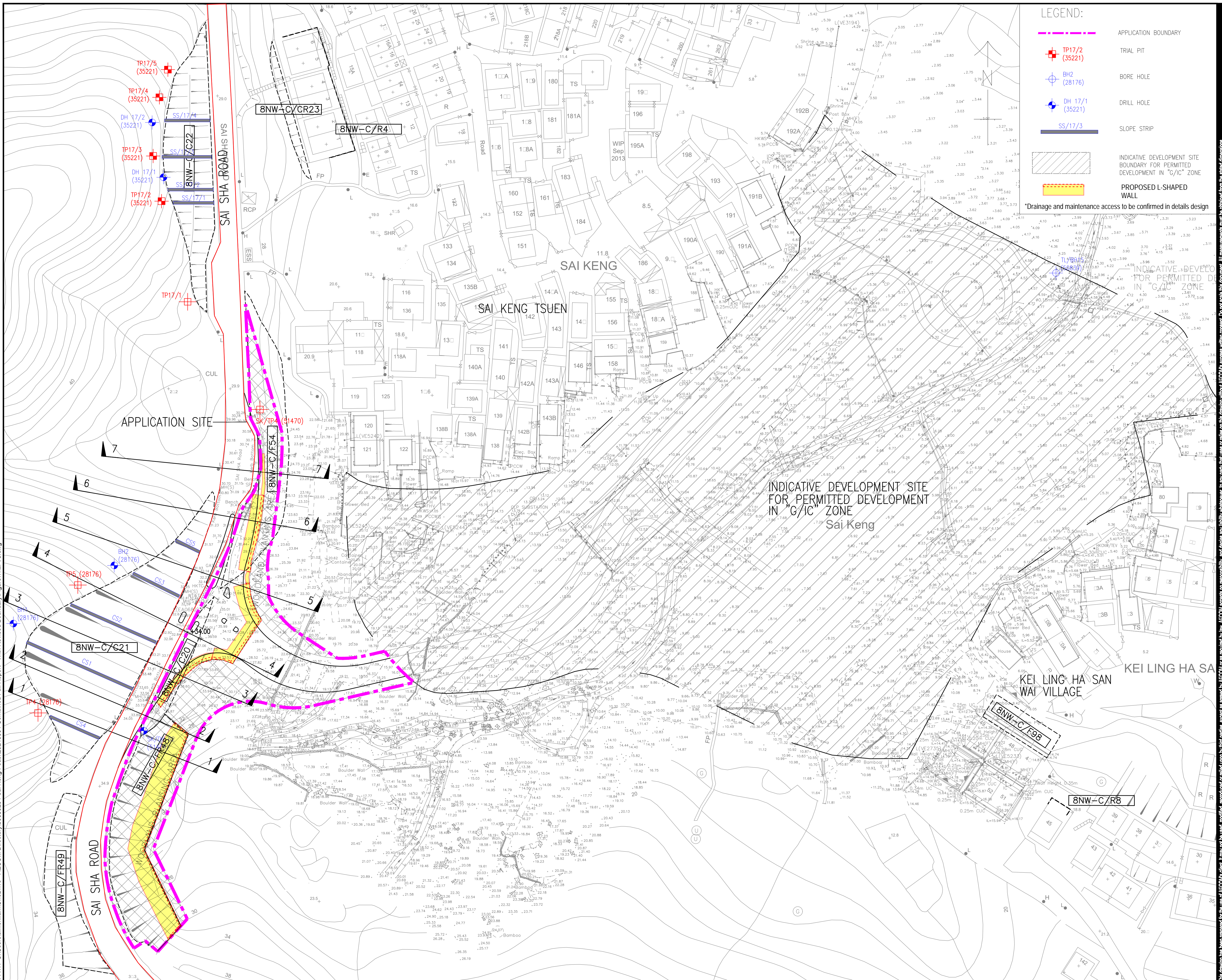
PROJECT NO. : 952

DWG. NO. : S16-A-01

## **Annex B**

# **PRELIMINARY SITE FORMATION PLAN AND SECTIONS**





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**AECOM**

**PROJECT**  
項目

PROPOSED ACCESS ROAD IN  
"GREEN BELT" ZONE FOR PERMITTED  
USES IN "GOVERNMENT, INSTITUTION OF  
COMMUNITY" ZONE  
AT VARIOUS LOTS AND ADJOINING  
GOVERNMENT LAND IN D.D. 209,  
SAI KENG, SHAP SZ HEUNG,  
THE NEW TERRITORIES

## CLIENT

## CONSULTANT

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## SUB-CONSULTANTS

**ISSUE/REVISION**

修訂

[illegible]**STATUS**

解説

## PRELIMINARY

**SCALE**

比例
A1 1 : 600
A3 1 : 1200

**DIMENSION UNIT**  
尺寸單位

## KEY PLAN

## 索引圖

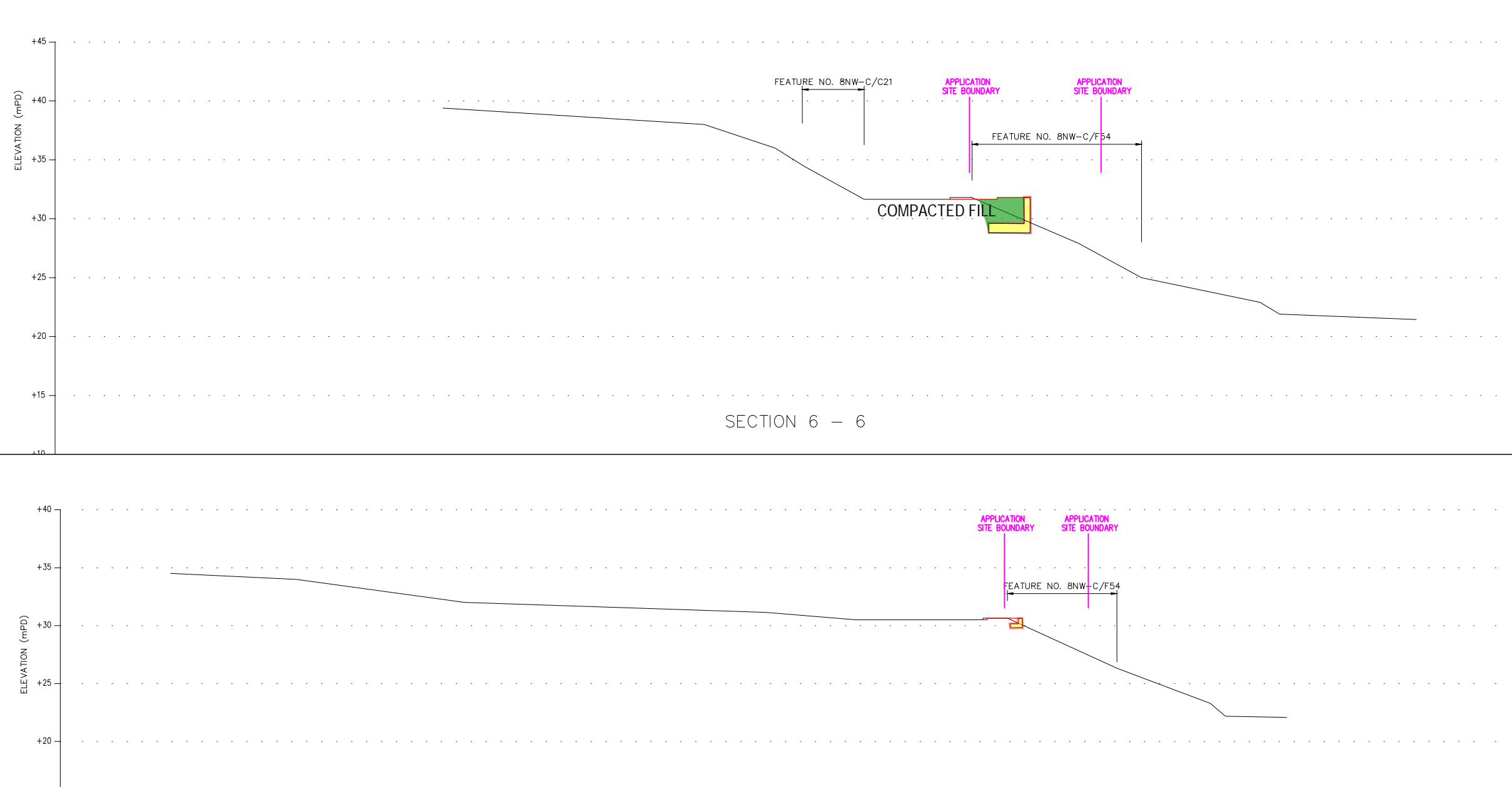
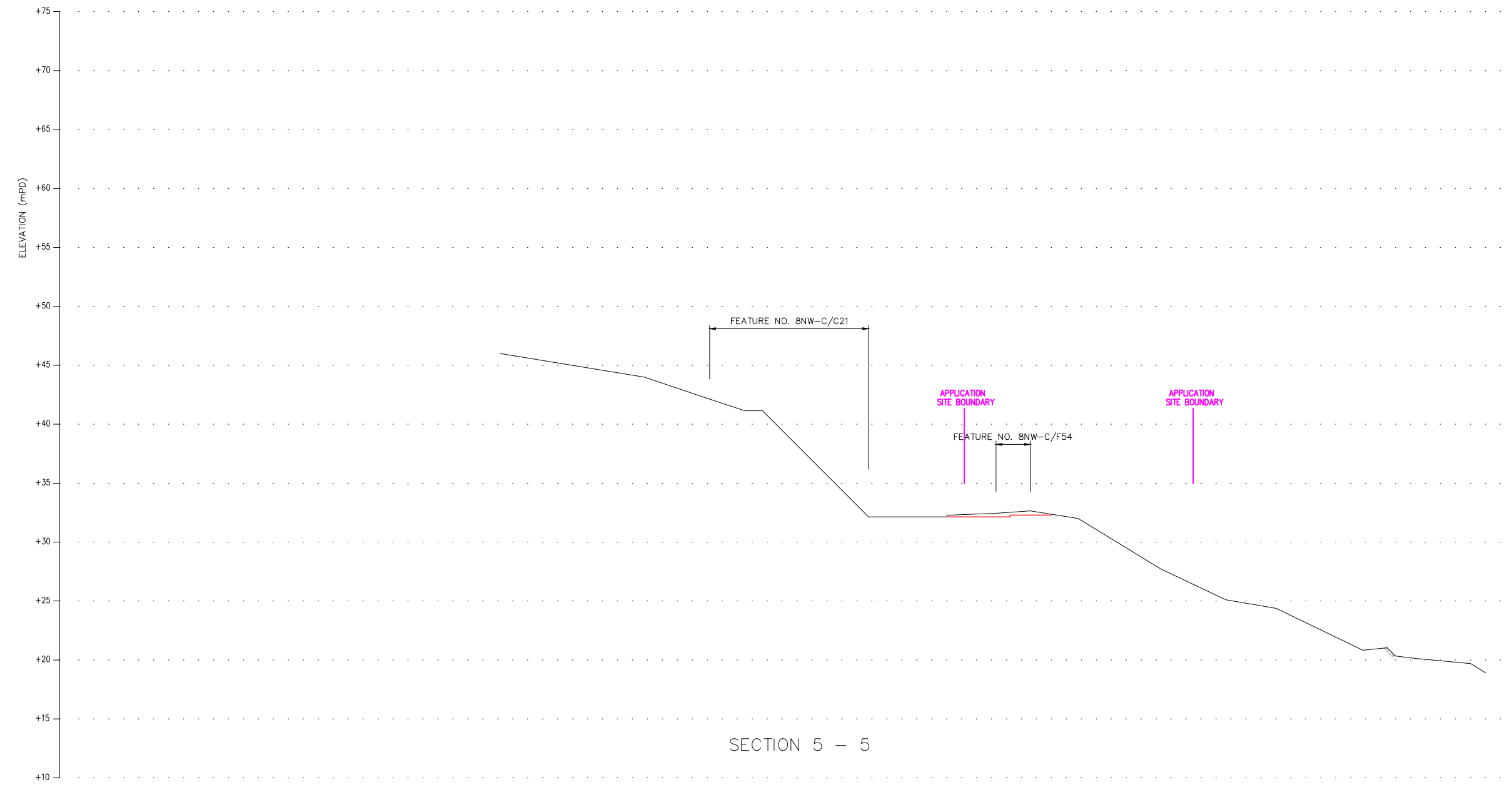
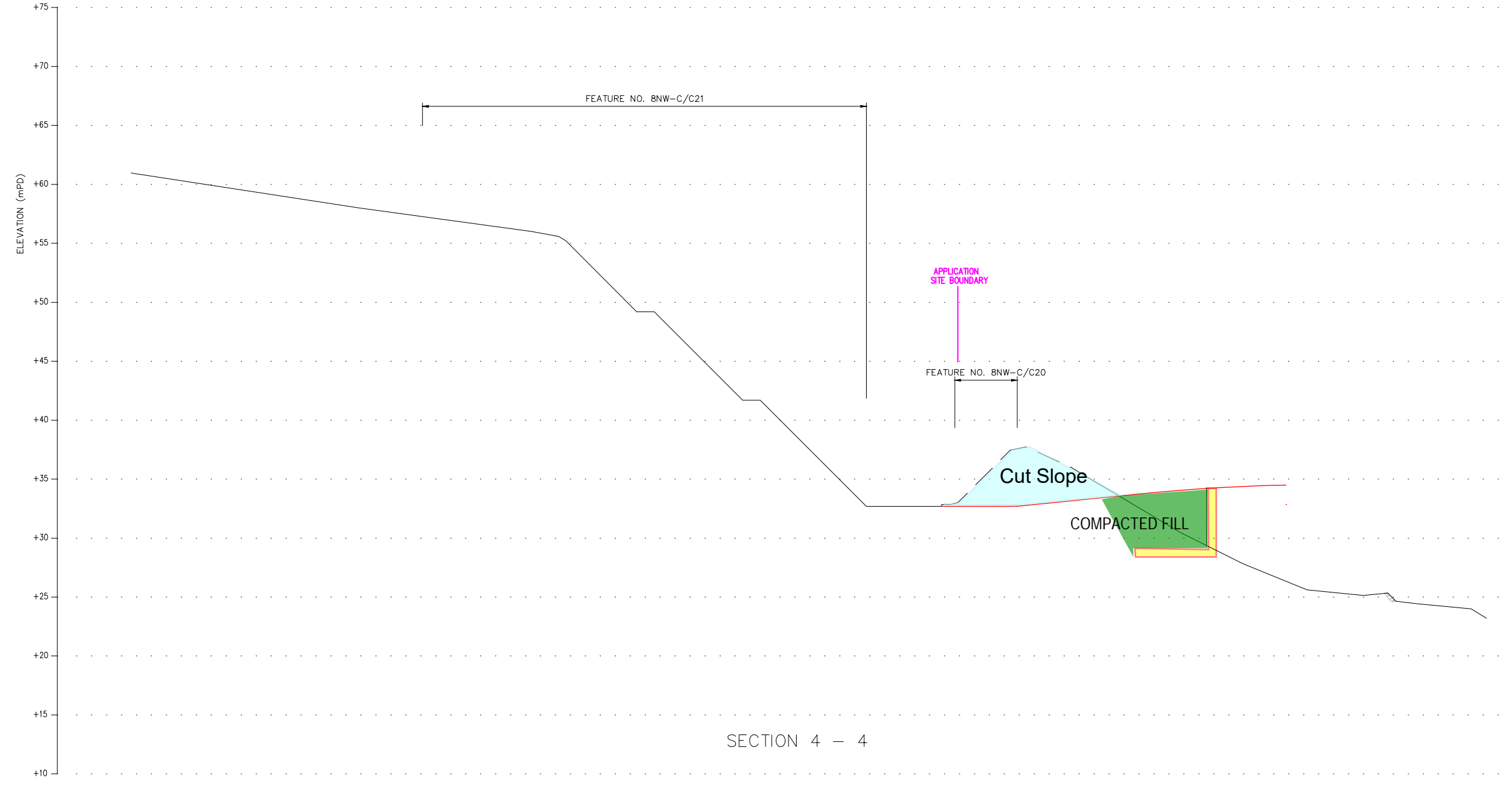
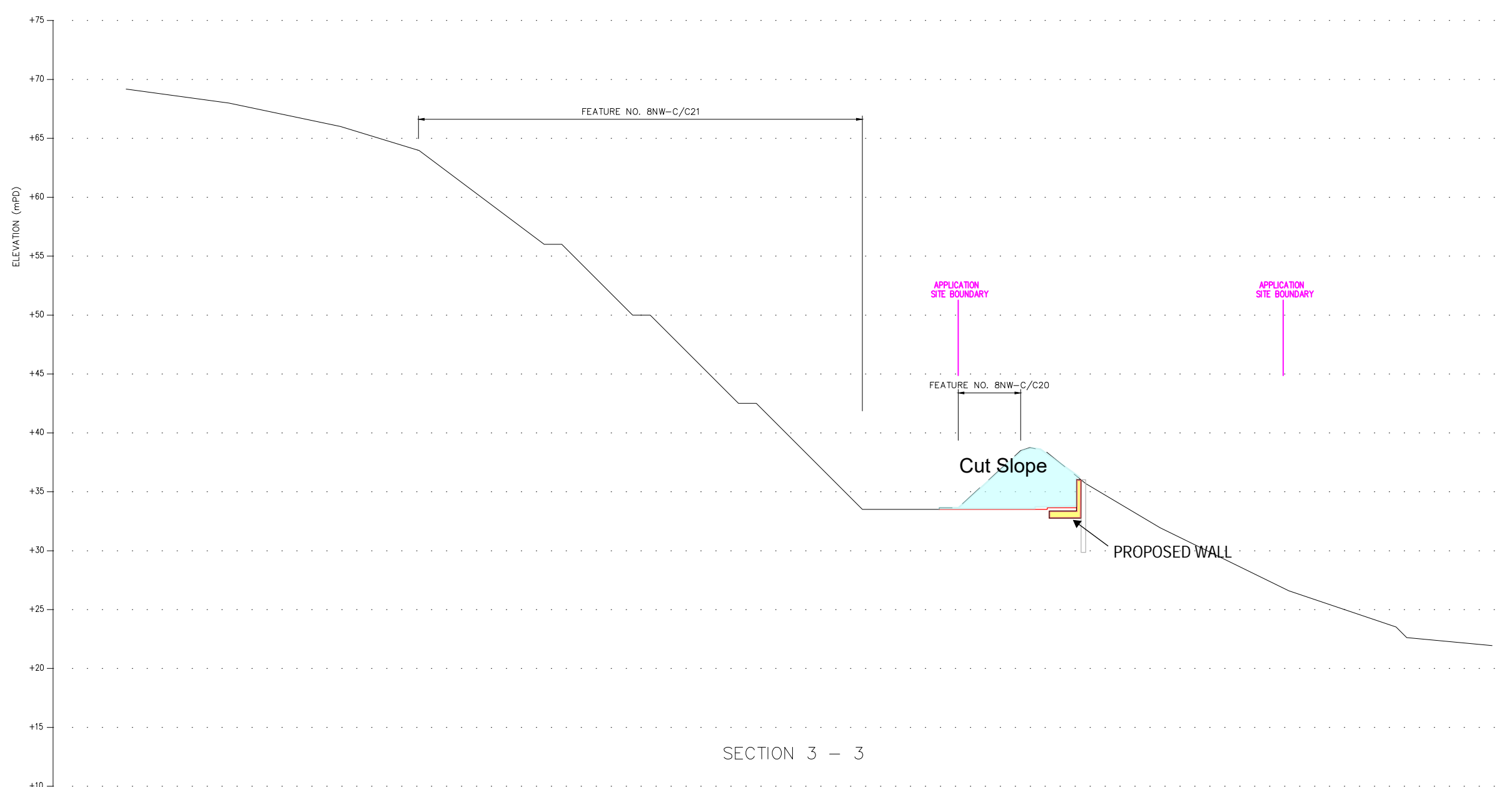
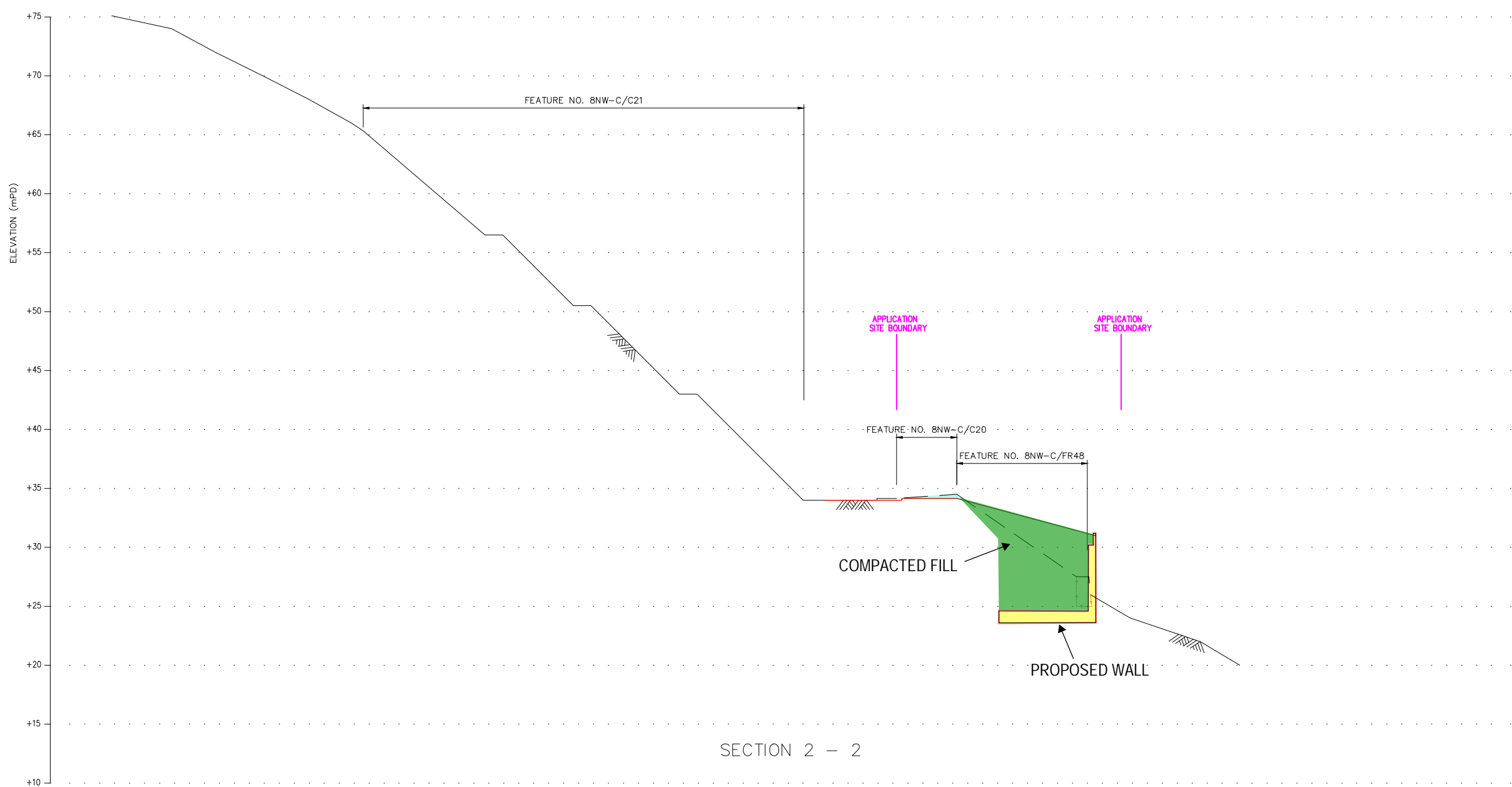
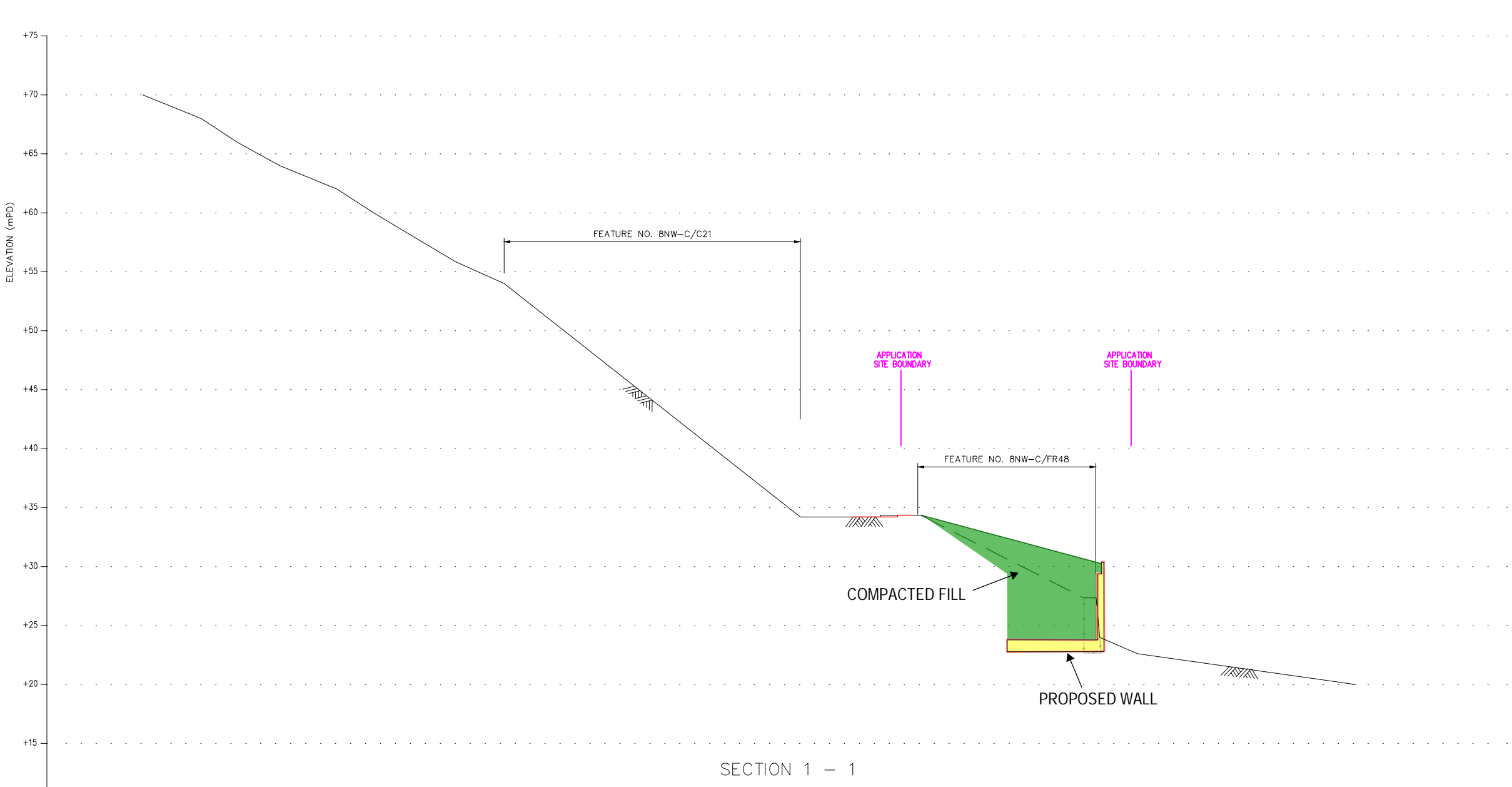
**PROJECT NO.****CONTRACT NO.**

**SHEET TITLE**

PRELIMINARY SITE  
FORMATION PLAN

**SHEET NUMBER**





AECOM

PROJECT

项目

PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

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I/R	DATE	DESCRIPTION	CHK.
修訂	日期	內容描述	審核

STATUS

階段

SCALE

比例

KEY PLAN

索引圖

PROJECT NO.

項目編號

CONTRACT NO.

合約編號

SHEET TITLE

圖紙名稱

PRELIMINARY SECTIONS

SHEET NUMBER

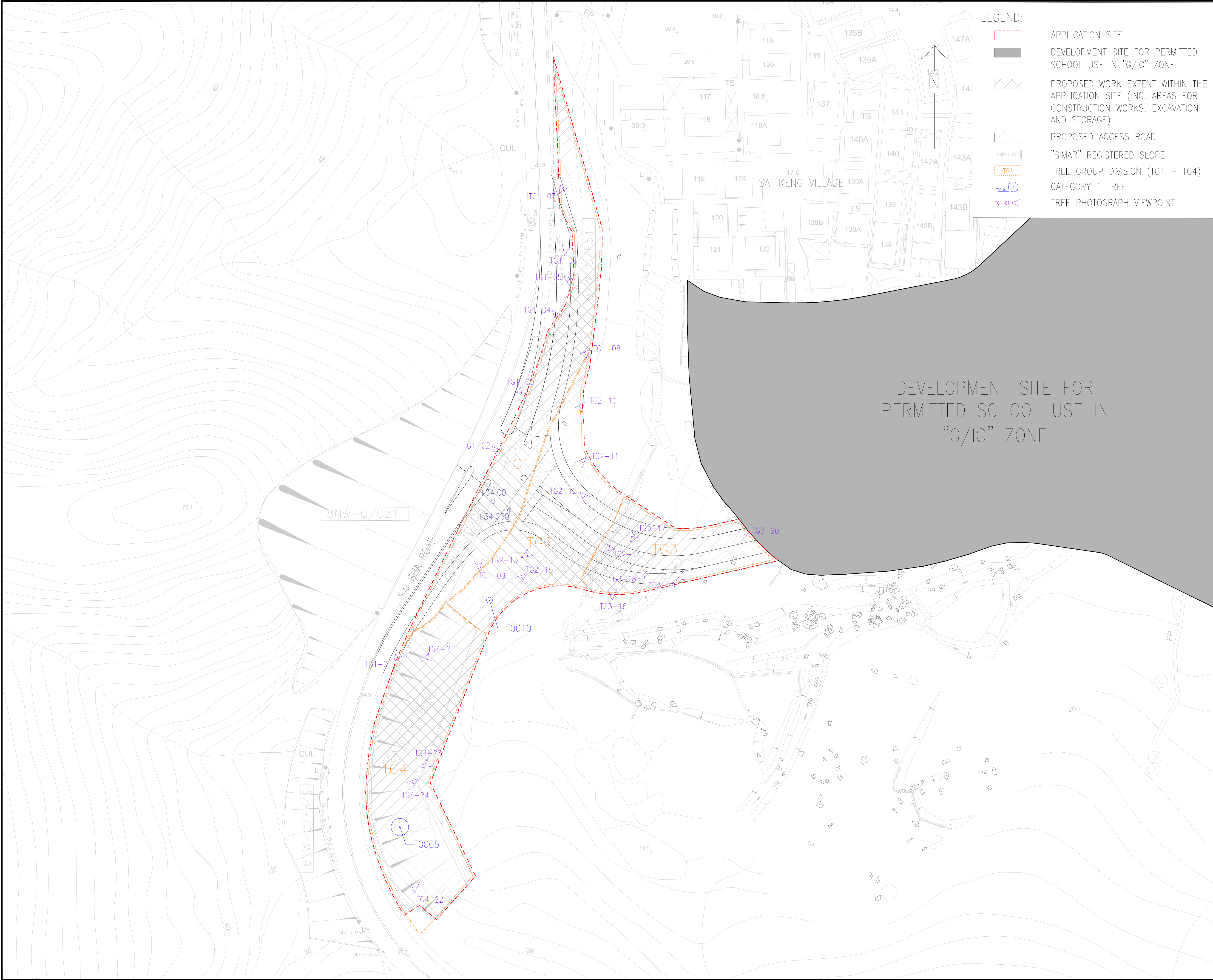
圖紙編號

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# **Annex C**

## **TREE SURVEY PLAN**





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**PROJECT**  
項目  
**PROPOSED ACCESS ROAD IN “GREEN BELT” ZONE FOR PERMITTED USES IN “GOVERNMENT, INSTITUTION OR COMMUNITY” ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES**

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ISSUE/REVISION				
修訂				
R3	06-09-21	TREE SURVEY PLAN	-	
R2	27-08-21	TREE SURVEY PLAN	-	
R1	02-07-21	TREE SURVEY PLAN	-	
-	29-04-21	TREE SURVEY PLAN	-	
I/R	DATE	DESCRIPTION	CHK.	
修訂	日期	內容摘要	校核	

**STATUS**  
階段

SCALE	DIMENSION UNIT
比例	尺寸單位
A1 1 : 450	METRES
A3 1 : 900	

**KEY PLAN**  
索引圖

**PROJECT NO.**  
項目編號  
60639068

**CONTRACT NO.**  
合約編號

**SHEET TITLE**  
圖紙名稱  
TREE SURVEY PLAN

**SHEET NUMBER**  
圖紙編號  
60639068/LMP/TSP



## **Annex D**

# **TREE ASSESSMENT SCHEDULE**

**CATEGORY 1 – INDIVIDUAL TREE ASSESSMENT SCHEDULE**

**CATEGORY 2 – 5 – TREE GROUP ASSESSMENT SCHEDULE**

**Tree Assessment Schedule: Category 1 - Individual Tree Assessment Schedule**

Tree No.	Botanical Name	Chinese Common Name	Multi-trunk (Y/N)	Size			Form (G/F/P) <sup>(1)</sup>	Health (G/F/P) <sup>(1)</sup>	Amenity Value <sup>(2)</sup> (H/M/L)	Conservation Status	Suitability for Transplanting (H/M/L) <sup>(2)</sup>	Proposed Action (R/T/F) <sup>(3)</sup>	Additional Remarks
				DBH (m)	Height (m)	Spread (m)							
T0005	<i>Ailanthus fordii</i>	常綠臭椿	N	0.16	10	4.5	P	F	M	Protected under Forests and Countryside Ordinance (Cap. 96); Rare and Precious Plants of Hong Kong (Status in China): Category 4 (Near Threatened)	L	F	Low live crown ratio, co-dominant trunk
T0010	<i>Aquilaria sinensis</i>	土沉香	N	0.15	6	1.5	P	P	H	Protected under Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586); Rare and Precious Plants of Hong Kong (Status of China): Category 2 & 3 (Near Threatened); Listed in Wild Plants under State Protection: Category II; China Plant Red Data Book: Vulnerable; Rare and Endangered Plants and National Key Protected Plants in Guangdong: Near Threatened; Threatened Species List of China's Higher Plants: Vulnerable; IUCN Red List (ver. 2020.3): Vulnerable	L	F	Heavy leaning trunk, asymmetrical and sparse crown, moderately vined

Notes:

<sup>(1)</sup> Form and health condition of trees are denoted as follows: "G" = Good, "F" = Fair, and "P" = Poor.

<sup>(2)</sup> Amenity value, suitability for transplanting and survival rate after transplanting are denoted as follows: "H" = High, "M" = Moderate, and "L" = Low.

<sup>(3)</sup> Proposed actions are denoted as follows: "R" = Retain, "T" = Transplant, and "F" = Fell.

<sup>(4)</sup> Other "Flora of conservation importance", as reported in the EcolA, with a DBH of less than 95 mm were not included in this tree assessment.

Tree Assessment Schedule: Category 2-5 - Tree Group Assessment Schedule

Tree Group	Category	Botanical Name	Chinese Common Name	Approx. No. of Trees	Approx. Percentage %	Size			Form (G/F/P) <sup>(1)</sup>	Health (G/F/P) <sup>(1)</sup>	Amenity Value (H/M/L) <sup>(2)</sup>	Conservation Status	Suitability for Transplanting (H/M/L) <sup>(2)</sup>	Proposed Action (R/T/F) <sup>(3)</sup>	Approx. Group Total	Species Count
						DBH (m)	Height (m)	Spread (m)								
TG1	5	<i>Acacia confusa</i>	台灣相思	13	17.3%	0.24-1.43	10-12	5-9	P-F	F	L	-	L	F	75	24
	4	<i>Alangium chinense</i>	八角楓	10	13.3%	0.10-0.13	5-9	4-7	P-F	F	L	-	L	F		
	2	<i>Celtis sinensis</i>	朴樹	7	9.3%	0.13-0.26	5-10	4-8	P-F	F	L	-	L	F		
	2	<i>Viburnum odoratissimum</i>	珊瑚樹	5	6.7%	0.11-0.25	6-8	5-6	P-F	F	L	-	L	F		
	4	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	5	6.7%	0.17-0.30	5-7	4-5	P-F	P-F	L	-	L	F		
	3	<i>Schefflera heptaphylla</i>	鴨腳木	5	6.7%	0.31-0.38	5-8	4-6	F	F	L	-	L	F		
	3	<i>Ficus microcarpa</i>	細葉榕	4	5.3%	0.29-0.66	9-12	7-9	P-F	F	L-M	-	L	F		
	5	<i>Delonix regia</i>	鳳凰木	3	4.0%	0.43-0.50	11-12	9-10	P-F	F	L-M	-	L	F		
	3	<i>Sterculia lanceolata</i>	假蘋婆	3	4.0%	0.13-0.18	5-6	3-4	F	F	L	-	L	F		
	3	<i>Cinnamomum parthenoxylon</i>	黃樟	3	4.0%	0.11-0.36	5-6	3-4	F	F	L-M	-	L	F		
	3	<i>Aporosa dioica</i>	銀柴	2	2.7%	0.10-0.19	5-8	4-6	P-F	F	L	-	L	F		
	5	<i>Bauhinia purpurea</i>	紅花羊蹄甲	2	2.7%	0.13-0.17	5-6	4-5	P-F	F	L	-	L	F		
	3	<i>Syzygium levinei</i>	山蒲桃	2	2.7%	0.11-0.14	5-6	4	F	F	L	-	L	F		
	4	<i>Acronychia pedunculata</i>	山油柑	1	1.3%	0.14	8	5	F	F	L	-	L	F		
	4	<i>Rhus succedanea</i>	野漆樹	1	1.3%	0.17	5-6	4-5	F	F	L	-	L	F		
	3	<i>Archidendron lucidum</i>	亮葉猴耳環	1	1.3%	0.12	6	3	P-F	F	L	-	L	F		
	3	<i>Bridelia tomentosa</i>	土蜜樹	1	1.3%	0.13	5	3.5	F	F	L	-	L	F		
	3	<i>Aphananthe cuspidata</i>	滇糙葉樹	1	1.3%	0.19	6.5	3	F	F	L	-	L	F		
	4	<i>Mallotus paniculatus</i>	白楸	1	1.3%	0.17	6	3.5	F	F	L	-	L	F		
	5	<i>Dimocarpus longan</i>	龍眼	1	1.3%	0.14	6	3.5	P-F	F	L	-	L	F		
TG2	4	<i>Ficus hispida</i>	對葉榕	1	1.3%	0.15	6	3.5	P-F	F	L	-	L	F	102	28
	3	<i>Ficus variegata</i>	青果榕	1	1.3%	0.12	5	3	F	F	L	-	L	F		
	2	<i>Canthium dicoccum</i>	魚骨木	1	1.3%	0.12	4.5	2	P	F	M	IUCN Red List (ver. 2020.3): Vulnerable	L	F		
	3	<i>Bischofia javanica</i>	秋楓	1	1.3%	0.12	5	3	F	F	L	-	L	F		
	3	<i>Aporosa dioica</i>	銀柴	18	17.6%	0.10-0.15	2.5-6.5	1.5-4	P-F	P-F	L	-	L	F		
	3	<i>Schefflera heptaphylla</i>	鴨腳木	11	10.8%	0.10-0.11	5-8	2-6	F	F	L	-	L	F		
	4	<i>Alangium chinense</i>	八角楓	8	7.8%	0.10-0.11	5-9	4-7	P-F	P-F	L	-	L	F		
	2	<i>Cratoxylum cochinchinense</i>	黃牛木	7	6.9%	0.10-0.13	5-7	2-5	P-F	F	L-M	-	L	F		
	3	<i>Garcinia oblongifolia</i>	黃牙果	6	5.9%	0.10-0.17	5-6	2-5	F-G	F-G	L-M	-	L	F		
	3	<i>Symplocos glauca</i>	羊舌樹	5	4.9%	0.10-0.19	5-7	3-4	F	F-G	L-M	-	L	F		
	3	<i>Syzygium levinei</i>	山蒲桃	5	4.9%	0.10-0.13	5-6	4	F	F	L	-	L	F		
	2	<i>Viburnum odoratissimum</i>	珊瑚樹	5	4.9%	0.11-0.23	6-8	5-6	P-F	F	L	-	L	F		
	2	<i>Canthium dicoccum</i>	魚骨木	4	3.9%	0.10-0.24	6-10	2-4.5	P	P-F	M	IUCN Red List (ver. 2020.3): Vulnerable	L	F		
	3	<i>Syzygium hancei</i>	韓氏蒲桃	4	3.9%	0.23-0.34	6-11	2-8	P-F	P-F	L	-	L	F		
	2	<i>Celtis sinensis</i>	朴樹	3	2.9%	0.13-0.25	5-10	4-8	P-F	F	L	-	L	F		
	3	<i>Scolopia saeva</i>	廣東刺柃	3	2.9%	0.12-0.34	5-8	3-6	F	F	L	-	L	F		
	3	<i>Sterculia lanceolata</i>	假蘋婆	3	2.9%	0.12-0.17	5-6	3-4	F	F	L	-	L	F		
	4	<i>Acronychia pedunculata</i>	山油柑	3	2.9%	0.17-0.19	5-8	4.5-6	F	F	L	-	L	F		
	3	<i>Archidendron lucidum</i>	亮葉猴耳環	2	2.0%	0.12-0.12	6	3	P	F	L	-	L	F		
	3	<i>Endospermum chinense</i>	黃桐	2	2.0%	0.32-0.37	9	5	F	F	M	-	L	F		
	4	<i>Rhus succedanea</i>	野漆樹	2	2.0%	0.11-0.15	4.5-6	3-5	F	F	L	-	L	F		

Tree Group	Category	Botanical Name	Chinese Common Name	Approx. No. of Trees	Approx. Percentage %	Size			Form (G/F/P) <sup>(1)</sup>	Health (G/F/P) <sup>(1)</sup>	Amenity Value (H/M/L) <sup>(2)</sup>	Conservation Status	Suitability for Transplanting (H/M/L) <sup>(2)</sup>	Proposed Action (R/T/F) <sup>(3)</sup>	Approx. Group Total	Species Count
						DBH (m)	Height (m)	Spread (m)								
	2	<i>Adinandra millettii</i>	黃瑞木	1	1.0%	0.14	6	4	F	F	L	-	L	F		
	3	<i>Cinnamomum parthenoxylon</i>	黃樟	1	1.0%	0.11-0.36	6-8	4-6	F	F	M	-	L	F		
	3	<i>Diospyros morrisiana</i>	羅浮柿	1	1.0%	0.11	5	3	F	F	L-M	-	L	F		
	3	<i>Elaeocarpus sylvestris</i>	山杜英	1	1.0%	0.11	6	2	P	F	L	-	L	F		
	4	<i>Ilex pubescens</i>	毛冬青	1	1.0%	0.11	4.5	3	F	F	L	-	L	F		
	3	<i>Machilus breviflora</i>	短序潤楠	1	1.0%	0.16	6	4	F	F	L	-	L	F		
	3	<i>Machilus pauhoi</i>	刨花潤楠	1	1.0%	0.17	6	4	F	F	L	-	L	F		
	4	<i>Melicope pteleifolia</i>	三椏苦	1	1.0%	0.12	4	3	P-F	F	L	-	L	F		
	4	<i>Microcos nervosa</i>	破布葉	1	1.0%	0.15	6	5	F	F	L	-	L	F		
	3	<i>Sapium discolor</i>	山烏柏	1	1.0%	0.12	5	4	F	F	L	-	L	F		
	2	<i>Symplocos cochinchinensis</i> var. <i>laurina</i>	黃牛奶樹	1	1.0%	0.14	5	3	P	F	L	-	L	F		
TG3	2	<i>Cratoxylum cochinchinense</i>	黃牛木	9	22.0%	0.10-0.20	4-5	2-7	P-F	F	L	-	L	F	41	20
	3	<i>Aporosa dioica</i>	銀柴	4	9.8%	0.14-0.23	5-7	3-5	P-F	P-F	L	-	L	F		
	4	<i>Rhus succedanea</i>	野漆樹	3	7.3%	0.11	4.5	4.5	P-F	F	L	-	L	F		
	3	<i>Syzygium levinei</i>	山蒲桃	3	7.3%	0.11-0.12	6-7	3-3.5	F	F	L	-	L	F		
	3	<i>Garcinia oblongifolia</i>	黃牙果	2	4.9%	0.19	6.5	1.5	F	F-G	L-M	-	L	F		
	4	<i>Alangium chinense</i>	八角楓	2	4.9%	0.13	5	3	P-F	F	L	-	L	F		
	2	<i>Antirhea chinensis</i>	毛茶	2	4.9%	0.13-0.15	3.5-6.5	4-6	P-F	F	L	-	L	F		
	4	<i>Microcos nervosa</i>	破布葉	2	4.9%	0.17-0.20	6	2.5-7	P-F	P-F	L	-	L	F		
	2	<i>Antidesma bunius</i>	五月茶	2	4.9%	0.10-0.26	6.5-7	4.5-5.5	P-F	P-F	L	-	L	F		
	3	<i>Sterculia lanceolata</i>	假蘋婆	2	4.9%	0.12-0.22	7.5-8	3.5-4	F	F	L	-	L	F		
	2	<i>Zanthoxylum avicennae</i>	欒欖花椒	1	2.4%	0.18	6	6	P-F	F	L	-	L	F		
	3	<i>Scolopia saeva</i>	廣東刺柃	1	2.4%	0.23	7	4	P-F	F	L	-	L	F		
	3	<i>Diospyros morrisiana</i>	羅浮柿	1	2.4%	0.21	8	5	F	F	L	-	L	F		
	4	<i>Mallotus paniculatus</i>	白楸	1	2.4%	0.38	5.5	3.5	F	F	L	-	L	F		
	3	<i>Cinnamomum parthenoxylon</i>	黃樟	1	2.4%	0.38	8	5	F	F	L	-	L	F		
	3	<i>Endospermum chinense</i>	黃桐	1	2.4%	0.20	8	4	F	F-G	M	-	L	F		
	4	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	1	2.4%	0.19	5	3.5	F	F	L	-	L	F		
	3	<i>Bridelia tomentosa</i>	土蜜樹	1	2.4%	0.13	5	3.5	F	F	L	-	L	F		
	3	<i>Schefflera heptaphylla</i>	鴨腳木	1	2.4%	0.12	6	3.5	P-F	P-F	L	-	L	F		
	3	<i>Photinia benthamiana</i>	闊葉石楠	1	2.4%	0.27	9	4	F	F	L	-	L	F		
TG4	5	<i>Acacia confusa</i>	台灣相思	29	35.8%	0.21-0.90	8-12	6-9	P-F	P-F	L	-	L	F	81	23
	2	<i>Celtis sinensis</i>	朴樹	7	8.6%	0.17-0.22	5-9	6-8	P	P	L	-	L	F		
	3	<i>Schefflera heptaphylla</i>	鴨腳木	6	7.4%	0.08-0.30	6.5-9.5	5-6	F	F	L	-	L	F		
	4	<i>Acronychia pedunculata</i>	山油柑	5	6.2%	0.10-0.11	6-8	4-4.5	F	P-F	L	-	L	F		
	3	<i>Sterculia lanceolata</i>	假蘋婆	5	6.2%	0.12-0.30	4.5-6.5	3.5	P-F	P-F	L	-	L	F		
	3	<i>Machilus pauhoi</i>	刨花潤楠	4	4.9%	0.14-0.23	7-10	5-6	P-F	P-F	L	-	L	F		
	3	<i>Aporosa dioica</i>	銀柴	3	3.7%	0.12-0.14	4.5-12	4.5-8	P-F	P-F	L	-	L	F		
	4	<i>Mallotus paniculatus</i>	白楸	3	3.7%	0.10-0.21	5.5-8	1.5-4	F	F	L	-	L	F		
	3	<i>Syzygium hancei</i>	韓氏蒲桃	2	2.5%	0.12-0.14	7-9	4-6	F	F	L	-	L	F		
	4	<i>Litsea cubeba</i>	木薑子	2	2.5%	0.15-0.20	5-8	5-6.5	F	F	L	-	L	F		
	3	<i>Bischofia javanica</i>	秋楓	2	2.5%	0.12-0.16	9-15	3.5-4	P-F	P-F	L	-	L	F		
	4	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	2	2.5%	0.11-0.20	5.5-8.5	4-5.5	P	P	L	-	L	F		
	3	<i>Endospermum chinense</i>	黃桐	1	1.2%	0.15	10	3	F	F	L	-	L	F		
	4	<i>Melicope pteleifolia</i>	三椏苦	1	1.2%	0.12	5	3.5	F	F	L	-	L	F		

Tree Group	Category	Botanical Name	Chinese Common Name	Approx. No. of Trees	Approx. Percentage %	Size			Form (G/F/P) <sup>(1)</sup>	Health (G/F/P) <sup>(1)</sup>	Amenity Value (H/M/L) <sup>(2)</sup>	Conservation Status	Suitability for Transplanting (H/M/L) <sup>(2)</sup>	Proposed Action (R/T/F) <sup>(3)</sup>	Approx. Group Total	Species Count
						DBH (m)	Height (m)	Spread (m)								
	5	<i>Bauhinia purpurea</i>	紅花羊蹄甲	1	1.2%	0.17	5	6	P	P	L	-	L	F		
	2	<i>Ficus fistulosa</i>	水同木	1	1.2%	0.10	4.5	5	F	F	L	-	L	F		
	4	<i>Microcos nervosa</i>	破布葉	1	1.2%	0.17	8	4	F	F	L	-	L	F		
	5	<i>Dimocarpus longan</i>	龍眼	1	1.2%	0.12	5	3	F	F	L	-	L	F		
	3	<i>Ficus variegata</i>	青果榕	1	1.2%	0.39	11	8	F	F	L	-	L	F		
	3	<i>Garcinia oblongifolia</i>	黃牙果	1	1.2%	0.14	12	7.5	F	P	L	-	L	F		
	3	<i>Syzygium levinei</i>	山蒲桃	1	1.2%	0.16	8.5	4.5	F	F	L	-	L	F		
	2	<i>Canthium dicoccum</i>	魚骨木	1	1.2%	0.10	8	4	P	P	M	IUCN Red List (ver. 2020.3): Vulnerable	L	F		
	2	<i>Sinosideroxylon wightianum</i>	革葉鐵欖	1	1.2%	0.11	4	1.5	P	F	L	-	L	F		

Notes:

- <sup>(1)</sup> Form and health condition of trees are denoted as follows: "G" = Good, "F"= Fair, and "P"= Poor.
- <sup>(2)</sup> Amenity value, suitability for transplanting and survival rate after transplanting are denoted as follows: "H" = High, "M" = Moderate, and "L" = Low.
- <sup>(3)</sup> Proposed actions are denoted as follows: "R" = Retain, "T" = Transplant, and "F" = Fell.



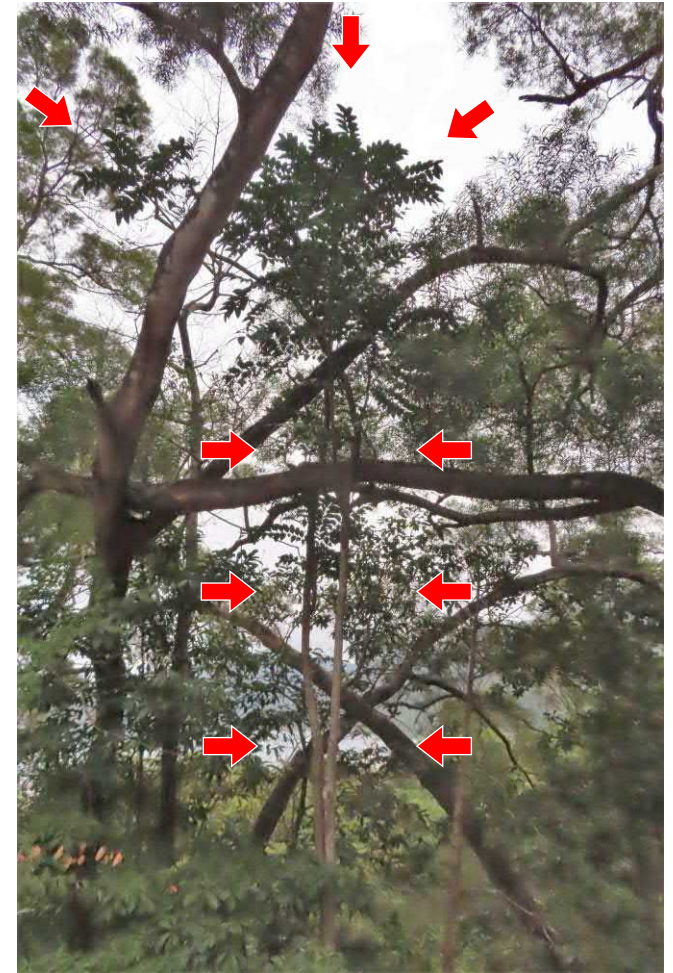
# **Annex E**

## **PHOTOGRAPHS OF EXISTING TREES**

**CATEGORY 1 – INDIVIDUAL TREE PHOTOGRAPHS**  
**CATEGORY 2 – 5 – TREE GROUP PHOTOGRAPHS**



T0010 – *Aquilaria sinensis*



T0005 – *Ailanthus fordii*

**AECOM**

Section 16 Planning Application for Proposed Access Road in “Green Belt” Zone for Permitted Uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories

Photographs of Existing Trees  
Category 1 - Individual Tree Photographs

Tree Group No.

Date taken:

Revision:

-

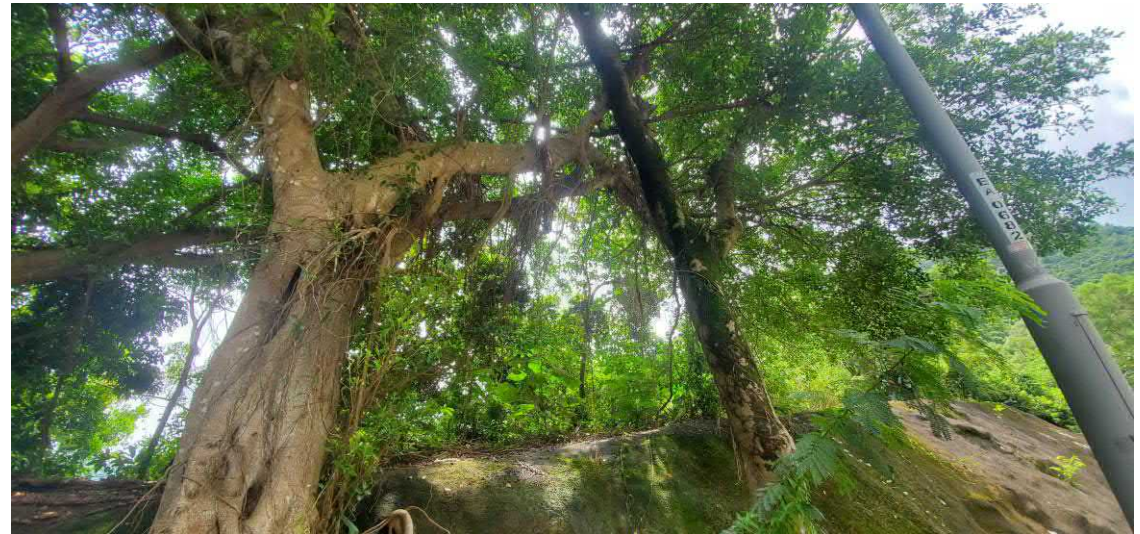
20210302

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TG1 - 01



TG1 - 02

**AECOM**

Section 16 Planning Application for Proposed Access Road in “Green Belt” Zone for Permitted Uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories

Photographs of Existing Trees  
Category 2-5 – Tree Group Photographs

Tree Group No.

Date taken:

Revision:

TG1

20200924

-





TG1 - 03



TG1 - 04

**AECOM**

Section 16 Planning Application for Proposed Access Road in “Green Belt” Zone for Permitted Uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories

Photographs of Existing Trees  
Category 2-5 – Tree Group Photographs

Tree Group No.

Date taken:

Revision:

TG1

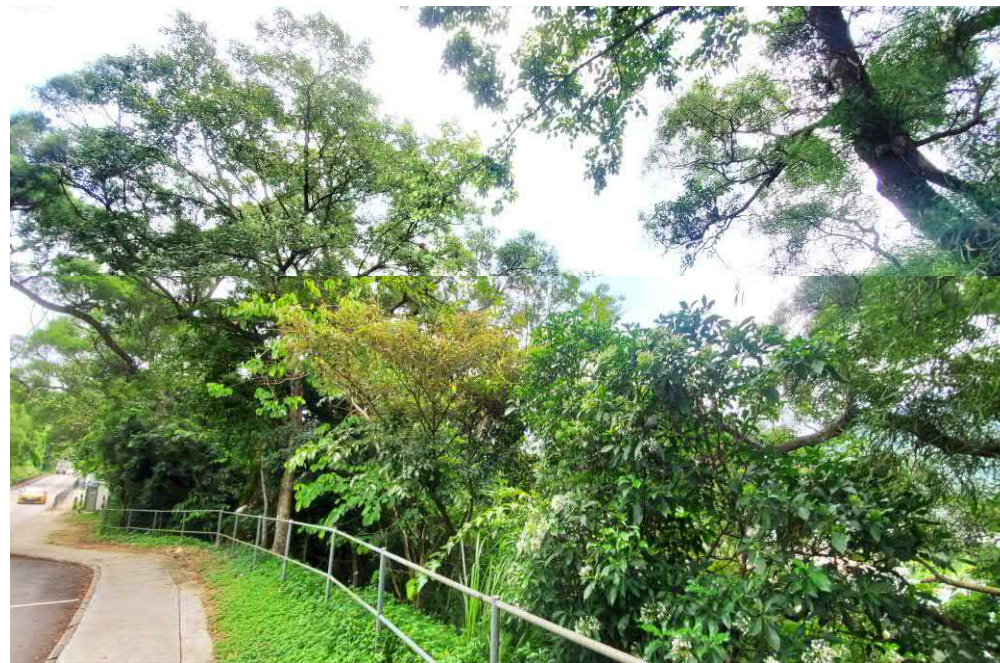
20200924

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TG1 - 05



TG1 - 06

**AECOM**

**Section 16 Planning Application for Proposed Access Road in “Green Belt” Zone for Permitted Uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories**

**Photographs of Existing Trees**  
Category 2-5 – Tree Group Photographs

**Tree Group No.**

TG1

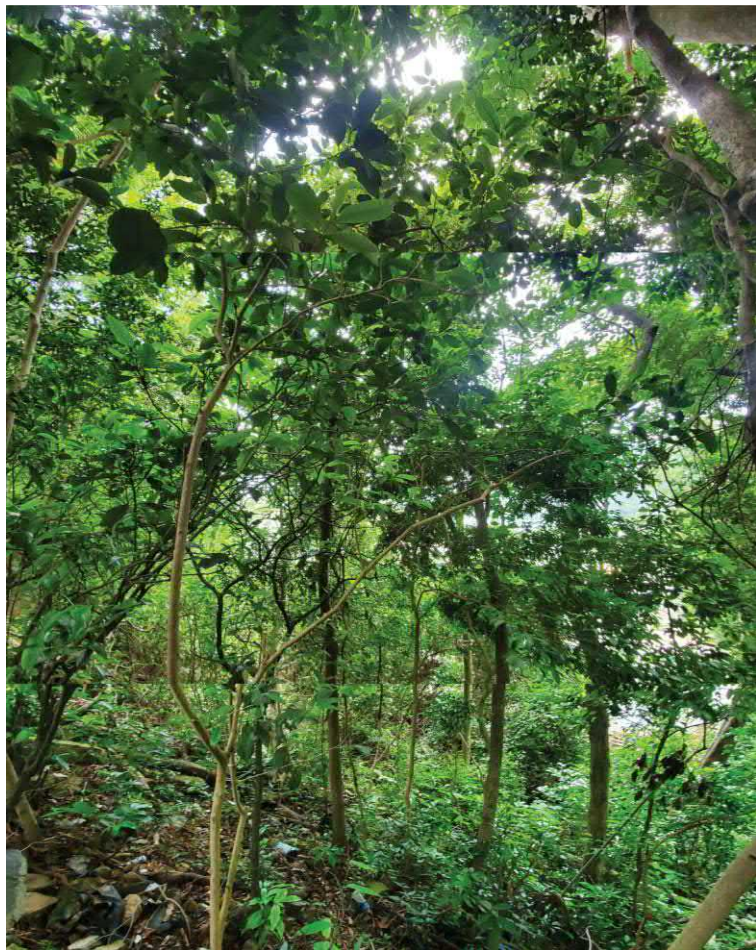
**Date taken:**

20200924

**Revision:**

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TG1 - 07




TG1 - 08

	Section 16 Planning Application for Proposed Access Road in “Green Belt” Zone for Permitted Uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories			Tree Group No.	Date taken:	Revision:
	Photographs of Existing Trees Category 2-5 – Tree Group Photographs			TG1	20200924	-





**TG1 - 09**

	<b>Section 16 Planning Application for Proposed Access Road in “Green Belt” Zone for Permitted Uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories</b>	<b>Tree Group No.</b>	<b>Date taken:</b>	<b>Revision:</b>
	<b>Photographs of Existing Trees</b> Category 2-5 – Tree Group Photographs	TG1	20200924	-






TG2 - 10



TG2 - 11

	Section 16 Planning Application for Proposed Access Road in “Green Belt” Zone for Permitted Uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories		Tree Group No.	Date taken:	Revision:
	Photographs of Existing Trees Category 2-5 – Tree Group Photographs		TG2	20200924	-






TG2 - 12



TG2 - 13

	<b>Section 16 Planning Application for Proposed Access Road in “Green Belt” Zone for Permitted Uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories</b>		<b>Tree Group No.</b>	<b>Date taken:</b>	<b>Revision:</b>
	<b>Photographs of Existing Trees</b> Category 2-5 – Tree Group Photographs		TG2	20200924	-






TG2 - 14



TG2 - 15

	Section 16 Planning Application for Proposed Access Road in “Green Belt” Zone for Permitted Uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories	Tree Group No.	Date taken:	Revision:
	Photographs of Existing Trees Category 2-5 – Tree Group Photographs	TG2	20200924	-






TG3 - 16




TG3 - 17

	Section 16 Planning Application for Proposed Access Road in “Green Belt” Zone for Permitted Uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories	Tree Group No.	Date taken:	Revision:
	Photographs of Existing Trees Category 2-5 – Tree Group Photographs	TG3	20200924	-





TG3 - 18

	<b>Section 16 Planning Application for Proposed Access Road in “Green Belt” Zone for Permitted Uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories</b>		<b>Tree Group No.</b>	<b>Date taken:</b>	<b>Revision:</b>
	<b>Photographs of Existing Trees</b> Category 2-5 – Tree Group Photographs		TG3	20200924	-






TG3 - 19



TG3 - 20

	<b>Section 16 Planning Application for Proposed Access Road in “Green Belt” Zone for Permitted Uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories</b>		<b>Tree Group No.</b>	<b>Date taken:</b>	<b>Revision:</b>
	<b>Photographs of Existing Trees</b> Category 2-5 – Tree Group Photographs		TG3	20200924	-






TG4 - 21



TG4 - 22

	<b>Section 16 Planning Application for Proposed Access Road in “Green Belt” Zone for Permitted Uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories</b>		<b>Tree Group No.</b>	<b>Date taken:</b>	<b>Revision:</b>
	<b>Photographs of Existing Trees</b> Category 2-5 – Tree Group Photographs		TG4	20210302	-






TG4 - 23



TG4 - 24

	<b>Section 16 Planning Application for Proposed Access Road in “Green Belt” Zone for Permitted Uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories</b>	<b>Tree Group No.</b>	<b>Date taken:</b>	<b>Revision:</b>
	<b>Photographs of Existing Trees</b> Category 2-5 – Tree Group Photographs	TG4	20210302	-

# **Annex F**

## **INDICATIVE LANDSCAPE PLAN**



Pld File by: ChanKKC 06/12/2021  
PATH: L:\SecureEnvironment\Group\PROPOSAL\LECO-20200706-SK Tree Group & LP\Cad\CompensatoryPlantingPlan\CompensatoryPlantingPlan\_20211203\_1.dwg

ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

PROPOSED COMPENSATORY TREE PLANTING SCHEDULE

SPECIES NAME	CHINESE NAME	SPECIES CATEGORY	PLANTING SIZE <sup>(1)</sup>	PLANTING SPACING	MIX RATIO	APPROX. QUANTITY	APPROX. SUM
Ailanthus fordii	常綠臭椿	1	LIGHT –STANDARD	3m STAGGERED	5%	15	299
Canthium dicoccum	魚骨木	2			5%	15	
Celtis sinensis	朴樹	2			15%	45	
Cratoxylum cochinchinense	黃牛木	2			15%	44	
Ficus subpisocarpa	筆管榕	2			2%	6	
Bischofia javanica	秋楓	3			8%	24	
Bridelia tomentosa	土蜜樹	3			8%	24	
Cinnamomum camphora	樟	3			8%	24	
Ficus microcarpa	榕樹	3			2%	6	
Ficus variegata var. chlorocarpa	青果榕	3			2%	6	
Litsea glutinosa	潺槁樹	3			8%	24	
Sapium discolor	山烏柏	3			8%	24	
Schefflera heptaphylla	鵝掌柴	3			8%	24	
Melicope pteleifolia	三椏苦	4			3%	9	
Micracos nervosa	破布葉	4			3%	9	

Note:  
All planting sizes are according to the latest version of General Specification for Civil Engineering Works, 2020 Edition (CEDD, 2021).

CATEGORY 1 TREES TO BE TRANSPLANTED

TREE NO.	SPECIES NAME	CHINESE NAME	DBH(m)*HEIGHT(m)*SPREAD(m)	REMARKS
T0005	Ailanthus fordii	常綠臭椿	0.16*10*4.5	The 2 nos of transplant trees will be planted within the "Transplantation Zone", along with 10 nos. of under-sized Aquilaria sinensis and 67 nos. of the shrub Pavetta hongkongensis.
T0010	Aquilaria sinensis	土沉香	0.15*6*1.5	

+34.00  
T0005  
T0010  
TRANSPLANTATION ZONE  
APPROX. AREA=0.03ha(300m<sup>2</sup>)

WOODLAND PLANTING AREA  
APPROX. AREA=0.24ha(2430m<sup>2</sup>)

LEGEND:

- APPLICATION SITE
- DEVELOPMENT SITE FOR PERMITTED SCHOOL USE IN "G/IC" ZONE
- PROPOSED ACCESS ROAD
- WOODLAND PLANTING AREA
- SHADE-TOLERANT PLANTING UNDER THE VIADUCT
- INDICATIVE TRANSPLANTATION ZONE
- INDICATIVE LOCATION OF TRANSPLANT TREE

DEVELOPMENT SITE FOR  
PERMITTED SCHOOL USE IN  
"G/IC" ZONE

AECOM

PROJECT

項目  
PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

CLIENT

業主

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

R5	03-12-21	INDICATIVE LANDSCAPE PLAN	-
R4	23-09-21	INDICATIVE LANDSCAPE PLAN	-
R3	06-09-21	INDICATIVE LANDSCAPE PLAN	-
R2	24-08-21	INDICATIVE LANDSCAPE PLAN	-
R1	30-06-21	INDICATIVE LANDSCAPE PLAN	-
-	29-04-21	INDICATIVE LANDSCAPE PLAN	-
I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 核對

STATUS

備註

SCALE

比例

A1 1 : 450  
A3 1 : 900

DIMENSION UNIT

尺寸單位

METRES

KEY PLAN

索引圖

PROJECT NO.

項目編號

60639068

CONTRACT NO.

合約編號

SHEET TITLE

圖紙名稱

INDICATIVE LANDSCAPE PLAN

SHEET NUMBER

圖紙編號

60639068/LMP/LP

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## **Annex G**

# **WORKSPACE DEMARCATION PLAN (OVERLAID WITH TREE SURVEY PLAN)**



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## **Appendix B**

### **Visual Appraisal**

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(Same as that under formal submission submitted on 30 April 2021)

*(No objection from visual and urban design perspective from Urban Design & Landscape Section  
(Urban Design Unit), Planning Department received in June 2021)*



**Section 16 Planning Application for Proposed Access Road with Filling and  
Excavation of Land in "Green Belt" Zone for Permitted Uses in  
"Government, Institution or Community" Zone at Various Lots and  
Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, N.T.**

**Visual Appraisal**

(September 2022)

**llewelyn  
davies**

ARCHITECTS PLANNERS DESIGNERS

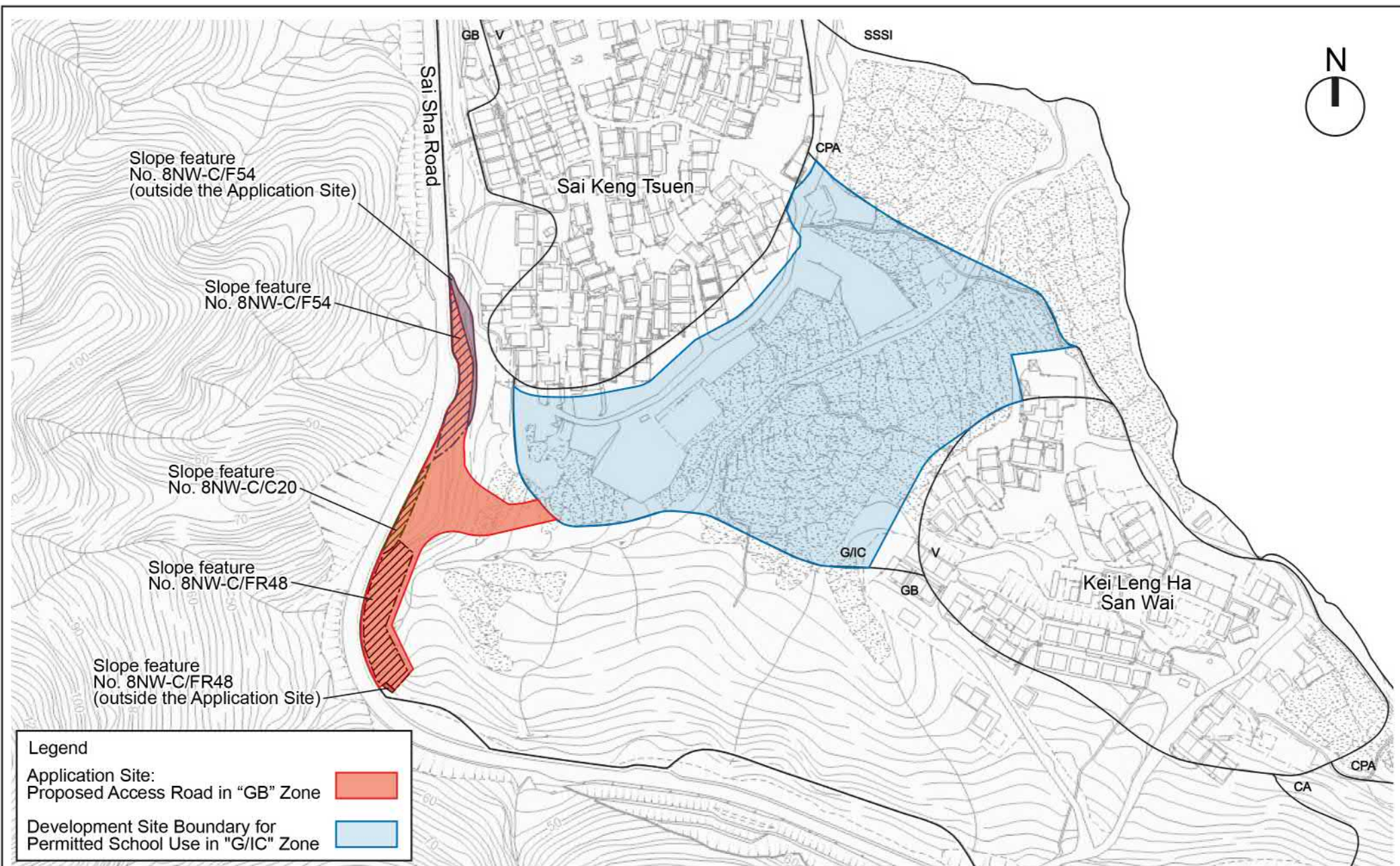
Llewelyn-Davies Hong Kong Ltd

## 1. VISUAL APPRAISAL

- 1.1 This Visual Appraisal is prepared for the planning application submitted to Town Planning Board under Section 16 of the Town Planning Ordinance to seek permission for provision of road with filling and excavation of land in “Green Belt” (“GB”) zone (i.e. hereafter referred to as the Proposed Access Road) for permitted uses in “Government, Institution or Community” (“G/IC”) zone at various lots and adjoining Government land in D.D. 209, Sai Keng, Shap Sz Heung, N.T. (i.e. hereafter referred to as the Application Site).
- 1.2 The Application Site falls within an area zoned as “GB” on the Approved Shap Sz Heung Outline Zoning Plan No. S/NE-SSH/11 (the OZP) (**Figure 1.1** refers), which is just a small portion of the whole “GB” zone<sup>1</sup>. There is a piece of land zoned “G/IC” at Sai Keng (i.e. hereafter referred to as the subject “G/IC” zone) being left vacant and undeveloped since the gazettal of the first Shap Sz Heung OZP No. S/NE-SSH/1 on 1 July 1994 (i.e. 27 years). ‘School’ and/or other GIC uses and their ancillary facilities are always permitted on the subject “G/IC” zone. Yet, despite that the subject “G/IC” zone is situated closely to Sai Sha Road to its west, there is no standard and direct access connecting it to Sai Sha Road at present. It is currently only accessible via two local tracks through the nearby villages which are sub-standard, with village houses constructed closely along the tracks that constrain any possible widening.
- 1.3 To facilitate the permitted uses in the subject “G/IC” zone, provision of a standard Proposed Access Road to the subject “G/IC” zone is required. Otherwise, without any proper access, the subject “G/IC” zone will remain sterilized without any development, which could not materialize the planning intention of the subject “G/IC” zone and result in a waste of valuable land resources that is against the government’s land supply policy.
- 1.4 As the subject “G/IC” zone is segregated from Sai Sha Road (the only proper public road in the area) by a “GB” zone, it is inevitable that the Proposed Access Road will have to pass through the “GB” zone before connecting to Sai Sha Road.

---

<sup>1</sup> The proposed access road with an area of about 1,844m<sup>2</sup> only account to 1.1% of the subject “GB” zone with an area of about 161,837m<sup>2</sup>.



- 1.5 According to the Notes of the OZP, while various GIC uses are always permitted in the subject "G/IC" zone, the Proposed Access Road within the "GB" portion that supports the permitted uses require planning permission from the Board. The subject matter of this application shall be the Proposed Access Road that falls in the "GB" zone only, whereas the permitted uses (including the access road) in the "G/IC" zone shall not form part of the planning application. Hence, the Application Site refers to the "GB" portion that will be affected by the Proposed Access Road.
- 1.6 This visual appraisal with photomontages prepared at a selection of viewpoints (VPs) is conducted to assess the potential visual impact that may be induced by the Proposed Access Road in "GB" zone.

## **2. THE PROPOSED ACCESS ROAD**

- 2.1 The Application Site in "GB" covers a total area of about 4,640 m<sup>2</sup>, comprising the segment of the proposed access road with an area of about 1,844 m<sup>2</sup> and its works area of 2,796 m<sup>2</sup>.
- 2.2 The Proposed Access Road in "GB" zone connecting the permitted uses in the adjacent "G/IC" zone will be of 7.3m wide branching off the east of Sai Sha Road. The Proposed Access Road is a single 2-lane carriageway with footpaths on both sides and forms a T-junction with Sai Sha Road.
- 2.3 The Proposed Access Road has fully met the requirements stipulated on the Transport Planning and Design Manual (TPDM) with general gradient of about 8% to 10% gradually stepping downwards from west to east to respect the existing topography.
- 2.4 The Indicative Layout Plan of the Proposed Access Road is provided in **Figure 2.1**. The indicative development schedule of the Proposed Access Road is summarised in **Table 2.1** below:





LEGEND

--- APPLICATION SITE BOUNDARY

Remark: The Proposed Access Road in the Application Site is to facilitate the permitted school and/or other permitted uses in the adjoining "G/IC" zone. The permitted school and/or other permitted uses are not the subject matter of this S16 planning application. Any layout and parameters of the development in "G/IC" zone provided are for general reference and information of the Town Planning Board, and do not form part of this S16 planning application for approval. Layout and parameters of the development in "G/IC" zone shall be subject to detailed design during GBP submission.  
\* During the construction stage, the woodland planting area will be used as temporary works area for the Proposed Access Road.



Checked	DH	Drawn	PW
Rev	0	Date	Sep 2022
Scale	Figure 2.1		



**Table 2.1 - Indicative Development Schedule**

<b>Proposed Access Road in “Green Belt” Portion</b>	
<b>Total Application Site Area <sup>(1)</sup></b>	About 4,640 m <sup>2</sup>
Area of the Proposed Access Road	About 1,844 m <sup>2</sup> (i.e. 39.74% of the Application Site Area)
Woodland Planting Area	About 2,796 m <sup>2</sup> (i.e. 60.26% of the Application Site Area)

Remarks:

- (1) Refers to the proposed access road and its works area that falls within the subject “GB” zone only. The permitted school and/or other GIC uses in the adjacent “G/IC” zone shall not form part of the planning approval.

### 3. VISUAL APPRAISAL

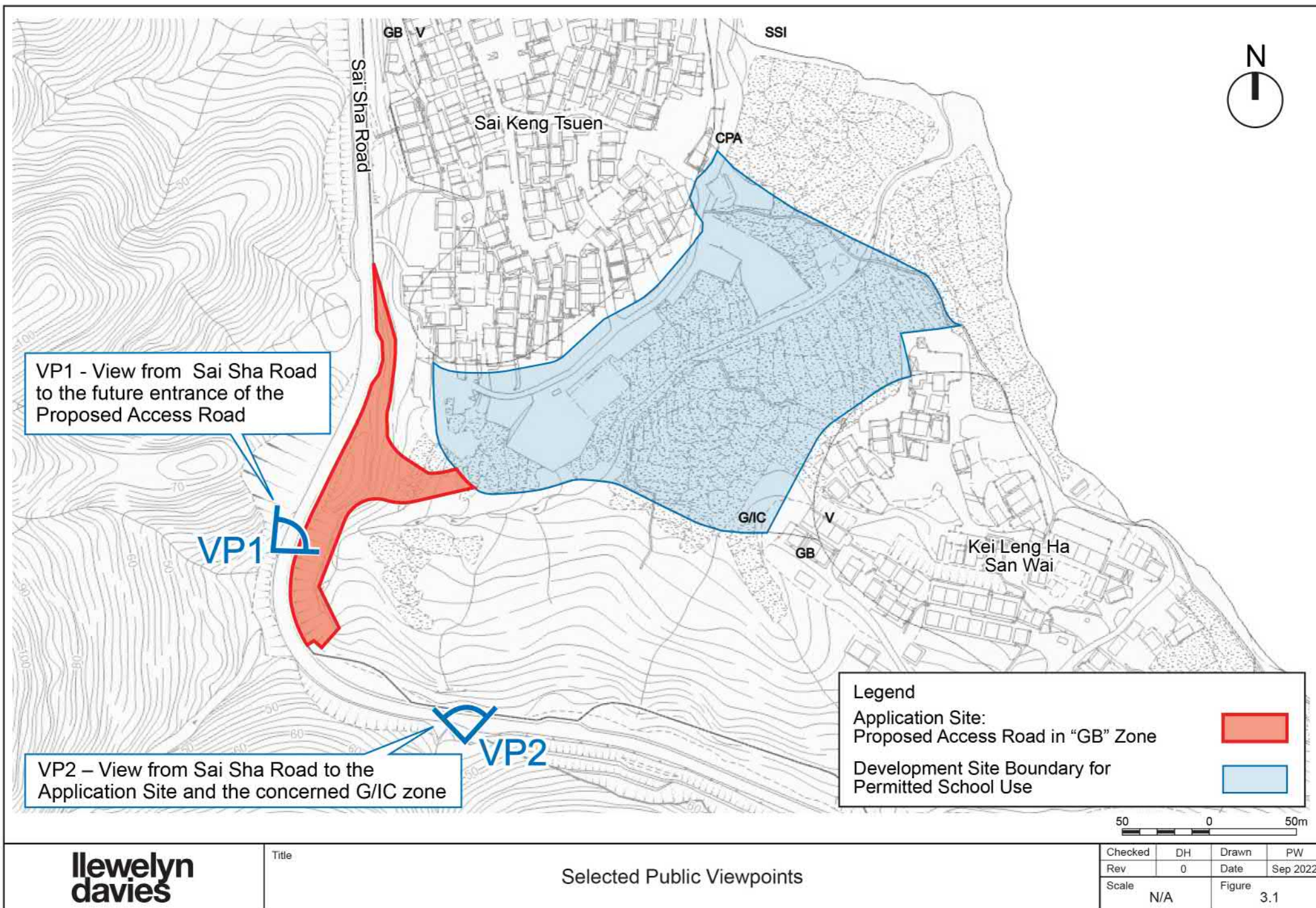
- 3.1 To assess the potential visual impact from the Proposed Access Road at the Application Site, viewpoints along Sai Sha Road have been selected. The locations of the selected viewpoints are illustrated on **Figure 3.1**.

#### Location of Viewpoints

- 3.2 **VP 1 - From Sai Sha Road to the future entrance of the Proposed Access Road:** This viewpoint is taken on Sha Sha Road with about 15m viewing distance to the future entrance of the Proposed Access Road. This viewpoint captures the view of the vehicular roadway and pedestrian footpath of Sai Sha Road with the existing vegetation and man-made slope features. This viewpoint has been adopted for visual appraisal as it represents the view perceived by the major visual sensitive receivers (VSRs) of this segment of Sai Sha Road, namely pedestrians, drivers and their passengers.



**Existing View from Sai Sha Road to the future entrance of the Proposed Access Road**





- 3.3 **VP 2 - From Sai Sha Road to the Application Site in “GB” and the concerned “G/IC” zone:** This viewpoint is taken on the footpath along the segment of Sai Sha Road to the south of the Application Site. It is located about 150m away from the Application Site. This viewpoint has been adopted for visual appraisal as it captures the overall visual context of the Proposed Access Road development, including the Application Site and the neighbouring existing vegetation within “GB” zone, the adjacent “G/IC” zone, Sai Keng Tsuen and the Three Fathoms Cove. The major VSRs of this viewpoint are pedestrians walking or drivers driving along this segment of Sai Sha Road.



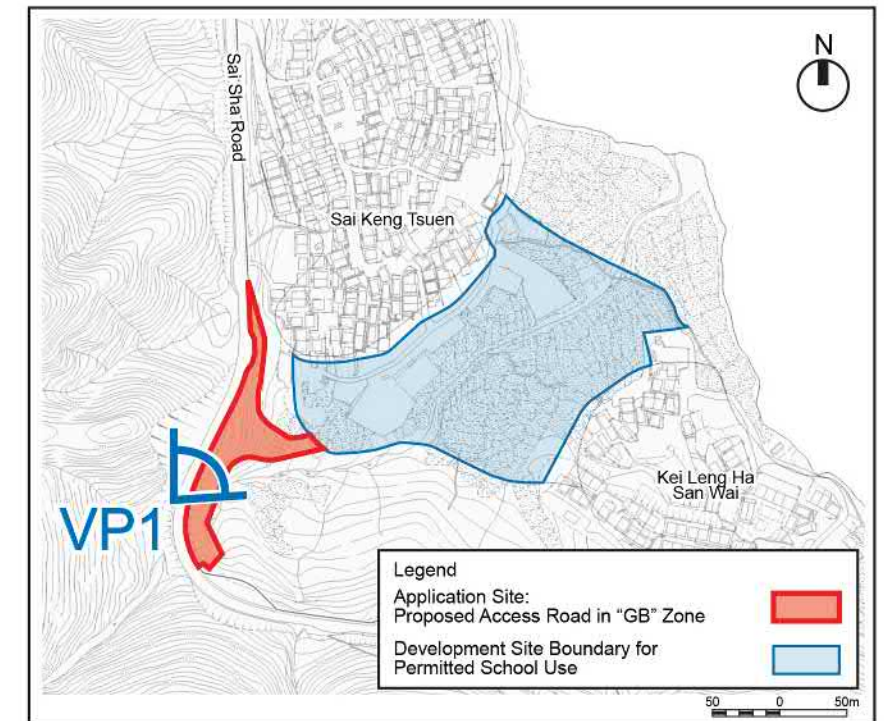
**Existing View from Sai Sha Road to the Application Site in “GB” and the concerned “G/IC” zone**

#### **Discussion of Visual Impacts on VPs**

#### **VP 1 – From Sai Sha Road to the future entrance of the Proposed Access Road (See Figure 3.2)**

- 3.4 **Visual Composition:** VP1 is a close-up viewpoint taken at Sai Sha Road opposite to the future entrance of the Proposed Access Road. The existing view of this viewpoint captures the view of the vehicular roadway and pedestrian footpath of Sai Sha Road with the existing vegetation and man-made slope features. The photomontage demonstrating the scenario with the Proposed Access Road appears largely similar to the existing view with only the entrance of the Proposed Access Road being visible in between the compensatory plantings. The view of the remaining portion of the Proposed Access Road in “GB” has largely been screen off by the compensatory plantings. The visual composition at VP1 is very similar to the existing scenario comprising mainly Sai Sha Road with existing vegetation replaced by compensatory planting and a minor glimpse of junction





Existing Condition



Proposed Scheme



between Sai Sha Road and Proposed Access Road. The degree of change in visual composition is anticipated to be low.

- 3.5 **Visual Obstruction:** The existing view at VP1 is dominated by existing Sai Sha Road and vegetation on the slope at the foreground. Upon completion of the Proposed Access Road together with the compensatory plantings, it is anticipated that the compensated trees will be able to largely screen off the Proposed Access Road at the background. Only part of the entrance of the Proposed Access Road would be visible to the VSR at this viewpoint. In this sense, the Proposed Access Road will not obstruct the view from this VP in spite of the close proximity between the VP and the Proposed Access Road.
- 3.6 **Effects on Visual Elements:** The major visual elements at this VP are mainly Sai Sha Road, vegetation along Sai Sha Road, a man-made shotcrete slope and partial view of the sky above tree crowns. While temporary works will be conducted along the slope, the affected slope will be planted with compensated plantings to create a similar lush vegetated view for the slope. The visual element of vegetation along Sai Sha Road can be re-created through provision of compensatory planting. Besides, the existing visually undesirable slope feature with shotcrete surface will be replaced by the entrance of the Proposed Access Road. With compensatory planting provided, the entrance of the Proposed Access Road will integrate and blend in well with the surroundings. Due to the alignment and gradient of the Proposed Access Road ramping down to the "G/IC" site, the sky view will also be maintained.
- 3.7 **Effects on Public Viewers:** Despite VP1 provides a close-up view for VSRs with only about 15m viewing distance to the Application Site, the potential visual changes could still be hardly noticeable by VSRs as the Proposed Access Road have been largely screened off by compensatory planting along Sai Sha Road. Given the transient nature of VP1 with pedestrians, drivers and their passengers being the major VSRs, the Proposed Access Road will only have a direct view towards the Proposed Access Road for a very short period of time. Therefore, the effect to public viewers is considered to be low in this sense.

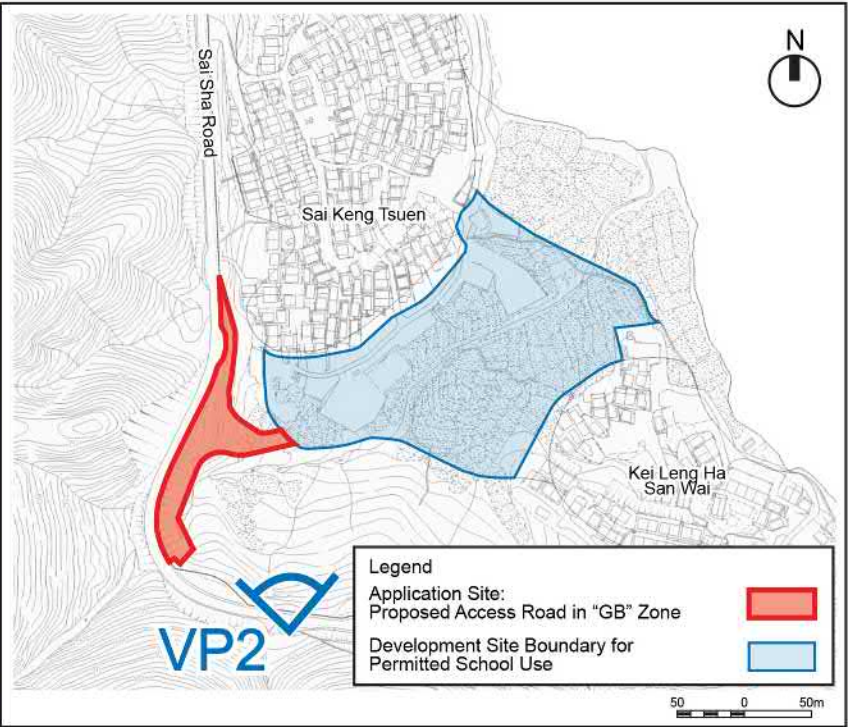
**VP 2 - From Sai Sha Road to the Application Site in "GB" and the concerned "G/IC" zone (See Figure 3.3)**

- 3.8 **Visual Composition:** VP2 is located about 150m away from the Application Site taken from the footpath along the segment of Sai Sha Road to the south of the subject "GB" zone. This viewpoint captures a more open view of Sai Keng area including the vegetated slope in "GB" zone, the adjacent "G/IC" zone, village settlements in Sai Keng Tsuen, the Three Fathoms Cove and the sky view above. Under the proposed scenario, although the Proposed Access Road will be visible from this VP, it appears to be part of the developed area of the village settlements in Sai Keng Tsuen. Other than that, the visual composition is largely remained similar to the existing condition.
- 3.9 **Visual Obstruction:** VP2 has an open sky view. As shown in the photomontage, a portion of the Proposed Access Road would be visible in between the existing vegetation. Yet, due to the descending gradient of the Proposed Access Road, the existing open sky view and the existing partial view to Sai Keng Tsuen and the Three Fathoms Cove remain unobstructed. Therefore, the visual openness and permeability of this viewpoint will not be affected by the Proposed Access Road when viewing from this location.
- 3.10 **Effects on Visual Elements:** Only a minor portion of the Proposed Access Road is visible in between the existing lush green vegetation and would integrate and blend into the natural landscape to form a harmonic view with no obstruction to the open sky view. The visual quality and character of the area is largely maintained.
- 3.11 **Effects on Public Viewers:** This viewpoint taken from the footpath along the segment of Sai Sha Road to the south of the subject "GB" zone is a transient one. As the major VSRs are pedestrian or driver passing by this segment of Sai Sha Road, they would only have a direct view into the Proposed Access Road for a very short period of time and their visual sensitivity would be low to medium. Therefore, the effect to public viewers is considered to be low.





Existing Condition



Proposed Scheme



#### 4. CONCLUSION

- 4.1 Based on the above visual appraisal on visual composition, visual obstruction, effects on public viewers and effects on visual resources, the overall visual impact caused by the Proposed Access Road in “GB” is summarised as follows:

**Table 4.1: Summary of Assessment of Visual Impact at the Selected Viewpoints:**

Viewpoint	Location	Overall Visual Impact brought the Proposed Access Road in “GB”
VP1	From Sai Sha Road to the future entrance of the Proposed Access Road	Negligible
VP2	From Sai Sha Road to the Application Site in “GB” and the concerned “G/IC” zone	Slightly adverse

- 4.2 Despite minor portion of the Proposed Access Road would be visible from the two selected viewpoints, the photomontages shows the Proposed Access Road would large be screened off by existing lush green vegetation and proposed compensatory planting. The Proposed Access Road would blend into the existing landscape setting to form a harmonic view.
- 4.3 This visual appraisal therefore concludes that the resultant overall visual impact of the Proposed Access Road would be insignificant which is considered compatible with the surrounding visual context.

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## **Appendix C**

### **Traffic Impact Assessment**

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(Consolidated Report based on Further Information submitted on 27 January 2022, 18 May 2022,  
30 June 2022 & 17 August 2022)

*(No in-principle objection from traffic engineering perspective from Transport Department  
received in September 2022)*

**Section 16 Planning Application for Proposed Access  
Road in “Green Belt” Zone for Permitted uses in  
“Government, Institution or Community” Zone at Various  
Lots and Adjoining Government Land in D.D. 209, Sai  
Keng, Shap Sz Heung, the New Territories**

**Traffic Impact Assessment for Proposed Access Road  
cum Private School Development**

**September 2022**

**AECOM**



**Section 16 Planning Application for Proposed Access  
Road in “Green Belt” Zone for Permitted uses in  
“Government, Institution or Community” Zone at Various  
Lots and Adjoining Government Land in D.D. 209, Sai  
Keng, Shap Sz Heung, the New Territories**

**Traffic Impact Assessment for Proposed Access Road  
cum Private School Development  
September 2022**

04	September 2022	MKCN	SHSN
Issue	Date	Prepared by	Reviewed by

**AECOM**

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## **1 INTRODUCTION**

### **1.1 Background**

- 1.1.1 The Application Site falls within an area zoned as “Green Belt” (“GB”) on the Approved Shap Sz Heung Outline Zoning Plan No. S/NE-SSH/11 (the OZP). Adjacent to the Application Site is an area zoned “Government, Institution or Community” (“G/IC”) in which ‘School’ and its ancillary uses are always permitted according to the OZP (“Development Site”). In late 2019, a set of General Building Plan (“GBP”) for a private school development in the “G/IC” was submitted to government for approval. While the “G/IC” site is situated closely to Sai Sha Road, it could only be accessible via two substandard village tracks through Sai Keng Tsuen and Kei Ling Ha San Wai from Sai Sha Road respectively. As these two village tracks are steep and narrow with existing village houses erected on their both sides, they are unable to handle the traffic generated from the as-of-right permitted school development in the “G/IC” zone.
- 1.1.2 As the proposed private school is not served by any proper access at present, a new and proper access road branching off from Sai Sha Road is therefore proposed to serve the operation needs of the proposed private school.
- 1.1.3 The Application Site of the subject planning application refers to the segment of the proposed proper access road and its adjacent Woodland Planting Area within “GB” portion only as illustrated in the site location plan in **Figure 1.1**. ‘School’ and its ancillary uses are always permitted within the “G/IC” zone to the east of the Application Site and hence they are not the subject of this planning application.
- 1.1.4 AECOM was commissioned by the Applicant to prepare a Traffic Impact Assessment (TIA) report for in support of the Section 16 Planning Application for the Proposed Access Road. For assessment purpose of this TIA, traffic impact arising from the proposed access road cum private school development would be assessed.

### **1.2 Objectives**

- 1.2.1 The main objectives of this report are as follows: -
- Outline the design parameters of the Proposed Access Road and development schedule of the proposed private school;
  - Review the current traffic condition in the vicinity;
  - Estimate the potential traffic generations and attractions of the school development served by the Proposed Access Road;
  - Produce traffic forecasts on the surrounding road network at the adopted design year;
  - Assess traffic impact on the surrounding road network induced from the school development served by the Proposed Access Road; and
  - Develop traffic improvement proposal if necessary.

### **1.3 Report Structure**

- 1.3.1 Following this introductory chapter, the TIA is structured as follows:

- **Chapter 2:** Proposed Access Road, which describes the alignment of the Proposed Access Road together with its junction arrangements with Sai Sha Road; The development schedule of the school use together with its internal transport facilities provisions would be discussed;
- **Chapter 3:** Existing Traffic Condition, which reviews the current traffic conditions;
- **Chapter 4:** Traffic Forecasting, which discusses the potential traffic generations and attractions of the school development served by the Proposed Access Road and summarizes the methodology for future traffic forecasts.
- **Chapter 5:** Traffic Impact Assessment, which presents the findings of the assessment for the future design year and recommend improvement measure if necessary. The construction traffic impact and the public transport /pedestrian assessment would also be discussed.
- **Chapter 6:** Summary and Conclusion, which summarizes the findings of the study and presents the conclusion of this TIA.

## 2 PROPOSED ACCESS ROAD FOR PRIVATE SCHOOL DEVELOPMENT

### 2.1 Proposed Private School (Not for approval)

- 2.1.1 Based on the previous submitted GBP, this proposed school in the “G/IC” zone is intended for a private school use with total 1,226 students receiving nursery/ kindergarten, primary school or secondary school education. The key development parameters are shown in **Table 2.1**

**Table 2.1 Development Schedule of Proposed Private School in “G/IC” Zone**

<b>Proposed Private School in “G/IC” Zone<sup>(1)</sup> (Not the subject matter of this S16 planning application)</b>	
<b>Development Site Area<sup>(1)</sup></b>	About 32,521 m <sup>2</sup>
<b>Total Gross Floor Area (GFA)</b> including	About 39,846 m <sup>2</sup>
- Main School and Sports Hall	About 31,186 m <sup>2</sup>
- Ancillary Boarding House	About 8,660 m <sup>2</sup>
<b>Total No. of Classrooms</b> including	47
- Nursery/Kindergarten	5
- Primary School	18
- Secondary School	24
<b>Total No. of Students</b> Including	1,226
- Nursery/Kindergarten	50
- Primary School	504
- Secondary School	672
	(Including 174 boarding students)
<b>Total No. of Teachers/ School Staff</b>	116

Remarks:

(1) ‘School’ use and/or other permitted uses in “G/IC” zone are always permitted and are not the subject matter of this S16 planning application. Parameters of the permitted development shall be subject to detailed design during GBP submission.

- 2.1.2 With a view to minimizing potential traffic impact arising from the Development Site, mandatory school bus policy would be adopted for the proposed private school. Under the mandatory school bus policy, all enrolled students would be required to take school bus to school/ home. Only students who live within walking distance in Sai Keng Village and Kei Ling Ha San Wai could be exempted from taking school bus to school/home. Parents of the admitted students will be required to sign and return the Mandatory School Bus Scheme Agreement before the start of each new school year. Under the above arrangement, no student would be allowed to walk via the Proposed Access Road and only school staff (with entry pass) could walk from Sai Sha Road via the Proposed Access Road to the school during school arrival/dismissal periods. For students living in Sai Keng Village and Kei Ling Ha San Wai, pedestrian access would be allowed in the northern and southern boundary of the development site (close to Sai Keng Village and Kei Ling Ha San Wai respectively) and only students living in Sai Keng Village and Kei Ling Ha San Wai (with entry pass) could walk via the said pedestrian access to the school. Security booth/drop bar would be provided at the Proposed Access Road. Through the security booth/drop bar, the future school operator could check if there is any parent of the admitted students violating the school



bus policy. If students are found going to school/home by private cars/taxis, a warning letter would be issued to their parents for the first time. If they are caught for the second time, the student's place at the proposed school will be reviewed, subject to the final decision of the proposed school. In addition, the operation hour of kindergarten + primary school/ secondary school would be staggered by 30 minutes to minimize potential traffic impact.

*Ancillary Parking and Loading/ Unloading Provisions*

- 2.1.3 In order to accommodate potential pick-up and drop-off demand arising from the proposed private school, sufficient internal transport facilities would be provided within the school site.
- 2.1.4 Based on the development schedule of the proposed private school as given in **Table 2.1**, **Table 2.2** summarises the internal transport facilities provided in the proposed private school. The ground floor layout of the proposed private school accommodating the transport provisions is given in **Annex E** for reference.

**Table 2.2 Internal Transport Facilities provided in the Proposed Private School**

	<b>Staff Car Parking</b>	<b>School Bus Layby</b>
Primary / Secondary School (1176 students)	25 <sup>(1)</sup>	22 <sup>(3)</sup> (12m x 3.5m)
Nursery / Kindergarten (50 students)	2 <sup>(2)</sup>	5 <sup>(4)</sup> (8m x 3m)

- Remark (1) Based on the demand of 2.1 staff car parking spaces / 100 students as observed on Shatin College / Shatin Junior School in Fo Tan
- (2) Based on the demand of 2.5 staff car parking spaces / 100 students as observed on Anchors Kindergarten and International Nursery in Tai Po
- (3) As observed at Shatin College / Shatin Junior School in Fo Tan (with similar number of students using school bus), a maximum of 6 large coaches and 19 small coaches are observed at one snapshot in time during school end serving for about 1122 students. By proportion, 27 nos. of school bus laybys are required (i.e.  $(6+19) \times 1176 / 1122$ ). As the school ending hours for kindergarten (around 4:30pm) and primary / secondary school (around 3:00pm) are different, the 5 nos of laybys provided for kindergarten can also be shared by primary / secondary schools. Hence a total of 22 nos. (i.e. 27-5) school bus laybys are proposed for the primary / secondary school.
- (4) Based on HKPSG requirements

## **2.2 Public Vehicle Park (Not for approval)**

- 2.2.1 Currently, part of the Development Site is being used as temporary carpark to serve Sai Keng Village and Kei Ling Ha San Wai. Based on the on-site observation, there are about 250 cars parking within the "G/IC" zone. The Applicant would consider provision of Public Vehicle Park (PVP) within the "G/IC" site for re-provisioning of affected car parks. In addition, the Applicant has always been closely communicating with representatives of the neighbouring villagers to inform them on the planning and development of the area and to understand their concerns. The Applicant will continue to liaise with the neighbouring villagers regarding the parking arrangements when the proposed private school development is mature for implementation in future. In principle, specific requirements on the provision of PVP in the Development Site would be dealt with in the subsequent Land Exchange application stage subject to the result of parking demand survey and to the satisfaction of Transport Department.

## **2.3 Proposed Access Road**

- 2.3.1 As mentioned in Section 1.1.1, the Development Site could only be accessible via two substandard village tracks through the 2 adjacent village environs (i.e. Sai Keng and Kei Ling Ha San Wai) from Sai Sha Road respectively. These two substandard tracks are steep and narrow and bounded by existing village houses on both sides, they are primarily designed to serve villages but not a private school development.
- 2.3.2 Hence, a new access road branching off from Sai Sha Road is proposed to serve the operation needs of the proposed private school. The Proposed Access Road is an approximately 20m long, single 2-lane carriageway with 2.75m wide footpath on both sides connecting the Development Site with Sai Sha Road. As the Proposed Access Road will serve primarily the Proposed Private School, it is therefore designed to comply with the requirements stipulated in Building (Private Street and Access Roads) Regulations.
- 2.3.3 Two options on the junction of Sai Sha Road / Proposed Access Road were explored as detailed below.

### **Option 1 (Signal Controlled)**

- 2.3.4 **Figure 2.1** shows the proposed conceptual junction layout and method of control on the junction of Sai sha Road / Proposed Access Road. As shown in **Figure 2.1**, traffic from Sai Sha Road northbound right-turning into the Proposed Access Road is banned so as to simplify the method of control. The affected traffic have to continue northbound and make a U-turn via the roundabout at Sai Sha Road / Access Road to Tseng Tau (J5), then travel southbound along Sai Sha Road southbound and left-turn into the Proposed Access Road. To avoid queue back from the Proposed Access Road, an exclusive free flow left turn from Sai Sha Road southbound is provided at the junction.
- 2.3.5 As shown in **Figure 2.1**, the junction would operate in 2 stages. Stage 1 relates to both Sai Sha Road northbound and southbound straight ahead traffic, while stage 2 relates to the traffic coming from the Proposed Access Road. As there is almost no demand to the school site for most of the time, a demand detector is proposed for traffic coming from the Proposed Access Road (i.e. Stage 2) so as to minimize any disruption to the Sai Sha Road northbound and southbound straight ahead traffic.

### **Option 2 (Priority Controlled)**

- 2.3.6 **Figure 2.3** shows the proposed conceptual junction of Sai Sha Road / Proposed Access Road under priority control. Similarly, traffic from Sai Sha Road northbound right turning into the Proposed Access Road is banned so as to minimize the traffic conflicts. An exclusive left-turn lane from Sai Sha Road southbound is provided at the junction.
- 2.3.7 There are heavy traffic flow along Sai Sha Road. Under the proposed layout, right-turning traffic from the Proposed Access Road have to give-way to the Sai Sha Road southbound traffic firstly. After crossing the Sai Sha Road southbound carriageway, an additional northbound merging lane is provided such that the right-turn traffic can merge back with the Sai Sha Road northbound straight-ahead traffic.
- 2.3.8 **Table 2.3** summarises the junction performance in 2031 AM peak period together with the pros and cons of the two options. The choice of control type (i.e. priority or signal controlled) could be further studied in the detailed design stage.

**Table 2.3 Comparison of Signal and Priority Control Method**

	Signal Control	Priority Control	Pros / Cons
Capacity	Reserve Capacity = 53%	DFC = 0.72	Both options have adequate capacity to handle the future traffic demand
Traffic Queue	Sai Sha Road NB = 24 m Sai Sha Road SB = 36 m Proposed Access Road = 24 m	No traffic queue along Sai Sha Road Proposed Access Road = 18 m	Longer traffic queue under the signal control scheme
Average Delay	Sai Sha Road NB = 2 sec/veh Sai Sha Road SB = 2 sec/veh Proposed Access Road = 30 sec/veh	No delay for traffic along Sai Sha Road Proposed Access Road = 1.1 min/veh	Longer traffic delay under the signal control scheme
Road Alignment	Straight alignment across the road junction	Slightly skewed across the road junction but the R value (i.e. 90m) would still meet the TPDM requirement	Better road alignment across the road junction under the signal control scheme
Safety	Low right turn rate but may have higher rear end accident rate	Relies heavily on driver judgement	<ul style="list-style-type: none"> <li>Relies heavily on driver judgement under priority control scheme</li> <li>Low right turn rate but might have higher rear end accident rate under signal control scheme</li> </ul>

- 2.3.9 The Proposed Access Road will be designed, implemented, managed and maintained by the future school operator subject to final agreement with the relevant Government departments in the later detailed design and implementation stage.



### 3 EXISTING TRAFFIC CONDITION

#### 3.1 Existing Road Network

- 3.1.1 The Application Site is located along Sai Sha Road near Sai Keng. The existing road network together with the future road layout under Sai Sha Road widening project is diagrammatically shown in **Figure 3.1**.
- 3.1.2 The section of Sai Sha Road between Nin Wah Road and Tai Mong Tsai Road is currently a rural road of single 2-lane carriageway connecting Ma On Shan with Sai Kung. The section of Sai Sha Road to the west of Nin Wah Road is dual carriageway connecting with Ma On Shan Bypass and Route 2 (Tate’s Cairn Highway) towards urban areas.
- 3.1.3 A total of 9 critical junctions have been identified for assessment under this TIA taking into account Sai Sha Road widening scheme. They are listed in **Table 3.1** and shown in **Figure 3.1**. The layouts of the above existing junctions are shown in **Figure 3.2** to **Figure 3.9**

**Table 3.1 Critical Junctions**

Ref.	Junction	Type	Fig. No.
J1	Sai Sha Road / Nin Wah Road / Nin Fung Road	Roundabout	3.2
J2	Sai Sha Road / Access Road to Sai O	Priority	3.3
J3 <sup>(1)</sup>	Sai Sha Road / Access Road to Kwun Hang (J3a) & Sai Sha Road / Access Road to Che Ha (J3b)	Priority	3.4
J4	Sai Sha Road / Access Road to Ma Kwu Lam	Priority	3.5
J5	Sai Sha Road / Access Road to Tseng Tau	Priority	3.6
J6	Sai Sha Road / Proposed Access Road	Signal	2.1
J7	Sai Sha Road / Tai Mong Tsai Road	Roundabout	3.7
J8	Sai Sha Road / Access Road to Sai Keng Tsuen	Priority	3.8
J9	Sai Sha Road / Access Road to Kei Ling Ha San Wai	Priority	3.9

Note:

- (1) J3a is the existing priority junction at Sai Sha Road / Access Road to Kwun Hang. J3b is the existing junction at Sai Sha Road / Access Road to Che Ha. With the Sai Sha Road widening works, J3a and J3b would be combined, forming a new signalized junction J3 – Sai Sha Road / Access Road to Kwun Hang / Access Road to Che Ha.

### 3.2 Traffic Survey

- 3.2.1 Manual classified traffic counts surveys were carried out to establish the current traffic condition in the vicinity. The surveys were undertaken at the above critical junctions during 0700 – 0900 and 1700 – 1900 on a typical weekday in 23 November 2021.
- 3.2.2 For the overall two-way traffic flows along Sai Sha Road, the AM peak and the PM peak periods occur from 7:30-8:30 and 17:15-18:15 respectively. For the AM peak period, the one-way traffic flow along Sai Sha Road (Ma On Shan Direction) during AM peak from 0700- 0800 is higher than the period 07:30 -08:30, hence the traffic flows in Ma On Shan Direction in this period would be adopted as the peak hour flows for conservative approach.
- 3.2.3 The 2021 observed AM and PM peak hour traffic flows are shown in **Figure 3.10**

### 3.3 Junction Assessment

- 3.3.1 Junction capacity analysis was carried out for the above surveyed junctions which are located in the vicinity of the site to appraise the existing traffic condition based on the 2021 observed peak hour traffic flows.
- 3.3.2 Based on the turning flows at the above junctions, capacity assessments were carried out in accordance with the methodology documented in the appendices of Transport Planning and Design Manual (TPDM) Volume 2 Chapter 4 for priority junction and roundabout capacity assessment. Signal junction assessments were based on TPDM Volume 4.
- 3.3.3 The existing junction performances of the critical junctions are summarized in **Table D 3.2**. Capacity calculation sheets are attached in **Annex A**.

**Table 3.2 Existing Junction Performance**

Ref.	Junction	Type	2021 RC/DFC*	
			AM Peak	PM Peak
J1	Sai Sha Road / Nin Wah Road / Nin Fung Road	Roundabout	0.74	0.62
J2	Sai Sha Road / Access Road to Sai O	Priority	0.11	0.10
J3a	Sai Sha Road / Access Road to Kwun Hang	Priority	0.49	0.48
J3b	Sai Sha Road / Access Road to Che Ha	Priority	0.60	0.48
J4	Sai Sha Road / Access Road to Ma Kwu Lam	Priority	0.34	0.09
J5	Sai Sha Road / Access Road to Tseng Tau	Priority	0.82	0.70
J7	Sai Sha Road / Tai Mong Tsai Road	Roundabout	0.39	0.40
J8	Sai Sha Road / Access Road to Sai Keng Tsuen	Priority	0.36	0.37
J9	Sai Sha Road / Access Road to Kei Ling Ha San Wai	Priority	0.35	0.36

\* RC = Reserve Capacity for signal junction; DFC = Design Flow / Capacity ratio for priority junction or roundabout

- 3.3.4 At present, all critical junctions are operating satisfactorily without capacity problem.
- 3.3.5 The existing road link performance of Sai Sha Road are summarized in **Table 3.3**.

**Table 3.3 Existing Road Link Performance**

Ref	Road Section	Dir.	Minimu m Width (m)	Link Capacity (pcu/hr) (C)	2021 Traffic Flows (pcus/hr) (V)		2021 V/C Ratio	
					AM Peak	PM Peak	AM Peak	PM Peak
Sai Sha Road								
L1	Between Ma On Shan Bypass and Nin Wah Road	WB	7.1	3,690 <sup>(1)</sup>	1440	1170	0.39	0.32
		EB	7.1	3,690 <sup>(1)</sup>	945	965	0.26	0.26
L2	Between Nin Wah Road and Access Road to Sai O	WB	3.5	1,230 <sup>(2)(3)</sup>	1145	940	0.93	0.76
		EB	3.5	1,230 <sup>(2)(3)</sup>	950	840	0.77	0.68
L3	Between Access Road to Sai O and Access Road to Che Ha	WB	3	1,230 <sup>(2)(3)</sup>	1065	915	0.87	0.74
		EB	3	1,230 <sup>(2)(3)</sup>	865	830	0.70	0.67
L4	Between Access Road to Che Ha and Access Road to Ma Kwu Lam	NB	3	1,230 <sup>(2)(3)</sup>	915	860	0.74	0.70
		SB	3	1,230 <sup>(2)(3)</sup>	805	750	0.65	0.61
L5	Between Access Road to Tseng Tau and Proposed Access Road	NB	3	1,230 <sup>(2)(3)</sup>	705	685	0.57	0.56
		SB	3	1,230 <sup>(2)(3)</sup>	650	580	0.53	0.47
L6	South of Proposed Access Road	NB	3	1,230 <sup>(2)(3)</sup>	645	655	0.52	0.53
		SB	3	1,230 <sup>(2)(3)</sup>	640	515	0.52	0.42
L7	North of Tai Mong Tsai Road	NB	3.3	1,230 <sup>(2)(3)</sup>	610	630	0.50	0.51
		SB	3.3	1,230 <sup>(2)(3)</sup>	640	500	0.52	0.41

**Notes:**

- (1) According to TPDM Volume 2 Table 2.4.1.1, road capacity for Dual 2 (7.3m)- Trunk Road is 3000 vehs/hr (one-way) with proportion of heavy vehicles equal to 15%. Based on 15% heavy vehicle proportion, the pcu factor is calculated as 1.23 (ie 0.85 + 0.15(2.5)). Hence the road capacity is 3690 pcu/hr (i.e. 3000 X 1.23)
- (2) According to TPDM Volume 2 Table 2.4.1.1, road capacity for Single 2 (7.3m)- Primary Distributor Road is 2000 vehs/hr (two-way) with proportion of heavy vehicles equal to 15%. Hence the road capacity is 2460 pcu/hr (two-way)(ie 2000 X 1.23) or 1230 pcu/hr (one-way). As also mentioned in TPDM, the capacity of single 2 lane carriageway is significantly affected the amount of kerb activities, pedestrian traffic and crossing, distance between side road and junctions etc, careful consideration on the actual site condition should be made before adopting these figures.
- (3) Based on TPDM Volume 4 Signal Design, the theoretical saturated flow of a 3m wide nearside traffic lane is about 1915 pcu/hr. Based on site observation, there is no kerb activities on the section of Sai Sha Road between Tseng Tau Road and the Proposed Access Road. Bus laybys are also provided. In addition, there are only limited number of junctions along this section of Sai Sha Road. Based on the on-site measurement at Sai Sha Road (near the bus layby in the vicinity of Proposed Access Road), the capacity is about 1400 pcu/hr(one-way). In view of above, a capacity of 1230 pcu/hr is adopted for conservative approach.

**3.3.6** At present, all the road links are operating without capacity problem except with section of Sha Sai Road between Nin Wah Road and Access Road to Che Ha (L2 & L3). For sections L2 & L3 westbound direction, it is operated close to its capacity.

## 4 TRAFFIC FORECASTING

### 4.1 Design Year

- 4.1.1 The proposed access road will be completed in conjunction with the private school development in year 2028 tentatively.
- 4.1.2 Year 2031 is therefore selected as a design year in this TIA for assessment purpose (i.e. 3 years after the planned completion of the Proposed Access Road according to Transport Department’s “Guidelines and Requirements of Traffic Impact Assessment Studies”).

### 4.2 Traffic Growth

- 4.2.1 In order to forecast the traffic flow and examine traffic impact due to the Proposed Access Road in year 2031, annual growth rate method is applied to derive the base traffic flow for further developing traffic flow for assessment. In addition, the traffic generated by other planned / committed developments in the vicinity of the Application Site would then be added to the background traffic flow to estimate the 2031 reference traffic flows (without proposed access road cum school development).
- 4.2.2 In determining the annual traffic growth rate, the historical traffic data of the Annual Traffic Census (ATC) reports published annually by the Transport Department was referred. The annual average daily traffic flow (AADT) of the nearby counting stations in Ma On Shan area from years 2015 to 2020 are summarized in below **Table 4.1**. The locations of the ATC stations are as shown in **Annex B**.

**Table 4.1 Annual Traffic Census**

Station No.	Road	AADT (Vehs / day)					
		2015	2016	2017	2018	2019	2020
5005	Ma On Shan Road	26,220	26,500	26,270	26,020	26,020	24,340
5275	On Chiu St	8,670	8,770	8,720	9,070	10,280	9,890
5281	Sai Sha Rd	15,520	15,690	15,590	11,250	12,560	12,080
5467	Ma On Shan Rd	17,340	17,530	17,420	17,700	17,150	15,990
5662	Sai Sha Road	17,660	18,260	18,140	18,430	18,300	22,480
5683	Sai Sha Road	25,750	23,210	23,060	23,440	23,270	24,950
5692	Ma On Shan Rd	42,640	42,710	42,830	42,980	42,940	47,540
5708	Ma On Shan Bypass	22,740	21,790	21,850	21,930	21,900	23,160
5877	Hang Hong St	15,390	14,820	15,040	15,280	15,180	14,600
5883	On Yuen St	9,950	10,530	11,410	11,590	11,510	11,070
6056	Sai Sha Rd	10,660	10,780	10,990	11,880	11,800	11,350
6072	On Chun St	6,760	6,830	7,290	6,990	6,940	6,680
6078	On Luk St	11,870	12,010	12,090	12,870	12,780	12,290
<b>Total</b>		<b>231,170</b>	<b>229,430</b>	<b>230,700</b>	<b>229,430</b>	<b>230,630</b>	<b>236,420</b>
Traffic Growth Rate of total traffic flows from 2015 to 2020 = <b>0.45% per annum, i.e. <math>((236,420 / 231,170)^{1/5} - 1) \times 100\%</math></b>							



- 4.2.3 As shown in **Table 4.1**, the average annual traffic growth is 0.45% per annum from years 2015 to 2020. Based on the Station No 5662, the AADT (vehs/day) increase from 17660 to 22480 from years 2015 to 2020. The increase in traffic flows was partially due to the growth in population in Ma On Shan area and partially due to the increase in construction traffic due to the Sai Sha Development and the Sai Sha Road widening. For the station No. 6056 (close to the roundabout at Sai Sha Road / Tai Mong Tsai Road and more related to the traffic flow pattern from Sai Kung bound), the AADT (vehs/day) increased from 10,660 to 11,350 from during years 2015 to 2020. This represent an annual growth rate of 1.3% per annum. Out of this 1.3% annual growth rate, it is anticipated that 0.45% is related to the population / employment growth at Ma On Shan Area, the remaining 0.85% growth would be related to the change in traffic flow pattern to / from Sai Kung Area.
- 4.2.4 As mentioned in **Section 4.2.1**, the additional traffic generated from planned / committed developments would be separately estimated and added to the future traffic flow (by growth method). The direct usage of this growth rate extracted from ATC would not be applicable.
- 4.2.5 Another traffic growth rate was hence estimated with reference to 2019-based Territorial Population and Employment Data Matrix (TPEDM) data which is available in Planning Department’s website. **Table 4.2** shows the planning data in Ma On Shan area in years 2019 and 2031. The annual growth rate of population and employment in Ma On Shan area from years 2019 to 2031 identified is 0.06% per annum.

**Table 4.2 2019-based TPEDM Planning Data**

Planning Data District	Year 2019			Year 2031			Annual Growth Rate (from 2019 to 2031)
	Population	Employment	Total	Population	Employment	Total	
Ma On Shan <sup>(1)</sup>	219,950	34,100	254,050	229,800	35,100	264,900	0.35%
South East New Territories (other area) <sup>^</sup>	68,900	27,250	96,150	59,750	28,100	87,850	-0.75%
Total	288,850	61,350	350,200	289,550	63,200	352,750	<b>0.06%</b>

Note:

<sup>^</sup> South East New Territories (other area): includes Sai Kung

- 4.2.6 As discussed in **Section 4.2.3**, the change in traffic flow pattern to / from Sai Kung Area would be about 0.85% per annum. As shown in **Table 4.2**, the overall population and employment at Sai Kung Area would be reduced by about -0.75% annually from Year 2019 to 2031. Based on the above, the overall annual growth rate to / from Sai Kung Area would be about 0.1% (i.e. 0.85% - 0.75%).
- 4.2.7 Based on the above findings on the traffic growth rates from TPEDM, a conservative annual growth rate of 0.5% per annum is adopted for projecting the peak hour traffic flows from year 2021 (existing) to year 2031 (background) (i.e. **2021 existing traffic flow x (1+0.5%)<sup>10</sup> = 2031 base traffic flow**).

### **4.3 Other Planned Developments**

- 4.3.1 Apart from the proposed private school in the Development Site, other committed / planned major developments in the vicinity and Ma On Shan area, have been taken into account in the traffic forecast. Also, for a conservative approach, current Short Term Tenancy (STT) sites in Ma On Shan Area are identified and added as their planned developments according to their land use in the approved Ma On Shan OZP. They are listed in **Table 4.3** and the locations and information of those committed / planned developments are shown in **Annex C**.

**Table 4.3 Future Committed / Planned Development in vicinity**

Site ID	Development	Development Type	No. of Flats	Assumed Average Flat Size (m <sup>2</sup> )	Other	Trip Rates				Trip Ends			
						AM Peak		PM Peak		AM Peak		PM Peak	
						Generation (pcu/hr/flat)	Attraction (pcu/hr/flat)	Generation (pcu/hr/flat)	Attraction (pcu/hr/flat)	Generation (pcu/hr)	Attraction (pcu/hr)	Generation (pcu/hr)	Attraction (pcu/hr)
1	STTL 600 – CDA(1)	Student Hostel	-	-	2,168 beds	-	-	-	-	10 <sup>(1)</sup>	10 <sup>(1)</sup>	10 <sup>(1)</sup>	10 <sup>(1)</sup>
2	STTL 601 – CDA(2)	Private Housing	547	66	-	0.0888 <sup>(2)</sup>	0.0515 <sup>(2)</sup>	0.0356 <sup>(2)</sup>	0.048 <sup>(2)</sup>	49	29	20	27
3	STTL 611 – R(C)3	Private Housing	111	100*	-	0.2452 <sup>(3)</sup>	0.1209 <sup>(3)</sup>	0.0835 <sup>(3)</sup>	0.1274 <sup>(3)</sup>	28	14	10	15
4	STTL 605 – R(B)5	Private Housing	148	142	-	0.2604 <sup>(4)</sup>	0.1372 <sup>(4)</sup>	0.1275 <sup>(4)</sup>	0.1722 <sup>(4)</sup>	39	21	19	26
5	Yan On Estate Phase 2 – R(A)8	PRH	1,600	32	-	0.0242 <sup>(5)</sup>	0.0226 <sup>(5)</sup>	0.0177 <sup>(5)</sup>	0.0201 <sup>(5)</sup>	39	37	29	33
6	Area 81A Development – R(A)9	HOS	2,079	51	-	0.0622 <sup>(6)</sup>	0.0426 <sup>(6)</sup>	0.0297 <sup>(6)</sup>	0.0401 <sup>(6)</sup>	130	89	62	84
7	Hang Kin Street Development – R(A)10#	HOS	735	42	-	0.0622 <sup>(6)</sup>	0.0426 <sup>(6)</sup>	0.0297 <sup>(6)</sup>	0.0401 <sup>(6)</sup>	46	32	22	30
8	On Chun Street Development – Area 100#	G/IC (Site Area: 0.48 hectare)	-	-	Social Welfare facilities	-	-	-	-	50 <sup>(7)</sup>	50 <sup>(7)</sup>	50 <sup>(7)</sup>	50 <sup>(7)</sup>
9	Ma On Shan Road Development – Area 103#	G/IC (Site Area: 0.79 hectare)	-	-	Sports Centre	-	-	-	-	0 <sup>(14)</sup>	0 <sup>(14)</sup>	50 <sup>(8)</sup>	50 <sup>(8)</sup>
10	Hang Kin Street Development	G/IC (Site Area: 0.21 hectare)	-	-	Social Welfare Facilities	-	-	-	-	50 <sup>(7)</sup>	50 <sup>(7)</sup>	50 <sup>(7)</sup>	50 <sup>(7)</sup>
11	On Chun Street School Development	G/IC (Site Area: 0.66 hectare)	-	-	Assumed 30 classrooms	0.567 <sup>(9)</sup>	1 <sup>(9)</sup>	0.333 <sup>(9)</sup>	0.167 <sup>(9)</sup>	18	30	10	6
12	Lok Wo sha Lane Development	G/IC (Site Area: 0.7 hectare)	-	-	Sports Centre	-	-	-	-	0 <sup>(14)</sup>	0 <sup>(14)</sup>	50 <sup>(8)</sup>	50 <sup>(8)</sup>
13	DD 191 , Ma On Shan - GB	Private Housing	180	180	-	0.2772 <sup>(10)</sup>	0.1769 <sup>(10)</sup>	0.1635 <sup>(10)</sup>	0.2394 <sup>(10)</sup>	50	32	30	44

Site ID	Development	Development Type	No. of Flats	Assumed Average Flat Size (m <sup>2</sup> )	Other	Trip Rates				Trip Ends			
						AM Peak		PM Peak		AM Peak		PM Peak	
						Generation (pcu/hr/flat)	Attraction (pcu/hr/flat)	Generation (pcu/hr/flat)	Attraction (pcu/hr/flat)	Generation (pcu/hr)	Attraction (pcu/hr)	Generation (pcu/hr)	Attraction (pcu/hr)
14	Sai Sha Development - CDA	Private Housing	9,700	60	Retail, Schools	-	-	-	-	974 <sup>(11)</sup>	672 <sup>(11)</sup>	628 <sup>(11)</sup>	716 <sup>(11)</sup>
15	Nai Chung School Development - OU	School Development	-	-	722 students	-	-	-	-	131 <sup>(12)</sup>	141 <sup>(12)</sup>	97 <sup>(12)</sup>	92 <sup>(12)</sup>
16	Cheung Muk Tau Site – R(A)11	Public Housing	3,480	55	-	0.0622 <sup>(13)</sup>	0.0426 <sup>(13)</sup>	0.0297 <sup>(13)</sup>	0.0401 <sup>(13)</sup>	216	148	103	140
17	Ma On Shan Tsuen Road Site – R(A)11	Public Housing	2,700	55	-	0.0622 <sup>(13)</sup>	0.0426 <sup>(13)</sup>	0.0297 <sup>(13)</sup>	0.0401 <sup>(13)</sup>	168	115	80	108

Notes:

- \* Assumed average flat size of STTL 611 is 100m<sup>2</sup>
- # Current STT Sites
- (1) Based on in-house survey data at Student Residence of the City University of Hong Kong (Tat Hong Avenue) and Student Halls of Hong Kong Polytechnic University (Fat Kwong Street)
- (2) Based on trip rates of private housing R(A) (flat size of 70m<sup>2</sup> GFA) as stated in TPDM
- (3) Interpolation based on trip rates of private housing R(C) (flat size of 180m<sup>2</sup> and 240m<sup>2</sup> GFA by) as stated in TPDM
- (4) Based on trip rates of private housing R(B) – Accessibility level A (flat size of 140m<sup>2</sup> GFA) as stated in TPDM
- (5) Based on trip rates of PRH (flat size of 30m<sup>2</sup> GFA) as stated in TPDM
- (6) Based on trip rates of HOS as stated in TPDM
- (7) In-house survey data at Pok Oi Hospital Tin Ka Ping Centre located at Au Tau Yuen Long (with site area of 0.22 hectare) generate / attract a two-way flow of about 20 pcu/hr during AM peak / PM peak. A conservative approach of 100 pcu/hr two-way flow is adopted.
- (8) In-house survey data at Lai King Sports Centre (with site area of 0.52 hectare) generate / attract a two-way flow of about 20 pcu/hr during PM peak. A conservative approach of 100 pcu/hr two-way flow is adopted.
- (9) Based on in-house survey data at SKH Ma On Shan Holy Spirit Primary School (with 30 classrooms)
- (10) Based on trip rates of private housing R(C) (flat size of 180 m<sup>2</sup> GFA) as stated in TPDM
- (11) Based on Sai Sha Development TIA under recently approved planning application no. A/NE-SSH/120-1
- (12) Based on TIA under recently approved planning application no. A/MOS/125
- (13) Information extracted from RNTPC Paper No. 4/20 and RNTPC Paper No. 6/20 and based on trip rates of HOS as stated in TPDM
- (14) No traffic/ very minimal traffic for sports centres in AM peak period



#### 4.4 2031 Reference Traffic Forecasts (without Proposed Access Road cum School Development)

- 4.4.1 By applying the adopted growth rate 0.5% per annum and superimposing the other planned / committed developments trips as shown in **Table 4.3**, the 2031 reference traffic forecast (without Proposed Access Road cum School Development) has been obtained and illustrated in **Figure 4.1**. For these planned / committed developments, a split of 90% to / from Ma On Shan bound and 10% to / from Sai Kung bound is assumed. The traffic flow generated / attracted to each development are indicated in **Annex D**.

#### 4.5 Trip Generation of the Development Site

##### Proposed Private School

- 4.5.1 As mentioned in **Section 2.1.2**, school-bus policy will be adopted for the concerned school development. Based on the parameters as listed in **Table 2.1** and the proposed internal transport facilities provided in **Table 2.2**, the vehicular trip generation / attraction of the said school development is derived and summarised in **Table 4.4**.

**Table 4.4 Trip Generation/ Attraction of School Development**

	No. of Students	Trip Generation/ Attraction (pcu/hr)			
		AM Peak		PM Peak	
		Generation	Attraction	Generation	Attraction
Kindergarten	50 students <sup>(1)</sup>	8	8	8	8
	2 Staff car parking <sup>(2)</sup>	-	2	2	-
	Total	8	10	10	8
Primary School	504 students <sup>(3)</sup>	34	34	34	34
	11 Staff car parking <sup>(2)</sup>	-	11	11	-
	Total	34	45	45	34
Secondary School	672 students <sup>(4)</sup>	45	45	45	45
	14 Staff car parking <sup>(2)</sup>	-	14	14	-
	Total	45	59	59	45

Note:

- (1) Assumed 5 nos of nanny bus and adopted pcu factor of 1.5 for small coach
- (2) Assumed all staff car to/from school use at peak hour;
- (3) As observed in Shatin College / Shatin Junior School (with similar number of students using school bus), there are 15 large coaches and 30 small coaches to / from school during the AM peak hour serving for about 1122 students. By proportion, a total number of 7 large coaches (i.e. 15 x 504 / 1122) and 13 small coaches (i.e. 30 x 504 / 1122) would be generated / attracted. By adopting a PCU factor of 2 for large coach and 1.5 for small coach, the overall traffic generation would be 34 pcu/hr (i.e. 7 x 2 + 13 x 1.5)
- (4) As observed in Shatin College / Shatin Junior School (with similar number of students using school bus), there are 15 large coaches and 30 small coaches to / from school during the AM peak hour serving for about 1122 students. By proportion, a total number of 9 large coaches (i.e. 15 x 672 / 1122) and 18 small coaches (i.e. 30 x 672 / 1122) would be generated / attracted. By adopting a PCU factor of 2 for large coach and 1.5 for small coach, the overall traffic generation would be 45 pcu/hr (i.e. 8 x 2 + 18 x 1.5)

- 4.5.2 As mentioned in **Section 2.1.2**, the operation hour of kindergarten + primary school / secondary school would be staggered by 30 minutes. As most of the students would likely come to school 30 minutes before the school starts, it is assumed that the trips generated / attracted to / from the school would happen in 30 minutes. For conservative assessment purpose, the number of secondary school students (which has more numbers of students than primary school) is adopted.
- 4.5.3 In general, the school hours for primary / secondary school starts at about 8:00am and ends at about 3:00pm. Hence the peak school traffic during the AM Peak period would largely overlap with the general AM Peak period (i.e. between 7:30am – 8:30am). For the peak school traffic during PM peak period, it would occur at about 3:00pm-4:00pm, and entirely not overlap with the general PM peak period. Nevertheless, the estimated traffic generation of secondary school (happens in 30 minutes) as listed in **Table 4.4** would add to the general AM/PM period traffic for conservative approach.

Public Vehicle Park (for re-provisioning of affected car parks in the Development Site)

- 4.5.4 To account for the possible provision of the PVP and the potential traffic impact arising from the PVP, it is assumed that 90% of traffic currently travel via the junction Sai Sha Road/ Access Road to Sai Keng Tsuen would be diverted to the Proposed Access Road as worse scenario for assessment purpose. The vehicular trip generation / attraction of the said PVP is derived and summarised in **Table 4.5**.

**Table 4.5 Trip Generation/ Attraction of Possible Public Vehicle Park**

	Trip Generation/ Attraction (pcu/hr)			
	AM		PM	
	Generation	Attraction	Generation	Attraction
Possible Public Vehicle Park	86	36	50	86

- 4.5.5 **Table 4.6** summarises the overall traffic generated by the private school and the possible provision of public vehicle park. A total two-way traffic of 330 pcu/hr and 344 pcu/hr would be generated / attracted to/from the Development Site comprising a private school and PVP during the AM and PM peak hours respectively.

**Table 4.6 Trip Generation/ Attraction of Private School and Possible Public Vehicle Park**

	Trip Generation/ Attraction (pcu/hr)			
	AM		PM	
	Generation	Attraction	Generation	Attraction
Private School <sup>(1)</sup>	90	118	118	90
Possible Public Vehicle Park	86	36	50	86
Total	176	154	168	176

Note:

- (1) Twice the trips generated by secondary school

#### **4.6 2031 Design Traffic Flows (with Proposed Access Road cum School Development)**

- 4.6.1 Traffic count on school coach was carried at roundabout Sai Sha Road / Hang Fai Street to identify the directional split of school coach from Renaissance College & Ma On Shan Methodist Primary School located at Hang Ming Street. It is observed that about 85% of school coach travelling towards Ma On Shan Direction while 15% of school coach travelling towards Sai Kung Direction. Based on these directional split, the resultant school development traffic flows are illustrated in **Figures 4.2**.
- 4.6.2 The 2031 design traffic flows were produced by reassigning the trips generated by PVP plus the school development as given in **Figure 4.2**. The resultant 2031 design traffic flows (with Proposed Access Road cum School Development) are illustrated in **Figure 4.3**.

#### **4.7 2031 Design Traffic Flows – Sensitivity Test on Directional Split**

- 4.7.1 Referring to the planning data in **Table 4.2**, the ratio of population in Ma On Shan and South East New Territories (including Sai Kung) would be about 80%:20%. Hence a directional split of 80% to/from Ma On Shan and 20% to/from Sai Kung is adopted as a sensitivity test scenario. Based on this directional split the resultant school development traffic flows are illustrated in **Figure 4.4**.
- 4.7.2 The 2031 design traffic flows for sensitivity test were produced by reassigning the trips generated by PVP plus the school development as given in **Figure 4.4**. The resultant 2031 design traffic flows (for sensitivity test) are illustrated in **Figure 4.5**.

## 5 TRAFFIC IMPACT ASSESSMENTS

### 5.1 Future Road Network

#### Sai Sha Road Widening

5.1.1 According to the approved Sai Sha comprehensive residential and recreational development (application no. A/NE-SSH/120-1), Sai Sha Road between Nin Wah Road and Tai Tung would be widened to a dual 2-lane carriageway around 2023.

5.1.2 The future planned junction layout of following newly formed junctions at Sai Sha Road (J1 – J5) are shown in **Figure 5.1 - 5.5** and would be adopted for assessment purpose.

- Junction of Sai Sha Road/ Nin Fung Road / Nin Wah Road (J1)
- Junction of Sai Sha Road/ Access Road to Sai O (J2)
- Junction of Sai Sha Road/ Access Road to Kwun Hang / Access Road to Che Ha (J3)
- Junction of Sai Sha Road/ Access Road to Ma Kwu Lam/ Access Road to Sai Sha Development (J4)
- Junction of Sai Sha Road/ Access Road to Tseng Tau (J5)

### 5.2 Junction Capacity Assessment

5.2.1 The operational performance of the 9 critical junctions based on year 2031 traffic forecasts (the reference and design scenarios) have been assessed. The results of junction capacity analysis are summarized in **Table 5.1**. Capacity calculation sheets are attached in **Annex A**.

**Table 5.1 Junction Performance in 2031**

Ref.	Junction	Type	2031 RC/DFC <sup>^</sup>			
			Reference Case (Without Proposed Access Road cum School Development)		Design Case (With Proposed Access Road cum School Development)	
			AM Peak	PM Peak	AM Peak	PM Peak
J1	Sai Sha Road / Nin Wah Road / Nin Fung Road	Roundabout	0.82	0.74	0.85	0.76
J2*	Sai Sha Road / Access Road to Sai O *	Signal	26%	63%	22%	59%
J3*	Sai Sha Road / Access Road to Kwun Hang / Access Road to Che Ha *	Signal	21%	40%	17%	37%
J4*	Sai Sha Road / Access Road to Ma Kwu Lam *	Roundabout	0.70	0.69	0.74	0.70
J5*	Sai Sha Road / Access Road to Tseng Tau *	Roundabout	0.60	0.58	0.65	0.60
J6	Sai Sha Road/ Proposed Access Road	Signalized	-	-	53%	69%
		Priority	-	-	0.72	0.33
J7	Sai Sha Road / Tai Mong Tsai Road	Roundabout	0.53	0.51	0.55	0.51
J8	Sai Sha Road / Access Road to Sai Keng Tsuen	Priority	0.48	0.21	0.08	0.03
J9	Sai Sha Road / Access Road to Kei Ling Ha San Wai	Priority	0.24	0.10	0.24	0.10

\* New Road / junction to be formed in Sai Sha Road Widening Project (By Others) for completion in year 2023



<sup>^</sup> RC = Reserve Capacity for signal junction; DFC = Design Flow / Capacity ratio for priority junction or roundabout

5.2.2 As shown in **Table 5.1**, all the critical junctions will be operating with sufficient capacity in year 2031 under both scenarios, and there will be no insurmountable traffic impact arising from the Proposed Access Road cum school development on these junctions.

5.2.3 Based on the assessment results as shown in **Table 5.1**, the roundabout Sai Sha Road / Nin Wah Road would be operated close to its capacity. The possibility of converting the roundabout into signal junction have been explored. To simplify the method of control, it is necessary to ban the right turn traffic at Sai Sha Road EB and WB at the said junction. For the Sai Sha Road EB right turn traffic, it has to route via the new roundabout at Sai Sha Road / Access Road to Ma Kwu Lam (J4) and back to Sai Sha Road WB with a detour distance of about 2.2km. The detour traffic would also overload another junction at Sai Sha Road / Access Road to Che Ha (J3). For the Sai Sha Road WB right turn traffic, it has to route via the roundabout at Sai Sha Road / Wu Kai Sha Road and back to Sai Sha Road EB with a detour distance of about **2.9km**. In view of the detour and capacity constraint at J3, the proposed conversion of the said junction into signalised junction is not feasible.

5.2.4 The queue length at the various signalized junction based on year 2031 design traffic flows have been assessed based on the methodology as given in TPDM Volume 4 Section 2.5. The results of queue length analysis are summarized in **Table 5.2**. The estimated queue at the junction of Sai Sha Road/ Proposed Access Road is illustrated in **Annex F**.

**Table 5.2 Estimated Queue Length at Various Signalized Junctions in 2031**

Ref.	Approach	Direction	Cycle Time (sec)	Estimated Average Queue Length (m)	
				Design Case (With Proposed Access Road cum School Development)	
				AM Peak	PM Peak
J2	Sai Sha Road – Eastbound	Straight Ahead	120s	42	42
		Right Turn		6	6
	Access Road to Sai O	All Movement		6	6
	Sai Sha Road – Westbound	Left Turn + Straight Ahead		54	42
J3	Sai Sha Road – Southbound	Left Turn + Straight Ahead	120s	78	60
		Right Turn		6	6
	Sai Sha Road – Northbound	Left Turn + Straight Ahead		72	54
		Right Turn		6	6
	Access Road to Che Ha	All Movement		36	18
	Access Road to Kwun Hang	All Movement		12	6
J6	Sai Sha Road – Southbound	Straight Ahead	90s	36	24
	Proposed Access Road	Left Turn		6	6
		Right Turn		24	12
	Sai Sha Road – Northbound	Straight Ahead		24	30

5.2.5 The road link performance of Sai Sha Road are summarized in **Table 5.3**. All the road links are operating satisfactory without capacity problem.

**Table 5.3 Future Road Link Performance**

Ref.	Road Section	Dir.	Min. Width (m)	Link Capacity (pcu/hr) (C)	2031 Traffic Flows (pcus/hr) (V)				2031 V/C Ratio			
					Reference Case (Without Proposed Access Road cum School Development)		Design Case (With Proposed Access Road cum School Development)		Reference Case (Without Proposed Access Road cum School Development)		Design Case (With Proposed Access Road cum School Development)	
					AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Sai Sha Road												
L1	Between Ma On Shan Bypass and Nin Wah Road	WB	7.1	3,690 <sup>(1)</sup>	3040	2220	3120	2275	0.82	0.60	0.85	0.62
		EB	7.1	3,690 <sup>(1)</sup>	2215	2115	2315	2155	0.60	0.57	0.63	0.58
L2 <sup>(4)</sup>	Between Nin Wah Road and Access Road to Sai O	WB	7.3	3,440 <sup>(2)</sup>	2310	1775	2390	1830	0.67	0.52	0.69	0.53
		EB	7.3	3,440 <sup>(2)</sup>	1844	1740	1944	1780	0.54	0.51	0.57	0.52
L3 <sup>(4)</sup>	Between Access Road to Sai O and Access Road to Che Ha	WB	7.3	3,440 <sup>(2)</sup>	2270	1770	2350	1820	0.66	0.51	0.68	0.53
		EB	7.3	3,440 <sup>(2)</sup>	1780	1750	1885	1790	0.52	0.51	0.55	0.52
L4 <sup>(4)</sup>	Between Access Road to Che Ha and Access Road to Ma Kwu Lam	NB	7.3	3,440 <sup>(2)</sup>	2055	1685	2135	1735	0.60	0.49	0.62	0.50
		SB	7.3	3,440 <sup>(2)</sup>	1660	1645	1765	1680	0.48	0.48	0.51	0.49
L5 <sup>(4)</sup>	Between Access Road to Tseng Tau and Proposed Access Road	NB	3	1,230 <sup>(3)</sup>	900	875	1005	940	0.73	0.71	0.82	0.76
		SB	3	1,230 <sup>(3)</sup>	895	745	1030	800	0.73	0.61	0.84	0.65
L6	South of Proposed Access Road	NB	3	1,230 <sup>(3)</sup>	840	845	860	850	0.68	0.69	0.70	0.69
		SB	3	1,230 <sup>(3)</sup>	890	675	905	685	0.72	0.55	0.74	0.56
L7	North of Tai Mong Tsai Road	NB	3.3	1,230 <sup>(3)</sup>	800	815	820	820	0.65	0.66	0.67	0.67
		SB	3.3	1,230 <sup>(3)</sup>	885	660	905	670	0.72	0.54	0.74	0.54

**Notes:**

- (1) Road capacity for Dual 2- Trunk Road from TPDM (ie 3000 vehs/hr) with pcu factor of 1.23
- (2) Road capacity for Dual 2- Primary Distributor from TPDM (ie 2800 veh/hr) with pcu factor of 1.23
- (3) According to TPDM Volume 2 Table 2.4.1.1, road capacity for Single 2 (7.3m)- Primary Distributor Road is 2000 vehs/hr (two-way) with proportion of heavy vehicles equal to 15%. Hence the road capacity is 2460 pcu/hr (two-way)(ie 2000 X 1.23) or 1230 pcu/hr (one-way). As also mentioned in TPDM, the capacity of single 2 lane carriageway is significantly affected the amount of kerb activities, pedestrian traffic and crossing, distance between side road and junctions etc, careful consideration on the actual site condition should be made before adopting these figures.  
Based on TPDM Volume 4 Signal Design, the theoretical saturated flow of a 3m wide nearside traffic lane is about 1915 pcu/hr. Based on site observation, there is no kerb activities on the section of Sai Sha Road between Tseng Tau Road and the Proposed Access Road. Bus laybys are also provided. In addition, there are only limited number of junctions along this section of Sai Sha Road. Based on the on-site measurement at Sai Sha Road (near the bus layby in the vicinity of Proposed Access Road), the capacity is about 1400 pcu/hr(one-way). In view of above, a capacity of 1230 pcu/hr is adopted for conservative approach.
- (4) Taking into account Sai Sha Road Widening scheme

### 5.3 Sensitivity Test on Directional Split

5.3.1 Similar to the “Reference Case” and “Design Case”, the key junctions are assessed with 2031 design traffic flows for sensitivity test with re-assigned development traffic flows based on the directional split of 80% to/from Ma On Shan and 20% to/from Sai Kung as discussed in **Section 4.7**. The assessment results are listed in **Table 5.4**.

**Table 5.4 2031 Junction Performance (Sensitivity Test)**

Ref.	Junction	Type	2031 RC/DFC <sup>^</sup>	
			AM Peak	PM Peak
J1	Sai Sha Road / Nin Wah Road / Nin Fung Road	Roundabout	0.85	0.76
J2*	Sai Sha Road / Access Road to Sai O *	Signal	22%	59%
J3*	Sai Sha Road / Access Road to Kwun Hang / Access Road to Che Ha *	Signal	17%	37%
J4*	Sai Sha Road / Access Road to Ma Kwu Lam *	Roundabout	0.74	0.70
J5*	Sai Sha Road / Access Road to Tseng Tau *	Roundabout	0.65	0.59
J6	Sai Sha Road/ Proposed Access Road	Signalized	53%	68%
		Priority	0.70	0.33
J7	Sai Sha Road / Tai Mong Tsai Road	Roundabout	0.55	0.51
J8	Sai Sha Road / Access Road to Sai Keng Tsuen	Priority	0.08	0.03
J9	Sai Sha Road / Access Road to Kei Ling Ha San Wai	Priority	0.24	0.11

Notes:

\* New Road / junction to be formed in Sai Sha Road Widening Project (By Others) for completion in year 2023

<sup>^</sup> RC = Reserve Capacity for signal junction; DFC = Design Flow / Capacity ratio for priority junction or roundabout

5.3.2 As shown in **Table 5.4**, all the assessed junctions will operate within capacity in the sensitivity test. The queue length at the various signalized junctions based on year 2031 design traffic flows for sensitivity test have been assessed. The results of queue length analysis are summarized in **Table 5.5**.

**Table 5.5 Estimated Queue Length at Various Signalized Junctions in 2031 (Sensitivity Test)**

Ref.	Approach	Direction	Cycle Time (sec)	Estimated Average Queue Length (m)	
				Design Case (With Proposed Access Road cum School Development)	
				AM Peak	PM Peak
J2	Sai Sha Road – Eastbound	Straight Ahead	120s	42	42
		Right Turn		6	6
	Access Road to Sai O	All Movement		6	6
	Sai Sha Road – Westbound	Left Turn + Straight Ahead		54	54

Ref.	Approach	Direction	Cycle Time (sec)	Estimated Average Queue Length (m)	
				Design Case (With Proposed Access Road cum School Development)	
				AM Peak	PM Peak
J3	Sai Sha Road – Southbound	Left Turn + Straight Ahead	120s	78	60
		Right Turn		6	6
	Sai Sha Road – Northbound	Left Turn + Straight Ahead		72	54
		Right Turn		6	6
	Access Road to Che Ha	All Movement		36	18
	Access Road to Kwun Hang	All Movement		12	6
J6	Sai Sha Road – Southbound	Straight Ahead	90s	36	24
	Proposed Access Road	Left Turn		6	6
		Right Turn		24	12
	Sai Sha Road – Northbound	Straight Ahead		36	30

5.3.3 The road link performance of Sai Sha Road is summarized in **Table 5.6**. All the road links are operating satisfactory without capacity problem.

**Table 5.6 Future Road Link Performance (Sensitivity Test)**

Ref.	Road Section	Dir.	Minimum Width (m)	Link Capacity (pcu/hr) (C)	2031 Traffic Flows (pcus/hr) (V)		2031 V/C Ratio	
					AM Peak	PM Peak	AM Peak	PM Peak
Sai Sha Road								
L1	Between Ma On Shan Bypass and Nin Wah Road	WB	7.1	3,690 <sup>(1)</sup>	3115	2270	0.84	0.62
		EB	7.1	3,690 <sup>(1)</sup>	2310	2150	0.63	0.58
L2 <sup>(4)</sup>	Between Nin Wah Road and Access Road to Sai O	WB	7.3	3,440 <sup>(2)</sup>	2385	1825	0.69	0.53
		EB	7.3	3,440 <sup>(2)</sup>	1939	1775	0.56	0.52
L3 <sup>(4)</sup>	Between Access Road to Sai O and Access Road to Che Ha	WB	7.3	3,440 <sup>(2)</sup>	2345	1820	0.68	0.53
		EB	7.3	3,440 <sup>(2)</sup>	1875	1785	0.55	0.52
L4 <sup>(4)</sup>	Between Access Road to Che Ha and Access Road to Ma Kwu Lam	NB	7.3	3,440 <sup>(2)</sup>	2130	1730	0.62	0.50
		SB	7.3	3,440 <sup>(2)</sup>	1755	1680	0.51	0.49
L5 <sup>(4)</sup>	Between Access Road to Tseng Tau and Proposed Access Road	NB	3	1,230 <sup>(3)</sup>	1015	945	0.83	0.77
		SB	3	1,230 <sup>(3)</sup>	1035	800	0.84	0.65
L6	South of Proposed Access Road	NB	3	1,230 <sup>(3)</sup>	865	855	0.70	0.70
		SB	3	1,230 <sup>(3)</sup>	905	685	0.74	0.56
L7	North of Tai Mong Tsai Road	NB	3.3	1,230 <sup>(3)</sup>	825	825	0.67	0.67
		SB	3.3	1,230 <sup>(3)</sup>	910	670	0.74	0.54

Notes:



- (1) Road capacity for Dual 2- Trunk Road from TPDM (ie 3000 vehs/hr) with pcu factor of 1.23
- (2) Road capacity for Dual 2- Primary Distributor from TPDM (ie 2800 veh/hr) with pcu factor of 1.23
- (3) According to TPDM Volume 2 Table 2.4.1.1, road capacity for Single 2 (7.3m)- Primary Distributor Road is 2000 vehs/hr (two-way) with proportion of heavy vehicles equal to 15%. Hence the road capacity is 2460 pcu/hr (two-way)(ie 2000 X 1.23) or 1230 pcu/hr (one-way). As also mentioned in TPDM, the capacity of single 2 lane carriageway is significantly affected the amount of kerb activities, pedestrian traffic and crossing, distance between side road and junctions etc, careful consideration on the actual site condition should be made before adopting these figures.  
Based on TPDM Volume 4 Signal Design, the theoretical saturated flow of a 3m wide nearside traffic lane is about 1915 pcu/hr. Based on site observation, there is no kerb activities on the section of Sai Sha Road between Tseng Tau Road and the Proposed Access Road. Bus laybys are also provided. In addition, there are only limited number of junctions along this section of Sai Sha Road. Based on the on-site measurement at Sai Sha Road (near the bus layby in the vicinity of Proposed Access Road), the capacity is about 1400 pcu/hr(one-way). In view of above, a capacity of 1230 pcu/hr is adopted for conservative approach.
- (4) Taking into account Sai Sha Road Widening scheme

#### 5.4 Sensitivity Test for Increase in Traffic Generation for 2 Primary Schools near Che Ha Village

- 5.4.1 Under the traffic forecast as given in **Section 4**, the traffic generation for each primary school is assumed to be 60 pcu (two-way) to / from each primary school during the AM peak period. Those are compatible with the traffic generation adopted in the previous approved TIA for Sai Sha Development (Application No. A/NE-SSH/120-1) and other government studies (such as Infrastructural Works for Proposed Developments at Queen’s Hill, Fanling). To account for the trip generation increased from 60 pcu (two-way) to 220 pcu (two-way) as mentioned by TD in extreme cases, a sensitivity test was carried out at the most critical junctions, Sai Sha Road / Nin Wah Road (J1) and Sai Sha Road / Access Road to Che Ha (J3) in 2031 AM peak period.
- 5.4.2 To resolve the capacity problems, several improvement measures were identified for government’s consideration in case this demand arises:
  - The operation hour of the two primary schools near Che Ha Village will need to be staggered by one hour.
  - Under the traffic forecast as given in **Section 4**, the traffic generation from the Nai Chung School development is assumed to happen in 30 minutes. Hence the operation time of the proposed private school could adjust to avoid coinciding with the Nai Chung School development traffic within this 30 minutes.
  - Ban the right-turn traffic from the future access road to the primary schools near Che Ha Village into Sai Sha Road WB. Traffic have to turn left and route via the new roundabout at Sai Sha Road / Access Road to Ma Kwu Lam (J4) then head back to Sai Sha Road WB.
- 5.4.3 Based on the above improvement measures, the junction J1 and J3 in the 2031 AM peak period has been reassessed and the results are summarised in **Table 5.7**. As shown in **Table 5.7**, with the suggested improvement measures, both the junctions J1 and J3 have capacity to cater for the additional traffic demand arising from the two primary schools near Che Ha Village.

**Table 5.7 2031 Junction Performance (Sensitivity Test for Increase in Traffic Generation for 2 Primary schools near Che Ha Village)**

Ref.	Junction	Type	2031 RC/DFC <sup>^</sup>
			AM Peak
J1	Sai Sha Road / Nin Wah Road / Nin Fung Road	Roundabout	0.83
J3*	Sai Sha Road / Access Road to Kwun Hang / Access Road to Che Ha *	Signal	21%

Notes:

\* New Road / junction to be formed in Sai Sha Road Widening Project (By Others) for completion in year 2023

<sup>^</sup> RC = Reserve Capacity for signal junction; DFC = Design Flow / Capacity ratio for priority junction or roundabout

## 5.5 Construction Traffic Impact

5.5.1 The Sai Sha Road widening works would be completed around 2023. Taken into consideration the current programme of the Proposed Access Road, it is unlikely that the works would be commenced before the completion of Sai Sha Road widening works. Even in case of commencing before the widening works, all the construction traffic for the construction of Proposed Access Road would only be allowed to/from the site during the non-peak period (ie between 10am- 4pm). With the completion of Sai Sha Road widening, the traffic situation would be improved. Based on the above traffic impact assessment for the school development traffic (i.e. two-way flow of about 200 pcu/hr), all the road junctions / links would be operating within capacity. For the construction traffic, it would be significantly lower than two-way of 200 pcu/hr (For reference, the two-way construction traffic flow of Sai Sha Site C is about 26 veh/hr). Hence the traffic impact due to the construction would be less than the future development traffic generation, and hence all the road junctions / links should still be operated within capacity.

## 5.6 Public Transport Assessment

- 5.6.1 With mandatory school bus policy implemented, all students will commute by school bus but not by public transport. Hence the public transport demand would only arise from the school staff only.
- 5.6.2 As a conservative approach for this public transport assessment, all staff (i.e. 116 staff according to **Table 2.1**) are assumed to take public transport. Currently, the subject site is served by existing franchised bus service no. 99 (between Heng On and Sai Kung with a headway of 15 minutes) and no. 299X (between Sha Tin Central and Sai Kung with a headway of 20 minutes) running along Sai Sha Road during AM peak hours.
- 5.6.3 Subject to the actual demand, it is recommended to enhance the bus frequency of bus routes 99 & 299X by providing 1 additional trip during AM peak hour for each bus route as shown in **Table 5.8**. A total of 2 extra buses/hour could provide an additional capacity of about 200 persons/hr (ie 2 x 100 persons/bus) which should provide adequate capacity for accommodating the additional public transport demand arising from the proposed school.

**Table 5.8 Public Transport Assessment**

Direction	Route	Existing AM Peak Frequency (min)	Proposed AM Peak Frequency (min)	Additional Capacity provided due to increase in Frequency (pax/hr)
To Sai Kung	299X	20 min (3 trips per hour)	15 min (4 trips per hour)	100
	99	15 min (4 trips per hour)	12 min (5 trips per hour)	100
			<b>Total</b>	<b>200 (&gt;116)</b>

## 5.7 Pedestrian Assessment

- 5.7.1 Pedestrian Assessment for the footpath of Proposed Access Road and footpath next to bus layby along Sai Sha Road are also conducted as shown in **Table 5.9** based on the total number of school staff (i.e. 116 staff) of the Proposed School. The result shows that the critical footpath will operate at Level-of-Service (LOS) A with ample capacity.

**Table 5.9 Pedestrian Flow Assessment**

Critical Section	Design Pedestrian Flows (persons per hour)	Width (m)	Effective Width (m)	Level of Service (LOS)
Footpath of Proposed Access Road	116	2.75	2.25*	A
Footpath at Sai Sha Road Next to Bus Layby	116	3.5	3*	A

\* Dead width of 0.5m adopted for footpaths

## **6 SUMMARY AND CONCLUSION**

### **6.1 Summary**

- 6.1.1 In late 2019, a GBP for a private school development in the “G/IC” zone was submitted to the government for approval. As the proposed private school is not served by any proper access at present, a new and proper access road branching off from Sai Sha Road is therefore proposed to serve the operation needs of the proposed private school. The subject Section 16 planning application refers to the segment of the Proposed Access Road within “GB” zone.
- 6.1.2 A Traffic Impact Assessment (TIA) report is prepared in support of the Section 16 Planning Application for the Proposed Access Road in “GB” zone. For assessment purpose of this TIA, traffic impact arising from the proposed access road cum private school development would be assessed.
- 6.1.3 The Proposed Access Road is a 7.3m wide single 2-lane carriageway with 2.75m wide footpaths on both sides and forms a T-junction with Sai Sha Road. The design of the Proposed Access Road has followed the requirements as given in Building (Private Street and Access Roads) Regulations as it would serve primarily the private school development. Two options on the junction of Sai Sha Road / Proposed Access Road were explored as detailed below.

#### **Option 1 (Signal Controlled)**

**Figure 2.1** shows the proposed junction layout and method of control on the junction of Sai sha Road / Proposed Access Road. As shown in **Figure 2.1**, traffic from Sai Sha Road northbound right-turning into the Proposed Access Road is banned so as to simplify the method of control. The affected traffic have to continue northbound and make a U-turn via the roundabout at Sai Sha Road / Access Road to Tseng Tau (J5), then travel southbound along Sai Sha Road southbound and left-turn into the Proposed Access Road. To avoid queue back from the Proposed Access Road, an exclusive free flow left turn from Sai Sha Road southbound is provided at the junction.

As shown in **Figure 2.1**, the junction would operate in 2 stages. Stage 1 relates to both Sai Sha Road northbound and southbound straight ahead traffic, while stage 2 relates to the traffic coming from the Proposed Access Road. As there is almost no demand to the school site for most of the time, a demand detector is proposed for traffic coming from the Proposed Access Road (i.e. Stage 2) so as to minimize any disruption to the Sai Sha Road northbound and southbound straight ahead traffic.

#### **Option 2 (Priority Controlled)**

**Figure 2.3** shows the proposed junction of Sai Sha Road / Proposed Access Road under priority control. Similarly, traffic from Sai Sha Road northbound right turning into the Proposed Access Road is banned so as to minimize the traffic conflicts. An exclusive left-turn lane from Sai Sha Road southbound is provided at the junction.



There are heavy traffic flow along Sai Sha Road. Under the proposed layout, right-turning traffic from the Proposed Access Road have to give-way to the Sai Sha Road southbound traffic firstly. After crossing the Sai Sha Road southbound carriageway, an additional northbound merging lane is provided such that the right-turn traffic can merge back with the Sai Sha Road northbound straight-ahead traffic.

- 6.1.4 **Table 2.3** summarises the junction performance in 2031 AM peak period together with the pros and cons of the two options. The choice of control type (i.e. priority or signal controlled) could be further studied in the detailed design stage.
- 6.1.5 According to the previously submitted GBP in 2019, the proposed private school was designed with total 1226 students receiving nursery/ kindergarten, primary school or secondary school education. To minimize potential traffic impact arising from the proposed private school in the Development Site, mandatory school bus policy with appropriate traffic management measures would be adopted for the private school development. Adequate internal transport facilities would be provided within the private school development as summarized in **Table 2.2**.
- 6.1.6 Currently, part of the Development Site is being used as temporary carpark by Sai Keng Village. A Public Vehicle Park (PVP) is proposed within the Development Site in “G/IC” zone for re-provisioning of affected car parks with vehicular access via the Proposed Access Road. Traffic impact arising from this PVP has been taken into account in this TIA.
- 6.1.7 In order to review the existing traffic condition, traffic count surveys at the identified critical junctions were conducted to investigate the peak hour traffic condition. The critical junctions include: -
- Sai Sha Road / Nin Wah Road / Ning Fung Road (J1)
  - Sai Sha Road / Access Road to Sai O (J2)
  - Sai Sha Road / Access Road to Kwun Hang / Access Road to Che Ha (J3)
  - Sai Sha Road / Access Road to Ma Kwu Lam (J4)
  - Sai Sha Road / Access Road to Tseng Tau (J5)
  - Sai Sha Road / Proposed Access Road to Sai Keng (J6)
  - Sai Sha Road / Tai Mong Tsai Road (J7)
  - Sai Sha Road / Access Road to Sai Keng Tsuen (J8)
  - Sai Sha Road / Access Road to Kei Ling Ha San Wai (J9)
- At present, all the critical junctions operate satisfactorily with ample capacity.
- 6.1.8 The Proposed Access Road in the “GB” zone (Application Site) will be completed in conjunction with the proposed private school in the “G/IC” zone (Development Site) in year 2028 tentatively. Year 2031 is therefore selected as a design year in this TIA for assessment purpose.
- 6.1.9 A conservative annual growth rate of 0.5% per annum is adopted for projecting the peak hour traffic flows from year 2021 to 2031. Apart from the proposed private school, other committed / planned major developments in the vicinity and Ma On Shan area have been taken into account in the traffic forecast. They are listed in **Table 4.3**.
- 6.1.10 The proposed private school with mandatory school bus policy would generate two-way traffic of 203 pcu/hr during both AM and PM peak hours. While the PVP within Development Site would generate two-way traffic of 122 pcu/hr and 136 pcu/hr during the AM and PM peak hours to represent the worse scenario from traffic terms.

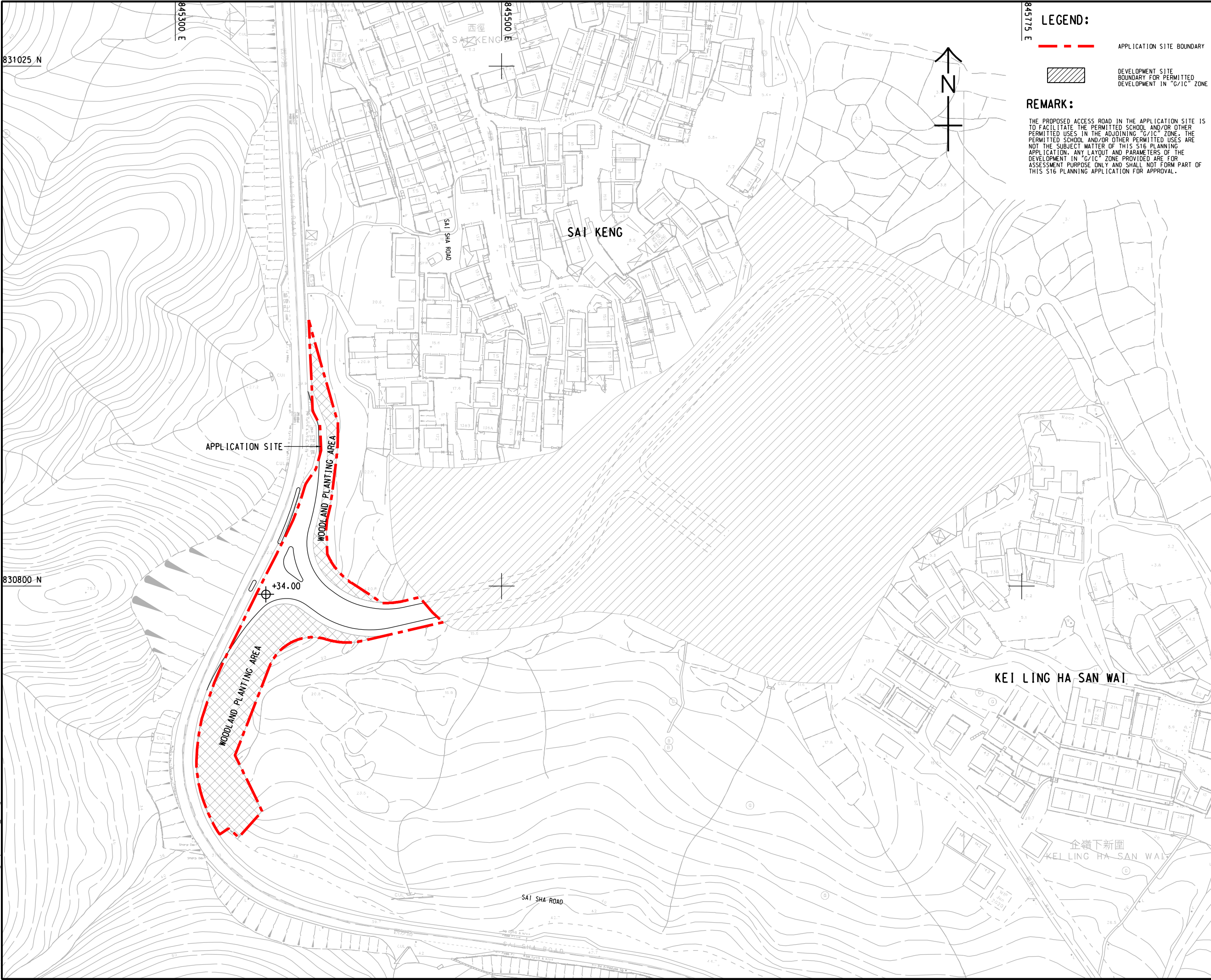
- 6.1.11 The 2031 design traffic flows were produced by adding the trips generated by the proposed private school and PVP to the 2031 reference traffic forecasts (without Proposed Access Road cum School Development). The resultant 2031 design traffic flows (with Proposed Access Road cum School Development) are illustrated in **Figures 4.3**. An additional sensitivity test with conservative directional split assumed on Sai Kung bound was also conducted.
- 6.1.12 The assessment results show that all the road links and critical junctions will be operating with sufficient capacity in year 2031 under all Reference, Design and Sensitivity Test scenarios; and there will be no insurmountable traffic impact arising from the Proposed Access Road cum private school development on these critical junctions.
- 6.1.13 Sensitivity test was carried out for the increase in traffic generation for the 2 primary schools near Che Ha Village. Several improvement measures have been identified for government's consideration in future when the demand arises.
- 6.1.14 The Sai Sha Road widening works would be completed around 2023. Taken into consideration the current programme of the Proposed Access Road, it is unlikely that the works would be commenced before the completion of Sai Sha Road widening works. Even in case of commencing before the widening works, all the construction traffic for the construction of Proposed Access Road would only be allowed to/from the site during the non-peak period (ie between 10am- 4pm). With the completion of Sai Sha Road widening, the traffic situation would be improved. Based on the above traffic impact assessment for the school development traffic (i.e. two-way flow of about 200 pcu/hr), all the road junctions / links would be operating within capacity. For the construction traffic, it would be significantly lower than two-way of 200 pcu/hr (For reference, the two-way construction traffic flow of Sai Sha Site C is about 26 veh/hr). Hence the traffic impact due to the construction would be less than the future development traffic generation, and hence all the road junctions / links should still be operated within capacity.
- 6.1.15 With mandatory school bus policy implemented, public transport demand would only arise from school staff only. Public Transport Assessment has been conducted by assuming all school staff would commute to school by public transport as a conservative approach. It is recommended to enhance the bus frequency of bus routes 99 & 299X by providing 1 additional trip during AM peak hour for each bus route. A total of 2 extra buses/hour could provide an additional capacity of about 200 persons/hr (ie 2 x 100 persons/bus) which should provide adequate capacity for accommodating the additional public transport demand arising from the proposed school.
- 6.1.16 Pedestrian assessment has also been conducted for the critical footpath of Proposed Access Road and footpath next to bus layby along Sai Sha Road. The result shows that the footpath will operate at LOS A with ample capacity.

## **6.2 Conclusion**

- 6.2.1 In light of the findings of this TIA, it is concluded that there is no insurmountable traffic impact arising from the Proposed Access Road cum school development in the "G/IC" zone. The Proposed Access Road is therefore considered sustainable from traffic engineering point of view.

## ***Figure***

---



LEGEND:

- APPLICATION SITE BOUNDARY
- DEVELOPMENT SITE BOUNDARY FOR PERMITTED DEVELOPMENT IN "G/IC" ZONE

REMARK:

THE PROPOSED ACCESS ROAD IN THE APPLICATION SITE IS TO FACILITATE THE PERMITTED SCHOOL AND/OR OTHER PERMITTED USES IN THE ADJOINING "G/IC" ZONE. THE PERMITTED SCHOOL AND/OR OTHER PERMITTED USES ARE NOT THE SUBJECT MATTER OF THIS S16 PLANNING APPLICATION. ANY LAYOUT AND PARAMETERS OF THE DEVELOPMENT IN "G/IC" ZONE PROVIDED ARE FOR ASSESSMENT PURPOSE ONLY AND SHALL NOT FORM PART OF THIS S16 PLANNING APPLICATION FOR APPROVAL.

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SITE LOCATION PLAN AND LAYOUT PLAN

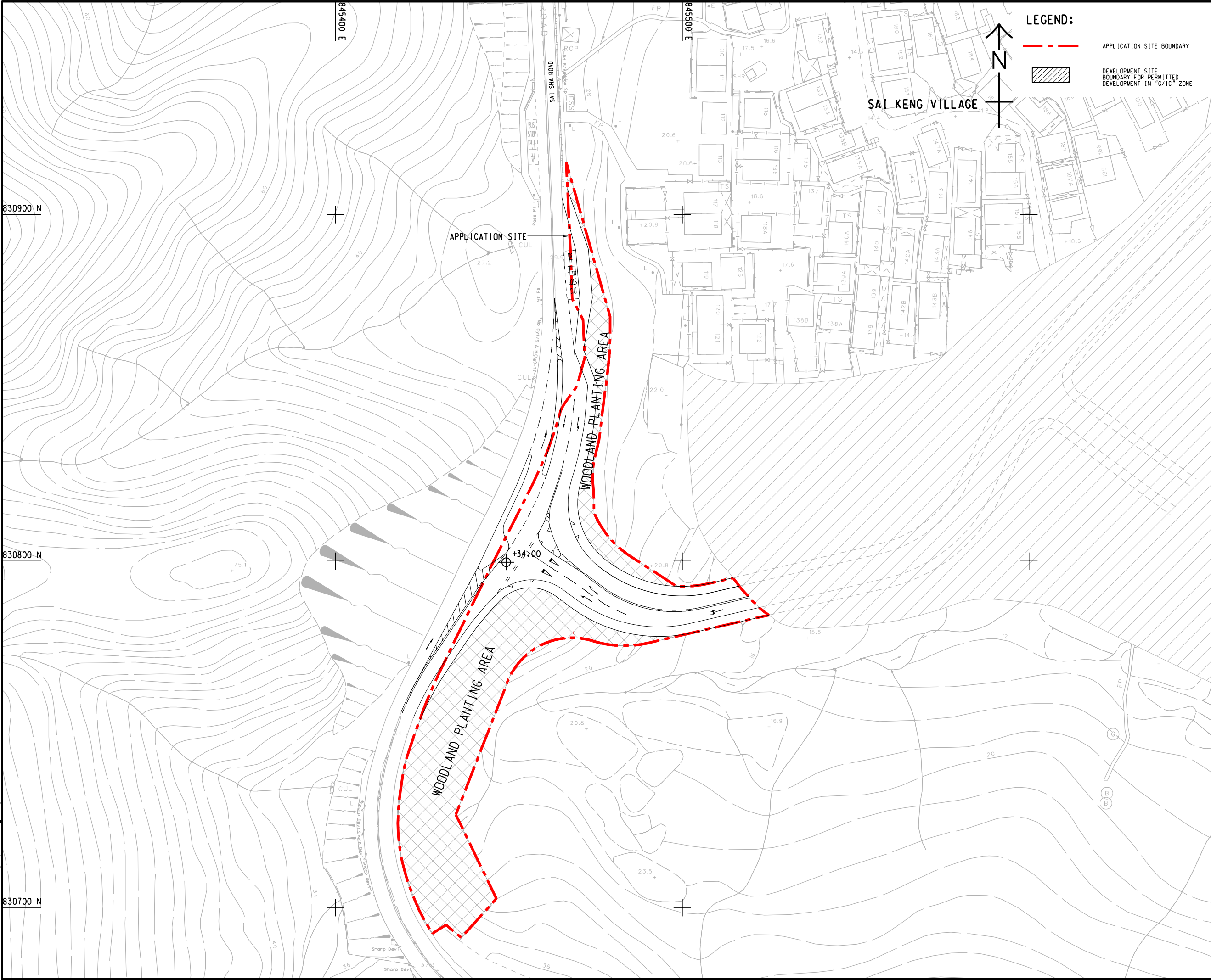
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**LEGEND:**

--- APPLICATION SITE BOUNDARY

Development Site Boundary for Permitted Development in "G/GC" Zone

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60638233

**SHEET TITLE**  
圖則名稱

PROPOSED PRIORITY JUNCTION OF SAI SHA ROAD/ PROPOSED ACCESS ROAD (J6)

**SHEET NUMBER**  
圖則編號

60638233/TIA/FIGURE 2.3

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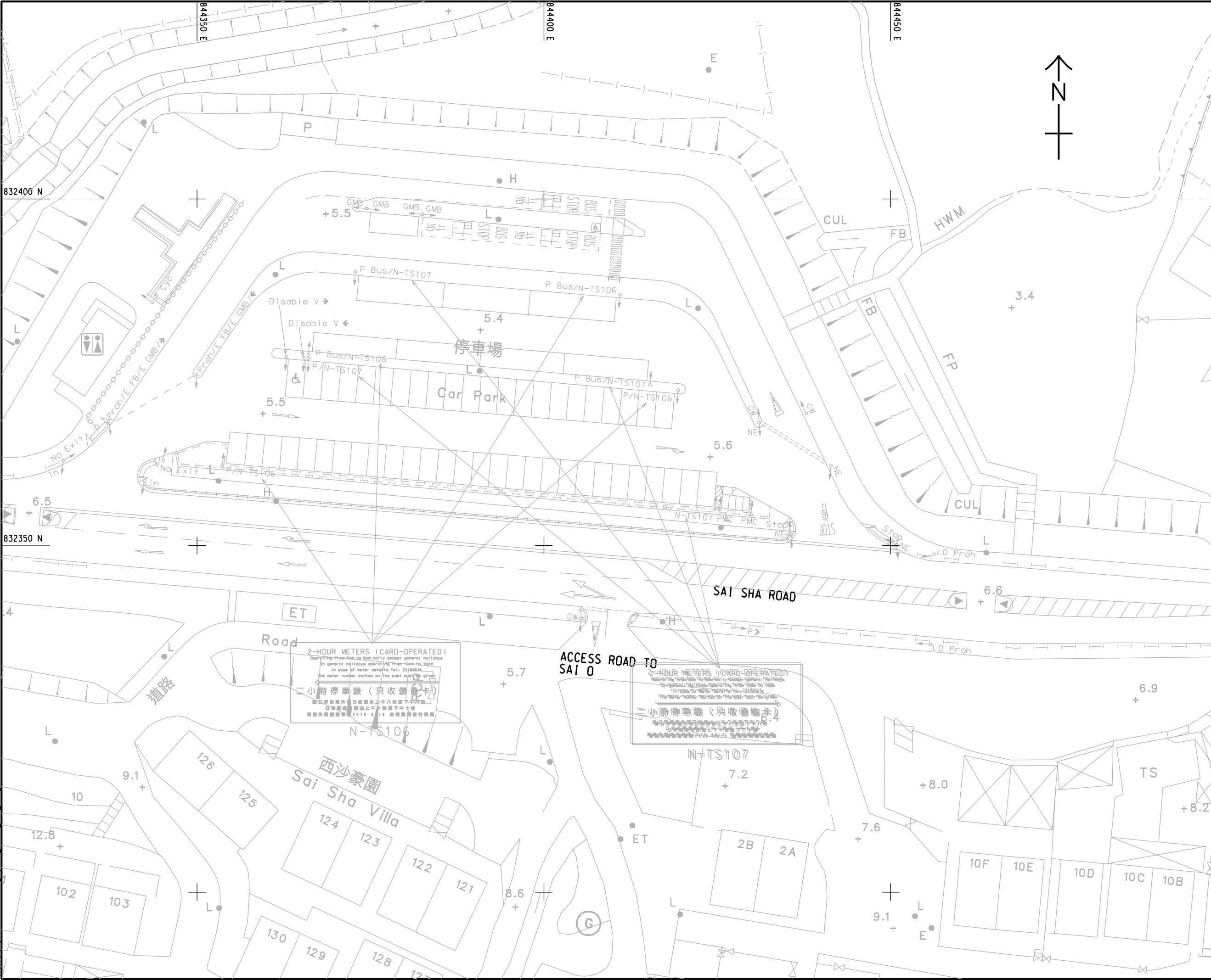






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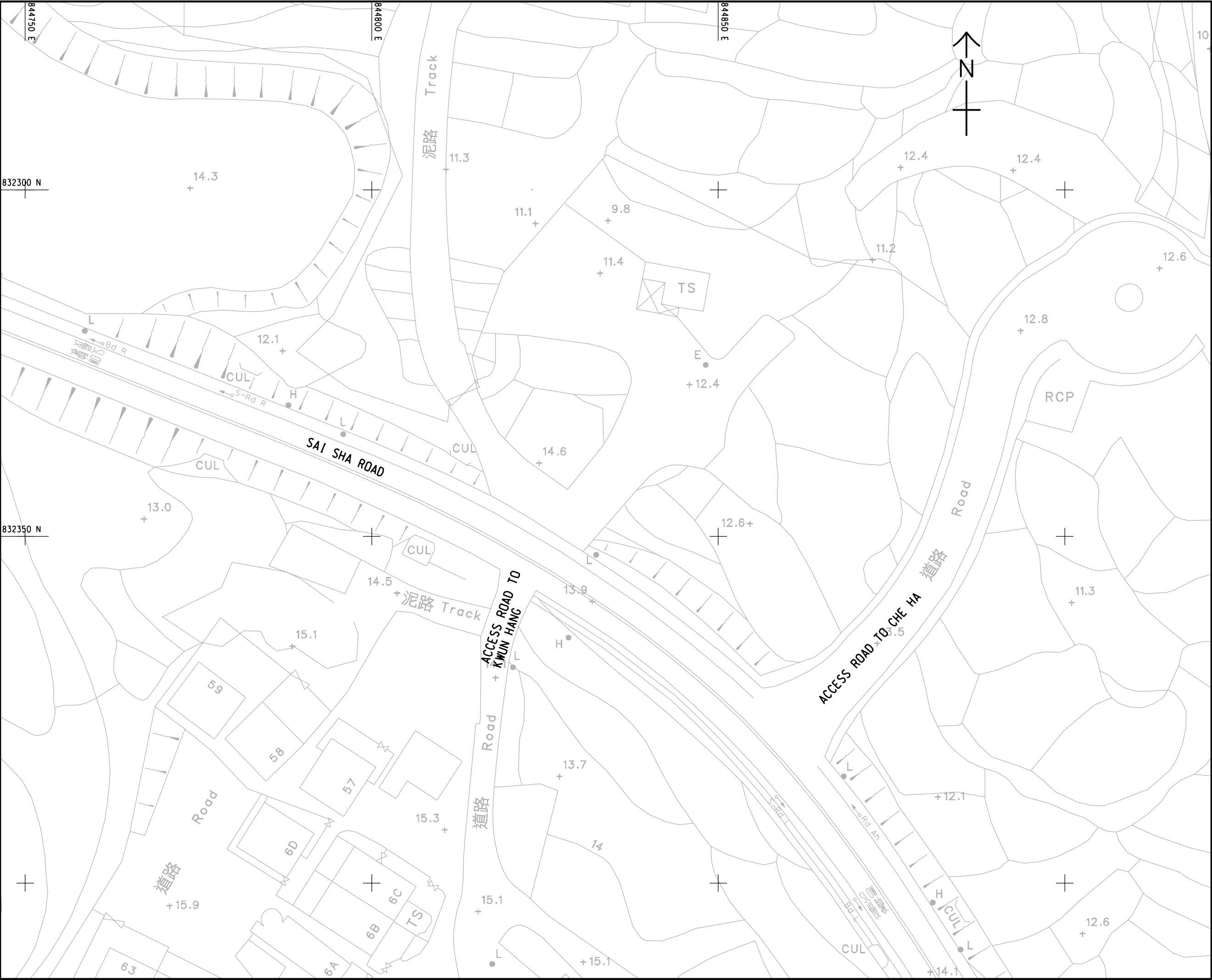
EXISTING JUNCTION LAYOUT OF SAI SHA ROAD/  
ACCESS ROAD TO SAI O (J2)

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**SHEET NUMBER**  
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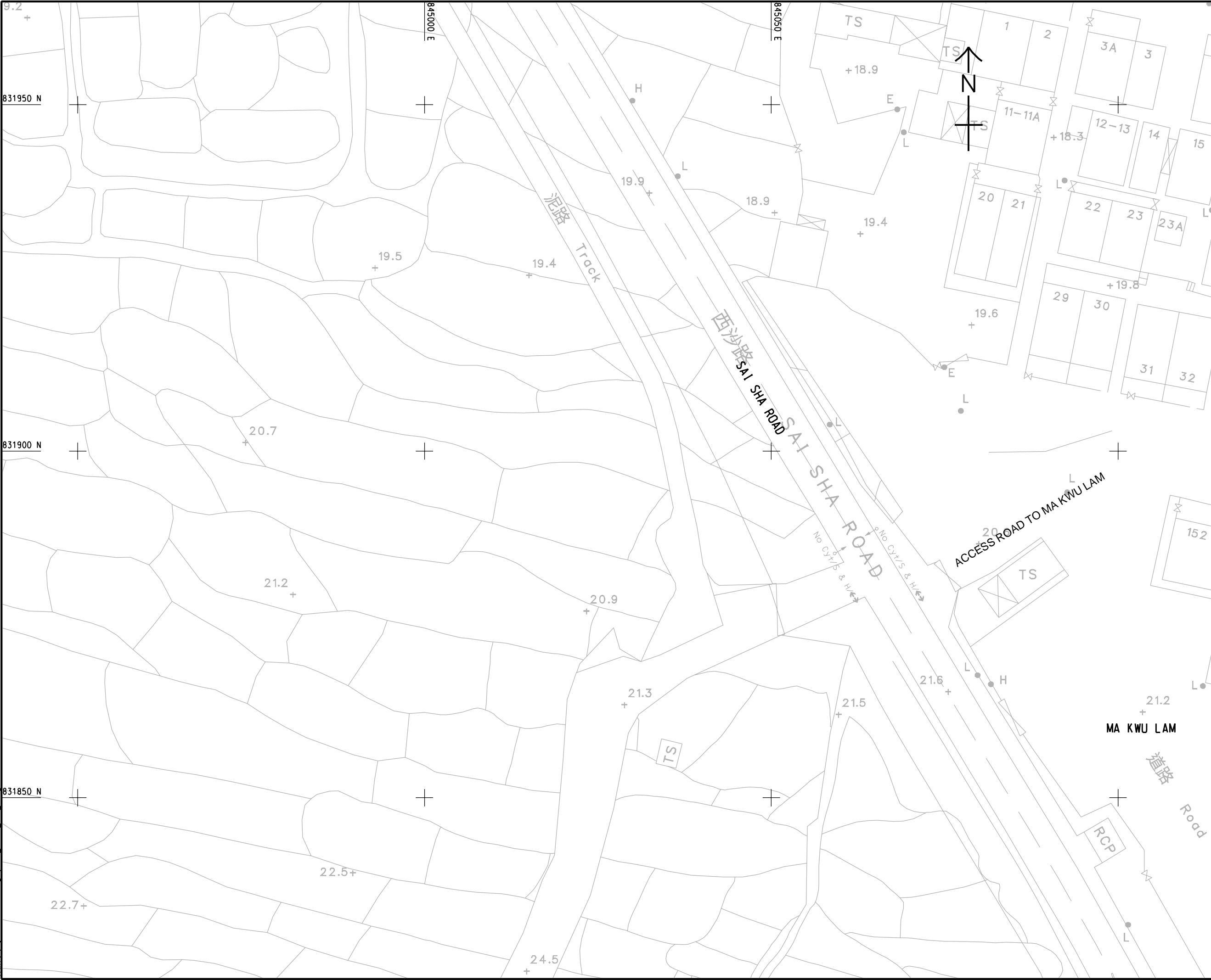
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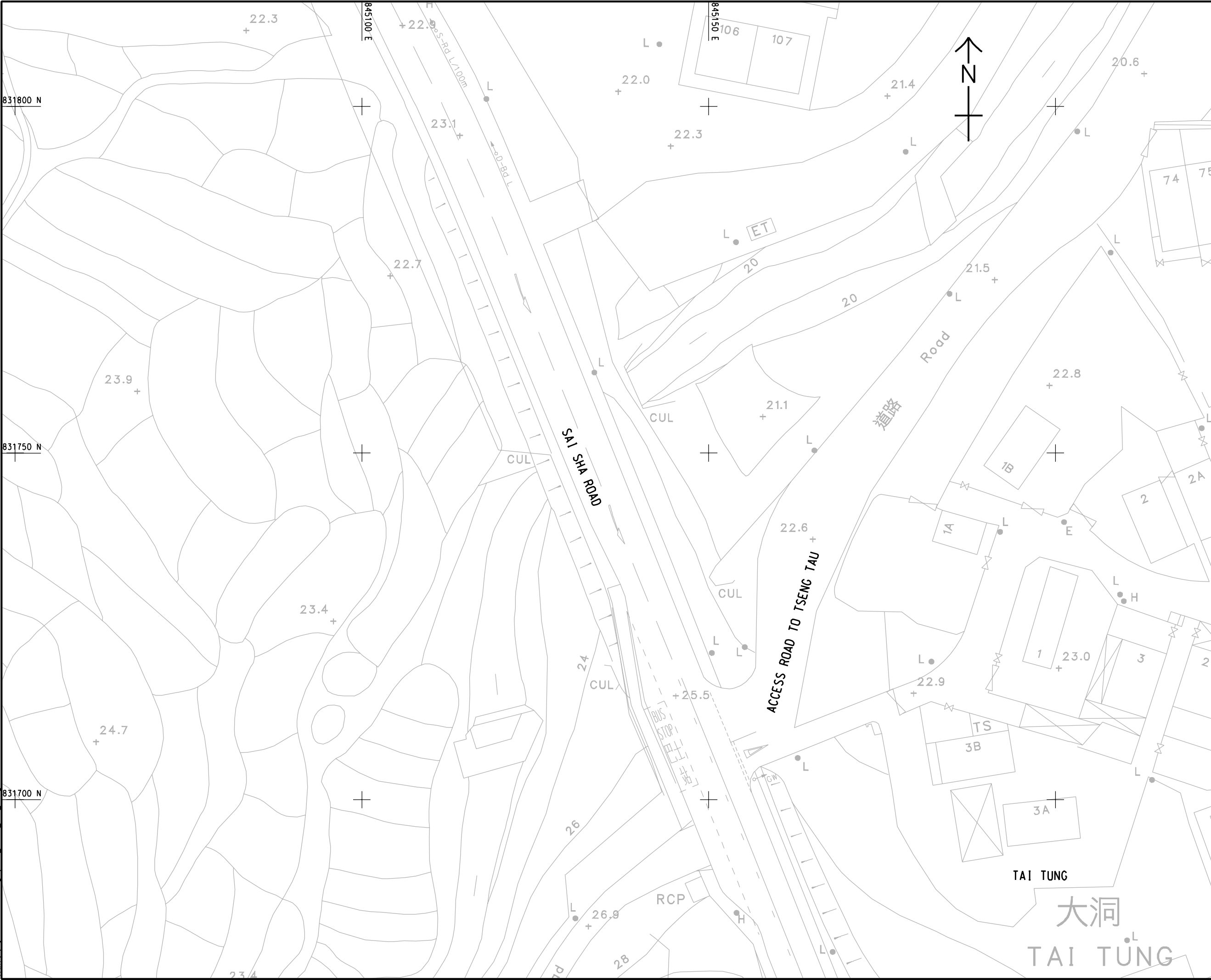
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EXISTING JUNCTION LAYOUT OF SAI SHA ROAD/  
ACCESS ROAD TO MA KWU LAM (J4)

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60638233/TIA/FIGURE 3.5

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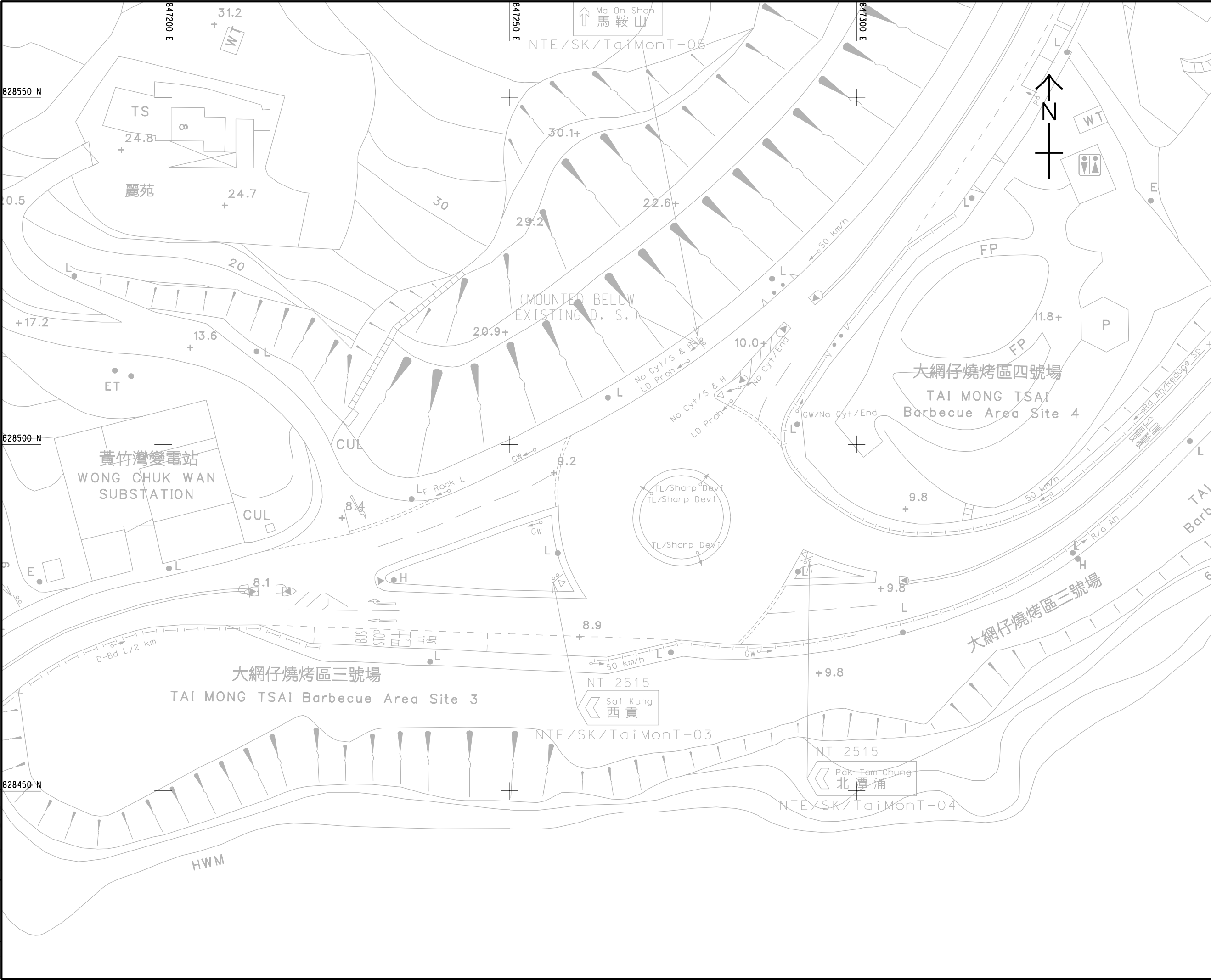
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60638233/TIA/FIGURE 3.6

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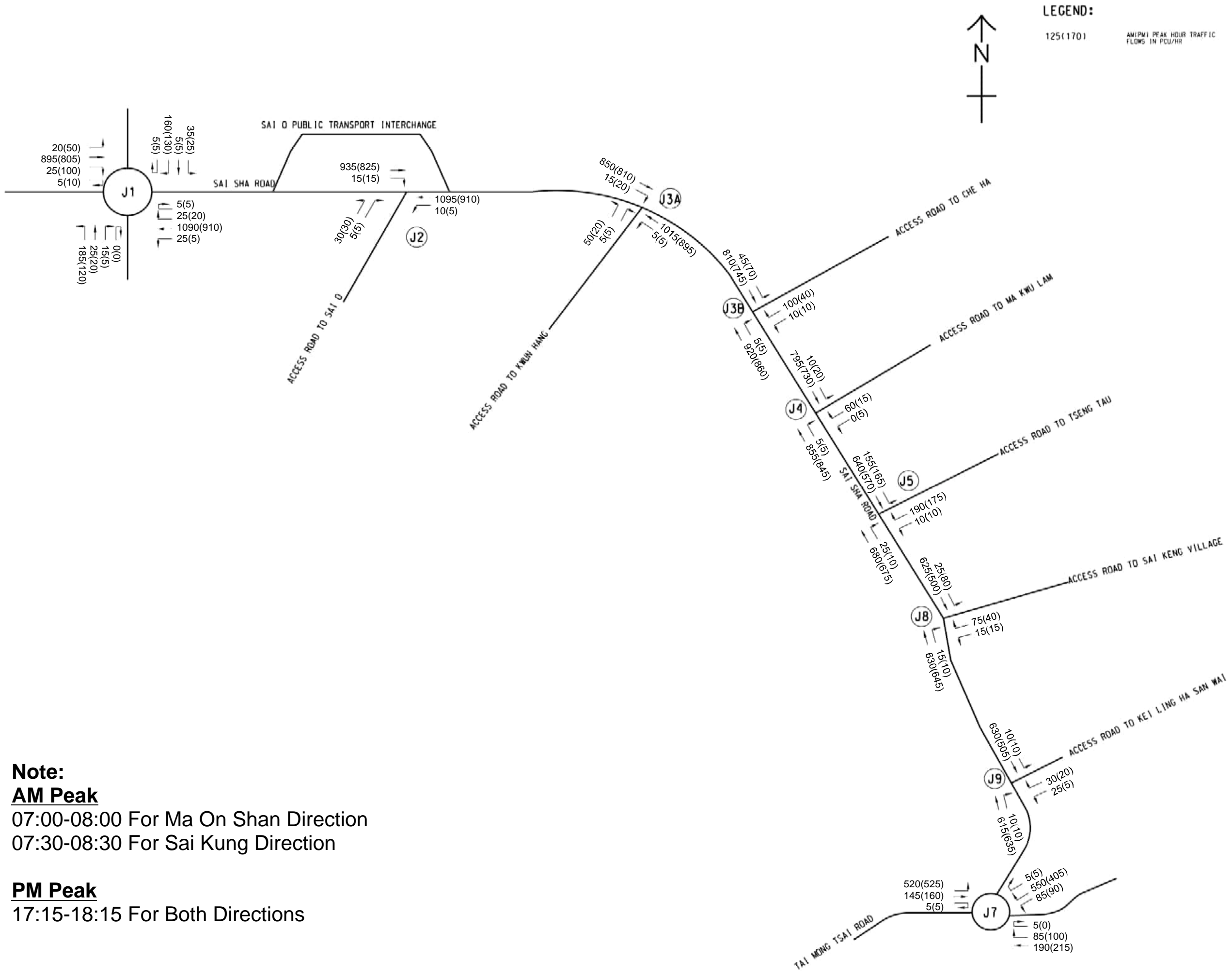
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60638233/TIA/FIGURE 3.7





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**Note:**  
**AM Peak**  
07:00-08:00 For Ma On Shan Direction  
07:30-08:30 For Sai Kung Direction  
**PM Peak**  
17:15-18:15 For Both Directions

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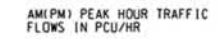
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2021 OBSERVED TRAFFIC FLOWS

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60638233/TIA/FIGURE 3.10



60638233/TIA/FIGURE 4.1







## PROJECT

SECTION 16 PLANNING APPLICATION FOR PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED SCHOOL DEVELOPMENT IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

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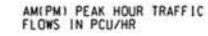
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2031 DESIGN TRAFFIC FLOWS  
(WITH PROPOSED ACCESS ROAD  
CUM SCHOOL DEVELOPMENT)

**SHEET NUMBER**





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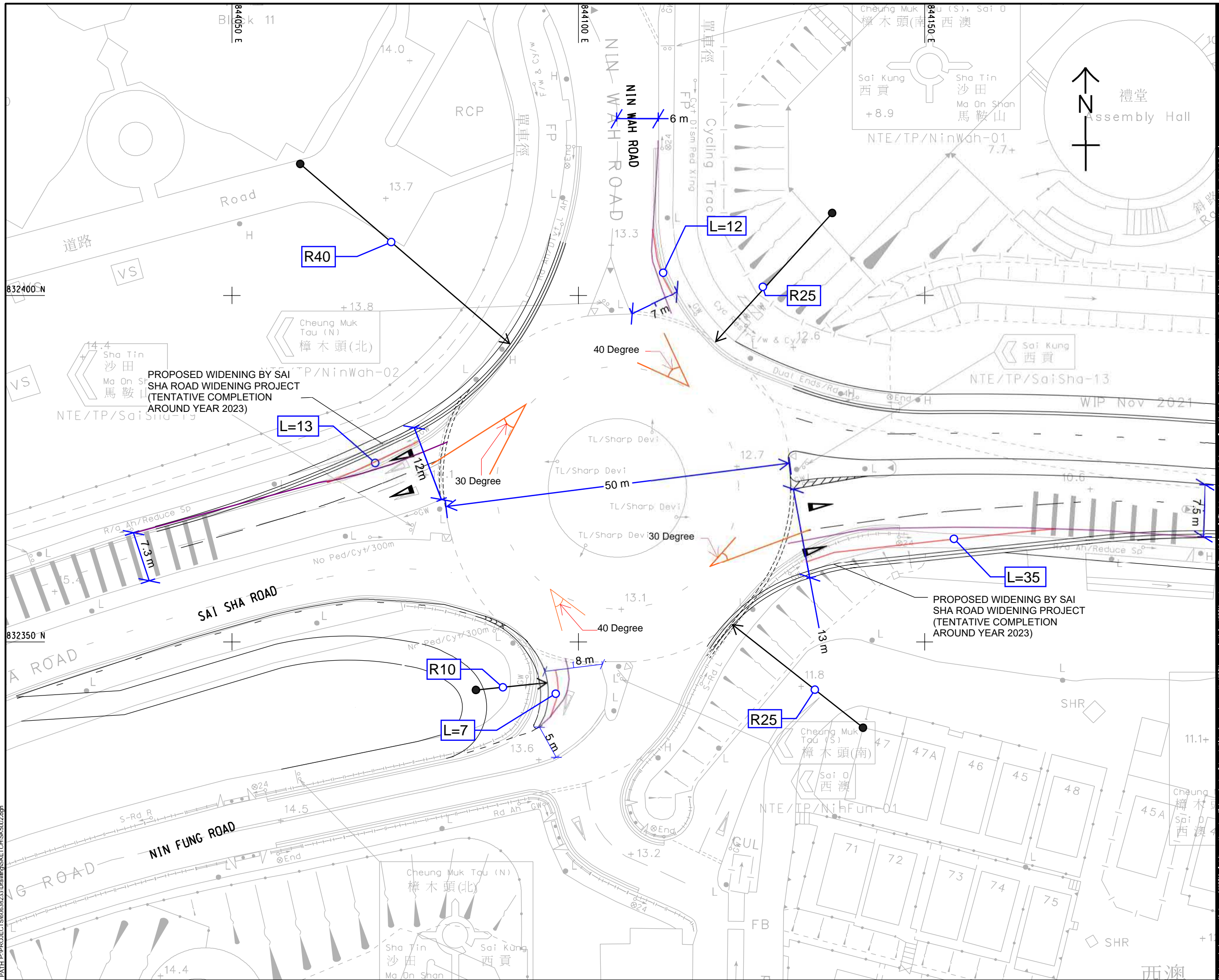
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## 2031 DESIGN TRAFFIC FLOWS (WITH PROPOSED ACCESS ROAD)

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## PROJECT

SECTION 16 PLANNING APPLICATION FOR PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 009, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES"

## CLIENT

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## CONSULTANT

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## SUB-CONSULTANTS

分判工程顧問公司

## ISSUE/REVISION

	MAR20	FIRST ISSUE	SHSN
W/R 日期	DATE 日期	DESCRIPTION 内容摘要	CHK. 复核

## STATUS

11:2

<b>SCALE</b> 比例	<b>DIMENSION UNIT</b> 尺寸单位
A3 1 : 500	MILLIMETRES
<b>KEY PLAN</b> 索引图	A1 1 : XXXXX

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CONTRACT NO.

副張瑞

**SHEET TITLE**

# PLANNED JUNCTION OF SAI SHA ROAD / NIN FUNG ROAD / NIN WAH ROAD (J1)

**SHEET NUMBER**

电液伺服

60638233/TIA/FIGURE 5.1

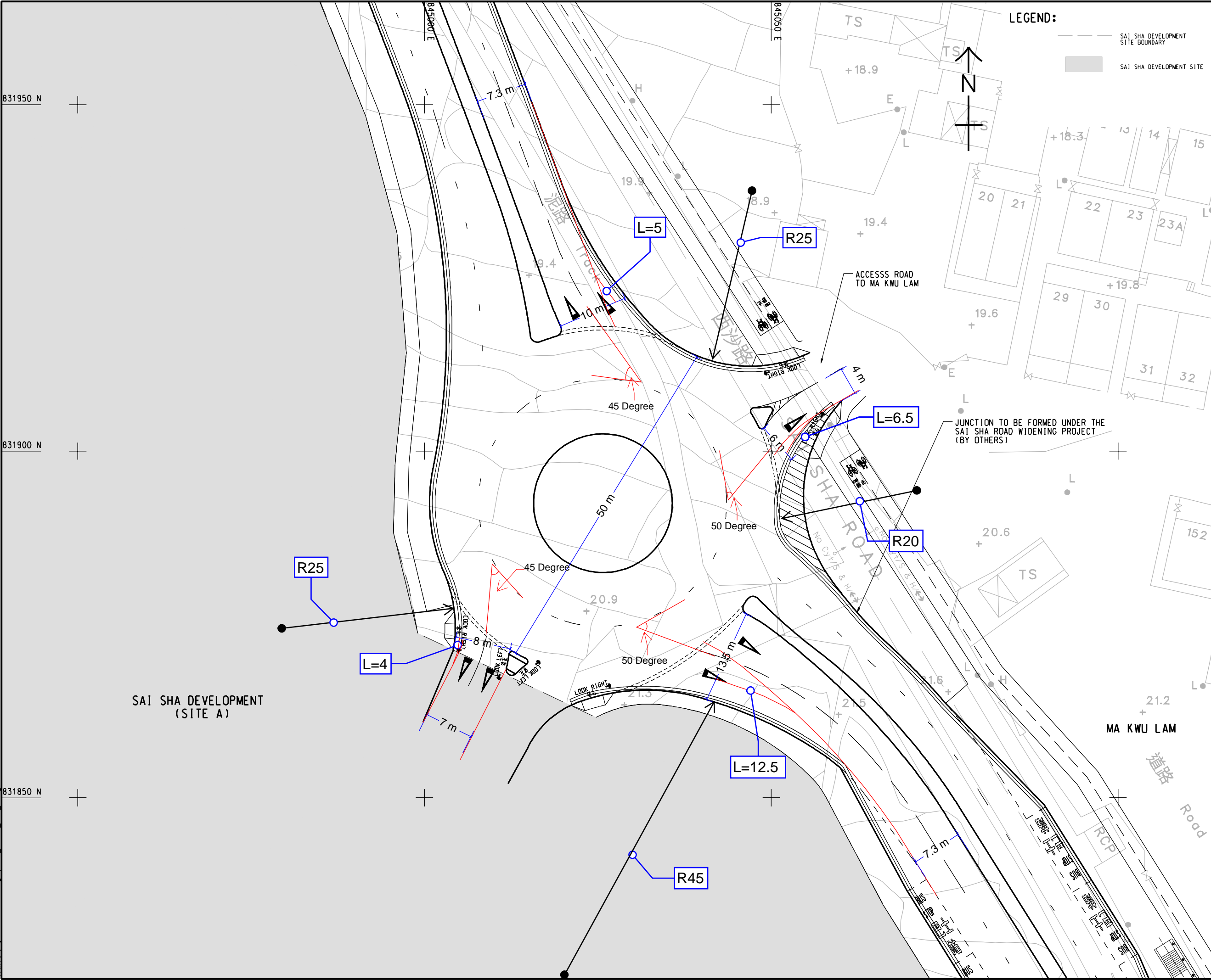




60638233/TIA/FIGURE 5.3



ISO A1 594mm x 841mm  
Approved:  
Checked:  
Designer:  
Project Management Initials:  
Pld File by: ZHACHQ2 2020/3/12  
PATH: E:\projects\60313653\drawing\figure\tia ncs\TIA\_NCS\_525.dgn



LEGEND:

- SAI SHA DEVELOPMENT SITE BOUNDARY
- SAI SHA DEVELOPMENT SITE

AECOM

PROJECT

SECTION 16 PLANNING APPLICATION FOR PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

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ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK.
-	NOV. 19	FIRST ISSUE	SHSN

STATUS

SCALE

A3 1: 500

DIMENSION UNIT

METRES

KEY PLAN

PROJECT NO.

60313653

CONTRACT NO.

SHEET TITLE

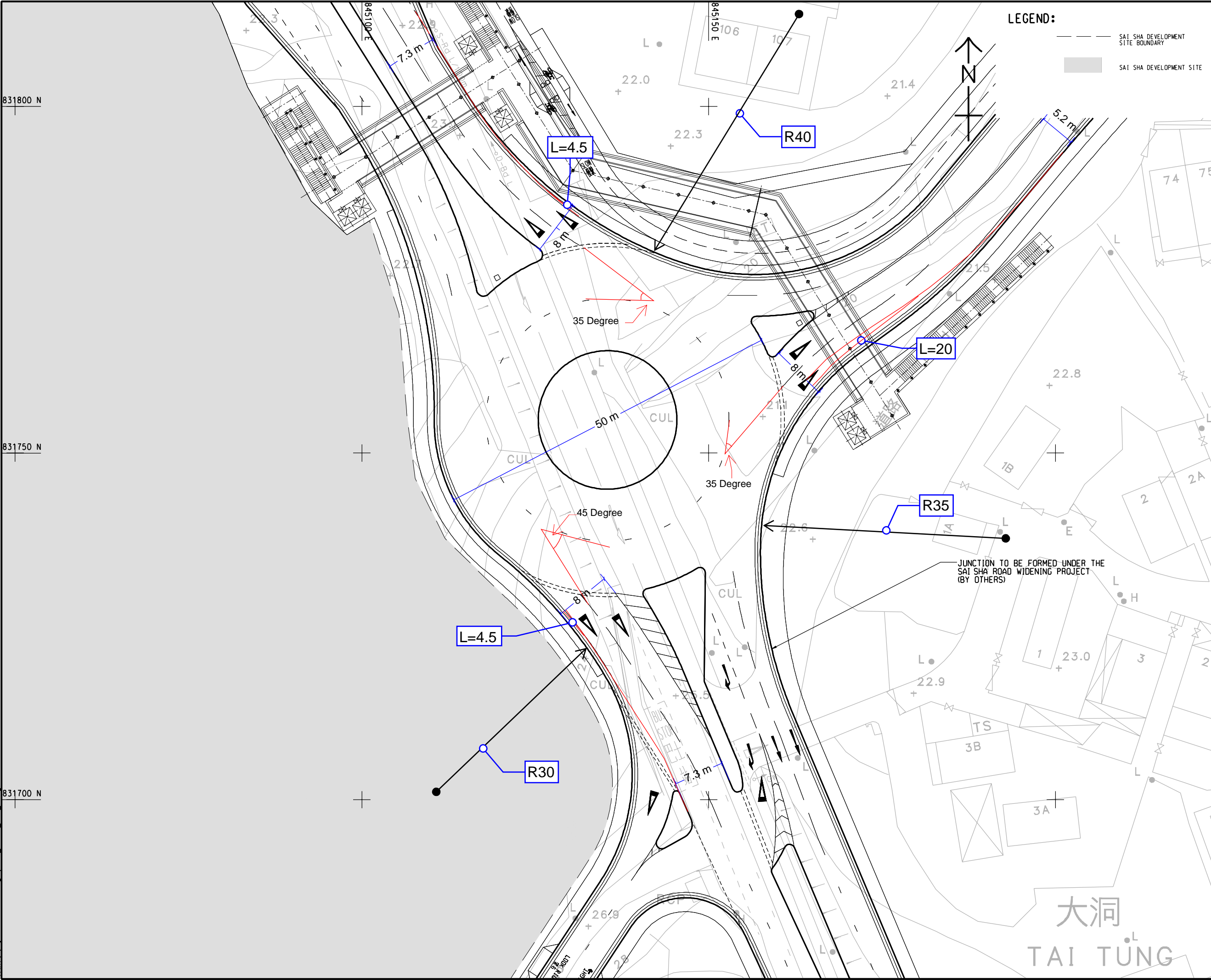
PLANNED JUNCTION OF SAI SHA ROAD/ ACCESS ROAD TO MA KWU LAM / ACCESS ROAD TO SAI SHA DEVELOPMENT (J4)

SHEET NUMBER

60638233/TIA/FIGURE 5.4

Pld File by: ZHACHONG 2020/3/13  
PATH: E:\projects\60313653\drawing\figure\ts\ts\TIA\_NCIS\_528.dgn

ISO A1 594mm x 841mm  
Approved:  
Checked:  
Designer:  
Project Management Initials:



LEGEND:

- SAI SHA DEVELOPMENT SITE BOUNDARY
- SAI SHA DEVELOPMENT SITE

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PROJECT

SECTION 16 PLANNING APPLICATION FOR PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

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NO.	DATE	DESCRIPTION	CHK.
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STATUS

SCALE

A3 1 : 500

DIMENSION UNIT

METRES

KEY PLAN

PROJECT NO.

60313653

CONTRACT NO.

SHEET TITLE

PLANNED JUNCTION OF SAI SHA ROAD / ACCESS ROAD TO TSENG TAU (J5)

SHEET NUMBER

60638233/TIA/FIGURE 5.5



## ***Annex A***

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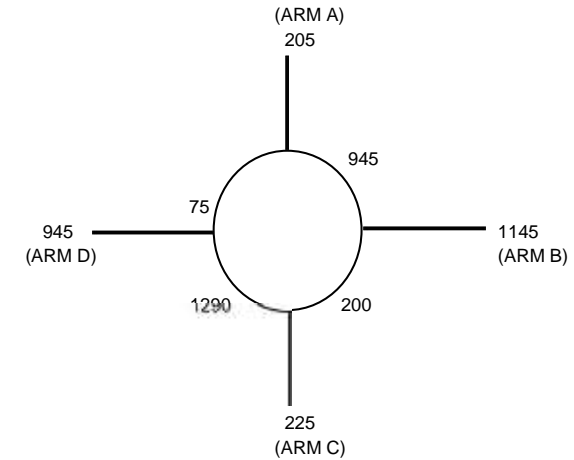
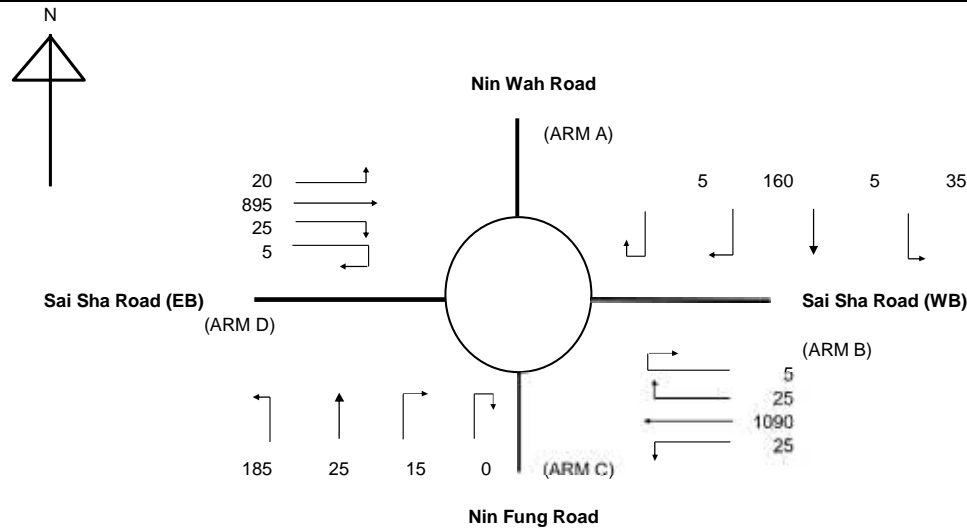
### ***Junction Capacity Calculation Sheets***

## **ANNEX A1**

### **CALCULATION SHEETS OBSERVED TRAFFIC FLOWS**

# ROUNDBOUT CAPACITY CALCULATIO

Junction	J1 - Sai Sha Road / Nin Wah Road / Nin Fung Road	Scenario	2021 AM Observed Traffic Flows	Project No.	Prepared By	Checked By	Date
				-	MKCN	SHSN	27-Jun-22



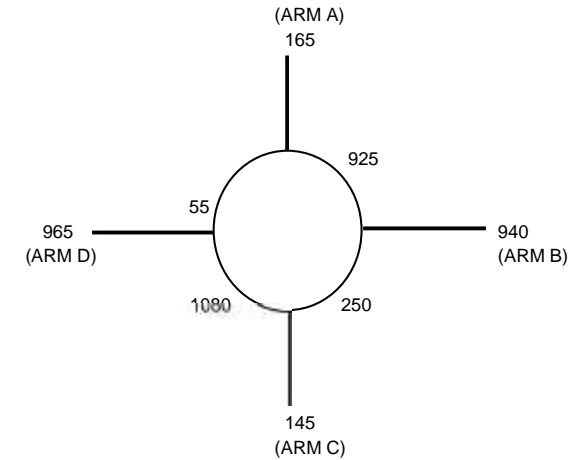
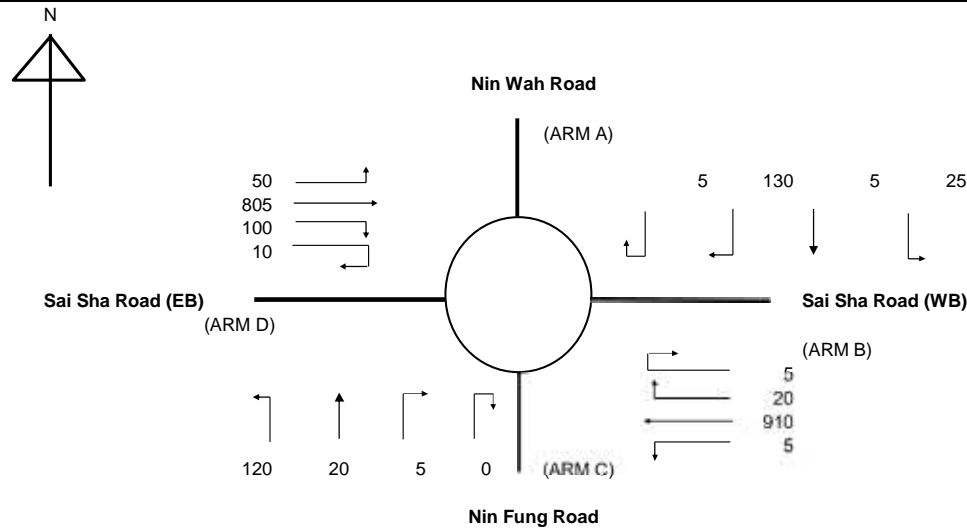
ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	6.00	3.50	5.00	7.00
E = Entry width (m)	7.00	8.00	10.00	9.00
L = Effective length of flare (m)	20.00	20.00	11.00	20.00
R = Entry radius (m)	25.00	20.00	10.00	45.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00	50.00
A = Entry angle (degree)	40.00	60.00	20.00	30.00
Q = Entry flow (pcu/h)	205	1145	225	945 *
Qc= Circulating flow across entry (pcu/h)	945	200	1290	75 *
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.08	0.36	0.73	0.16
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.98	0.90	0.99	1.03
X2= V + ((E-V)/(1+2S))	6.86	6.12	7.04	8.52
M = EXP((D-60)/10)	0.37	0.37	0.37	0.37
F = 303*X2	2079	1853	2132	2580
Td= 1+(0.5/(1+M))	1.37	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.68	0.64	0.69	0.78
Qe= K(F-Fc*Qc)	1401	1546	1224	2590
DFC = Design flow/Capacity = Q/Qe	0.15	0.74	0.18	0.36

TOTAL ENTRY FLOWS 2520 PCU

CRITICAL DFC 0.74

# ROUNDBOUT CAPACITY CALCULATIO

Junction	J1 - Sai Sha Road / Nin Wah Road / Nin Fung Road	Scenario	2021 PM Observed Traffic Flows	Project No.	Prepared By	Checked By	Date
				-	MKCN	SHSN	27-Jun-22



ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	6.00	3.50	5.00	7.00
E = Entry width (m)	7.00	8.00	10.00	9.00
L = Effective length of flare (m)	20.00	20.00	11.00	20.00
R = Entry radius (m)	25.00	20.00	10.00	45.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00	50.00
A = Entry angle (degree)	40.00	60.00	20.00	30.00
Q = Entry flow (pcu/h)	165	940	145	965
Qc= Circulating flow across entry (pcu/h)	925	250	1080	55
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.08	0.36	0.73	0.16
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.98	0.90	0.99	1.03
X2= V + ((E-V)/(1+2S))	6.86	6.12	7.04	8.52
M = EXP((D-60)/10)	0.37	0.37	0.37	0.37
F = 303*X2	2079	1853	2132	2580
Td= 1+(0.5/(1+M))	1.37	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.68	0.64	0.69	0.78
Qe= K(F-Fc*Qc)	1414	1518	1367	2606
DFC = Design flow/Capacity = Q/Qe	0.12	0.62	0.11	0.37

TOTAL ENTRY FLOWS 2215 PCU

CRITICAL DFC 0.62



# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J2 - Sai Sha Road / Access Road to Sai O

2021 AM Observed Traffic Flows

Designed By : MKCN

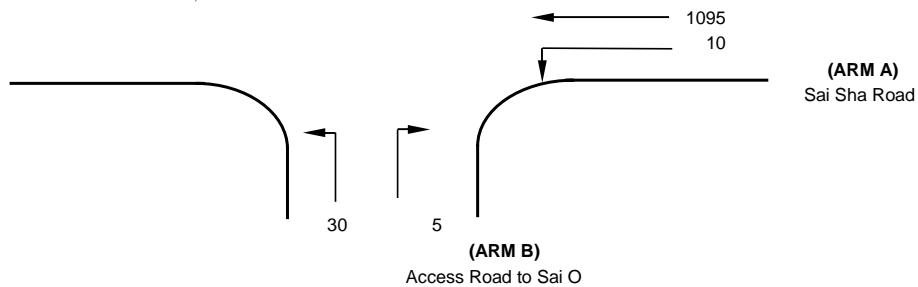
Checked By : SHSN

Job No. : -

Date : Jun 22

Sai Sha Road  
(ARM C)

935  
15



NOTES : ( GEOMETRIC INPUT DATA )

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

J2

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W = 7.4 (metres)  
W cr = 3 (metres)  
q a-b = 10 (pcu/hr)  
q a-c = 1095 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b = 1.5 (metres)  
Vr c-b = 50 (metres)  
q c-a = 935 (pcu/hr)  
q c-b = 15 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a = 1.6 (metres)  
W b-c = 1.6 (metres)  
Vl b-a = 80 (metres)  
Vr b-a = 170 (metres)  
Vr b-c = 120 (metres)  
q b-a = 5 (pcu/hr)  
q b-c = 30 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.808196  
E = 0.807300  
F = 0.747632  
Y = 0.744700

## THE CAPACITY OF MOVEMENT :

Q b-a = 166  
Q b-c = 361  
Q c-b = 333  
Q b-ac = 309

CRITICAL DFC = 0.11

## COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.03  
DFC b-c = 0.08  
DFC c-b = 0.05  
DFC b-ac = 0.11

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J2 - Sai Sha Road / Access Road to Sai O

2021 PM Observed Traffic Flows

Designed By : MKCN

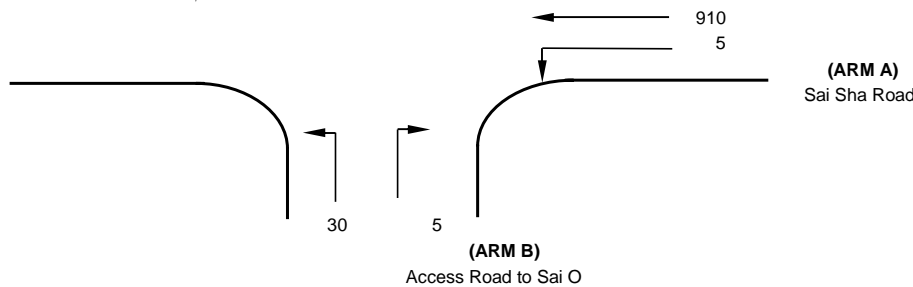
Checked By : SHSN

Job No. : -

Date : Jun 22

Sai Sha Road  
(ARM C)

825  
15



NOTES : ( GEOMETRIC INPUT DATA )

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

J2

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W = 7.4 (metres)  
W cr = 3 (metres)  
q a-b = 5 (pcu/hr)  
q a-c = 910 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b = 1.5 (metres)  
Vr c-b = 50 (metres)  
q c-a = 825 (pcu/hr)  
q c-b = 15 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a = 1.6 (metres)  
W b-c = 1.6 (metres)  
Vl b-a = 80 (metres)  
Vr b-a = 170 (metres)  
Vr b-c = 120 (metres)  
q b-a = 5 (pcu/hr)  
q b-c = 30 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.808196  
E = 0.807300  
F = 0.747632  
Y = 0.744700

## THE CAPACITY OF MOVEMENT :

Q b-a = 222  
Q b-c = 402  
Q c-b = 372  
Q b-ac = 360

CRITICAL DFC = 0.10

## COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.02  
DFC b-c = 0.07  
DFC c-b = 0.04  
DFC b-ac = 0.10

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J3a - Sai Sha Road / Access Road to Kwun Hang

2021 AM Observed Traffic Flows

Designed By : MKCN

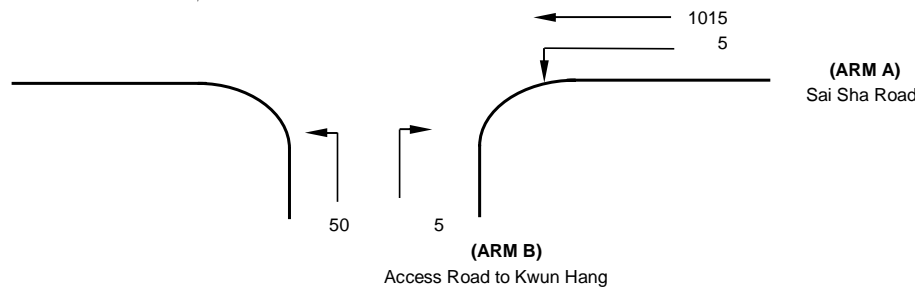
Checked By : SHSN

Job No. : -

Date : Jun 22

Sai Sha Road  
(ARM C)

850  
15



NOTES : ( GEOMETRIC INPUT DATA )

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

J3a

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W = 6 (metres)  
W cr = 0 (metres)  
q a-b = 5 (pcu/hr)  
q a-c = 1015 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b = 1.5 (metres)  
Vr c-b = 60 (metres)  
q c-a = 850 (pcu/hr)  
q c-b = 15 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a = 2.5 (metres)  
W b-c = 2.5 (metres)  
Vl b-a = 60 (metres)  
Vr b-a = 40 (metres)  
Vr b-c = 70 (metres)  
q b-a = 5 (pcu/hr)  
q b-c = 50 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.782988  
E = 0.851765  
F = 0.754813  
Y = 0.793000

## THE CAPACITY OF MOVEMENT :

Q b-a = 135  
Q b-c = 385  
Q c-b = 340  
Q b-ac = 329  
Q c-a = 1721

## COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.04  
DFC b-c = 0.13  
DFC c-b = 0.04  
DFC b-ac = 0.17  
DFC c-a = 0.49

CRITICAL DFC = 0.49

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J3a - Sai Sha Road / Access Road to Kwun Hang

2021 PM Observed Traffic Flows

Designed By : MKCN

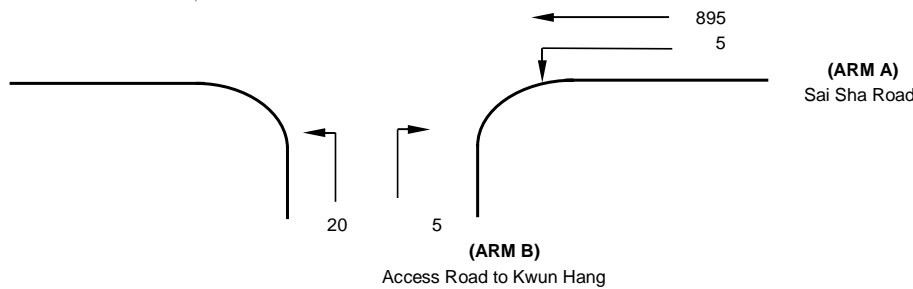
Checked By : SHSN

Job No. : -

Date : Jun 22

Sai Sha Road  
(ARM C)

810  
20



NOTES : ( GEOMETRIC INPUT DATA )

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

J3a

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W = 6 (metres)  
W cr = 0 (metres)  
q a-b = 5 (pcu/hr)  
q a-c = 895 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b = 1.5 (metres)  
Vr c-b = 60 (metres)  
q c-a = 810 (pcu/hr)  
q c-b = 20 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a = 2.5 (metres)  
W b-c = 2.5 (metres)  
Vl b-a = 60 (metres)  
Vr b-a = 40 (metres)  
Vr b-c = 70 (metres)  
q b-a = 5 (pcu/hr)  
q b-c = 20 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.782988  
E = 0.851765  
F = 0.754813  
Y = 0.793000

## THE CAPACITY OF MOVEMENT :

Q b-a = 167  
Q b-c = 414  
Q c-b = 366  
Q b-ac = 319  
Q c-a = 1702

## COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.03  
DFC b-c = 0.05  
DFC c-b = 0.05  
DFC b-ac = 0.08  
DFC c-a = 0.48

CRITICAL DFC = 0.48



# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J3b - Sai Sha Road / Access Road to Che Ha

2021 AM Observed Traffic Flows

Designed By : MKCN

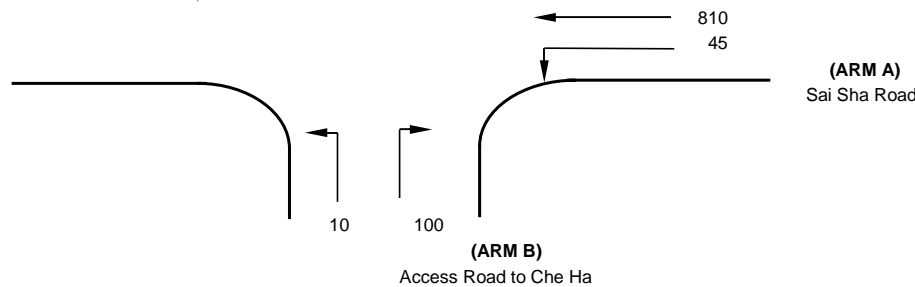
Checked By : SHSN

Job No. : -

Date : Jun 22

Sai Sha Road  
(ARM C)

920  
5



NOTES : ( GEOMETRIC INPUT DATA )

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

J3b

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W = 6 (metres)  
W cr = 0 (metres)  
q a-b = 45 (pcu/hr)  
q a-c = 810 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b = 1.5 (metres)  
Vr c-b = 45 (metres)  
q c-a = 920 (pcu/hr)  
q c-b = 5 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a = 2.5 (metres)  
W b-c = 2.5 (metres)  
Vl b-a = 60 (metres)  
Vr b-a = 60 (metres)  
Vr b-c = 60 (metres)  
q b-a = 100 (pcu/hr)  
q b-c = 10 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.798176  
E = 0.843737  
F = 0.744042  
Y = 0.793000

## THE CAPACITY OF MOVEMENT :

Q b-a = 175  
Q b-c = 427  
Q c-b = 371  
Q b-ac = 185  
Q c-a = 1776

## COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.57  
DFC b-c = 0.02  
DFC c-b = 0.01  
DFC b-ac = 0.60  
DFC c-a = 0.52

CRITICAL DFC = 0.60

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J3b - Sai Sha Road / Access Road to Che Ha

2021 PM Observed Traffic Flows

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Jun 22

Sai Sha Road  
(ARM C)

860  
5



(ARM A)  
Sai Sha Road

(ARM B)  
Access Road to Che Ha

NOTES : ( GEOMETRIC INPUT DATA )

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

J3b

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W = 6 (metres)  
W cr = 0 (metres)  
q a-b = 70 (pcu/hr)  
q a-c = 745 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b = 1.5 (metres)  
Vr c-b = 45 (metres)  
q c-a = 860 (pcu/hr)  
q c-b = 5 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a = 2.5 (metres)  
W b-c = 2.5 (metres)  
Vl b-a = 60 (metres)  
Vr b-a = 60 (metres)  
Vr b-c = 60 (metres)  
q b-a = 40 (pcu/hr)  
q b-c = 10 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.798176  
E = 0.843737  
F = 0.744042  
Y = 0.793000

## THE CAPACITY OF MOVEMENT :

Q b-a = 196  
Q b-c = 440  
Q c-b = 379  
Q b-ac = 221  
Q c-a = 1776

## COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.20  
DFC b-c = 0.02  
DFC c-b = 0.01  
DFC b-ac = 0.23  
DFC c-a = 0.48

CRITICAL DFC = 0.48

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J4 - Sai Sha Road / Access Road to Ma Kwu Lam

2021 AM Observed Traffic Flows

Designed By : MKCN

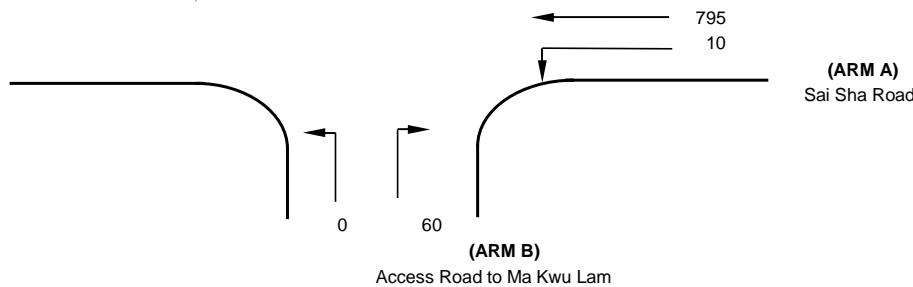
Checked By : SHSN

Job No. : -

Date : Jun 22

Sai Sha Road  
(ARM C)

855  
5



NOTES : ( GEOMETRIC INPUT DATA )

J4

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W = 6 (metres)  
W cr = 0 (metres)  
q a-b = 10 (pcu/hr)  
q a-c = 795 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b = 1.5 (metres)  
Vr c-b = 100 (metres)  
q c-a = 855 (pcu/hr)  
q c-b = 5 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a = 1.25 (metres)  
W b-c = 1.25 (metres)  
Vl b-a = 100 (metres)  
Vr b-a = 100 (metres)  
Vr b-c = 100 (metres)  
q b-a = 60 (pcu/hr)  
q b-c = 0 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.737647  
E = 0.760461  
F = 0.783538  
Y = 0.793000

## THE CAPACITY OF MOVEMENT :

Q b-a = 176  
Q b-c = 391  
Q c-b = 402  
Q b-ac = 176

CRITICAL DFC = 0.34

## COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.34  
DFC b-c = 0.00  
DFC c-b = 0.01  
DFC b-ac = 0.34

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J4 - Sai Sha Road / Access Road to Ma Kwu Lam

2021 PM Observed Traffic Flows

Designed By : MKCN

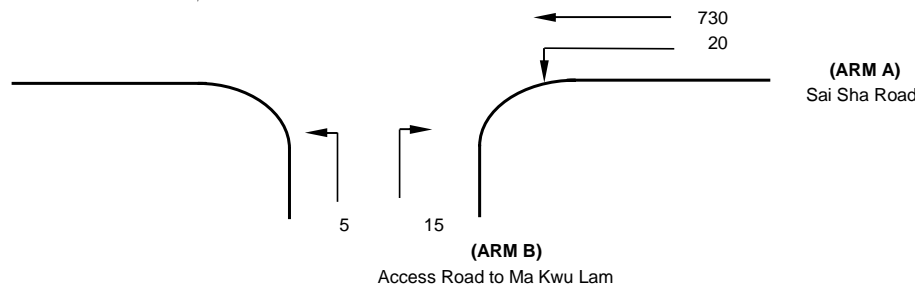
Checked By : SHSN

Job No. : -

Date : Jun 22

Sai Sha Road  
(ARM C)

845  
5



NOTES : ( GEOMETRIC INPUT DATA )

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

J4

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W = 6 (metres)  
W cr = 0 (metres)  
q a-b = 20 (pcu/hr)  
q a-c = 730 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b = 1.5 (metres)  
Vr c-b = 100 (metres)  
q c-a = 845 (pcu/hr)  
q c-b = 5 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a = 1.25 (metres)  
W b-c = 1.25 (metres)  
Vl b-a = 100 (metres)  
Vr b-a = 100 (metres)  
Vr b-c = 100 (metres)  
q b-a = 15 (pcu/hr)  
q b-c = 5 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.737647  
E = 0.760461  
F = 0.783538  
Y = 0.793000

## THE CAPACITY OF MOVEMENT :

Q b-a = 191  
Q b-c = 405  
Q c-b = 414  
Q b-ac = 220

CRITICAL DFC = 0.09

## COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.08  
DFC b-c = 0.01  
DFC c-b = 0.01  
DFC b-ac = 0.09



# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J5 - Sai Sha Road / Access Road to Tseng Tau

2021 AM Observed Traffic Flows

Designed By : MKCN

Checked By : SHSN

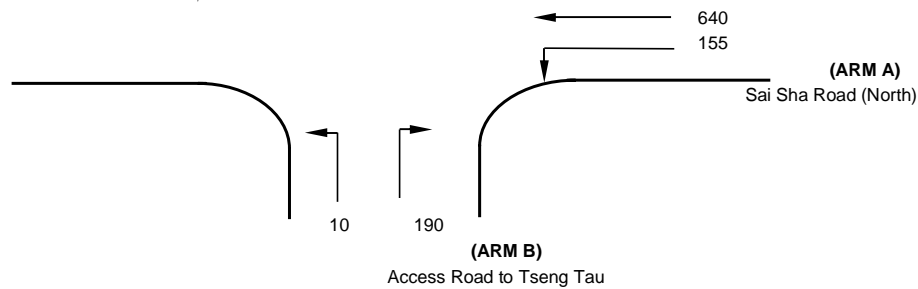
Job No. : -

Date : Jun 22

Sai Sha Road (South)

(ARM C)

680  
25



NOTES : ( GEOMETRIC INPUT DATA )

J5

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

## GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 6.5 (metres)  
W cr = 0 (metres)  
q a-b = 155 (pcu/hr)  
q a-c = 640 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 1.7 (metres)  
Vr c-b = 45 (metres)  
q c-a = 680 (pcu/hr)  
q c-b = 25 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 2.5 (metres)  
W b-c = 2.5 (metres)  
Vl b-a = 60 (metres)  
Vr b-a = 60 (metres)  
Vr b-c = 60 (metres)  
q b-a = 190 (pcu/hr)  
q b-c = 10 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.798176  
E = 0.843737  
F = 0.761573  
Y = 0.775750

## THE CAPACITY OF MOVEMENT :

Q b-a = 238  
Q b-c = 461  
Q c-b = 396  
Q b-ac = 244  
Q c-a = 1686

## COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.80  
DFC b-c = 0.02  
DFC c-b = 0.06  
DFC b-ac = 0.82  
DFC c-a = 0.40

CRITICAL DFC = 0.82

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J5 - Sai Sha Road / Access Road to Tseng Tau

2021 PM Observed Traffic Flows

Designed By : MKCN

Checked By : SHSN

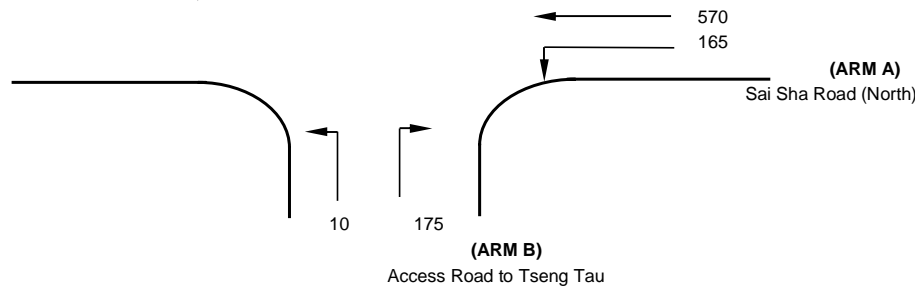
Job No. : -

Date : Jun 22

Sai Sha Road (South)

(ARM C)

675  
10



NOTES : ( GEOMETRIC INPUT DATA )

J5

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W = 6.5 (metres)  
W cr = 0 (metres)  
q a-b = 165 (pcu/hr)  
q a-c = 570 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b = 1.7 (metres)  
Vr c-b = 45 (metres)  
q c-a = 675 (pcu/hr)  
q c-b = 10 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a = 2.5 (metres)  
W b-c = 2.5 (metres)  
Vl b-a = 60 (metres)  
Vr b-a = 60 (metres)  
Vr b-c = 60 (metres)  
q b-a = 175 (pcu/hr)  
q b-c = 10 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.798176  
E = 0.843737  
F = 0.761573  
Y = 0.775750

## THE CAPACITY OF MOVEMENT :

Q b-a = 258  
Q b-c = 477  
Q c-b = 409  
Q b-ac = 265  
Q c-a = 1756

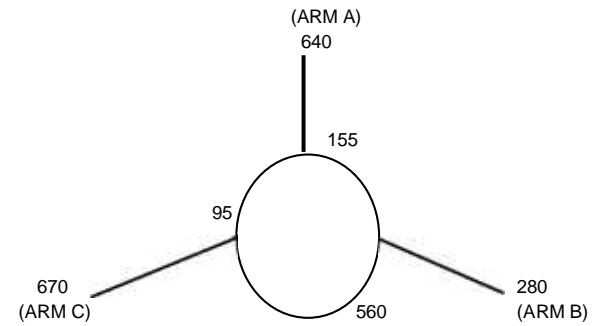
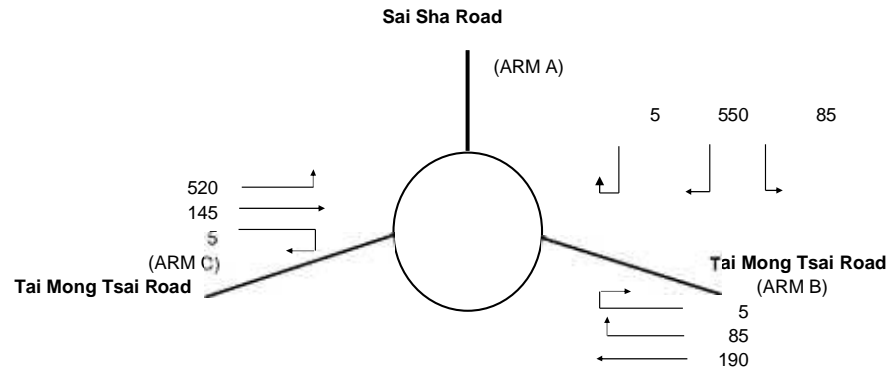
## COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.68  
DFC b-c = 0.02  
DFC c-b = 0.02  
DFC b-ac = 0.70  
DFC c-a = 0.38

CRITICAL DFC = 0.70

# ROUNDAABOUT CAPACITY CALCULATION

Junction	J7 - Sai Sha Road / Tai Mong Tsai Road	Scenario	2021 AM Observed Traffic Flows	Project No.	Prepared By	Checked By	Date
				-	MKCN	SHSN	27-Jun-22



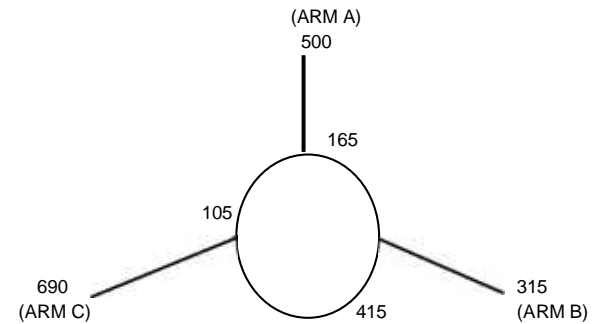
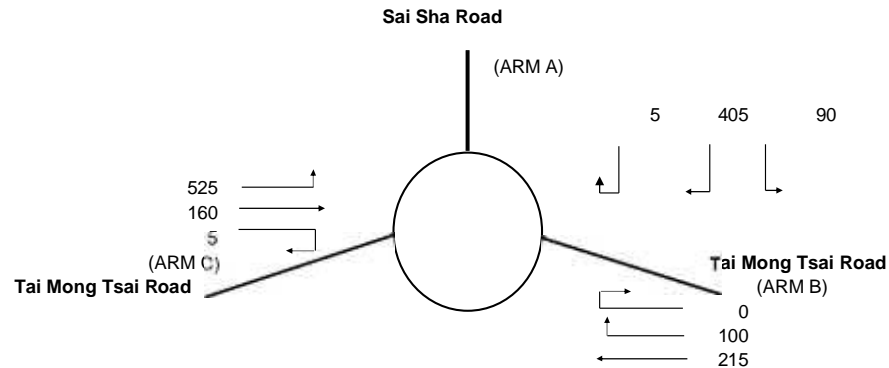
ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	4.30	3.00	3.30
E = Entry width (m)	7.50	8.00	8.00
L = Effective length of flare (m)	15.00	20.00	20.00
R = Entry radius (m)	16.00	80.00	100.00
D = Inscribed circle diameter (m)	32.00	32.00	32.00
A = Entry angle (degree)	45.00	30.00	45.00
Q = Entry flow (pcu/h)	640	280	670
Qc= Circulating flow across entry (pcu/h)	155	560	95
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.34	0.40	0.38
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.94	1.04	0.99
X2= V + ((E-V)/(1+2S))	6.20	5.78	5.98
M = EXP((D-60)/10)	0.06	0.06	0.06
F = 303*X2	1879	1751	1813
Td= 1+(0.5/(1+M))	1.47	1.47	1.47
Fc= 0.21*Td(1+0.2*X2)	0.69	0.67	0.68
Qe= K(F-Fc*Qc)	1658	1428	1726
DFC = Design flow/Capacity = Q/Qe	0.39	0.20	0.39

TOTAL ENTRY FLOWS = 1590 PCU

CRITICAL DFC = 0.39

# ROUNDAABOUT CAPACITY CALCULATION

Junction	J7 - Sai Sha Road / Tai Mong Tsai Road	Scenario	2021 PM Observed Traffic Flows	Project No.	Prepared By	Checked By	Date
				-	MKCN	SHSN	27-Jun-22



ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	4.30	3.00	3.30
E = Entry width (m)	7.50	8.00	8.00
L = Effective length of flare (m)	15.00	20.00	20.00
R = Entry radius (m)	16.00	80.00	100.00
D = Inscribed circle diameter (m)	32.00	32.00	32.00
A = Entry angle (degree)	45.00	30.00	45.00
Q = Entry flow (pcu/h)	500	315	690
Qc= Circulating flow across entry (pcu/h)	165	415	105
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.34	0.40	0.38
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.94	1.04	0.99
X2= V + ((E-V)/(1+2S))	6.20	5.78	5.98
M = EXP((D-60)/10)	0.06	0.06	0.06
F = 303*X2	1879	1751	1813
Td= 1+(0.5/(1+M))	1.47	1.47	1.47
Fc= 0.21*Td(1+0.2*X2)	0.69	0.67	0.68
Qe= K(F-Fc*Qc)	1651	1528	1719
DFC = Design flow/Capacity = Q/Qe	0.30	0.21	0.40

TOTAL ENTRY FLOWS = 1505 PCU

CRITICAL DFC = 0.40

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J8 - Sai Sha Road / Access Road to Sai Keng Village

2021 AM Observed Traffic Flows

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Jun 22

Sai Sha Road (South)

(ARM C)

630  
15

625

25

(ARM A)

Sai Sha Road (North)

15

75

(ARM B)

Access Road to Tseng Tau

NOTES : ( GEOMETRIC INPUT DATA )

J8

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

## GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 7 (metres)  
W cr = 0 (metres)  
q a-b = 25 (pcu/hr)  
q a-c = 625 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.5 (metres)  
Vr c-b = 40 (metres)  
q c-a = 630 (pcu/hr)  
q c-b = 15 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 2.5 (metres)  
W b-c = 2.5 (metres)  
Vl b-a = 40 (metres)  
Vr b-a = 40 (metres)  
Vr b-c = 40 (metres)  
q b-a = 75 (pcu/hr)  
q b-c = 15 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.773056  
E = 0.827683  
F = 0.914915  
Y = 0.758500

## THE CAPACITY OF MOVEMENT :

Q b-a = 260  
Q b-c = 472  
Q c-b = 517  
Q b-ac = 281  
Q c-a = 1748

## COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.29  
DFC b-c = 0.03  
DFC c-b = 0.03  
DFC b-ac = 0.32  
DFC c-a = 0.36

CRITICAL DFC = 0.36



# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J8 - Sai Sha Road / Access Road to Sai Keng Village

2021 PM Observed Traffic Flows

Designed By : MKCN

Checked By : SHSN

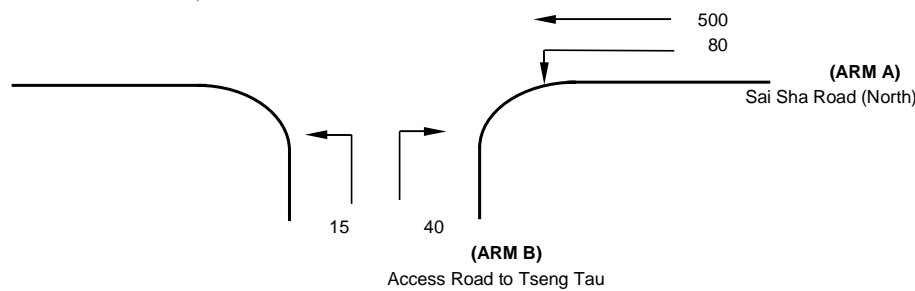
Job No. : -

Date : Jun 22

Sai Sha Road (South)

(ARM C)

645  
10



NOTES : ( GEOMETRIC INPUT DATA )

J8

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W = 7 (metres)  
W cr = 0 (metres)  
q a-b = 80 (pcu/hr)  
q a-c = 500 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b = 3.5 (metres)  
Vr c-b = 40 (metres)  
q c-a = 645 (pcu/hr)  
q c-b = 10 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a = 2.5 (metres)  
W b-c = 2.5 (metres)  
Vl b-a = 40 (metres)  
Vr b-a = 40 (metres)  
Vr b-c = 40 (metres)  
q b-a = 40 (pcu/hr)  
q b-c = 15 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.773056  
E = 0.827683  
F = 0.914915  
Y = 0.758500

## THE CAPACITY OF MOVEMENT :

Q b-a = 282  
Q b-c = 495  
Q c-b = 535  
Q b-ac = 319  
Q c-a = 1766

## COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.14  
DFC b-c = 0.03  
DFC c-b = 0.02  
DFC b-ac = 0.17  
DFC c-a = 0.37

CRITICAL DFC = 0.37

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J9 - Sai Sha Road / Access Road to Kei Ling Ha San Wai

2021 AM Observed Traffic Flows

Designed By : MKCN

Checked By : SHSN

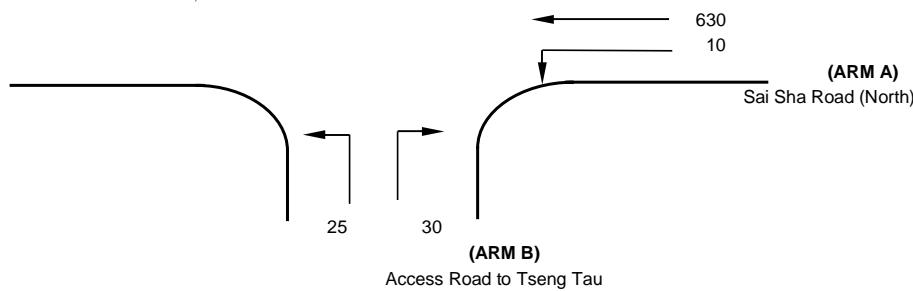
Job No. : -

Date : Jun 22

Sai Sha Road (South)

(ARM C)

615  
10



NOTES : ( GEOMETRIC INPUT DATA )

J9

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

## GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 6.5 (metres)  
W cr = 0 (metres)  
q a-b = 10 (pcu/hr)  
q a-c = 630 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.2 (metres)  
Vr c-b = 40 (metres)  
q c-a = 615 (pcu/hr)  
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 2.2 (metres)  
W b-c = 2.2 (metres)  
Vl b-a = 40 (metres)  
Vr b-a = 40 (metres)  
Vr b-c = 40 (metres)  
q b-a = 30 (pcu/hr)  
q b-c = 25 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.748614  
E = 0.801514  
F = 0.888746  
Y = 0.775750

## THE CAPACITY OF MOVEMENT :

Q b-a = 251  
Q b-c = 454  
Q c-b = 502  
Q b-ac = 315  
Q c-a = 1764

## COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.12  
DFC b-c = 0.06  
DFC c-b = 0.02  
DFC b-ac = 0.17  
DFC c-a = 0.35

CRITICAL DFC = 0.35

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J9 - Sai Sha Road / Access Road to Kei Ling Ha San Wai

2021 PM Observed Traffic Flows

Designed By : MKCN

Checked By : SHSN

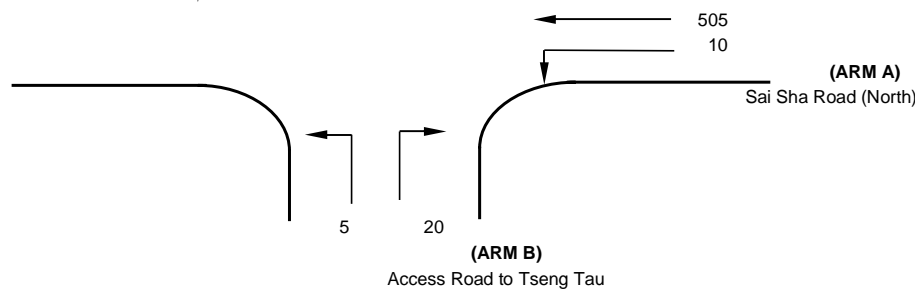
Job No. : -

Date : Jun 22

Sai Sha Road (South)

(ARM C)

635  
10



NOTES : ( GEOMETRIC INPUT DATA )

J9

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W = 6.5 (metres)  
W cr = 0 (metres)  
q a-b = 10 (pcu/hr)  
q a-c = 505 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b = 3.2 (metres)  
Vr c-b = 40 (metres)  
q c-a = 635 (pcu/hr)  
q c-b = 10 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a = 2.2 (metres)  
W b-c = 2.2 (metres)  
Vl b-a = 40 (metres)  
Vr b-a = 40 (metres)  
Vr b-c = 40 (metres)  
q b-a = 20 (pcu/hr)  
q b-c = 5 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.748614  
E = 0.801514  
F = 0.888746  
Y = 0.775750

## THE CAPACITY OF MOVEMENT :

Q b-a = 274  
Q b-c = 482  
Q c-b = 533  
Q b-ac = 300  
Q c-a = 1766

## COMPARISION OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.07  
DFC b-c = 0.01  
DFC c-b = 0.02  
DFC b-ac = 0.08  
DFC c-a = 0.36

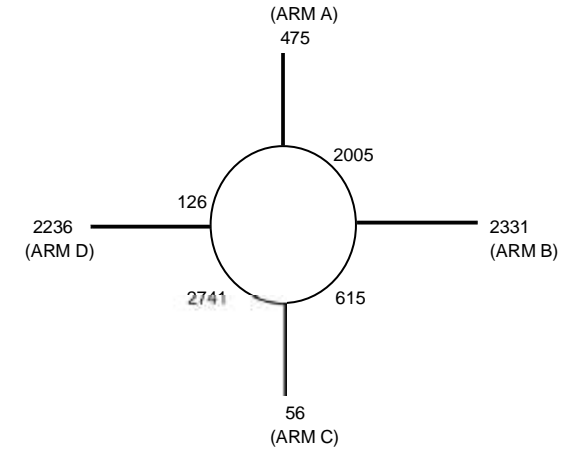
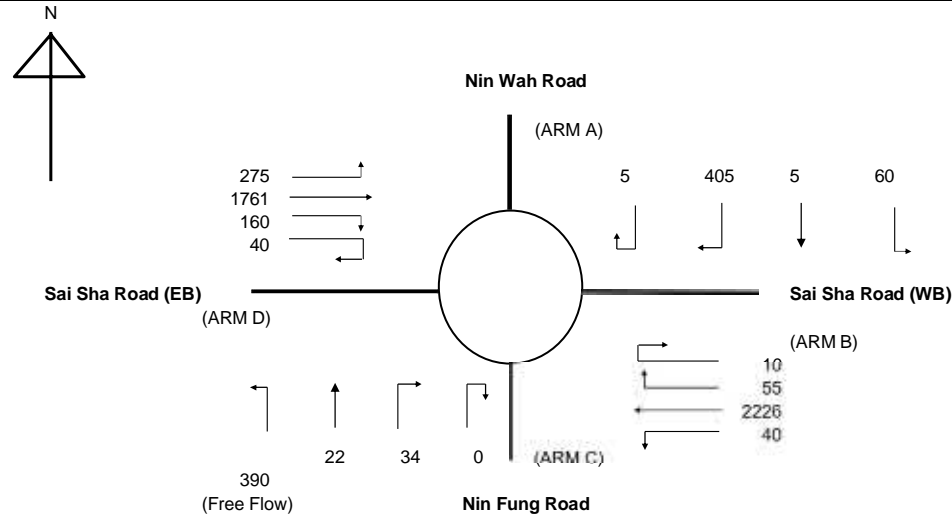
CRITICAL DFC = 0.36

## **ANNEX A2**

### **CALCULATION SHEETS REFERENCE TRAFFIC FLOWS**

# ROUNDAABOUT CAPACITY CALCULATIO

Junction	Scenario	Project No.	Prepared By	Checked By	Date
J1 - Sai Sha Road / Nin Wah Road / Nin Fung Road	2029 AM Reference Traffic Flows (Future Layout)	-	MKCN	SHSN	14-Aug-22



ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	6.00	7.50	5.00	7.30
E = Entry width (m)	7.00	13.00	8.00	12.00
L = Effective length of flare (m)	12.00	35.00	7.00	13.00
R = Entry radius (m)	25.00	25.00	10.00	40.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00	50.00
A = Entry angle (degree)	40.00	30.00	40.00	30.00
Q = Entry flow (pcu/h)	475	2331	56	2236 *
Qc= Circulating flow across entry (pcu/h)	2005	615	2741	126 *
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.13	0.25	0.69	0.58
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.98	1.01	0.92	1.02
X2= V + ((E-V)/(1+2S))	6.79	11.16	6.27	9.48
M = EXP((D-60)/10)	0.37	0.37	0.37	0.37
F = 303*X2	2057	3381	1898	2872
Td= 1+(0.5/(1+M))	1.37	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.68	0.93	0.65	0.83
Qe= K(F-Fc*Qc)	684	2839	117	2835
DFC = Design flow/Capacity = Q/Qe	0.69	0.82	0.48	0.79

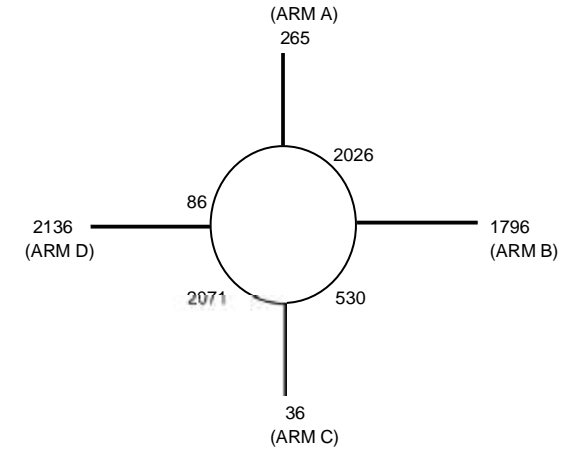
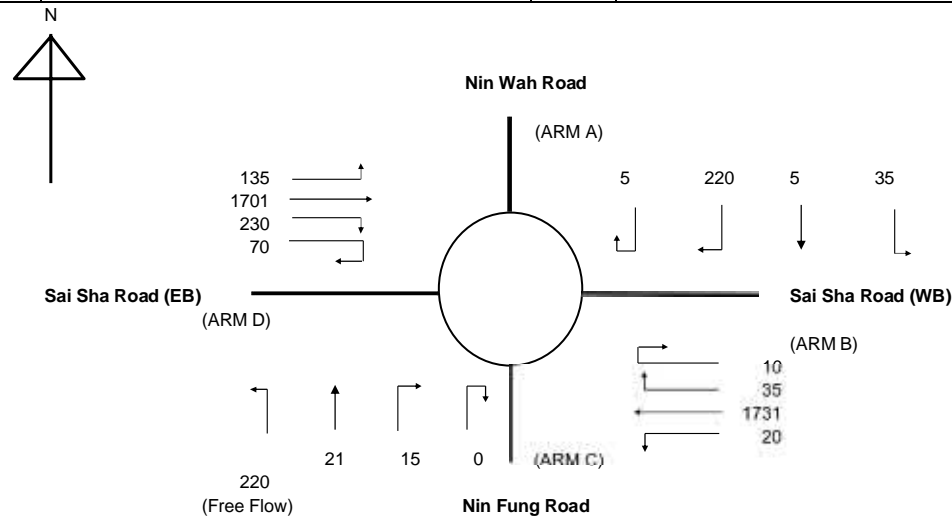
TOTAL ENTRY FLOWS 5098 PCU

CRITICAL DFC 0.82



# ROUNDAABOUT CAPACITY CALCULATIO

Junction	J1 - Sai Sha Road / Nin Wah Road / Nin Fung Road	Scenario	2029 PM Reference Traffic Flows (Future Layout)	Project No.	Prepared By	Checked By	Date
				-	MKCN	SHSN	14-Aug-22



ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	6.00	7.50	5.00	7.30
E = Entry width (m)	7.00	13.00	8.00	12.00
L = Effective length of flare (m)	12.00	35.00	7.00	13.00
R = Entry radius (m)	25.00	25.00	10.00	40.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00	50.00
A = Entry angle (degree)	40.00	30.00	40.00	30.00
Q = Entry flow (pcu/h)	265	1796	36	2136 *
Qc= Circulating flow across entry (pcu/h)	2026	530	2071	86 *
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.13	0.25	0.69	0.58
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.98	1.01	0.92	1.02
X2= V + ((E-V)/(1+2S))	6.79	11.16	6.27	9.48
M = EXP((D-60)/10)	0.37	0.37	0.37	0.37
F = 303*X2	2057	3381	1898	2872
Td= 1+(0.5/(1+M))	1.37	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.68	0.93	0.65	0.83
Qe= K(F-Fc*Qc)	670	2918	513	2869
DFC = Design flow/Capacity = Q/Qe	0.40	0.62	0.07	0.74






TOTAL ENTRY FLOWS 4233 PCU

CRITICAL DFC 0.74

**AECOM**

DATE: Aug 22


$$\text{R.C.(C)} = (0.9 \times Y_{\max} - Y) / Y \times 100\% = 26\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICALITY
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.300	2						0		4030				1835			4030	0.455	
	C	2	3.300	1		25	0	0		0		2085		1835	15		100%	1967	0.008		
	B	1	3.700	1	10			1		0		1985	10	1086		1096	1%	1982	0.553		
	B	1	3.700	1				0		0		2125		1174		1174		2125	0.553	0.553	
	D	3	4.500	1	10	20	0	1		0		2065	30		5	35	86%	14%	1813	0.019	

# JUNCTION CAPACITY CALCULATION

AECOM

Junction J2 - Sai Sha Road / Access Road to Sai O

2031 PM Reference Traffic Flows

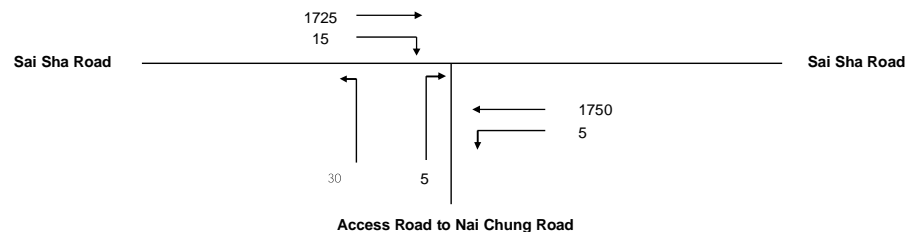
DESIGN: 0

CHECK: 0

JOB NO: -

DATE: Aug 22

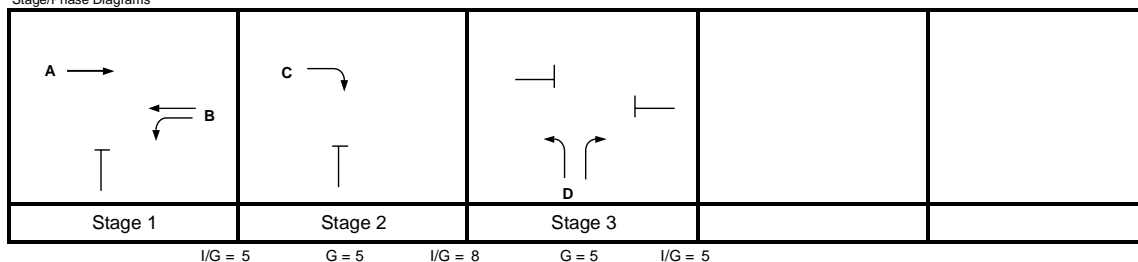
Traffic Flow Diagram  
(pcu/hr)



No. of stages per cycle	N =	3
Cycle time	C =	120 sec
Sum(y)	Y =	0.428
Lost time	L =	27 sec
Total Flow	=	12,290 pcu
Optimum Cycle $C_o$	= $(1.5 \times L + 5) / (1 - Y)$	80 sec
Min. Cycle Time $C_m$	= $L / (1 - Y)$	47 sec
$Y_{ult}$	= $0.9 - 0.0075 \times L$	0.698
$R.C._{ult}$	= $(Y_{ult} - Y) / Y \times 100\%$	63.0 %
Practical Cycle Time $C_p$	= $0.9 \times L / (0.9 - Y)$	51 sec
$Y_{max}$	= $1 - L / C$	0.775

J2




Stage/Phase Diagrams



I/G = 5      G = 5      I/G = 8      G = 5      I/G = 5

Critical Case : A,C,D

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 63\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.300	2				1		0		4030		1725		1725			4030	0.428	0.428
	C	2	3.300	1		25	0	0		0		2085		15		15	100%		1967	0.008	
	B	1	3.700	1	10			1		0		1985	5	842		847	1%		1983	0.427	
	B	1	3.700	1				0		0		2125		908		908			2125	0.427	
	D	3	4.500	1	10	20	0	1		0		2065	30		5	35	86%	14%	1813	0.019	

# JUNCTION CAPACITY CALCULATION

AECOM

Junction J3 - Sai Sha Road / Access Road to Kwun Hang / Access Road to Che Ha 2031 AM Reference Traffic Flows

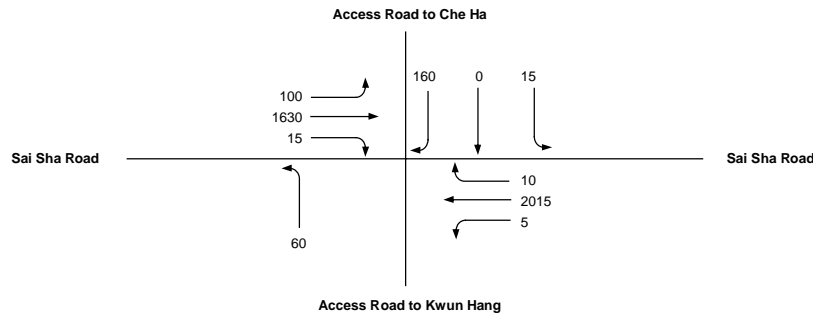
DESIGN:

CHECK:

JOB NO:

DATE: Aug 22

Traffic Flow Diagram  
(pcu/hr)



No. of stages per cycle

N = 4

Cycle time

C = 120 sec

Sum(y)

Y = 0.590

Lost time

L = 25 sec

Total Flow

= 16,316 pcu

Optimum Cycle  $C_o = (1.5 \times L + 5) / (1 - Y) = 104$  sec

Min. Cycle Time  $C_m = L / (1 - Y) = 61$  sec

$Y_{ult} = 0.9 - 0.0075 \times L = 0.713$

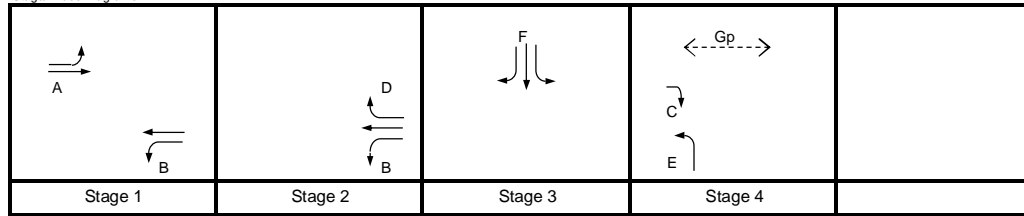
$R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 20.7\%$

Practical Cycle Time  $C_p = 0.9 \times L / (0.9 - Y) = 73$  sec

$Y_{max} = 1 - L / C = 0.792$

J3

Stage/Phase Diagrams



I/G =

I/G = 5

I/G = 4





G = 16

I/G = 2

Critical Case : B,F,Gp

$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 21\%$

1

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y	EFFECTIVE GREEN g=y/Yx(C-L) (sec)	ACTUAL GREEN G (sec)	DEGREE OF SATURATION X	Average Queue N					
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT												
	A	1	3.500	1	15			1		0		1965	100	730		830	12%		1942	0.428	0.496	69	69	0.733	12					
	A	1	3.500	1			0		0		2105		900		900			2105	0.428	69		69	0.733	12						
	C	4	3.500	1		25	1	0		0		2105			15	15	100%		1769	0.008		1	5	0.170	0					
	B	1,2	3.500	1	10			1		0		1965	5	970		975	1%		1963	0.496	0.496	80	79	0.745	11					
	B	1,2	3.500	1			0		0		2105		1045		1045			2105	0.496	80		79	0.745	12						
	D	2	3.500	1		20	1	0		0		2105			10	10	100%		1744	0.006		1	5	0.115	0					
	E	2	3.700	1	10			1		0		1985	60			60	100%		1726	0.035	0.094	6	16	0.245	2					
	F	3	5.000	1	30	25	0	1	3.2	-134		2115	15	0	160	175	9%	91%	1870	0.094	0.094	15	14	0.745	2					
Ped.	Gp	4	min.	16	=	9	+	7	sec																					

# JUNCTION CAPACITY CALCULATION

AECOM

Junction J3 - Sai Sha Road / Access Road to Kwun Hang / Access Road to Che Ha 2031 PM Reference Traffic Flows

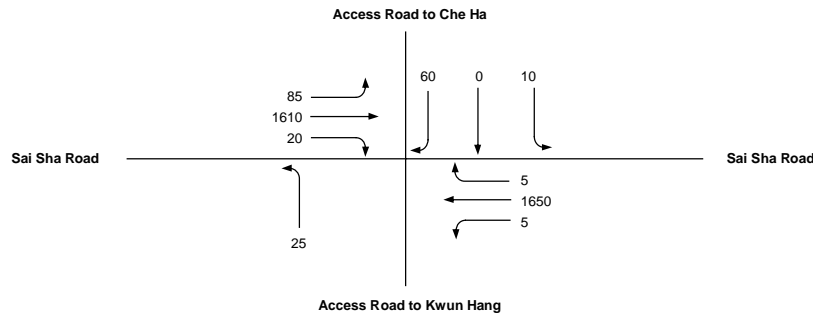
DESIGN:

CHECK:

JOB NO:

DATE: Aug 22

Traffic Flow Diagram  
(pcu/hr)



No. of stages per cycle

N = 4

Cycle time

C = 120 sec

Sum(y)

Y = 0.456

Lost time

L = 35 sec

Total Flow

= 16,316 pcu

Optimum Cycle  $C_o = (1.5 \times L + 5) / (1 - Y) = 106$  sec

Min. Cycle Time  $C_m = L / (1 - Y) = 64$  sec

$Y_{ult} = 0.9 - 0.0075 \times L = 0.638$

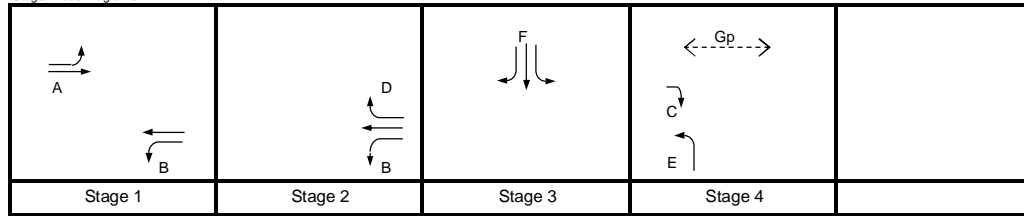
$R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 39.8\%$

Practical Cycle Time  $C_p = 0.9 \times L / (0.9 - Y) = 71$  sec

$Y_{max} = 1 - L/C = 0.708$

J3

Stage/Phase Diagrams



I/G = 5

G = 5

I/G = 5

I/G = 4





G = 16

I/G = 2

Critical Case : A,D,F,Gp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 40\%$$

1

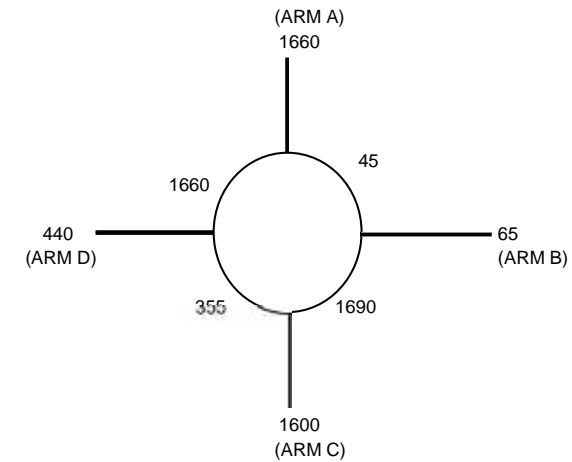
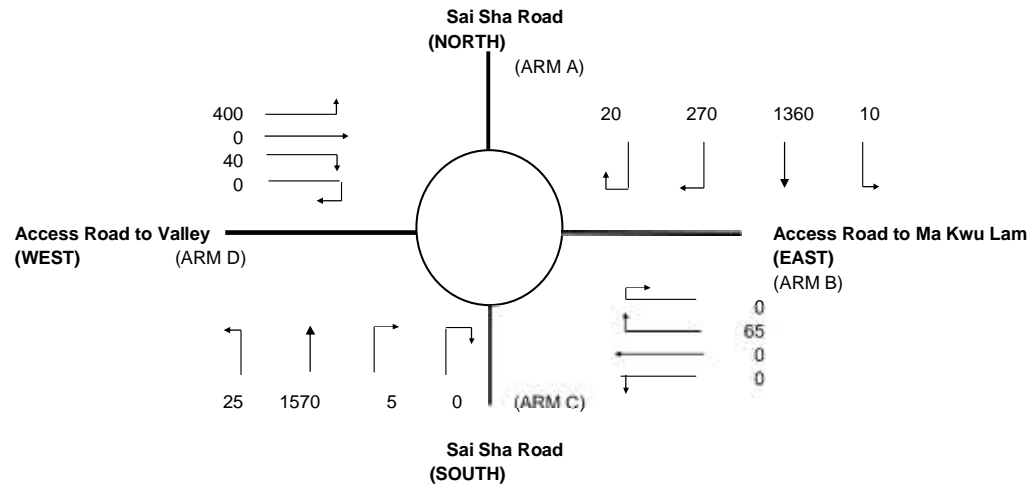
MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y	EFFECTIVE GREEN g=y/Yx(C-L) (sec)	ACTUAL GREEN G (sec)	DEGREE OF SATURATION X	Average Queue N
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT							
	A	1	3.500	1	15			1		0		1965	85	729		814	10%		1945	0.419	0.419	78	77	0.644	9
	A	1	3.500	1			0		0		2105		881		881			2105	0.419	78		77	0.644	10	
	C	4	3.500	1		25	1	0		0		2105			20	20	100%	0.011	1769	0.011		2	5	0.226	1
	B	1,2	3.500	1	10			1		0		1965	5	794		799	1%		1963	0.407	0.037	76	84	0.574	8
	B	1,2	3.500	1			0		0		2105		856		856			2105	0.407	76		84	0.574	8	
	D	2	3.500	1		20	1	0		0		2105			5	5	100%	0.003	1744	0.003		1	5	0.057	0
	E	2	3.700	1	10			1		0		1985	25			25	100%		1726	0.014	0.037	3	16	0.102	1
	F	3	5.000	1	30	25	0	1	3.2	-134		2115	10	0	60	70	14%	86%	1871	0.037	0.037	7	6	0.644	1
Ped.	Gp	4	min.	16	=	9	+	7	sec																



# ROUNDBABOUT CAPACITY CALCULATIO

MAUNSELL CONSULTANTS ASIA LTD.

Junction	J4- Sai Sha Road / Access Road to Ma Kwu Lam / Access Road to Sai Sha Development (Site A)	Scenario	Year 2031 AM Reference Traffic Flows	Project No.	Prepared By	Checked By	Date
				-	MKCN	SHSN	Aug 2022



ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	7.30	4.00	7.30	7.00
E = Entry width (m)	10.00	6.00	13.50	8.00
L = Effective length of flare (m)	5.00	6.50	12.50	4.00
R = Entry radius (m)	25.00	20.00	45.00	25.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00	50.00
A = Entry angle (degree)	45.00	50.00	50.00	45.00
Q = Entry flow (pcu/h)	1660	65	1600	440
Qc= Circulating flow across entry (pcu/h)	45	1690	355	1660
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.86	0.49	0.79	0.40
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.96	0.93	0.96	0.96
X2= V + ((E-V)/(1+2S))	8.29	5.01	9.70	7.56
M = EXP((D-60)/10)	0.37	0.37	0.37	0.37
F = 303*X2	2512	1517	2938	2289
Td= 1+(0.5/(1+M))	1.37	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.76	0.57	0.84	0.72
Qe= K(F-Fc*Qc)	2373	509	2527	1048
DFC = Design flow/Capacity = Q/Qe	0.70	0.13	0.63	0.42

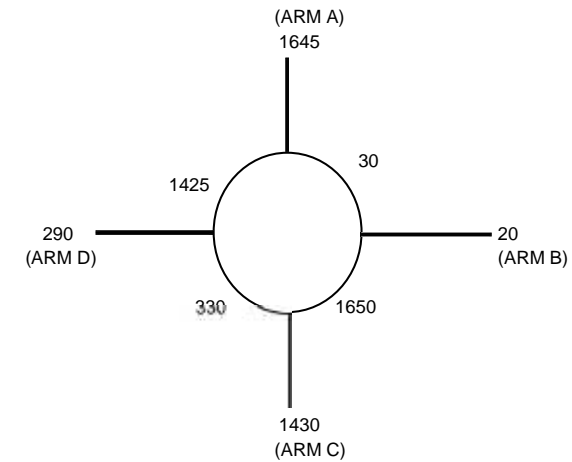
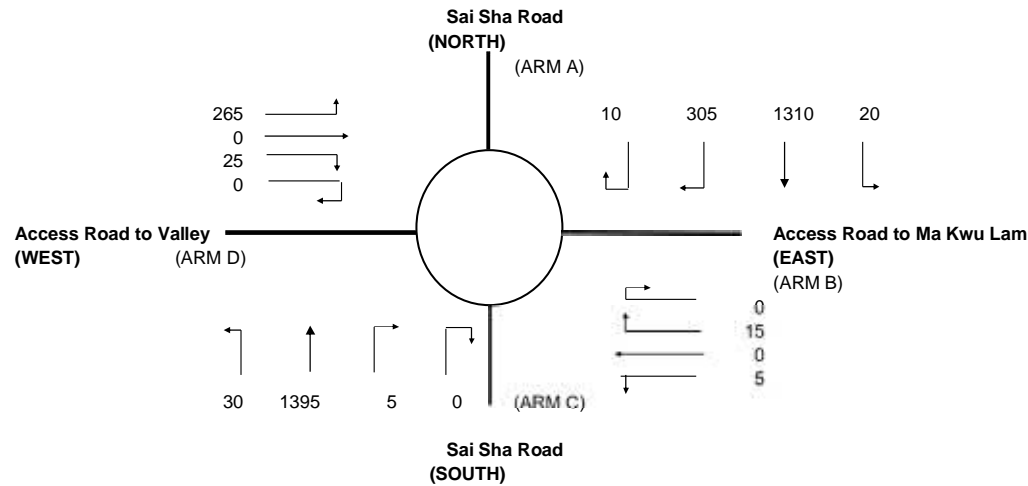
TOTAL ENTRY FLOWS 3765 PCU

CRITICAL DFC 0.70

# ROUNDAABOUT CAPACITY CALCULATIO

MAUNSELL CONSULTANTS ASIA LTD.

Junction	J4- Sai Sha Road / Access Road to Ma Kwu Lam / Access Road to Sai Sha Development (Site A)	Scenario	Year 2031 PM Reference Traffic Flows	Project No.	Prepared By	Checked By	Date
				-	MKCN	SHSN	Aug 2022

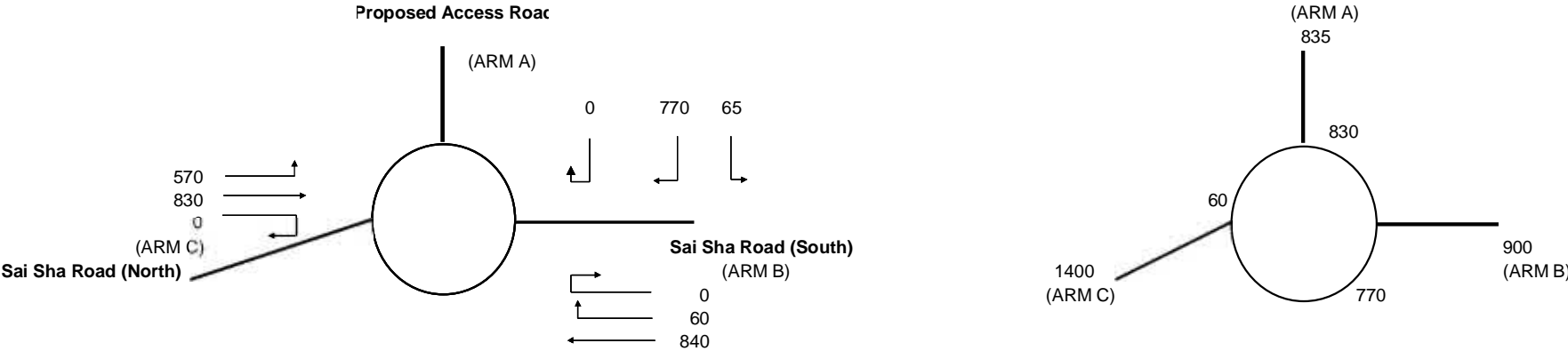


ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	7.30	4.00	7.30	7.00
E = Entry width (m)	10.00	6.00	13.50	8.00
L = Effective length of flare (m)	5.00	6.50	12.50	4.00
R = Entry radius (m)	25.00	20.00	45.00	25.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00	50.00
A = Entry angle (degree)	45.00	50.00	50.00	45.00
Q = Entry flow (pcu/h)	1645	20	1430	290
Qc= Circulating flow across entry (pcu/h)	30	1650	330	1425
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.86	0.49	0.79	0.40
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.96	0.93	0.96	0.96
X2= V + ((E-V)/(1+2S))	8.29	5.01	9.70	7.56
M = EXP((D-60)/10)	0.37	0.37	0.37	0.37
F = 303*X2	2512	1517	2938	2289
Td= 1+(0.5/(1+M))	1.37	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.76	0.57	0.84	0.72
Qe= K(F-Fc*Qc)	2384	531	2548	1210
DFC = Design flow/Capacity = Q/Qe	0.69	0.04	0.56	0.24

TOTAL ENTRY FLOWS 3385 PCU

CRITICAL DFC 0.69

JUNCTION CAPACITY CALCULATION

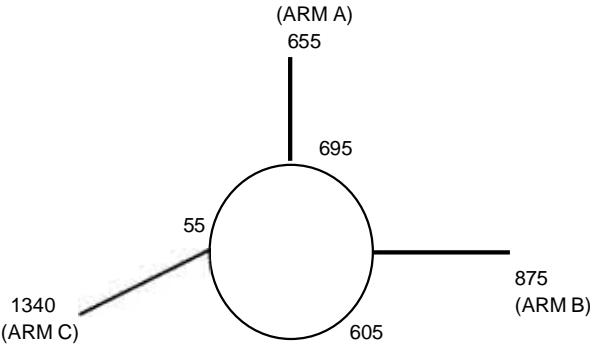
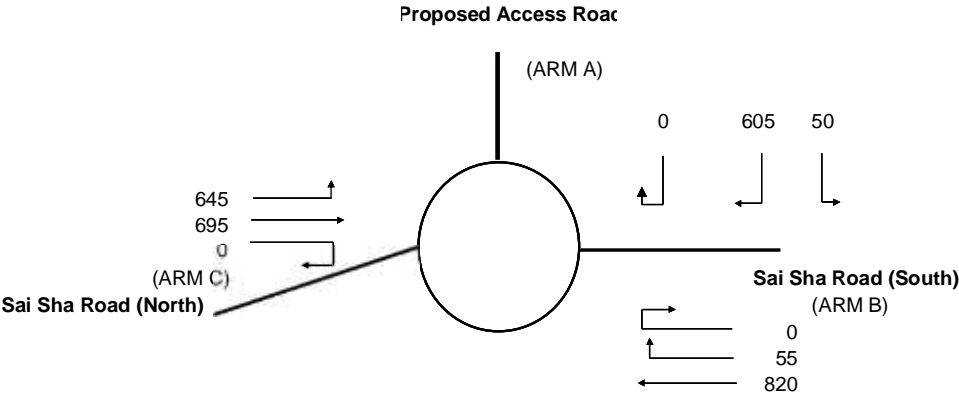


ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	5.20	7.30	7.30
E = Entry width (m)	8.00	8.00	8.00
L = Effective length of flare (m)	20.00	4.50	4.50
R = Entry radius (m)	35.00	30.00	40.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00
A = Entry angle (degree)	35.00	45.00	35.00
Q = Entry flow (pcu/h)	835	900	1400
Qc= Circulating flow across entry (pcu/h)	830	770	60
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.22	0.25	0.25
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.00	0.96	1.01
X2= V + ((E-V)/(1+2S))	7.13	7.77	7.77
M = EXP((D-60)/10)	0.37	0.37	0.37
F = 303*X2	2162	2354	2354
Td= 1+(0.5/(1+M))	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.70	0.73	0.73
Qe= K(F-Fc*Qc)	1590	1726	2326
DFC = Design flow/Capacity = Q/Qe	0.53	0.52	0.60

TOTAL ENTRY FLOWS = 3135 PCU

CRITICAL DFC = 0.60

JUNCTION CAPACITY CALCULATION



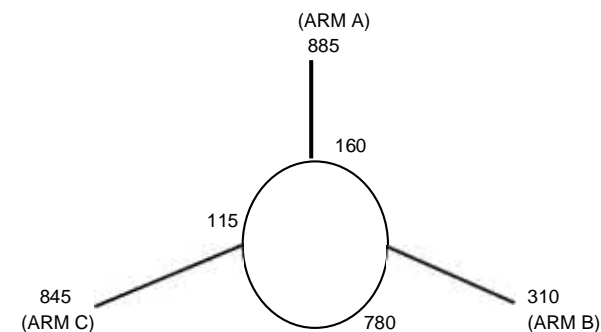
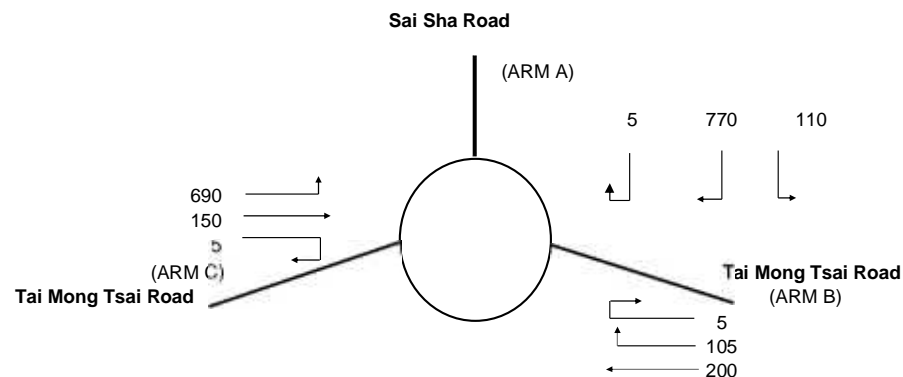
ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	5.20	7.30	7.30
E = Entry width (m)	8.00	8.00	8.00
L = Effective length of flare (m)	20.00	4.50	4.50
R = Entry radius (m)	35.00	30.00	40.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00
A = Entry angle (degree)	35.00	45.00	35.00
Q = Entry flow (pcu/h)	655	875	1340
Qc= Circulating flow across entry (pcu/h)	695	605	55
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.22	0.25	0.25
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.00	0.96	1.01
X2= V + ((E-V)/(1+2S))	7.13	7.77	7.77
M = EXP((D-60)/10)	0.37	0.37	0.37
F = 303*X2	2162	2354	2354
Td= 1+(0.5/(1+M))	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.70	0.73	0.73
Qe= K(F-Fc*Qc)	1684	1842	2330
DFC = Design flow/Capacity = Q/Qe	0.39	0.47	0.58

TOTAL ENTRY FLOWS = 2870 PCU

CRITICAL DFC = 0.58

# ROUNDBABOUT CAPACITY CALCULATION

Junction	J7 - Sai Sha Road / Tai Mong Tsai Road	Scenario	2031 AM Reference Traffic Flows	Project No.	Prepared By	Checked By	Date
				-	mkn	shsn	14-Aug-22



ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	4.30	3.00	3.30
E = Entry width (m)	7.50	8.00	8.00
L = Effective length of flare (m)	15.00	20.00	20.00
R = Entry radius (m)	16.00	80.00	100.00
D = Inscribed circle diameter (m)	32.00	32.00	32.00
A = Entry angle (degree)	45.00	30.00	45.00
Q = Entry flow (pcu/h)	885	310	845
Qc= Circulating flow across entry (pcu/h)	160	780	115
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.34	0.40	0.38
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.94	1.04	0.99
X2= V + ((E-V)/(1+2S))	6.20	5.78	5.98
M = EXP((D-60)/10)	0.06	0.06	0.06
F = 303*X2	1879	1751	1813
Td= 1+(0.5/(1+M))	1.47	1.47	1.47
Fc= 0.21*Td(1+0.2*X2)	0.69	0.67	0.68
Qe= K(F-Fc*Qc)	1655	1276	1712
DFC = Design flow/Capacity = Q/Qe	0.53	0.24	0.49

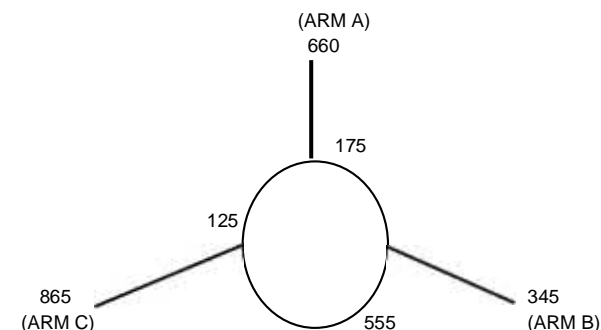
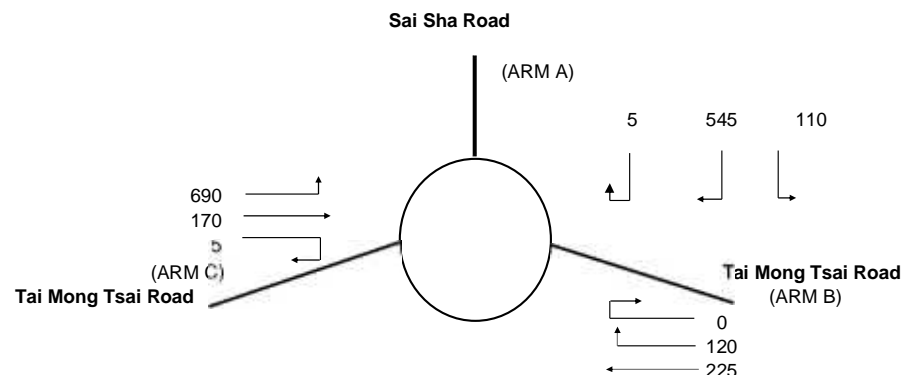
TOTAL ENTRY FLOWS = 2040 PCU

CRITICAL DFC = 0.53



# ROUNDBABOUT CAPACITY CALCULATION

Junction	J7 - Sai Sha Road / Tai Mong Tsai Road	Scenario	2031 PM Reference Traffic Flows	Project No.	Prepared By	Checked By	Date
				-	mkn	shsn	14-Aug-22



ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	4.30	3.00	3.30
E = Entry width (m)	7.50	8.00	8.00
L = Effective length of flare (m)	15.00	20.00	20.00
R = Entry radius (m)	16.00	80.00	100.00
D = Inscribed circle diameter (m)	32.00	32.00	32.00
A = Entry angle (degree)	45.00	30.00	45.00
Q = Entry flow (pcu/h)	660	345	865
Qc= Circulating flow across entry (pcu/h)	175	555	125
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.34	0.40	0.38
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.94	1.04	0.99
X2= V + ((E-V)/(1+2S))	6.20	5.78	5.98
M = EXP((D-60)/10)	0.06	0.06	0.06
F = 303*X2	1879	1751	1813
Td= 1+(0.5/(1+M))	1.47	1.47	1.47
Fc= 0.21*Td(1+0.2*X2)	0.69	0.67	0.68
Qe= K(F-Fc*Qc)	1645	1432	1706
DFC = Design flow/Capacity = Q/Qe	0.40	0.24	0.51

TOTAL ENTRY FLOWS = 1870 PCU

CRITICAL DFC = 0.51

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J8 - Sai Sha Road / Access Road to Sai Keng Village

2031 AM Reference Traffic Flows

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Aug 22

Sai Sha Road  
(ARM C)

820  
15



(ARM A)  
Sai Sha Road

(ARM B)  
Access Road to Sai Keng Village

NOTES : ( GEOMETRIC INPUT DATA )

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

J8

## GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 7 (metres)  
W cr = 0 (metres)  
q a-b = 25 (pcu/hr)  
q a-c = 870 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.5 (metres)  
Vr c-b = 40 (metres)  
q c-a = 820 (pcu/hr)  
q c-b = 15 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 2.5 (metres)  
W b-c = 2.5 (metres)  
Vl b-a = 40 (metres)  
Vr b-a = 40 (metres)  
Vr b-c = 40 (metres)  
q b-a = 80 (pcu/hr)  
q b-c = 15 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.773056  
E = 0.827683  
F = 0.914915  
Y = 0.758500

## THE CAPACITY OF MOVEMENT :

Q b-a = 182  
Q b-c = 416  
Q c-b = 456  
Q b-ac = 200

## COMPARISON OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.44  
DFC b-c = 0.04  
DFC c-b = 0.03  
DFC b-ac = 0.48

CRITICAL DFC = 0.48

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J8 - Sai Sha Road / Access Road to Sai Keng Village

2031 PM Reference Traffic Flows

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Aug 22

Sai Sha Road  
(ARM C)

835  
10



(ARM A)  
Sai Sha Road

(ARM B)  
Access Road to Sai Keng Village

NOTES : ( GEOMETRIC INPUT DATA )

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

J8

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W = 7 (metres)  
W cr = 0 (metres)  
q a-b = 85 (pcu/hr)  
q a-c = 660 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b = 3.5 (metres)  
Vr c-b = 40 (metres)  
q c-a = 835 (pcu/hr)  
q c-b = 10 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a = 2.5 (metres)  
W b-c = 2.5 (metres)  
VI b-a = 40 (metres)  
Vr b-a = 40 (metres)  
Vr b-c = 40 (metres)  
q b-a = 40 (pcu/hr)  
q b-c = 15 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.773056  
E = 0.827683  
F = 0.914915  
Y = 0.758500

## THE CAPACITY OF MOVEMENT :

Q b-a = 221  
Q b-c = 458  
Q c-b = 493  
Q b-ac = 258

CRITICAL DFC = 0.21

## COMPARISON OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.18  
DFC b-c = 0.03  
DFC c-b = 0.02  
DFC b-ac = 0.21

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J9 - Sai Sha Road / Access Road to Kei Ling Ha San Wai

2031 AM Reference Traffic Flows

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Aug 22

Sai Sha Road  
(ARM C)

805  
10



(ARM A)  
Sai Sha Road

(ARM B)  
Access Road to Sai Keng Village

NOTES : ( GEOMETRIC INPUT DATA )

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

J9

## GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 6.5 (metres)  
W cr = 0 (metres)  
q a-b = 10 (pcu/hr)  
q a-c = 875 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.2 (metres)  
Vr c-b = 40 (metres)  
q c-a = 805 (pcu/hr)  
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 2.2 (metres)  
W b-c = 2.2 (metres)  
Vl b-a = 40 (metres)  
Vr b-a = 40 (metres)  
Vr b-c = 40 (metres)  
q b-a = 30 (pcu/hr)  
q b-c = 25 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.748614  
E = 0.801514  
F = 0.888746  
Y = 0.775750

## THE CAPACITY OF MOVEMENT :

Q b-a = 174  
Q b-c = 398  
Q c-b = 440  
Q b-ac = 233

CRITICAL DFC = 0.24

## COMPARISON OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.17  
DFC b-c = 0.06  
DFC c-b = 0.02  
DFC b-ac = 0.24

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J9 - Sai Sha Road / Access Road to Kei Ling Ha San Wai

2031 PM Reference Traffic Flows

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Aug 22

Sai Sha Road  
(ARM C)

820  
10



(ARM A)  
Sai Sha Road

(ARM B)  
Access Road to Sai Keng Village

NOTES : ( GEOMETRIC INPUT DATA )

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

J9

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W = 6.5 (metres)  
W cr = 0 (metres)  
q a-b = 10 (pcu/hr)  
q a-c = 665 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b = 3.2 (metres)  
Vr c-b = 40 (metres)  
q c-a = 820 (pcu/hr)  
q c-b = 10 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a = 2.2 (metres)  
W b-c = 2.2 (metres)  
Vl b-a = 40 (metres)  
Vr b-a = 40 (metres)  
Vr b-c = 40 (metres)  
q b-a = 20 (pcu/hr)  
q b-c = 5 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.748614  
E = 0.801514  
F = 0.888746  
Y = 0.775750

## THE CAPACITY OF MOVEMENT :

Q b-a = 216  
Q b-c = 446  
Q c-b = 493  
Q b-ac = 241

CRITICAL DFC = 0.10

## COMPARISON OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.09  
DFC b-c = 0.01  
DFC c-b = 0.02  
DFC b-ac = 0.10



## **ANNEX A3**

### **CALCULATION SHEETS DESIGN TRAFFIC FLOWS**

# ROUNDBOUT CAPACITY CALCULATION

AECOM

Junction	J1 - Sai Sha Road / Nin Wah Road / Nin Fung Road	Scenario	2031 AM Design Traffic Flows (Future Layout)	Project No.	Prepared By	Checked By	Date
				-	MKN	SHSN	14-Aug-22

**Diagram Data:**

- (ARM A) Nin Wah Road:** 475 (Approach), 2105 (Circulating), 615 (Exit)
- (ARM B) Sai Sha Road (WB):** 2411 (Approach), 2821 (Circulating), 126 (Exit)
- (ARM C) Nin Fung Road:** 56 (Approach), 2821 (Circulating), 2336 (Exit)
- (ARM D) Sai Sha Road (EB):** 2336 (Approach), 2821 (Circulating), 475 (Exit)

ARM	A	B	C	D
<b>INPUT PARAMETERS:</b>				
V = Approach half width (m)	6.00	7.50	5.00	7.30
E = Entry width (m)	7.00	13.00	8.00	12.00
L = Effective length of flare (m)	12.00	35.00	7.00	13.00
R = Entry radius (m)	25.00	25.00	10.00	40.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00	50.00
A = Entry angle (degree)	40.00	30.00	40.00	30.00
Q = Entry flow (pcu/h)	475	2411	56	2336
Qc = Circulating flow across entry (pcu/h)	2105	615	2821	126
<b>OUTPUT PARAMETERS:</b>				
S = Sharpness of flare = 1.6(E-V)/L	0.13	0.25	0.69	0.58
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.98	1.01	0.92	1.02
X2= V + ((E-V)/(1+2S))	6.79	11.16	6.27	9.48
M = EXP((D-60)/10)	0.37	0.37	0.37	0.37
F = 303*X2	2057	3381	1898	2872
Td= 1+(0.5/(1+M))	1.37	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.68	0.93	0.65	0.83
Qe= K(F-Fc*Qc)	618	2839	69	2835
DFC = Design flow/Capacity = Q/Qe	0.77	0.85	0.81	0.82

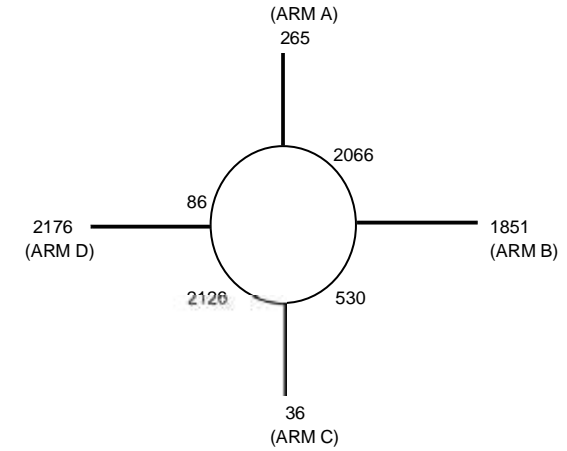
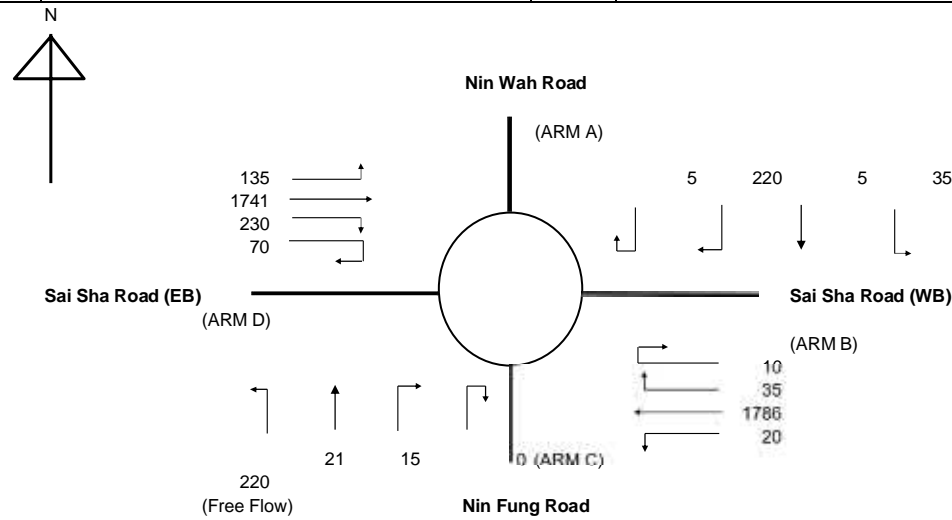
TOTAL ENTRY FLOWS :5278 PCU

**CRITICAL DFC0.85**

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# ROUNDAABOUT CAPACITY CALCULATION

Junction	Scenario	Project No.	Prepared By	Checked By	Date
J1 - Sai Sha Road / Nin Wah Road / Nin Fung Road	2031 PM Design Traffic Flows (Future Layout)	-	MKCN	SHSN	14-Aug-22



ARM	A	B	C	D
<b>INPUT PARAMETERS:</b>				
V = Approach half width (m)	6.00	7.50	5.00	7.30
E = Entry width (m)	7.00	13.00	8.00	12.00
L = Effective length of flare (m)	12.00	35.00	7.00	13.00
R = Entry radius (m)	25.00	25.00	10.00	40.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00	50.00
A = Entry angle (degree)	40.00	30.00	40.00	30.00
Q = Entry flow (pcu/h)	265	1851	36	2176 *
Qc= Circulating flow across entry (pcu/h)	2066	530	2126	86 *
<b>OUTPUT PARAMETERS:</b>				
S = Sharpness of flare = 1.6(E-V)/L	0.13	0.25	0.69	0.58
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.98	1.01	0.92	1.02
X2= V + ((E-V)/(1+2S))	6.79	11.16	6.27	9.48
M = EXP((D-60)/10)	0.37	0.37	0.37	0.37
F = 303*X2	2057	3381	1898	2872
Td= 1+(0.5/(1+M))	1.37	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.68	0.93	0.65	0.83
Qe= K(F-Fc*Qc)	644	2918	481	2869
DFC = Design flow/Capacity = Q/Qe	0.41	0.63	0.07	0.76

TOTAL ENTRY FLOWS 4328 PCU

CRITICAL DFC 0.76

# JUNCTION CAPACITY CALCULATION

AECOM

Junction J2 - Sai Sha Road / Access Road to Sai O

2031 AM Design Traffic Flows

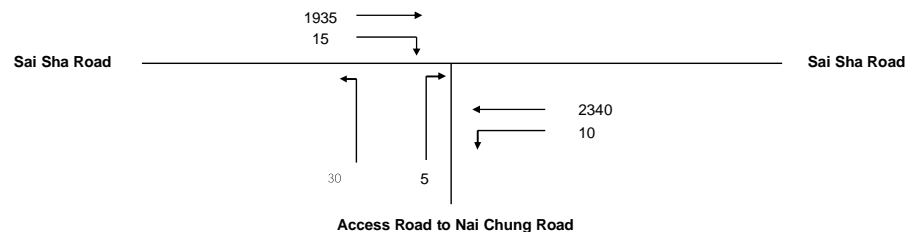
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JOB NO: -

DATE: Aug 22

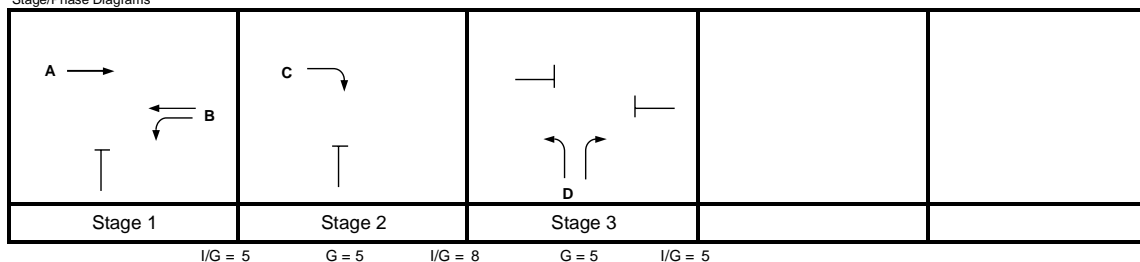
Traffic Flow Diagram  
(pcu/hr)



No. of stages per cycle	N =	3
Cycle time	C =	120 sec
Sum(y)	Y =	0.572
Lost time	L =	27 sec
Total Flow	=	12,290 pcu
Optimum Cycle $C_o$	$= (1.5 \times L + 5) / (1 - Y) =$	106 sec
Min. Cycle Time $C_m$	$= L / (1 - Y) =$	63 sec
$Y_{ult}$	$= 0.9 - 0.0075 \times L =$	0.698
$R.C._{ult}$	$= (Y_{ult} - Y) / Y \times 100\% =$	21.9 %
Practical Cycle Time $C_p$	$= 0.9 \times L / (0.9 - Y) =$	74 sec
$Y_{max}$	$= 1 - L / C =$	0.775

J2

Stage/Phase Diagrams



Critical Case : B,C,D

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 22\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y	EFFECTIVE GREEN $g = y / Y \times (C - L)$ (sec)	ACTUAL GREEN G (sec)	DEGREE OF SATURATION X	Average Queue N
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT							
→	A	1	3.300	2				1		0		4030		1935		1935			4030	0.480		78	92	0.620	7
↶	C	2	3.300	1		25	0	0		0		2085			15	15		100%	1967	0.008		1	5	0.153	0
↷	B	1	3.700	1	10			1		0		1985	10	1124		1134	1%		1982	0.572	0.572	93	92	0.738	9
↶	B	1	3.700	1				0		0		2125		1216		1216			2125	0.572		93	92	0.738	9
↷	D	3	4.500	1	10	20	0	1		0		2065	30		5	35	86%	14%	1813	0.019		3	5	0.386	1

# JUNCTION CAPACITY CALCULATION

AECOM

Junction J2 - Sai Sha Road / Access Road to Sai O

2031 PM Design Traffic Flows

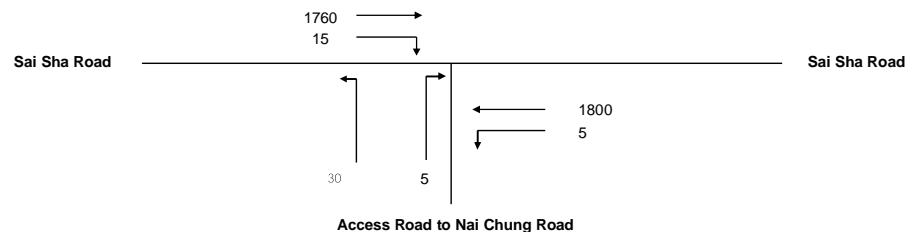
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CHECK: 0

JOB NO: -

DATE: Aug 22

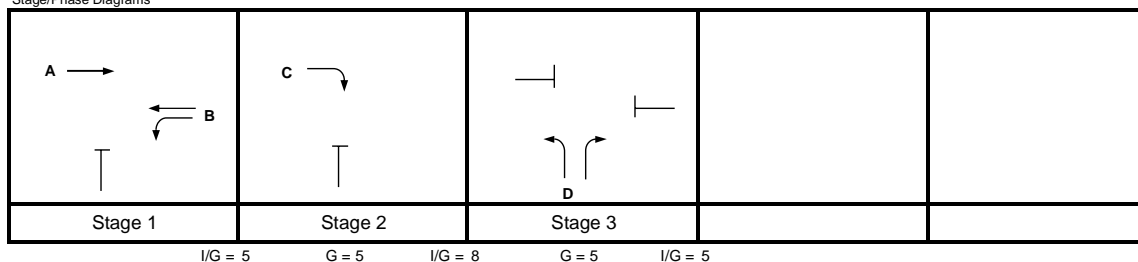
Traffic Flow Diagram  
(pcu/hr)



No. of stages per cycle	N =	3
Cycle time	C =	120 sec
Sum(y)	Y =	0.439
Lost time	L =	27 sec
Total Flow	=	12,290 pcu
Optimum Cycle $C_o$	= $(1.5 \times L + 5) / (1 - Y)$	81 sec
Min. Cycle Time $C_m$	= $L / (1 - Y)$	48 sec
$Y_{ult}$	= $0.9 - 0.0075 \times L$	0.698
$R.C._{ult}$	= $(Y_{ult} - Y) / Y \times 100\%$	58.8 %
Practical Cycle Time $C_p$	= $0.9 \times L / (0.9 - Y)$	53 sec
$Y_{max}$	= $1 - L / C$	0.775

J2

Stage/Phase Diagrams



I/G = 5      G = 5      I/G = 8      G = 5      I/G = 5

Critical Case : B,C,D

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 59\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y	EFFECTIVE GREEN $g = y / Y \times (C - L)$ (sec)	ACTUAL GREEN G (sec)	DEGREE OF SATURATION X	Average Queue N
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT							
→	A	1	3.300	2				1		0		4030		1760		1760			4030	0.437		92	92	0.564	7
↶	C	2	3.300	1		25	0	0		0		2085			15	15		100%	1967	0.008		2	5	0.153	0
↷	B	1	3.700	1	10			1		0		1985	5	866		871	1%		1983	0.439	0.439	93	92	0.567	7
↷	B	1	3.700	1				0		0		2125		934		934			2125	0.439		93	92	0.567	7
↷	D	3	4.500	1	10	20	0	1		0		2065	30		5	35	86%	14%	1813	0.019		4	5	0.386	1



# JUNCTION CAPACITY CALCULATION

AECOM

Junction J3 - Sai Sha Road / Access Road to Kwun Hang / Access Road to Che Ha 2031 AM Design Traffic Flows

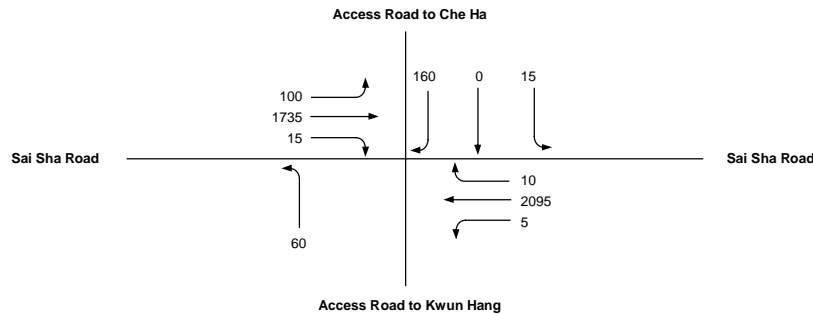
DESIGN:

CHECK:

JOB NO:

DATE: Aug 22

Traffic Flow Diagram  
(pcu/hr)



No. of stages per cycle

N = 4

Cycle time

C = 120 sec

Sum(y)

Y = 0.547

Lost time

L = 35 sec

Total Flow

= 16,316 pcu

Optimum Cycle  $C_o = (1.5 \times L + 5) / (1 - Y) = 127$  sec

Min. Cycle Time  $C_m = L / (1 - Y) = 77$  sec

$Y_{ult} = 0.9 - 0.0075 \times L = 0.638$

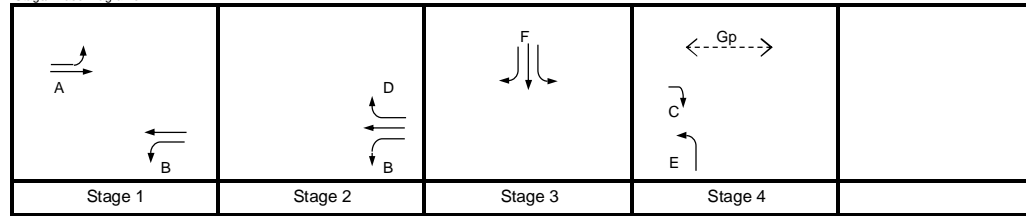
$R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 16.6\%$

Practical Cycle Time  $C_p = 0.9 \times L / (0.9 - Y) = 89$  sec

$Y_{max} = 1 - L/C = 0.708$

J3

Stage/Phase Diagrams



I/G = 5

G = 5

I/G = 5





I/G = 4

G = 16

I/G = 2

Critical Case : A,D,F,Gp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 17\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y	EFFECTIVE GREEN g=y/Yx(C-L) (sec)	ACTUAL GREEN G (sec)	DEGREE OF SATURATION X	Average Queue N					
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT												
	A	1	3.500	1	15			1		0		1965	100	781		881	11%		1943	0.453	0.453	70	69	0.772	12					
	A	1	3.500	1			0		0		2105		954		954			2105	0.453	70		69	0.772	13						
	C	4	3.500	1		25	1	0		0		2105			15	15	100%		1769	0.008		1	5	0.170	0					
	B	1,2	3.500	1	10			1		0		1965	5	1008		1013	0%		1964	0.516	0.516	80	79	0.774	11					
	B	1,2	3.500	1			0		0		2105		1087		1087			2105	0.516	80		79	0.774	12						
	D	2	3.500	1		20	1	0		0		2105			10	10	100%		1744	0.006		1	5	0.115	0					
	E	2	3.700	1	10			1		0		1985	60			60	100%		1726	0.035	0.035	5	16	0.245	2					
	F	3	5.000	1	30	25	0	1	3.2	-134		2115	15	0	160	175	9%	91%	1870	0.094	0.094	15	14	0.772	6					
Ped.	Gp	4	min.	16	=	9	+	7	sec																					

# JUNCTION CAPACITY CALCULATION

AECOM

Junction J3 - Sai Sha Road / Access Road to Kwun Hang / Access Road to Che Ha 2031 PM Design Traffic Flows

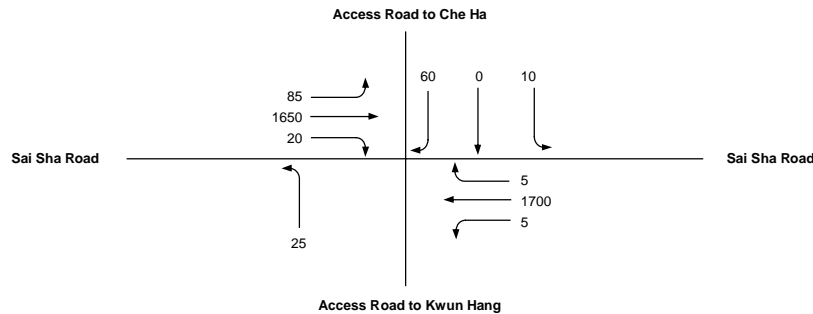
DESIGN:

CHECK:

JOB NO:

DATE: Aug 22

Traffic Flow Diagram  
(pcu/hr)



No. of stages per cycle

N = 4

Cycle time

C = 120 sec

Sum(y)

Y = 0.466

Lost time

L = 35 sec

Total Flow

= 16,316 pcu

Optimum Cycle  $C_o = (1.5 \times L + 5) / (1 - Y) = 108$  sec

Min. Cycle Time  $C_m = L / (1 - Y) = 66$  sec

$Y_{ult} = 0.9 - 0.0075 \times L = 0.638$

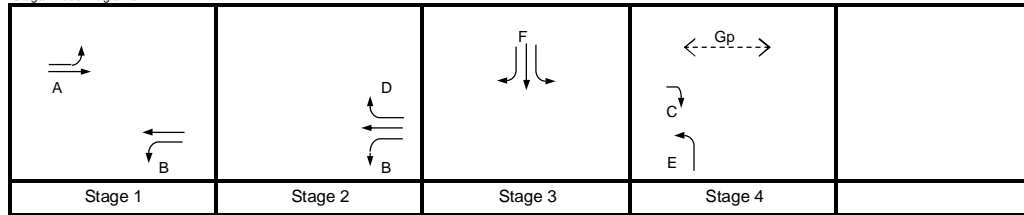
$R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 36.9\%$

Practical Cycle Time  $C_p = 0.9 \times L / (0.9 - Y) = 73$  sec

$Y_{max} = 1 - L/C = 0.708$

J3

Stage/Phase Diagrams



I/G = 5

G = 5

I/G = 5

I/G = 4





G = 16

I/G = 2

Critical Case : A,D,F,Gp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 37\%$$

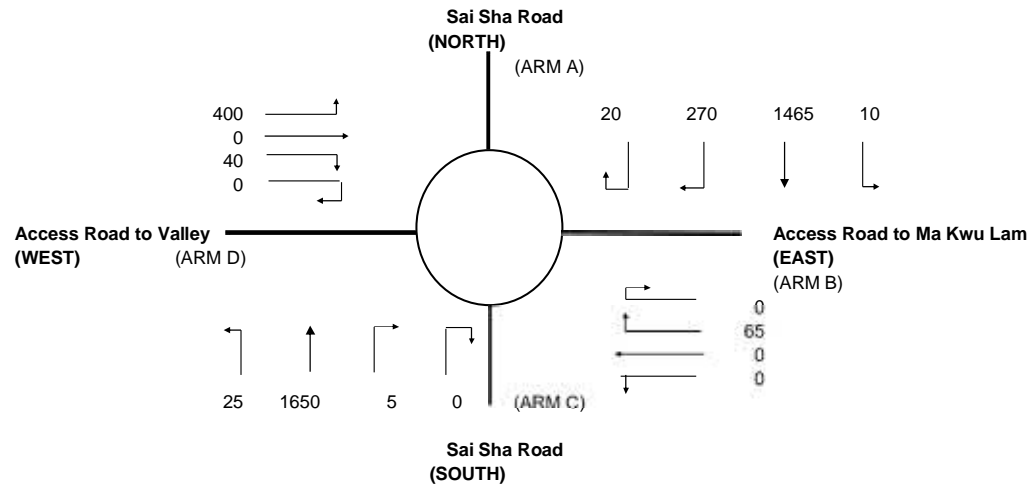
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MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y	EFFECTIVE GREEN g=y/Yx(C-L) (sec)	ACTUAL GREEN G (sec)	DEGREE OF SATURATION X	Average Queue N					
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT												
	A	1	3.500	1	15			1		0		1965	85	748		833	10%		1945	0.428	0.428	78	77	0.658	10					
	A	1	3.500	1			0		0		2105		902		902			2105	0.428	78		77	0.658	10						
	C	4	3.500	1		25	1	0		0		2105			20	20	100%	0.011	1769	0.011		2	5	0.226	1					
	B	1,2	3.500	1	10			1		0		1965	5	818		823	1%		1963	0.419	0.037	76	84	0.592	8					
	B	1,2	3.500	1			0		0		2105		882		882			2105	0.419	76		84	0.592	9						
	D	2	3.500	1		20	1	0		0		2105			5	5	100%	1744	0.003	1		5	0.057	0						
	E	2	3.700	1	10			1		0		1985	25			25	100%		1726	0.014	0.037	3	16	0.102	1					
	F	3	5.000	1	30	25	0	1	3.2	-134		2115	10	0	60	70	14%	86%	1871	0.037	0.037	7	6	0.658	3					
Ped.	Gp	4	min.	16	=	9	+	7	sec																					

# ROUNDBABOUT CAPACITY CALCULATIO

MAUNSELL CONSULTANTS ASIA LTD.

Junction	J4- Sai Sha Road / Access Road to Ma Kwu Lam / Access Road to Sai Sha Development (Site A)	Scenario	Year 2031 AM Design Traffic Flows	Project No.	Prepared By	Checked By	Date
				-	MKCN	SHSN	Aug 2022



ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	7.30	4.00	7.30	7.00
E = Entry width (m)	10.00	6.00	13.50	8.00
L = Effective length of flare (m)	5.00	6.50	12.50	4.00
R = Entry radius (m)	25.00	20.00	45.00	25.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00	50.00
A = Entry angle (degree)	45.00	50.00	50.00	45.00
Q = Entry flow (pcu/h)	1765	65	1680	440
Qc= Circulating flow across entry (pcu/h)	45	1795	355	1740
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.86	0.49	0.79	0.40
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.96	0.93	0.96	0.96
X2= V + ((E-V)/(1+2S))	8.29	5.01	9.70	7.56
M = EXP((D-60)/10)	0.37	0.37	0.37	0.37
F = 303*X2	2512	1517	2938	2289
Td= 1+(0.5/(1+M))	1.37	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.76	0.57	0.84	0.72
Qe= K(F-Fc*Qc)	2373	453	2527	993
DFC = Design flow/Capacity = Q/Qe	0.74	0.14	0.66	0.44

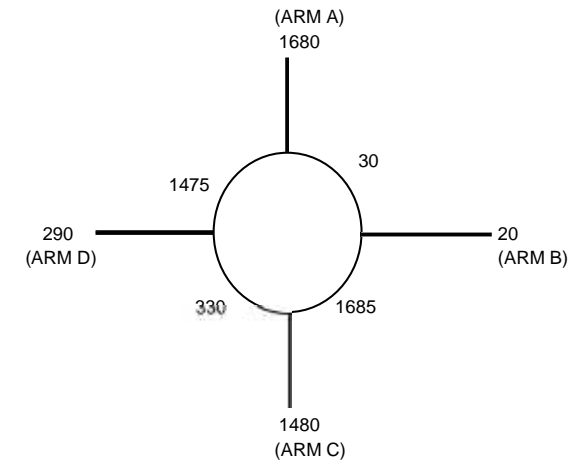
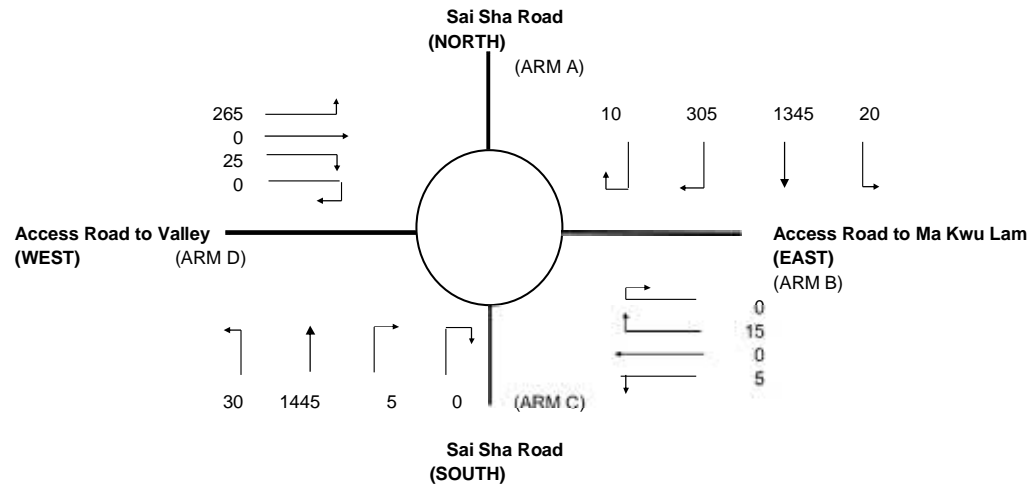
TOTAL ENTRY FLOWS 3950 PCU

CRITICAL DFC 0.74

# ROUNDBABOUT CAPACITY CALCULATIO

MAUNSELL CONSULTANTS ASIA LTD.

Junction	J4- Sai Sha Road / Access Road to Ma Kwu Lam / Access Road to Sai Sha Development (Site A)	Scenario	Year 2031 PM Design Traffic Flows	Project No.	Prepared By	Checked By	Date
				-	MKCN	SHSN	Aug 2022

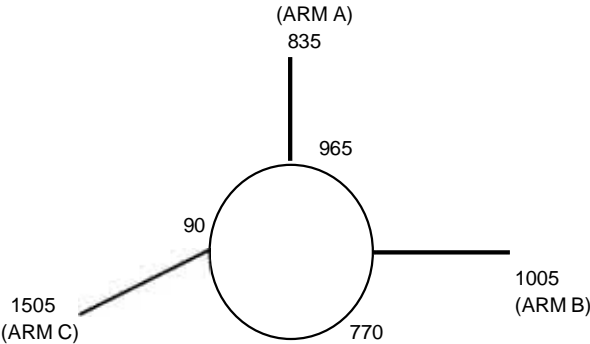
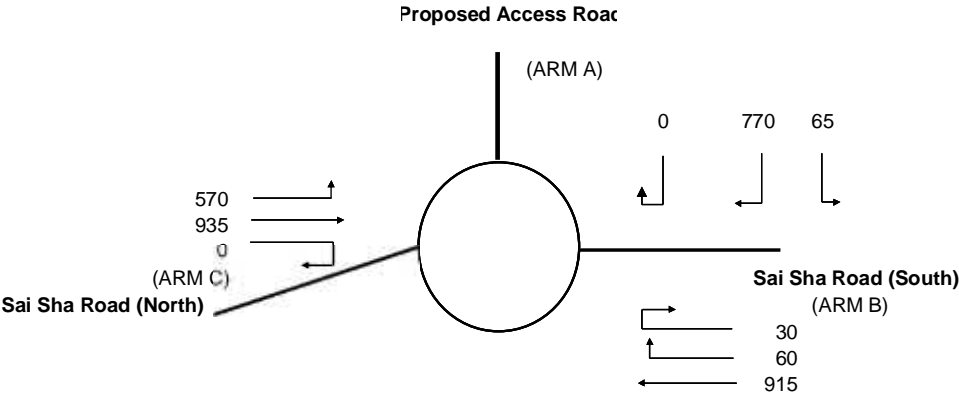


ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	7.30	4.00	7.30	7.00
E = Entry width (m)	10.00	6.00	13.50	8.00
L = Effective length of flare (m)	5.00	6.50	12.50	4.00
R = Entry radius (m)	25.00	20.00	45.00	25.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00	50.00
A = Entry angle (degree)	45.00	50.00	50.00	45.00
Q = Entry flow (pcu/h)	1680	20	1480	290
Qc= Circulating flow across entry (pcu/h)	30	1685	330	1475
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.86	0.49	0.79	0.40
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.96	0.93	0.96	0.96
X2= V + ((E-V)/(1+2S))	8.29	5.01	9.70	7.56
M = EXP((D-60)/10)	0.37	0.37	0.37	0.37
F = 303*X2	2512	1517	2938	2289
Td= 1+(0.5/(1+M))	1.37	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.76	0.57	0.84	0.72
Qe= K(F-Fc*Qc)	2384	512	2548	1175
DFC = Design flow/Capacity = Q/Qe	0.70	0.04	0.58	0.25

TOTAL ENTRY FLOWS 3470 PCU

CRITICAL DFC 0.70

JUNCTION CAPACITY CALCULATION



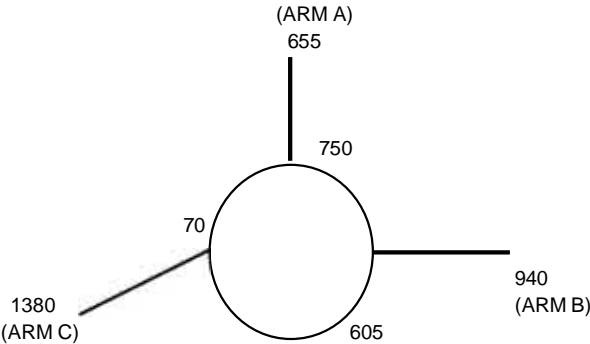
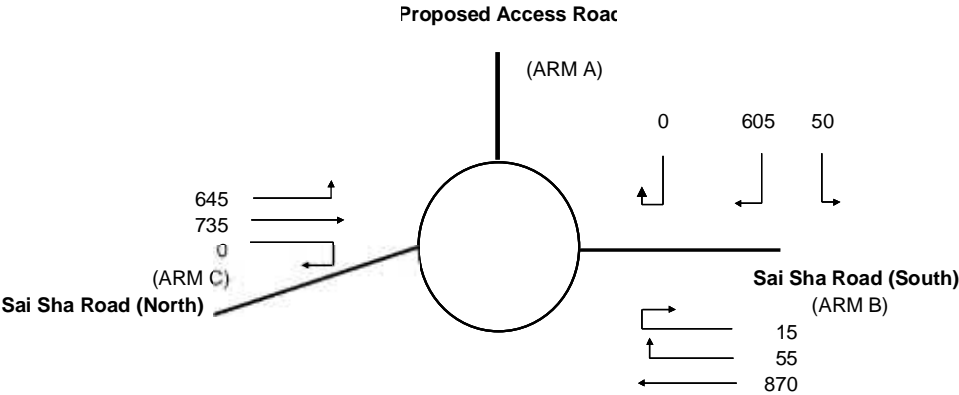
ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	5.20	7.30	7.30
E = Entry width (m)	8.00	8.00	8.00
L = Effective length of flare (m)	20.00	4.50	4.50
R = Entry radius (m)	35.00	30.00	40.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00
A = Entry angle (degree)	35.00	45.00	35.00
Q = Entry flow (pcu/h)	835	1005	1505
Qc= Circulating flow across entry (pcu/h)	965	770	90
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.22	0.25	0.25
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.00	0.96	1.01
X2= V + ((E-V)/(1+2S))	7.13	7.77	7.77
M = EXP((D-60)/10)	0.37	0.37	0.37
F = 303*X2	2162	2354	2354
Td= 1+(0.5/(1+M))	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.70	0.73	0.73
Qe= K(F-Fc*Qc)	1495	1726	2304
DFC = Design flow/Capacity = Q/Qe	0.56	0.58	0.65

TOTAL ENTRY FLOWS = 3345 PCU

CRITICAL DFC = 0.65



JUNCTION CAPACITY CALCULATION



ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	5.20	7.30	7.30
E = Entry width (m)	8.00	8.00	8.00
L = Effective length of flare (m)	20.00	4.50	4.50
R = Entry radius (m)	35.00	30.00	40.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00
A = Entry angle (degree)	35.00	45.00	35.00
Q = Entry flow (pcu/h)	655	940	1380
Qc= Circulating flow across entry (pcu/h)	750	605	70
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.22	0.25	0.25
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.00	0.96	1.01
X2= V + ((E-V)/(1+2S))	7.13	7.77	7.77
M = EXP((D-60)/10)	0.37	0.37	0.37
F = 303*X2	2162	2354	2354
Td= 1+(0.5/(1+M))	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.70	0.73	0.73
Qe= K(F-Fc*Qc)	1646	1842	2319
DFC = Design flow/Capacity = Q/Qe	0.40	0.51	0.60

TOTAL ENTRY FLOWS = 2975 PCU

CRITICAL DFC = 0.60

# JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Sai Sha Road and Proposed Accessed Road

2031 AM Design Traffic Flows

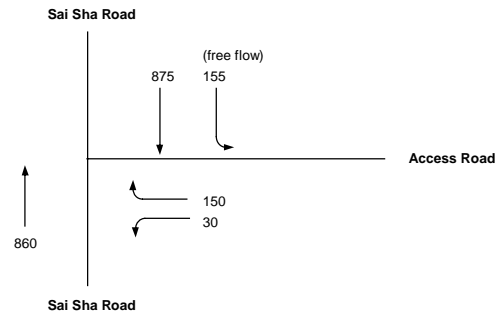
DESIGN:

CHECK:

JOB NO: 604583204

DATE: Aug 22

Traffic Flow Diagram  
(pcu/hr)



No. of stages per cycle

N = 2

Cycle time

C = 90 sec

Sum(y)

Y = 0.531

Lost time

L = 9 sec

Total Flow

= 7,685 pcu

Optimum Cycle  $C_o = (1.5 \times L + 5) / (1 - Y) = 39$  sec

Min. Cycle Time  $C_m = L / (1 - Y) = 19$  sec

$Y_{ult} = 0.9 - 0.0075 \times L = 0.833$

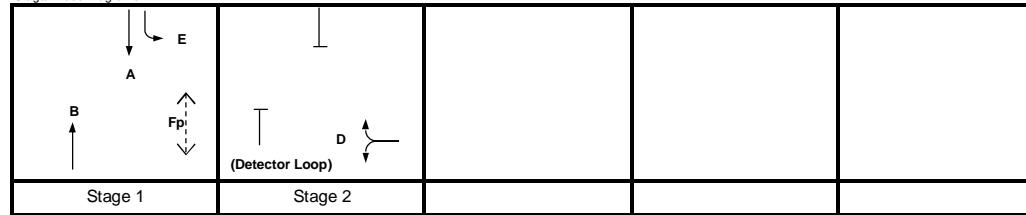
$R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 56.8\%$

Practical Cycle Time  $C_p = 0.9 \times L / (0.9 - Y) = 22$  sec

$Y_{max} = 1 - L/C = 0.900$

J6

Stage/Phase Diagrams



I/G = 5

I/G = 6

Critical Case : A,D

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 53\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y	EFFECTIVE GREEN g=y/Yx(C-L) (sec)	ACTUAL GREEN G (sec)	DEGREE OF SATURATION X	Average Queue N
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT							
↓	A	1	3.500	1				0	3.5	-147		2105		875		875			1958	0.447	0.447	68	67	0.000	6
↑	B	1	3.500	1				1		0		1965		860		860			1965	0.438		67	67	0.000	6
↔	D	2	3.500	1		15	0	1		0		1965			150	150			1786	0.084	0.084	13	12	0.000	4
	D	2	3.500	1	13			1	4	-168		1965	30			30	100%	100%	1611	0.019		3	12	0.000	1

# JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Sai Sha Road and Proposed Accessed Road

2031 PM Design Traffic Flows

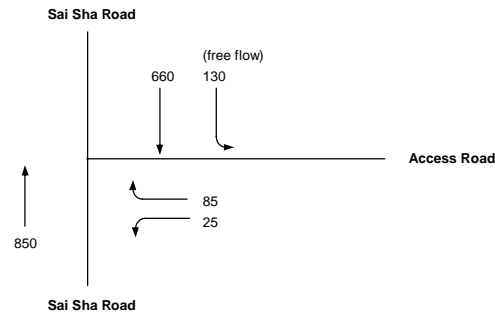
DESIGN:

CHECK:

JOB NO: 604583204

DATE: Aug 22

Traffic Flow Diagram  
(pcu/hr)



No. of stages per cycle

N = 2

Cycle time

C = 90 sec

Sum(y)

Y = 0.480

Lost time

L = 9 sec

Total Flow

= 7,685 pcu

Optimum Cycle  $C_o = (1.5 \times L + 5) / (1 - Y) = 36$  sec

Min. Cycle Time  $C_m = L / (1 - Y) = 17$  sec

$Y_{ult} = 0.9 - 0.0075 \times L = 0.833$

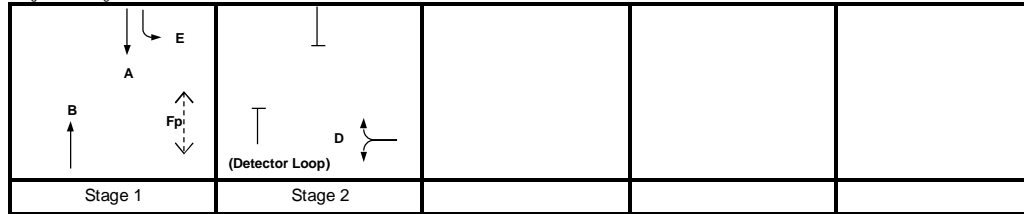
$R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 73.4\%$

Practical Cycle Time  $C_p = 0.9 \times L / (0.9 - Y) = 19$  sec

$Y_{max} = 1 - L / C = 0.900$

J6

Stage/Phase Diagrams



I/G = 5

I/G = 6

Critical Case : B,D

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 69\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y	EFFECTIVE GREEN g=y/Yx(C-L) (sec)	ACTUAL GREEN G (sec)	DEGREE OF SATURATION X	Average Queue N
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT							
↓	A	1	3.500	1				0	3.5	-147		2105		660		660			1958	0.337		57	72	0.000	4
↑	B	1	3.500	1				1		0		1965		850		850			1965	0.433	0.433	73	72	0.000	5
↑	D	2	3.500	1		15	0	1		0		1965			85	85			1786	0.048	0.048	8	7	0.000	2
↓	D	2	3.500	1	13			1	4	-168		1965	25			25	100%	100%	1611	0.016		3	7	0.000	1
Pedestrian	Fp	1	min.	GM 5	+	FGM 9	=	14	sec																

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Sai Sha Road / Proposed Access Road

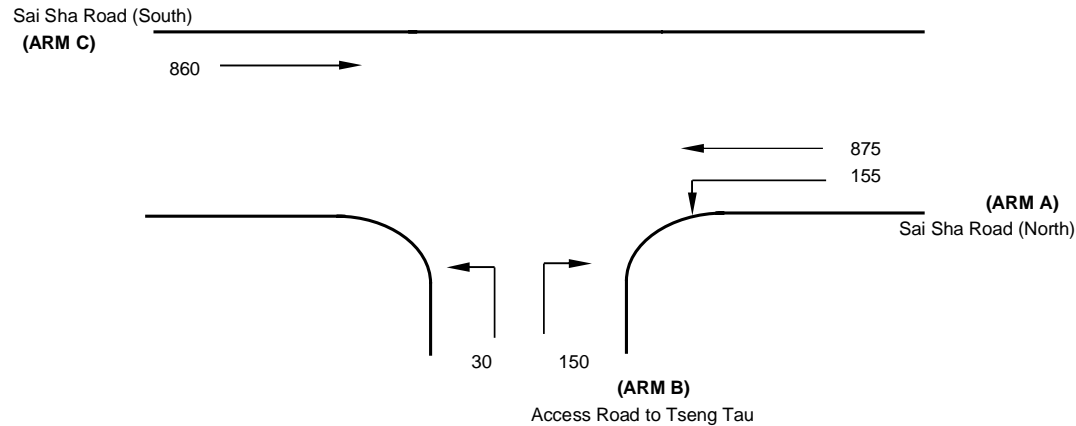
2031 AM Design Traffic Flows

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Aug 22



## NOTES : ( GEOMETRIC INPUT DATA )

J6

- W = Major Road Width (6.4 - 20.0)
- W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
- W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
- W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
- W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
- VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
- Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
- Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
- Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

- D = Stream-specific B-A
- E = Stream-specific B-C
- F = Stream-specific C-B
- Y = (1-0.0345W)

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W	=	7 (metres)
W cr	=	3 (metres)
q a-b	=	155 (pcu/hr)
q a-c	=	875 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b	=	2.05 (metres)
Vr c-b	=	40 (metres)
q c-a	=	860 (pcu/hr)
q c-b	=	0 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a	=	3 (metres)
W b-c	=	3 (metres)
VI b-a	=	30 (metres)
Vr b-a	=	30 (metres)
Vr b-c	=	30 (metres)
q b-a	=	150 (pcu/hr)
q b-c	=	30 (pcu/hr)

## GEOMETRIC FACTORS :

D	=	0.800724
E	=	0.862849
F	=	0.788429
Y	=	0.758500

## THE CAPACITY OF MOVEMENT :

Q b-a	=	209
Q b-c	=	420
Q c-b	=	363
Q b-ac	=	228
Q c-a	=	1800

## COMPARISON OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.72
DFC b-c	=	0.07
DFC c-b	=	0.00

CRITICAL DFC = 0.72

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Sai Sha Road / Proposed Access Road

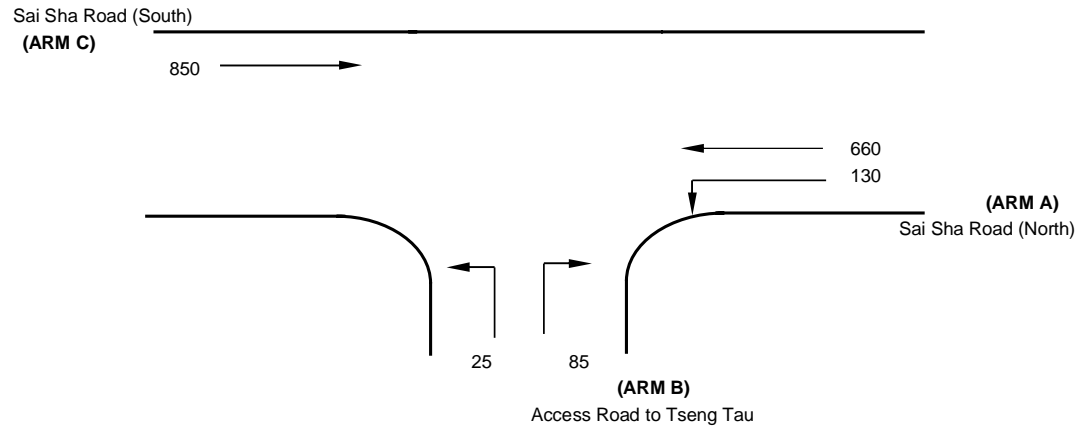
2031 PM Design Traffic Flows

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Aug 22



## NOTES : ( GEOMETRIC INPUT DATA )

J6

- W = Major Road Width (6.4 - 20.0)
- W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
- W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
- W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
- W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
- VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
- Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
- Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
- Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

- D = Stream-specific B-A
- E = Stream-specific B-C
- F = Stream-specific C-B
- Y = (1-0.0345W)

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W	=	7 (metres)
W cr	=	3 (metres)
q a-b	=	130 (pcu/hr)
q a-c	=	660 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b	=	2.05 (metres)
Vr c-b	=	40 (metres)
q c-a	=	850 (pcu/hr)
q c-b	=	0 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a	=	3 (metres)
W b-c	=	3 (metres)
VI b-a	=	30 (metres)
Vr b-a	=	30 (metres)
Vr b-c	=	30 (metres)
q b-a	=	85 (pcu/hr)
q b-c	=	25 (pcu/hr)

## GEOMETRIC FACTORS :

D	=	0.800724
E	=	0.862849
F	=	0.788429
Y	=	0.758500

## THE CAPACITY OF MOVEMENT :

Q b-a	=	260
Q b-c	=	473
Q c-b	=	415
Q b-ac	=	290
Q c-a	=	1800

## COMPARISON OF DESIGN FLOW TO CAPACITY :

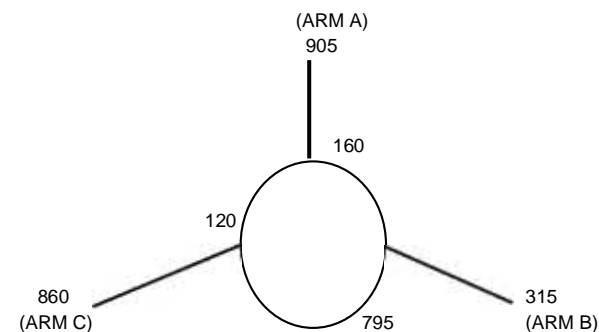
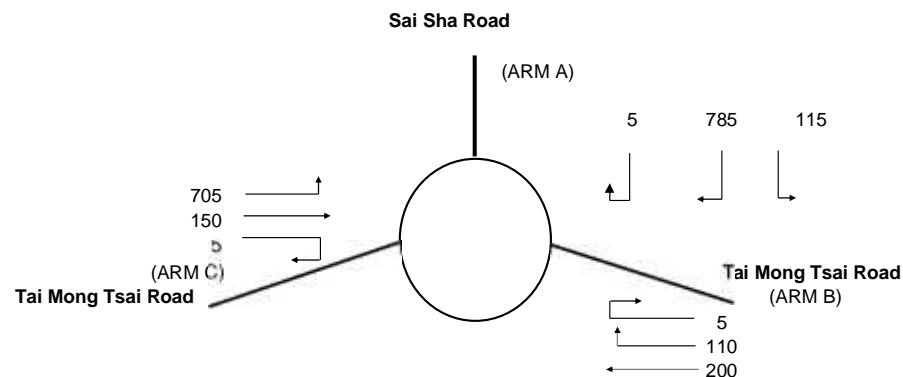
DFC b-a	=	0.33
DFC b-c	=	0.05
DFC c-b	=	0.00

CRITICAL DFC = 0.33



# ROUNDBABOUT CAPACITY CALCULATION

Junction	J7 - Sai Sha Road / Tai Mong Tsai Road	Scenario	2031 AM Design Traffic Flows	Project No.	Prepared By	Checked By	Date
				-	mkn	shsn	14-Aug-22



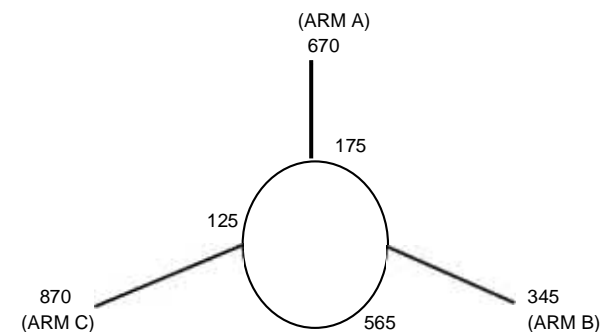
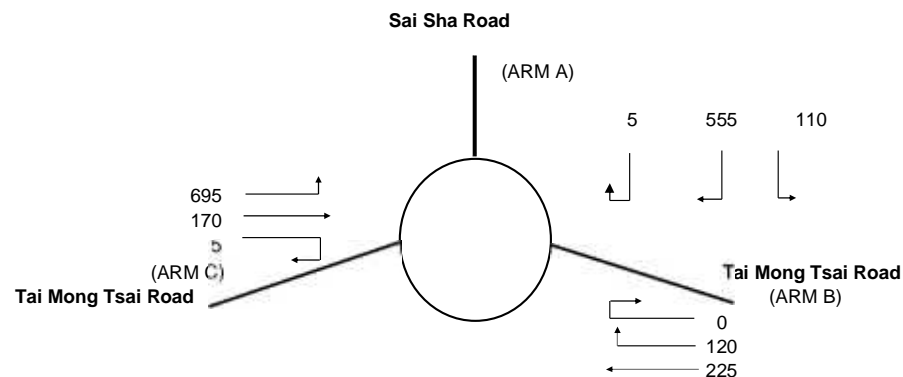
ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	4.30	3.00	3.30
E = Entry width (m)	7.50	8.00	8.00
L = Effective length of flare (m)	15.00	20.00	20.00
R = Entry radius (m)	16.00	80.00	100.00
D = Inscribed circle diameter (m)	32.00	32.00	32.00
A = Entry angle (degree)	45.00	30.00	45.00
Q = Entry flow (pcu/h)	905	315	860
Qc= Circulating flow across entry (pcu/h)	160	795	120
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.34	0.40	0.38
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.94	1.04	0.99
X2= V + ((E-V)/(1+2S))	6.20	5.78	5.98
M = EXP((D-60)/10)	0.06	0.06	0.06
F = 303*X2	1879	1751	1813
Td= 1+(0.5/(1+M))	1.47	1.47	1.47
Fc= 0.21*Td(1+0.2*X2)	0.69	0.67	0.68
Qe= K(F-Fc*Qc)	1655	1266	1709
DFC = Design flow/Capacity = Q/Qe	0.55	0.25	0.50

TOTAL ENTRY FLOWS = 2080 PCU

CRITICAL DFC = 0.55

# ROUNDBABOUT CAPACITY CALCULATION

Junction	J7 - Sai Sha Road / Tai Mong Tsai Road	Scenario	2031 PM Design Traffic Flows	Project No.	Prepared By	Checked By	Date
				-	mkn	shsn	14-Aug-22



ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	4.30	3.00	3.30
E = Entry width (m)	7.50	8.00	8.00
L = Effective length of flare (m)	15.00	20.00	20.00
R = Entry radius (m)	16.00	80.00	100.00
D = Inscribed circle diameter (m)	32.00	32.00	32.00
A = Entry angle (degree)	45.00	30.00	45.00
Q = Entry flow (pcu/h)	670	345	870
Qc= Circulating flow across entry (pcu/h)	175	565	125
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.34	0.40	0.38
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.94	1.04	0.99
X2= V + ((E-V)/(1+2S))	6.20	5.78	5.98
M = EXP((D-60)/10)	0.06	0.06	0.06
F = 303*X2	1879	1751	1813
Td= 1+(0.5/(1+M))	1.47	1.47	1.47
Fc= 0.21*Td(1+0.2*X2)	0.69	0.67	0.68
Qe= K(F-Fc*Qc)	1645	1425	1706
DFC = Design flow/Capacity = Q/Qe	0.41	0.24	0.51

TOTAL ENTRY FLOWS = 1885 PCU

CRITICAL DFC = 0.51

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J8 - Sai Sha Road / Access Road to Sai Keng Village

2031 AM Design Traffic Flows

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Aug 22

Sai Sha Road  
(ARM C)

1005  
15



(ARM A)  
Sai Sha Road

(ARM B)  
Access Road to Sai Keng Village

NOTES : ( GEOMETRIC INPUT DATA )

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

J8

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W = 7 (metres)  
W cr = 0 (metres)  
q a-b = 5 (pcu/hr)  
q a-c = 1025 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b = 3.5 (metres)  
Vr c-b = 40 (metres)  
q c-a = 1005 (pcu/hr)  
q c-b = 15 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a = 2.5 (metres)  
W b-c = 2.5 (metres)  
Vl b-a = 40 (metres)  
Vr b-a = 40 (metres)  
Vr b-c = 40 (metres)  
q b-a = 10 (pcu/hr)  
q b-c = 0 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.773056  
E = 0.827683  
F = 0.914915  
Y = 0.758500

## THE CAPACITY OF MOVEMENT :

Q b-a = 126  
Q b-c = 382  
Q c-b = 421  
Q b-ac = 126

CRITICAL DFC = 0.08

## COMPARISON OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.08  
DFC b-c = 0.00  
DFC c-b = 0.04  
DFC b-ac = 0.08

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J8 - Sai Sha Road / Access Road to Sai Keng Village

2031 PM Design Traffic Flows

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Aug 22

Sai Sha Road  
(ARM C)

940  
10



(ARM A)  
Sai Sha Road

(ARM B)  
Access Road to Sai Keng Village

NOTES : ( GEOMETRIC INPUT DATA )

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

J8

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W = 7 (metres)  
W cr = 0 (metres)  
q a-b = 10 (pcu/hr)  
q a-c = 790 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b = 3.5 (metres)  
Vr c-b = 40 (metres)  
q c-a = 940 (pcu/hr)  
q c-b = 10 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a = 2.5 (metres)  
W b-c = 2.5 (metres)  
Vl b-a = 40 (metres)  
Vr b-a = 40 (metres)  
Vr b-c = 40 (metres)  
q b-a = 5 (pcu/hr)  
q b-c = 0 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.773056  
E = 0.827683  
F = 0.914915  
Y = 0.758500

## THE CAPACITY OF MOVEMENT :

Q b-a = 186  
Q b-c = 435  
Q c-b = 480  
Q b-ac = 186

## COMPARISON OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.03  
DFC b-c = 0.00  
DFC c-b = 0.02  
DFC b-ac = 0.03

CRITICAL DFC = 0.03

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J9 - Sai Sha Road / Access Road to Kei Ling Ha San Wai

2031 AM Reference Traffic Flows

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Aug 22

Sai Sha Road  
(ARM C)

825  
10



(ARM A)  
Sai Sha Road

(ARM B)  
Access Road to Sai Keng Village

NOTES : ( GEOMETRIC INPUT DATA )

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

J9

## GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 6.5 (metres)  
W cr = 0 (metres)  
q a-b = 10 (pcu/hr)  
q a-c = 885 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.2 (metres)  
Vr c-b = 40 (metres)  
q c-a = 825 (pcu/hr)  
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 2.2 (metres)  
W b-c = 2.2 (metres)  
Vl b-a = 40 (metres)  
Vr b-a = 40 (metres)  
Vr b-c = 40 (metres)  
q b-a = 30 (pcu/hr)  
q b-c = 25 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.748614  
E = 0.801514  
F = 0.888746  
Y = 0.775750

## THE CAPACITY OF MOVEMENT :

Q b-a = 169  
Q b-c = 396  
Q c-b = 438  
Q b-ac = 228

CRITICAL DFC = 0.24

## COMPARISON OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.18  
DFC b-c = 0.06  
DFC c-b = 0.02  
DFC b-ac = 0.24



# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J9 - Sai Sha Road / Access Road to Kei Ling Ha San Wai

2031 PM Reference Traffic Flows

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Aug 22

Sai Sha Road  
(ARM C)

825  
10



(ARM A)  
Sai Sha Road

(ARM B)  
Access Road to Sai Keng Village

NOTES : ( GEOMETRIC INPUT DATA )

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

J9

## GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 6.5 (metres)  
W cr = 0 (metres)  
q a-b = 10 (pcu/hr)  
q a-c = 670 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.2 (metres)  
Vr c-b = 40 (metres)  
q c-a = 825 (pcu/hr)  
q c-b = 10 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 2.2 (metres)  
W b-c = 2.2 (metres)  
Vl b-a = 40 (metres)  
Vr b-a = 40 (metres)  
Vr b-c = 40 (metres)  
q b-a = 20 (pcu/hr)  
q b-c = 5 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.748614  
E = 0.801514  
F = 0.888746  
Y = 0.775750

## THE CAPACITY OF MOVEMENT :

Q b-a = 214  
Q b-c = 445  
Q c-b = 491  
Q b-ac = 239

CRITICAL DFC = 0.10

## COMPARISON OF DESIGN FLOW TO CAPACITY :

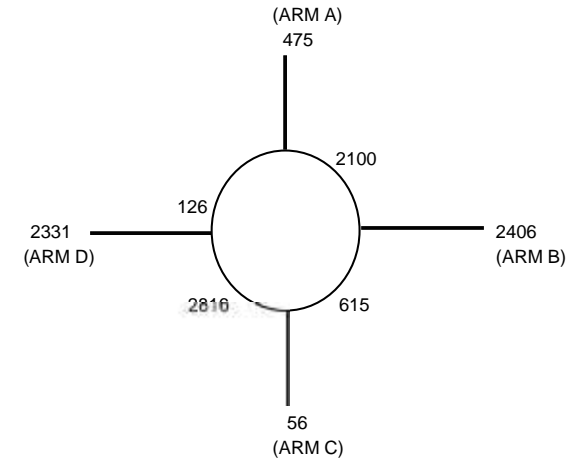
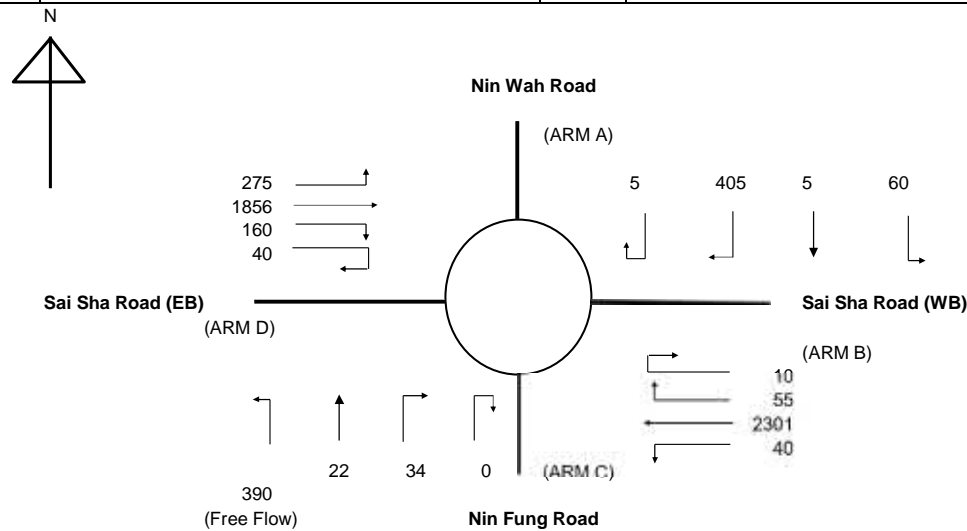
DFC b-a = 0.09  
DFC b-c = 0.01  
DFC c-b = 0.02  
DFC b-ac = 0.10

## **ANNEX A4**

### **CALCULATION SHEETS DESIGN TRAFFIC FLOWS (SENSITIVITY TEST)**

# ROUNABOUT CAPACITY CALCULATIO

Junction	J1 - Sai Sha Road / Nin Wah Road / Nin Fung Road	Scenario	2031 AM Design Traffic Flows (Sensitivity Test) (future layout)	Project No.	Prepared By	Checked By	Date
				-	MKCN	SHSN	14-Aug-22



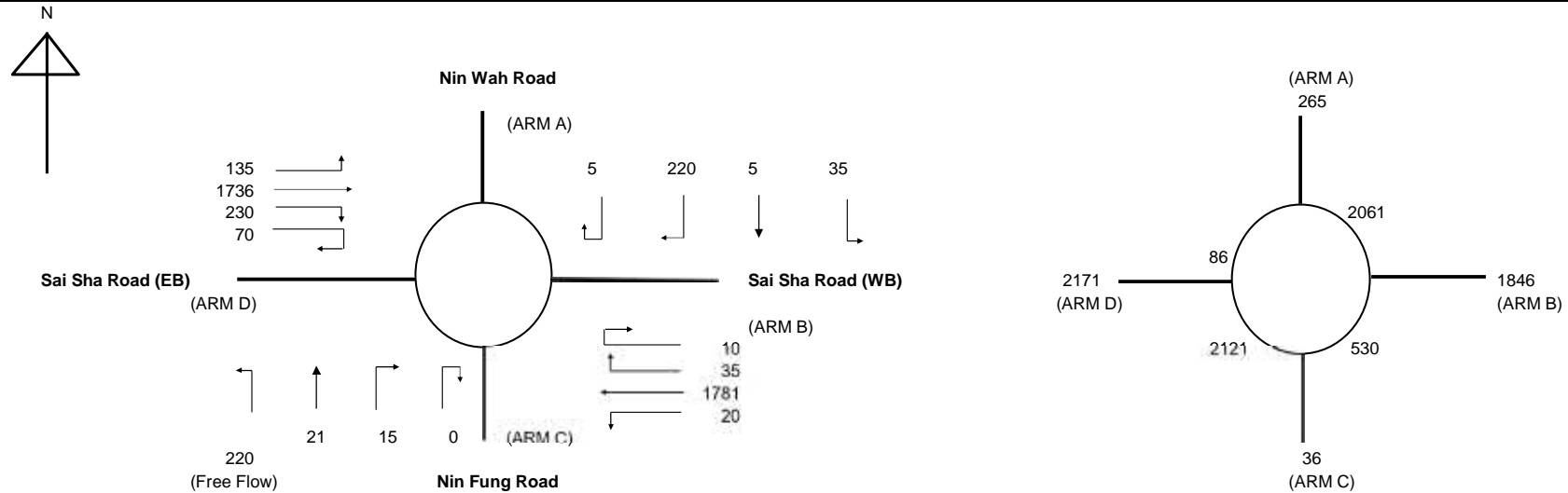
ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	6.00	7.50	5.00	7.30
E = Entry width (m)	7.00	13.00	8.00	12.00
L = Effective length of flare (m)	12.00	35.00	7.00	13.00
R = Entry radius (m)	25.00	25.00	10.00	40.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00	50.00
A = Entry angle (degree)	40.00	30.00	40.00	30.00
Q = Entry flow (pcu/h)	475	2406	56	2331
Qc= Circulating flow across entry (pcu/h)	2100	615	2816	126
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.13	0.25	0.69	0.58
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.98	1.01	0.92	1.02
X2= V + ((E-V)/(1+2S))	6.79	11.16	6.27	9.48
M = EXP((D-60)/10)	0.37	0.37	0.37	0.37
F = 303*X2	2057	3381	1898	2872
Td= 1+(0.5/(1+M))	1.37	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.68	0.93	0.65	0.83
Qe= K(F-Fc*Qc)	621	2839	72	2835
DFC = Design flow/Capacity = Q/Qe	0.76	0.85	0.77	0.82

TOTAL ENTRY FLOWS 5268 PCU

CRITICAL DFC 0.85

# ROUNDBABOUT CAPACITY CALCULATIO

Junction	J1 - Sai Sha Road / Nin Wah Road / Nin Fung Road	Scenario	2031 PM Design Traffic Flows (Sensitivity Test) (Future Layout)	Project No.	Prepared By	Checked By	Date
				-	MKCN	SHSN	14-Aug-22



ARM	A	B	C	D
<b>INPUT PARAMETERS:</b>				
V = Approach half width (m)	6.00	7.50	5.00	7.30
E = Entry width (m)	7.00	13.00	8.00	12.00
L = Effective length of flare (m)	12.00	35.00	7.00	13.00
R = Entry radius (m)	25.00	25.00	10.00	40.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00	50.00
A = Entry angle (degree)	40.00	30.00	40.00	30.00
Q = Entry flow (pcu/h)	265	1846	36	2171
Qc= Circulating flow across entry (pcu/h)	2061	530	2121	86
<b>OUTPUT PARAMETERS:</b>				
S = Sharpness of flare = 1.6(E-V)/L	0.13	0.25	0.69	0.58
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.98	1.01	0.92	1.02
X2= V + ((E-V)/(1+2S))	6.79	11.16	6.27	9.48
M = EXP((D-60)/10)	0.37	0.37	0.37	0.37
F = 303*X2	2057	3381	1898	2872
Td= 1+(0.5/(1+M))	1.37	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.68	0.93	0.65	0.83
Qe= K(F-Fc*Qc)	647	2918	484	2869
DFC = Design flow/Capacity = Q/Qe	0.41	0.63	0.07	0.76

TOTAL ENTRY FLOWS 4318 PCU

CRITICAL DFC 0.76

# JUNCTION CAPACITY CALCULATION

AECOM

Junction J2 - Sai Sha Road / Access Road to Sai O

2031 AM Design Traffic Flows (Sensitivity Test)

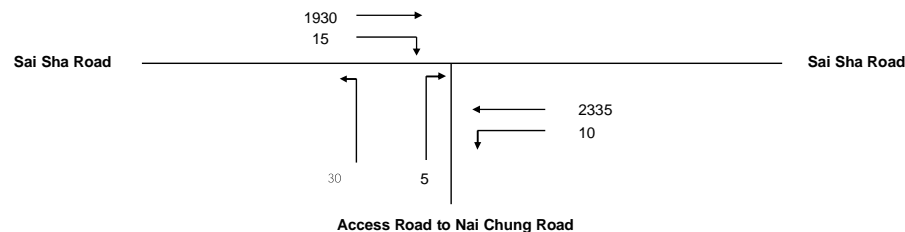
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CHECK: 0

JOB NO: -

DATE: Aug 22

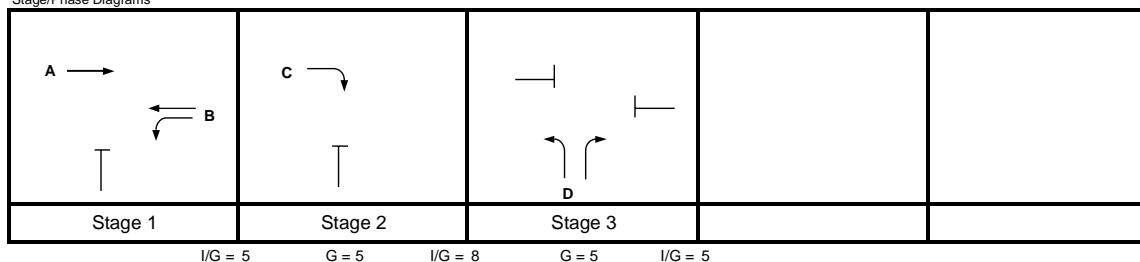
Traffic Flow Diagram  
(pcu/hr)



No. of stages per cycle	N =	3
Cycle time	C =	120 sec
Sum(y)	Y =	0.571
Lost time	L =	27 sec
Total Flow	=	12,290 pcu
Optimum Cycle $C_o$	= $(1.5 \times L + 5) / (1 - Y)$	106 sec
Min. Cycle Time $C_m$	= $L / (1 - Y)$	63 sec
$Y_{ult}$	= $0.9 - 0.0075 \times L$	0.698
$R.C._{ult}$	= $(Y_{ult} - Y) / Y \times 100\%$	22.2 %
Practical Cycle Time $C_p$	= $0.9 \times L / (0.9 - Y)$	74 sec
$Y_{max}$	= $1 - L / C$	0.775

J2

Stage/Phase Diagrams



Critical Case : B,C,D

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 22\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y	EFFECTIVE GREEN g=y/(C-L) (sec)	ACTUAL GREEN G (sec)	DEGREE OF SATURATION X	Average Queue N
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT							
→	A	1	3.300	2				1		0		4030		1930		1930			4030	0.479		78	92	0.618	7
↘	C	2	3.300	1		25	0	0		0		2085			15	15		100%	1967	0.008		1	5	0.153	0
↙	B	1	3.700	1	10			1		0		1985	10	1122		1132	1%		1982	0.571		93	92	0.737	8
↘	B	1	3.700	1				0		0		2125		1213		1213			2125	0.571	0.571	93	92	0.737	9
→	D	3	4.500	1	10	20	0	1		0		2065	30		5	35	86%	14%	1813	0.019		3	5	0.386	1



# JUNCTION CAPACITY CALCULATION

AECOM

Junction J2 - Sai Sha Road / Access Road to Sai O

2031 PM Design Traffic Flows (Sensitivity Test)

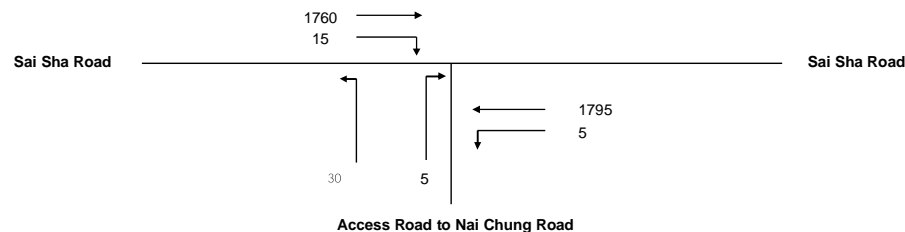
DESIGN: 0

CHECK: 0

JOB NO: -

DATE: Aug 22

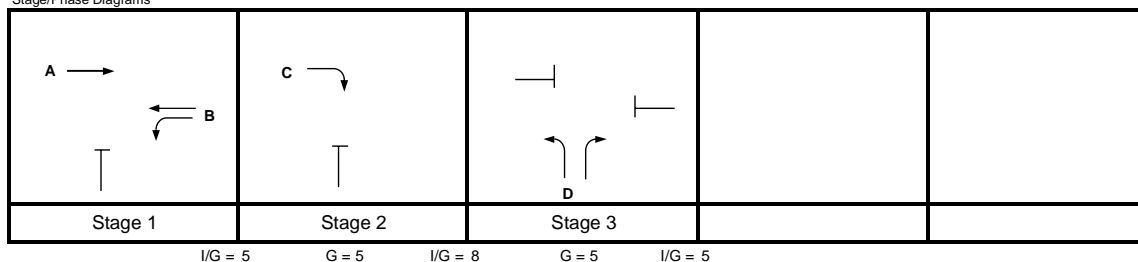
Traffic Flow Diagram  
(pcu/hr)



No. of stages per cycle	N =	3
Cycle time	C =	120 sec
Sum(y)	Y =	0.438
Lost time	L =	27 sec
Total Flow	=	12,290 pcu
Optimum Cycle $C_o$	= $(1.5 \times L + 5) / (1 - Y)$	81 sec
Min. Cycle Time $C_m$	= $L / (1 - Y)$	48 sec
$Y_{ult}$	= $0.9 - 0.0075 \times L$	0.698
$R.C._{ult}$	= $(Y_{ult} - Y) / Y \times 100\%$	59.2 %
Practical Cycle Time $C_p$	= $0.9 \times L / (0.9 - Y)$	53 sec
$Y_{max}$	= $1 - L / C$	0.775

J2

Stage/Phase Diagrams



Critical Case : B,C,D

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 59\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y	EFFECTIVE GREEN g=y/(C-L) (sec)	ACTUAL GREEN G (sec)	DEGREE OF SATURATION X	Average Queue N
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT							
→	A	1	3.300	2				1		0		4030		1760		1760			4030	0.437		93	92	0.564	7
↶	C	2	3.300	1		25	0	0		0		2085			15	15		100%	1967	0.008		2	5	0.153	0
↷	B	1	3.700	1	10			1		0		1985	5	864		869	1%		1983	0.438	0.438	93	92	0.565	7
↷	B	1	3.700	1				0		0		2125		931		931			2125	0.438		93	92	0.565	7
↷	D	3	4.500	1	10	20	0	1		0		2065	30		5	35	86%	14%	1813	0.019		4	5	0.386	1

# JUNCTION CAPACITY CALCULATION

AECOM

Junction J3 - Sai Sha Road / Access Road to Kwun Hang / Access Road to Che Ha 2031 AM Design Traffic Flows (Sensitivity Test)

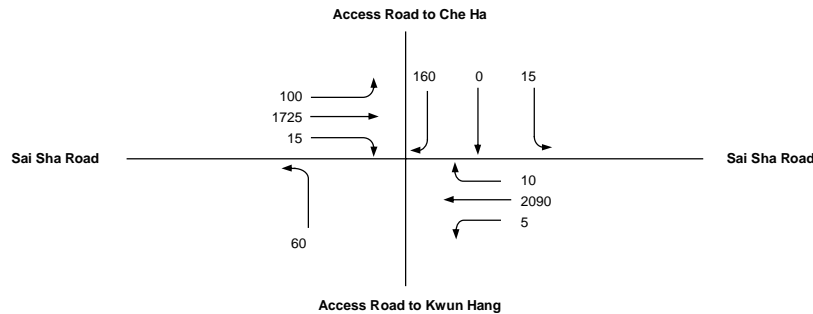
DESIGN:

CHECK:

JOB NO:

DATE: Aug 22

Traffic Flow Diagram  
(pcu/hr)



No. of stages per cycle

N = 4

Cycle time

C = 120 sec

Sum(y)

Y = 0.609

Lost time

L = 25 sec

Total Flow

= 16,316 pcu

Optimum Cycle  $C_o = (1.5 \times L + 5) / (1 - Y) = 109$  sec

Min. Cycle Time  $C_m = L / (1 - Y) = 64$  sec

$Y_{ult} = 0.9 - 0.0075 \times L = 0.713$

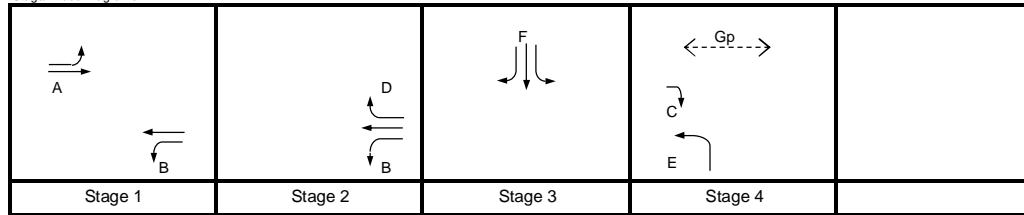
$R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 17.1\%$

Practical Cycle Time  $C_p = 0.9 \times L / (0.9 - Y) = 77$  sec

$Y_{max} = 1 - L/C = 0.792$

J3

Stage/Phase Diagrams



I/G =

I/G = 5

I/G = 4

G = 16

I/G = 2

Critical Case : B,F,Gp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 17\%$$

1

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR $y$	CRITICAL $y$	EFFECTIVE GREEN $g = y/Y \times (C-L)$ (sec)	ACTUAL GREEN $G$ (sec)	DEGREE OF SATURATION $X$	Average Queue $N$
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT							
	A	1	3.500	1	15			1		0		1965	100	776		876	11%		1943	0.451	0.515	70	69	0.769	12
	A	1	3.500	1				0		0		2105		949		949			2105	0.451		70	69	0.769	13
	C	4	3.500	1		25	1	0		0		2105			15	15	100%		1769	0.008		1	5	0.170	0
	B	1,2	3.500	1	10			1		0		1965	5	1006		1011	0%		1964	0.515	0.515	80	79	0.772	11
	B	1,2	3.500	1				0		0		2105		1084		1084			2105	0.515		80	79	0.772	12
	D	2	3.500	1		20	1	0		0		2105			10	10	100%		1744	0.006		1	5	0.115	0
	E	2	3.700	1	10			1		0		1985	60			60	100%		1726	0.035	0.094	5	16	0.245	2
	F	3	5.000	1	30	25	0	1	3.2	-134		2115	15	0	160	175	9%	91%	1870	0.094	0.094	15	14	0.769	6
Ped.	Gp	4	min.	16	=	9	+	7	sec																

# JUNCTION CAPACITY CALCULATION

AECOM

Junction J3 - Sai Sha Road / Access Road to Kwun Hang / Access Road to Che Ha 2031 PM Design Traffic Flows (Sensitivity Test)

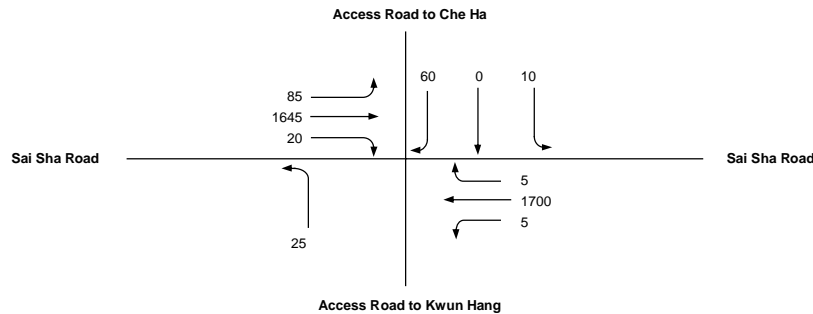
DESIGN:

CHECK:

JOB NO:

DATE: Aug 22

Traffic Flow Diagram  
(pcu/hr)



No. of stages per cycle

N = 4

Cycle time

C = 120 sec

Sum(y)

Y = 0.465

Lost time

L = 35 sec

Total Flow

= 16,316 pcu

Optimum Cycle  $C_o = (1.5 \times L + 5) / (1 - Y) = 107$  sec

Min. Cycle Time  $C_m = L / (1 - Y) = 65$  sec

$Y_{ult} = 0.9 - 0.0075 \times L = 0.638$

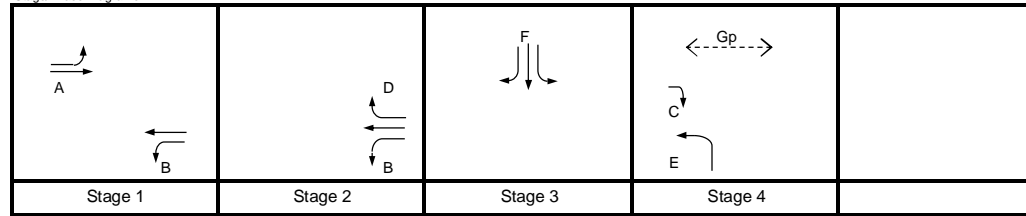
$R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 37.2\%$

Practical Cycle Time  $C_p = 0.9 \times L / (0.9 - Y) = 72$  sec

$Y_{max} = 1 - L/C = 0.708$

J3

Stage/Phase Diagrams



I/G = 5

G = 5

I/G = 5

I/G = 4





G = 16

I/G = 2

Critical Case : A,D,F,Gp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 37\%$$

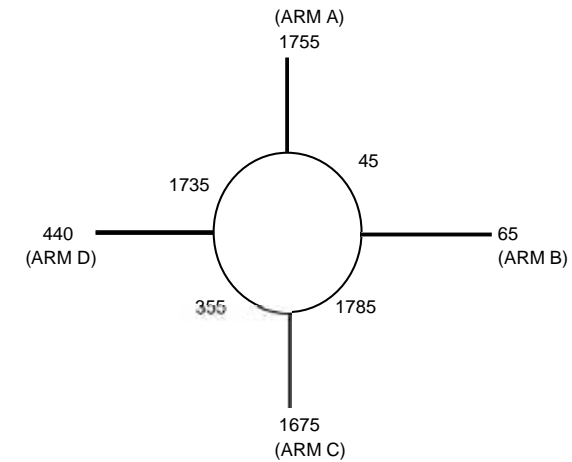
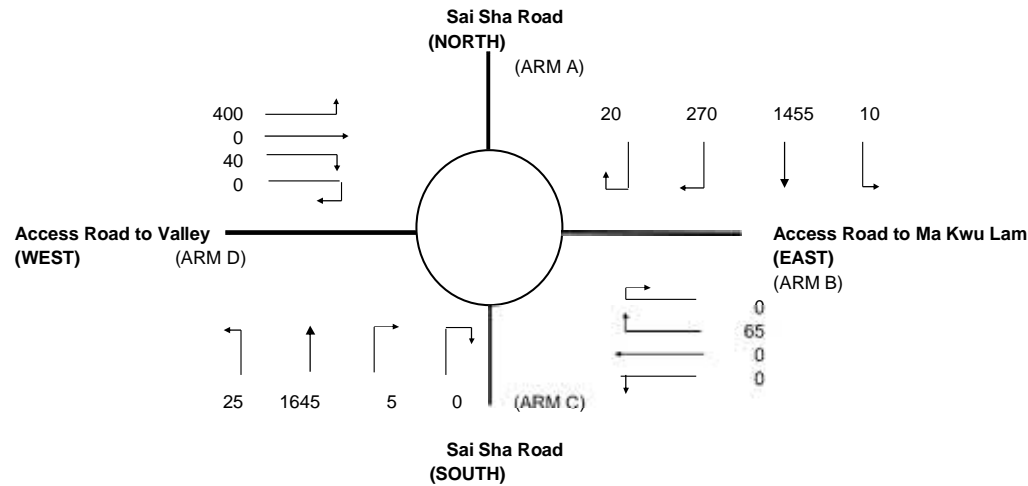
1

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y	EFFECTIVE GREEN g=y/Yx(C-L) (sec)	ACTUAL GREEN G (sec)	DEGREE OF SATURATION X	Average Queue N
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT							
	A	1	3.500	1	15			1		0		1965	85	746		831	10%		1945	0.427	0.427	78	77	0.656	10
	A	1	3.500	1			0		0		2105		899		899			2105	0.427	78		77	0.656	10	
	C	4	3.500	1		25	1	0		0		2105			20	20	100%	0.011	1769	0.011		2	5	0.226	1
	B	1,2	3.500	1	10			1		0		1965	5	818		823	1%		1963	0.419	0.037	77	84	0.592	8
	B	1,2	3.500	1			0		0		2105		882		882			2105	0.419	77		84	0.592	9	
	D	2	3.500	1		20	1	0		0		2105			5	5	100%		1744	0.003		1	5	0.057	0
	E	2	3.700	1	10			1		0		1985	25			25	100%		1726	0.014	0.037	3	16	0.102	1
	F	3	5.000	1	30	25	0	1	3.2	-134		2115	10	0	60	70	14%	86%	1871	0.037	0.037	7	6	0.656	3
Ped.	Gp	4	min.	16	=	9	+	7	sec																
										</															

# ROUNDAABOUT CAPACITY CALCULATIO

MAUNSELL CONSULTANTS ASIA LTD.

Junction	J4- Sai Sha Road / Access Road to Ma Kwu Lam / Access Road to Sai Sha Development (Site A)	Scenario	Year 2031 AM Design Traffic Flows (Sensitivity Test)	Project No.	Prepared By	Checked By	Date
				-	MKCN	SHSN	Aug 2022



ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	7.30	4.00	7.30	7.00
E = Entry width (m)	10.00	6.00	13.50	8.00
L = Effective length of flare (m)	5.00	6.50	12.50	4.00
R = Entry radius (m)	25.00	20.00	45.00	25.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00	50.00
A = Entry angle (degree)	45.00	50.00	50.00	45.00
Q = Entry flow (pcu/h)	1755	65	1675	440
Qc= Circulating flow across entry (pcu/h)	45	1785	355	1735
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.86	0.49	0.79	0.40
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.96	0.93	0.96	0.96
X2= V + ((E-V)/(1+2S))	8.29	5.01	9.70	7.56
M = EXP((D-60)/10)	0.37	0.37	0.37	0.37
F = 303*X2	2512	1517	2938	2289
Td= 1+(0.5/(1+M))	1.37	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.76	0.57	0.84	0.72
Qe= K(F-Fc*Qc)	2373	459	2527	996
DFC = Design flow/Capacity = Q/Qe	0.74	0.14	0.66	0.44

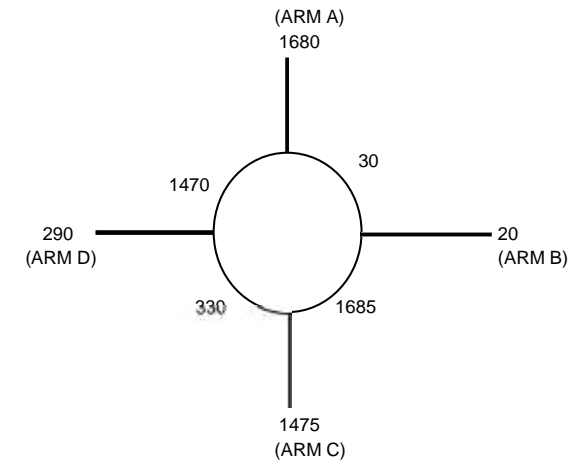
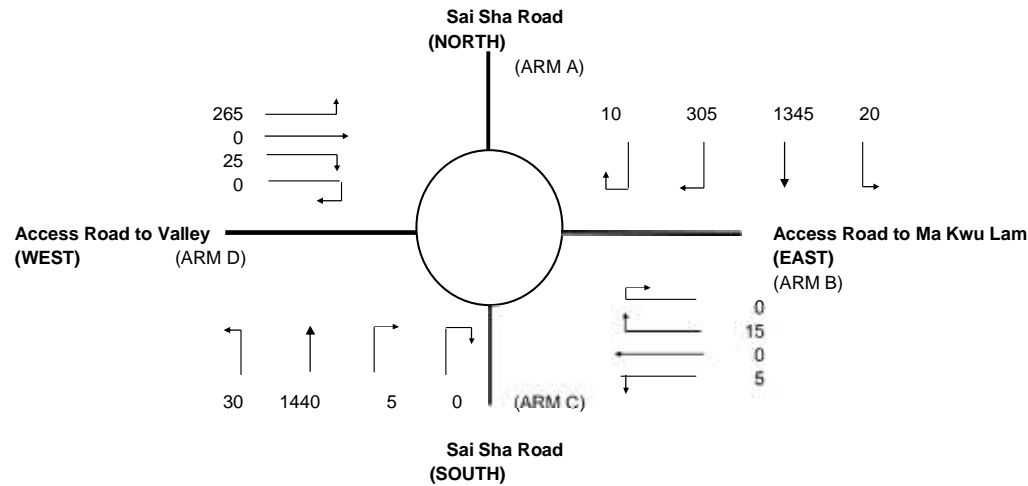
TOTAL ENTRY FLOWS 3935 PCU

CRITICAL DFC 0.74

# ROUNDBABOUT CAPACITY CALCULATIO

MAUNSELL CONSULTANTS ASIA LTD.

Junction	J4- Sai Sha Road / Access Road to Ma Kwu Lam / Access Road to Sai Sha Development (Site A)	Scenario	Year 2031 PM Design Traffic Flows (Sensitivity Test)	Project No.	Prepared By	Checked By	Date
				-	MKCN	SHSN	Aug 2022



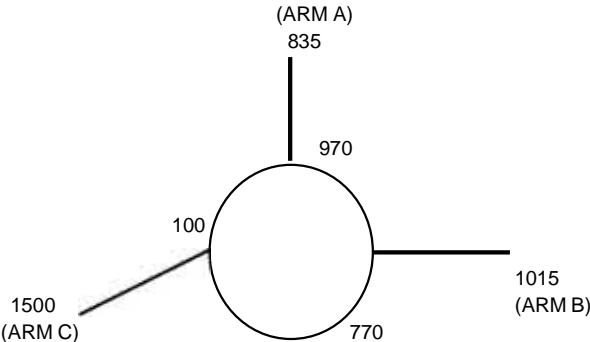
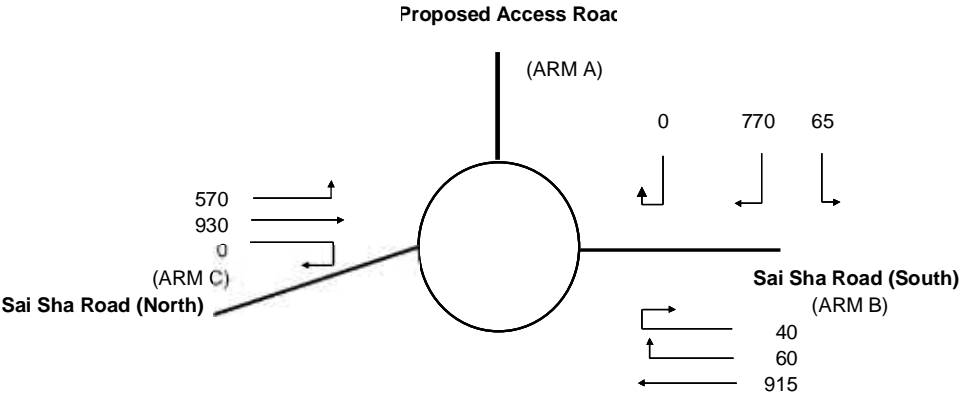
ARM	A	B	C	D
INPUT PARAMETERS:				
V = Approach half width (m)	7.30	4.00	7.30	7.00
E = Entry width (m)	10.00	6.00	13.50	8.00
L = Effective length of flare (m)	5.00	6.50	12.50	4.00
R = Entry radius (m)	25.00	20.00	45.00	25.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00	50.00
A = Entry angle (degree)	45.00	50.00	50.00	45.00
Q = Entry flow (pcu/h)	1680	20	1475	290
Qc= Circulating flow across entry (pcu/h)	30	1685	330	1470
OUTPUT PARAMETERS:				
S = Sharpness of flare = 1.6(E-V)/L	0.86	0.49	0.79	0.40
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.96	0.93	0.96	0.96
X2= V + ((E-V)/(1+2S))	8.29	5.01	9.70	7.56
M = EXP((D-60)/10)	0.37	0.37	0.37	0.37
F = 303*X2	2512	1517	2938	2289
Td= 1+(0.5/(1+M))	1.37	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.76	0.57	0.84	0.72
Qe= K(F-Fc*Qc)	2384	512	2548	1179
DFC = Design flow/Capacity = Q/Qe	0.70	0.04	0.58	0.25

TOTAL ENTRY FLOWS 3465 PCU

CRITICAL DFC 0.70



JUNCTION CAPACITY CALCULATION

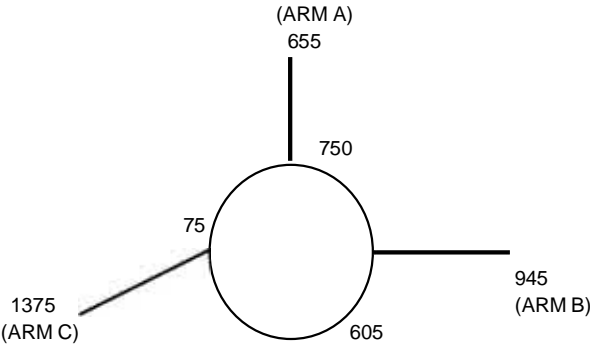
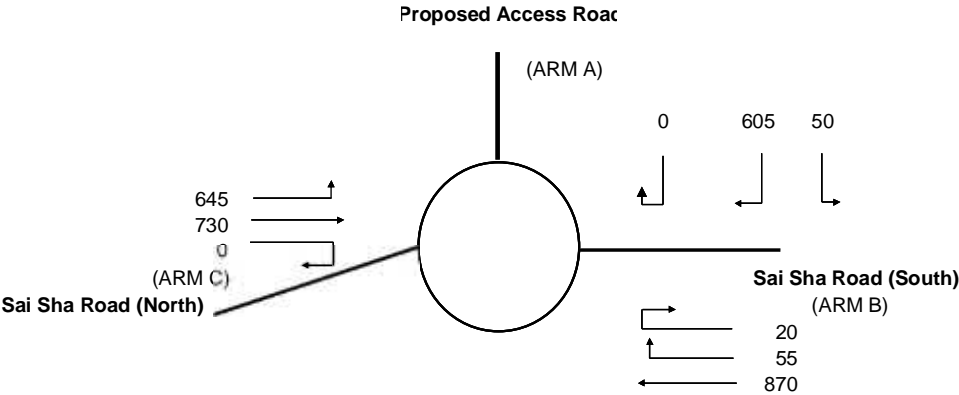


ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	5.20	7.30	7.30
E = Entry width (m)	8.00	8.00	8.00
L = Effective length of flare (m)	20.00	4.50	4.50
R = Entry radius (m)	35.00	30.00	40.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00
A = Entry angle (degree)	35.00	45.00	35.00
Q = Entry flow (pcu/h)	835	1015	1500
Qc= Circulating flow across entry (pcu/h)	970	770	100
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.22	0.25	0.25
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.00	0.96	1.01
X2= V + ((E-V)/(1+2S))	7.13	7.77	7.77
M = EXP((D-60)/10)	0.37	0.37	0.37
F = 303*X2	2162	2354	2354
Td= 1+(0.5/(1+M))	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.70	0.73	0.73
Qe= K(F-Fc*Qc)	1492	1726	2296
DFC = Design flow/Capacity = Q/Qe	0.56	0.59	0.65

TOTAL ENTRY FLOWS = 3350 PCU

CRITICAL DFC = 0.65

JUNCTION CAPACITY CALCULATION



ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	5.20	7.30	7.30
E = Entry width (m)	8.00	8.00	8.00
L = Effective length of flare (m)	20.00	4.50	4.50
R = Entry radius (m)	35.00	30.00	40.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00
A = Entry angle (degree)	35.00	45.00	35.00
Q = Entry flow (pcu/h)	655	945	1375
Qc= Circulating flow across entry (pcu/h)	750	605	75
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.22	0.25	0.25
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.00	0.96	1.01
X2= V + ((E-V)/(1+2S))	7.13	7.77	7.77
M = EXP((D-60)/10)	0.37	0.37	0.37
F = 303*X2	2162	2354	2354
Td= 1+(0.5/(1+M))	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.70	0.73	0.73
Qe= K(F-Fc*Qc)	1646	1842	2315
DFC = Design flow/Capacity = Q/Qe	0.40	0.51	0.59

TOTAL ENTRY FLOWS = 2975 PCU

CRITICAL DFC = 0.59

# JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Sai Sha Road and Proposed Accessed Road

2031 AM Design Traffic Flows (Sensitivity Test)

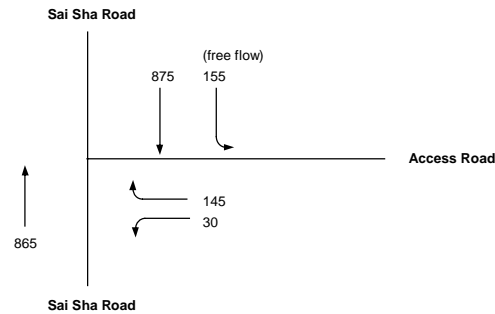
DESIGN:

CHECK:

JOB NO: 604583204

DATE: Aug 22

Traffic Flow Diagram  
(pcu/hr)



No. of stages per cycle N = 2  
Cycle time C = 90 sec  
Sum(y) Y = 0.528  
Lost time L = 9 sec  
Total Flow = 7,685 pcu

Optimum Cycle  $C_o = (1.5 \times L + 5) / (1 - Y) = 39$  sec  
Min. Cycle Time  $C_m = L / (1 - Y) = 19$  sec  
 $Y_{ult} = 0.9 - 0.0075 \times L = 0.833$   
 $R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 57.7\%$   
Practical Cycle Time  $C_p = 0.9 \times L / (0.9 - Y) = 22$  sec  
 $Y_{max} = 1 - L/C = 0.900$

J6

Stage/Phase Diagrams



I/G = 5

I/G = 6

Critical Case : A,D

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 53\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y	EFFECTIVE GREEN g=y/Yx(C-L) (sec)	ACTUAL GREEN G (sec)	DEGREE OF SATURATION X	Average Queue N
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT							
↓	A	1	3.500	1				0	3.5	-147		2105		875		875			1958	0.447	0.447	69	68	0.000	6
↑	B	1	3.500	1				1		0		1965		865		865			1965	0.440		68	68	0.000	6
↑	D	2	3.500	1		15	0	1		0		1965			145	145			1786	0.081	0.081	12	11	0.000	4
↓	D	2	3.500	1	13			1	4	-168		1965	30			30	100%	100%	1611	0.019		3	11	0.000	1
Pedestrian	Fp	1	min.	GM 5	+	FGM 9	=	14	sec																

# JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Sai Sha Road and Proposed Accessed Road

2031 PM Design Traffic Flows (Sensitivity Test)

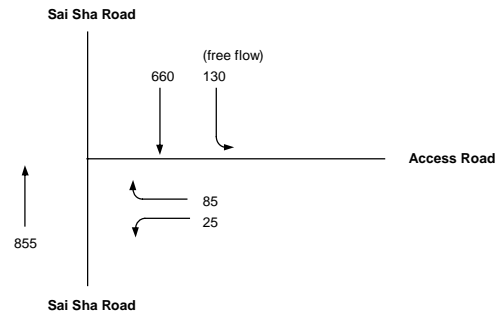
DESIGN:

CHECK:

JOB NO: 604583204

DATE: Aug 22

Traffic Flow Diagram  
(pcu/hr)



No. of stages per cycle N = 2  
Cycle time C = 90 sec  
Sum(y) Y = 0.483  
Lost time L = 9 sec  
Total Flow = 7,685 pcu

Optimum Cycle  $C_o = (1.5 \times L + 5) / (1 - Y) = 36$  sec  
Min. Cycle Time  $C_m = L / (1 - Y) = 17$  sec  
 $Y_{ult} = 0.9 - 0.0075 \times L = 0.833$   
 $R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 72.5\%$   
Practical Cycle Time  $C_p = 0.9 \times L / (0.9 - Y) = 19$  sec  
 $Y_{max} = 1 - L/C = 0.900$

J6

Stage/Phase Diagrams



I/G = 5

I/G = 6

Critical Case : B,D

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 68\%$$

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y	EFFECTIVE GREEN g=y/Yx(C-L) (sec)	ACTUAL GREEN G (sec)	DEGREE OF SATURATION X	Average Queue N
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT							
↓	A	1	3.500	1				0	3.5	-147		2105		660		660			1958	0.337		57	72	0.000	4
↑	B	1	3.500	1				1		0		1965		855		855			1965	0.435	0.435	73	72	0.000	5
↑	D	2	3.500	1		15	0	1		0		1965			85	85			1786	0.048	0.048	8	7	0.000	2
↓	D	2	3.500	1	13			1	4	-168		1965	25			25	100%	100%	1611	0.016		3	7	0.000	1
Pedestrian		Crossing																							
Fp		1	min.																						
				GM		FGM																			
				5	+	9	=	14	sec																

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Sai Sha Road / Proposed Access Road

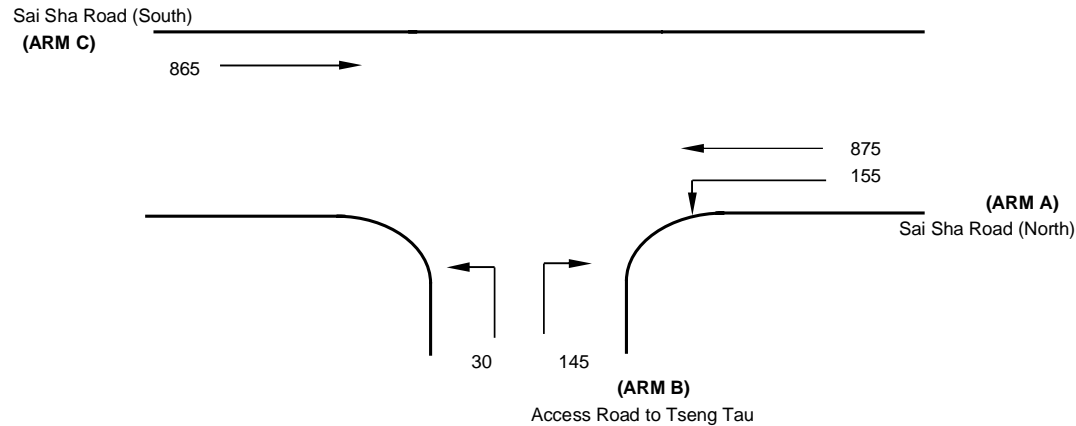
2031 AM Design Traffic Flows (Sensitivity Test)

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Aug 22



## NOTES : ( GEOMETRIC INPUT DATA )

J6

- W = Major Road Width (6.4 - 20.0)
- W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
- W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
- W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
- W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
- VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
- Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
- Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
- Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

- D = Stream-specific B-A
- E = Stream-specific B-C
- F = Stream-specific C-B
- Y = (1-0.0345W)

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W	=	7 (metres)
W cr	=	3 (metres)
q a-b	=	155 (pcu/hr)
q a-c	=	875 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b	=	2.05 (metres)
Vr c-b	=	40 (metres)
q c-a	=	865 (pcu/hr)
q c-b	=	0 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a	=	3 (metres)
W b-c	=	3 (metres)
VI b-a	=	30 (metres)
Vr b-a	=	30 (metres)
Vr b-c	=	30 (metres)
q b-a	=	145 (pcu/hr)
q b-c	=	30 (pcu/hr)

## GEOMETRIC FACTORS :

D	=	0.800724
E	=	0.862849
F	=	0.788429
Y	=	0.758500

## THE CAPACITY OF MOVEMENT :

Q b-a	=	208
Q b-c	=	420
Q c-b	=	363
Q b-ac	=	228
Q c-a	=	1800

## COMPARISON OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.70
DFC b-c	=	0.07
DFC c-b	=	0.00

CRITICAL DFC = 0.70



# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J6 - Sai Sha Road / Proposed Access Road

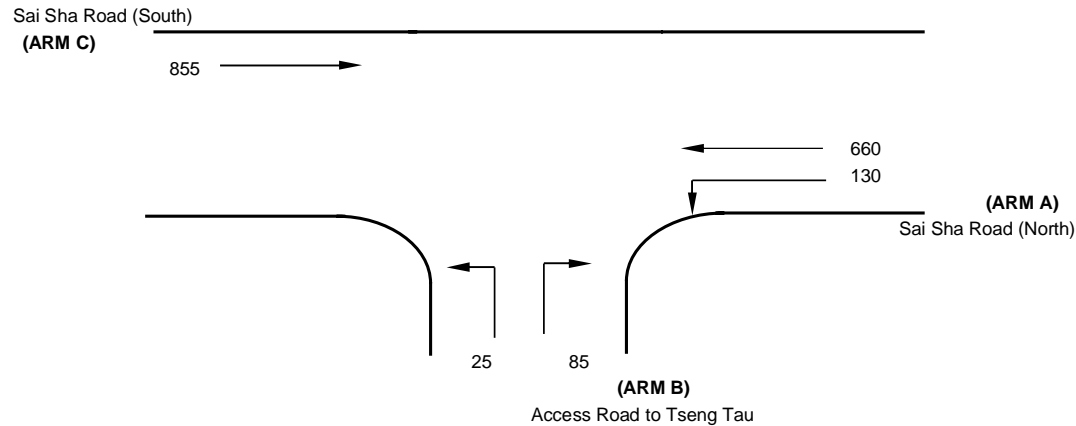
2031 PM Design Traffic Flows (Sensitivity Test)

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Aug 22



## NOTES : ( GEOMETRIC INPUT DATA )

J6

- W = Major Road Width (6.4 - 20.0)
- W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)
- W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)
- W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)
- W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)
- VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)
- Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)
- Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)
- Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

- D = Stream-specific B-A
- E = Stream-specific B-C
- F = Stream-specific C-B
- Y = (1-0.0345W)

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W	=	7 (metres)
W cr	=	3 (metres)
q a-b	=	130 (pcu/hr)
q a-c	=	660 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b	=	2.05 (metres)
Vr c-b	=	40 (metres)
q c-a	=	855 (pcu/hr)
q c-b	=	0 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a	=	3 (metres)
W b-c	=	3 (metres)
VI b-a	=	30 (metres)
Vr b-a	=	30 (metres)
Vr b-c	=	30 (metres)
q b-a	=	85 (pcu/hr)
q b-c	=	25 (pcu/hr)

## GEOMETRIC FACTORS :

D	=	0.800724
E	=	0.862849
F	=	0.788429
Y	=	0.758500

## THE CAPACITY OF MOVEMENT :

Q b-a	=	259
Q b-c	=	473
Q c-b	=	415
Q b-ac	=	289
Q c-a	=	1800

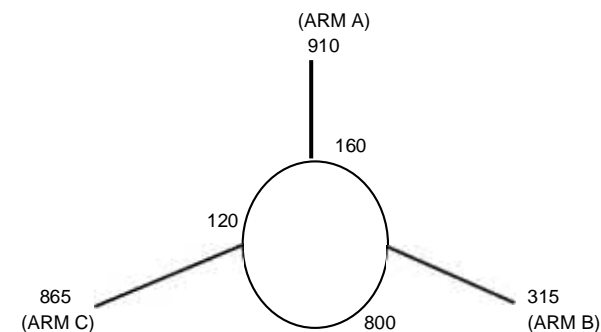
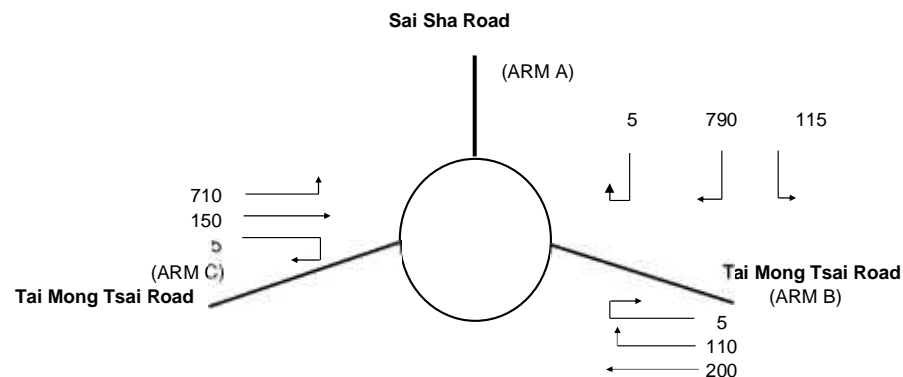
## COMPARISON OF DESIGN FLOW TO CAPACITY :

DFC b-a	=	0.33
DFC b-c	=	0.05
DFC c-b	=	0.00

CRITICAL DFC = 0.33

# ROUNDBABOUT CAPACITY CALCULATION

Junction	J7 - Sai Sha Road / Tai Mong Tsai Road	Scenario	2031 AM Design Traffic Flows (Sensitivity Test)	Project No.	Prepared By	Checked By	Date
				-	mkn	shsn	14-Aug-22



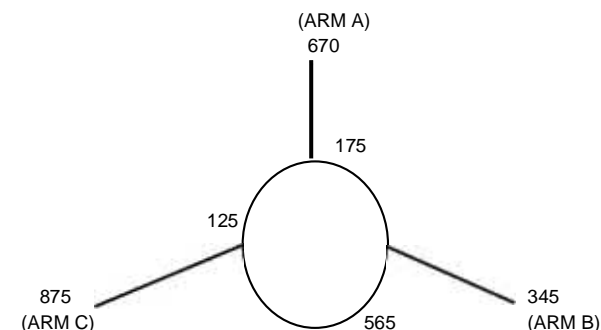
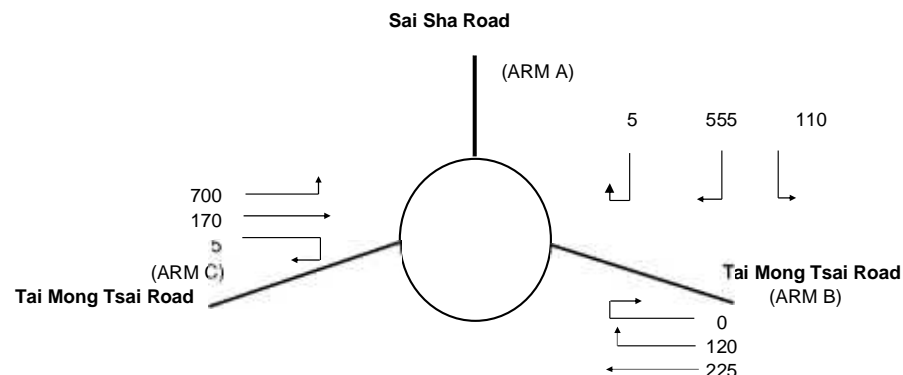
ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	4.30	3.00	3.30
E = Entry width (m)	7.50	8.00	8.00
L = Effective length of flare (m)	15.00	20.00	20.00
R = Entry radius (m)	16.00	80.00	100.00
D = Inscribed circle diameter (m)	32.00	32.00	32.00
A = Entry angle (degree)	45.00	30.00	45.00
Q = Entry flow (pcu/h)	910	315	865
Qc= Circulating flow across entry (pcu/h)	160	800	120
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.34	0.40	0.38
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.94	1.04	0.99
X2= V + ((E-V)/(1+2S))	6.20	5.78	5.98
M = EXP((D-60)/10)	0.06	0.06	0.06
F = 303*X2	1879	1751	1813
Td= 1+(0.5/(1+M))	1.47	1.47	1.47
Fc= 0.21*Td(1+0.2*X2)	0.69	0.67	0.68
Qe= K(F-Fc*Qc)	1655	1263	1709
DFC = Design flow/Capacity = Q/Qe	0.55	0.25	0.51

TOTAL ENTRY FLOWS = 2090 PCU

CRITICAL DFC = 0.55

# ROUNDBABOUT CAPACITY CALCULATION

Junction	J7 - Sai Sha Road / Tai Mong Tsai Road	Scenario	2031 PM Design Traffic Flows (Sensitivity Test)	Project No.	Prepared By	Checked By	Date
				-	mkn	shsn	14-Aug-22



ARM	A	B	C
INPUT PARAMETERS:			
V = Approach half width (m)	4.30	3.00	3.30
E = Entry width (m)	7.50	8.00	8.00
L = Effective length of flare (m)	15.00	20.00	20.00
R = Entry radius (m)	16.00	80.00	100.00
D = Inscribed circle diameter (m)	32.00	32.00	32.00
A = Entry angle (degree)	45.00	30.00	45.00
Q = Entry flow (pcu/h)	670	345	875
Qc= Circulating flow across entry (pcu/h)	175	565	125
OUTPUT PARAMETERS:			
S = Sharpness of flare = 1.6(E-V)/L	0.34	0.40	0.38
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.94	1.04	0.99
X2= V + ((E-V)/(1+2S))	6.20	5.78	5.98
M = EXP((D-60)/10)	0.06	0.06	0.06
F = 303*X2	1879	1751	1813
Td= 1+(0.5/(1+M))	1.47	1.47	1.47
Fc= 0.21*Td(1+0.2*X2)	0.69	0.67	0.68
Qe= K(F-Fc*Qc)	1645	1425	1706
DFC = Design flow/Capacity = Q/Qe	0.41	0.24	0.51

TOTAL ENTRY FLOWS = 1890 PCU

CRITICAL DFC = 0.51

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J8 - Sai Sha Road / Access Road to Sai Keng Village

2031 AM Design Traffic Flows (Sensitivity Test)

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Aug 22

Sai Sha Road  
(ARM C)

1005  
15



(ARM A)  
Sai Sha Road

(ARM B)  
Access Road to Sai Keng Village

NOTES : ( GEOMETRIC INPUT DATA )

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

J8

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W = 7 (metres)  
W cr = 0 (metres)  
q a-b = 5 (pcu/hr)  
q a-c = 1025 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b = 3.5 (metres)  
Vr c-b = 40 (metres)  
q c-a = 1005 (pcu/hr)  
q c-b = 15 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a = 2.5 (metres)  
W b-c = 2.5 (metres)  
VI b-a = 40 (metres)  
Vr b-a = 40 (metres)  
Vr b-c = 40 (metres)  
q b-a = 10 (pcu/hr)  
q b-c = 0 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.773056  
E = 0.827683  
F = 0.914915  
Y = 0.758500

## THE CAPACITY OF MOVEMENT :

Q b-a = 126  
Q b-c = 382  
Q c-b = 421  
Q b-ac = 126

CRITICAL DFC = 0.08

## COMPARISON OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.08  
DFC b-c = 0.00  
DFC c-b = 0.04  
DFC b-ac = 0.08

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J8 - Sai Sha Road / Access Road to Sai Keng Village

2031 PM Design Traffic Flows (Sensitivity Test)

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Aug 22

Sai Sha Road  
(ARM C)

935  
10



(ARM A)  
Sai Sha Road

(ARM B)  
Access Road to Sai Keng Village

NOTES : ( GEOMETRIC INPUT DATA )

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
Vl b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

J8

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W = 7 (metres)  
W cr = 0 (metres)  
q a-b = 10 (pcu/hr)  
q a-c = 790 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b = 3.5 (metres)  
Vr c-b = 40 (metres)  
q c-a = 935 (pcu/hr)  
q c-b = 10 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a = 2.5 (metres)  
W b-c = 2.5 (metres)  
Vl b-a = 40 (metres)  
Vr b-a = 40 (metres)  
Vr b-c = 40 (metres)  
q b-a = 5 (pcu/hr)  
q b-c = 0 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.773056  
E = 0.827683  
F = 0.914915  
Y = 0.758500

## THE CAPACITY OF MOVEMENT :

Q b-a = 187  
Q b-c = 435  
Q c-b = 480  
Q b-ac = 187

## COMPARISON OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.03  
DFC b-c = 0.00  
DFC c-b = 0.02  
DFC b-ac = 0.03

CRITICAL DFC = 0.03



# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J9 - Sai Sha Road / Access Road to Kei Ling Ha San Wai

2031 AM Design Traffic Flows (Sensitivity Test)

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Aug 22

Sai Sha Road  
(ARM C)

830  
10



(ARM A)  
Sai Sha Road

(ARM B)  
Access Road to Sai Keng Village

NOTES : ( GEOMETRIC INPUT DATA )

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

J9

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W = 6.5 (metres)  
W cr = 0 (metres)  
q a-b = 10 (pcu/hr)  
q a-c = 890 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b = 3.2 (metres)  
Vr c-b = 40 (metres)  
q c-a = 830 (pcu/hr)  
q c-b = 10 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a = 2.2 (metres)  
W b-c = 2.2 (metres)  
VI b-a = 40 (metres)  
Vr b-a = 40 (metres)  
Vr b-c = 40 (metres)  
q b-a = 30 (pcu/hr)  
q b-c = 25 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.748614  
E = 0.801514  
F = 0.888746  
Y = 0.775750

## THE CAPACITY OF MOVEMENT :

Q b-a = 167  
Q b-c = 395  
Q c-b = 436  
Q b-ac = 226

CRITICAL DFC = 0.24

## COMPARISON OF DESIGN FLOW TO CAPACITY :

DFC b-a = 0.18  
DFC b-c = 0.06  
DFC c-b = 0.02  
DFC b-ac = 0.24

# PRIORITY JUNCTION CAPACITY CALCULATION

AECOM

Junction J9 - Sai Sha Road / Access Road to Kei Ling Ha San Wai

2031 PM Design Traffic Flows (Sensitivity Test)

Designed By : MKCN

Checked By : SHSN

Job No. : -

Date : Aug 22

Sai Sha Road  
(ARM C)

830  
10



(ARM A)  
Sai Sha Road

(ARM B)  
Access Road to Sai Keng Village

NOTES : ( GEOMETRIC INPUT DATA )

W = Major Road Width (6.4 - 20.0)  
W cr = Central Reserve width (1.2 - 9.0, kerbed central reserve only)  
W b-a = Lane width available to vehicle waiting in stream b-a (2.05 - 4.07)  
W b-c = Lane width available to vehicle waiting in stream b-c (2.05 - 4.07)  
W c-b = Lane width available to vehicle waiting in stream c-b (2.05 - 4.07)  
VI b-a = Visibility to the left for vehicles waiting in stream b-a (22.0 - 250.0)  
Vr b-a = Visibility to the right for vehicles waiting in stream b-a (17.0 - 250.0)  
Vr b-c = Visibility to the right for vehicles waiting in stream b-c (17.0 - 250.0)  
Vr c-b = Visibility to the right for vehicles waiting in stream c-b (17.0 - 250.0)

D = Stream-specific B-A  
E = Stream-specific B-C  
F = Stream-specific C-B  
Y = (1-0.0345W)

J9

## GEOMETRIC DETAILS:

### MAJOR ROAD (ARM A)

W = 6.5 (metres)  
W cr = 0 (metres)  
q a-b = 10 (pcu/hr)  
q a-c = 675 (pcu/hr)

### MAJOR ROAD (ARM C)

W c-b = 3.2 (metres)  
Vr c-b = 40 (metres)  
q c-a = 830 (pcu/hr)  
q c-b = 10 (pcu/hr)

### MINOR ROAD (ARM B)

W b-a = 2.2 (metres)  
W b-c = 2.2 (metres)  
VI b-a = 40 (metres)  
Vr b-a = 40 (metres)  
Vr b-c = 40 (metres)  
q b-a = 20 (pcu/hr)  
q b-c = 5 (pcu/hr)

## GEOMETRIC FACTORS :

D = 0.748614  
E = 0.801514  
F = 0.888746  
Y = 0.775750

## THE CAPACITY OF MOVEMENT :

Q b-a = 212  
Q b-c = 443  
Q c-b = 490  
Q b-ac = 237

CRITICAL DFC = 0.11

## COMPARISON OF DESIGN FLOW TO CAPACITY :

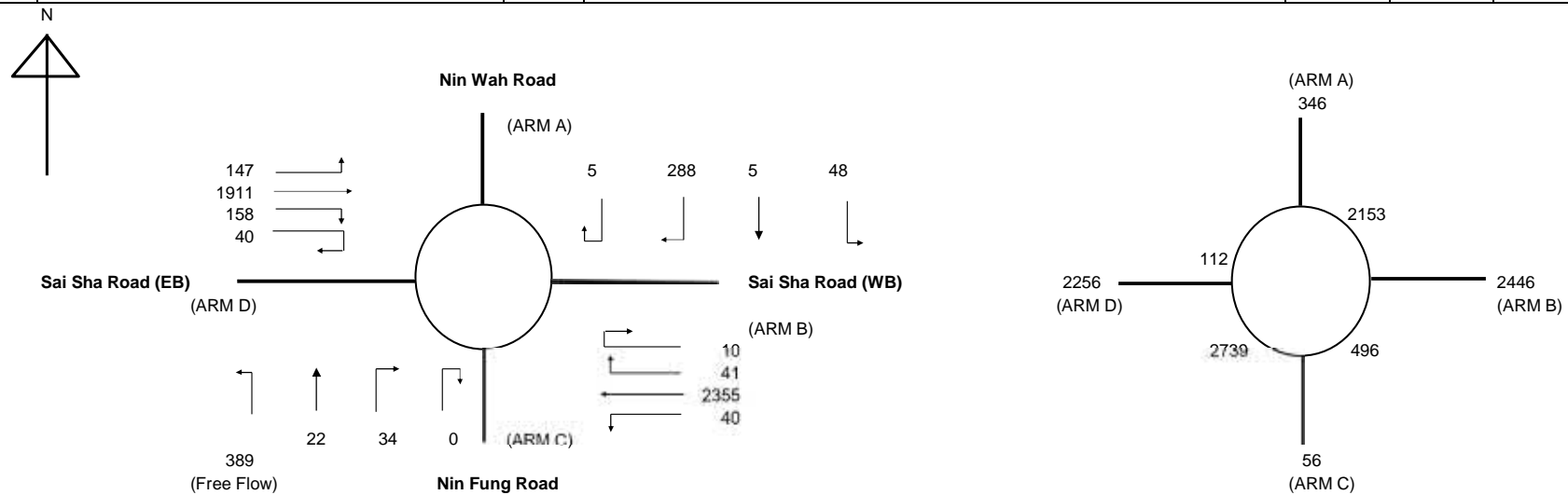
DFC b-a = 0.09  
DFC b-c = 0.01  
DFC c-b = 0.02  
DFC b-ac = 0.11

## **ANNEX A5**

### **CALCULATION SHEETS DESIGN TRAFFIC FLOWS (SENSITIVITY TEST FOR INCREASED TRAFFIC GENERATION FOR 2 PRIMARY SCHOOLS NEAR CHE HA VIILLAGE)**

# ROUNDBABOUT CAPACITY CALCULATIO

Junction	J1 - Sai Sha Road / Nin Wah Road / Nin Fung Road	Scenario	Design Traffic Flows (Sensitivity Test for Increase in Traffic Generation for 2 Primary Schools at Che Ha Road)	Project No.	Prepared By	Checked By	Date
				-	MKCN	SHSN	14-Aug-22



ARM	A	B	C	D
<b>INPUT PARAMETERS:</b>				
V = Approach half width (m)	6.00	7.50	5.00	7.30
E = Entry width (m)	7.00	13.00	8.00	12.00
L = Effective length of flare (m)	12.00	35.00	7.00	13.00
R = Entry radius (m)	25.00	25.00	10.00	40.00
D = Inscribed circle diameter (m)	50.00	50.00	50.00	50.00
A = Entry angle (degree)	40.00	30.00	40.00	30.00
Q = Entry flow (pcu/h)	346	2446	56	2256
Qc= Circulating flow across entry (pcu/h)	2153	496	2739	112
<b>OUTPUT PARAMETERS:</b>				
S = Sharpness of flare = 1.6(E-V)/L	0.13	0.25	0.69	0.58
K = 1-0.00347(A-30)-0.978(1/R-0.05)	0.98	1.01	0.92	1.02
X2= V + ((E-V)/(1+2S))	6.79	11.16	6.27	9.48
M = EXP((D-60)/10)	0.37	0.37	0.37	0.37
F = 303*X2	2057	3381	1898	2872
Td= 1+(0.5/(1+M))	1.37	1.37	1.37	1.37
Fc= 0.21*Td(1+0.2*X2)	0.68	0.93	0.65	0.83
Qe= K(F-Fc*Qc)	586	2950	118	2847
DFC = Design flow/Capacity = Q/Qe	0.59	0.83	0.47	0.79

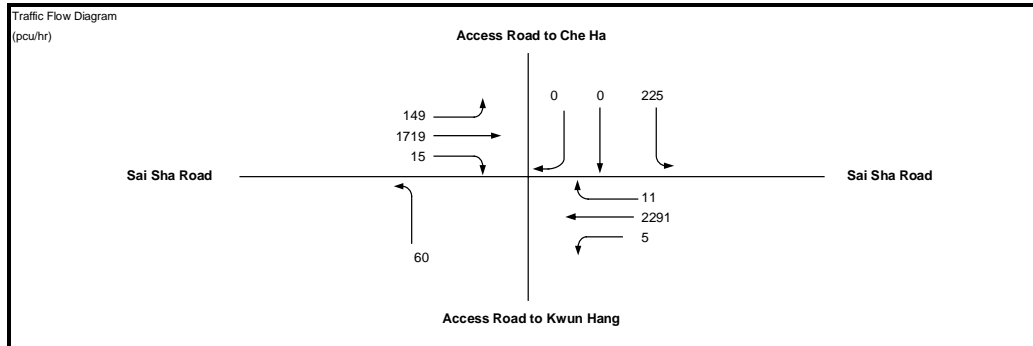
TOTAL ENTRY FLOWS 5104 PCU

CRITICAL DFC 0.83

# JUNCTION CAPACITY CALCULATION

AECOM

Junction J3 - Sai Sha Road / Access Road to Kwun Hang / Access Road to Che Ha 2031 AM Design Traffic Flows (Sensitivity Test for Increase in Traffic Generation for 2 Primary Schools at Che Ha) DESIGN: CHECK: JOB NO: DATE: Jun 22



No. of stages per cycle N = 3

Cycle time C = 120 sec

Sum(y) Y = 0.582

Lost time L = 26 sec

Total Flow = 16,316 pcu

Optimum Cycle  $C_o = (1.5 \times L + 5) / (1 - Y) = 105$  sec

Min. Cycle Time  $C_m = L / (1 - Y) = 62$  sec

$Y_{ult} = 0.9 - 0.0075 \times L = 0.705$

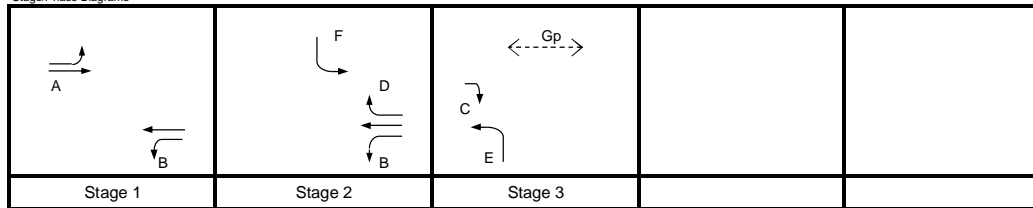
$R.C._{ult} = (Y_{ult} - Y) / Y \times 100\% = 21.2\%$

Practical Cycle Time  $C_p = 0.9 \times L / (0.9 - Y) = 74$  sec

$Y_{max} = 1 - L/C = 0.783$

J3

Stage/Phase Diagrams



I/G = 6

I/G = 4

G = 16

I/G = 2

Critical Case : A,F,Gp

$$R.C.(C) = (0.9 \times Y_{max} - Y) / Y \times 100\% = 21\%$$

1

MOVEMENT	PHASE	STAGE	LANE WIDTH (m)	NO. OF LANES	RADIUS (m)		OPPOSING TRAFFIC	NEAR SIDE LANE	UPHILL GRADIENT (%)	GRADIENT EFFECT (pcu/hr)	ADDITIONAL CAPACITY (pcu/hr)	STRAIGHT-AHEAD SAT. FLOW (pcu/hr)	FLOW (pcu/hr)			TOTAL FLOW (pcu/hr)	PROPORTION OF TURNING VEHICLES (%)		REVISED SAT. FLOW (pcu/hr)	FLOW FACTOR y	CRITICAL y
					LEFT	RIGHT							LEFT	STRAIGHT AHEAD	RIGHT		LEFT	RIGHT			
	A	1	3.500	1	15			1	0			1965	149	745		894	17%		1933	0.463	0.463
	A	1	3.500	1				0	0			2105		974		974			2105	0.463	
	C	3	3.500	1		25	1	0	0			2105			15	15		100%	1769	0.008	
	B	1,2	3.500	1	10			1	0			1965	5	1103		1108	0%		1964	0.564	
	B	1,2	3.500	1				0	0			2105		1188		1188			2105	0.564	
	D	2	3.500	1		20	1	0	0			2105			11	11		100%	1744	0.006	
	E	3	3.700	1	10			1	0			1985	60			60	100%		1726	0.035	
	F	2	5.000	1	30			1	3.2	-134.4		2115	225			225	100%		1886	0.119	0.119
Ped.	Gp	3	min.	16	=	9	+	7	sec												

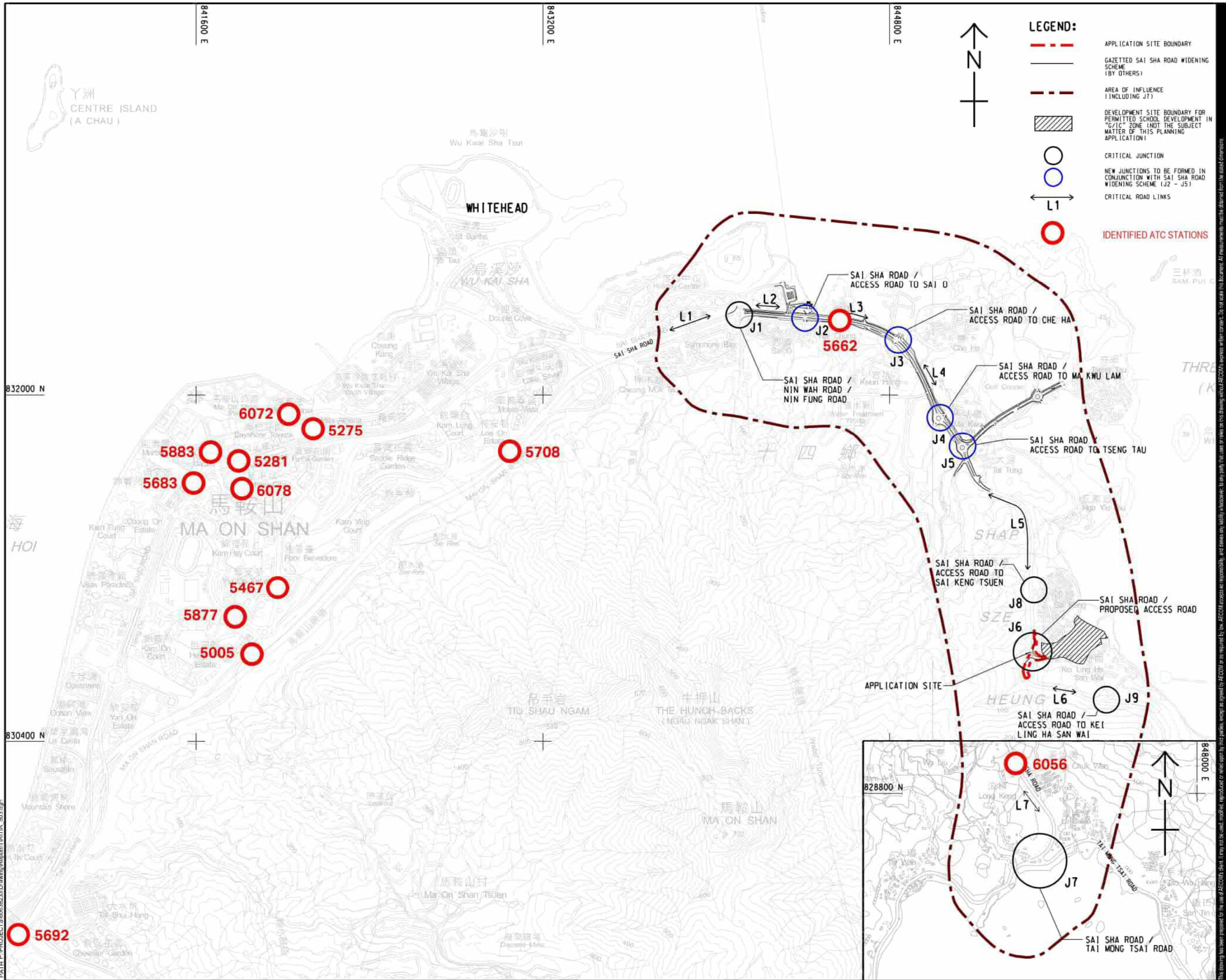
## ***Annex B***

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### ***Location / Information of Selected ATC Stations***



ISO A1 594mm x 841mm  
Approved:  
Checked:  
Designed:  
Project Management Initials:  
Plot File by: 21/01/2022  
PATH P:\PROJECTS\60638233\Drawing\Report\T1A1T1A\_503.dgn



**AECOM**

**PROJECT**  
SECTION 16 PLANNING APPLICATION FOR PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

**CLIENT**  
E.C.

**CONSULTANT**  
AECOM Asia Company Ltd.  
www.aecom.com

**SUB-CONSULTANTS**  
E.C.

**ISSUE/REVISION**  
1.0  

IR	DATE	DESCRIPTION	CHK.
-	SEP. 20	FIRST ISSUE	SHSN

**STATUS**  
1/1

**SCALE**  
1:16000

**DIMENSION UNIT**  
METRES

**KEY PLAN**  
A3 1: 16000

**PROJECT NO.**  
60638233

**CONTRACT NO.**  
030420

**SHEET TITLE**  
IDENTIFIED ATC STATIONS

**SHEET NUMBER**  
ANNEX B

## ***Annex C***

---

### ***Locations of Committed / Planned Developments & Boundary of Ma On Shan Planning Data District***



ISO A1 594mm x 841mm  
Approved:  
Checked:  
Designer:  
Project Management Initials:  
Plot File by: ZHACHO2 6/27/2022  
PATH P:\PROJECTS\06638233\Drawing\Report\TATA 328.dgn

PLANNED/COMMITTED DEVELOPMENT

- 1

CDA(1) - STTL 600
- 2

CDA(3) - STTL 601
- 3

R(C)3 - STTL 611
- 4

R(B)5 - STTL 605
- 5

R(A)8
- 6

R(A)9
- 7

R(A)10
- 8

AREA 100
- 9

AREA 103
- 10

HANG KIN STREET
- 11

ON CHUN STREET
- 12

LOK WO SHA LANE
- 13

DD191
- 14

SAI SHA DEVELOPMENT
- 15

NAI CHUNG SCHOOL DEVELOPMENT
- 16

CHEUNG MUK TAU SITE A & B1  
(RNTPC PAPER NO. 4/20)
- 17

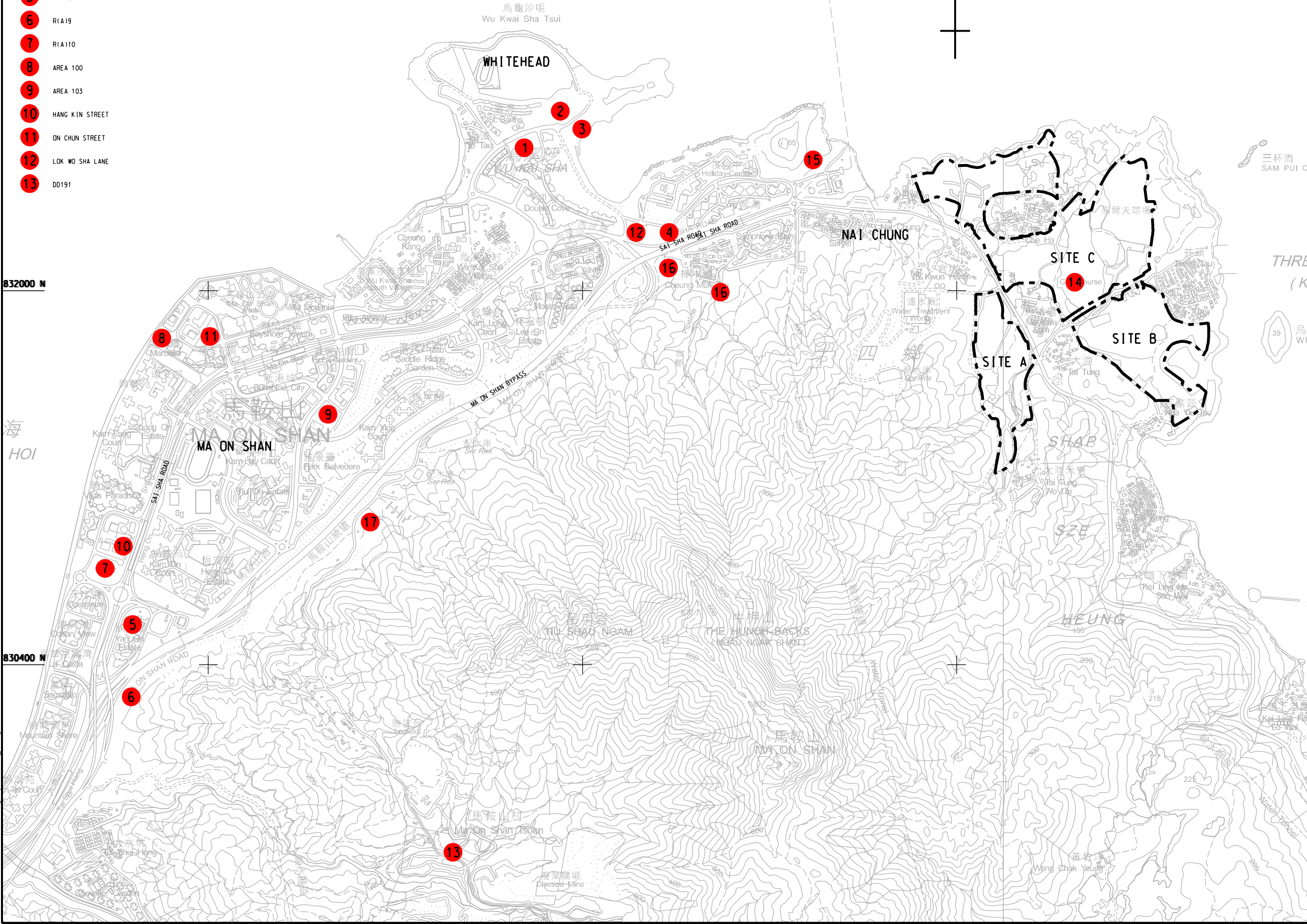
MA ON SHAN TSUEN ROAD SITE D  
(RNTPC PAPER NO. 4/20)

843200 E

844800 E

LEGEND:

SITE BOUNDARY



**PROJECT**  
SECTION 16 PLANNING APPLICATION FOR PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES"

**CLIENT**  
李士

**CONSULTANT**  
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**SUB-CONSULTANTS**  
分州工程師及公署

**ISSUE/REVISION**

NO.	DATE	DESCRIPTION	CHK.
-	SEP. 22	FIRST ISSUE	SHSN

**STATUS**  
有效

**SCALE**  
A3 1: 16000

**DIMENSION UNIT**  
METRES

**KEY PLAN**  
索引圖

**PROJECT NO.**  
項目編號  
60638233

**CONTRACT NO.**  
合約編號  
60638233

**SHEET TITLE**  
圖紙名稱  
OTHER FUTURE DEVELOPMENTS IN MA ON SHAN

**SHEET NUMBER**  
圖紙編號  
60638233/TIA/FIGURE 3.1

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**關乎申請編號 A/MOS/96 的擬議用途/發展的概括發展規範**  
**Broad Development Parameters of the Applied Use/Development**  
**in respect of Application No. A/MOS/96**

**1. STTL 600**

因應於 2014 年 5 月 2 日接獲的進一步資料而修訂的概括發展規範  
 Revised broad development parameters in view of  
 the further information received on 02.05.2014

(a) 申請編號 Application no.	A/MOS/96		
(b) 位置／地址 Location/Address	新界馬鞍山沙田市地段第 502 號及 574 號及毗連政府土地 (近落禾沙) STTL 502, STTL574 and adjoining Government Land, near Lok Wo Sha, Ma On Shan, N.T.		
(c) 地盤面積 Site area	127,400.00 平方米 m <sup>2</sup> (包括政府土地約 Includes Government Land of about 16,159.00 平方米 m <sup>2</sup> )		
(d) 圖則 Plan	第 16 條申請 Section 16 application 馬鞍山分區計劃大綱核准圖編號 S/MOS/18 Approved Ma On Shan Outline Zoning Plan No. S/MOS/18		
	接獲進一步資料 Further information received 馬鞍山分區計劃大綱草圖編號 S/MOS/19 Draft Ma On Shan Outline Zoning Plan No. S/MOS/19		
(e) 地帶 Zoning	第 16 條申請 Section 16 application 「綜合發展區(1)」 "Comprehensive Development Area (1)"		
	接獲進一步資料 Further information received 「綜合發展區(1)」 "Comprehensive Development Area (1)"		
(f) 申請用途／發展 Applied Use/ Development	擬議住宿機構(校外學生宿舍)及略為放寬非住用總樓面面 積限制以作學生宿舍的輔助設施 Proposed Residential Institution (Off-campus Student Hostel) with Minor Relaxation of Non-domestic Gross Floor Area Restriction for Ancillary Facilities Serving the Student Hostel		
(g) 總樓面面積 及／或地積比率 Total floor area and/or plot ratio		平方米 m <sup>2</sup>	地積比率 Plot ratio
	住用 Domestic	356,250.00	約 About 3.08
	非住用 Non-domestic	15,890.00	-
(h) 幢數 No. of block	住用 Domestic	27	
	非住用 Non-domestic	-	
	綜合用途 Composite	-	
(i) 建築物高度／ 層數 Building height/ No. of storeys	住用 Domestic	- 米 m 50.65 - 127.5 米(主水平基準 以上)mPD 12 - 35 層 storey(s)	
	非住用 Non-domestic	- 米 m - 米(主水平基準以上)mPD - 層 storey(s)	
	綜合用途 Composite	- 米 m - 米(主水平基準以上)mPD - 層 storey(s)	

(j) 上蓋面積 Site coverage	-	
(k) 單位數目 No. of units	4,000 住宅單位 Flats 2,168 床位 Bed Spaces 68 留宿員工住宿單位 Overnight Staff Accommodation Unit	
(l) 休憩用地 Open Space	- 私人 Private	- 平方米 m <sup>2</sup>
	- 公眾 Public	- 平方米 m <sup>2</sup>
(m) 停車位及上落客貨車位數目 No. of parking spaces and loading/unloading spaces	- 私家車車位 Private Car Parking Spaces	1,393
	- 上落客貨車位 Loading/Unloading Spaces	35
	- 停車處 Lay-bys	6
	- 電單車車位 Motorcycle Parking Spaces	156
	- 單車車位 Bicycle Parking Spaces	326

\* 有關資料是為方便市民大眾參考而提供。對於所載資料在使用上的問題及文義上的歧異，城市規劃委員會概不負責。若有任何疑問，應查閱申請人提交的文件。

The information is provided for easy reference of the general public. Under no circumstances will the Town Planning Board accept any liabilities for the use of the information nor any inaccuracies or discrepancies of the information provided. In case of doubt, reference should always be made to the submission of the applicant.



# A/MOS/96





申請編號 Application No. : A/MOS/96

### 備註 Remarks

The applicant submitted further information of a revised development scheme mainly with reduction in building height from 14-25 storeys to 12-17 storeys to respond to the public and departmental comments about deviation from the scheme, in terms of building height, presented to and supported by Sha Tin District Council in July 2010.

申請人呈交進一步資料修改發展計劃，主要修改是把建築物高度由 14 至 25 層減至 12 至 17 層，以回應政府部門及公眾的意見對有關發展計劃與 2010 年 7 月向沙田區議會簡介並獲得支持的發展計劃有所不同。

有關資料是為方便市民大眾參考而提供。對於所載資料在使用上的問題及文義上的歧異，城市規劃委員會概不負責。若有任何疑問，應查閱申請人提交的文件。

The information is provided for easy reference of the general public. Under no circumstances will the Town Planning Board accept any liabilities for the use of the information nor any inaccuracies or discrepancies of the information provided. In case of doubt, reference should always be made to the submission of the applicant.

Compliance with Town  
Planning Ordinance

(b) no building or buildings may be erected on the lot or any part thereof or upon any area or areas outside the lot specified in these Conditions, nor may any development or use of the lot or any part thereof, or of any area or areas outside the lot specified in these Conditions take place, which does not in all respects comply with the requirements of the Town Planning Ordinance, any regulations made thereunder and any amending legislation;

Total gross floor area

(c) the total gross floor area of any building or buildings erected or to be erected on the lot shall not be less than 21,600 square metres and shall not exceed 36,000 square metres;

Height

(d) no part of any building or other structure erected or to be erected on the lot together with any addition or fitting (if any) to such building or structure may in the aggregate exceed a height of 58 metres above the Hong Kong Principal Datum, or such other height limit as the Director at his sole discretion may, subject to the payment by the Purchaser of any premium and administrative fee as shall be determined by the Director, approve, provided that:

- (i) machine rooms, air-conditioning units, water tanks, stairhoods and similar roof-top structures may be erected or placed on the roof of the building so as to exceed the above height limit on condition that the design, size and disposition of the said roof-top structures are to the satisfaction of the Director; and
- (ii) the Director at his sole discretion may in calculating the height of a building or structure exclude any structure or floor space referred to in Special Condition No. (37)(b)(i)(II) hereof;

Building separation

- (e) (i) except with the prior written approval of the Director, any building or group of buildings erected or to be erected on the lot shall not have any projected façade length of 60 metres or more; and
- (ii) for the purposes of sub-clause (e)(i) of this Special Condition:
  - (I) the decision of the Director as to what constitutes a building shall be final and binding on the Purchaser;
  - (II) any two or more buildings shall be treated as a group of buildings if the shortest horizontal distance between any two buildings erected or to be erected on the lot is less than 15 metres;

## 2. STTL 601

# 泓碧

< 返回物業發展



## 泓碧

由碧桂園集團、宏安地產及中國建築國際集團攜手合作，精心策劃的馬鞍山低密度尊尚臨海豪宅項目，正式命名為「Altissimo 泓碧」。項目先天條件優越，傲據馬鞍山白石半島 (Whitehead Peninsula) 之上，盡享遼闊無邊的吐露港及海星灣動人景觀，同時背靠馬鞍山郊野公園，遠眺無際連綿翠綠山巒，全方位環抱盎然綠意，尊貴氣派渾然天成。

「Altissimo 泓碧」為低密度住宅發展項目，合共提供547伙，為實踐集團理念，發展項目提供多元化戶型，切合不同家庭需要。同時，項目集多項優勢於一身，前臨自然保育區之生態寶庫—海星灣，背靠馬鞍山郊野公園，遠眺八仙嶺翠樹景致，白石高爾夫球練習場亦是咫尺之遙，天然優勢不言而喻，再配以頂級建築用料及精心設計，勢必成為區內全新尊貴住宅項目之新指標。

瀏覽網頁

### 街道名稱及門牌號數

耀沙路11號 (臨時門牌)

### 區域

馬鞍山

區域：馬鞍山 | 街道名稱及門牌號數：耀沙路11號 (註：此臨時門牌號數有待發展項目建成時確認。) | 賣方為施行《一手住宅物業銷售條例》第二部而就本發展項目指定的互聯網網站的網址\*：www.altissimo.hk

#\*載有售樓說明書、價單、銷售安排及成交記錄冊電子版本的互聯網網址。

本廣告/宣傳資料內載列的相片、圖像、繪圖或素描顯示純屬畫家對有關發展項目之想像。有關相片、圖像、繪圖或素描並非按照比例繪畫及/或可能經過電腦修飾處理。準買家如欲了解發展項目的詳情，請參閱售樓說明書#。賣方亦建議準買家到有關發展地盤作實地考察，以對該發展地盤、其周邊地區環境及附近的公共設施有較佳了解。

賣方：銘尚有限公司 | 賣方之控股公司：Ease Mind Investments Limited及順意國際有限公司 | 發展項目的認可人士：黎紹堅先生 | 發展項目的認可人士以其專業身分擔任經營人、董事或雇員的法團：呂鄧黎建築師有限公司 | 發展項目的承建商：中國海外房屋工程有限公司 | 就發展項目中的住宅物業的出售而代表擁有人行事的律師事務所：的近律師行及姚黎李律師行 | 已為發展項目的建造提供貸款或已承諾為該項建造提供融資的認可機構：香港上海滙豐銀行有限公司、渣打銀行(香港)有限公司、東亞銀行有限公司、大華銀行有限公司及 DBS Bank Ltd., Hong Kong Branch | 已為發展項目的建造提供貸款的任何其他人：大豐銀行有限公司 | 盡賣方所知的發展項目的預計關鍵日期：2021年1月29日 (「關鍵日期」指批地

Total gross floor  
area

(c) the total gross floor area of any building or buildings erected or to be erected on the lot shall not be less than 6,653 square metres and shall not exceed 11,088 square metres;

Height

(d) no part of any building or other structure erected or to be erected on the lot together with any addition or fitting (if any) to such building or structure may in the aggregate exceed a height of 40 metres above the Hong Kong Principal Datum, or such other height limit as the Director at his sole discretion may, subject to the payment by the Purchaser of any premium and administrative fee as shall be determined by the Director, approve, provided that:

- (i) machine rooms, air-conditioning units, water tanks, stairhoods and similar roof-top structures may be erected or placed on the roof of the building so as to exceed the above height limit on condition that the design, size and disposition of the said roof-top structures are to the satisfaction of the Director; and
- (ii) the Director at his sole discretion may in calculating the height of a building or structure exclude any structure or floor space referred to in Special Condition No. (40)(b)(i)(II) hereof;

Building separation

- (e) (i) except with the prior written approval of the Director, any building or group of buildings erected or to be erected on the lot shall not have any projected façade length of 60 metres or more; and
- (ii) for the purposes of sub-clause (e)(i) of this Special Condition:
  - (I) the decision of the Director as to what constitutes a building shall be final and binding on the Purchaser;
  - (II) any two or more buildings shall be treated as a group of buildings if the shortest horizontal distance between any two buildings erected or to be erected on the lot is less than 15 metres;
  - (III) the decision of the Director as to what constitutes the projected façade length of a building or a group of buildings erected or to be erected on the lot shall be final and binding on the Purchaser; and
  - (IV) in calculating the projected façade length referred to in sub-clause (e)(i) of this Special Condition, gap between any two buildings shall be taken into account and the Director's decision as to the calculation shall be final and binding on the Purchaser; and

Design and

- (f) the design and disposition of any building or buildings erected or



Tenders awarded for commercial site and residential site  
\*\*\*\*\*

The Lands Department today (May 13) announced that the tenders for a commercial site and a residential site have been awarded on 50-year land grants at a total premium of \$4,507,768,888.

The commercial site, New Kowloon Inland Lot No. 6313 at the junction of Cheung Yip Street, Sheung Yee Road and Wai Yip Street, Kowloon Bay, Kowloon, was awarded to Great Maker Limited at \$3,038.88 million. The residential site, Sha Tin Town Lot No. 605 at Lok Wo Sha Lane, Ma On Shan, Sha Tin, New Territories, was awarded to Jumbo Vision Holdings Limited (parent company: CITIC Pacific Limited) at \$1,468,888,888.

"Authority from the Central Tender Board was given to the Lands Department to award the two sites to the highest tenderers," a Lands Department spokesman said.

The tenderers, other than the successful tenderer, in respect of each lot in alphabetical order, with the name of the parent company where provided by the tenderer in brackets, were:

- (a) New Kowloon Inland Lot No. 6313
- (1) Best King Limited (Chinese Estates Holdings Limited)
  - (2) Bright Vision International Limited (CITIC Pacific Limited)
  - (3) Conford Investments Limited (CK Hutchison Holdings Limited)
  - (4) Conventional Wisdom Limited (Sunny Autumn Limited)
  - (5) Ever Merits Investments Limited (Wheelock Properties Limited)
  - (6) Juliyam Limited (Henderson Land Development Company Limited)
  - (7) Luck Huge Limited
  - (8) Newly Development Limited (New World Development Company Limited)
  - (9) Silver Grace Company Limited (K. Wah Properties (Holdings) Limited)
  - (10) Sunrise Treasure Limited (Great Eagle Holdings Limited)
  - (11) Super Great Limited (Sun Hung Kai Properties Limited)
  - (12) Time Fort Limited (K&K Property Holdings Limited)
- (b) Sha Tin Town Lot No. 605
- (1) Adventure Success Limited (Emperor International Holdings Limited and Shimao Property Holdings Limited)
  - (2) Asia Bright Development Limited (Sino Land Company Limited)
  - (3) Century Link Investments Limited (Wang On Group Limited)
  - (4) Ease Success Limited (Great Eagle Holdings Limited)
  - (5) Fortune Choice Development Limited (Henderson Land Development Company Limited)
  - (6) Gainwick Limited (HKR International Limited)
  - (7) Golden Centurion Limited (Wheelock Properties Limited)
  - (8) Hanforth Limited
  - (9) K Wise Limited (K&K Property Holdings Limited)
  - (10) Kingright International Limited (Lai Sun Garment (International) Limited and Pine Billion Enterprises Limited)
  - (11) Kong Smart Investment Limited (Sun Hung Kai Properties Limited)
  - (12) Manful Global Development Limited (K. Wah International Holdings Limited)
  - (13) Master Green Limited (Soundwill Holdings Limited)
  - (14) Rich View Investments Limited (CK Hutchison Holdings Limited)
  - (15) Sanon Limited (Far East Consortium International Limited)
  - (16) Smart Base Holdings Limited (Paliburg Holdings Limited and Regal Hotels International Holdings Limited)
  - (17) Super Record Limited (New World Development Company Limited)
  - (18) Victory Asset Inc Limited (Angel Stars International Limited and Wealthy Sino Limited)


New Kowloon Inland Lot No. 6313 has a site area of about 3,795 square metres and is designated for non-industrial

(excluding residential, hotel, godown, petrol filling station and residential care home) purposes. The minimum gross floor area and the maximum gross floor area are 27,324 sq m and 45,540 sq m respectively.

Sha Tin Town Lot No. 605 has a site area of about 5,830 sq m and is designated for private residential purposes. The minimum gross floor area and the maximum gross floor area are 12,593 sq m and 20,988 sq m respectively.

Ends/Wednesday, May 13, 2015  
Issued at HKT 17:07

NNNN

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主頁 即時新聞 今日信報 港股360 地產投資 財富管理 信博 專題 信報視頻

地產投資 地產即時 新盤情報 二手市場 工商舖市道 專家評論 睇樓速遞 屋苑樓價 物業報告 置業工具

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2018年10月18日 新盤情報

## 峻源148伙部署登場

中信股份(00267)旗下中信泰富發展的馬鞍山落禾沙項目，今天正式命名為峻源。中信泰富物業代理董事關潔瑩表示，峻意指項目翠巒環抱，可享翠綠茂林之景，源則意味項目同時享寬闊海景，兩者併合彰顯項目前臨壯闊海灣，後靠崇山峻嶺之自然環境。

[放大圖片](#)

關潔瑩補充，項目由3座住宅大樓組

成，提供148伙單位，實用面積879至1656方呎，間隔包括3房1套及4房雙套，另有8伙超過2000方呎的特色單位切合不同家庭需要。

標籤：峻源

下一篇：朗城滙加推144伙 折實512萬起

上一篇：弦海首批75伙 折實最平288萬

### 編輯推介



剩餘時間: 0天11小時

港股炒救市漲352 夜期續高水

今日信報



剩餘時間: 1天11小時

歐洲港人詳述居住地疫情

林艷虹 | 今日信報



剩餘時間: 1天11小時

股市如過山車 短線炒波幅有路捉

陸文 | 今日信報



【信報月刊】「低醣」莫走極端 飯太少短命...



剩餘時間: 0天11小時

愈理性死得愈慘 畢老林 | 今日信報



十大零食損兒童健康

李思齊教授 | 信健康



4港青全球搶材料本土產口罩 盼惠弱勢社群

StartupBeat



印度消費升級 借鑑中國尋機會

譚家駿 | 財富管理

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OCEAN MARINI周六208伙首輪銷售

新盤情報 | 昨日 19:09

OCEAN MARINI加推60伙 折實661萬起

新盤情報 | 昨日 16:17

恆大·睿峰增優惠助去貨

新盤情報 | 昨日 17:14

迎海兩房海景減價142萬承接

二手市場 | 昨日 17:59

杏花邨低層三房劈價238萬沽

二手市場 | 昨日 15:43

傲雲峰兩房劈價210萬成交

二手市場 | 昨日 19:00

2月私樓呎租連跌7個月

| 昨日 15:59

信置旗下兩盤今沽3伙

新盤情報 | 昨日 19:06

日出康城三房東南降價80萬沽

二手市場 | 昨日 15:27

投資者489.5萬購嘉湖山莊兩房

二手市場 | 昨日 19:34

欣安邨第二期公共房屋發展項目及  
馬鞍山路(南段及北段)居者有其屋發展項目方案

1. 目的

- 1.1 本文件旨在向沙田區議會發展及房屋事務委員會介紹欣安邨第二期公共房屋(公屋)發展項目及馬鞍山路(南段及北段)居者有其屋(居屋)發展項目的方案。歡迎各委員就有關項目提出意見。

2. 背景

- 2.1 根據《馬鞍山分區計劃大綱核准圖編號 S/MOS/18》，公屋、居屋地盤現分別規劃作「道路」、「政府、機構或社區」及「綠化地帶」用地。為配合公營房屋發展項目，規劃署擬於稍後建議把用地更改規劃為「住宅(甲類)」地帶。請參閱附錄一的位置圖。

欣安邨第二期公屋發展項目

- 2.2 公屋地盤位處馬鞍山 86B 區恆泰路，毗鄰公共房屋欣安邨。擬議發展包括恆泰路改道，地盤總面積約為 3.26 公頃(包括現時欣安邨約 2.22 公頃、第二期發展用地約 0.85 公頃及毗鄰休憩區用地約 0.19 公頃)。現時撥作渠務署及路政署作工務工程臨時工地、地盤辦公室及存放場。

馬鞍山路(南段及北段)居屋發展項目

- 2.3 居屋地盤位處馬鞍山路及西沙路的東面，地盤面積約為 1.85 公頃。現時大部分的地盤範圍以短期租約形式出租作單車公園、社區農圃、臨時射箭場及撥作路政署作沙中線有關的工務工程臨時工地。

3. 發展項目及初步建議

- 3.1 香港房屋委員會(下稱「房委會」)現提交有關發展項目的初步規劃大綱供區議會討論，請參閱附錄二(甲)和附錄三(甲)。
- 3.2 本發展項目設計概念如下：
- 建議把分隔現有欣安邨一期及二期的部份恆泰路路段改道，使新公屋發展項目與現有欣安邨有更佳的融合。
  - 優化現時欣安邨小社區，增加零售和社區配套設施，進一步發展成為成熟小社區，確保有關發展項目在提供公營房

屋單位的同時，亦能配合社區的需要。

- 興建一座行人天橋連接居屋發展項目與設於欣安邨二期發展項目的零售和社區配套設施，改善行人流。
  - 進行空氣流通評估及微氣候研究，提升樓宇和整體綠化設計、景觀及空氣流通。
  - 住宅樓宇的高度佈局亦會參照山脊線，與周邊環境協調。
- 項目的概念設計圖，請參閱附錄二(乙)和附錄三(乙)。

3.3 房委會已就擬建的公屋及居屋發展項目進行相關的技術評估，以確保項目符合交通、環境等方面的要求。

3.4 房委會亦已與運輸署聯繫，為現有道路設施、擬議的恆泰路改道及新建的馬鞍山路支路作交通評估，初步評估顯示擬建的公屋及居屋發展項目將不會對道路網絡造成不良的影響。同時，運輸署亦會積極配合發展項目，會適時為擬建的公屋及居屋發展項目所帶來對公共交通服務的新增需求制定具體公共交通計劃。

#### 4. 預計項目發展時間表

4.1 欣安邨第二期公屋預計項目發展時間表如下：

##### 零售設施

開工日期	約 2016 年
完工日期	約 2020 年

##### 住宅項目

開工日期	約 2019 年
完工日期	約 2024 年

4.2 馬鞍山路(南段及北段)居屋預計項目發展時間表如下：

開工日期	約 2016 年
完工日期	約 2020 年

#### 5. 徵詢意見

5.1 歡迎各委員就上述發展項目提出寶貴意見。

房屋署  
2013 年 8 月

## 附錄

附錄一	欣安邨第二期公屋及馬鞍山路(南段及北段)居屋發展項目位置圖
附錄二(甲)	欣安邨第二期公屋發展項目規劃大綱
附錄二(乙)	欣安邨第二期公屋發展項目概念設計圖
附錄三(甲)	馬鞍山路(南段及北段)居屋發展項目規劃大綱
附錄三(乙)	馬鞍山路(南段及北段)居屋發展項目概念設計圖

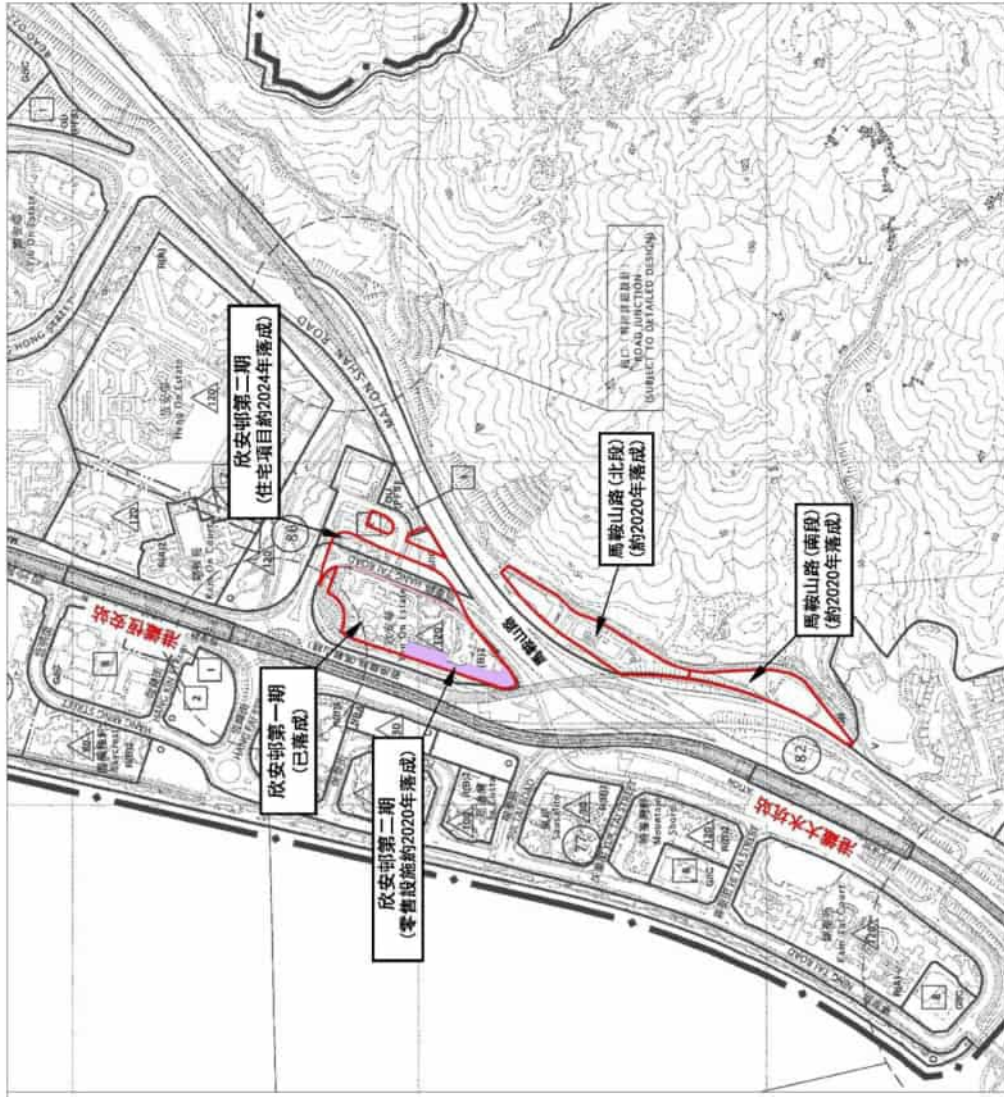


### 欣安邨第二期

- 現時規劃用途：  
「道路」及「政府、機構或社區」
- 建議規劃用途：  
「住宅(甲類)」
- 地盤面積約3.26公頃  
(包括現時欣安邨約2.22公頃、第二期發展用地約0.85公頃及毗鄰休憩區用地約0.19公頃)

### 馬鞍山路(南段及北段)

- 現時規劃用途：  
「綠化地帶」
- 建議規劃用途：  
「住宅(甲類)」
- 地盤面積約1.85公頃



## 欣安邨第二期(公屋)及馬鞍山路(南段及北段) 居屋發展項目

(備註: 只供參考, 最終設計會因應需要而更改。)



房屋署

位置圖

PROJECT NO.  
MOSR/DC/SITE/NILO-01

SCALE 1:10000 (A4)

SOURCE

日期: 2013 年 9 月 5 日



欣安邨第二期公屋發展項目  
規劃大綱

1. 擬建的公屋發展項目及主要發展參數。詳情如下：

地盤面積	約 3.26 公頃 (包括現時欣安邨約 2.22 公頃、 第二期發展用地約 0.85 公頃及 毗鄰休憩區用地約 0.19 公頃)
欣安邨整體發展地積比率	住用約 6 倍 非住用約 0.3 倍
第二期發展的主要發展參數	
樓宇數目	3
樓宇高度	約 42 至 44 層 不高於主水平基準上 135 至 140 米
單位數目	約 1,600 個
預計人口	約 4,900 人
地盤綠化率	約 20-30%
零售設施	約 4,500 平方米 (建築樓面面積) (有 待有關零售設施研究)
康樂設施	休憩用地、兒童遊樂場及球場等
社會福利設施	<ul style="list-style-type: none"><li>• 特殊幼兒中心</li><li>• 早期教育及訓練中心</li><li>• 弱智人士輔助宿舍</li></ul> (有待與社會福利署進一步商討)
其他設施	<ul style="list-style-type: none"><li>• 幼稚園</li><li>• 私家車、電單車、輕型貨車泊車 位及單車停放處</li><li>• 屋苑管理設施等</li></ul>

2. 有關此公屋發展項目的概念設計圖，請參閱附錄二(乙)。

3. 公屋地盤現位於恆泰路。為配合發展，現有恆泰路將進行改道工程，使公屋發展項目與現有欣安邨有更佳的融合。



概念設計圖

日期: 2013 年 9 月 5 日

## 欣安邨第二期(公屋)發展項目

(備註: 只供參考, 最終設計會因應需要而更改。)

**關 乎 申 請 編 號 A/MOS/122 的 擬 議 用 途 / 發 展 的 概 括 發 展 規 範**  
**Broad Development Parameters of the Applied Use/Development**  
**Aspect of Application No. A/MOS/122**

**6. AREA 81A DEVELOPMENT - R(A)9**

(a) 申請編號 Application no.	A/MOS/122		
(b) 位置／地址 Location/Address	馬鞍山第 81A 區馬鞍山路的政府土地 Government Land at Ma On Shan Road, Ma On Shan Area 81A		
(c) 地盤面積 Site area	約 About 19,000 平方米 m <sup>2</sup> (包括政府土地約 Includes Government Land of about 19,000 平方米 m <sup>2</sup> )		
(d) 圖則 Plan	馬鞍山分區計劃大綱核准圖編號 S/MOS/22 Approved Ma On Shan Outline Zoning Plan No. S/MOS/22		
(e) 地帶 Zoning	「住宅(甲類)9」、「綠化地帶」及「道路」 "Residential (Group A) 9", "Green Belt" and "Road"		
(f) 申請用途／發展 Applied Use/ Development	擬議資助出售房屋發展 Proposed Subsidized Sale Flats Development		
(g) 總樓面面積 及／或地積比率 Total floor area and/or plot ratio		平方米 m <sup>2</sup>	地積比率 Plot ratio
	住用 Domestic	不多於 Not more than 105,070	不多於 Not more than 5.53
	非住用 Non-domestic	不多於 Not more than 5,700	不多於 Not more than 0.3
(h) 幢數 No. of block	住用 Domestic	5	
	非住用 Non-domestic	2	
	綜合用途 Composite	-	
(i) 建築物高度／ 層數 Building height/ No. of storeys	住用 Domestic	- 米 m 不超過 Not Exceeding 140 米 (主水平基準以上) mPD 41 層 storey(s)	
	非住用 Non-domestic	- 米 m 不超過 Not Exceeding 31 米 (主水平基準以上) mPD 不超過 Not Exceeding 3 層 storey(s) 包括 1 層 敞開式停車間 Carport including	
	綜合用途 Composite	- 米 m - 米(主水平基準以上)mPD - 層 storey(s)	
(j) 上蓋面積 Site coverage	<u>15 米以下的非住用部分 Non-domestic under 15m</u> 不多於 Not more than 100% <u>15 米以上的非住用部分 Non-domestic above 15m</u> 不多於 Not more than 65% <u>住用部分 Domestic</u> 不多於 Not more than 40%		
(k) 單位數目 No. of units	2,079 單位 Units		

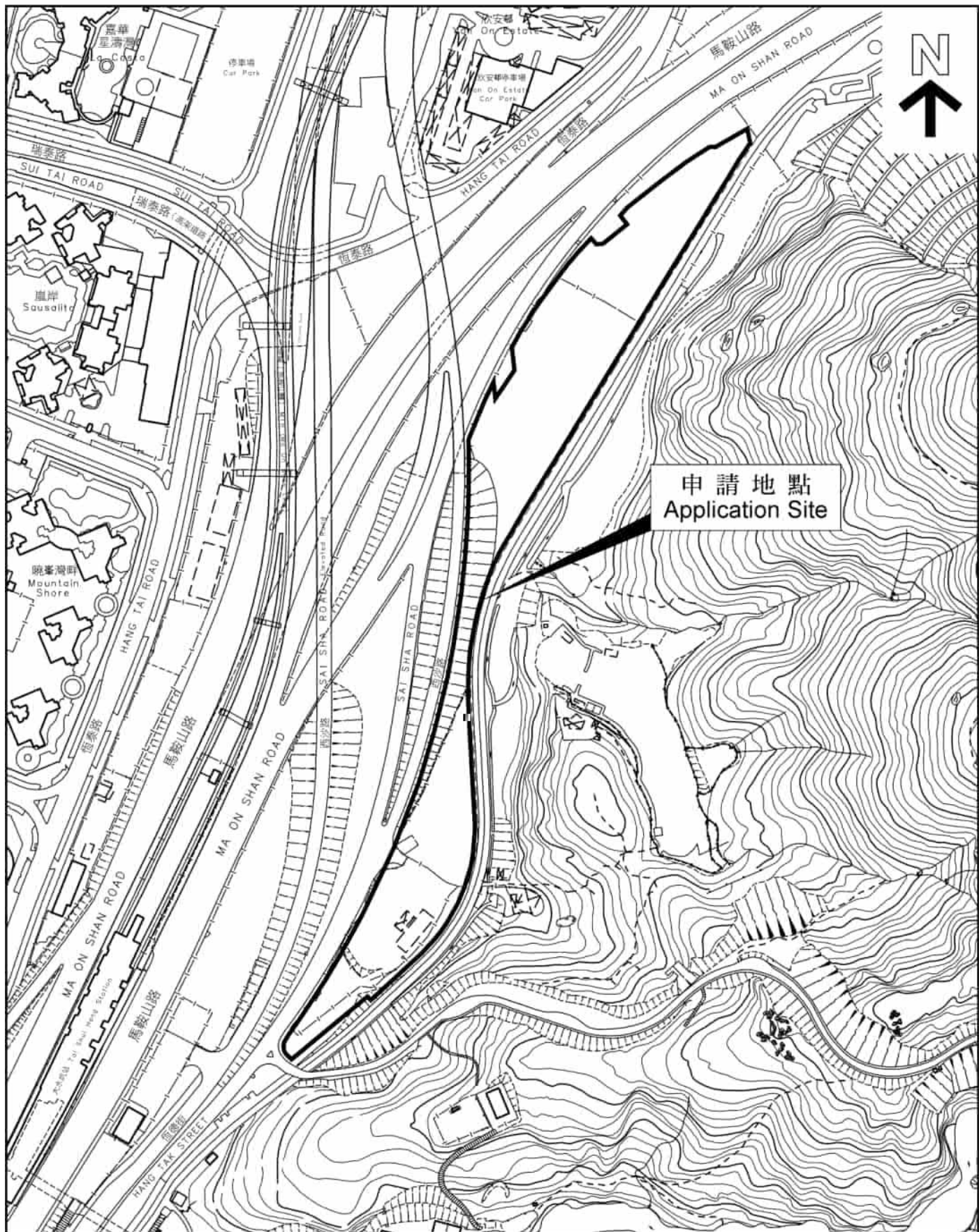
(l) 休憩用地 Open Space	- 私人 Private	不少於 Not less than 6,403 平方米 m <sup>2</sup>	
	- 公眾 Public	- 平方米 m <sup>2</sup>	
(m) 停車位及上落客貨車位數目 No. of parking spaces and loading/unloading spaces	- 私家車車位 Private Car Parking Spaces		116
	- 電單車車位 Motorcycle Parking Spaces		21
	- 單車車位 Bicycle Parking Spaces		174
	- 上落客貨車位 Loading/Unloading Spaces		6

\* 有關資料是為方便市民大眾參考而提供。對於所載資料在使用上的問題及文義上的歧異，城市規劃委員會概不負責。若有任何疑問，應查閱申請人提交的文件。

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# A/MOS/122





## 行政摘要

（聲明：本中文譯本僅供參考。若與英文原文有歧義，一概以英文原文為準。）

是項規劃申請是由香港房屋委員會（下稱房委會）向城市規劃委員會（下稱城規會）提出，旨在根據《城市規劃條例》第 16 條，向城規會申請規劃許可，放寬位於馬鞍山路資助出售房屋發展計劃（下稱申請地點）的住宅地積比率限制。

城規會曾批准就此發展地盤包括四小片土地作住宅用途的規劃許可（編號：A/MOS/120）。申請地點主要座落於馬鞍山分區計劃大綱核准圖編號 S/MOS/22（下稱分區計劃大綱圖）上的「住宅（甲類）9」地帶上，三小片現時顯示為「道路」及一小片「綠化地帶」的土地亦納入申請範圍內。擬議發展項目的住宅地積比率限制為最高 5.5 倍，非住宅地積比率為 0.3 倍，及最高建築物高度限制為主水平基準上 140 米。

有見公營房屋用地短缺，政府一直採取多管齊下的措施以增加公營房屋土地供應，包括適當地優化個別地盤的發展潛力。為配合 2018 年 12 月政府公布的“提升公營房屋用地的發展密度”政策，房委會進行了一項檢討，以確立增加項目單位數量的條件。由於房屋發展項目已進入打樁後期階段，重大修改規劃和設計將導致項目計劃大幅延誤；因此，房委會建議略為放寬申請地點的住宅地積比率限制，由 5.5 倍增加至 5.53 倍，以充分運用現時尚餘下的地基設計負載能力，為項目提供額外 10 個單位。這個建議令資助出售房屋項目可提供的單位，由 2 069 個上調至 2 079 個，設計人口由容納 6 373 人上調至 6 403 人。這個建議可在不影响項目計劃的前提下，更有效地運用珍貴的土地資源。

擬議發展符合「住宅（甲類）」地帶的規劃意向，並與周邊土地用途配合。擬議增加的房屋單位並不會對附近的交通、環境、空氣流通、量化風險、排水和排污及視覺環境方面構成不良影響。

申請人基於以上所列論據，懇請城市規劃委員會批准是次規劃申請，於擬議發展略為放寬住宅地積比率限制。

## Executive Summary

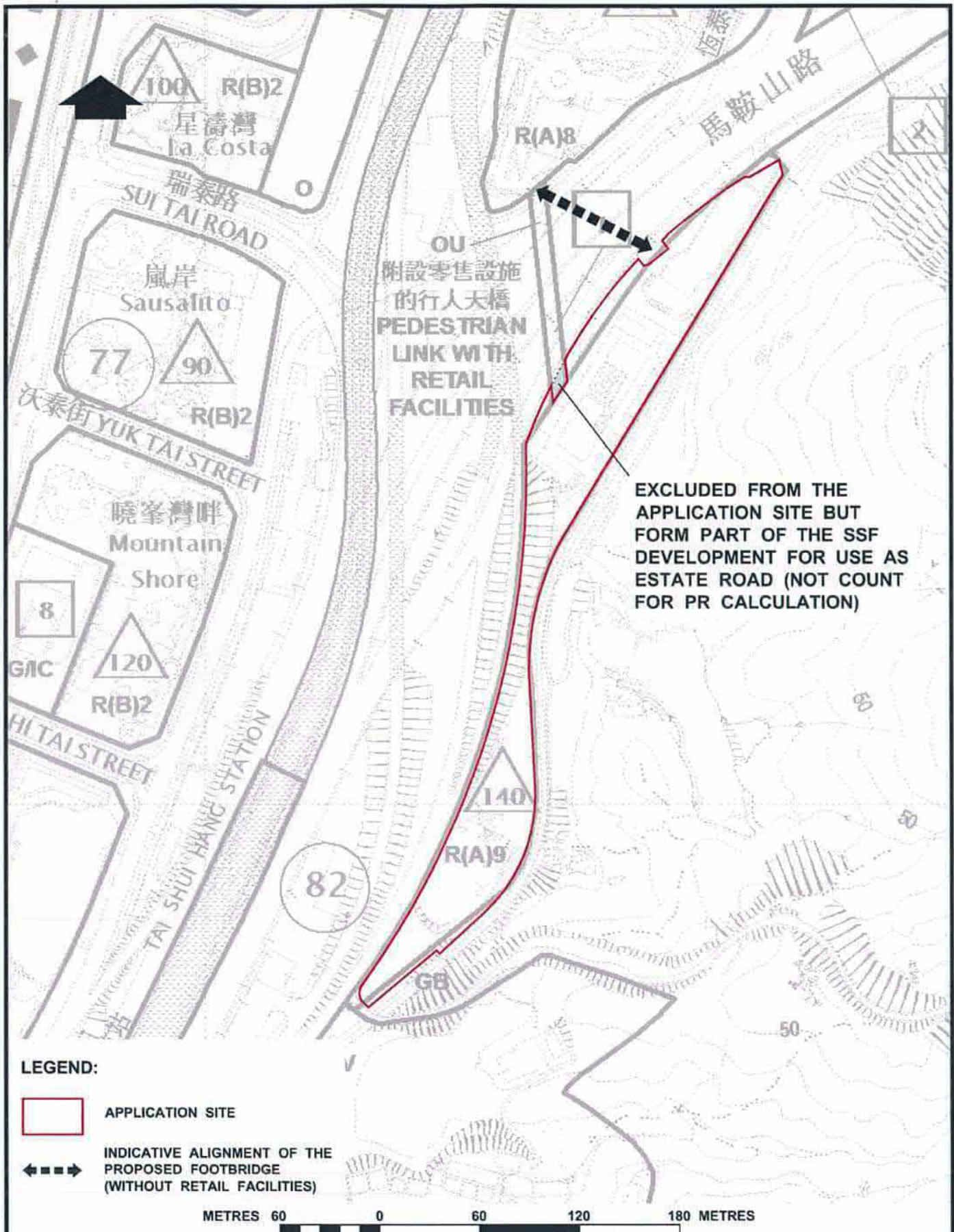
The Hong Kong Housing Authority (HKHA) submits this application to seek permission from the Town Planning Board (TPB) for minor relaxation of domestic plot ratio under section 16 of the Town Planning Ordinance for the proposed Subsidised Sale Flats (SSF) development at Ma On Shan Road.

A s16 planning approval (no. A/MOS/120) was previously obtained from the TPB on inclusion of four small strips of land as part of the development site. The application site boundary of the proposed development mainly falls within "Residential (Group A)9" ("R(A)9") zone with three areas shown as "Road" and a strip of land zoned "Green Belt" ("GB") on the Approved Ma On Shan Outline Zoning Plan No. S/MOS/22. The proposed development is subject to a maximum domestic PR of 5.5, a maximum non-domestic PR of 0.3, and a maximum building height ("BH") of 140mPD.

In view of the shortage of land for public housing development, the Government has been adopting a multi-pronged approach in increasing public housing land supply, including optimization of development potential of sites where appropriate. In line with Government's initiative announced in Dec 2018 on "Enhanced Development Intensity of Public Housing Sites", a review was conducted to ascertain if there is scope to increase the flat production of the project. Bearing in mind that the project is at advanced piling stage and any significant change to planning parameters and detail design of the project will result in a significant delay in project programme, the HKHA proposes minor relaxation of domestic plot ratio restriction for the Application Site from 5.5 to 5.53 to fully utilize the existing capacity of the foundation design for an additional of 10 flats. The resulting flat production and design population will be adjusted from 2 069 to 2 079 and 6 373 to 6 403 respectively. The proposal will better utilize the scarce land resources without affecting the project programme.

The proposed development is in line with the planning intention of the "R(A)" zone and is compatible with surrounding uses. The traffic, environmental, air ventilation, quantitative risk, drainage and sewerage and visual impacts arising from the minor increase in flat production to the surrounding areas would be insignificant.

In view of the above, the Town Planning Board is sincerely requested to give favourable consideration to the proposed minor relaxation of domestic plot ratio restriction for the proposed development under this application.



# **APPLICATION SITE** **MA ON SHAN ROAD SSF DEVELOPMENT**

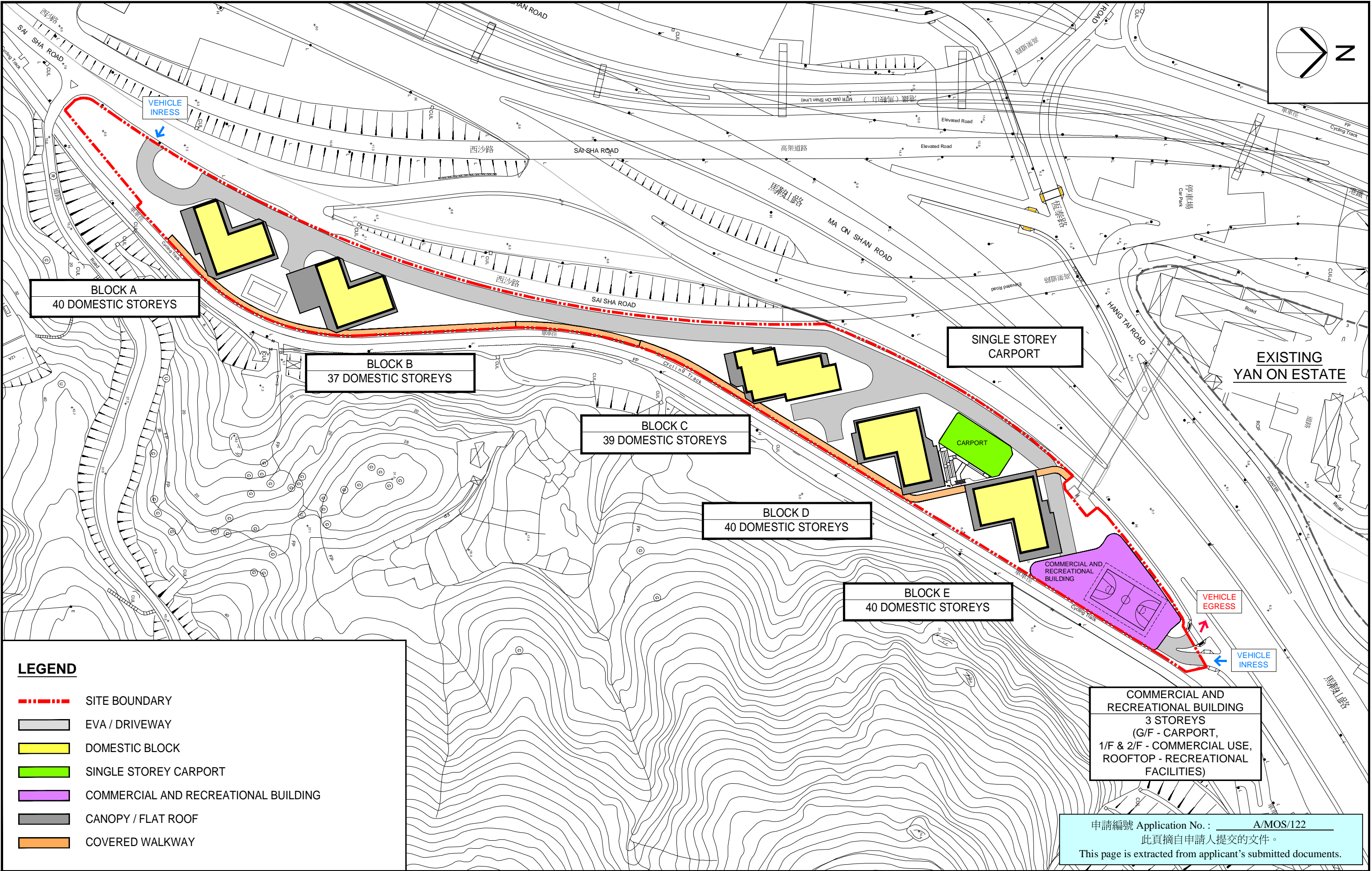


**HONG KONG  
HOUSING AUTHORITY**

**FIGURE 1**

**DATE:**  
**APR 2019**





**LEGEND**

- Red dashed line: SITE BOUNDARY
- Grey line: EVA / DRIVEWAY
- Yellow fill: DOMESTIC BLOCK
- Green fill: SINGLE STOREY CARPORT
- Purple fill: COMMERCIAL AND RECREATIONAL BUILDING
- Dark grey fill: CANOPY / FLAT ROOF
- Orange line: COVERED WALKWAY

COMMERCIAL AND RECREATIONAL BUILDING  
3 STOREYS  
(G/F - CARPORT,  
1/F & 2/F - COMMERCIAL USE,  
ROOFTOP - RECREATIONAL  
FACILITIES)

申請編號 Application No. : A/MOS/122  
此頁摘自申請人提交的文件。  
This page is extracted from applicant's submitted documents.

PROJECT TITLE  
**SUBSIDISED SALE FLATS  
DEVELOPMENT AT MA ON SHAN ROAD**

DRAWING TITLE  
**INDICATIVE MASTER LAYOUT PLAN  
OF PROPOSED SCHEME**

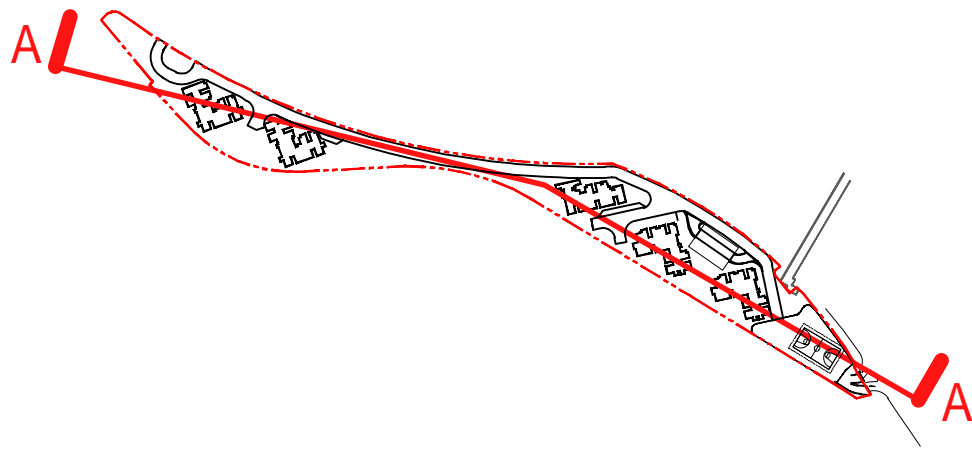
SCALE 1:1500 (A3)



房屋署  
HOUSING DEPARTMENT

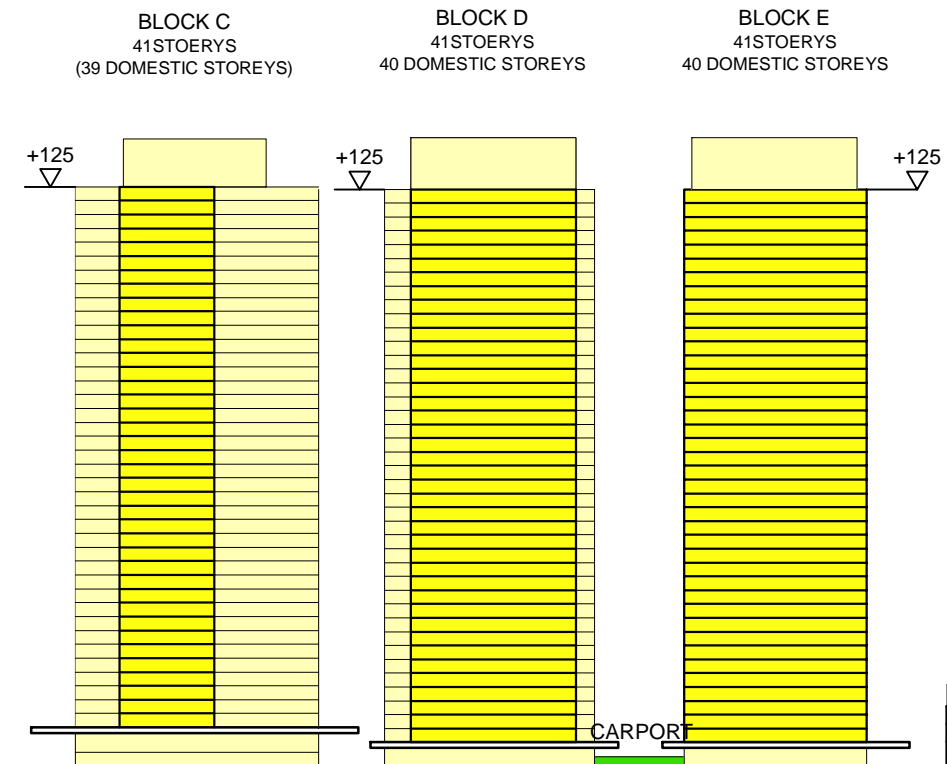
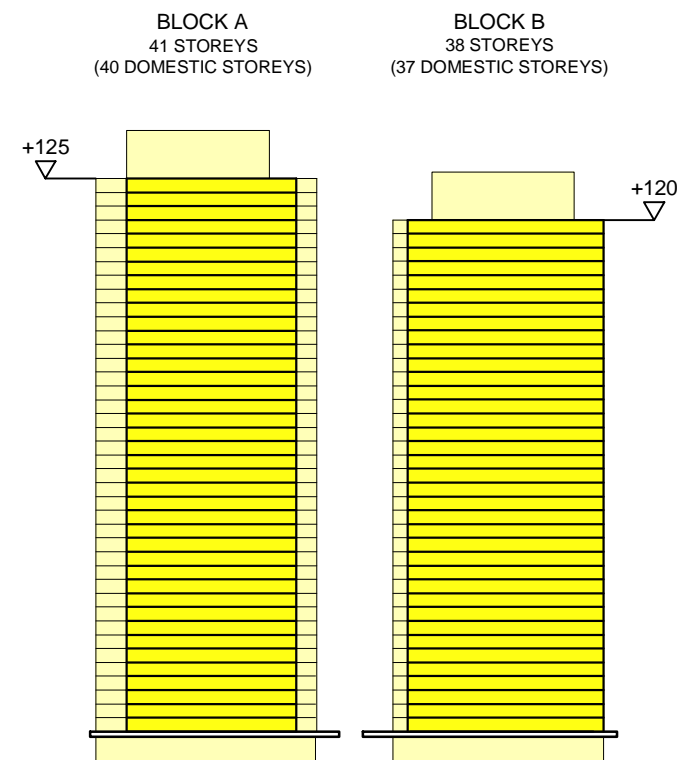
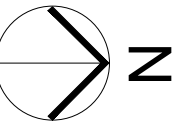
Appendix 1

DATE  
MAR 2019



KEY PLAN

SCALE 1:5000



**LEGEND**

- SITE BOUNDARY
- RESIDENTIAL
- CARPORT
- COMMERCIAL AND RECREATIONAL BUILDING

申請編號 Application No. : \_\_\_\_\_ A/MOS/122  
此頁摘自申請人提交的文件。  
This page is extracted from applicant's submitted documents.

PROJECT TITLE  
**SUBSIDISED SALE FLATS  
DEVELOPMENT AT MA ON SHAN ROAD**

DRAWING TITLE  
**SECTION A-A**

SCALE 1:1500 (A3)



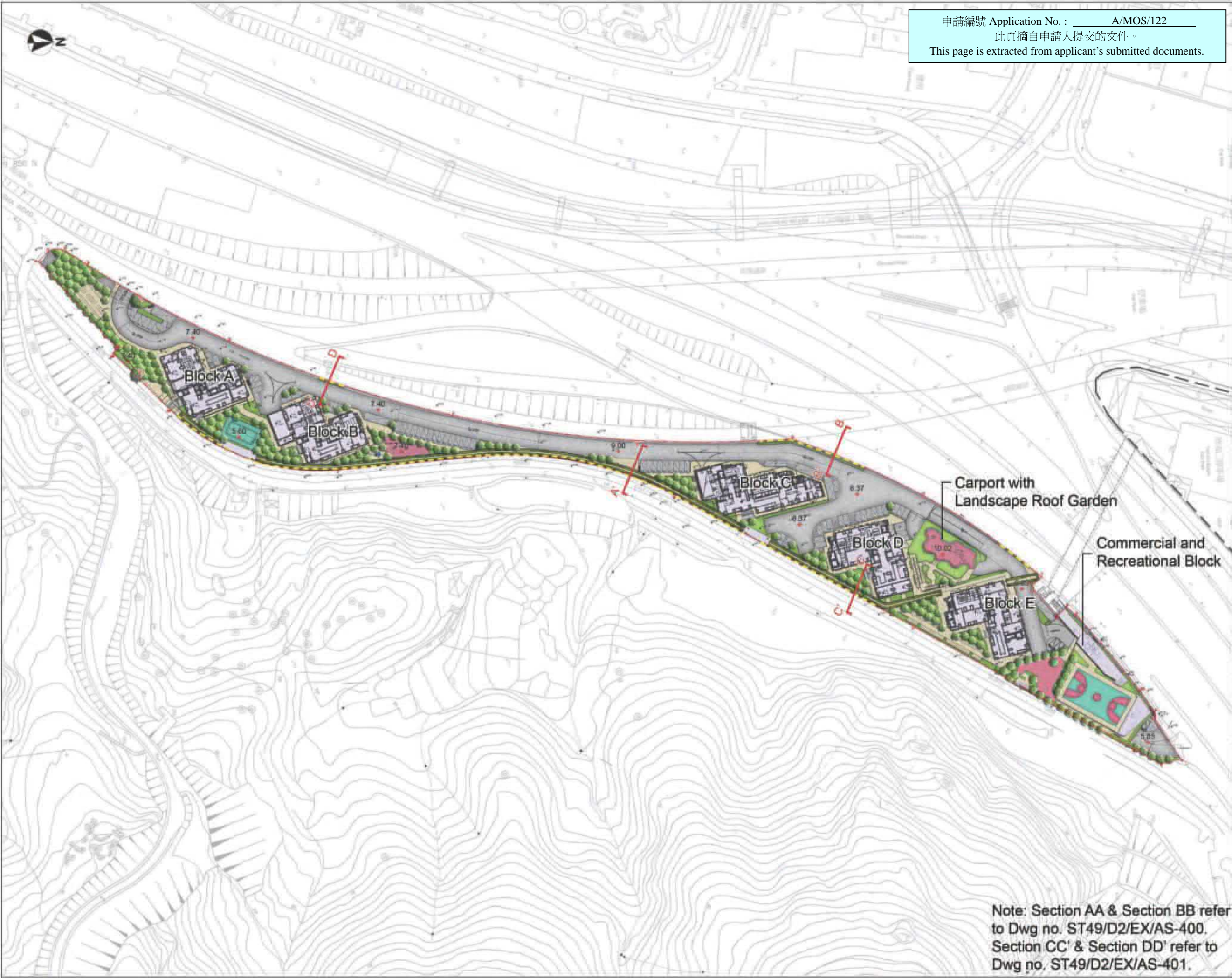
房屋署  
HOUSING DEPARTMENT

Appendix 2

DATE  
MAR 2019



申請編號 Application No. : A/MOS/122  
此頁摘自申請人提交的文件。  
This page is extracted from applicant's submitted documents.



LEGEND	
	DEVELOPMENT BOUNDARY
	SSF BUILDING BLOCKS
	FEATURE TREE
	COMPENSATORY TREES PLANTING
	IN-ACCESSIBLE GREEN ROOF ON COVERED WALKWAY
	CHILDREN'S PLAY AREA
	PROPOSED SHRUBS/ GROUND COVER PLANTING
	PROPOSED BADMINTON COURT
	PROPOSED BASKETBALL COURT
	PROPOSED TABLE TENNIS
	VERTICAL GREEN

REVISIONS		INITIAL AND DESIGNATION	
NO.	DESCRIPTION AND DATE	DWN	CHKD / AUTH
A	GENERAL REVISION	TEAM	JYX ALL

NAME AND DESIGNATION	INITIAL	DATE
<b>DLN</b> <small>Design &amp; Landscape</small>		
AUTHORISED CHIRP CHUNG		
ENDORSED ALBON LEE		
CHECKED XU JAYLE		
DRAWN TEAM		

PROJECT PROPOSED SUBSIDISED SALE FLATS DEVELOPMENT AT MA ON SHAN ROAD	
DRAWING TITLE LANDSCAPE MASTER PLAN (COMBINED)	
SCALE 1:800@A1 1:1600@A3	
DRAWING NO. ST49/D2/EX/L/O-800(S18)/A	
SOURCE	
IDU NO.	
HOUSING DEPARTMENT	

Note: Section AA & Section BB refer to Dwg no. ST49/D2/EX/AS-400.  
Section CC' & Section DD' refer to Dwg no. ST49/D2/EX/AS-401.

申請編號 Application No. : A/MOS/122

與申請地點／處所有關的先前申請  
Previous Applications Covering the Application Site/Premises

申請編號 Application No.	擬議用途／發展 Proposed Uses/Development	城市規劃委員會的決定 (日期) Decision of Town Planning Board (Date)
A/MOS/120	擬議資助出售房屋發展 Proposed Subsidized Sale Flats Development	在有附帶條件下批給的許可 Approved with conditions (7.12.2018)

有關資料是為方便市民大眾參考而提供。對於所載資料在使用上的問題及文義上的歧異，城市規劃委員會概不負責。若有任何疑問，應查閱申請人提交的文件。

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申請人提交的圖則、繪圖及報告書  
Plans, Drawings and Reports Submitted by Applicant

中文 英文  
Chinese English

**圖則及繪圖 Plans and Drawings**

總綱發展藍圖／布局設計圖 Master layout plan(s)/Layout plan(s)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
樓宇位置圖 Block plan(s)	<input type="checkbox"/>	<input type="checkbox"/>
樓宇平面圖 Floor plan	<input type="checkbox"/>	<input type="checkbox"/>
截視圖 Sectional plan(s)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
立視圖 Elevation(s)	<input type="checkbox"/>	<input type="checkbox"/>
顯示擬議發展的合成照片 Photomontage(s) showing the proposed development	<input type="checkbox"/>	<input type="checkbox"/>
園境設計總圖／園境設計圖 Master landscape plan(s)/Landscape plan(s)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
其他（請註明） Others (please specify)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
位置圖 Location Plan		

**報告書 Reports**

規劃研究 Planning studies	<input type="checkbox"/>	<input type="checkbox"/>
環境影響評估（噪音、空氣及／或水的污染） Environmental impact assessment (noise, air and/or water pollutions)	<input type="checkbox"/>	<input type="checkbox"/>
就車輛的交通影響評估 Traffic impact assessment (on vehicles)	<input type="checkbox"/>	<input type="checkbox"/>
就行人的交通影響評估 Traffic impact assessment (on pedestrians)	<input type="checkbox"/>	<input type="checkbox"/>
視覺影響評估 Visual impact assessment	<input type="checkbox"/>	<input type="checkbox"/>
景觀影響評估 Landscape impact assessment	<input type="checkbox"/>	<input type="checkbox"/>
樹木調查 Tree Survey	<input type="checkbox"/>	<input type="checkbox"/>
土力影響評估 Geotechnical impact assessment	<input type="checkbox"/>	<input type="checkbox"/>
排水影響評估 Drainage impact assessment	<input type="checkbox"/>	<input type="checkbox"/>
排污影響評估 Sewerage impact assessment	<input type="checkbox"/>	<input type="checkbox"/>
風險評估 Risk Assessment	<input type="checkbox"/>	<input type="checkbox"/>
其他（請註明） Others (please specify)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
規劃綱領/理據 Planning Statement/Justifications		

有關資料是為方便市民大眾參考而提供。對於所載資料在使用上的問題及文義上的歧異，城市規劃委員會概不負責。若有任何疑問，應查閱申請人提交的文件。

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**7. HANG KIN STREET DEVELOPMENT - R(A)10**

G KIN STREET DEVELOPMENT -		期	地區	屋苑名稱	單位數目	面積@ (平方米)	售價 (\$)
出售居者有其屋計劃 單位 2018	二零一八年三月  (二零一八年十月 重啟申請 )	長沙灣	凱樂苑	2,522	35.6 – 58.6	2,168,000 – 4,679,800	
		啟德	啟朗苑	683	26.6 – 43.8	1,688,500 – 3,627,800	
		東涌	裕泰苑	1,226	25.8 – 53.1	1,181,000 – 3,179,500	
出售居者有其屋計劃 單位 2019	二零一九年五月	何文田	冠德苑	603	41.3 – 52.8	3,245,100 – 5,289,900	
		西南九龍	凱德苑	814	25.9 – 48.5	1,949,600 – 4,352,000	
		葵涌	尚文苑	494	26.6 – 42.6	1,770,900 – 3,539,000	
		將軍澳	雍明苑	1,395	26.2 – 52.8	1,827,900 – 4,550,900	
		馬鞍山	錦暉苑	735	25.6 – 42.3	1,555,100 – 3,476,200	
		沙田	旭禾苑	830	27.3 – 43.0	1,726,300 – 3,364,200	
		沙田	嘉順苑	1	41.3	2,756,600	
		洪水橋及 厦村	屏欣苑	9	34.9 – 53.0	1,801,000 – 2,818,000	
		大嶼山 梅窩	銀河苑	2	41.8	2,029,600 – 2,058,500	
			銀蔚苑	2	35.1 – 41.3	1,600,700 – 1,904,500	
	觀塘	彩興苑	19	34.4 – 41.2	2,570,300 – 3,577,000		

@ 單位面積在居者有其屋計劃第 1 至 24A 期以建築面積計算，而其後銷售計劃則以實用面積計算

\* 包括一個前裝修承辦商示範單位

\*\* 包括二個前裝修承辦商示範單位

# 一個單位因維修而不出售

二零一七年三月二日

資料文件



文件 DH 7/2017

沙田區議會  
發展及房屋委員會

政府部門及有關機構就上次會議所議事項的回覆

1. 有關沙田土地及經濟發展工作小組“推廣及發展沙田區旅遊事業研究計劃”研究結果報告初稿的補充資料(會議記錄第 63 段):

香港可持續發展研究中心的回覆:

1.1 就二零一七年一月五日沙田區議會發展及房屋委員會委員在會上提出有關“推廣及發展沙田區旅遊事業研究計劃”研究報告的提問，香港可持續發展研究中心有以下回覆：

1.2 “推廣及發展沙田區旅遊事業研究計劃”研究報告的受訪對象，主要是以問卷調查方式訪問一千二百名外地遊客與本港居民。另外，為擴大研究報告的全面性，研究中心接納小組成員會上提出的意見，同時向旅遊業界人士及四個目標區域的相應持份者收集意見。務求透過業內人士和持份者所提供的意見，得出更全面的研究資料，以提出具可行性而且可平衡一般民眾及業界訴求的推廣及發展沙田區旅遊事業建議。業內人士名單由香港旅遊業議會提供，而持份者名單則根據網上搜尋結果及小組成員推薦。當中，持份者名單所挑選的對象必須長期關注四個目標區域之相關議題，名單詳見下表：



目標區域	相關持份者
馬鞍山礦場	馬鞍山民康促進會
	香港聯合國教科文組織協會
城門河畔	中國香港賽艇協會
	沙田居民協會
火炭藝術區	沙田文藝協會
	沙田文化藝術推廣委員會
獅子亭	香港山藝協會
	沙田健青體育會

- 1.3 按照上述名單，本中心於二零一六年十一月一日始，以電話來電方式直接聯絡上述相關的持份者。由於參加調查屬自願性質，截至二零一六年十一月二十八日，只收到馬鞍山民康促進會的回覆，表示願意應邀出席訪談。而上述列表的其它持份者均因聯絡不果或未能抽空出席而婉拒接受訪問。由於是次研究受時間及其他研究因素所局限，本研究中心再次對未能接觸其它的持份者表示抱歉。
- 1.4 馬鞍山民康促進會曾出版多項有參考性的研究報告且對於馬鞍山礦場有豐富的認識，有關地理地質、自然環境及保育的書籍包括《香港礦山公園研究計劃及建議書》（2009年）、《倡議香港世界地質公園建議書》（2007年）；有關地方人文、歷史及風物的著作包括一系列的《馬鞍山風物誌》。因此，本研究中心相信，馬鞍山民康促進會所提供的寶貴意見對於是此研究具一定程度的參考作用。
- 1.5 若對於研究報告及調查方式有任何疑問，歡迎致電2156 3756與香港可持續發展研究中心聯絡。

## 2. 有關沙田馬場續約提問的臨時動議(會議記錄第 83 段)：

民政事務局、地政總署和規劃署的綜合回覆：

- 2.1 沙田馬場一直以來都是規劃作賽馬及相關用途，主要目的是為公眾提供觀賞賽馬及進行合法博彩的設施。考慮到沙田馬場性質獨特，政府已向香港賽馬會（馬會）批出為期 50 年的特殊用途契約，繼續現時作為馬場及相關用途，以便馬會就沙田馬場的賽馬及社區設施作長遠規劃及發展。
- 2.2 至於任何涉及改劃土地用途或建議大幅修改馬場內的設施或興建樓宇的計劃，馬會須根據程序和機制向有關政府部門申請，政府部門會按既定程序處理，包括考慮相關諮詢安排。我們亦已向馬會轉達區議會對沙田馬場發展事宜的關注。馬會承諾會就沙田馬場的發展，繼續與區內相關人士保持緊密溝通。

## 3. 有關沙田城市規劃的補充資料(會議記錄第 95 段)：

規劃署的回覆：

- 3.1 本署現附上沙田區(包括沙田及馬鞍山規劃區)內各項已預留土地的社區設施的位置、面積及相關實施部門等資料，以供參考(附件一及二)。本署亦已把議員就有關加快落實設施的訴求轉達相關部門跟進。

文化、體育及康樂設施

- 3.2 隨着沙田規劃區人口的增長，市民對文化、體育及康樂設施的需求亦有所增加。為此，本署已於多石、沙田頭路秦石邨附近及火炭工業區預留三幅土地作體育中心之用。沙田頭路秦石邨體育中心的建造工程已於二零一五年十二月展開，預計可於二零一九年初完工。此外，本署較早前預留了另一幅位於沙田頭路的土地用作興建圓洲角綜合大樓，其中體育中心及學生自修室已於二零一六年十二月啟

用；圖書館預計於三月投入服務；至於社區會堂，預期最早可於二零一七年第一季開放予市民使用。

- 3.3 鑑於馬鞍山規劃區人口的增長及長遠的文化、體育及康樂設施的需求，本署已在馬鞍山第 103 區鞍祿街馬鞍山警署旁預留一幅土地作一座綜合體育中心及社區會堂之用，該項目是二零一七年施政報告公布在未來 5 年增建或重建 26 個體育及康樂設施的項目之一，康樂及文化事務署(康文署)現正積極籌劃此項目。此外，在港鐵烏溪沙站旁落禾沙里亦已預留土地作體育中心之用。
- 3.4 康文署會繼續密切留意沙田區的發展，因應區內人口的增長、居民的訴求、現有文康設施及其使用率，以及參考《香港規劃標準與準則》(《規劃標準》)等主要因素，根據沙田區議會對區內各項文康工程訂定的緩急先後次序，為優先進行的工程，開展籌劃工作。

#### 教育設施

- 3.5 為滿足沙田規劃區內居民對教育設施的需求，本署已於沙田多石預留一幅土地作中學用途，並於港鐵火炭站附近及水泉澳預留兩幅土地作小學用途。
- 3.6 於馬鞍山規劃區方面，本署正擬議在馬鞍山市中心鞍駿街(保良局雨川小學及道教純陽小學旁)預留一幅土地作小學用途。此外，在烏溪沙年華路的一份規劃申請中，申請人建議把部份申請地點劃作小學之用。同時，本署將會繼續在規劃新發展時預留土地作興建小學之用。
- 3.7 教育局正積極推展在水泉澳邨興建一所 30 室小學工程項目的前期工作。其中，建築署已聘請工程顧問公司進行校舍設計、制訂建築費用預算及預備招標文件等工作；教育局亦正按既定機制向沙田地政處申請政府撥地安排，並計劃在年內啟動相關的校舍分配工作。教育局會在適當時候就此建校工程項目諮詢沙田區議會及提交立法會申請撥款，以期校舍可早日落成啟用。

## 休憩用地設施

- 3.8 按照《規劃標準》，沙田規劃區內現已有足夠的休憩用地，而已規劃的休憩用地主要包括位於隔田、紅梅谷、隆亨邨及景田苑附近、近車公廟站城門河畔、小瀝源港鐵第一城站附近、水泉澳及石門商貿區的休憩用地，合共約 14 公頃土地。
- 3.9 根據《規劃標準》，馬鞍山規劃區已預留足夠土地作休憩用地，主要包括保泰街休憩用地、恆輝街休憩用地、恆明街休憩用地、一塊在“翠擁華庭”旁及一塊近梅子林路的土地，合共約 5 公頃土地。康文署現正積極籌劃恆明街休憩用地，而西沙路公園的建設工程已經完成。
- 3.10 據本署理解，康文署及相關部門現正積極籌劃其餘休憩用地設施，並會適時諮詢區議會。

## 醫療及社會福利設施

- 3.11 為滿足沙田規劃區對醫療及社福設施的需要，本署已於顯耀邨及文林路附近預留兩幅土地作診所之用，而早期計劃於港鐵大圍站附近提供的綜合青少年服務中心、長者鄰舍中心及安老院舍，現已投入服務。
- 3.12 鑑於馬鞍山規劃區內醫療及社福設施的需要，本署已在馬鞍山市中心鞍駿街(海澄軒酒店旁)預留一幅土地作社福設施之用。此外，在港鐵恒安站旁恒健街亦預留土地作診所及社福設施之用。
- 3.13 政府在規劃和發展公營基層醫療服務時，會考慮一系列因素，包括基層醫療服務提供模式、區內人口結構變化及服務對象分布、區內基層醫療服務的供應，以及對公營基層醫療服務的需要等。考慮到區內服務對象分布及未來人口增長，政府已如上所述在沙田區預留用地作基層醫療服務長遠發展之用。待有進一步計劃，政府會諮詢區議會意見。

3.14 沙田及馬鞍山規劃區均屬新界東醫院聯網的一部份，為滿足新界東的長遠醫療服務需求，威爾斯親王醫院將展開第二期重建計劃(第一階段)，工程竣工後將增加約 450 張病床，以拓展住院及醫療服務。此外，位於大圍仁安醫院的擴建工程，以及位於港鐵大學站附近現正興建中的香港中文大學醫院，初步預計將為新增約 700 張病床。

### 總結

3.15 沙田是一個發展成熟的新市鎮，有完善的社區和休憩設施。隨着沙田區人口的增長，市民對社區設施的需求亦有所增加。一般而言，政府在土地規劃及發展上，會預留足夠土地供房屋、經濟及社會發展之用，並提供適切的社區或其他所需配套設施和服務，以配合市民需要。具體而言，規劃署在進行地區規劃時，會參考《規劃標準》，並依循各相關政策局和政府部門建議，以及考慮其他相關因素（包括土地用途需求、地區情況、發展限制等），於整體地區範圍內為各類政府、機構或社區用途及設施預留及提供所需用地。至於個別社區設施和服務的實施計劃及推展時間表，須視乎相關政策局／部門的資源運用優次，以及個別項目在政府工務工程計劃內的優先次序。一般而言，政府會考慮當區入住的人口、現有設施的供應狀況和使用率等因素，訂立實施項目的優次。

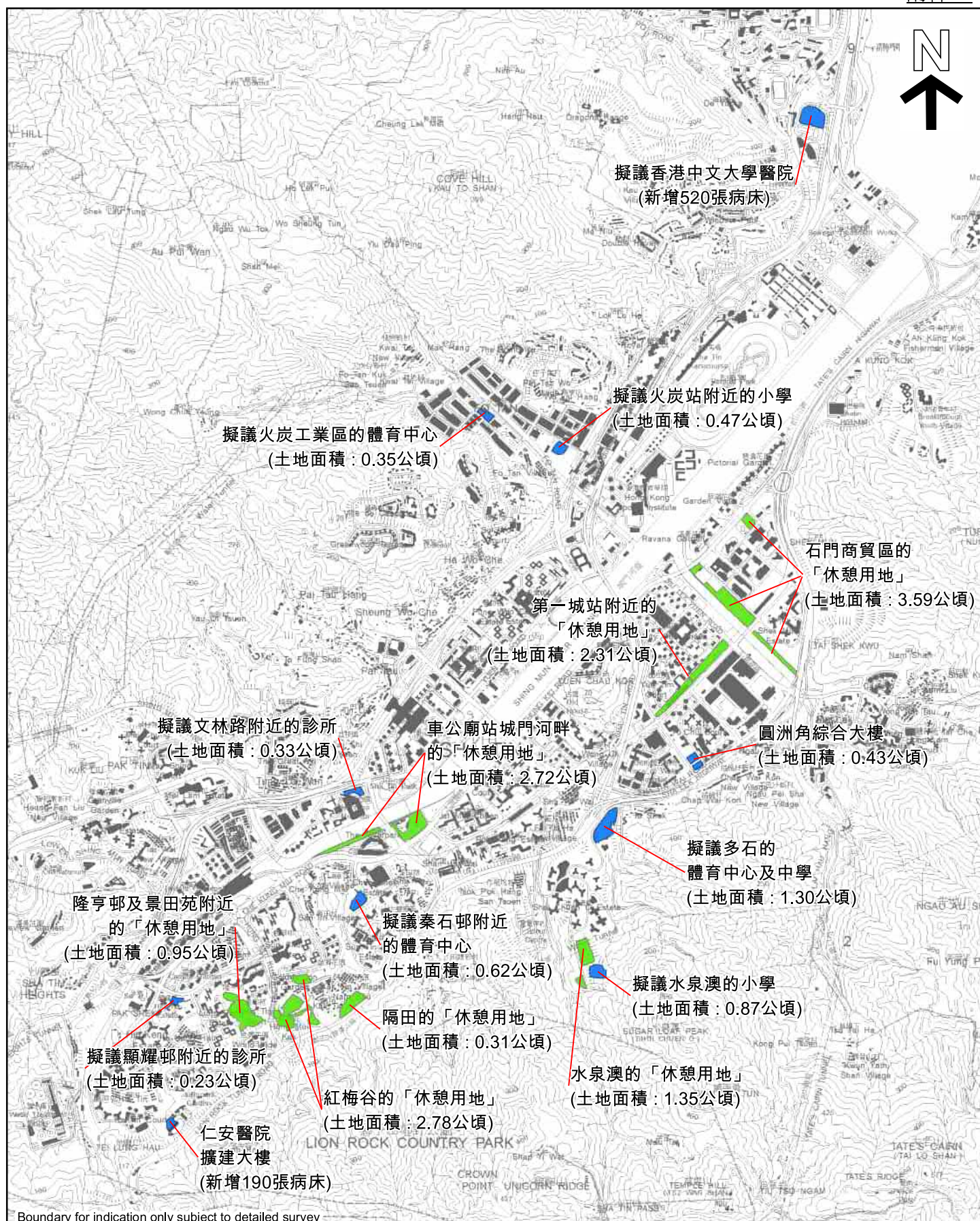
3.16 本署會繼續密切留意沙田區內實際情況（如現有設施的供應和使用狀況、人口實際增長的速度以及有關政府部門的政策及資源分配等因素），積極與相關部門配合，預留土地提供所需的配套設施，並會適時諮詢區議會。

沙田區議會秘書處

STDC 13/20/30

二零一七年二月





Boundary for indication only subject to detailed survey

Extracted from  
1:20,000 Map Sheet No(s):  
T11 and T7

沙田規劃區  
已規劃的休憩用地  
及擬議社區設施的位置

Scale 1:30,000

METRES 300 0 300 600 900 1,200 METRES

SHATIN, TAI PO AND  
NORTH DISTRICT  
PLANNING OFFICE  
**PLANNING DEPARTMENT**

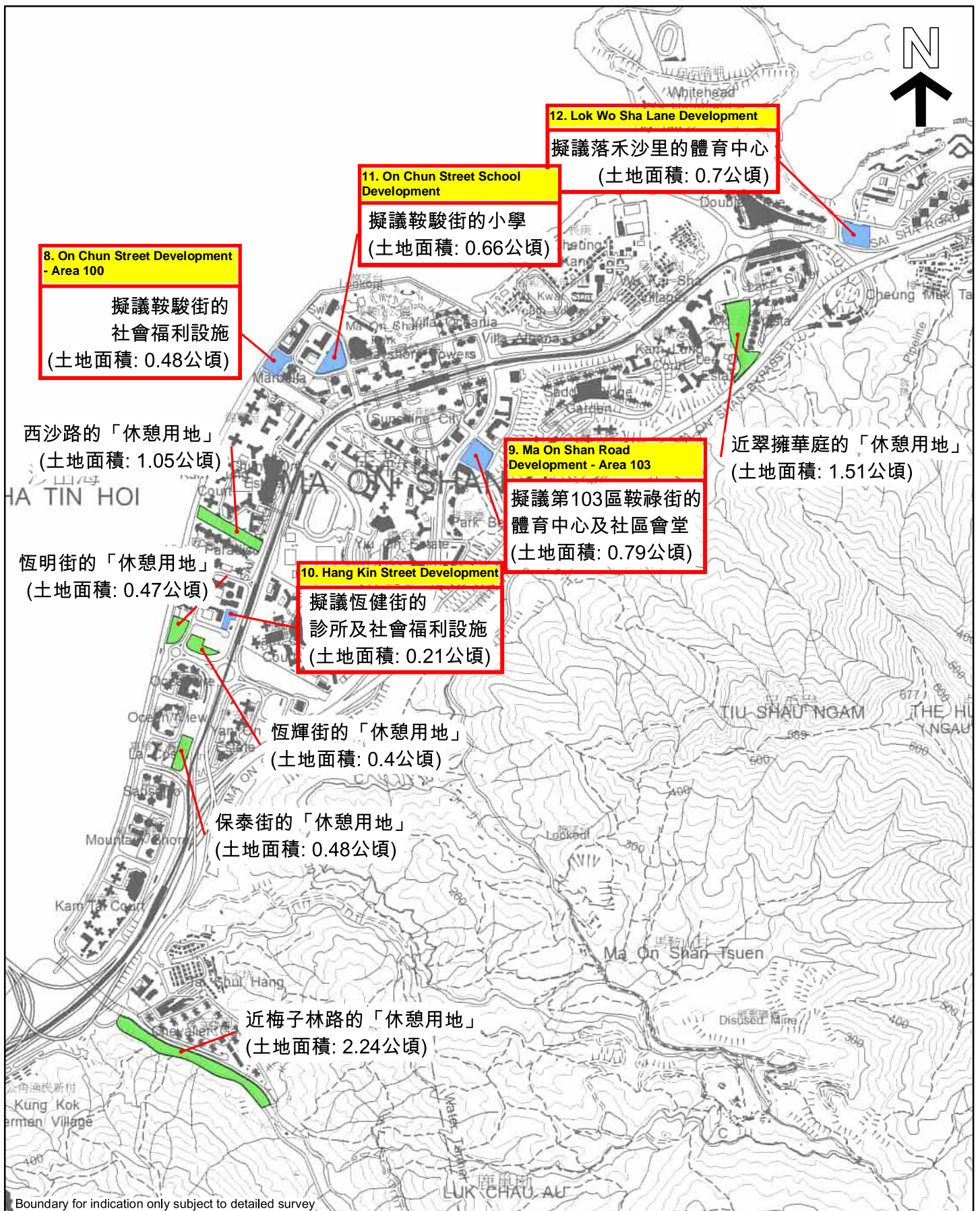


Reference No.

PLAN  
1

Date: 7 February 2017





Extracted from  
1:20,000 Map Sheet No(s):  
T7

馬鞍山規劃區  
已規劃的休憩用地  
及擬議社區設施的位置

SHATIN, TAI PO AND  
NORTH DISTRICT  
PLANNING OFFICE  
**PLANNING DEPARTMENT**



Date: 7 February 2017

Scale 1:18,000  
METRES 180 0 180 360 540 720 METRES

Reference No.

PLAN  
2

### Detail information of Planning Application Case

#### General Information:

Case Number:	A/MOS/65-1
Use Applied for:	Residential Development cum Public Car Park/Visitor Centre and Associated Landscaped Areas and Children Playground (Proposed Amendments to Approved Scheme)

#### Location:

Address:	Ma On Shan, New Territories
Lot Number:	VARIOUS LOTS IN DD 191
Statutory Plan:	S/MOS/13 (Ma On Shan OZP)

#### Detailed Information:

Site Area (sq.m):	118,000.00
Proposed Number of Unit:	180.00
Number of Storeys:	2 - 3
GFA Applied for (sq.m):	34191
Zoning:	Green Belt



Note:

- (1) Retail = Commercial GFA (12,077 m<sup>2</sup> in Site A & B) with kindergarten (1,500m<sup>2</sup> x2) and church (1,500m<sup>2</sup>) GFA excluded
- (2) Assumed trip ends for Sports and Recreation Centres & Ancillary Facilities
- (3) Assumed trip ends for Social Welfare Centre

### Analysis for Proposed Changes

- 4.4.2 With applying the adopted trip generation rates, as given in **Table 4.4**, to the proposed development schedule as listed in **Table 2.1**. The development traffic flows for the current proposed scheme are calculated and summarised as in **Table 4.6**:

**Table 4.6 Development Traffic Flow - Current Proposed Scheme**

Current Proposed Scheme	Development	Trip Ends (pcu/hr)			
		AM Peak		PM Peak	
		Generation	Attraction	Generation	Attraction
Private Residential (FS=55.49m <sup>2</sup> )	9,700 flats	697	413	412	505
Retail	12,077 m <sup>2</sup> (1)	28	29	37	43
Kindergarten/ Nursery	6 classroom x 2	29	33	17	5
Recreation & Sports Centre with Ancillary Facilities (2)	14,000 m <sup>2</sup>	50(2)	50(2)	50(2)	50(2)
Primary School Site	30 classroom x 2	34	60	20	10
Social Welfare Centre		25(3)	25(3)	25(3)	25(3)
Total	-	863	610	561	638
<b>Two Way Total (Proposed)</b>	-	<b>1,473</b>		<b>1,199</b>	
<b>Two Way Total (Proposed - Approved)</b>	-	<b>1,498-1,473 = +25</b>		<b>1,233-1,199 = +34</b>	

Note:

- (1) Retail = Commercial GFA (12,077 m<sup>2</sup> in Site A & B + 3,500 m<sup>2</sup> in Site C) with kindergarten (1000m<sup>2</sup> x2) and church (1500m<sup>2</sup>) GFA excluded
- (2) Assumed trip ends for Sports and Recreation Centres & Ancillary Facilities (excluding the retail & F&B facilities)
- (3) Assumed trip ends for Social Welfare Centre

**Table 4.7 Residential Trip Rates- Private Car Only Comparison**

Location	Average Flat Size	Trip Rates (pcu/hr/flat)							
		AM Peak				PM Peak			
		Gen.	(a)/(b)	Att.	(a)/(b)	Gen.	(a)/(b)	Att.	(a)/(b)
Sereno Verde, Yuen Long	65 m <sup>2</sup>	(a)	0.0292	=53%	0.0201 /0.0400	=50%	0.0229 /0.0424	=54%	0.0268 /0.0520
		(b)	/0.0550						
Dawning Views, Fanling	60 m <sup>2</sup>	(a)	0.0164	=37%	0.0098 /0.0335	=29%	0.0098 /0.0298	=33%	0.0161 /0.0324
		(b)	/0.0446						
The Reach, Yuen Long	48 m <sup>2</sup>	(a)	0.0208	=39%	0.0127 /0.0391	=32%	0.0155 /0.0349	=44%	0.0189 /0.0391
		(b)	/0.0535						
Bayshore Towers, Ma On Shan	56 m <sup>2</sup>	(a)	0.0056	=39%	0.0013 /0.0045	=30%	0.0029 /0.0082	=35%	0.0065 /0.0163
		(b)	/0.0145						

Legend: Gen = Generation ; Att = Attraction (a) = Private Car only Trip Rate ; (b) = Total Trip Rate

- 4.4.6 For trip generation rate (pcu/hr/flat), it includes private car trips, taxi trips, school bus trips and good vehicle trips. According to the surveyed results, approximately 50% of total traffic generation is car park related. For school bus/ goods vehicle trips, it should be mainly related to the number of units/ residents and should not be affected by the car parking provision. For taxi trips, some residents may choose to drive their cars if more car parking spaces are provided. However, for a conservative approach, it is assumed that taxi trips would remain the same.

- 4.4.7 For private car trips, the impact of trips with more car parking spaces are provided is uncertain as the factor affecting the choice of driving also depends on other factors, e.g. someone may not choose to drive to work from home if there is no parking space in his/her work place. Hence, the relationship between increase parking spaces and the increase of private car traffic flows should not be linear but significantly less than the linear proportion in reality. Yet, for a very conservative approach, it is assumed that the private car trips are in proportion to the number of car parking spaces provided, i.e. with the general increase of 30% residential car parking space will at most increase the private car trip rates in residential portion by 30% as a worst-case testing only.

- 4.4.8 The derivation of the increased trip rates are detailed in the following **Table 4.8** and the corresponding development traffic flows calculated and summarised as in **Table 4.9**:

**Table 4.8 Residential Trip Rates with Increased Parking**

	Trip Rates (pcu/hr/flat)			
	AM Peak		PM Peak	
	Generation	Attraction	Generation	Attraction
Trip Rates (Original)	0.0718	0.0425	0.0424	0.0520
Private Car Trip Proportion (%) <sup>(1)</sup>	53%	50%	54%	52%
Private Car Trip Rate	0.0718 x 53% =0.0381	0.0425 x 50% =0.0214	0.0424 x 54% =0.0229	0.0520 x 52% =0.0268
Private Car Trip Rate with Increased Parking Provision (+30%)	0.0381 x 1.30 =0.0496	0.0214 x 1.30 =0.0278	0.0229 x 1.30 =0.0298	0.0268 x 1.30 =0.0348
Trip Rates (Increased Parking)	0.0496 + (0.0718-0.0381)	0.0278 + (0.0425-0.0214)	0.0298 + (0.0424 - 0.0229)	0.0348 + (0.0520-0.0268)

- 4.4.3 In the approved application, the residential car parking provision is approximately 1 private car parking space per 4 residential units. With the proposed increase of residential car parking provision (i.e. approximately 30%), the trip generation rates may be increased accordingly.

- 4.4.4 Surveys were carried at private residential developments to identify the proportion of private car trips for private residential developments with similar characteristic to the Application Site, e.g. flat size, proximity with MTR. Most of the private residential developments in Ma On Shan are located close to the MTR Ma On Shan Line and not similar to the location of Application Site. In view of above, the other locations (two in Yuen long and one in Fanling) with 1-2km away from MTR station (similar to our site) were selected for survey for comparing/estimating the trip rates. Nevertheless, another trip rate survey was carried at Ma On Shan and the results are summarised.

- 4.4.5 The private car trip rates for residential sites are surveyed, extracted and compared with the total trip rates as stated in **Table 4.7**

	Trip Rates (pcu/hr/flat)			
	AM Peak		PM Peak	
	Generation	Attraction	Generation	Attraction
	=0.0832	=0.0489	=0.0493	=0.06

Note: (1) Maximum surveyed proportion as listed in **Table 4.7** adopted.

**Table 4.9 Residential Traffic Flow with Increased Parking**

		Trip Rates (pcu/hr)			
		AM Peak		PM Peak	
		Generation	Attraction	Generation	Attraction
Trip Rates (Original)	9700 units	0.0718 /flat	0.0425 /flat	0.0424 /flat	0.0520 /flat
Trip End (Original)	(a)	696	412	411	504
Trip Rates (Increased Parking)	9700 units	0.0832 /flat	0.0489 /flat	0.0493 /flat	0.060 /flat
Trip Ends (Increased Parking)	(b)	807	474	478	582
<b>Difference</b>	<b>(b)-(a)</b>	<b>+111</b>	<b>+62</b>	<b>+67</b>	<b>+78</b>

4.4.9 As shown in **Table 4.9**, the overall traffic generation of Proposed Development under the previous Approved Scheme and the current Proposed Scheme would be similar. The two-way development traffic to be induced by the current proposed scheme would only be increased by 173 pcu/hr and by 145 pcu/hr in AM and PM peak respectively. According to the detailed traffic impact assessment as presented in following **Chapter 5**, all the assessed junctions and road links would be able to handle the future traffic demand with the current design of Sai Sha Road Widening Scheme.

#### 4.5 2028 Reference and Design Traffic Flows

4.5.1 The 2028 design traffic flows in this TIA were produced by adding the additional trips to be generated by the Proposed Development in current proposed scheme in **Table 4.6** to the 2028 traffic forecasts in the approved TIA with the previous approved scheme (Application No. **A/NE-SSH/120**), as shown in **Figures 4.2– 4.3**, i.e. the reference traffic flows in this TIA. The directional distribution of the development traffic of the Application Site is illustrated in **Figures 4.4**. The resultant 2028 design-1 (proposed scheme) traffic flows are shown in **Figures 4.5– 4.6**.

4.5.2 In order to assess for the likely traffic impact if the residential parking provision is increased, another set of 2028 design traffic flows were produced by adding the additional trips to be generated by adopting the trip rates for increased residential parking provision as in **Table 4.9** to the 2028 design proposed scheme) traffic flows. The resultant 2028 design-2 (proposed scheme with increased residential parking) traffic flows are shown in **Figures 4.7– 4.8**.

#### 4.6 Sensitivity Test 1 – Potential Housing Site in Ma On Shan

4.6.1 Similar to the Approved TIA, a sensitivity test with four potential housing sites, where their indicative locations are illustrated in **Figure 4.1**, identified in Ma On Shan area is carried with the development trips assumed as following **Table 4.10**.

**Table 4.10 Trip for Potential Housing Sites**

Data Source/ Sites	Average Flat Size	<u>Trip Rates (pcu/hr/flat)/ Trip ends (pcu/h)r</u>			
		AM Peak		PM Peak	
		Generation	Attraction	Generation	Attraction
Public Housing					
TPDM	50m²	<u>0.0622</u>	<u>0.0426</u>	<u>0.0297</u>	<u>0.0401</u>
Sites P1 & P2 (1800 units)		112	77	53	72
Sites P3 & P4 (2400 units)		149	102	71	96
Private Housing					
TPDM	100 m²	<u>0.1961</u>	<u>0.1116</u>	<u>0.0955</u>	<u>0.1321</u>
Sites P1 & P2 (1200 units)		235	134	115	159
Sites P3 & P4 (1600 units)		314	179	153	211

Reference: TPDM Mean Rates for HOS / PSPS : 50sqm and Private housing :100sqm adopted

4.6.2 The additional traffic of the potential housing sites is added to the 2028 traffic flow in design cases (i.e. (1) with current proposed scheme and (2) with current proposed scheme with increased residential parking) to produce the 2028 traffic flows for sensitivity test-1. **Figures 4.9 – 4.12** illustrate the resultant 2028 traffic flows for sensitivity test with potential housing sites.

#### 4.7 Sensitivity Test 2– Potential Schools with Non-local Programme

##### *Nai Chung Private School*

4.7.1 A recent submission was made to TBP for a proposed private school at Nin Ming Road, opposite to Hong Kong Baptist Theological Seminary in Nai Chung (Application A/MOS/125). Its location is indicated in **Figure 4.1**. The potential school will be operated as a private school with a total of 722 students ranging from early year learning, primary to secondary education. The potential school is anticipated to operate in year 2025.

4.7.2 Due to the close vicinity of the potential school with the Application Site, another sensitivity test is carried to take into account the potential traffic volume to be induced by the potential school.

4.7.3 The trip ends of the Nai Chung School is derived from the results of traffic survey at various school sites in Application A/MOS/125. The trip ends are summarised in the following tables for reference.



- 4.5.2 Based on the staff parking and pick up / drop off demand as shown in **Table D 4.4**, the trip generation and attraction rates of various school sites during the AM peak hour and mid-afternoon peak hour are derived and summarised as given in **Table D 4.5** and the corresponding estimated modal split are summarised in **Table D 4.6**.

**Table D 4.5 Trip Generation Rates of Surveyed Schools / Kindergarten**

	Trip Rates (pcu / 100 students/hr)			
	AM Peak (7am – 9am)		Mid-Afternoon Peak (2pm – 5pm)	
	Generation	Attraction	Generation	Attraction
Renaissance College	13.2	14.5	8.8	8.1
Shatin College / Shatin Junior School	14.8	16.9	10.6	9.6
Hong Kong Academy	17.1	18.5	12.1 <sup>(1)</sup>	11.3 <sup>(1)</sup>
Anchors Kindergarten & International Nursery	30.5	33.1	30.1 <sup>(2)</sup>	30.1 <sup>(2)</sup>
Adopted for Primary / Secondary School	17.1	18.5	12.1	11.3
Adopted for Early Year Planning	30.5	33.1	30.1	30.1

Note: <sup>(1)</sup> Based on 581 students excluding kindergarten

<sup>(2)</sup> Based on 73 students in AM class

**Table D 4.6 Estimated Transport Mode of Surveyed Schools / Kindergarten**

	Transport Mode		
	Car / Taxi	School Bus	Public Transport / Walk
Renaissance College	11%	49%	40%
Shatin College / Shatin Junior School	12%	58%	30%
Hong Kong Academy	15%	60%	25%
Anchors Kindergarten & International Nursery	25%	70%	5%

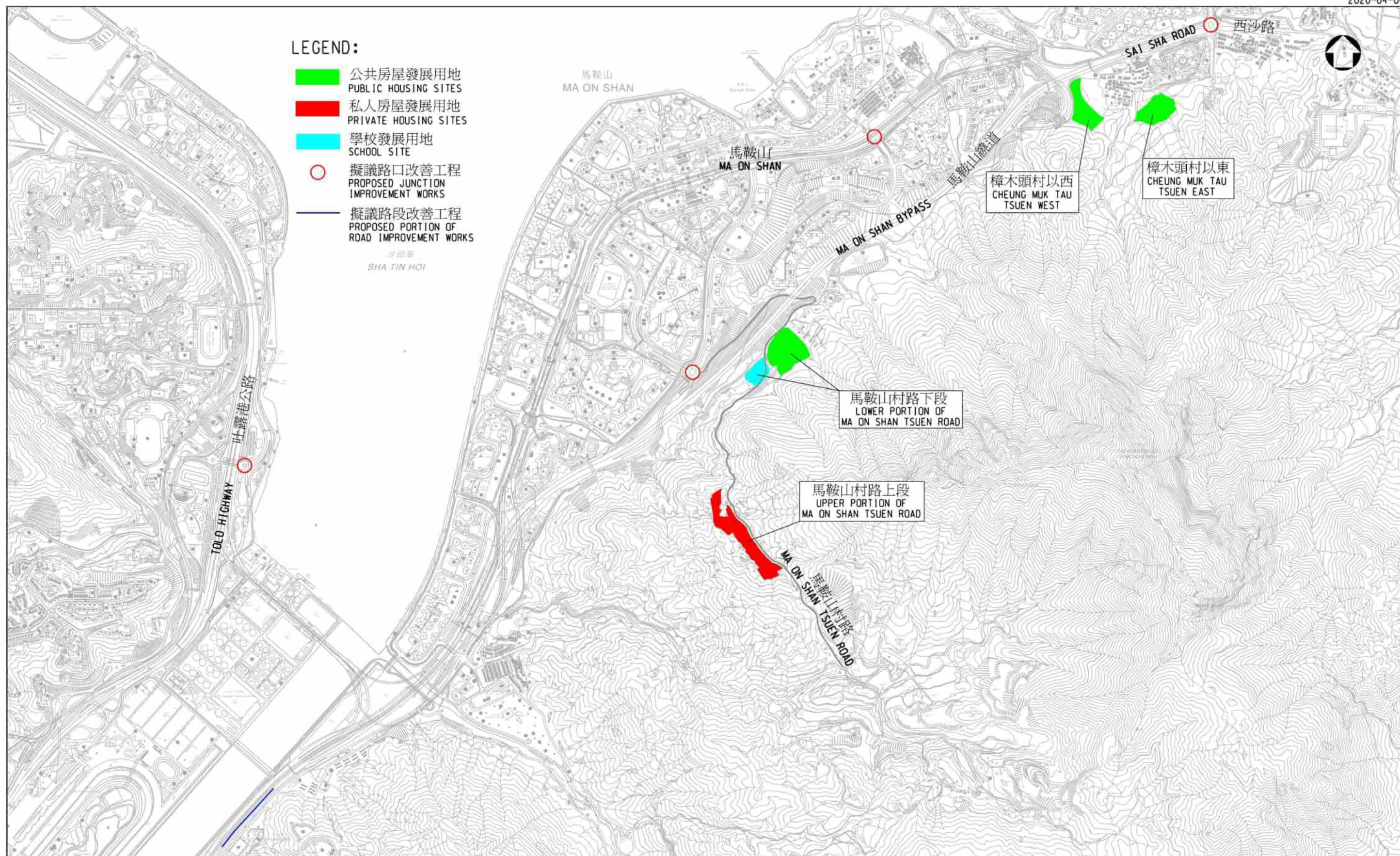
- 4.5.3 By applying the adopted trip generation rates as given in **Table D 4.5** and the proposed development scheme as listed in **Table D 2.1**, the development traffic of Proposed School was calculated and summarised in **Table D 4.7**. The mid-afternoon peak (i.e. school dismissal period) falls between around 3pm – 4pm and does not coincide with the normal PM peak period (i.e. 6pm-7pm). As a conservative approach, it is assumed that 50% of development traffic at mid-afternoon peak would occur at the normal PM peak period.

**Table D 4.7 Traffic Generations of Proposed School**

	Trip Ends (pcu/hr)			
	AM Peak (7am – 9am)		Mid-Afternoon Peak (2pm – 5pm)	
	Generation	Attraction	Generation	Attraction
Primary / Secondary School (672 students)	115	124	81	76
Early Year Learning (50 students)	16	17	16	16
Total	131	141	97 (49) <sup>(1)</sup>	92 (46) <sup>(1)</sup>

Note: <sup>(1)</sup> Figure in ( ) represent the 50% of development traffic at mid-afternoon peak occur at normal PM peak





圖則名稱 drawing title

建議的房屋和學校發展用地及擬議交通改善工程

PROPOSED SCHOOL SITE AND HOUSING DEVELOPMENT AND ASSOCIATED TRAFFIC IMPROVEMENT WORKS

圖號 drawing no.

附件3 ANNEX 3

比例 scale

1:15 000

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AND DEVELOPMENT  
DEPARTMENT



**Summary of the Development Parameters of the Amendment Sites**

Proposed Amendments	Location	Site Area (ha, about)	Current Zoning	Proposed Zoning	Maximum Plot Ratio	Proposed Building Height Restriction (mPD)	Approximate Flat Number	Approximate Population
<b>Housing Sites</b>								
A	East of the Cheung Muk Tau Village	1.46	GB	R(A)11	6.8	165mPD	1,820	5,100
B1	West of the Cheung Muk Tau Village	1.38	GB	R(A)11	6.8	165mPD	1,660	4,650
D	Lower end of Ma On Shan Tsuen Road	2.26	GB	R(A)11	6.8	225mPD	2,700	7,560
G	Upper end of Ma On Shan Tsuen Road	2.73	GB	R(B)6	3.6	250mPD	1,040	3,120
<b>GIC Sites</b>								
C	Lower end of Ma On Shan Tsuen Road	0.45	GB	G/IC	-	1 storey	-	-
E	Lower end of Ma On Shan Tsuen Road	0.73	GB	G/IC	-	8 storeys	-	-

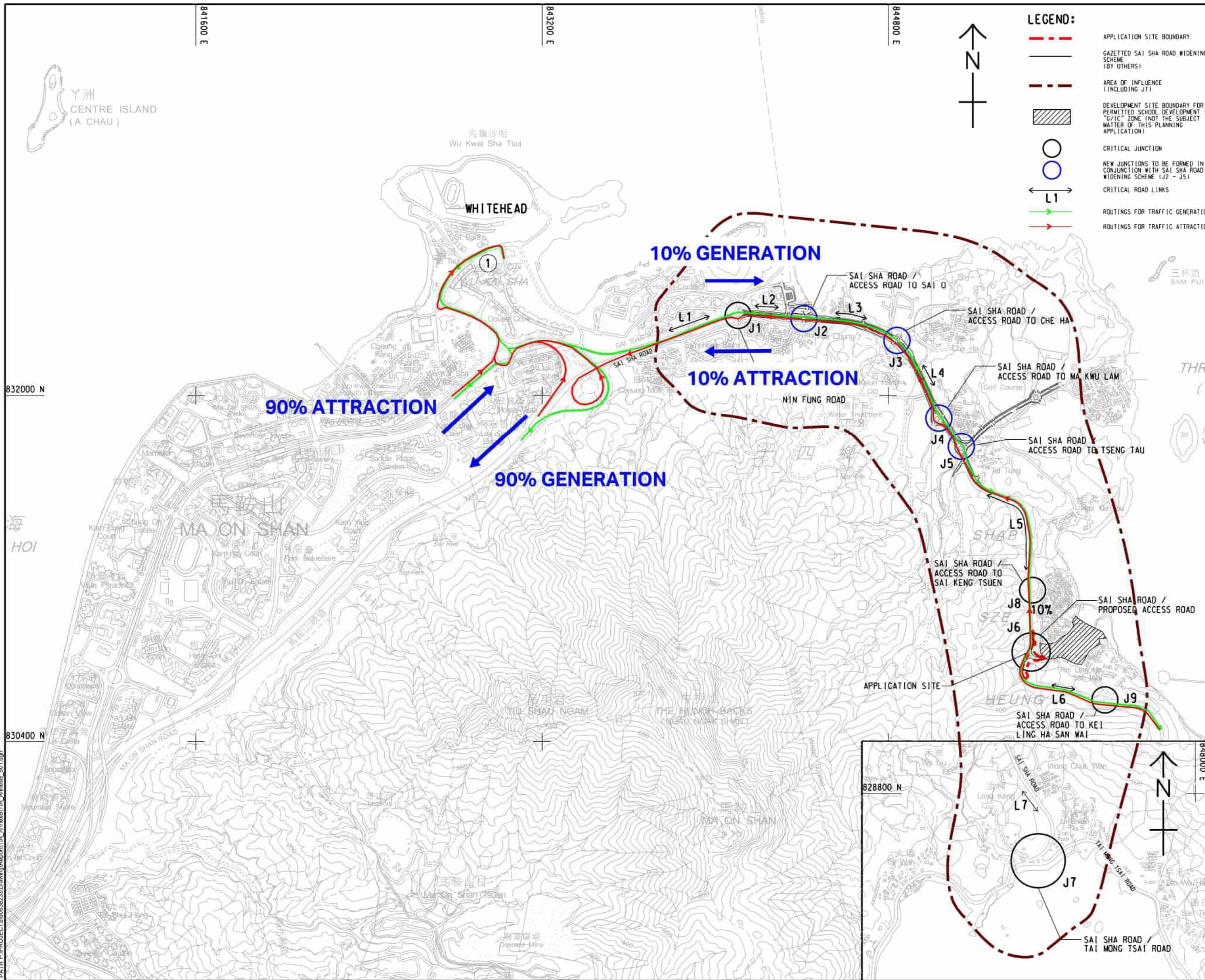
## ***Annex D***

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### ***Development Flow of Committed / Planned Developments***



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**CONTRACT NO.**

**SHEET TITLE**

TRAFFIC ROUTINGS FOR COMMITTED DEVELOPMENT-STTL 600

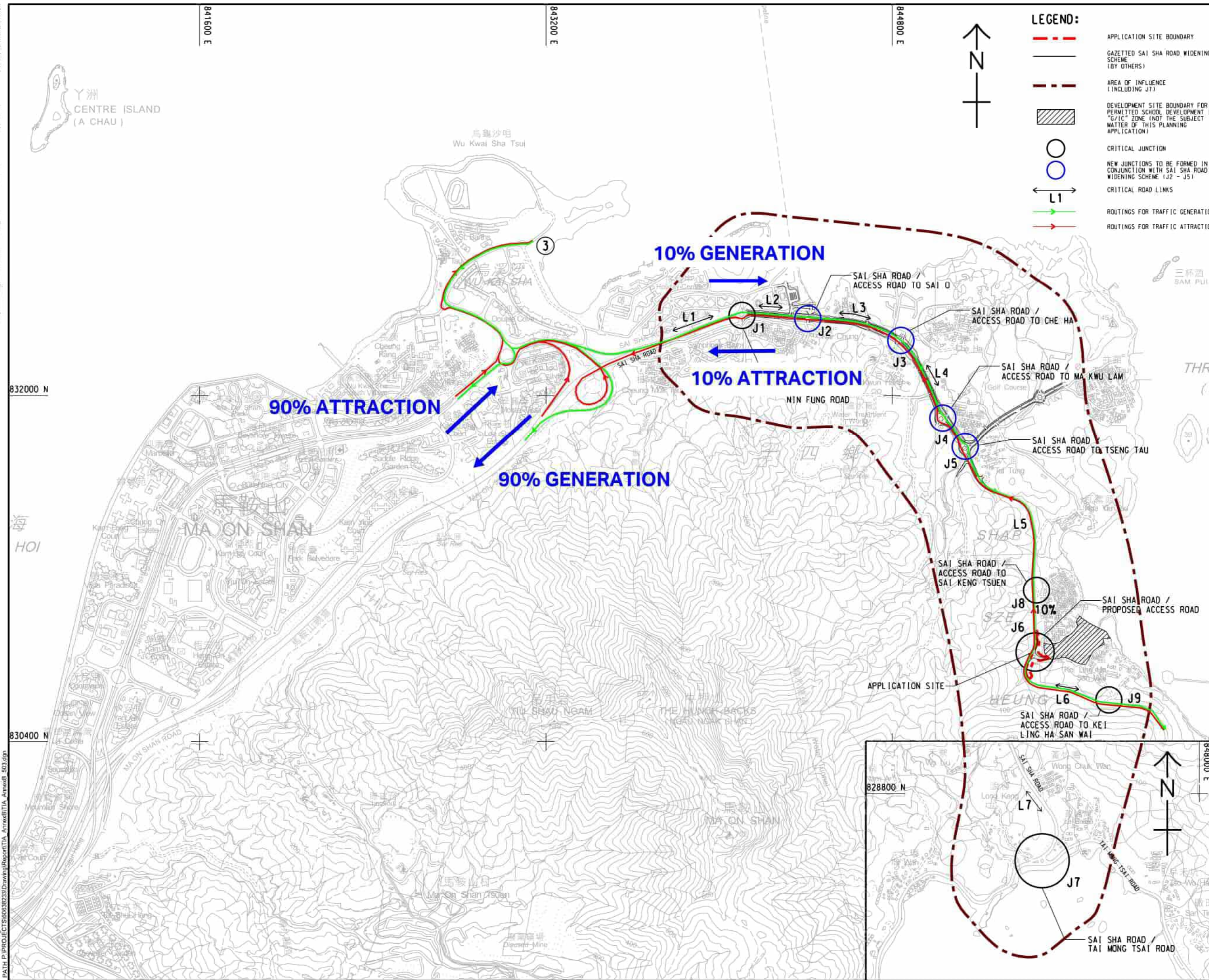
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60638233/TIA\_AnnexB/FIGURE 1.1









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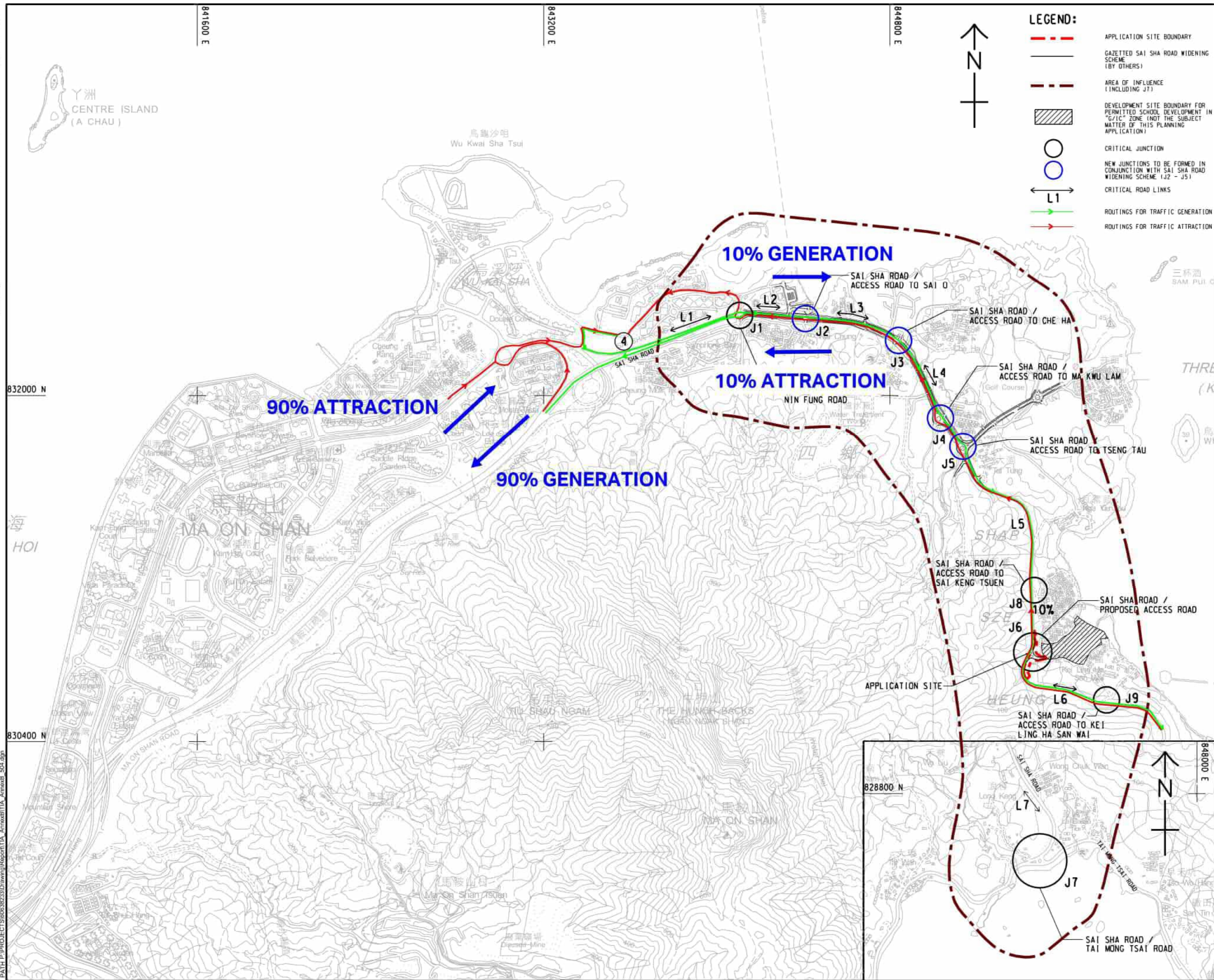
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PROJECT NO.	CONTRACT NO.
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**SHEET TITLE**  
TRAFFIC ROUTINGS FOR COMMITTED DEVELOPMENT-STTL 611

**SHEET NUMBER**  
60638233/TIA\_AnnexB/FIGURE 1.3





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01/21

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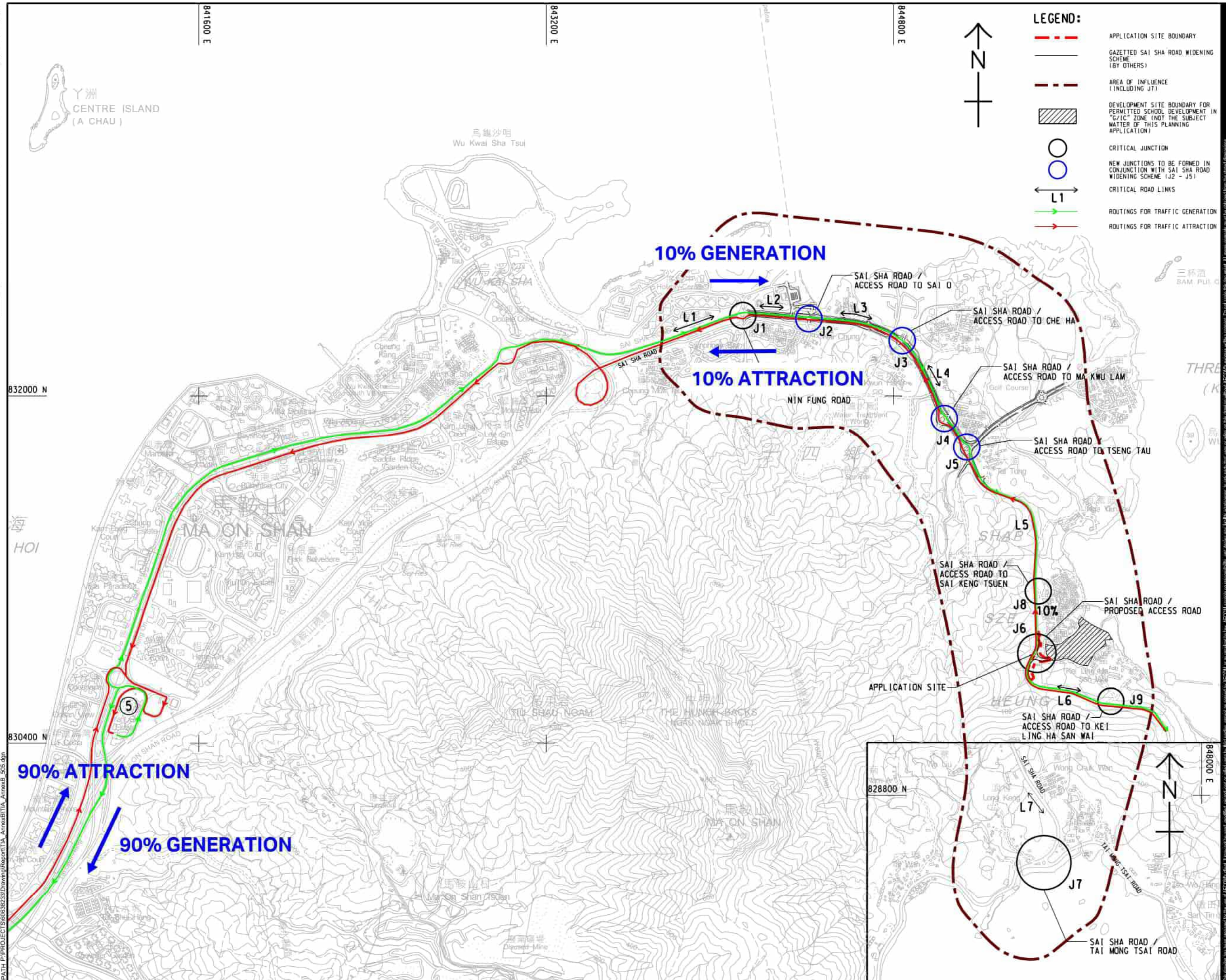
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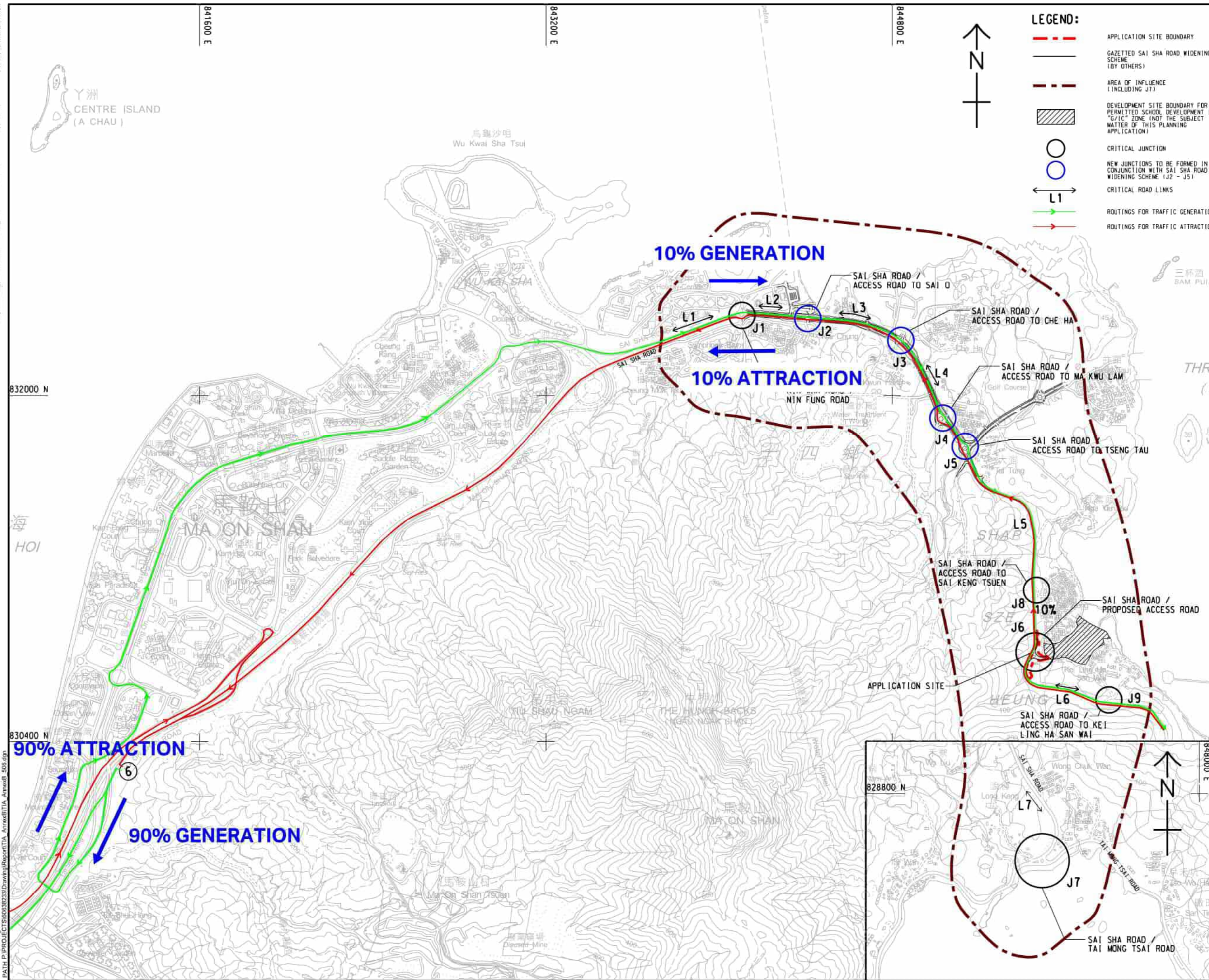
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60638233/TIA\_AnnexB/FIGURE 1.4







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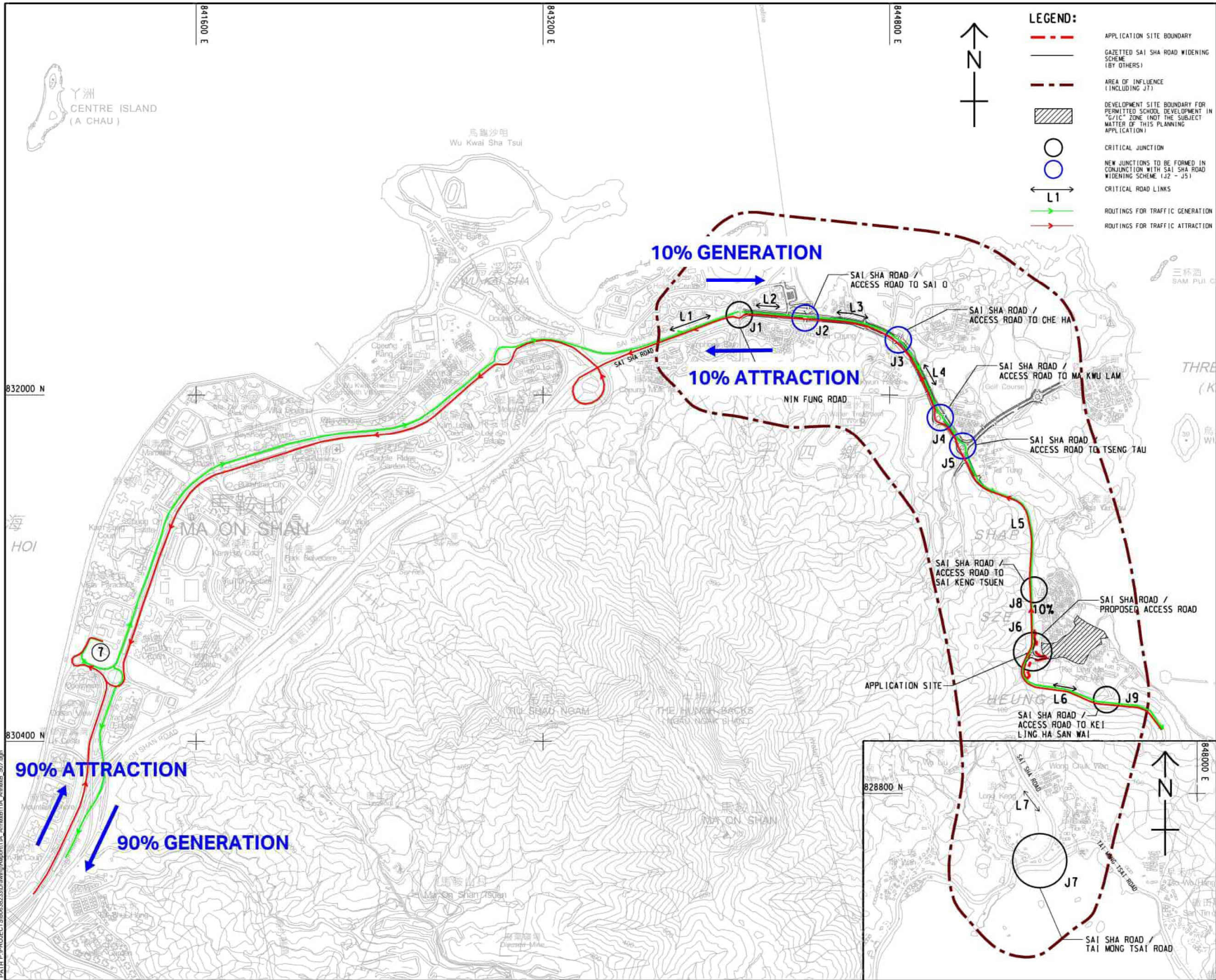
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**SHEET NUMBER**  
60638233/TIA\_AnnexB/FIGURE 1.6



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3/1	11/01/2022	Issue for comment	
4/1	11/01/2022	Issue for comment	
5/1	11/01/2022	Issue for comment	
6/1	11/01/2022	Issue for comment	
7/1	11/01/2022	Issue for comment	
8/1	11/01/2022	Issue for comment	
9/1	11/01/2022	Issue for comment	
10/1	11/01/2022	Issue for comment	

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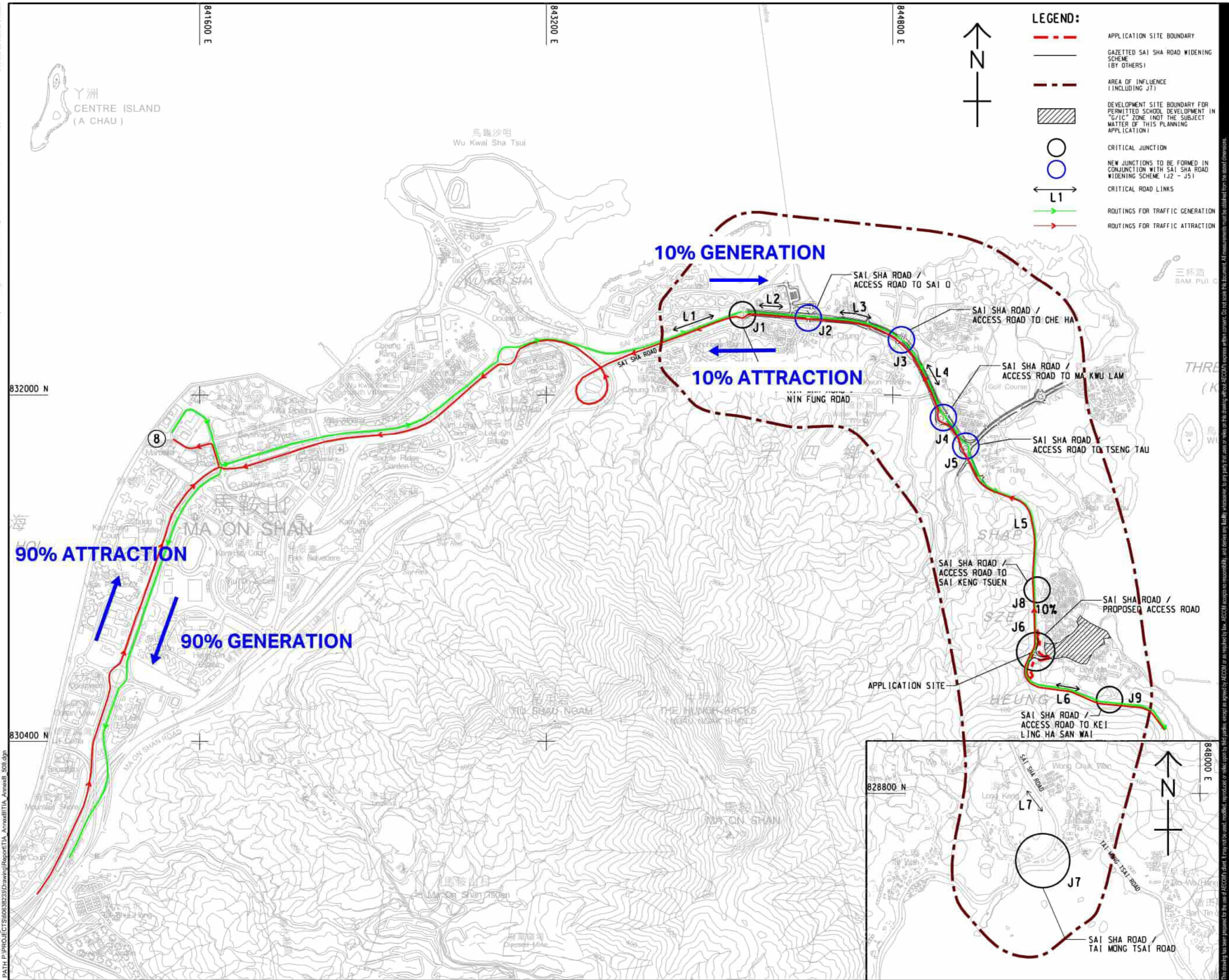
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**SHEET NUMBER**

60638233/TIA\_AnnexB/FIGURE 1.7



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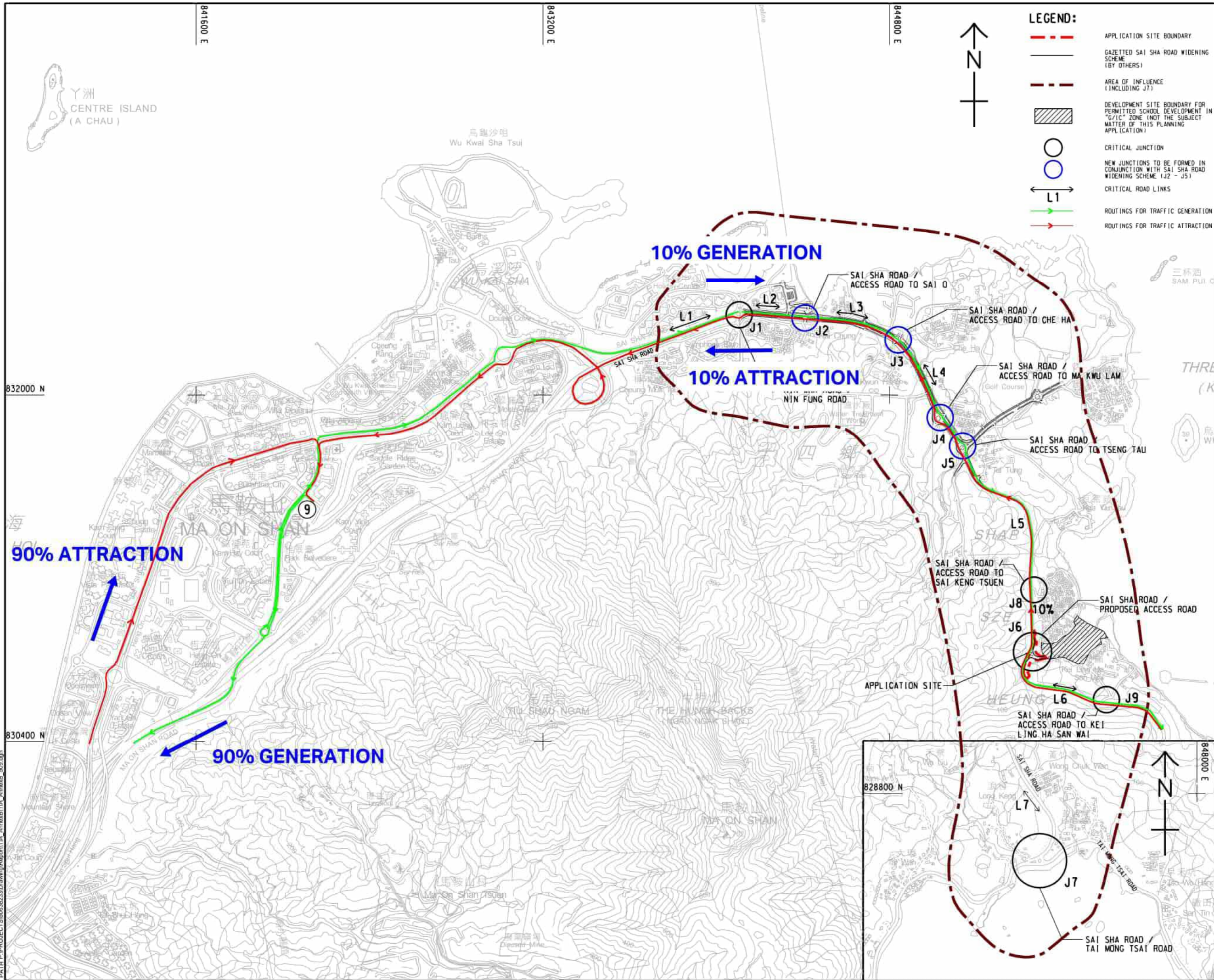
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TRAFFIC ROUTINGS FOR COMMITTED DEVELOPMENT- ON CHUNSTREET DEVELOPMENT - AREA 100

**SHEET NUMBER**  
60638233/TIA\_AnnexB/FIGURE 1.8





**LEGEND:**

- APPLICATION SITE BOUNDARY
- GAZETTED SAI SHA ROAD WIDENING SCHEME (BY OTHERS)
- AREA OF INFLUENCE (INCLUDING JT)
- DEVELOPMENT SITE BOUNDARY FOR PERMITTED SCHOOL DEVELOPMENT IN "G1/C" ZONE (NOT THE SUBJECT MATTER OF THIS PLANNING APPLICATION)
- CRITICAL JUNCTION
- NEW JUNCTIONS TO BE FORMED IN CONJUNCTION WITH SAI SHA ROAD WIDENING SCHEME (J2 - J5)
- CRITICAL ROAD LINKS
- ROUTINGS FOR TRAFFIC GENERATION
- ROUTINGS FOR TRAFFIC ATTRACTION

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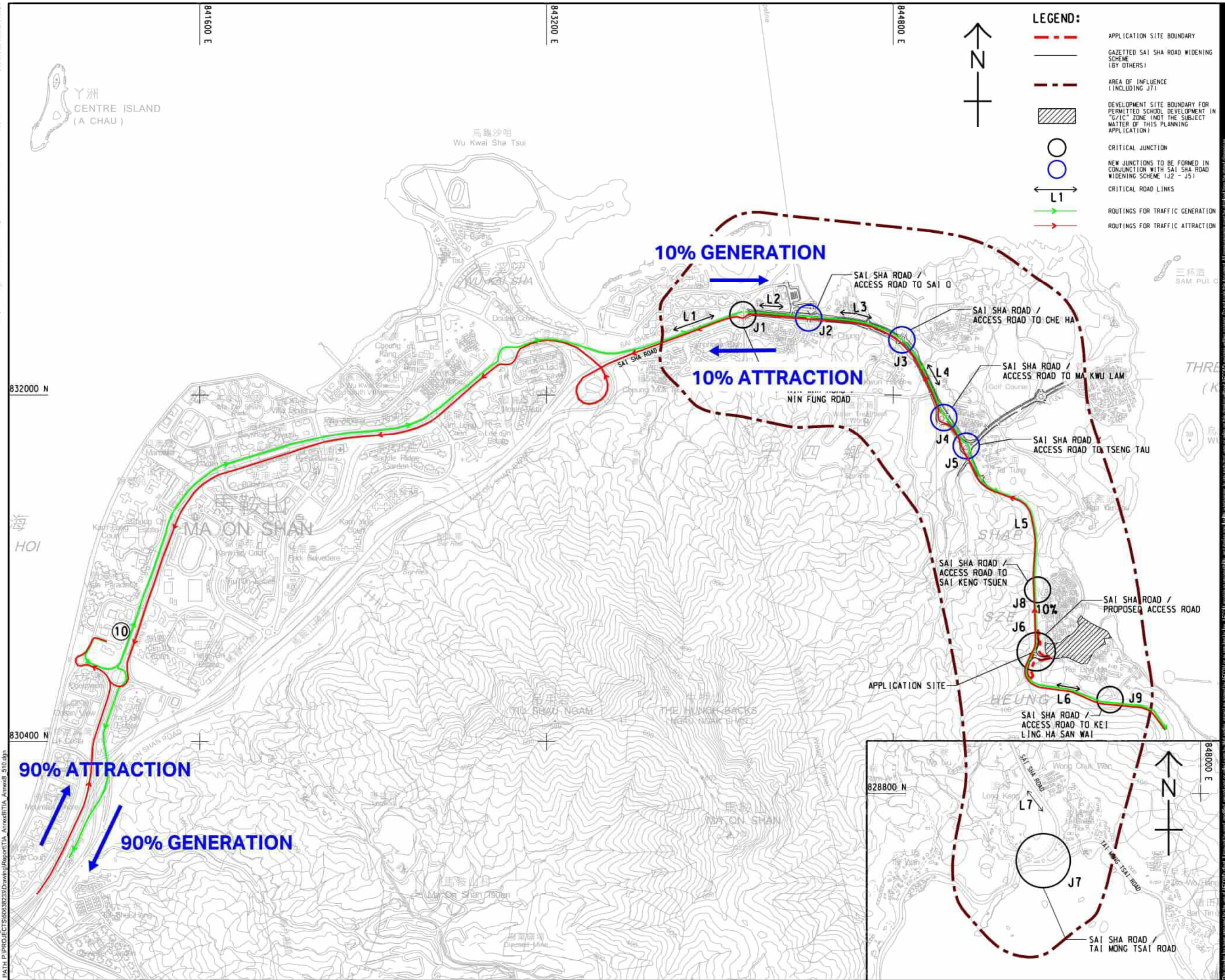
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**SHEET NUMBER**  
60638233/TIA\_AnnexB/FIGURE 1.9



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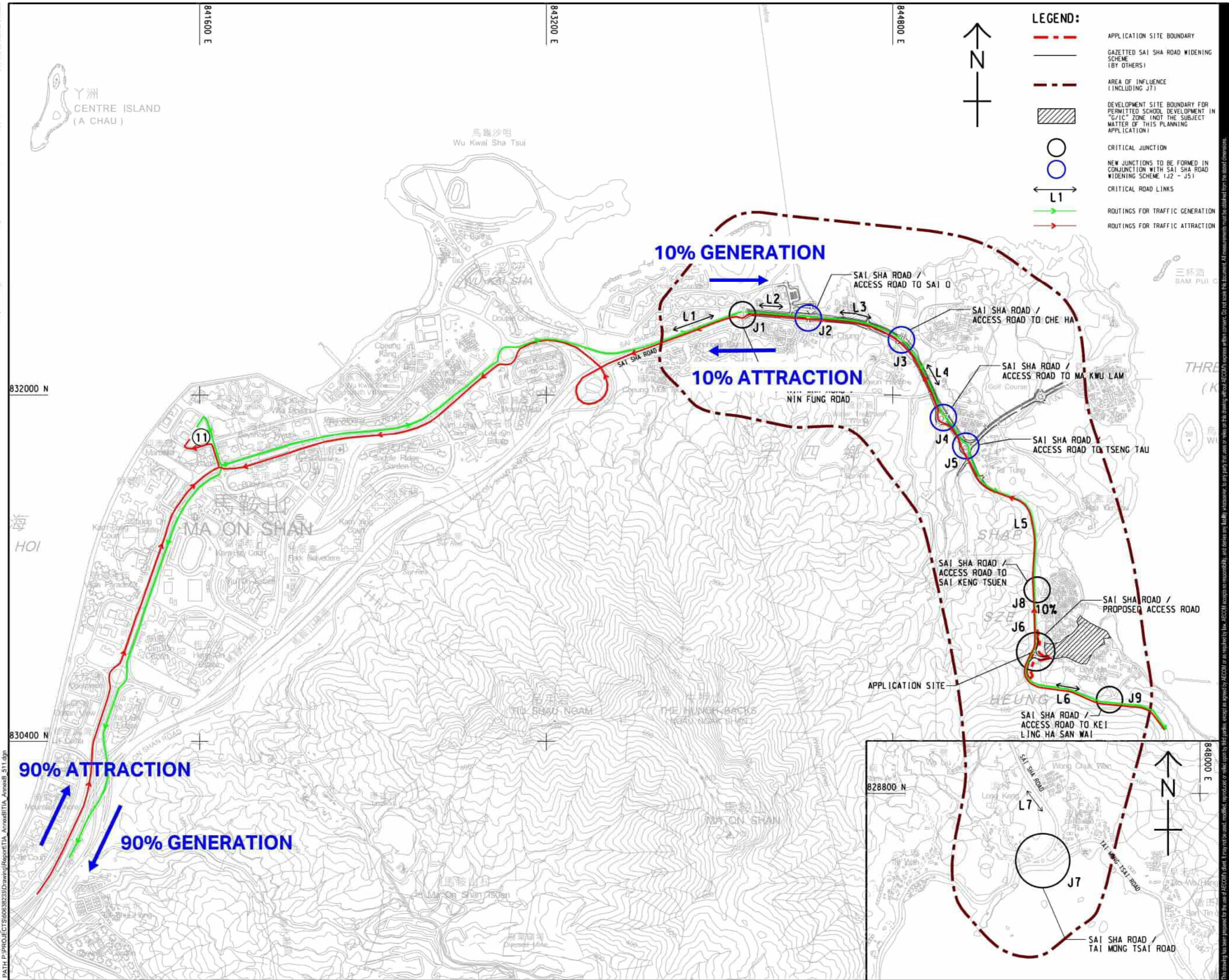
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60638233/TIA\_AnnexB/FIGURE 1.10

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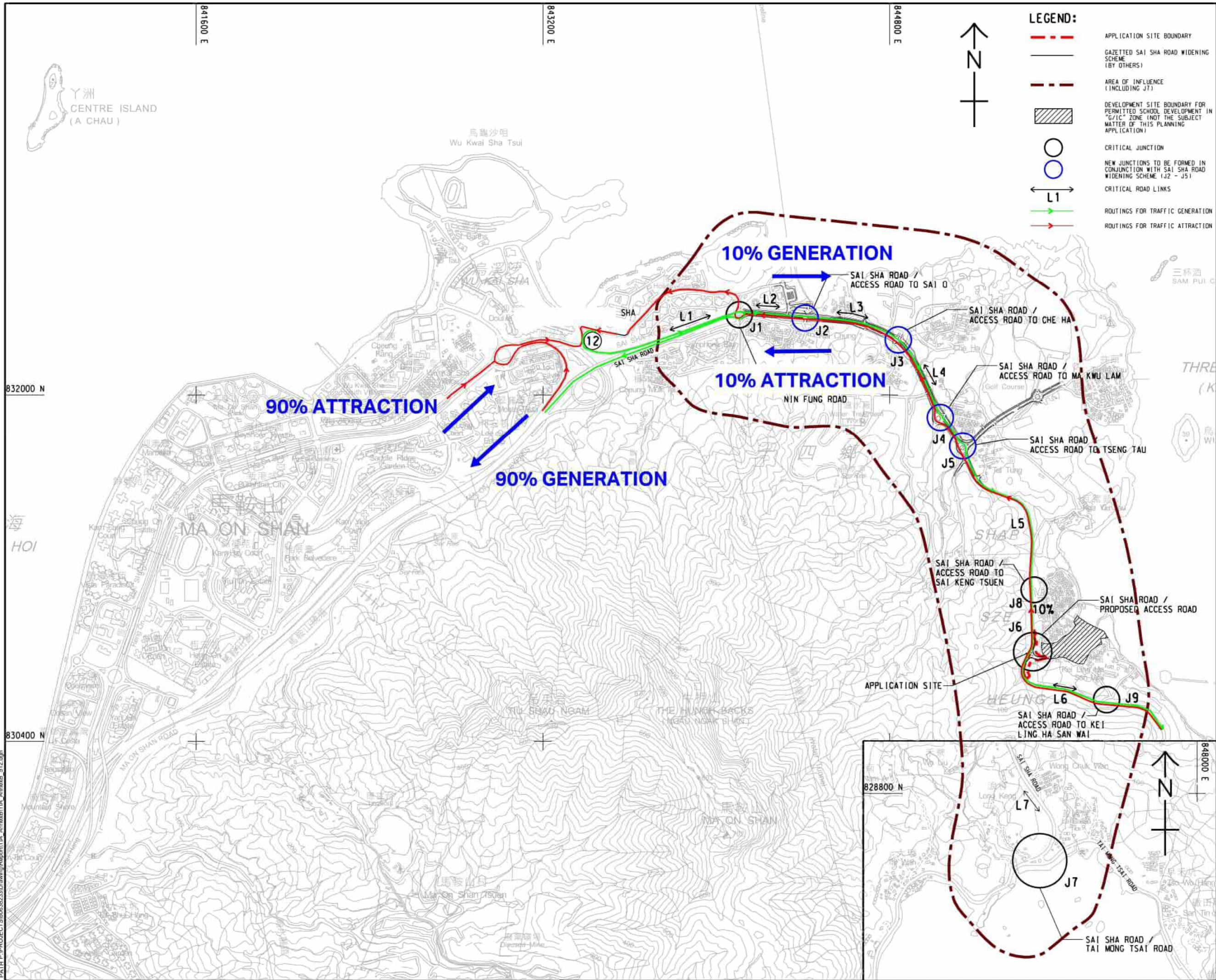
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TRAFFIC ROUTINGS FOR COMMITTED DEVELOPMENT - ON CHUN STREET SCHOOL DEVELOPMENT  
**SHEET NUMBER**  
60638233/TIA\_AnnexB/FIGURE 1.11





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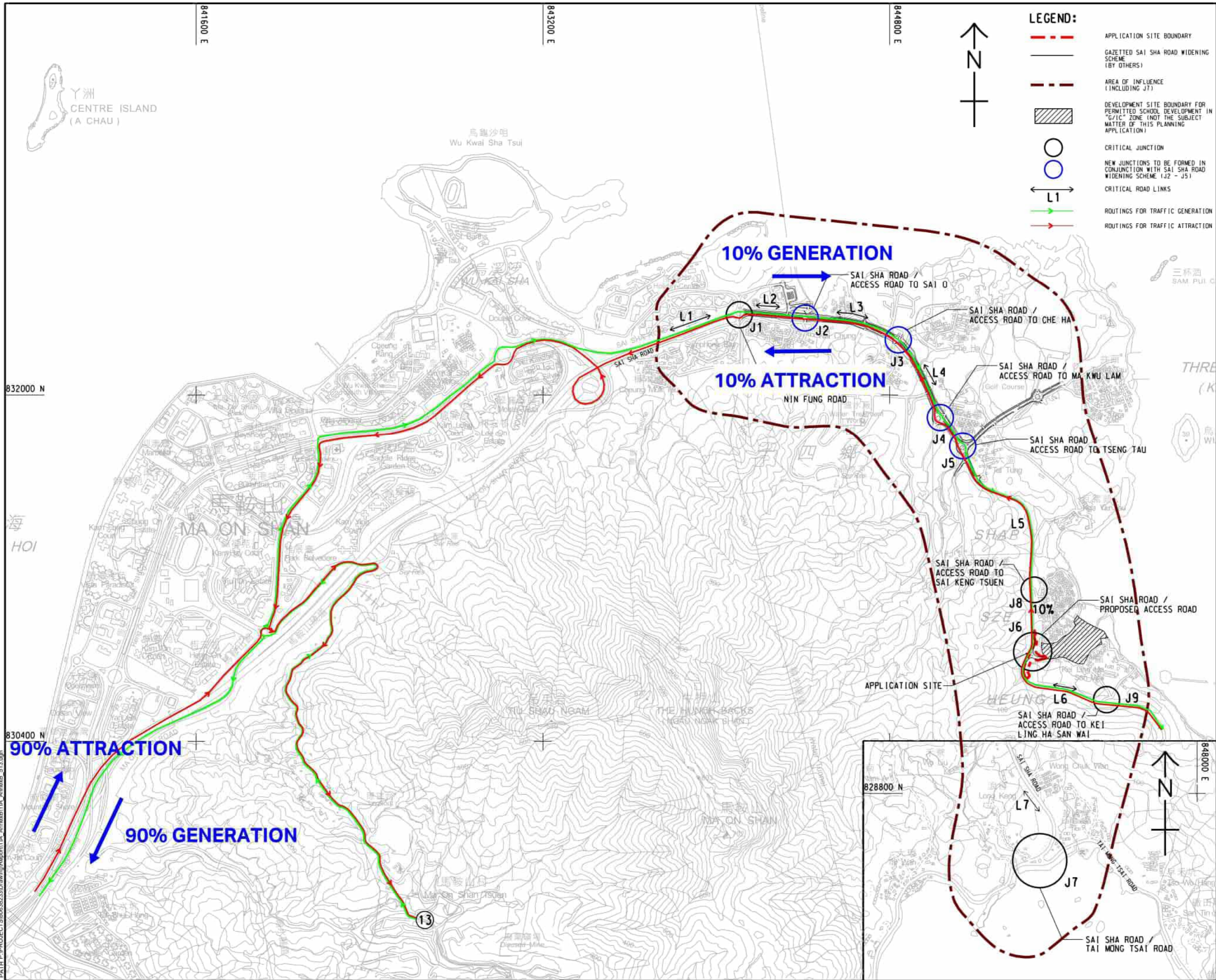
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60638233/TIA\_AnnexB/FIGURE 1.12



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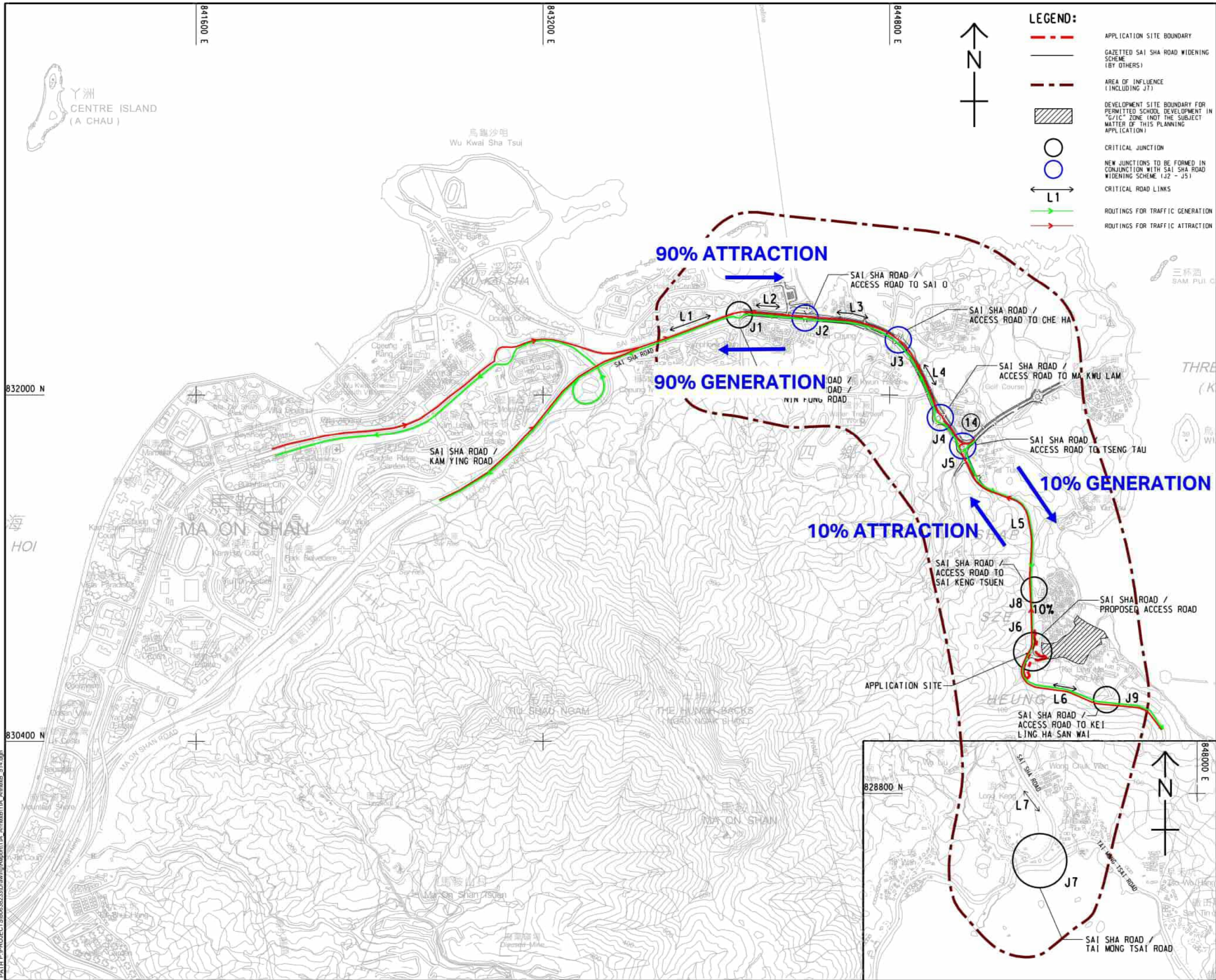
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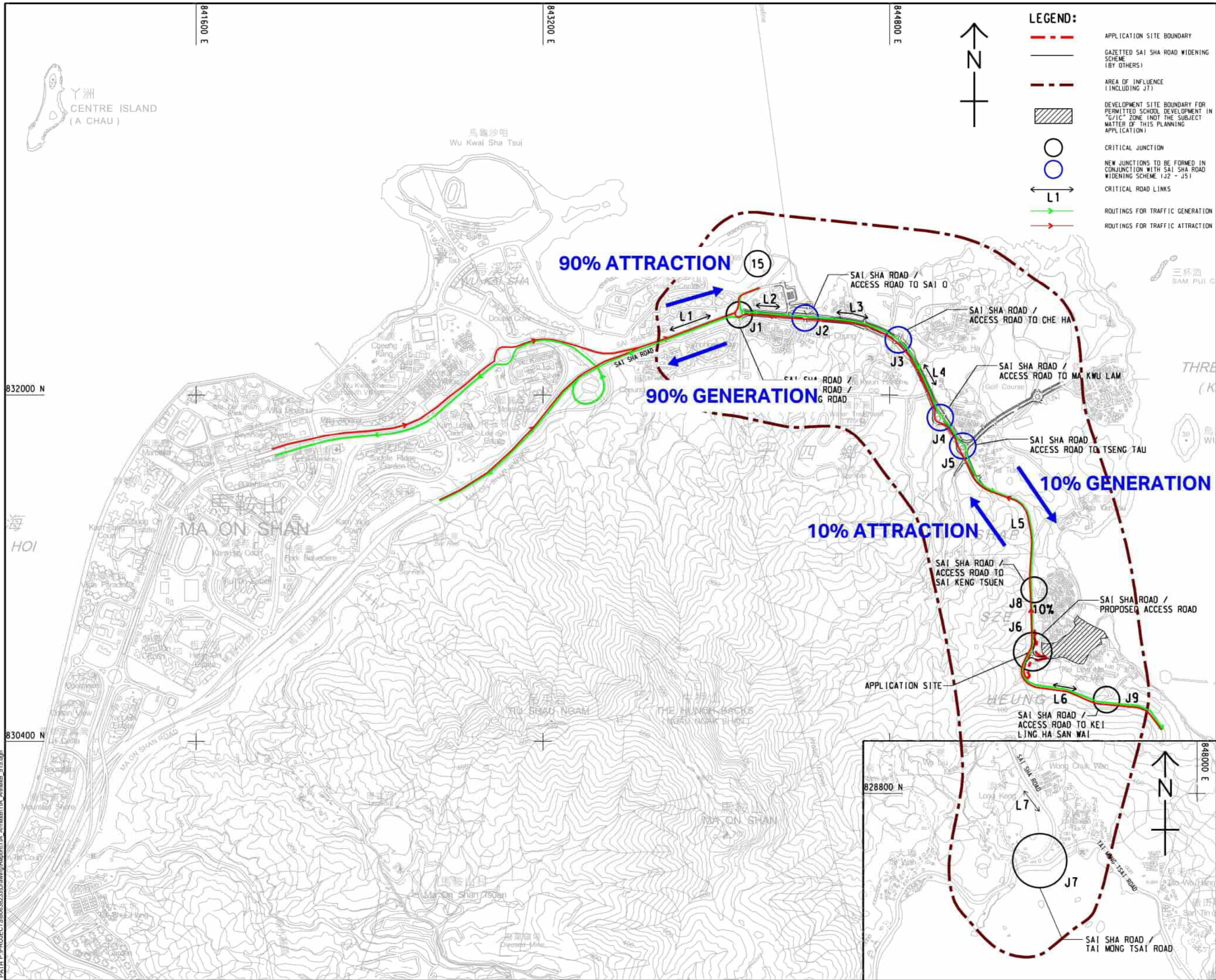
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**SHEET NUMBER**

60638233/TIA\_AnnexB/FIGURE 1.14



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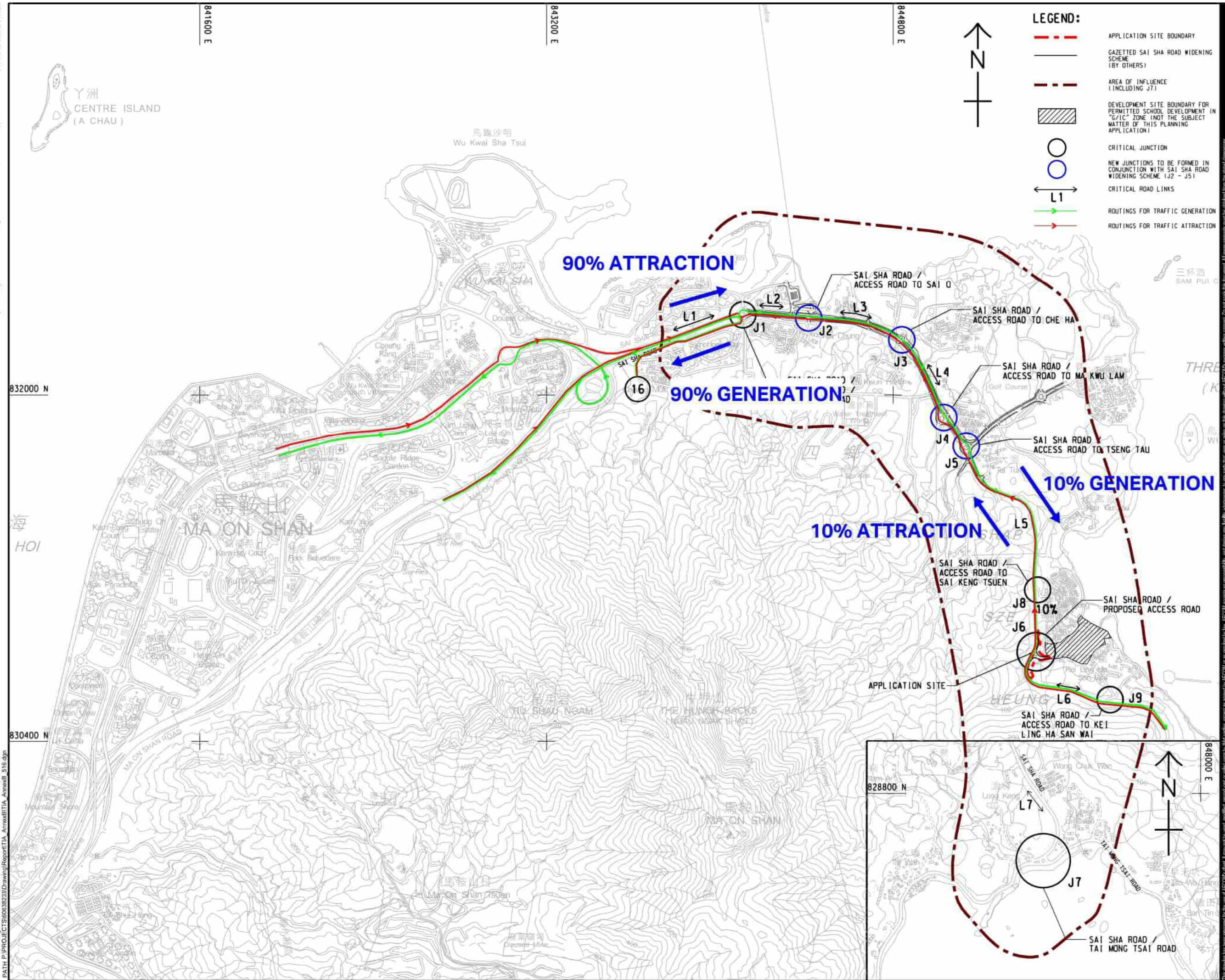
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TRAFFIC ROUTINGS FOR COMMITTED DEVELOPMENT- NAI CHUNG SCHOOL DEVELOPMENT

SHEET NUMBER

60638233/TIA\_AnnexB/FIGURE 1.15





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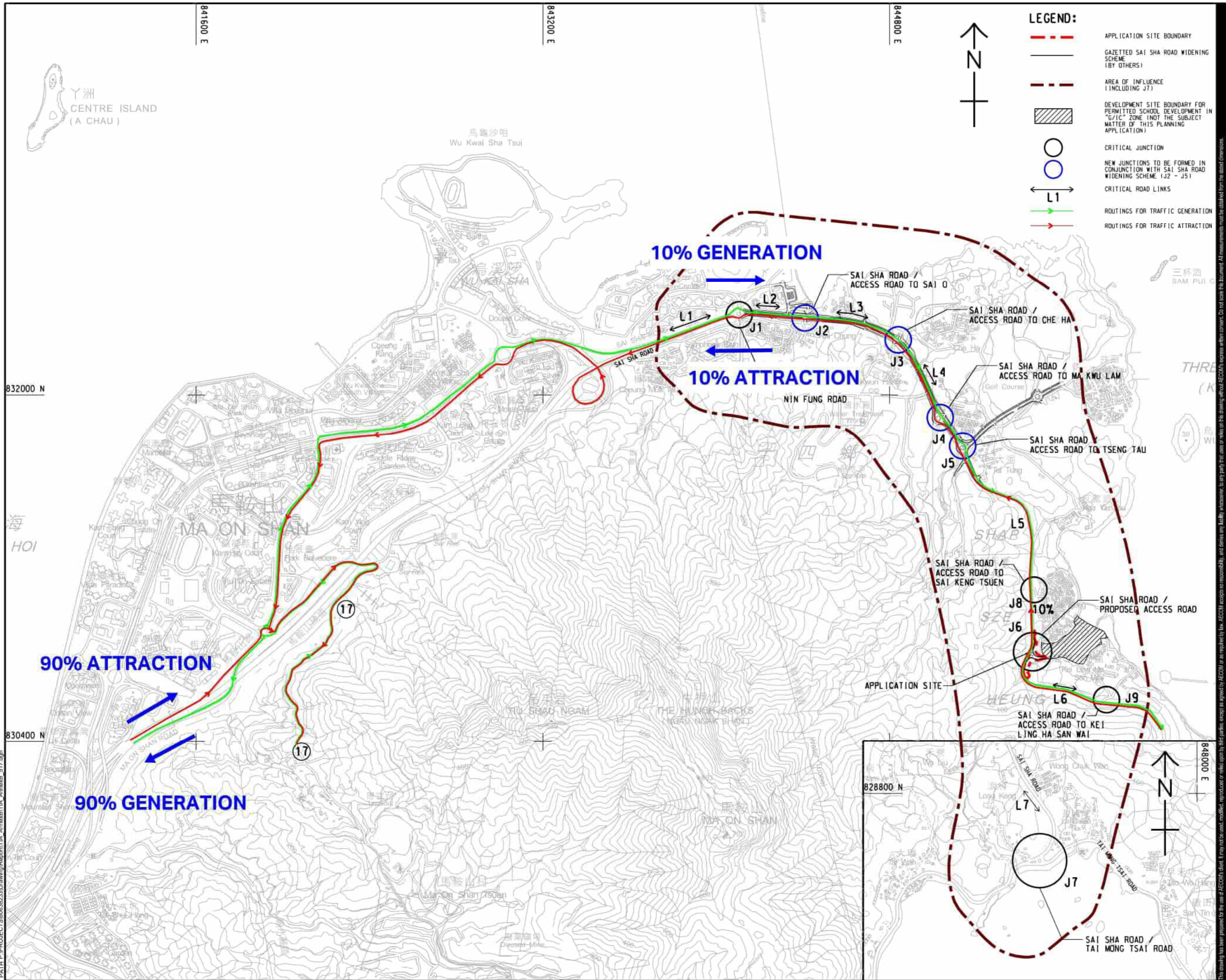
TRAFFIC ROUTINGS FOR COMMITTED DEVELOPMENT POTENTIAL HOUSING SITES - CHEUNG MUK TAU SITES

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60638233/TIA\_AnnexB/FIGURE 1.16



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SECTION 16 PLANNING APPLICATION FOR PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

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**ISSUE/REVISION**  
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01/21	17/04/21	01/21	01/21

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**SCALE**  
1:16000

**DIMENSION UNIT**  
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**KEY PLAN**  
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**PROJECT NO.**  
60638233

**CONTRACT NO.**  
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**SHEET TITLE**  
TRAFFIC ROUTINGS FOR COMMITTED DEVELOPMENT - POTENTIAL HOUSING SITES - MA ON SHAN TSUEN ROAD SITES

**SHEET NUMBER**  
60638233/TIA\_AnnexB/FIGURE 1.17



## ***Annex E***

---

### ***Ground Floor Layout of School Use***

LEGEND:

- PRIVATE CAR PARKING SPACE
- SMALL COACH PARKING SPACE
- LARCH COACH PARKING SPACE



**Proposed Carpark Layout**  
ANNEX E  
1:1000 (A3)  
27/06/2022

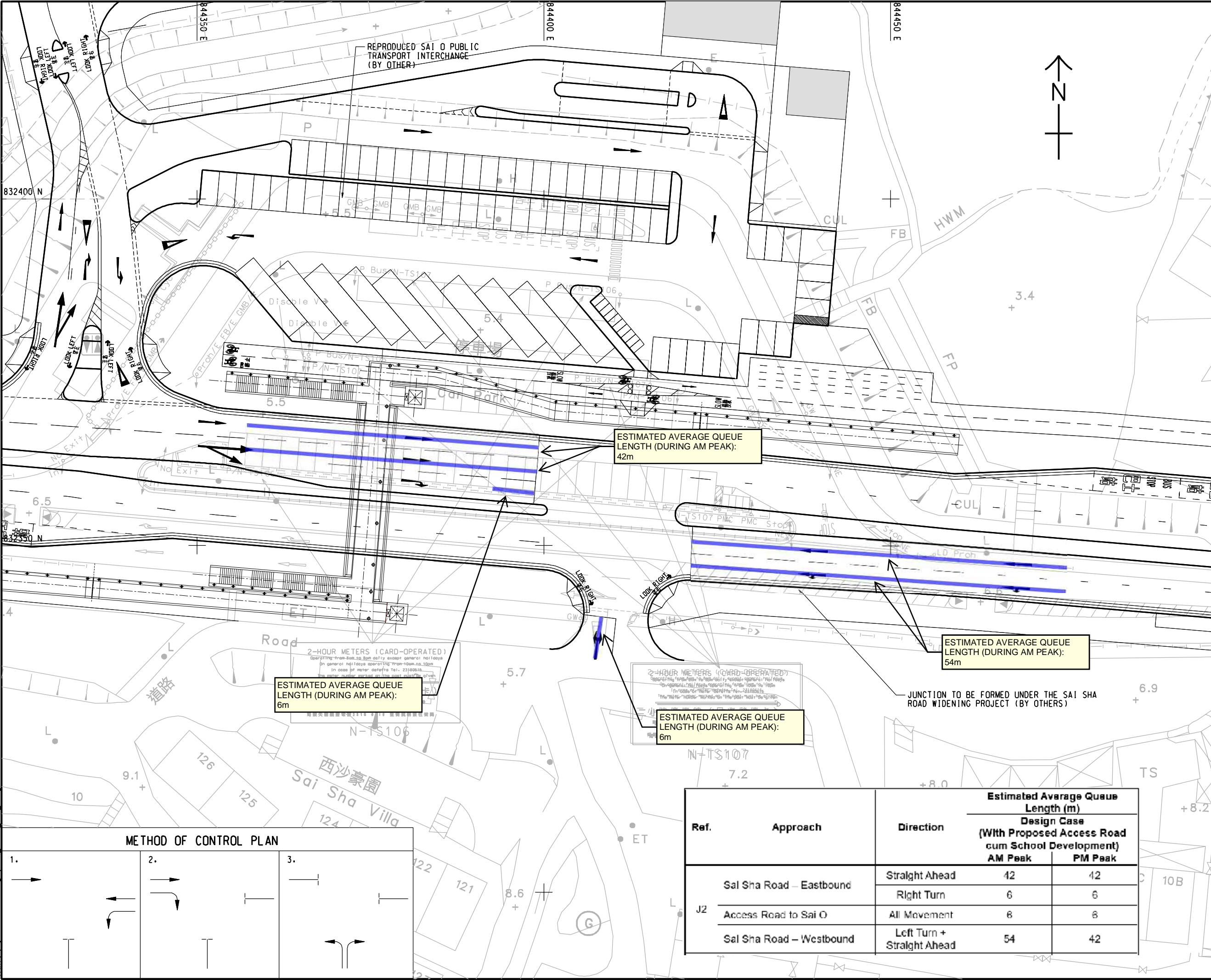


## ***Annex F***

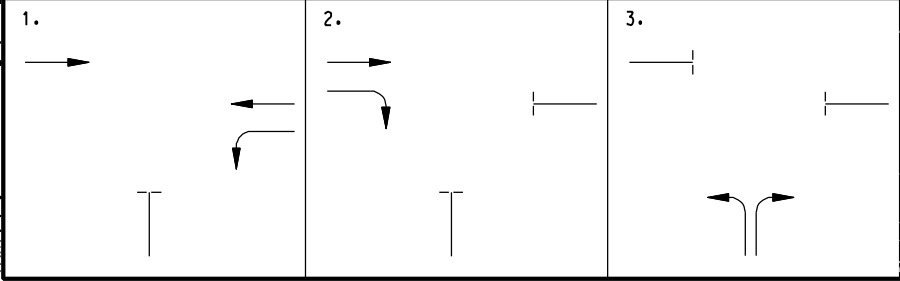
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### ***Estimated Queue Length at Various Signalized Junctions***

ISO A1 594mm x 841mm  
Approved:  
Checked:  
Designer:  
Project Management Initials:  
Pld File by: ZHACHONG 2020/3/13  
PATH: E:\projects\60313653\drawing\supercell\ ncs\TIA\_NCS\_523.dgn



METHOD OF CONTROL PLAN



Ref.	Approach	Direction	Estimated Average Queue Length (m)	
			Design Case (With Proposed Access Road cum School Development)	
			AM Peak	PM Peak
J2	Sai Sha Road – Eastbound	Straight Ahead	42	42
		Right Turn	6	6
	Access Road to Sai O	All Movement	6	6
	Sai Sha Road – Westbound	Left Turn + Straight Ahead	54	42



**PROJECT**  
SECTION 16 PLANNING APPLICATION FOR PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES'

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**STATUS**  
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**SCALE**  
比例  
A3 1 : 500

**DIMENSION UNIT**  
尺寸單位  
METRES

**KEY PLAN**  
索引圖

**PROJECT NO.**  
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60313653

**CONTRACT NO.**  
合約編號

**SHEET TITLE**  
圖紙名稱  
ESTIMATED QUEUE LENGTH AT JUNCTION OF SAI SHA ROAD / ACCESS ROAD TO SAI O (J2) DESIGN CASE

**SHEET NUMBER**  
圖紙編號  
ANNEX F1

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## **Appendix D**

### **Environmental Assessment**

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(Consolidated Report based on Further Information submitted on 16 September 2021, 29 December 2021, 27 January 2022, 18 May 2022 & 30 June 2022)

*(No in-principle objection from environmental perspective from Environmental Protection Department received in June 2022)*

Prepared by

**Ramboll Hong Kong Limited**

**SECTION 16 PLANNING APPLICATION FOR PROPOSED  
ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED  
USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY"  
ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT  
LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW  
TERRITORIES**

**ENVIRONMENTAL ASSESSMENT**

Date **September 2022**

Prepared by **Vinkie Cheng**  
**Assistant Environmental Consultant**

Signed



Approved by **Tony Cheng**  
**Senior Manager**

Signed



Project Reference **SHKSKSCREI00**

Document No. **R7614\_V1.13.docx**

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Figure 4	Location of the Representative Water Sensitive Receivers at the 500m Boundary of the Subject Site

## APPENDICES

Appendix 1	Layout Plan of the Application Site
Appendix 2	2043 Traffic Forecast
Appendix 3	Road Traffic Noise Impact Assessment Results for Existing NSRs

## 1. INTRODUCTION

### 1.1 Project Background

- 1.1.1 The Proposed Access Road is located in "Green Belt" zone within the Approved Shap Sze Heung Outline Zoning Plan (No. S/NE-SSH/11) . Adjacent to the Application Site is an area "G/IC". Despite that the concerned "G/IC" zone is situated closely to Sai Sha Road to its west, there is no standard and direct access connecting it to Sai Sha Road at present. It is currently only accessible via two local tracks through the nearby villages which are sub-standard, with village houses constructed closely along the tracks that constrain any possible widening. The layout plan of the Application Site is shown in **Appendix 1**.
- 1.1.2 To facilitate the permitted development in the subject "G/IC" zone, provision of a standard Proposed Access Road to the subject "G/IC" zone is required. As the subject "G/IC" zone is segregated from Sai Sha Road (the only proper public road in the area) by a "GB" zone, it is inevitable that the Proposed Access Road will have to pass through the "GB" zone before connecting to Sai Sha Road.
- 1.1.3 After taking into consideration of the distance away from nearby villages and the avoidance of encroaching into any third-party lots, the proposed alignment has minimised the encroachment into the "GB" zone as far as practicable. The Application Site of the subject planning application refers to the segment of the access road and its works area that falls within "Green Belt" (GB) portion only as illustrated in the site location plan in **Figure 1**, whereas the permitted development (including the access road) in the "G/IC" zone shall not form part of the planning application.

### 1.2 Scope of Work

- 1.2.1 An Environmental Assessment (EA) has been undertaken as part of the technical assessments to support the S16 planning application for Proposed Access Road in "GB" zone from an environmental ground. This EA identifies and addresses the following major environmental issues:
- Potential air quality problem due to emissions from the proposed access road;
  - Traffic noise impact from the Proposed Access Road on the surrounding existing noise sensitive use;
  - Environmental impact from the construction of the Proposed Access Road;

## **2. AIR QUALITY IMPACT**

### **2.1 Introduction**

- 2.1.1 This section identifies potential air quality impacts arising from the traffic emissions along the road carriageways.

### **2.2 Assessment Criteria**

- 2.2.1 The HKPSG has provided a set of guidelines to assess the potential air quality impacts generated from traffics. According to Table 3.1 in Chapter 9 of HKPSG, a number of horizontal buffer distance between kerb side of roads and sensitive uses is recommended for various types of road.

### **2.3 Impact of Vehicular Emission**

- 2.3.1 The Proposed Access Road is to connect the permitted school development at the adjacent "G/IC" site and Sai Sha Road (the only proper road in the area). As advised by project traffic consultant, this access road is classified as local road. According to the Table 3.1 of Chapter 9 of HKPSG, the recommended buffer distance from the local road is >5m.
- 2.3.2 **Figure 2.1** shows the buffer distance from the kerb side of the Proposed Access Road to the existing village houses in Sai Keng Tsuen. The separation of the Proposed Access Road to the nearest Air Sensitive Receiver is more than ~ 20m. The relevant HKPSG buffer distance for local road is fulfilled, and it is expected that the existing sensitive receivers would not be subject to unacceptable vehicular emission impact.

### **3. NOISE IMPACT ASSESSMENT**

#### **3.1 Introduction**

- 3.1.1 This traffic noise impact assessment is prepared to address road traffic noise impact on the noise sensitive uses of the existing premises along the Proposed Access Road, and to recommend mitigation measures where practicable to attenuate the impact, if any.

#### **3.2 Assessment Criteria**

- 3.2.1 Noise standards are recommended in the HKPSG for planning against possible noise impact from road traffic. According to the EIAO Guidance Note No. 12/2010, the traffic noise impact would be considered significant if the traffic noise level with the road project would be greater than that without the road project at the design year by 1.0 dB(A) or more.
- 3.2.2 The nearest existing premises surrounding the access road are the village houses at Sai Keng Tsuen, to the north of the Proposed Access Road. According to the HKPSG, the maximum noise level from road traffic, measured in terms of  $L_{10}$  (1-hr) is recommended to be 70 dB(A) at typical facades of dwellings.

#### **3.3 Assessment Methodology**

- 3.3.1 The methodology involves the prediction of future noise impacts on Noise Sensitive Receivers (NSRs) arising from traffic flows on existing and future road carriageways in the vicinity of the Proposed Access Road.
- 3.3.2 The U.K. Department of Transport's procedure "Calculation of Road Traffic Noise" was applied to predict the hourly  $L_{10}$  noise level generated from road traffic at selected representative noise sensitive receivers (NSRs) of the Proposed Access Road. The predicted noise levels were then compared with the HKPSG noise criterion for assessing the impact.
- 3.3.3 Based on the tentative completion year of the Proposed Access Road (Year 2028), traffic forecast for the year 2043 on the road carriageways in the vicinity was provided by AECOM (the project traffic consultant) for prediction of the worst-case, which is the AM scenario, of the traffic noise impact within 15 years from the completion of the Proposed Access Road. The projected traffic flows and vehicle composition are shown in **Appendix 2**. Reply from Transport Department (TD) on the methodology adopted for the traffic forecast and the confirmation letter from traffic consultant on the validity of the traffic data will be provided when available.

#### **3.4 Road Characteristics**

- 3.4.1 All roads are assumed with speed limit of 50km/hr.
- 3.4.2 Since the access road is a bridge for connecting the G/IC site (~ 5 mPD) to the Sai Sha Road (~ 30 mPD), 0.8m solid parapet wall is standard provision along the kerb side of the access road.

#### **3.5 Noise Sensitive Receivers**

- 3.5.1 Residential dwellings with openable windows/ doors for prescribed ventilation purposes, are selected as noise sensitive receivers (NSRs). The assessment points of NSRs are taken 1.2m above the floors and 1m away from the facades of openable windows (which would be used for ventilation purpose).



- 3.5.2 Locations of the identified representative existing NSRs for the road traffic noise impact assessment are shown in **Figure 3.1**. **Figure 3.2** shows the section of the identified NSRs and the road level of the Proposed Access Road.

### **3.6 Predicted Road Traffic Noise Level**

- 3.6.1 The traffic noise impacts on the representative existing NSRs is shown in **Table 1 of Appendix 3**. The assessment results show that the predicted noise level at all representative NSRs along the Proposed Access Road comply with the relevant HKPSG traffic noise standard.
- 3.6.2 Since the assessment results indicated that the predicted noise level at all existing noise sensitive receivers due to the proposed access road would comply with the noise criteria as stipulated in Table 4.1 of the Chapter 9 of the HKPSG road traffic noise standards (i.e. 70dB(A)), no unacceptable road traffic noise impact is anticipated due to the proposed access road. Therefore, no mitigation measures are required at the proposed access road.

## **4. CONSTRUCTION PHASE ENVIRONMENTAL IMPACTS**

### **4.1 Introduction**

4.1.1 During the construction of the development, key environmental impacts were identified as follows:

- noise from construction equipment on surrounding sensitive uses;
- construction dust;
- site run-off and discharge; and
- construction waste disposal.

4.1.2 These impacts can be effectively suppressed by carefully selection of powered mechanical equipment for construction, incorporating proper mitigation measures into work procedures through contractual clauses, good site management and close enforcement of the resident engineers.

### **4.2 Construction Work**

4.2.1 The construction of the Proposed Access Road is general construction for road works, i.e. site formation work, construction of road, etc.

4.2.2 As there is a level difference between the G/IC site (~ 5 mPD) and the Sai Sha Road (~ 30 mPD), the Proposed Access Road would be in bridge form, and the major construction work would therefore involve the site formation for the pier of the bridge. At this preliminary planning stage, each pier would involve an area of 15m x 4m for foundation area, and there might be around 20 piers for the whole access roads with a separation of 20m.

### **4.3 Construction Phase Noise Impact**

4.3.1 This section presents the management and mitigation strategy of the construction noise generated from the construction work for the Proposed Access Road. Where appropriate, environmental control measures for avoiding and minimising the potential impacts are recommended.

#### Legislation

4.3.2 Construction noise is governed by the Noise Control Ordinance (NCO) which prohibits the use of powered mechanical equipment (PME) during the restricted hours (7 p.m. to 7 a.m. on normal weekdays and any time on a public holiday, including Sunday) without a valid Construction Noise Permit (CNP) issued by the EPD. The criteria and procedures for issuing such a permit are specified in the "Technical Memorandum on Noise From Construction Works Other than Percussive Piling" (TM1).

4.3.3 With effect from 1 November 1996, the use of specified powered mechanical equipment (SPME) for carrying out construction work other than percussive piling and/or the carrying out of prescribed construction work (PCW) within a designated area are also brought under control. The relevant technical details are provided in the "Technical Memorandum on Noise from Construction Work in Designated Areas" (TM2).

4.3.4 Percussive piling is controlled similarly by a noise permit system and described in the NCO and the "Technical Memorandum on Noise From Percussive Piling" (TM3) which restrict the number of hours during which piling can be conducted.

4.3.5 For construction works other than percussive piling, noise limits as shown in Table 4.1 at below are set out in the "Assessment Criteria for Noise from Construction Activities – Non-statutory Controls" at ProPECC PN 2/93.

**Table 4.1 Noise Limits for Daytime Construction Activities**

<b>NSR</b>	<b>0700 to 1900 hours on any day not being a Sunday or general holiday <math>L_{eq}</math> (30min.) dB (A)</b>
All domestic premises including temporary housing accommodation	75
Educational institutions including kindergartens, nurseries	70 65 (during examination)

Notes:

- (i) the above standards apply to uses which rely on opened windows for ventilation;
- (ii) the above standards shall be viewed as the maximum permissible noise levels assessed at 1m from the external facade.

#### Construction Noise Mitigation

- 4.3.6 Mitigation for construction noise impacts shall be implemented through standard contract document clauses. Appropriate arrangement should be provided into working methods to minimise the potential construction noise impact. To minimize potential noise impacts during construction, a noise mitigation management system should be set up to ensure regular maintenance of all plant and equipment, reduce noise generation at source, and that appropriate silencing applications are in use based upon the best reasonable practice.
- 4.3.7 Other common noise mitigation measures that could be applied include:
- Use of quieter equipment and methods, e.g. use of quieter Powered Mechanical Equipment, non-explosive chemical expansion agent (soundless chemical demolition agent), hydraulic crusher for concrete breaking;
  - Use of PME equipped with properly designed silencers, mufflers, acoustically dampened panels and/ or acoustic sheds or shields, etc.;
  - Use of electric-powered equipment where applicable instead of diesel-powered or pneumatic-powered equipment;
  - Erecting noise enclosures around noisy plants;
  - Locating noise emitting plants as far as practicable away from sensitive receivers;
  - Define Contractual clauses for construction works; and
  - Schedule noisy operations during less sensitive hours on normal weekdays.
- 4.3.8 "Recommended Pollution Control Clauses for Construction Contracts" is available on EPD website. This clause also contain the recommended noise control measures to be implemented by the contractor during the construction of the development.
- 4.3.9 Detailed construction method with number and types of construction plants to be used for different stages of work should be prepared by the project main contractor. Also, the prediction of construction noise level with necessary noise mitigation measures in different stage of work should be provided by the project main contractor and submitted to the Engineer for approval. The contractor shall also implement the recommendation pollution control clauses for construction contracts.
- 4.3.10 With the implementation of the appropriate mitigation measures as discussed above, the potential construction noise impacts would not be significant. These mitigation measures can be enforced by specifying a construction noise control plan as part of the contract document.

- 4.3.11 Requirements in relevant pollution control ordinances/regulations and the guideline document "Recommended Pollution Control Clause for Construction Contracts" also are relevant for construction noise control.

#### 4.4 Construction Phase Air Quality Consideration

- 4.4.1 This section presents the management and mitigation strategy of the construction dust generated from the construction work for the Proposed Access Road. Where appropriate, environmental control measures for avoiding and minimising the potential impacts are recommended.

##### Legislation

- 4.4.2 Construction activities will arise some potential temporary air quality impact on the surrounding area.
- 4.4.3 Assessment Criteria for aerial emission is based on the Hong Kong Air Quality Objectives (AQO) for air pollutants given in Chapter 9, "Environment", of the HKPSG for air pollution control and the AQOs for the pollutants relevant to the construction phase air quality impact are listed in Table 4.2 below.

**Table 4.2 Prevailing Air Quality Objectives**

Pollutants	Averaging Period *	Pollutants Concentration ( $\mu\text{g}/\text{m}^3$ ) *	No. of Exceedances Allowed Per Calendar Year *
CO	1 hour	30,000	0
	8 hours	10,000	0
NO <sub>2</sub>	1 hour	200	18
	Annual	40	N.A.
SO <sub>2</sub>	10-min.	500	3
	Daily (24 hours)	125	3
Ozone (O <sub>3</sub> )	8-hr	160	9
Lead (Pb)	Annual	0.5	NA
RSP (PM <sub>10</sub> )	24-hours (24-hours)	100	9
	Annual	50	N.A.
FSP (PM <sub>2.5</sub> )	Daily (24-hours)	75	9
	Annual	35	N.A.

Remark:

\* Based on the Air Quality Objectives under the Air Pollution Control (Amendment) Ordinance 2013.

N.B. Concentrations of gaseous air pollutants are measured at 293 K and 101.325 kPa (one atmospheric pressure).

N.A. Not applicable.

FSP means suspended particles in air with a nominal aerodynamic diameter of 2.5  $\mu\text{m}$  or less.

RSP means suspended particles in air with a nominal aerodynamic diameter of 10  $\mu\text{m}$  or less

##### Dust Impact and Mitigation

- 4.4.4 Dust will be the potential major source of air quality impact during the construction phase. Unacceptable impacts from the criteria pollutants - NO<sub>x</sub>, SO<sub>2</sub>, and CO, etc. are unlikely as significant emissions are not anticipated, as number of diesel or petroleum



fuelled machinery operating in the Application Site shall be limited as compared to the traffic volume in nearby roads.

#### Exhaust Emission Impact and Mitigation

- 4.4.5 Exhaust emission from the construction plants and machineries will be another potential major source of air quality impact during the construction phase. Unacceptable impacts from the criteria pollutants - NO<sub>x</sub>, HC, PM, CO and smoke, etc. are unlikely as significant emissions are not anticipated, as number of diesel or petroleum fuelled machinery operating in the Application Site shall be limited as compared to the traffic volume in nearby roads.
- 4.4.6 Appropriate dust and exhaust emission reduction measures should be adopted as required under the Air Pollution Control (Construction Dust) Regulation, Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation and Air Pollution Control (Fuel Restriction) Regulations. Essential dust and exhaust emission mitigation measures must be implemented to minimize the potential air impact. Dust and exhaust emission impact could be effectively mitigated by inclusion of appropriate contracts clauses for dust and exhaust emission minimisation in the works contract. Mitigation measures may include:
- dump trucks for material transport should be totally enclosed using impervious sheeting;
  - any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading;
  - the stockpiled malodorous materials should be removed from Project Area as soon as possible, and they should be covered entirely by plastic tarpaulin sheets;
  - dusty materials remaining after a stockpile is removed should be wetted with water;
  - the area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with e.g. concrete, bituminous materials or hardcore or similar;
  - stockpile of dusty materials to be either covered entirely by impervious sheeting, placed in an area sheltered on the top and the 3 sides; or sprayed with water so as to maintain the entire surface wet;
  - all dusty materials to be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet;
  - vehicle speed to be limited to 10 kph except on completed access roads;
  - the portion of road leading only to a construction site that is within 30 m of a designated vehicle entrance or exit should be kept clear of dusty materials;
  - every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites;
  - the load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle;
  - the working area of excavation should be sprayed with water immediately before, during and immediately after (as necessary) the operations so as to maintain the entire surface wet; and
  - use of effective dust screens, sheeting or netting to be provided to enclose dry scaffolding which may be provided from the ground floor level of the building or if a canopy is provided at the first floor level, from the first floor level, up to the

highest level (maximum four floors for this Project) of the scaffolding where scaffolding is erected around the perimeter of a building under construction;

- Usage of ultra-low sulphur diesel;
- Installation of emission control device such as scrubbers.

- 4.4.7 Good site management is important to help for reducing potential air quality impact down to an acceptable level. As a general guidance, the contractor shall maintain high standard of site management to prevent potential emission of fugitive dust emission. Loading, unloading, handling and storage of fuel, raw materials, products, wastes or by-products should also be carried out in a manner so as to minimise the release of visible dust emission.
- 4.4.8 A high standard of site management shall be maintained. Any piles of materials accumulated on or around the work areas shall be cleaned up regularly. Cleaning, repair and maintenance of all plant facilities within the work areas shall be carried out in a manner without generating fugitive dust emissions. The material shall be handled properly to prevent fugitive dust emission before cleaning.
- 4.4.9 "Recommended Pollution Control Clauses for Construction Contracts" is available on EPD website. It contains the recommended air pollution control measures to be implemented by the contractor during the construction of the Proposed Access Road.

#### **4.5 Construction Phase Water Quality Impact**

- 4.5.1 This section presents the management and mitigation strategy of the wastewater generated from the construction work for the Proposed Access Road and the nearby Water Sensitive Receivers (WSR). Three representative WSRs have been identified, they are the permanent stream in the south, CPA zone and SSSI zone in the northeast of the application site. The location of WSRs is illustrated at **Figure 4**. Where appropriate, environmental control measures for avoiding and minimising the potential impacts are recommended.

##### Legislation

- 4.5.2 Construction activities may induce potential water quality impact due to the discharge of the effluent generated from the construction site. Effluent discharges from construction site is subject to control under the Water Pollution Control Ordinance and the Technical Memorandum Standards for Effluents Discharged in Drainage and Sewerage Systems, Inland and Coastal Water issued by EPD. Information in the ProPECC PN1/94 Construction Site Drainage will also be considered to provide some basic environmental guidelines for handling and disposal of construction site discharges.

##### Construction Site Wastewater Impacts

- 4.5.3 Site construction activities will inevitably have the potential to generate wastewater. As such works should be carried out in such a manner as to minimise adverse impacts on the water quality. Pollution sources could include:
- Construction runoff and drainage;
  - Sewage effluent from the site; and
  - Liquid spillage, e.g. oil, diesel and solvents etc.
- 4.5.4 Construction runoff contains increased loads of sediments, other suspended solids and contaminants. Potential sources of pollution include runoff and erosion from the site surfaces, drainage channels; bentonite slurries and other grouting materials, concrete washout and drainage from dust suppression sprays, fuel, oil and lubricants from construction vehicles and other equipment.

- 4.5.5 Sufficient silt removal facilities should be installed to settle out sediment prior to discharge. Such facilities shall be properly designed in accordance with guidelines from the Civil Engineering and Development Department (CEDD) to achieve the desired mitigating effect. Typically, a detention time not less than 5 minutes for maximum design flow of inlet should achieve adequate sediment removal. Channels or earth berm or sand bag barriers should be provided on site to properly direct surface runoff to such silt removal facilities. Sediment traps, channels and manholes should be maintained and the deposited silt and grit should be removed on regular basis.
- 4.5.6 To prevent spillage of fuel oils or other polluting fluids at sources, it is recommended that all the stocks should be stored inside proper containers and sited on sealed areas, preferably surrounded by berms.
- 4.5.7 "Recommended Pollution Control Clauses for Construction Contracts" (RPCC) also recommends appropriate wastewater control measures to be implemented at the construction site by the contractor. The RPCC is available on EPD website.
- 4.5.8 The discharge from the construction site of the Proposed Access Road would likely go into Tolo Hoarbour, hence the quality of the discharge wastewater should meet the standards specified in the Technical Memorandum – Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters. The above proposed mitigation measures and control measures should be implemented and an environmental monitoring and audit should be carried out to ensure the effectiveness of the proposed mitigation measures and subsequently ensure the water quality of the nearby WSRs would not be adversely affected by the construction of the project.
- 4.5.9 Water pollution due to temporary site facilities e.g. toilets could be source of pollution if appropriate measures are not implemented properly in respect of storage and discharge. Since portable chemical toilets will be provided, no adverse water quality impact is anticipated.

Recommended Mitigation Measures During Construction Phase

- 4.5.10 Control of potential water quality impact arising from the construction works shall be achieved based on the following principles:
- Minimization of runoff;
  - Prevention or minimisation of the likelihood of the identified pollutants being in contact with rain or runoff; and
  - Measures to abate pollutants in the stormwater runoff.
  - Site formation work of the proposed access road would be carried out in dry-season to minimize the generation of run-off, if any.
- 4.5.11 The Contractor shall apply for a discharge licence under the WPCO and the discharge shall comply with the terms and conditions of the licence.
- 4.5.12 Contractor(s) of this Project will be required to submit a Construction Phase Drainage Management Plan with details of the design of the temporary site drainage system for the approval of the Engineers Representative (RE) and the Environmental Team in order to ensure that the above mitigation measures are in place.
- 4.5.13 Regular inspection (weekly) of the site drainage system and the implementation of the Plan shall be carried out by the Contractor(s), RE, and ET in order to ensure no off-site spillage of runoff and that the mitigation measures are effectively implemented. Any deficiencies identified shall be rectified by the Contractor(s).
- 4.5.14 The BMPs given in the ProPECC PN 1/94 shall be implemented in controlling water pollution during the whole construction phase. The main practices provided in the above-mentioned document (i.e. ProPECC PN 1/94) are also summarized in the

following paragraphs which should be implemented by the contractor during the construction phase, where practicable:

- High loading of suspended solids (SS) in construction site runoff will be prevented through proper site management by the contractor;
- The boundary of critical work areas will be surrounded by ditches or embankment. Accidental release of soil or refuse into the adjoining lands should be prevented by the provision of site hoarding or earth bunds, etc. at the site boundary. These facilities should be constructed in advance of the site formation works and roadworks;
- Consideration will be given to plan construction activities to allow the use of natural topography of the Project Site as a barrier to minimize uncontrolled non-point discharge of construction runoff;
- Temporary ditches, earth bunds should be provided to facilitate controlled discharge of runoff into storm drains via sand/ silt removal facilities such as sand traps and sedimentation basins. Oil and grease removal facilities should also be provided where appropriate, for example, in area near plant workshop/ maintenance areas;
- Sedimentation basins and sand traps designed in accordance with the requirements of ProPECC Note PN 1/94 should be installed at the construction site for collecting surface runoff;
- Sand and silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly by the contractor, and at the onset of and after each rainstorm to ensure that these facilities are functioning properly;
- Slope exposure should be minimized where practicable especially during the wet season. Exposed soil surfaces should be protected from rainfall through covering the temporarily exposed slope surfaces or stockpiles with tarpaulin or the like;
- Haul roads should be protected by crushed rock, gravel or other granular materials (i.e. hard paved) to minimize discharge of contaminated runoff;
- Slow down water run-off flowing across exposed soil surfaces;
- Plant workshop/ maintenance areas should be bonded and constructed on a hard standing. Sediment traps and oil interceptors should be provided at appropriate locations;
- Manholes (including newly constructed ones) should be adequately covered or temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system;
- Construction works should be programmed to minimize soil excavation works where practicable during the rainy days;
- Chemical stores will be contained (bonded) to prevent any spills from contact with water bodies. All fuel tanks and/ or storage areas should be provided with locks and be sited on hard surface;
- Chemical waste arising from the Project Site should be properly stored, handled, treated and disposed of in compliance with the requirements stipulated under the Waste Disposal (Chemical Waste) (General) Regulation;
- Drainage facilities must be adequate for the controlled release of storm flows.
- Vehicle wheel washing facilities should be provided at the site exit such that mud, debris, etc. attached to the vehicle wheels or body can be washed off before the vehicle leaves the work site;
- Section of the road between the wheel washing bay and the public road will be paved to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.



- Bentonite slurries, if any to be generated, shall be reconditioned and reused as far as practicable. Spent bentonite should be kept in a separate slurry collection system for disposal at a marine spoil grounds subject to obtaining a marine dumping licence from EPD. If used bentonite slurry is to be disposed of through public drainage system, it should be treated to meet the respective applicable effluent standards for discharges into sewers, storm drains or the receiving waters;
- Sewage generated from the construction workforce should be contained in chemical toilets and be tanked away. Chemical toilets should be provided at a minimum rate of about 1 per 50 workers. The facility should be serviced and cleaned by a specialist contractor at regular intervals.

#### **4.6 Construction Phase Waste Management**

- 4.6.1 This section presents the management and disposal strategy of the wastes generated from the construction work for the Proposed Access Road. The options for waste minimization, reuse, recycling, collection, transport and disposal of wastes arising from the construction and demolition work have been examined. Where appropriate, procedures for waste reduction and management are considered and environmental control measures for avoiding and minimising the potential impacts are recommended.

##### Legislation

- 4.6.2 The following legislations and guidelines are relevant to the handling, treatment and disposal of waste in HKSAR and references were made in assessing the potential impacts and their avoidance or mitigation:
- *Waste Disposal Ordinance (Cap. 354);*
  - *Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C);*
  - *Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N); and*
  - *Practice Note for Authorized Persons and Registered Structural Engineers – Construction and Demolition Waste (PNAP ADV-19, also known as PN for AR&RSE No. 243).*

##### Identification and Evaluation of Potential Impact

- 4.6.3 The construction activities to be carried out for the proposed Project would generate a variety of wastes that can be divided into distinct categories based on their composition and ultimate method of disposal. The identified waste types include:
- Construction and Demolition (C&D) materials;
  - Chemical waste; and
  - General refuse.

##### **C&D Materials**

- 4.6.4 C&D materials comprise mainly of unwanted materials, including exaction for foundation of the pier of the access road, surplus materials generated from the construction works of the Proposed Access Road. C&D materials may comprise different types of materials, including:
- Inert C&D materials (also known as public fill, including soil, rock debris, rubble earth, concrete, etc.) do not decompose and are suitable to reuse as filling materials for land reclamation and site formation. Inert C&D materials could be reused on-site as filling materials. For those inert C&D materials that cannot be reused should be disposed of at Public Fill Reception Facilities.
  - Non-inert C&D materials (also known as C&D waste, including bamboo, timber, paper, metal, glass, plastic, packaging wastes, etc.). Non-inert C&D

materials should be reused or recycled as far as possible. For those non-inert C&D materials that cannot be reused or recycled, they should be disposed of at designated landfill sites as last resort.

- 4.6.5 The general waste management strategy is to avoid waste generation in the first place. Should it be unavoidable, reduction and segregation at-source should be exercised as far as practicable and recycling and reuse should be adopted at the same time to salvage all the recyclable and reusable materials as much as possible.
- 4.6.6 Inert C&D materials should be re-used on-site (e.g for backfilling) if it is practical and/or disposed of at public filling area or other CEDD designated public fill reception facilities. Non-inert C&D materials (i.e. C&D waste) should be re-used or recycled. For those that cannot be reused or recycled, they should be disposed of at designated landfill sites as last resort.
- 4.6.7 The Contractor(s) should be responsible for ensuring that all on-site wastes will be collected by approved waste collectors and appropriate measures should be undertaken to minimise adverse impacts to the surrounding environment, such as dust generation. The Contractor(s) must also ensure that all necessary waste disposal permits have been obtained before actions.
- 4.6.8 Prior to disposal of non-inert C&D materials, it is recommended that wood, steel, glass and other metals will be collected separately for re-use and/or recycling and inert C&D materials utilized as fill materials to minimize the quantity of waste to be disposed of at the Public Fill Reception Facilities and landfill.

#### **Chemical Waste**

- 4.6.9 Construction plant and equipment will require regular maintenance and servicing, which would generate waste such as solvents, lubrication oil and fuel, etc. Chemical wastes arising during the construction phase may pose serious environmental, health and safety hazards if not stored and disposed of in an appropriate manner.
- 4.6.10 It is difficult to quantify the amount of chemical wastes as it will solely depend on the contractor's on-site maintenance practice and the quantities of plant and vehicles utilized at the construction site. Nevertheless, it is anticipated that the quantity of chemical waste such as lubrication oil and solvent produced from equipment maintenance would be small and less than hundred litres per month.
- 4.6.11 The contractor is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.
- 4.6.12 Storage, handling, transport and disposal of chemical waste should be arranged in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Waste published by the EPD. Chemical wastes such as wasted solvents, lubrication oil and fuel, etc. will need special handling and storage arrangements and should be collected by licensed collectors for subsequent disposal and appropriate treatment at licensed waste disposal facilities, for example the Chemical Waste Treatment Facility Centre (CWTC) in Tsing Yi. Mitigation and control requirements for chemical waste are provided in the "Recommended Pollution Control Clauses for Construction Contracts" available in EPD website mentioned the handling, storage and disposal of chemical wastes. With good management and site particles, adverse environmental impacts should not result.

#### **General Refuse**

- 4.6.13 Throughout the construction stage, the workforce would generate general refuse comprising food scraps, waste paper, empty containers, etc. Release of general refuse into watercourses or marine waters should not be permitted as introduction of these wastes is likely to have detrimental effects on water quality in the area. Effective collection of site wastes would be required to prevent waste materials being blown around by wind, flushed or leached into the marine environment, and odour nuisance. The work sites may also attract pests and vermin if the waste storage area is not well maintained and cleaned regularly. Disposal of refuse at sites other than approved waste transfer or disposal facilities can also result in similar impacts. The number of work force to be employed for the Project is around 80. Based on the generation rate of 0.65kg/person/day, the estimated total refuse generated per day (maximum) would be about 52kg/day.
- 4.6.14 Recyclable materials (i.e. paper, plastic bottles and aluminium cans) will be collected separately for recycling, in order to reduce the amount of general refuse to be disposed into the landfill. Adequate number of enclosed waste containers will be provided to avoid over-spillage of waste. The non-recyclable refuse will be placed in bags and stored in enclosed containers, and disposed of on a daily basis to the designated landfill. Given that the quantity of general refuse to be disposed will be small, no adverse impact on the operation of these waste disposal facilities is anticipated. With the implementation of the recommended waste management practices at the site, adverse environmental impacts would not arise from the storage, handling and transportation of refuse.
- 4.6.15 Preliminary quantity estimation of construction waste involved and disposal method is summarised in the **Table 4.3** below.

**Table 4.3 Summary of Estimated Construction Waste and Disposal Method**

Waste Material Type		Estimated Quantity Generated	Disposal Method
Inert C&D Materials	Demolition of Existing Building and Excavation of Basements	~6500 m <sup>3</sup>	To be reused or recycled on site or in other projects; and delivered to Public Fill Reception Facilities for other beneficial reuse
	Construction of New Buildings/Structures	~200 m <sup>3</sup>	
Non-inert C&D Materials	Demolition of Existing Building and Excavation of Basements	~500 m <sup>3</sup>	To be reused, recycled or disposed of at landfill as the last resort
	Construction of New Buildings/Structures	~80 m <sup>3</sup>	
Chemical Waste	-	Less than hundred litres /month (preliminary estimate)	For treatment at licensed facilities
General Refuse	-	52kg/day (preliminary estimate, assuming there are 80 workers at any one time with generation rate of 0.65kg per worker per day)	Disposal to landfill

### **Waste Disposal and Mitigation Measures**

- 4.6.16 Waste generated by construction activities should be properly sorted and certain waste management requirements must be followed to minimize the impacts arising because of the generation, storage, handling, transport and disposal of wastes. Good site management and control can prevent the generation of significant amounts of "mixed waste". For unavoidable wastes, reuse, recycling and optimal disposal are most practical when segregation occurs on the construction site, categorized as follows:
- Inert C&D materials for reuse on-site or delivering to Public Fill Reception Facilities for beneficial reuse at other projects;
  - Non-inert C&D materials for reuse or recycle or disposal at landfill as last resort;
  - Chemical waste for treatment at licensed facilities; and
  - General refuse for disposal at landfill.

#### **C&D Materials**

- 4.6.17 Proper storage and site practices should be adopted to minimize the damage to, or contamination of, C&D materials that may reduce their recyclability and suitability for disposal in public fill reception facilities. The inert C&D materials shall be reused in earth filling, reclamation or site formation works. The non-inert C&D materials shall be reused or recycled and, as the last resort, disposed of at landfills.
- 4.6.18 Appropriate measures should also be employed to minimize windblown litter and dust during transportation by either covering trucks with tarpaulin or transporting wastes in enclosed containers. Waste should only be disposed at licensed sites. Resident site staff and the contractors should develop procedures to ensure that illegal disposal of waste does not occur. In addition, waste storage areas within the Project should be well maintained and cleaned regularly to prevent cross-contamination. The disposal of inert C&D materials and non-inert C&D materials to public fill reception facilities/sorting facilities respectively through a trip-ticket system, while general refuse will be disposed of at landfill.

#### **Chemical Waste**

- 4.6.19 Chemical and oily wastes generated from the construction activities, vehicle and plant maintenance should be disposed of as chemical waste in strict compliance with the Waste Disposal (Chemical Waste) (General) Regulations.

#### **General Refuse**

- 4.6.20 For general refuse, mitigation measures should include provision of a collection area where waste can be sorted, stored and loaded prior to removal from the site during construction phase.
- 4.6.21 In additional, with the implementation of the recommended mitigation measures in the "Recommended Pollution Control Clauses for Construction Contracts" available in EPD website, the potential environmental impacts resulting from the storage, handling and transportation of inert C&D materials, non-inert C&D materials, chemical wastes and general site wastes would be minimal. Below are the examples of the relevant measures:-

### **Waste Minimisation**

- The Contractor shall submit to the Engineer for approval a waste management plan with appropriate mitigation measures including the allocation of an area



for waste segregation and shall ensure that the day-to-day site operations comply with the approved waste management plan.

- The Contractor shall minimise the generation of waste from his work. Avoidance and minimisation of waste generation can be achieved through changing or improving design and practices, careful planning and good site management.
- The Contractor shall ensure that different types of wastes are segregated on-site and stored in different containers, skips or stockpiles to facilitate reuse/recycling of waste and, as the last resort, disposal at different outlets as appropriate.
- The reuse and recycling of waste shall be practised as far as possible.
- The Contractor shall record the amount of wastes generated, recycled and disposed of (including the disposal sites).
- The Contractor shall use a trip ticket system for the disposal of C&D materials to any designated public filling facility and/or landfill.

#### **Waste Nuisance Control**

- The Contractor shall not permit any sewage, waste water or effluent containing sand, cement, silt or any other suspended or dissolved material to flow from the Site onto any adjoining land or allow any waste matter (or refuse) which is not part of the final product from waste processing plants to be deposited anywhere within the Site (or onto any adjoining land). He shall arrange removal of such matter from the site (or any building erected or to be erected thereon) in a proper manner to the satisfaction of the Engineer in consultation with the Director of Environmental Protection.

#### **Chemical Waste Control**

- The Contractor shall observe and comply with the Waste Disposal (Chemical Waste) (General) Regulation.
- The Contractor shall apply for registration as chemical waste producer under the Waste Disposal (Chemical Waste) (General) Regulation when chemical waste is produced. All chemical waste shall be properly stored, labelled, packaged and collected in accordance with the Regulation.

- 4.6.22 Waste generated during construction works have been qualitatively evaluated. With these waste managements in place, the waste generated from the construction work of the Proposed Access Road would be properly controlled and no adverse waste management impact is anticipated.

## 5. WATER IMPACT ASSESSMENT AT OPERATION PHASE

### 5.1 Storm Water Discharge

- 5.1.1 During operation, the surface runoff during rainfall events which is known as non-point source of pollution would be the only potential water quality impact. Substances such as vehicle dust, scraps and oil may be deposited on paved road surface. Fallen leaves, particles, litter from open areas/ landscape areas, which is a source of organic and nutrient pollutants, can be washed into the drainage system during heavy rainfall if it is not properly controlled. No fertilizers and pesticides will be routinely used for vegetation management. Pollutants contributed by non-point source are often bound or adsorbed onto particles, thus an effective stormwater management system will be the removal of pollution sources prior to rainstorm and the provision of degritting/ screening facilities that collect sediment. As particles settle out, the associated pollutants will also settle out (then removed from stormwater).
- 5.1.2 Under normal condition, runoff carrying pollutants will not be generated in low rainfall intensity, but increased runoff may occur during heavy rainfall condition. The first flush flow would carry most of the pollutants and the subsequent overland flow generated from rainstorms is expected to be uncontaminated. Thus, prevention of "first flush" pollution in stormwater runoff will be an effective way in controlling pollution at source and to abate pollutants.
- 5.1.3 The area of the application site is small in size with an area of about 4,673m<sup>2</sup>, of which only 1,844m<sup>2</sup> is for the construction of proposed access road. Hence, the surface runoff during the operation of the access road would not cause adverse water quality impact.

### 5.2 Best Management Practices (BMPs) for Stormwater Discharge

- 5.2.1 Surface runoff can be controlled by good drainage design and implementation of BMPs. The proposed development has adopted the following BMPs.
- 5.2.2 Erosion Control
- If uncontrolled, exposed surfaces may contribute to sediment laden in stormwater runoff and cause water pollution. The proposed development site is either hard paved or covered by landscaping area with appropriate planting species in order to eliminate any exposed surface.
- The landscaped open area will be managed and maintained by the property management company (and its contractor) during operation.
- 5.2.3 Prevention of "First Flush" Pollution
- Appropriate drainage system will be constructed for the proposed development in order to control its surface runoff. During detailed design, site drainage system of the development will be designed in such way that surface runoff from the proposed development will be directed towards the internal access road, where appropriate drainage system with control facilities have been proposed. Additional paved U-channels with screening facilities are also provided along the edge of residential portion to avoid uncontrolled spillage of runoff.
- 5.2.4 Devices for Removal of Pollutants
- In addition to the above, screening facilities such as standard gully grating and trash grille, with spacing which is capable of screening off large substances such as fallen leaves and rubbish should be provided at the inlet of drainage system. It is expected that most of the large substances in stormwater runoff would be removed with such devices so as to prevent it from entering the drainage system. Road gullies with

standard design and silt traps and oil interceptors should be incorporated during the detailed design to remove particles present in stormwater runoff.

In the event of emergency (e.g. car accident) where there is a major spillage of oil, chemical or fuel, dispersants or firefighting foam, etc., a system of contaminant bunding will be implemented as appropriate.

#### 5.2.5 Management Measures

Good management measures such as regular cleaning and sweeping of road surface/ open areas is suggested. The road surface/ open area cleaning should also be carried out prior to occurrence of rainstorm.

Stormwater gullies and ditches provided among the residential development will be regularly inspected and cleaned by the property management company.

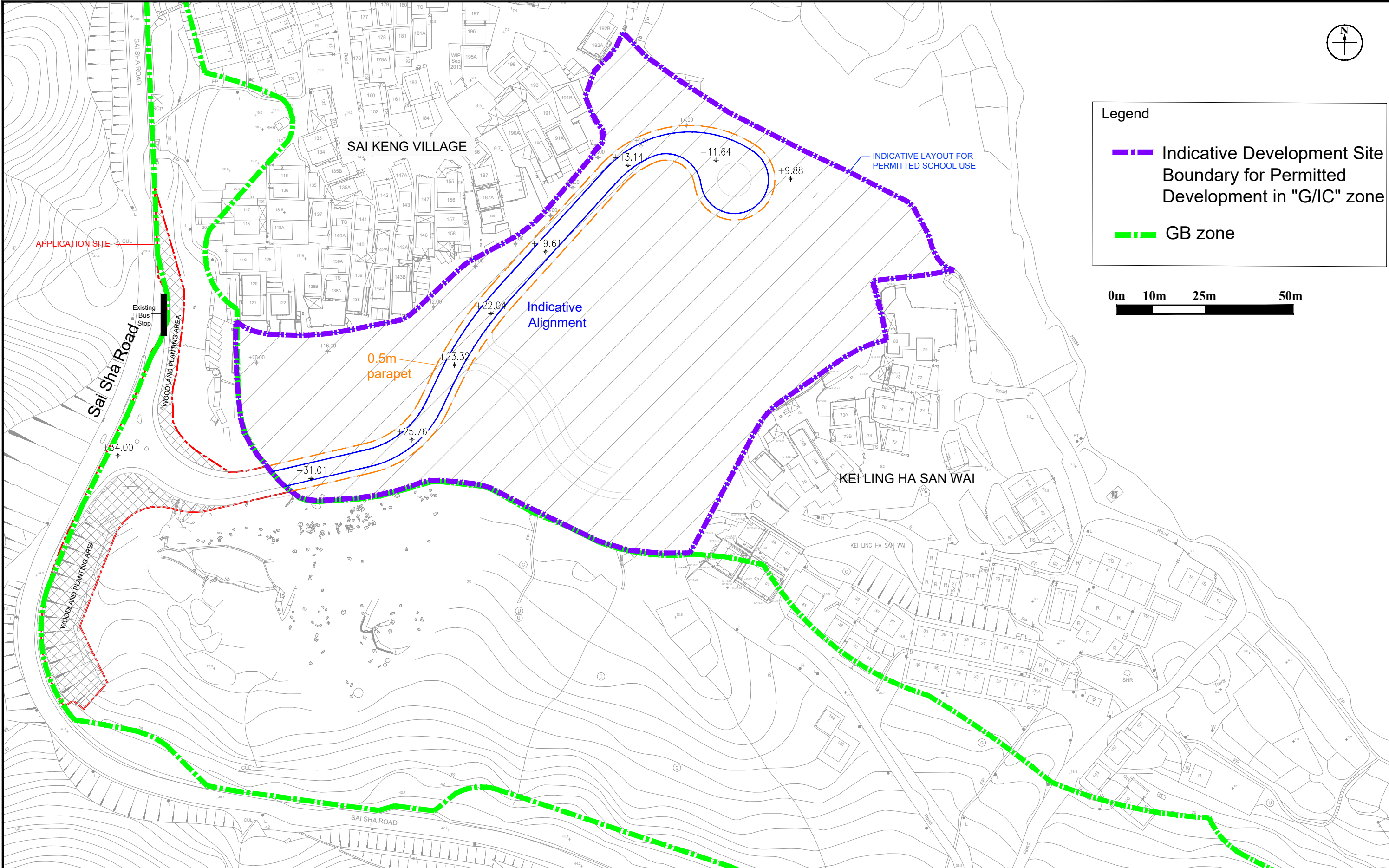
With the removal of pollutants, the pollution levels from stormwater would be much reduced, and given the stochastic nature of non-point source pollution and the proposed management measures, there will be no significant impact expected.


## **6. CONCLUSION**

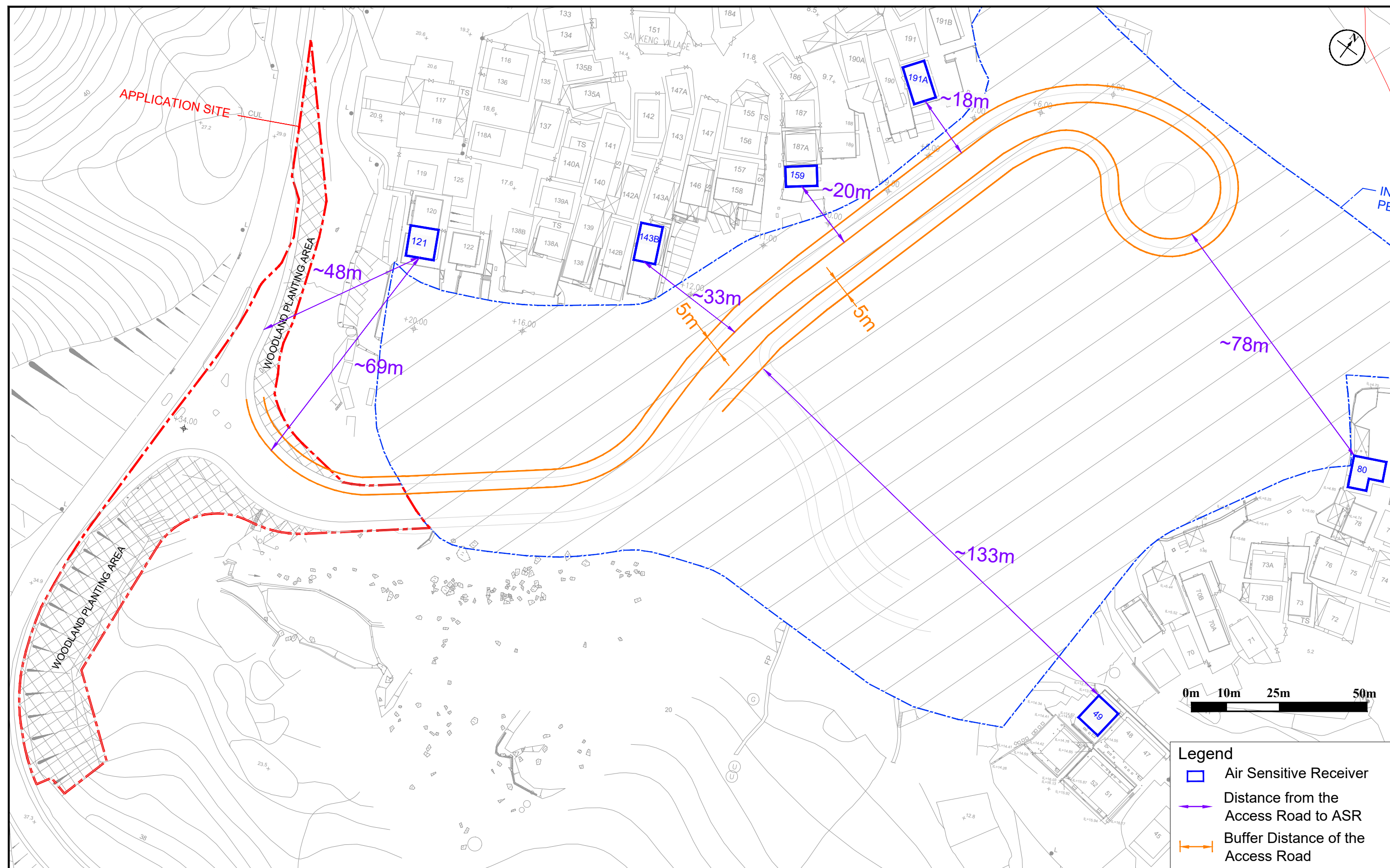
- 6.1.1 The key environmental issues associated with both operation and construction phase of the Proposed Access Road are discussed in this report.
- 6.1.2 Air Quality Impact assessment for both construction and operation phases has been carried. At construction phase, the air quality impact will not be adverse with site management takes place. At operation phase, the existing air sensitive receivers will not be subject to unacceptable vehicular emission impacts from the Proposed Access Road with sufficient buffer distance.
- 6.1.3 A Road Traffic Noise Impact assessment has been carried out for the existing NSRs. With sufficient buffer, the noise impact due to the proposed access road to the nearby representative noise sensitive receivers is not considered to be significant. Therefore, it is considered that the existing NSRs would not be affected by the proposed road improvement work.
- 6.1.4 The Construction Phase Noise Impact has been assessed. The predicted noise impact due to the construction work will not be adverse with the implication of construction noise mitigation.
- 6.1.5 Waste generated during construction works have been qualitatively evaluated. With waste managements in place, the waste generated from the construction work of the Proposed Access Road would be properly controlled and no adverse waste management impact is anticipated.
- 6.1.6 Water impact assessment for both construction and operation phases has been carried out. With various mitigation measures and managements in place, no adverse water quality impact is anticipated due to the wastewater or runoff from the Proposed Access Road.
- 6.1.7 It confirms the feasibility of the Proposed Access Road from an environmental point of view.



**Figure**



<b>Figure:</b> 1.1			
<b>Title:</b>	Location of the Subject Site	Drawn by:	VC
		Checked by:	TC
<b>Project:</b>	Section 16 Planning Application for Proposed Access Road in "Green Belt" Zone for Permitted Uses in "Government, Institution or Community" Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories	Rev.:	1.10
		Date:	Sep 2022



**Figure:** 2.1

**Title:** Buffer Distance Between the Air Sensitive Receivers and the Nearby Road Network

**Project:** Section 16 Planning Application for Proposed Access Road in "Green Belt" Zone for Permitted Uses in "Government, Institution or Community" Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories

**RAMBOLL**

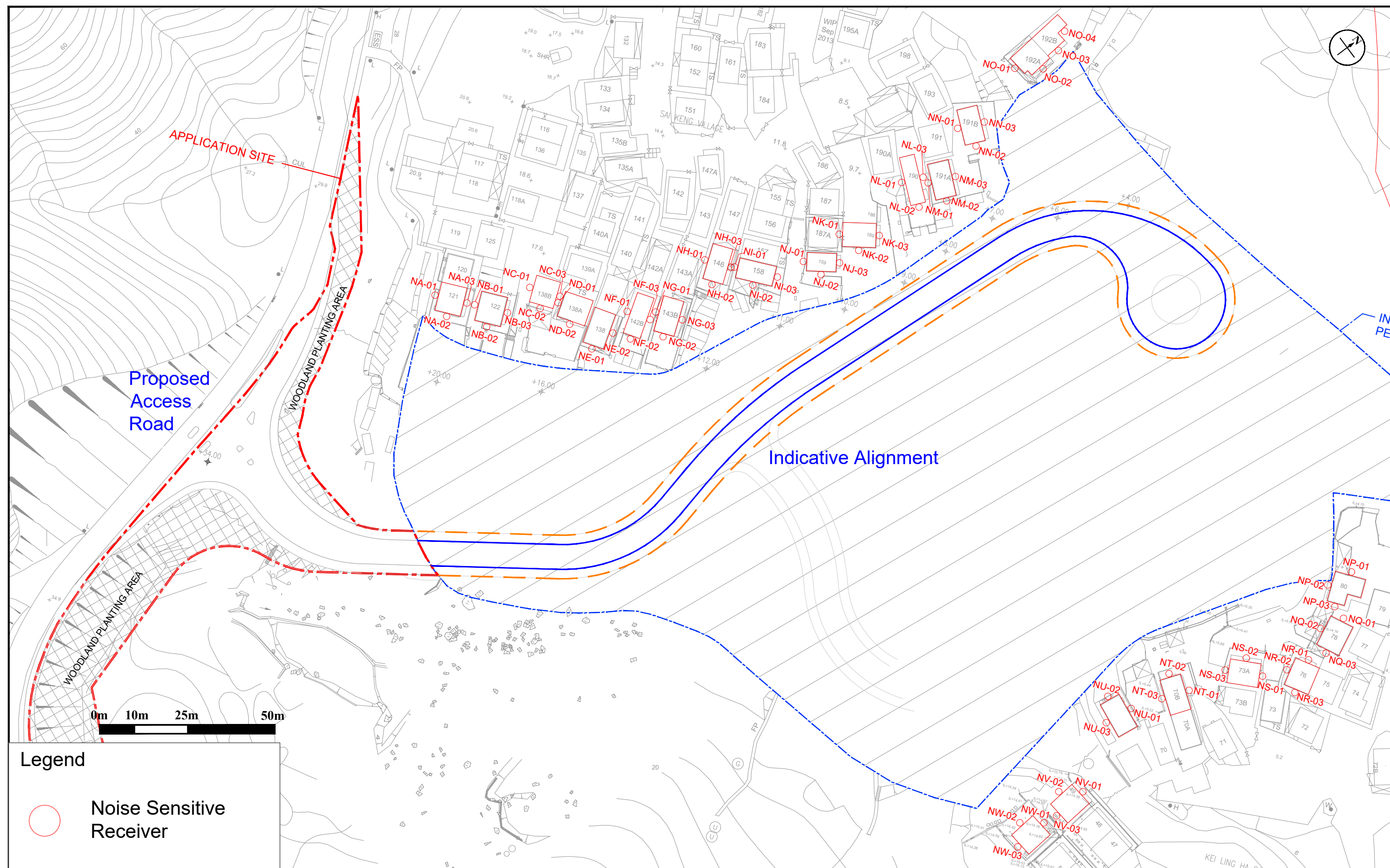
Drawn by: VC

Checked by: TC

Rev.: 1.9

Date: Sep 2022





**Figure:** 3.1

**Title:** Location of Representative Existing Noise Sensitive Receivers for Road Traffic Noise Impact Assessment

**Project:** Section 16 Planning Application for Proposed Access Road in "Green Belt" Zone for Permitted Uses in "Government, Institution or Community" Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories

**RAMBOLL**

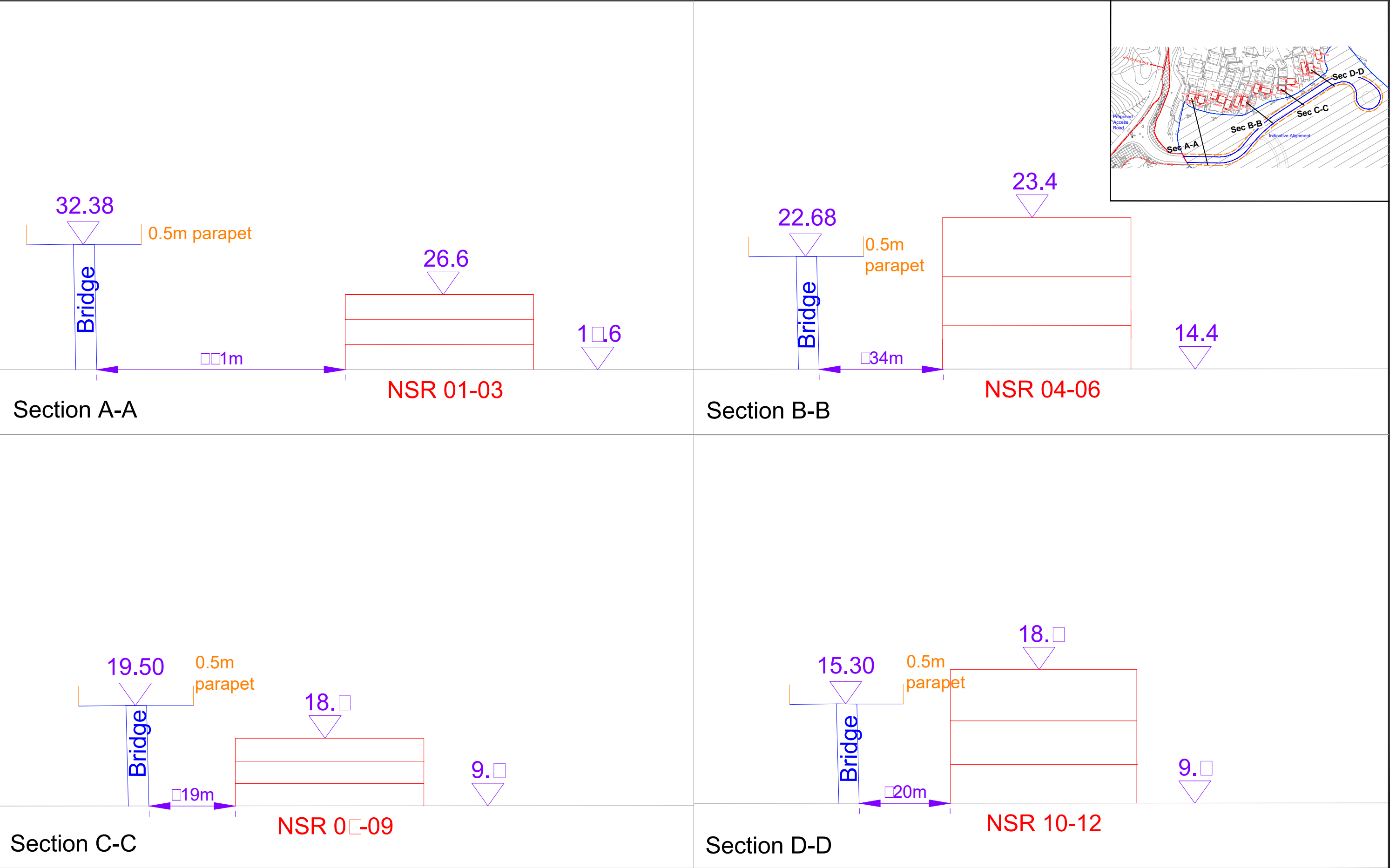
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Checked by: TC

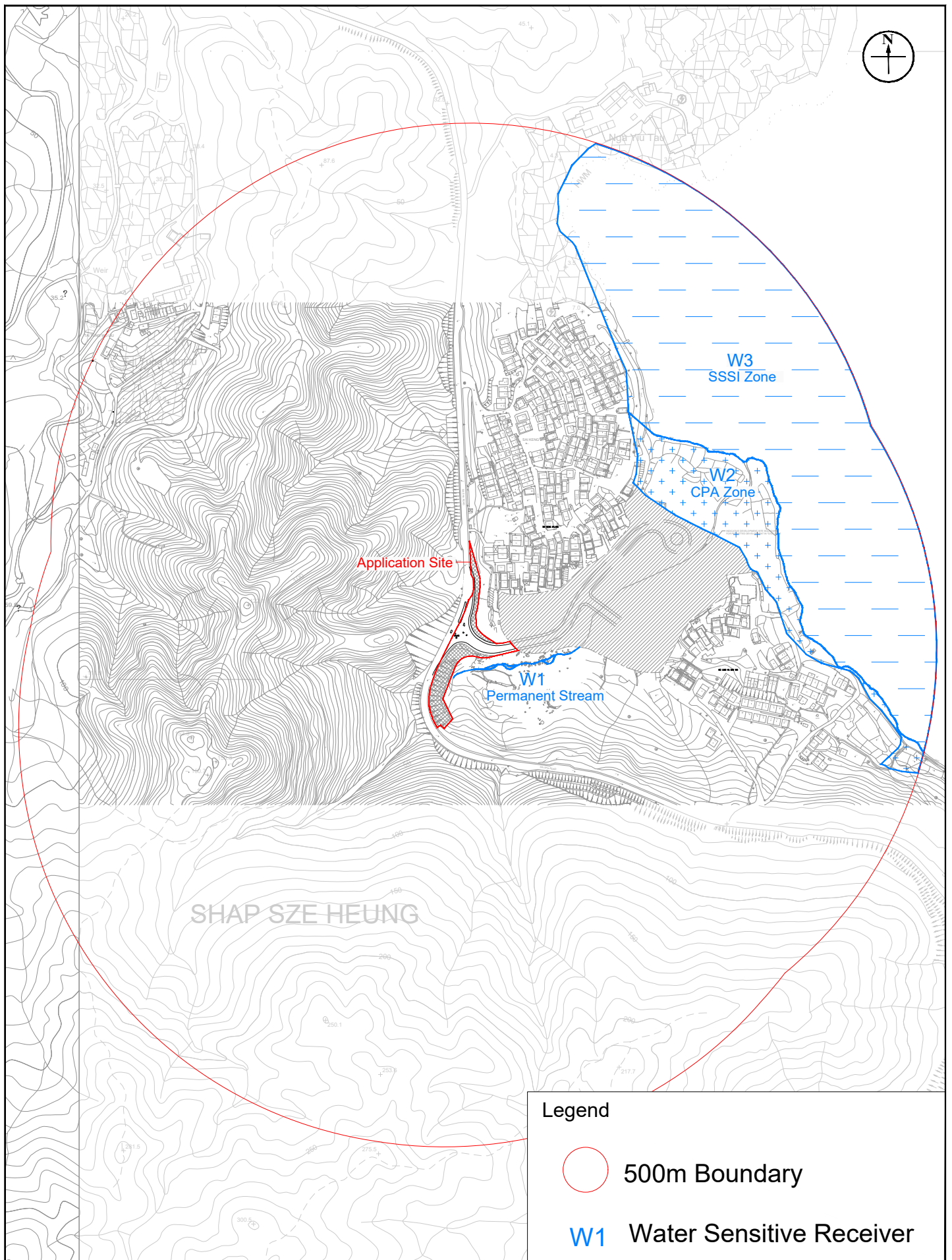
Rev.: 1.10

Date: Sep 2022





<b>Figure:</b> 3.2		RAMBOLL	
<b>Title:</b>	Cross Section of the Location of Representative Noise Sensitive Receivers for Traffic Noise Impact Assessment	Drawn by: VC	
		Checked by: TC	
<b>Project:</b>	Section 16 Planning Application for Proposed Access Road in "Green Belt" Zone for Permitted Uses in "Government, Institution or Community" Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories	Rev.: 1.8	
		Date: Sep 2022	



**Figure: 4**

**Title:** Location of the Representative Water Sensitive Receivers at the 500m Boundary of the Subject Site

**Project:** Section 16 Planning Application for Proposed Access Road in "Green Belt" Zone for Permitted Uses in "Government, Institution or Community" Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories

**RAMBOLL**

Drawn by: VC

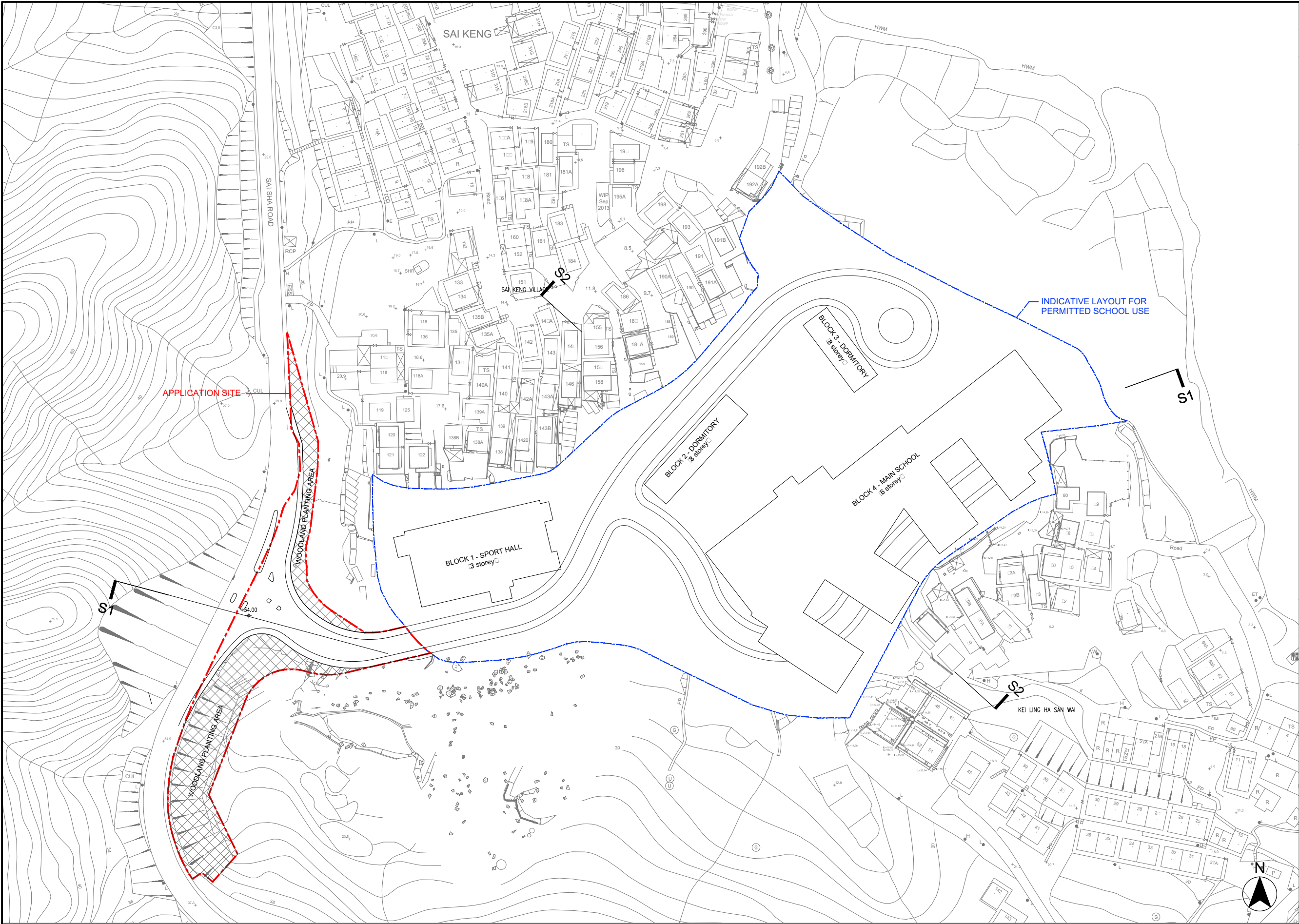
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Rev.: 1.0

Date: Sep 2022

**Appendix 1      Layout Plan of the Application Site**





LEGEND

--- APPLICATION SITE BOUNDARY --- DEVELOPMENT SITE BOUNDARY FOR PERMITTED SCHOOL USE IN "G/IC" ZONE

Remark:

- The Proposed Access Road in the Application Site is to facilitate the permitted school use in the adjoining "G/IC" zone. The permitted school use is not the subject matter of this S16 planning application.
- During the construction stage, the woodland planting area will be used as temporary works area for the Proposed Access Road.



B.D. REF. :

F.S.D. REF. :

REVISIONS :

NO.	DESCRIPTION	DATE

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PROJECT :  
PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

DRAWING TITLE :  
INDICATIVE  
MASTER LAYOUT PLAN

DATE : SEP 2022 PAPER SIZE : A3

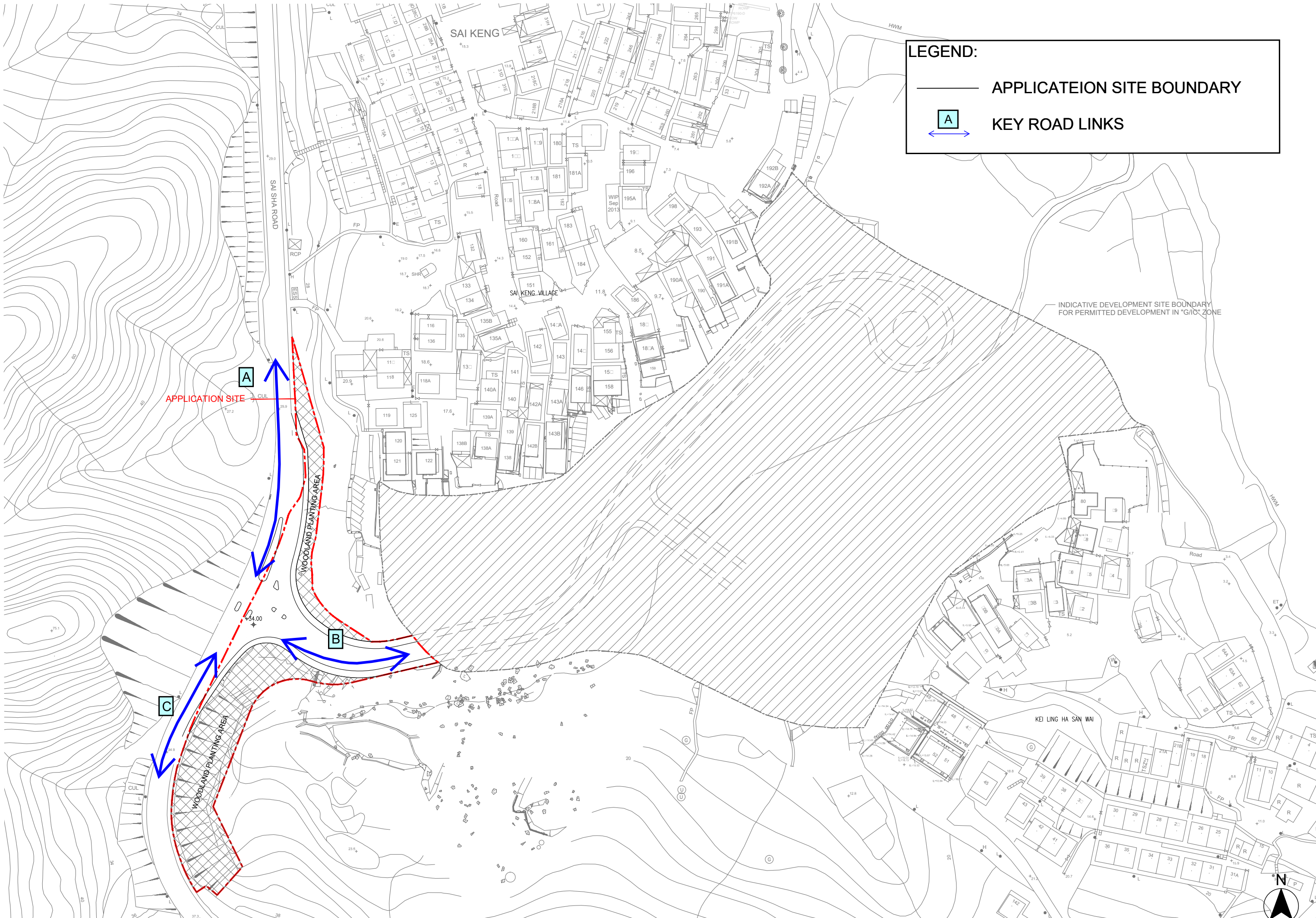
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PROJECT NO. : 952

DWG. NO. : S16-A-01



## **Appendix 2      2043 Traffic Forecast**



LEGEND:

— APPLICATION SITE BOUNDARY

 KEY ROAD LINKS

APPLICATION SITE

INDICATIVE DEVELOPMENT SITE BOUNDARY  
FOR PERMITTED DEVELOPMENT IN "G/C" ZONE

A

B

C

WOODLAND PLANTING AREA

WOODLAND PLANTING AREA

SAI KENG

SAI KENG VILLAGE

KEI LING HA SAN WAI



**Proposed Access Road for Sai Keng International School**

Index	Road Link	Direction	Year 2043 Design Traffic Flow	
			veh/hr	HV%
A	Sai Sha Road (North of Propsoed Access Road)	Two-way	1780	15%
B	Proposed Access Road	Two-way	245	39%
C	Sai Sha Road (South of Propsoed Access Road)	Two-way	1600	12%

**Appendix 3      Road Traffic Noise Impact Assessment Results for Existing  
NSRs**



Table 1 - Predicted Road Traffic Noise at Sensitive Receivers - WITH Proposed Access Road

1. Base Scenario

HSE-121				
Floor	mPD	NA-01	NA-02	NA-03
G/F	18.8	63	62	54
1/F	21.8	65	63	56
2/F	24.8	67	65	59
Exceedance units		0		

HSE-122				
Floor	mPD	NB-01	NB-02	NB-03
G/F	18.8	54	62	57
1/F	21.8	56	63	58
2/F	24.8	60	64	61
Exceedance units		0		

HSE-138B				
Floor	mPD	NC-01	NC-02	NC-03
G/F	18.8	56	58	52
1/F	21.8	58	60	54
2/F	24.8	62	63	57
Exceedance units		0		

HSE-138A			
Floor	mPD	ND-01	ND-02
G/F	18.8	53	60
1/F	21.8	55	61
2/F	24.8	58	63
Exceedance units		0	

HSE-138			
Floor	mPD	NE-01	NE-02
G/F	18.8	62	59
1/F	21.8	63	61
2/F	24.8	65	63
Exceedance units		0	

HSE-142B				
Floor	mPD	NF-01	NF-02	NF-03
G/F	15.6	52	59	55
1/F	18.6	53	60	57
2/F	21.6	56	62	60
Exceedance units		0		

HSE-143B				
Floor	mPD	NG-01	NG-02	NG-03
G/F	14.40	53	59	58
1/F	17.35	55	61	60
2/F	20.35	58	63	63
Exceedance units		0		

HSE-146				
Floor	mPD	NH-01	NH-02	NH-03
G/F	13.0	55	58	54
1/F	16.0	56	59	56
2/F	19.0	58	61	59
Exceedance units		0		

HSE-158				
Floor	mPD	NI-01	NI-02	NI-03
G/F	13.0	54	58	58
1/F	16.0	56	60	60
2/F	19.0	59	63	63
Exceedance units		0		

HSE-159				
Floor	mPD	NJ-01	NJ-02	NJ-03
G/F	10.9	58	58	57
1/F	13.9	59	60	59
2/F	16.9	61	63	62
Exceedance units		0		

HSE-189				
Floor	mPD	NK-01	NK-02	NK-03
G/F	10.9	52	58	57
1/F	13.9	54	60	60
2/F	16.9	58	64	63
Exceedance units		0		

HSE-190				
Floor	mPD	NL-01	NL-02	NL-03
G/F	10.9	56	59	53
1/F	13.9	59	62	56
2/F	16.9	62	66	59
Exceedance units		0		

HSE-191A				
Floor	mPD	NM-01	NM-02	NM-03
G/F	10.9	55	60	58
1/F	13.9	57	63	61
2/F	16.9	61	67	65
Exceedance units		0		

HSE-191B				
Floor	mPD	NN-01	NN-02	NN-03
G/F	10.9	56	59	58
1/F	13.9	58	63	61
2/F	16.9	61	66	64
Exceedance units		0		

HSE-192A & 192B					
Floor	mPD	NO-01	NO-02	NO-03	NO-04
G/F	7.0	60	57	57	53
1/F	10.0	61	59	59	55
2/F	13.0	62	61	61	58
Exceedance units		0			

HSE-80				
Floor	mPD	NP-01	NP-02	NP-03
G/F	5.9	60	61	58
1/F	8.9	61	62	58
2/F	11.9	61	62	59
Exceedance units		0		

HSE-78				
Floor	mPD	NQ-01	NQ-02	NQ-03
G/F	5.9	57	61	58
1/F	8.9	57	62	58
2/F	11.9	57	62	58
Exceedance units		0		

HSE-76				
Floor	mPD	NR-01	NR-02	NR-03
G/F	6.4	60	61	52
1/F	9.4	60	61	53
2/F	12.4	61	61	54
Exceedance units		0		

HSE-73A				
Floor	mPD	NS-01	NS-02	NS-03
G/F	6.4	46	62	62
1/F	9.4	48	62	63
2/F	12.4	51	62	63
Exceedance units		0		

HSE-70B				
Floor	mPD	NT-01	NT-02	NT-03
G/F	6.4	59	63	62
1/F	9.4	59	63	62
2/F	12.4	59	63	62
Exceedance units		0		

HSE-69				
Floor	mPD	NU-01	NU-02	NU-03
G/F	6.4	60	63	61
1/F	9.4	60	63	61
2/F	12.4	60	63	62
Exceedance units		0		

HSE-49				
Floor	mPD	NV-01	NV-02	NV-03
G/F	15.7	60	63	60
1/F	18.7	61	63	60
2/F	21.7	61	63	61
Exceedance units		0		

HSE-50				
Floor	mPD	NW-01	NW-02	NW-03
G/F	16.2	61	63	61
1/F	19.2	61	63	61
2/F	22.2	61	63	62
Exceedance units		0		

Note:

71	N.B. shaded cells denote noise level that will exceed limit of 70dB(A)
	Not Applicable

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## **Appendix E**

# **Ecological Impact Assessment**

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(Consolidated Report based on Further Information submitted on 16 September 2021 & 29  
December 2021)

*(No further comments from ecological perspective from Agriculture, Fisheries and Conservation  
Department received in January 2022)*

**Section 16 Planning Application for Proposed  
Access Road in “Green Belt” Zone for Permitted  
Government, Institution or Community uses in  
“Government, Institution or Community” Zone at  
Various Lots and Adjoining Government Land in  
D.D. 209, Sai Keng, Shap Sz Heung, the New  
Territories**

***Ecological Impact Assessment Report***



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## **1. PROJECT INFORMATION**

### **1.1 Background**

- 1.1.1 This planning application is submitted to the Town Planning Board (the Board) under Section 16 (S16) of the Town Planning Ordinance (the Ordinance) to seek permission for the provision of access road in "Green Belt" ("GB") zone (i.e. hereafter referred to as the Proposed Access Road) for permitted Government, Institution or Community ("GIC") uses in "Government, Institution or Community" ("G/IC") zone at various lots and adjoining Government land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories (i.e. hereafter referred to as the Application Site).
- 1.1.2 The Application Site falls within an area zoned as "GB" on the Approved Shap Sz Heung Outline Zoning Plan No. S/NE-SSH/11 (the OZP), which is directly abutting to a piece of undeveloped land zoned "G/IC" at Sai Keng (i.e. hereafter referred to as the subject "G/IC" zone). Despite that the subject "G/IC" zone is situated closely to Sai Sha Road to its west, the "G/IC" zone is being sandwiched from the Sai Sha Road by the "GB" zone and there is no standard and direct access connecting the "G/IC" zone to Sai Sha Road at present. The "G/IC" zone is currently only accessible via two local tracks through the nearby villages which are sub-standard, with village houses constructed closely along the tracks that constrain any possible widening for standard provision.
- 1.1.3 To facilitate the permitted Government, Institution or Community ("GIC") use in the subject "G/IC" zone, provision of a standard Proposed Access Road to the subject "G/IC" zone is required. Otherwise, without any proper access, the subject "G/IC" zone will remain sterilized without any development, which could not materialize the planning intention of the subject "G/IC" zone and result in a waste of valuable land resources that is against the government's land supply policy.
- 1.1.4 As the subject "G/IC" zone is segregated from Sai Sha Road (the only proper public road in the area) by a "GB" zone, it is inevitable that the Proposed Access Road will have to pass through the "GB" zone before connecting to Sai Sha Road.
- 1.1.5 A General Building Plan (GBP) for permitted 'School' use was submitted to the Buildings Department on September 2019. According to the Notes of the OZP, while 'School' use is always permitted in the subject "G/IC" zone, the Proposed Access Road within the "GB" portion that supports 'School' use is a Column 2 use requiring planning permission from the Board. Therefore, the subject matter of this application shall be the Proposed Access Road that falls in the "GB" zone only, whereas the permitted Government, Institution or Community ("GIC") use (including the access road) in the "G/IC" zone shall not form part of the planning application. Hence, the Application Site refers to the "GB" portion that will be affected by the Proposed Access Road.
- 1.1.6 After taking into consideration the distance away from nearby villages and the avoidance of encroaching into any third-party lots, the proposed alignment has minimised the encroachment into the "GB" zone as far as practicable.
- 1.1.7 In view of the densely vegetated woodland area within the proposed alignment of the access road, during the preliminary design stage of this Project, the Project Team has spent a lot of effort in minimizing the potential ecological impact to the Application Site that would be discussed in detail in the impact and mitigation sections of this Report. The appreciation to the dense woodland is reflected in the

first place at the current alignment option. The current alignment has taken the shortest possible distance between Sai Sha Road and the "G/IC" zone in balance with other design constraints including landscape and visual impact to the residents of Sai Keng Village, traffic requirement, slope safety etc. The current design is nearly perpendicular to Sai Sha Road and the "G/IC" zone which has minimised the bridge footprint and thus the woodland loss as far as practicable.

## 2. RELEVANT LEGISLATION, STANDARDS AND GUIDELINES

- 2.1.1 The ecological characteristics of the Assessment Area, which is defined as 500m from the Application Site boundary (see **Figure 1** for the Assessment Area), were identified through a comprehensive review of the accessible literature.
- 2.1.2 The Hong Kong Special Administrative Region ordinances and regulations relevant to the ecological surveys for this consultancy assignment include the followings:
- Forests and Countryside Ordinance (Cap. 96) and its subsidiary legislation, the Forestry Regulations;
  - Wild Animals Protection Ordinance (Cap. 170);
  - Country Parks Ordinance (Cap. 208) and its subsidiary legislation;
  - The Environmental Impact Assessment Ordinance (Cap. 499) and the associated TM; and
  - The Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586) and its subsidiary legislation;
- 2.1.3 This ecological baseline study also makes reference to the following Mainland legislation:
- List of State Protected Wild Animals, promulgated by the State Council 國家重點保護野生動物名錄;
  - List of State Protected Wild Plants, promulgated by the State Council 國家重點保護野生植物名錄;
- 2.1.4 Other international conventions and guidelines that are relevant to this ecological baseline study include the followings:
- Convention on International Trade in Endangered Species of Wild Fauna and Flora ("CITES"). This Convention regulates international trade in animal and plant species considered to be at risk from such trade. The main categories of species relevant to Hong Kong are Appendices I and II. Species listed in Appendix I are species threatened with extinction that are or may be affected by trade; species listed in Appendix II are those that, while not necessarily under current threat of extinction, may become threatened unless trade is subject to strict regulation. Hong Kong's obligations under this Convention are enforced via the Protection of Endangered Species of Animals and Plants Ordinance.
  - IUCN The World Conservation Union maintains, through its Species Survival Commission, a Red List of globally threatened species of wild plants and animals (see <http://www.redlist.org>). The Red List is considered the authoritative publication to classify species as critically endangered, endangered, vulnerable, or lower-risk.
- 2.1.5 In accordance with Table 3, Annex 8 of the TM-EIAO, the ecological value of species was assessed in terms of protection status, distribution, and rarity. Flora or fauna species protected by the following laws/regulations, listed under the following conventions and/or endemic to Hong Kong were considered to be species of conservation importance. However, this excludes exotic weeds, escaped cultivars or captive species, vagrants and introduced species which have lower ecological value. Species which are classified by IUCN as Least Concern (LC),



Data Deficient (DD), or Not Evaluated (NE), and not covered by any other laws/regulations/conventions are not considered of conservation importance in the present study.

- The International Union for Conservation of Nature and Natural Resources (IUCN) Red List of Threatened Species;
- China Plant Red Data Book;
- China Species Red List;
- China Red Data Book of Endangered Animals;
- Category I or II protected species in mainland China;
- Threatened Species List of China's Higher Plants (Qin *et al.* 2017)
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES);
- Forestry Regulations (Cap. 96A) which are subsidiary legislation of the Forests and Countryside Ordinance (Cap. 96);
- Wild Animals Protection Ordinance (Cap. 170) (except birds as all wild birds are protected under the ordinance but their conservation importance is not equal)
- Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586);
- PRC Wild Animal Protection Law;
- Plant species considered 'Rare' or 'Very Rare' listed by Corlett *et al.* (2000) or Yip *et al.* (2010) where applicable; and
- Fauna species considered of concern in Fellowes *et al.* (2002).

### 3. LITERATURE REVIEW

- 3.1.1 Relevant literature was reviewed, and information was extracted to establish preliminary ecological baseline of the Assessment Area.
- 3.1.2 Ecological conditions of different parts of the Assessment Area were obtained from previous EIA studies, investigation studies and surveys including:
- Section 16 Planning Approval (under Application No. A/NE-SSH/120) for Proposed Comprehensive Residential and Commercial Development including Government, Institution or Community Facilities with Minor Relaxation of GFA and Building Height Restrictions at Tai Po Town Lot 157, Various Lots in D.D. 165, 207 and 218 and Adjoining Government Land, Sai Sha, Shap Sz Heung, New Territories
  - Proposed Amendments to Approval Shap Sz Heung Outline Zoning Plan No. S/NE-SSH/7 for Various Lots and Adjoining Government Land in DD209, Sai Keng, Shap Sz Heung (Application No. TPB/Z/NE-SSH/1)

### 4. SURVEY METHODOLOGY

- 4.1.1 The Assessment Area for terrestrial and aquatic ecological impact assessment included all areas within 500m distance from the Application Site boundary (**Figure 1**). Survey findings were subdivided to those recorded for each habitat within the Application Site and/or the Assessment Area (refer to the extent of the Application Site and Assessment Area illustrated in **Figure 1**). For convenience, "within the Assessment Area" refers to all the area bounded by the black line termed "Assessment Area" (i.e. including the Application Site) in **Figure 1**, while "outside the Application Site but within the Assessment Area" refers to the area bounded by the black line termed "Assessment Area" but excluding the area bounded by the red line termed "Application Site" (**Figure 1**).
- 4.1.2 Surveys on habitat, vegetation, mammal, bird, herpetofauna, butterfly, odonate, aquatic fauna and intertidal fauna were conducted between January to June 2020 covering both wet and dry seasons. The respective survey methodology for each

item is described in the following sections.

- 4.1.3 **Habitat and Vegetation** – Habitats within the Assessment Area were mapped based on aerial photos and ground truthing. Walk-over surveys were conducted at representative areas of each habitat type. Vascular plant species in each habitat type were identified (with the aid of binoculars when necessary) and their relative abundance were recorded, with special attention to rare and protected species. Color photographs were taken of all habitats encountered on site and of ecological features of special importance. Habitat maps of the Assessment Area were produced at the required scale using GIS software. Nomenclature of vascular plant species follows Hong Kong Herbarium (2020), whilst their rarity in Hong Kong follows Corlett *et al.* (2000) and Yip *et al.* (2010) where applicable.
- 4.1.4 **Mammal** – Mammals within the Assessment Area were surveyed by active search. All sightings, tracks, and signs of mammals found were recorded. As some mammal species (e.g., bats) are nocturnal, night surveys were also conducted. Nomenclature of mammal followed the biodiversity database maintained by Agriculture, Fisheries and Conservation Department (AFCD 2020).
- 4.1.5 **Bird** – Birds within the Assessment Area were surveyed quantitatively in each month using transect count method. Locations of survey transects are shown in **Figure 1**. All birds seen or heard were identified and their abundance recorded by habitat. Signs of breeding (e.g. nests, recently fledged juveniles) were also recorded. As some birds (e.g., owls, nightjars) are nocturnal, night surveys were also conducted. Nocturnal birds were identified by active searching using spot-light and by their calls. Ornithological nomenclature in this report followed AFCD (2020).
- 4.1.6 **Herpetofauna** – Herpetofauna within the Assessment Area were surveyed by active search. All reptiles and amphibians sighted were recorded. As herpetofauna are mostly nocturnal, night surveys were carried out. Potential microhabitats of herpetofauna such as wall, fallen logs, litter, channel/nullah, fishpond margins, underneath of stones or other materials, artificial container (e.g., pots) were searched during surveys to locate cryptic or secretive herpetofauna species. Amphibians were also identified by their calls during night surveys. Nomenclature of amphibian followed AFCD (2020).
- 4.1.7 **Butterflies and Odonates** – Odonates and butterflies within the Assessment Area were surveyed quantitatively using transect method. Locations of survey transects are shown in **Figure 1**. Odonates and butterflies observed were identified and their abundance recorded by habitat. Odonates and butterflies encountered outside survey transects but within the Assessment Area were also recorded in order to produce a complete species list. Nomenclature of odonate followed AFCD (2020).
- 4.1.8 **Freshwater Fauna** – Freshwater fauna (such as freshwater fishes and invertebrates) at the sampling locations within the Assessment Area (**Figure 1**) were studied by active searching and direct observation. As the section of watercourse just next to the Application Site was in very shallow water, little fauna was found. In order to study the freshwater communities comprehensively, the sampling locations were set to the lower stream where the water level was high enough for more fauna to inhabit there.
- 4.1.9 **Intertidal Fauna** – Intertidal fauna (such as intertidal fishes and invertebrates) in the intertidal shore within the Assessment Area were studied by active searching and direct observation.
- 4.1.10 Terrestrial fauna survey transects, along with stream sampling locations, are

shown in **Figure 1**. Survey schedule is shown in **Table 1**.

**Table 1 Ecological Survey Programme**

Month	2020					
	Jan	Feb	Mar	Apr	May	Jun
Habitat and Vegetation	D	D			D	D
Mammal	D	D	D and N	D and N	D and N	D and N
Bird	D	D	D and N	D and N	D and N	D and N
Herpetofauna	D	D	D and N	D and N	D and N	D and N
Butterfly and Odonate	D	D	D	D	D	D
Freshwater fauna	D	D			D	D
Intertidal fauna		D				D

Note:

D = Daytime survey; N = Night-time survey

## 5. RESULTS

### 5.1 Literature Review

5.1.1 **Kei Ling Ha Mangal Site of Special Scientific Interest (SSSI)** is located to the east of the Application Site (**Figure 2**). The shortest distance between the SSSI and the Application Site is about 500m. The SSSI includes the mangrove community and the mud flat covering the western coast of Kei Ling Ha Hoi (Three Fathoms Cove) from Tseng Tau southward to the inner bay. The total area is about 48.4 ha. The mangrove community receives discharge from a number of small freshwater streams originating from Ma On Shan. The largest strand of mangroves can be found near Sai Keng. This mangrove is one of the largest strands of mangroves in Hong Kong. Like the mangrove in Ting Kok SSSI, it is the remain of the mangroves once flourishing within Tolo Harbour. Unlike other mangroves which consist of mainly silty and muddy substrate, the substrate here also includes sand covered with cobbles in many places. Almost all mangroves and their associate plants recorded in Hong Kong can be found here, including the *Bruguiera gymnorhiza* and *Lumnitzera racemosa*. The latter is rather common at the back of this mangrove. A clear zonation pattern can be observed: *Kandelia obovata* (previously known as *Kandelia candel*) and *Aegiceras corniculatum* dominate the seaward part of the community with the former normally grow on muddier substrate. At the more landward part, *Avicennia marina*, *Acanthus ilicifolius*, *Lumnitzera racemosa* and *Excoecaria agallocha* can be found. At the back of the mangrove is a well-developed strip of mangrove associates including *Hibiscus tiliaceus*, *Clerodendrum inerme*, *Pandanus tectorius* and other shore plants. Such well-developed shore back community is now becoming rare. The mangrove community, especially the part near Sai Keng, is one of the favorite sites for postgraduate research and ecological field trips. The mud flat outside the mangrove is also of biological importance. It supports numerous invertebrates which in turn provide food for larger animals such as birds and fishes. Invertebrates new to science had been found here, namely *Scoloplos tumidus* (Mackie 1991) and *Metaphoxus fultoni* subsp. *asiaensis* (Hirayama 1992).

5.1.2 Coastal areas to the east of the Assessment Area is zoned as “**Coastal Protection Area**” (“**CPA**”). This CPA consists of a total area of 15.42 hectares and covers the majority of the coastal land in the area. They include rocky/boulder shore in Nai Chung East and the immediate hinterland of Kei Ling Ha Mangrove. The bedrock

conglomerate and quartzite are interesting geological features along the coast of Nai Chung East. The marine habitat supported by the rocky/boulder shore is also of significant ecological value in view of its biological diversity.

**5.1.3 Ma On Shan Country Park** is located to the south, north and west of the Application Site (**Figure 2**). Ma On Shan Country Park commands a site of 2,880 ha in the Eastern New Territories. Designated in 1979, Ma On Shan Country Park covers inland uplands as well as Hebe Haven that lies between Pak Sha Wan and Port Shelter. Most uplands within the bounds of Ma On Shan Country Park are covered by sparse vegetation with no sign of trees. On these hostile volcanic hills, only hardy and highly adaptable plants survive. Some rare flora species, such as wild rhododendrons, orchids and uncommon ferns are present on the precipitous slopes of Ma On Shan. By contrast, hillocks on the remote promontory of Hebe Haven are well vegetated. The natural environment of Ma On Shan is relatively undisturbed. This invaluable sanctuary gives shelter to many wildlife species. Mammals reported include Chinese Porcupine (*Hystrix brachyura*), Wild Boar (*Sus scrofa*) and Common Muntjac (*Muntiacus muntjac*). In the dense forests of Hebe Haven, a phalanx of birds roost and feed.

**5.1.4** For the **fauna and flora communities**, across the reviewed studies, a total of four species of conservation importance were recorded within the Assessment Area of this study and their locations were accurately marked on map (except the avifauna species, *Falco* sp., whose sighting location was not specified) (**Figure 3**). These four species include two vascular plant species, one odonate species and one avifauna species, their protection/ conservation status and habitat/ distribution in Hong Kong are shown in **Table 2**.

**Table 2 Species of Conservation Importance Recorded within the Assessment Area from the Reviewed Literature**

Species name	Protection/Conservation status					Habitat / Distribution in Hong Kong <sup>13 14</sup>
	Local laws <sup>1 2</sup> <sub>3</sub>	Regional laws <sup>4 5</sup>	IUCN <sup>6</sup> / China Red List <sup>7 8 9</sup> <sub>10</sub>	Hu <i>et al.</i> 2003 <sup>11</sup> / Fellowes <i>et al.</i> 2002 <sup>12</sup>	Rarity in Hong Kong <sup>13</sup> <sub>14</sub>	
Flora						
Incense Tree <i>Aquilaria sinensis</i>	Cap. 586 <sup>1</sup>	State protection (category II) <sup>4</sup> Appendix II of CITES <sup>5</sup>	IUCN Red List (2019): Vulnerable <sup>6</sup>  Threatened Species List of China's Higher Plants: Vulnerable in China <sup>7</sup>  China Plant Red Data Book: Vulnerable in China <sup>8</sup>  Included in Illustrations of Rare & Endangered Plant in Guangdong Province <sup>9</sup>	Listed in Rare and Precious Plants of Hong Kong <sup>11</sup>	Common <sup>13</sup>	Lowland forest and fung shui woods <sup>13</sup>
<i>Pavetta hongkongensis</i>	Cap. 96A <sup>2</sup>				Common <sup>13</sup>	Fung shui woods and lowland forest <sup>13</sup>
Bird						



Species name	Protection/Conservation status					Habitat Distribution in Hong Kong <sup>13 14</sup>
	Local laws <sup>1 2 3</sup>	Regional laws <sup>4 5</sup>	IUCN <sup>6</sup> / China Red List <sup>7 8 9 10</sup>	Hu <i>et al.</i> 2003 <sup>11</sup> / Fellowes <i>et al.</i> 2002 <sup>12</sup>	Rarity in Hong Kong <sup>13 14</sup>	
<i>Falco</i> sp.	Cap. 586 <sup>1</sup> Cap. 170 <sup>3</sup>	Appendix II of CITES <sup>5</sup>	Class 2 Protected Animal of China <sup>10</sup>		-	-
<b>Odonate</b>						
Dancing Shadow-emerald <i>Idionyx victor</i>				Fellowes <i>et al.</i> (2002): Local Concern <sup>12</sup>	Common <sup>14</sup>	Widely distribute in wooded steams throughout Hong Kong <sup>14</sup>

Notes:

1. Cap. 586 Protection of Endangered Species of Animals and Plants Ordinance
2. Cap. 96A Forestry Regulations under Cap. 96 Forests and Countryside Ordinance
3. Cap. 170 Wild Animals Protection Ordinance
4. State Forestry Administration & Ministry of Agriculture (1999). List of Wild Plants under State Protection (Part 1).
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  - For conservation status listed by Fellowes *et al.* (2002), letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence
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## 5.2 Ecological Survey Results

### Habitat

- 5.2.1 Within the Assessment Area, there are twelve types of habitats, namely agricultural land, developed area, intertidal shore, mangrove, marsh, plantation, sea, shrubland/grassland, wasteland, watercourse, woodland and woodland remnant (**Figure 4**). These habitats within the Assessment Area are shown in **Table 3** and **Figure 4**. Photos of the habitats are presented in **Figure 8**. Vascular plant species and their relative abundance within each habitat within the Assessment Area are listed in **Appendix A**. The Application Site is predominated by woodland.

**Table 3 Habitats within the Assessment Area**

Habitat	Within the Application Site		Within the Assessment Area		Percentage of habitats within the Assessment Area by size (%)
	Size (ha)	Length (km)	Size (ha)	Length (km)	
Agricultural Land	-	N/A	0.47	N/A	0.45
Developed Area	0.06	N/A	13.94	N/A	13.27
Intertidal Shore	-	N/A	6.85	N/A	6.52
Mangrove	-	N/A	3.42	N/A	3.25
Marsh	-	N/A	1.12	N/A	1.07
Plantation	0.14	N/A	1.72	N/A	1.64
Sea	-	N/A	2.04	N/A	1.94
Shrubland/Grassland	0.01	N/A	19.56	N/A	18.61
Wasteland	-	N/A	0.13	N/A	0.12
Watercourse	-	N/A	0.20	0.79 (Perennial) 0.17 (Seasonal)	0.19
Woodland	0.26	N/A	55.28	N/A	52.61
Woodland Remnant	-	N/A	0.35	N/A	0.33
<b>Total</b>	<b>0.47</b>	<b>N/A</b>	<b>105.08</b>	<b>0.96</b>	<b>100</b>

- 5.2.2 **Agricultural Land** – Three pieces of Agricultural Land grown with crops (e.g. *Musa x paradisiaca*, *Ipomoea batatas* and *Vigna unguiculata* subsp. *sesquipedalis*) were found next to the village area in the northeast and southeast of the Application Site. Weedy species (e.g. *Plantago major*, *Kyllinga polyphylla* and *Oplismenus compositus*) were also found at the area that was not occupied by crops. No plant species of conservation importance was noted.
- 5.2.3 **Developed Area** - Developed land within the Assessment Area includes Sai Sha Road, village areas and some of the man-made slopes. All vegetation in these areas was either intensively managed or roadside weeds. Paved by concrete and being subject to disturbance, it was dominated by highly adaptable weedy herbs (e.g. *Bidens alba*, *Eleusine indica* and *Kyllinga polyphylla*), climbers (e.g. *Ipomoea cairica* and *Pueraria lobata* var. *montana*), shrubs (e.g. *Lantana camara*) and trees (e.g. *Leucaena leucocephala*). Besides, ornamental and landscape species (e.g. *Bauhinia variegata* and *Acacia confusa*) were also planted within the Developed Area. One species of conservation importance (an individual of *Aquilaria sinensis*) was recorded in the Developed Area within Assessment Area but outside Application Site.
- 5.2.4 **Intertidal Shore** - Intertidal Shore ran along the coastline of Kei Ling Ha Mangal SSSI. With the continuous exposure to intertidal waves, no plant was found. No plant species of conservation importance was also recorded.
- 5.2.5 **Plantation** - Plantation was mainly found on the engineering slope and roadside planation along Sai Sha Road. Among, one patch of roadside planation and an engineering slope numbered 8NW-C/FR48 fell within the Application Site. Common exotic fast-growing tree species at a height between 10 and 20 meters dominating the canopy of the plantation were *Acacia confusa* and *Eucalyptus urophylla*. Planted shrub, *Pittosporum tobira*, was also commonly encountered. Saplings and young trees of common native tree species, such as *Ficus variegata* var. *chlorocarpa*, *Mallotus paniculatus* and *Microcos nervosa* were found regenerating in the understorey of the plantation. Two flora species of conservation importance i.e. *Canthium dicoccum* and *Pavetta hongkongensis* were found within this habitat.
- 5.2.6 **Sea** - Sea area was the marine waters and was non-vegetated. About 2% of the Assessment Area was occupied by Coastal Waters (2.04 ha) of Three Fathoms Cove.
- 5.2.7 **Shrubland/Grassland** - Shrubland/Grassland interspersed with Woodland, which is found on hillslopes within the Assessment Area, part of it is included into Ma On Shan Country Park. Shrubland/Grassland at the country park area was dominated by native shrub and grass species such as *Miscanthus sinensis*, *Rhodomyrtus tomentosa* and *Baeckea frutescens*. Patches of Shrubland/Grassland also occurs next to the village area, as these patches of Shrubland/Grassland were close to the village areas, it was prone to human disturbance; and consisted of more weedy species, such as *Solanum torvum*, *Wedelia trilobata* and *Bidens alba*. No plant species of conservation importance was found.
- 5.2.8 **Wasteland** - A patch of Wasteland was situated at the northern boundary of the Assessment Area, which is next to Nga Yiu Tau Village. The establishment and dominance of common, fast-growing, and exotic weeds like *Cynodon dactylon*, *Kyllinga polyphylla* and *Ageratum conyzoides* suggested that the wasteland was recolonizing by vegetation after human disturbance. The diversity of plant species was relatively low when compared to other habitats. No plant species of

conservation importance was found.

- 5.2.9 **Woodland** - Extensive woodlands were found on hillslopes to the south and to the west of the Assessment Area, and along a watercourse. They contained common lowland secondary forest species and have a moderately diverse understorey. The woodland within Ma On Shan Country Park was more mature. Formed by secondary succession, trees attained variable heights, ranging from 10 to 20 meters, and formed a complex woodland structure.
- 5.2.10 There was also woodland inside the Application Site (canopy height: 8 – 12 m) and it was situated between Sai Sha Road and Sai Keng Village. The canopy of the woodland within the Application Site was occupied by native lowland forest tree species such as *Litsea monopetala*, *Endospermum chinense* and *Schefflera heptaphylla*. The understorey was dominated by native shade-tolerant shrub such as *Pavetta hongkongensis* and *Psychotria asiatica*. Native climbers such as *Merremia umbellata*, *Strophanthus divaricatus* and *Desmos chinensis* were also commonly found within the woodland of the Application Site. Five locally common species of conservation importance, namely *Aquilaria sinensis*, *Canthium dicoccum*, *Cibotium barometz*, *Diospyros vaccinioides* and *Pavetta hongkongensis*, were recorded in this habitat within the Assessment Area. Except *Cibotium barometz*, all species of conservation importance could also be found in the Woodland within the Application Site.
- 5.2.11 **Woodland Remnant** – Patches of woodland remnant were found inside Sai Keng Village and Kei Ling Ha San Wai within the Assessment Area. These woodland remnants were discontinued from other major woodland areas in the Assessment Area. Locating next to village area, the woodland remnant was prone to human disturbance, self-sown native tree species accommodating urbanized environment, such as *Schefflera heptaphylla* and *Macaranga tanarius* var. *tomentosa* and exotic tree species dominated the canopy. Shade-tolerant shrubs were very sparse at the understorey. Instead, much of the shade-tolerant plants typical in woodlands were replaced by herbaceous species such as *Alocasia macrorrhizos* and *Microstegium ciliatum* and weedy species such as *Ipomoea cairica* and *Bidens alba*.
- 5.2.12 Important habitats listed under Annex 8 of the TM-EIAO, that occur within the Assessment Area include:
- Natural stream courses and river longer than 500m;
  - Brackish or freshwater marshes larger than one hectare; and
  - Established mangrove stands of any size
- 5.2.13 **Watercourse** – A well preserved natural stream was located within the Assessment Area outside the Application Site. The upper course was located within the Ma On Shan Country Park. This section was more natural, stony and steeper in profile and shaded by a closed canopy. The lower course which runs underneath the developed Sai Sha Road was located next to the village areas, and it was partly channelized and gentler and without a continuous closed canopy. Several man-made structures including weirs, bridge abutments and some hard banks were also found. The water quality of both upper and lower courses was generally good. Riparian vegetation species, such as *Ficus fistulosa*, *Ficus hispida*, *Cleistocalyx nervosum*, and aquatic species, *Acorus gramineus*, were commonly found. Meanwhile, invasive *Eichhornia crassipes* was found to have colonized the lower section of the watercourse. No plant species of conservation importance was found.
- 5.2.14 **Marsh** - Two patches of Marsh were identified within the Assessment Area, which

are located to the northeast and east of the Application Site respectively, in between the Mangrove and the Developed Area. Common marsh species were found including *Colocasia esculenta*, *Fuirena umbellata*, *Floscopa scandens* and *Leersia hexandra*. No plant species of conservation importance was found.

- 5.2.15 **Mangrove** – A belt of mangrove communities was located along the coastline of Kei Ling Ha Mangal SSSI. Mangrove was absent from the Application Site. The seaward mangroves were mainly composed of true mangrove species *Aegiceras corniculatum*, *Kandelia obovata*, *Avicennia marina* and *Bruguiera gymnorhiza*, while landward mangroves encompassed true mangrove species interspersed with mangrove associate species, such as *Hibiscus tiliaceus*, *Pongamia pinnata*, *Pandanus tectorius*, *Paliurus ramosissimus* and *Clerodendrum inerme*. The height of the mangrove trees ranged from 1.5 m to 4 m. No plant species of conservation importance was noted.

### Vegetation

- 5.2.16 A total of 374 plant species were recorded within the Assessment Area, among which 271 and 95 are known to be native and exotic to Hong Kong respectively and the remaining 8 species are of uncertain origin (**Appendix A**). *Ailanthus fordii*, *Aquilaria sinensis*, *Canthium dicoccum*, *Cibotium barometz*, *Diospyros vaccinioides* and *Pavetta hongkongensis* are the flora species of conservation importance recorded within the Assessment Area. Locations of species of conservation importance outside the Application Site but within the Study Area are shown in **Figure 4**. Locations of species of conservation importance within and immediately adjacent to the Application Site are shown in **Figure 5**.
- 5.2.17 *Araucaria heterophylla*, *Bauhinia corymbosa*, *Canarium pimela*, *Casuarina equisetifolia*, *Dimocarpus longan*, *Lagerstroemia speciosa*, *Michelia x alba*, *Pittosporum tobira*, *Rhododendron pulchrum* var. *phoeniceum* and *Talinum paniculatum* are exotic to Hong Kong and not considered of conservation importance, despite being considered rare/ very rare by Corlett *et al.* (2000), listed as Vulnerable by IUCN (2019), listed as vulnerable in Threatened Species List of China's Higher Plants, listed as vulnerable in China Plant Red Data Book, listed under Category II in the List of Wild Plants under State Protection (Part 1), and/ or listed under Cap. 96 Forests and Countryside Ordinance.
- 5.2.18 *Podocarpus macrophyllus* was cultivated therefore not considered species of conservation importance, despite being considered as Vulnerable in Threatened Species List of China's Higher Plants.
- 5.2.19 An individual of *Ailanthus fordii* was recorded in plantation within the Application Site. *Ailanthus fordii* is considered be a rare tree species in forest of Hong Kong (Corlett *et al.* 2000). In addition, it is protected under Cap. 96 Forests and Countryside Ordinance and listed in the book *Rare and Precious Plants of Hong Kong* (Near Threatened in China).
- 5.2.20 About 21 individuals of *Aquilaria sinensis* were recorded during the surveys. Among, about 11 individuals occurred within the woodland of the Application Site. Outside the Application Site, about 9 individuals of *Aquilaria sinensis* were found in the woodland, about 1 sapling was found in the developed area. *Aquilaria sinensis* is a native tree species common in the lowland forests and fung shui woods of Hong Kong but under the threat of illegal felling and over-exploitation in southern China including Hong Kong. It is scheduled under the Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586) in Hong Kong, included in China Plant Red Data Book (vulnerable in China), Threatened Species



List of China's Higher Plants (vulnerable in China) and Illustration of Rare & endangered plant in Guangdong Province, listed as "Vulnerable" in the IUCN Red List (IUCN 2018), listed in Appendix II of CITES, and listed the book *Rare and Precious Plants of Hong Kong* (Near Threatened in China). In addition, wild individuals of *Aquilaria sinensis* are protected under State protection (Category II).

- 5.2.21 In total, about 11 individuals of *Canthium dicoccum* were found within the Assessment Area. Within the Application Site, about 7 individuals of *Canthium dicoccum* were recorded in the woodland and about 2 individuals were recorded in plantation. Outside the Application Site, about 2 individuals *Canthium dicoccum* were found in the woodland. *Canthium dicoccum* is a native tree species common in the lowland forests of Hong Kong. It is regarded as vulnerable by the IUCN Red List (IUCN 2018) owing to habitat loss and declination in habitat quality but it is not known to be subject to any conservation threat in Hong Kong.
- 5.2.22 About 11 aggregated individuals of *Cibotium barometz* were observed in the Assessment Area and all of them were recorded in the woodland outside the Application Site. *Cibotium barometz* is a large herb which is very common in the forests and shrublands of Hong Kong. It is regarded as vulnerable by the book *Rare and Precious Plants of Hong Kong*, listed in Appendix II of CITES. Wild individuals of *Cibotium barometz* are protected under State protection (category II). Moreover, it is protected by the Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586) in Hong Kong.
- 5.2.23 About 64 and 3 of *Pavetta hongkongensis* were found within the woodland and plantation of the Application Site respectively.
- 5.2.24 Outside the Application Site but within Assessment Area, *Pavetta hongkongensis* was also found. About 24 individuals and 1 individual were located in the woodland and plantation respectively immediately adjacent to the Application Site; more than 100 individuals were located in the woodland to the south of the watercourse; 5 individuals and 2 individuals were located in the rest of the woodland and plantation respectively outside the Application Site but within Assessment Area. *Pavetta hongkongensis* is a common shrub or small tree species found in the fung shui woods and lowland forests of Hong Kong and scheduled under Forestry Regulations (Cap. 96).
- 5.2.25 The only individual of *Diospyros vaccinioides* recorded during the surveys was located in the woodland within Application Site. *Diospyros vaccinioides* is a shrub that is very common in the shrublands of Hong Kong. Overexploitation of wild individuals of *Diospyros vaccinioides* for ornamental uses, especially in Taiwan, leads to its critically endangered status in the IUCN Red List (IUCN 2018).

### **Mammal**

- 5.2.26 Two mammal species, Japanese Pipistrelle *Pipistrellus abramus* and Rhesus Macaque *Macaca mulatta* were recorded within the Assessment Area. These species were considered of conservation importance (**Appendix B**).
- 5.2.27 Japanese Pipistrelle *Pipistrellus abramus* was recorded in the shrubland/grassland outside the Application Site but within the Assessment Area (**Figure 4**). All bat species in Hong Kong are protected under Cap. 170 Wild Animals Protection Ordinance.
- 5.2.28 Rhesus Macaque *Macaca mulatta* was recorded in the woodland outside the Application Site but within the Assessment Area (**Figure 4**). This species is

protected under Cap. 170 Wild Animals Protection Ordinance in Hong Kong and is listed in Appendix II of CITES and Class 2 Protected Animal of China.

### **Bird**

- 5.2.29 Forty-one bird species were recorded within the Assessment Area, eight of them were recorded within the Application Site (**Appendix C**). They are mostly common residents and winter visitors to Hong Kong. All wild birds are protected under Cap. 170 Wild Animals Protection Ordinance. No roosting or breeding behaviour was observed within the Assessment Area. Among them, seven bird species were regarded as with conservation importance, including Eastern Cattle Egret *Bubulcus coromandus*, Great Egret *Ardea alba*, Intermediate Egret *Egretta intermedia*, Little Egret *Egretta garzetta*, Black Kite *Milvus migrans*, Greater Coucal *Centropus sinensis* and Rufous-capped Babbler *Stachyridopsis ruficeps*.
- 5.2.30 Eastern Cattle Egret *Bubulcus coromandus*, a resident and common passage migrant, is widely distributed in Hong Kong (AFCD 2020; Carey *et al.* 2001). They were recorded in the agricultural land outside the Application Site but within the Assessment Area (**Figure 4**). This species is of local concern on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence in Hong Kong (Fellowes *et al.* 2002).
- 5.2.31 Great Egret *Ardea alba* was recorded in the intertidal shore outside the Application Site but within the Assessment Area (**Figure 4**). This species is a common resident and winter visitor widely distributed in Hong Kong (AFCD 2019b; Carey *et al.* 2001) and is of potential regional concern and regional concern on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence (Fellowes *et al.* 2002).
- 5.2.32 Intermediate Egret *Egretta intermedia* is a common passage migrant in Hong Kong (AFCD 2020; Carey *et al.* 2001) and is regarded as regional concern (Fellowes *et al.* 2002). It was recorded in the agricultural land and marsh outside the Application Site but within the Assessment Area (**Figure 4**).
- 5.2.33 Little Egret *Egretta garzetta* is a common resident widely distributed in coastal area throughout Hong Kong (AFCD 2020; Carey *et al.* 2001). This species was recorded in the intertidal shore outside the Application Site but within the Assessment Area (**Figure 4**). This species is of regional concern (Fellowes *et al.* 2002).
- 5.2.34 Black Kite *Milvus migrans* was recorded in the developed area, marsh and woodland remnant outside the Application Site but within the Assessment Area (**Figure 4**). This species is a common resident and an abundant winter visitor widely distributed in Hong Kong (AFCD 2020; Carey *et al.* 2001). It is considered of regional concern by Fellowes *et al.* (2002), listed in Appendix II of CITES and protected under Cap. 586 Protection of Endangered Species of Animals and Plants Ordinance.
- 5.2.35 Greater Coucal *Centropus sinensis* was recorded in the woodland within the Application Site and the shrubland/grassland and woodland within the Assessment Area (**Figure 4**). This locally common resident (Carey *et al.* 2001) is a Class 2 Protected Animal of China and regarded as vulnerable in China Red Data Book (Zheng and Wang 1998).
- 5.2.36 Rufous-capped Babbler *Stachyridopsis ruficeps* is an uncommon resident (AFCD 2020; Carey *et al.* 2001) recorded in the woodland outside the Application Site but within the Assessment Area (**Figure 4**). This species is listed as local concern by

Fellowes *et al.* (2002).

### **Herpetofauna**

- 5.2.37 Only one reptile species and two amphibian species were recorded within the Assessment Area (**Appendix B**). All species is widely distributed in Hong Kong. No other species of conservation importance were noted during the surveys.

### **Odonate**

- 5.2.38 Seven odonate species were recorded within the Assessment Area (**Appendix D**). All recorded odonate species are common in Hong Kong (AFCD 2020) and no species of conservation importance was recorded.

### **Butterfly**

- 5.2.39 Thirty-two butterfly species were recorded within the Assessment Area, five of which occurred within the Application Site (**Appendix E**). All species are common and widely distributed throughout Hong Kong. Only Spotted Sawtooth *Prioneris thestylis* was considered of conservation importance.
- 5.2.40 Spotted Sawtooth *Prioneris thestylis* was recorded in the developed area outside the Application Site (**Figure 4**). This species is rare but widely distributed throughout Hong Kong. It is listed as local concern by Fellowes *et al.* (2002).

### **Freshwater Fauna**

- 5.2.41 Twenty-four freshwater fauna species were recorded in the sampling locations within the Assessment Area (**Appendix F**). Small snakehead *Channa asiatica* and South China Grappletail *Heliogomphus scorio* are considered of conservation importance.
- 5.2.42 Small snakehead *Channa asiatica* was recorded in the watercourse outside the Application Site but within Assessment Area (**Figure 4**). It is listed as local concern by Fellowes *et al.* (2002).
- 5.2.43 Larva of a dragonfly species South China Grappletail *Heliogomphus scorio* was recorded in the watercourse outside the Application Site but within Assessment Area (**Figure 4**). It is listed as local concern by Fellowes *et al.* (2002).

### **Intertidal Fauna**

- 5.2.44 A total of thirty-eight intertidal organisms were found in the survey locations during the surveys. *Clithon oualaniensis* and *Monodonta labio* were the dominant species. Highly mobile fauna such as crabs were also recorded in the surveys (**Appendix G**). *Haberma tingkok*, an endemic arboreal crab species with limited distribution over Hong Kong, was recorded by AFCD in the Kei Ling Ha Mangal SSSI mangrove stand within the Assessment Area.
- 5.2.45 The endemic crab *Haberma tingkok* was first recorded at Ting Kok in 2017. It is an arboreal species associated with mangrove *Kandelia obovata* (Cannicci and Ng 2017). There were unpublished records of this species in the mangrove stand within the Assessment Area (AFCD *in litt.*). Apart from this species, no species of conservation importance was recorded during the intertidal surveys. All species recorded were considered to be common and widespread as in other intertidal

shores in Hong Kong.

## 6. EVALUATION OF HABITATS AND SPECIES

- 6.1.1 The Application Site encompasses developed area, plantation, shrubland/grassland and woodland. The ecological importance of the Application Site (**Table 4**) and each type of habitat in the Assessment Area were evaluated in accordance with the criteria stipulated in Annex 8 of EIAO-TM (**Table 5** to **Table 14**).



**Table 4 Evaluation of the Application Site**

Criteria	Habitats within the Application Site			
	Developed Area	Plantation	Shrubland/Grassland	Woodland
Naturalness	Man-made	Man-made habitat with a high proportion of exotic species.	Semi-natural habitat undergone natural succession and developed from wasteland	Natural
Size	0.06 ha	0.14 ha	0.01 ha	0.26 ha
Diversity	Low diversity of flora and terrestrial fauna	Low diversity of flora and fauna	Low diversity of flora and fauna	Moderate floral diversity and moderate structural diversity.
Rarity	None for flora None for fauna	Three flora species of conservation importance: <i>Ailanthus fordii</i> , <i>Canthium dicoccum</i> and <i>Pavetta hongkongensis</i>  None for fauna	None for flora None for fauna	Four flora species of conservation importance: <i>Aquilaria sinensis</i> , <i>Canthium dicoccum</i> , <i>Diospyros vaccinioides</i> and <i>Pavetta hongkongensis</i>  Fauna species of conservation importance: Greater Coucal
Re-creatability	Readily re-creatable	Readily re-creatable	Readily re-creatable	Readily re-creatable but trees need time to grow and mature
Fragmentation	None	None	None	None
Ecological linkage	Little ecological linkage to adjacent habitats	Adjacent to woodland	Adjacent to woodland	Ecologically linked to other terrestrial habitats and upland habitats
Potential value	Low given the land use nature	Low due to lower floristic diversity and complexity	Limited due to frequent human disturbance	Transiting to more mature woodland over time
Nursery/breeding ground	No significant observation. Limited due to high level of disturbance.	No significant observation. Potentially provide breeding habitats for birds and butterflies.	No significant observation	No significant nursery or breeding ground
Age	N/A	N/A	N/A	Over 30 years in age
Abundance/ richness of wildlife	Low abundance and species diversity compared to the large area present	Low abundance of fauna	Low abundance of fauna	Mostly native tree species. Relatively low abundance of wildlife
Overall ecological value of the Application Site	Low	Low	Low	Low - Medium

**Table 5 Evaluation of Agricultural Land within the Assessment Area**

Criterion	Agricultural Land
Naturalness	Man-made habitat
Size	0.47 ha
Diversity	Very low diversity of bird, butterfly and dragonfly
Rarity	None for flora Fauna of conservation importance included Eastern Cattle Egret and Intermediate Egret
Re-creatability	Readily re-creatable
Fragmentation	Exist as isolated patches
Ecological linkage	Adjacent to woodland
Potential value	Low due to management for harvesting
Nursery/breeding ground	No significant observation. Potentially provide breeding habitats butterflies.
Age	N/A
Abundance/richness of wildlife	Very low abundance of bird and butterfly
Overall ecological value	Low

**Table 6 Evaluation of Developed Area within the Assessment Area**

Criterion	Developed Area
Naturalness	Man-made habitat
Size	13.94 ha
Diversity	Low plant diversity. Low to moderate faunal diversity
Rarity	Flora of conservation importance included <i>Aquilaria sinensis</i> Fauna of conservation importance included Black Kite and Spotted Sawtooth
Re-creatability	Readily re-creatable
Fragmentation	Present at many separate locations.
Ecological linkage	Little ecological linkage to adjacent habitats
Potential value	Low given the land use nature
Nursery/breeding ground	No significant observation. Limited due to high level of disturbance.
Age	N/A
Abundance/richness of wildlife	Low abundance and species diversity compared to the large area present
Overall ecological value	Low

**Table 7 Evaluation of Intertidal Shore within the Assessment Area**

Criterion	Intertidal Shore
Naturalness	Basically natural, with occasional man-made structures such as piers
Size	6.85 ha
Diversity	Moderate diversity of intertidal fauna
Rarity	None for flora Fauna of conservation importance included Great Egret, Little Egret
Re-creatability	Not readily re-creatable
Fragmentation	Connected to adjacent marine habitats
Ecological linkage	Functionally linked to adjacent marine habitats
Potential value	Low as the present condition has existed for a long time
Nursery/breeding ground	Potentially nursery and breeding grounds for intertidal and

Criterion	Intertidal Shore
	marine life, but no special observation
Age	N/A
Abundance/richness of wildlife	Medium
Overall ecological value	Medium

**Table 8 Evaluation of Mangrove within the Assessment Area**

Criterion	Mangrove
Naturalness	Natural habitat
Size	3.42 ha
Diversity	Low plant species diversity dominated by common mangrove species ( <i>Aegiceras corniculatum</i> , <i>Kandelia obovata</i> , <i>Avicennia marina</i> and <i>Bruguiera gymnorhiza</i> )
Rarity	None for flora  Fauna of conservation importance included <i>Habermia tingkok</i>
Re-creatability	Re-creatable but the mangrove community and associated mangrove species require time to develop and mature to their structural complexity and composition
Fragmentation	Not fragmented
Ecological linkage	Functionally linked to other intertidal habitats and marine habitat
Potential value	Low as the present condition has existed for a long time
Nursery/breeding ground	Potentially nursery and breeding grounds for intertidal and marine life, but no special observation
Age	N/A
Abundance/richness of wildlife	Relatively low diversity of fauna observed
Overall ecological value	Medium

**Table 9 Evaluation of Marsh within the Assessment Area**

Criterion	Marsh
Naturalness	Semi-natural habitat, some probably developed from abandoned agricultural lands.
Size	1.12 ha
Diversity	Low floral and faunal diversity
Rarity	None for flora  Fauna of conservation importance included Black Kite and Intermediate Egret
Re-creatability	Re-creatable but requires suitable hydrological conditions.
Fragmentation	Present at two separate locations.
Ecological linkage	Adjacent to mangroves and woodland
Potential value	Potential value subject to the hydrology
Nursery/breeding ground	No significant observation. Potentially provide breeding habitats for amphibians
Age	N/A
Abundance/richness of wildlife	Medium
Overall ecological value	Medium

**Table 10 Evaluation of Plantation within the Assessment Area**

Criterion	Plantation
Naturalness	Man-made habitat with a high proportion of exotic species.
Size	1.72 ha
Diversity	Low diversity of flora and fauna
Rarity	Three flora species of conservation importance: <i>Ailanthus fordii</i> ,

Criterion	Plantation
	<i>Canthium dicoccum</i> and <i>Pavetta hongkongensis</i>
	None for fauna
Re-creatability	Readily re-creatable
Fragmentation	Exist as isolated patches
Ecological linkage	Adjacent to woodland
Potential value	Low due to lower floristic diversity and complexity
Nursery/breeding ground	No significant observation. Potentially provide breeding habitats for birds and butterflies.
Age	N/A
Abundance/richness of wildlife	Low abundance of fauna
Overall ecological value	Low

**Table 11 Evaluation of Shrubland/grassland within the Assessment Area**

Criterion	Shrubland/grassland
Naturalness	Semi-natural habitat undergone natural succession and developed from wasteland or hilly terrain
Size	19.56 ha
Diversity	Low to moderate diversity of butterfly, low diversity of bird and dragonfly
Rarity	None for flora Fauna species of conservation importance included Greater Coucal and Japanese Pipistrelle
Re-creatability	Easy to recreate
Fragmentation	Exist as several patches on village areas
Ecological linkage	Adjacent to woodland
Potential value	Limited due to frequent human disturbance
Nursery/breeding ground	No significant observation
Age	N/A
Abundance/richness of wildlife	Low to moderate abundance of bird, low abundance of butterfly and dragonfly
Overall ecological value	Low

**Table 12 Evaluation of Sea within the Assessment Area**

Criterion	Sea
Naturalness	Natural
Size	2.04 ha
Diversity	No flora and very low diversity of fauna recorded
Rarity	None for flora None for fauna
Re-creatability	Not readily re-creatable
Fragmentation	None
Ecological linkage	Ecologically linked to intertidal shore within the Assessment Area and the marine waters outside the Assessment Area
Potential value	Low
Nursery/breeding ground	No significant record
Age	N/A
Abundance/richness of wildlife	Low abundance of all groups of terrestrial fauna surveyed
Overall ecological value	Low



**Table 13 Evaluation of Woodland and Woodland Remnant within the Assessment Area**

Criterion	Woodland	Woodland Remnant
Naturalness	Natural	Habitat of natural origin, but separated from habitat of its kind and subjected to disturbance
Size	55.28 ha	0.35 ha
Diversity	Moderate floral diversity and moderate structural diversity.	Low floral diversity and low structural diversity.
Rarity	Flora species of conservation importance included <i>Aquilaria sinensis</i> , <i>Canthium dicoccum</i> , <i>Cibotium barometz</i> , <i>Diospyros vaccinioides</i> and <i>Pavetta hongkongensis</i>  Fauna of conservation importance included Greater Coucal, Rufous-capped Babbler and Rhesus Macaque	None for flora  Fauna of conservation importance included Black Kite
Re-creatability	Readily re-creatable but trees need time to grow and mature	Readily re-creatable
Fragmentation	Slightly fragmented by Sai Sha road, villages and more open habitats	Fragmented from existing woodland by village development
Ecological linkage	Ecologically linked to other terrestrial habitats and upland habitats	Ecologically linked to other terrestrial habitats
Potential value	Transiting to more mature woodland over time	Transiting to more mature woodland or expanding to connect to other woodlands over time
Nursery/breeding ground	No significant nursery or breeding ground	No significant nursery or breeding ground
Age	Over 30 years in age	Over 30 years in age
Abundance/richness of wildlife	Mostly native tree species. Relatively low abundance of wildlife	Mixture of self-sown native and exotic tree species. Relatively low abundance of wildlife (bird and butterfly), no mammal, herpetofauna or dragonfly was recorded.
Overall ecological value	Low - Medium	Low

**Table 14 Evaluation of Wasteland within the Assessment Area**

Criterion	Wasteland
Naturalness	Formerly disturbed area but succession to early colonising grass and herbs species along with woody weeds.
Size	0.13 ha
Diversity	Low to moderate diversity of butterfly, low diversity of bird and dragonfly
Rarity	None for flora  None for fauna
Re-creatability	Easy to recreate
Fragmentation	Present as fragmented patches
Ecological linkage	No special linkage was observed

Criterion	Wasteland
Potential value	Low
Nursery/breeding ground	Limited as breeding habitats for fauna due to low vegetation coverage
Age	N/A
Abundance/richness of wildlife	Low to abundance diversity of butterfly, low diversity of bird and dragonfly
Overall ecological value	Low

**Table 15 Evaluation of Watercourse within the Assessment Area**

Criterion	Watercourse
Naturalness	Largely natural stream bed. Small sections are channelized. The upper course is more natural, stony and steeper in profile and shaded by a closed canopy.
Size	0.96 km
Diversity	From low to low-medium diversity of stream fauna
Rarity	None for flora Fauna of conservation importance included Small Snakehead and South China Grappletail
Re-creatability	Natural stream sections are difficult to re-create
Fragmentation	Not fragmented
Ecological linkage	Linked to the upstream and marine areas (provides habitat for amphidromous species)
Potential value	Medium
Nursery/breeding ground	Nursery and/or breeding ground for aquatic fauna
Age	N/A
Abundance/richness of wildlife	Medium
Overall ecological value	Medium

6.1.2 In accordance with Table 3, Annex 8 of the EIAO-TM, the ecological value of species was assessed in terms of protection status (e.g. fauna protected under WAPO (except birds), and flora and fauna protected under regional/global legislation/conventions), species distribution (e.g. endemic), and rarity (e.g. rare). The list and evaluation of floral and faunal species of conservation importance recorded within the Assessment Area, according to the EIAO-TM, are given in **Tables 16 & 17**.

**Table 16 Evaluation of Flora Species of Conservation Importance within the Assessment Area Recorded from Surveys**

Species name	Protection/Conservation status <sup>1 2 3 4 5 6 7 8 9 10</sup>					Locations
	Local laws <sup>1 2</sup>	Regional laws <sup>3 4</sup>	IUCN <sup>5</sup> / China Red List <sup>6 7 8</sup>	Hu <i>et al.</i> 2003 <sup>9</sup>	Rarity in Hong Kong <sup>10</sup>	
<i>Ailanthus fordii</i>	Cap. 96A <sup>2</sup>			Listed in Rare and Precious Plants of Hong Kong (Near threatened in China)	Rare	Plantation within the Application Site
<i>Aquilaria sinensis</i>	Cap. 586 <sup>1</sup>	Appendix II of CITES <sup>3</sup> State protection (category II) <sup>4</sup>	IUCN Red List (2019): Vulnerable <sup>5</sup> Threatened Species List of China's Higher Plants: Vulnerable <sup>6</sup>	Listed in Rare and Precious Plants of Hong Kong (Near threatened in China) <sup>9</sup>	Common	Woodland within the Application Site Developed Area and Woodland outside Application Site but within Assessment Area

Species name	Protection/Conservation status <sup>1 2 3 4 5 6 7 8 9 10</sup>					Locations
	Local laws <sup>1 2</sup>	Regional laws <sup>3 4</sup>	IUCN <sup>5</sup> China Red List <sup>6 7 8</sup>	Hu <i>et al.</i> 2003 <sup>9</sup>	Rarity in Hong Kong <sup>10</sup>	
			China Plant Red Data Book: Vulnerable <sup>7</sup> Included in Illustrations of Rare & Endangered Plant in Guangdong Province <sup>8</sup>			
<i>Canthium dicoccum</i>			IUCN Red List (2019): Vulnerable <sup>5</sup>		Common	Plantation and woodland within the Application Site Woodland outside Application Site but within Assessment Area
<i>Cibotium barometz</i>	Cap. 586 <sup>1</sup>	Appendix II of CITES <sup>3</sup> State protection (category II) <sup>4</sup>		Listed in Rare and Precious Plants of Hong Kong (Vulnerable in China) <sup>9</sup>	Very common	Woodland outside Application Site but within Assessment Area
<i>Diospyros vaccinioides</i>			IUCN Red List (2019): Critically Endangered <sup>5</sup>		Very common	Woodland within the Application Site
<i>Pavetta hongkongensis</i>	Cap. 96A <sup>2</sup>				Common	Plantation and woodland within the Application Site Plantation and Woodland outside Application Site but within Assessment Area

## Notes:

1. Cap. 586 Protection of Endangered Species of Animals and Plants Ordinance
2. Cap. 96A Forestry Regulations under Cap. 96 Forests and Countryside Ordinance
3. Convention on International Trade in Endangered Species of Wild Flora and Fauna (2019). Appendices I, II and III.
4. State Forestry Administration & Ministry of Agriculture (1999). List of Wild Plants under State Protection (Part 1).
5. International Union of Conservation for Nature. (2019). The IUCN Red List of Threatened Species. Version 2020-2.
6. Qin *et al.* (2017). Threatened Species List of China's Higher Plants.
7. Fu & Chin (1992). China Plant Red Data Book – Rare and Endangered Plants.
8. Wu & Hu (1988). Illustration of Rare & endangered plant in Guangdong Province.
9. Hu *et al.* (2003). Rare and Precious Plants of Hong Kong.
10. Corlett *et al.* (2000). Hong Kong Vascular Plants: Distribution and Status.

**Table 17 Evaluation of Fauna Species of Conservation Importance within the Assessment Area Recorded from Surveys**

Species name	Protection status / Concern Level <sup>1 2 3 4 5 6 7</sup>					Distribution <sup>7</sup>	Locations
	Local laws <sup>1 2</sup>	Regional laws <sup>3 4</sup>	China Red List <sup>5</sup>	Fellowes et al. 2002 <sup>6</sup>	Rarity in Hong Kong <sup>7</sup>		
Rhesus Macaque <i>Macaca mulatta</i>	Cap. 170 <sup>1</sup>	Appendix II of CITES <sup>3</sup> Class 2 Protected Animal of China <sup>4</sup>			Common	Found in Kam Shan, Shing Mun, Tai Po Kau, Ma On Shan, Sai Kung and Tai Lam Country Parks.	Woodland outside the Application Site but within the Assessment Area
Japanese Pipistrelle <i>Pipistrellus abramus</i>	Cap. 170 <sup>1</sup>				Very Common	Widely distributed throughout Hong Kong.	Shrubland/grassland outside the Application Site but within the Assessment Area
Eastern Cattle Egret <i>Bubulcus coromandus</i>	Cap. 170 <sup>1</sup>			Fellowes et al. (2002): (Local Concern)	Resident and common passage migrant	Widely distributed in Hong Kong	Agricultural land outside the Application Site but within the Assessment Area
Great Egret <i>Ardea alba</i>	Cap. 170 <sup>1</sup>			Fellowes et al. (2002): Potential Regional Concern, (Regional Concern)	Common resident and winter visitor	Widely distributed in Hong Kong.	Intertidal shore outside the Application Site but within the Assessment Area
Intermediate Egret <i>Egretta intermedia</i>	Cap. 170 <sup>1</sup>			Fellowes et al. (2002): Regional Concern	Common passage migrant	Found in Deep Bay area, Tai Long Wan, Starling Inlet, Tai O, Cape D'Aguilar.	Agricultural land and Marsh outside the Application Site but within the Assessment Area
Little Egret <i>Egretta garzetta</i>	Cap. 170 <sup>1</sup>			Fellowes et al. (2002): Regional Concern	Common resident	Widely distributed in coastal area throughout Hong Kong	Intertidal shore outside the Application Site but within the Assessment Area
Black Kite <i>Milvus migrans</i>	Cap. 170 <sup>1</sup> Cap. 586 <sup>2</sup>	Appendix II of CITES <sup>3</sup>		Fellowes et al. (2002): Regional Concern	Common resident and winter visitor	Widely distributed in Hong Kong	Developed area, marsh and woodland remnant outside the Application Site but within the



Species name	Protection status / Concern Level <sup>1 2 3 4 5 6 7</sup>					Distribution <sup>7</sup>	Locations
	Local laws <sup>1 2</sup>	Regional laws <sup>3 4</sup>	China Red List <sup>5</sup>	Fellowes <i>et al.</i> 2002 <sup>6</sup>	Rarity in Hong Kong <sup>7</sup>		
							Assessment Area
Greater Coucal <i>Centropus sinensis</i>	Cap. 170 <sup>1</sup>	Class 2 Protected Animal of China <sup>4</sup>	China Red Data Book: (Vulnerable) <sup>5</sup>		Common resident	Widely distributed in Hong Kong	Woodland within the Application Site and, Shrubland/ Grassland and Woodland outside the Application Site but within the Assessment Area
Rufous-capped Babbler <i>Stachyridopsis ruficeps</i>	Cap. 170 <sup>1</sup>			Fellowes <i>et al.</i> (2002): Local Concern	Uncommon resident	Found in Shing Mun, Tai Po Kau, Tai Mek Tuk, Ng Tung Chai, Fo Tan, Tai Mo Shan, The Peak and Kadoorie Agricultural Research Centre	Woodland outside the Application Site but within the Assessment Area
Spotted Sawtooth <i>Prioneris thestylis</i>				Fellowes <i>et al.</i> (2002): Local Concern	Rare	Widely distributed throughout Hong Kong	Developed Area outside the Application Site but within the Assessment Area
Small Snakehead <i>Channa asiatica</i>				Fellowes <i>et al.</i> (2002): Local Concern	Uncommon	-	Watercourse outside the Application Site but within the Assessment Area
South China Grappletail <i>Heliogomphus scorio</i> (larvae)				Fellowes <i>et al.</i> (2002): Local Concern	Common	-	Watercourse outside the Application Site but within the Assessment Area

## Notes:

1. Cap. 170 Wild Animals Protection Ordinance
2. Cap. 586 Protection of Endangered Species of Animals and Plants Ordinance
3. Convention on International Trade in Endangered Species of Wild Flora and Fauna (2019). Appendices I, II and III.
4. Wild Animal Conservation Law of the People's Republic of China
5. Zheng and Wang (1998). China Red Data Book of Endangered Animals: Aves.
6. Fellowes *et al.* (2002). Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong.
  - For conservation status listed by Fellowes *et al.* (2002), letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
7. AFCD (2020). Hong Kong Biodiversity Database.

## 7. IMPACT IDENTIFICATION AND PREDICTION

### 7.1 Design Considerations

- 7.1.1 In order to minimize the ecological impacts at the outset, the project team has examined all the available information at this planning stage to reveal the physical constraints that the Application Site is facing, and to formulate an alignment and road design which will cause the least ecological impact. The actions that have been proactively taken to address the physical constraints and minimize the impacts are summarized below.
- 7.1.2 **Adopting the Shortest Alignment within “GB”** - Having examined the conditions and capacity of the existing vehicle access serving the “G/IC” zone, it is considered essential to construct a new up-to-standard access road to connect Sai Sha Road to the “G/IC” zone to support the proposed land use of “G/IC” zone. Woodland habitat zoned as Green Belt and Sai Keng Village are located between Sai Sha Road and the “G/IC” zone. While it is not feasible to have a new access road going through the village or improving the existing village access to meet the road standard given the limited space among village houses it is inevitable that the new access road alignment will go through the Green Belt. The latest ecological surveys have confirmed that the “GB” is mainly covered by woodland habitat which is of low – medium ecological value (see **Section 6**). With the domination of woodland within the “GB”, total avoidance of woodland habitat is not possible, and the project team has thus taken the shortest alignment for the Proposed Access Road. The present alignment of the Proposed Access Road connects Sai Sha Road to the west of the “G/IC” site, where is more or less the nearest point, and thus the shortest distance to go through the “GB” in between the “G/IC” zone and Sai Sha Road. The Application Site is totally within the “GB” area in which woodland is the dominant habitat type. By selecting this shortest alignment, the impacts on woodland within the “GB” have been minimized as most as practicable.
- 7.1.3 **Adopting the Minimal Width of the Access Road** – Other than the alignment, the width of the access road also affects the area size of “GB” to be occupied as well as woodland to be impacted. In order to cater for the future needs of the potential development within the “G/IC” zone, a minimum carriageway width 7.3m (2 lanes) as stipulated in the “Transport Planning and Design Manual” has been adopted. The total width would be about 12m including pedestrian walkway along both sides of the access road. No extra space for planters, dividers or layby is proposed and thus the width of the current design has been kept to minimal. By limiting the width of the road design, the impacts on woodland within the “GB” have been further minimized as most as practicable.
- 7.1.4 **Avoidance of Watercourse** – The current Proposed Access Road alignment has taken the shortest distance between Sai Sha Road and the “G/IC” Site with due consideration to minimise direct impact to the vegetation within the Green Belt Zone. The current Proposed Access Road has also avoided crossing the natural stream section within the Green Belt Zone to minimise potential direct and indirect impact to the natural stream. This is considered as the optimal design from ecological perspective.
- 7.1.5 Construction works area along the watercourse have all been avoided. Avoidance of development along this watercourse ensures there would be no net loss of natural habitat in the watercourse, and allows for natural stream flow and maintenance of the stream-ocean corridor, which are all essential parameters for preserving amphidromous species (Fitzsimons & Nishimoto 1995, Fitzsimons *et al.*

1996, Yamasaki & Tachihara 2006, Keith *et al.* 2009). The work boundary will be away from the natural stream and hence could minimise potential indirect impact to the stream.

- 7.1.6 With the above considerations, the alignment and design of the Proposed Access Road has minimized the covered areas, the exact footprint of the structures, the ecological impacts have been minimized.

## 7.2 Identification of Key Works

- 7.2.1 The key works of the Proposed Access Road involves construction of an elevated access road connecting Sai Sha Road to a “G/IC” (Government, Institution or Community) site, in order to support the school development within the “G/IC” site. The Proposed Access Road is approximately 12m wide and will go through the green belt next to Sai Sha Road and then land on the “G/IC” site near Sai Keng Village. As discussed in **Section 1**, this report focuses on the development of the Proposed Access Road section within the green belt only.

- 7.2.2 **Addressing the Topographical Challenge between Sai Sha Road and “G/IC” Zone** – The latest topographical information has revealed that Sai Sha Road is approximately 14m above the “G/IC” Site. Besides, the terrain in the vicinity of the alignment consists of various gradients from <15 deg to 45 deg. Viaduct design will be adopted for the Proposed Access Road and can reduce the actual footprint of the supporting structures. Given the structural depth of the access road is approximately 2m, the headroom underneath the viaduct structure would vary along the alignment. According to the latest design at this stage, for the section closer to Sai Sha Road, the headroom would be about 3m. For the section closer to the “G/IC” zone, the headroom would be larger and in the order of about 14m. The headroom underneath the viaduct would be subject to detailed design.

- 7.2.3 Within the Application Site boundary, there will be temporary works area for the Proposed Access Road on its both sides. Besides an engineering slope numbered 8NW-C/FR48 (about 0.12 ha), which is currently covered by plantation dominating by exotic tree *Acacia confusa*, is located on the southern end and will be inevitably affected by the construction works due to its proximity to the Proposed Access Road. Preliminarily, the fill slope and retaining wall shall be upgraded to flatter slope i.e. 15 degree with strengthened wall i.e. retaining wall to make it up-to-standard. While slope stability analysis for the whole feature will need to be carried out at the detail design stage to finalize the site arrangement and formation works, it is anticipated that the entire slope will require reconstruction after the road construction, and thus is also included as part of the temporary works area.

## 7.3 Construction Phase

### **Direct Impact – Habitat Loss**

- 7.3.1 Habitat and vegetation loss due to site clearance for temporary works areas and site formation for the road structures within the Application Site will constitute to direct ecological impacts. Habitats anticipated to be affected within the Application Site include developed area, shrubland/grassland, plantation and woodland.
- 7.3.2 Clearance would be required in the Application Site for the construction of the Proposed Access Road. Both areas for the construction of road structures including bridge piers and abutment as well as the necessary temporary works area are included (**Figure 6**).

### *Temporary habitat loss*

- 7.3.3 Temporary works areas cover the part of Application Site outside the plan view area of the Proposed Access Road. This includes developed area, shrubland/grassland, plantation and woodland. Areas within the temporary works area will not be shaded by the viaduct of the Proposed Access Road after construction and are regarded as temporary habitat loss (**Figure 7**).
- 7.3.4 Developed area, shrubland/grassland, and plantation are ranked as low ecological value as the diversity and abundance wildlife were low, the temporary loss of developed area (about 0.02 ha), shrubland/grassland, (< 0.01 ha) and plantation (about 0.13 ha) are considered **Insignificant (Table 18)**. As reinstatement by planting of tree as woodland compensation in these temporary loss areas after completion of construction is recommended, it is expected that these areas could be used for woodland compensation after construction.
- 7.3.5 Loss of woodland within the temporary works area is regarded as temporary woodland loss, as trees will be planted in this area after the completion of the construction. Moderate diversity and relatively low abundance of fauna with mostly native tree species were recorded within the woodland of the Application Site, the ecological value of woodland is considered low to medium, the area of temporary woodland loss will be about 0.13 ha (**Table 18**). Thus, temporary loss of small area of woodland is considered **Minor**, given that reinstatement native tree planting will be conducted after construction.

### *Permanent habitat loss*

- 7.3.6 Minor permanent loss of roadside developed area and plantation on the Sai Sha Road junction side is anticipated as the junction side would be occupied by at-grade permanent structure of the access road. Besides, minor permanent loss of shrubland/grassland and woodland were also due to the construction of bridge piers (**Figure 6**). In addition, in accordance with the plan view area of the Proposed Access Road, there are areas, including developed area, shrubland/grassland and woodland, will be shaded by the viaduct after construction but will not be physically occupied by the road structures (**Figure 6**). These areas are regarded as permanent habitat loss as shading does not favour for the growth of trees, thus, reinstatement of habitats is considered not possible.
- 7.3.7 There will be permanent loss of about 0.04 ha developed area, 0.01 ha of plantation and 0.01 ha of shrubland/grassland (**Table 18**). Developed area, plantation and shrubland/grassland are all ranked as low ecological value as the diversity and abundance wildlife were low. Thus, permanent loss of developed area, plantation and shrubland/grassland are considered **Insignificant**.
- 7.3.8 About 0.13 ha of permanent woodland loss is anticipated (**Table 18**). The ecological value of woodland within the Application Site is considered low to medium due to moderate diversity and relatively low abundance of fauna with the record of mostly native tree species. However, the affected area will be small. Permanent woodland loss within the Application Site is considered **Minor to Moderate**. Woodland compensation is recommended as a mitigation measure for the permanent woodland loss.

**Table 18      Estimated Habitat Loss**



Habitats	Temporary loss area (ha)	Permanent loss area (ha)	Total (ha)	Ecological value
Developed area	0.02	0.04	0.06	Low
Plantation	0.13	0.01	0.14	Low
Shrubland/grassland	<0.01	0.01	0.01	Low
Woodland	0.13	0.13	0.26	Low – Medium

### ***Indirect Impacts - Disturbance***

- 7.3.9 Dusts, noise and human activities arising from construction works will cause disturbances to habitats and associated wildlife adjacent to Application Site. Excessive noise, vibration, dust and increased human activity may all contribute to increased disturbance. Considerable noise and visual disturbance may be generated during site formation and earth moving works. Construction work is likely to take several years to complete and may generate noise and visual disturbance to wildlife.
- 7.3.10 Habitats adjacent to Application Site are mostly developed area and woodland, and also agricultural land, shrubland/grassland and watercourse. The ecological value of developed area and shrubland/grassland are ranked of low and other habitats are of low to medium ecological value. They are currently located close to villages and are currently subject to certain disturbance, the potential of impact is ranked as **Minor** for developed area and shrubland/grassland and **Minor – Moderate** for other habitats. These types of habitat and associated fauna would potentially be impacted due to construction disturbance. Mitigation measures including erection of hoardings and good site practices will be required.

### ***Indirect Impacts – Water Quality and Site Run-off***

- 7.3.11 Construction site run-off, inappropriate stock piling of construction materials, and incorrect handling of construction chemicals may affect the water quality in the surrounding aquatic habitats and hence associated fauna. Site run-off may carry sediments and lead to temporary increase in local suspended solids for a short period of time. Chemical pollution (especially oil) would have higher impact to aquatic species subject to the quantity. As the works will be away from the stream course, no large-scaled earth works would be conducted close to the stream course, and the risk of sedimentation would be lower. The potential impact is ranked as **Minor – Moderate**. Potential impact due to site run-off will be minimized and controlled by implementation of good site practice.

### ***Indirect Impacts – Fragmentation***

- 7.3.12 Fragmentation of habitats may occur during construction phase, resulting in the loss of ecological linkage between patches of habitats or habitats assemblages, especially in areas where construction of the development cuts between two areas of similar habitat. A section of Application Site cut through the woodland adjacent to the east of Sai Sha Road. This may result in isolation of population of non-volant fauna (e.g. herpetofauna). However, low diversity and abundance of non-volant fauna were recorded in the woodland within Assessment Area. In addition, this section of Application Site will span over the woodland after completion of works, fragmentation would only occur temporarily during construction phase. The potential impact due to woodland fragmentation is ranked as **Minor**.

## 7.4 Operational Phase

### **Indirect Impacts – Human Disturbance**

- 7.4.1 During the operational phase, there may be indirect disturbance impacts to wildlife in the surrounding habitats due to increase of human activities, traffic and artificial lightings along the Application Site. While the Application Site is connected to Sai Sha Road and village area is existing in close vicinity, it is anticipated any impacts of increased disturbance will be **Insignificant**.

### **Indirect Impacts – Light Glare**

- 7.4.2 There may be indirect impacts to wildlife from an increase in artificial lightings. There are existing lightings near the Application Site. Application Site and the surrounding areas are already inhabited by species tolerant of artificial lightings. The impacts of increased light glare will be **Insignificant**.

## 7.5 Impacts to Species and Sites of Conservation Importance

### **Vegetation**

- 7.5.1 Six floral species of conservation importance, including *Ailanthus fordii*, *Aquilaria sinensis*, *Canthium dicoccum*, *Cibotium barometz*, *Diospyros vaccinioides* and *Pavetta hongkongensis* were recorded in the Assessment Area. Only five of the floral species of conservation importance, *Ailanthus fordii* (~1 individual), *Aquilaria sinensis* (~11 individuals), *Canthium dicoccum* (~9 individuals), *Diospyros vaccinioides* (~1 individual) and *Pavetta hongkongensis* (~67 individuals) were located within the proposed Application Site and will be directly impacted.
- 7.5.2 The potential impact to *Ailanthus fordii*, *Aquilaria sinensis* and *Pavetta hongkongensis*, i.e., species which are protected by Hong Kong laws, is ranked as **Moderate**. The directly impacted individuals of these three species are recommended to be transplanted as far as practicable. Due to the protection status, tree T0005 (*A. fordii*) and T0010 (*A. sinensis*) are proposed to be transplanted despite their low suitability for transplantation.
- 7.5.3 For the rest of the species of conservation importance, i.e. *Canthium dicoccum* and *Diospyros vaccinioides*, which are indeed widely spread in Hong Kong and not under protection by Hong Kong law though there are listed in the IUCN Red List. They are also considered as common and very common in Hong Kong by Corlett *et al.* (2000) respectively. The potential impact to these two species is ranked as **Minor**. According to the Tree Assessment, 6 mature individuals of *Canthium dicoccum* with DBH  $\geq$  95mm were identified within the Application Site and all of these individuals are considered of low suitability for transplanting and low survival rate after transplanting. After consideration of the commonness of *Canthium dicoccum* and *Diospyros vaccinioides* in Hong Kong and the suitability for transplanting and low survival rate after the transplantation of mature individuals of *Canthium dicoccum* within the Application Site, transplantation of these species is not recommended. Instead, seedlings of these species, possibly available in the market, should be planted in the compensatory woodland as mitigation to compensate the loss of these individuals within the Application Site during construction. Though the individual is recommended to be transplanted, *Ailanthus fordii* which is also available in the market, would also be included in the compensatory planting list.

- 7.5.4 For the floral species of conservation importance located outside Application Site, their locations are not affected by the Project, so the significance of ecological impact is considered negligible.

### **Fauna**

- 7.5.5 One species of bat, Japanese Pipistrelle *Pipistrellus abramus*, was recorded in the Assessment Area. This species was only present in low abundance. Though protected by Cap 170, this species is widely distributed throughout Hong Kong and is considered very common in urban areas under AFCD assessment. Significant impact to this species due to the Project is not anticipated.
- 7.5.6 One non-volant mammal species, Rhesus Macaque *Macaca mulatta*, was recorded in the Assessment Area. There are sufficient natural habitats available outside construction area, and significant impact to this species due to the Project is not anticipated.
- 7.5.7 Seven bird species of conservation importance were recorded in the Assessment Area. All these species were recorded irregularly and in small numbers. Although one individual of Greater Coucal was recorded within the Application Site, it is mobile and no roosting site was recorded within the Application Site. Thus, it is not considered that the proposed construction would have a significant impact on the population of any of these species.
- 7.5.8 One butterfly species of conservation importance, Spotted Sawtooth *Prioneris thestylis* were recorded in the Assessment Area. Abundance of this species observed was low. It is not considered that the proposed construction would have significant impact to this species.
- 7.5.9 Aquatic fauna of conservation importance, *Channa asiatica* and larva of *Heliogomphus scorio*, were recorded in watercourse. There will be no encroachment to the watercourse. It is not considered that the Project would have significant direct impact on this species. Although this species was located far away from the Application Site, it was located at the downstream so it may be indirectly impacted by receiving the construction site run-off. As the works will be away from the stream course, no large-scaled earth works would be conducted close to the stream course, and the risk of sedimentation would be lower. The potential indirect impact to this species is ranked as **Minor – Moderate**. Potential indirect impact due to site run-off will be minimized and controlled by implementation of good site practice. The endemic crab *Haberma tingkok* has been recorded from nearby mangroves (AFCD *in litt.*). Given that there is no mangrove found within the Application Site, combined with the arboreal nature of this species, and the extensive, suitable habitat within the wider area, no direct impact to this species is anticipated.

### **Recognised Sites of Conservation Importance**

- 7.5.10 Kei Ling Ha Mangal SSSI and Coastal Protection Area are near to the Application Site. Ma On Shan Country Park (MOSCP) is located to the west, south and north of the Application Site. A very small area of the MOSCP is located adjacent to the southern tip of the Application Site (**Figure 2b** refers). The Application Site would not encroach into the MOSCP.

- 7.5.11 There would be no direct impact to the Ma On Shan Country Park. Disturbance during construction phase may cause indirect impact to the Ma On Shan Country Park as it is closely adjacent to the area with works within the Application Site. Thus, during construction phase, demarcating the boundary of Ma On Shan Country Park will be needed. Given implementation of such mitigation, the indirect impact due to disturbance during construction phase is anticipated to be **Minor**.
- 7.5.12 Although the mentioned Recognised Sites of Conservation Importance are located in close vicinity, the latest design of the development would not have any dedicated paths/roads leading to these sites to allow access to these sites directly. Increase in disturbance to these recognized sites of conservation importance is not anticipated.

## **8. MITIGATION MEASURES**

- 8.1.1 Mitigation measures will follow the hierarchy detailed in Annex 16 of TM-EIAO, following the order of priority: avoidance, minimization and compensation. Wherever possible, on-site mitigation measures are preferred over off-site mitigations.

### **8.2 Avoidance and Minimization**

- 8.2.1 As discussed in the sections about design considerations, the measures, design and considerations which contribute to avoidance and minimization include:
- Avoidance of permanent and temporary works within the recognized sites of conservation importance such as Country Park;
  - Avoidance of Watercourse;
  - Adopting the Shortest Alignment within "GB" and
  - Adopting the Minimal Width of the Access Road.
- 8.2.2 The approaches of avoidance and minimization have adopted as much as practicable in this Proposed Access Road.
- 8.2.3 The current proposed alignment of the Proposed Access Road has taken the shortest distance connecting Sai Sha Road and the "G/IC" zone and the minimal width for the road to meet the required road standard. This alignment option is nearly perpendicular to both the Sai Sha Road and the "G/IC" zone. By this design in the first place, the area to be affected within the "GB" zone has already been minimised at the first place to conserve the existing woodland within the "GB" zone as far as practicable.

### **8.3 Mitigation for Construction Impacts – Woodland Loss**

- 8.3.1 Though the loss has been minimised to as low as possible by the nature of the Proposed Access Road in the form as a short viaduct nearly perpendicular to both Sai Sha Road and the "G/IC" site and a minimum width, there are still in total 0.26ha of woodland loss. Permeant woodland loss will be mitigated by on-site compensatory planting on plantation.
- 8.3.2 A total 0.28ha on-site woodland planting area are proposed to fully mitigate the unavoidable woodland loss. 0.13ha temporary woodland loss would be compensated within the same area after construction. About 0.15ha including 0.02ha of developed area, 0.13ha of plantation and <0.01 ha of



shrubland/grassland are considered as feasible for permanent woodland loss compensatory planting because they are neither occupied by the structure of the Proposed Access Road nor shaded by the viaduct after construction.

- 8.3.3 However, among the 0.15 ha available area for compensatory planting, there is about 0.003 ha area with gradient more than 35 degree. According to GEO Publication No. 1/2011 – Technical Guidelines on Landscape Treatment for Slopes, trees are not recommended to be planted in steep slopes with considerations of tree hazard and public safety. Thus, tree planting may not be feasible in this area. Besides, structure including retaining wall and U-shape channel will be built after the reprofile of slope 8NW-C/FR48 and these structures do not allow the growth of trees. Thus, tree planting may also not be feasible in these structures (around 0.0075 ha).
- 8.3.4 After considering gradient and the structure of the slope 8NW-C/FR48, there will be about 0.14 ha on-site area available for compensatory planting, which is enough to cover the 0.13 ha permanent woodland loss.
- 8.3.5 Plant species with ecological functions are also suggested to be planted in order to further improve the ecological functions of the compensatory woodland. Besides, all temporary works area within the Application Site will also be re-planted to compensate any woodland loss within temporary works area itself.
- 8.3.6 Plant species would be selected include a mix of species according to the following principles:
- a) Native species and
  - b) Species that already existed around the Application Site, so that the compensated woodland can be utilized by the local wildlife;
  - c) Species that providing host or as a nectar plant to the butterfly species found within the Application Site and Assessment Area.
  - d) Species that is commercially available in Hong Kong
- 8.3.7 The plant list of recommended species is shown in **Appendix H**. Shrub species should be planted at spacing of 600mm to 1,000mm and tree species at spacing of 3,000mm staggered. Both whips or seedlings can be chosen to plant depending on the market availability.
- 8.3.8 Through selection of plant species according to the above principles, the compensatory woodland will be tailor-made to meet the need of the local fauna communities. For example, Common Bluebottle was recorded within the Application Site during survey, its host plants are *Aidia canthioides*, *Cinnamomum burmannii*, *Cinnamomum camphora*, *Cinnamomum parthenoxylon*, *Litsea cubeba*, *Litsea glutinosa*, *Litsea rotundifolia* var. *oblongifolia*, *Machilus thunbergia*, *Magnolia grandiflora*, *Michelia figo*, *Michelia x alba* and *Persea americana*. Among these species, *Cinnamomum burmannii*, *Cinnamomum camphora*, *Litsea cubeba*, *Litsea glutinosa*, *Litsea rotundifolia* var. *oblongifolia* are native species and regarded as species local to Sai Keng as they were recorded during survey. After checking with the commercial availability, *Cinnamomum camphora*, *Litsea glutinosa* and *Litsea rotundifolia* var. *oblongifolia* are proposed as species to be planted, so that host plants of Common Bluebottle can be provided. Consideration has also been made on the needs of fauna of other taxa, for example, Greater Coucal was recorded within the Application Site during survey, this bird is omnivorous, its food items include fruits, insects and other small animals. Many species among the suggested plant species could provide fruit for wildlife, thus, food source of Greater Coucal could also be provided.

#### **8.4 Mitigation for Construction Impacts – Minimization of Runoff to the Natural Stream**

- 8.4.1 The site formation and foundation works will be carried out during dry season to minimize the risk of spillage of soil into the stream during heavy rainfall.
- 8.4.2 The works boundary should be maintained to confine any site runoff within the site. Protective barrier in the form of sandbags with tarpaulin, sheet pile and/or any other feasible method(s) will be provided/erected along the works boundaries to protect the stream from any unexpected washout and soil erosion during the course of construction. A temporary toe channel is also proposed to collect surface runoff, which will then go through sand filters and finally be discharged to designated discharge point or pumped away.
- 8.4.3 Prior to the commencement of works, surface runoff flowing into the works area will be intercepted by surface channels and pumped away by surface pumps.
- 8.4.4 Exposed slope faces will be protected with sheeting well-secured against wind after completion of the day work and prior to rainfall forecast.

#### **8.5 Mitigation for Construction Impacts – Flora Species of Conservation Importance**

- 8.5.1 The construction of the proposed access road will directly impact about 1 individual of *Ailanthus fordii*, 11 individuals of *Aquilaria sinensis*, 9 individuals of *Canthium dicoccum*, 1 individual of *Diospyros vaccinioides* and 67 individuals of *Pavetta hongkongensis*. After evaluating the conditions of the abovementioned species in the Application Site and in Hong Kong as discussed at **Section 7.5.2**, individuals of *Ailanthus fordii*, *Aquilaria sinensis* and *Pavetta hongkongensis* will be transplanted as far as practicable. Transplantation Zone (Landscape Master Plan refers) will be set up within the Application Site after construction to receive the transplanted individuals.
- 8.5.2 Seedlings of *Canthium dicoccum* and *Diospyros vaccinioides* are recommended to be planted in the compensatory woodland to replace the individuals which will be lost during construction. These species are added to the Suggested Plant Species for Compensatory Planting in **Appendix H**.

#### **8.6 Mitigation for Construction Impacts – Disturbance**

- 8.6.1 Apart from the disturbance impacts, increased accessibility to the construction site would bring an increased risk of unauthorized fly-tipping and dumping of construction waste. The risk of unauthorized dumping activity would be minimized during the construction period by increased site security, including restrictions on vehicular access into the construction site and access roads, and vigilance by site environmental staff and security staff at the construction site.
- 8.6.2 Consideration for the erection of site hoarding to reduce noise and disturbance impacts in those areas with noise sensitive species would be required. Good site practice listed as follows would be implemented to minimise potential impacts due to noise, dust and runoff to the surrounding environment.

- Regular checking should be undertaken to ensure that the work site boundaries are not exceeded and that no damage occurs to surrounding areas;
- Implementation of mitigation measures specified in ProPECC PN 1/94 to control site runoff and drainage at all work sites during construction;
- Implementation of noise control measures at all construction sites to reduce impacts of construction noise to wildlife habitats adjacent works areas;
- Implementation of dust control measures at all construction sites to minimise dust nuisance to adjacent wildlife habitats during construction activities;
- Construction debris and spoil should be covered up and/or properly disposed of as soon as possible to avoid being washed into nearby waterbodies by rain;
- Construction effluent, site run-off and sewage should be properly collected and/or treated. Wastewater from a construction site should be managed with the following approach in descending order;
- Dusty materials remaining after a stockpile is removed should be wetted with water;
- All dusty materials shall be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet; and
- Proper locations for discharge outlets of wastewater treatment facilities well away from the natural streams/rivers should be identified.

## **8.7 Mitigation for Construction Impacts – Water Quality**

- 8.7.1 Impacts to any habitats should easily be avoided and minimized by implementing good site practices. During the construction stage, there are increased risks of pollution events affecting the watercourse. Sources of pollution during the construction phase include sedimentation from soil excavation, release of contaminants during excavation, chemical waste from equipment, surface run-off from roads and hard-standing and domestic waste water.
- 8.7.2 Mitigation measures to be adopted during the construction phase related to good site practices. Such practices include the containment of silt runoff within the construction area, the containment of contaminated soils for removal from the site, appropriate storage of chemicals and chemical waste away from sites of ecological value, the provision of sanitary facilities for on-site workers and provision of enough sedimentation tanks and/or any other appropriate water treatment facilities to ensure that all site runoff should be treated properly before discharge. Adoption of such measures should permit waste to be suitably contained within the site for subsequent removal and appropriate disposal. In addition, in order to reduce runoff, excavation and site formation works for the Application should be conducted in dry season.
- 8.7.3 Specific measures to minimize the potential for soil erosion and sedimentation include:
- Site formation and foundation works would be conducted during dry season.
  - Earth-bunding of all areas within the site where soils have been disturbed, where vegetation has been cleared, to ensure that surface runoff will not move soils off-site.

- Erection of temporary geotextile silt fences around any earth-moving works to trap any sediments and prevent them from entering nearby watercourses (wherever necessary).
- Installation of silt traps at points where drainage from the site enters local watercourses (wherever necessary).
- Covering of any exposed soil or other loose materials with tarpaulins to prevent erosion.
- Covering of exposed soil as quickly as possible following formation works, followed by seeding and covering with biodegradable geotextile blanket for erosion control purposes.

## 9. CUMULATIVE IMPACT

### 9.1 Concurrent Projects

9.1.1 The combination of various concurrent developments in Sai Sha area will potentially lead to cumulative impacts, particularly on habitat loss, increase road use and disturbance impacts. Concerns would be on concurrent projects that are undergoing planning, design, construction and/or operation within the construction and/or operational period for the Project. The concurrent projects in the area identified in accordance with the best available information include the following:

- Section 16 Planning Approval (under Application No. A/NE-SSH/120) for Proposed Comprehensive Residential and Commercial Development including Government, Institution or Community Facilities with Minor Relaxation of GFA and Building Height Restrictions at Tai Po Town Lot 157, Various Lots in D.D. 165, 207 and 218 and Adjoining Government Land, Sai Sha, Shap Sz Heung, New Territories
- Sai Sha Road Widening
- The remaining section of the Proposed Access Road within the adjacent "G/IC" (Government, Institution or Community) site

#### *Section 16 Planning Approval*

9.1.2 The 500m Assessment Area for residential development at Sai Sha partially overlapped with the 500m Assessment Area for current study. The habitats of overlapped area composed of woodland, shrubland/grassland, wasteland, mangrove and intertidal shore. Since only the edge of 500m Assessment Area of both developments were overlapped, significant cumulative ecological impact is thus not anticipated.

#### *Sai Sha Road widening*

9.1.3 This project mainly involves widening of a section of the current Sai Sha Road near Shap Sz Heung. The 500m Assessment Area for Sai Sha Road widening partially overlapped with the 500m Assessment Area for current study. The habitats of overlapped area composed of woodland, shrubland/grassland, wasteland, mangrove and intertidal shore. While only the edge of 500m Assessment Area of both developments were overlapped, significant cumulative ecological impact is thus not anticipated.

#### *The remaining section of the Proposed Access Road within the adjacent "G/IC" site*



- 9.1.4 The Proposed Access Road of the present Project will extend to the east of the Application Site and fall within the adjacent “G/IC” site. The detailed design of it is not yet confirmed and a tentative extent is provided in **Figure 10**. Same as the section of the present Project, the remaining section will be elevated before it lands. There will be area temporarily occupied during construction, area shaded by the elevated Proposed Access Road and area occupied by the road structure such as pier caps after completion of works.
- 9.1.5 As the remaining section of the Proposed Access Road within the adjacent “G/IC” site is in close vicinity with the Application Site of the present Project and it will be constructed at the same time with the present Project, it is anticipated that it will cause both construction and operational cumulative impacts.
- 9.1.6 Among the three concurrent projects, only the remaining section of the Proposed Access Road within the adjacent “G/IC” site will have cumulative impacts. The cumulative impacts of this project are presented in **Section 9.2**.

## 9.2 Cumulative Impacts during Construction Phase

### ***Direct Impact – temporary habitat loss and habitat fragmentation***

- 9.2.1 Cumulative temporary habitat loss includes area that will be temporarily occupied by the remaining section of the Proposed Access Road within the adjacent “G/IC” site and will not be shaded by the elevated access road after completion of construction works. However, a large proportion of area within the extent will be habitats of low ecological value with scarce non-volant fauna, i.e. developed area and shrubland/grassland, potential cumulative impacts due to temporary loss and fragmentation of developed area and shrubland/grassland is insignificant.
- 9.2.2 Nevertheless, two small patches of woodland, which is of Low – Moderate ecological value, are located within the tentative extent of the remaining section of the road development. Temporary loss of this habitat is anticipated and it should be reinstated upon completion of construction works. Cumulative woodland fragmentation may also be anticipated, and this may result in isolation of population of non-volant fauna (e.g. herpetofauna). However, low diversity and abundance of non-volant fauna were recorded in the woodland within Assessment Area. In addition, this remaining section of the elevated access road will span over the woodland after completion of works, fragmentation would only occur temporarily during construction phase and hence, cumulative woodland fragmentation is insignificant.
- 9.2.3 A short section of watercourse is also located within the extent of the remaining section of the road development. The ecological value of the watercourse is ranked as Moderate due to its naturalness. It is suggested that the Proposed Access Road should span over the watercourse and keep the watercourse untouched during construction.

### ***Indirect Impact – Disturbance, Water Quality and Site Run-off***

- 9.2.4 As the remaining section of the Proposed Access Road within the adjacent “G/IC” site will be in close vicinity with the Application Site of the present project, cumulative environmental impacts (including noise, dusts, human activities, vibration), and water quality impacts (such as construction site run-off, inappropriate stock piling of construction materials, and incorrect handling of construction chemicals) during construction phase of the Project are therefore anticipated. With good site practices to be implemented, these cumulative impacts will be limited.

## 9.3 Cumulative Impacts during Operational Phase

### ***Direct Impacts – permanent habitat loss***

- 9.3.1 Cumulative permanent habitat loss includes area that will be permanently occupied by the road structure and area that will be shaded by the elevated access road after completion of works. This may involve developed area, shrubland/grassland and woodland. Developed area and shrubland/grassland are considered as low ecological value, in addition, developed area will be replaced by similar habitat after completion of construction, so insignificant cumulative permanent loss of these habitats is anticipated. Woodland is considered as ecological sensitive and hence, the loss of woodland should be compensated.

### **Indirect Impacts – Human Disturbance**

- 9.3.2 Terrestrial noise and air pollution generated by traffic and increased human disturbance and artificial lightings due to the concurrent project during operational phase are not expected to contribute significant impact to surrounding wildlife as Sai Sha Road and village areas are existing in close vicinity, the surrounding area is already inhabited by species tolerant of human disturbance.

### **Indirect Impacts – Light Glare**

- 9.3.3 Impact of light glare due to increase in artificial lightings from the concurrent project during operational phase to surrounding wildlife is considered as insignificant, as the surrounding areas are supposed to be already inhabited by species tolerant of artificial lightings due to the nearby Sai Sha Road and village areas.

## **10. RESIDUAL IMPACTS**

- 10.1.1 With proper designs and implementation of mitigation measures, discussed in earlier paragraphs, potential impacts due to the Proposed Access Road should be within acceptable level and residual impacts are not anticipated. Hence, the cumulative impact due to construction disturbance from the Project will be **insignificant**.
- 10.1.2 Besides, to further enhance the ecological function of the compensatory woodland after completion of construction, rather than leaving the area under the bridge uncovered, it is recommended that shade-tolerant small trees, shrubs, herbs and climbers can be planted in this area. The recommended species should also meet the criteria shown in **Section 8.3.6**. The suggested plant list is shown in **Appendix I**.

## **11. CONCLUSION**

- 11.1.1 Due to the site constraints, the proposed access road would unavoidably encroach into a woodland habitat within the “GB” zone. To minimise the ecological impact as far as practicable, the current design would take the shortest possible alignment between Sai Sha Road and the “G/IC” zone and minimal width, to minimise the woodland loss. A total of 0.13 ha temporary woodland loss and 0.13 ha permanent woodland loss are anticipated due to the construction and operation of the access road. The temporary woodland loss would be mitigated by on-site planting of native tree species with ecological functions within the temporary works areas within the Application Site. The nearby man-made slope, which is currently covered by plantation, would also be enhanced into a woodland planting area with native trees with ecological function. After considering the feasibility of transplantation, survival rates and their status in Hong Kong, directly impacted law-protected flora species i.e. *Ailanthus fordii*, *Aquilaria sinensis* and *Pavetta hongkongensis* would be transplanted to a Transplantation Zone within the Application Site as far as practicable. Area underneath the proposed access road would also be planted with shade-tolerant plants as an enhancement. Together with other construction phase site measures, the overall ecological impacts and residual impacts due to the proposed access road would be mitigated into insignificant level.

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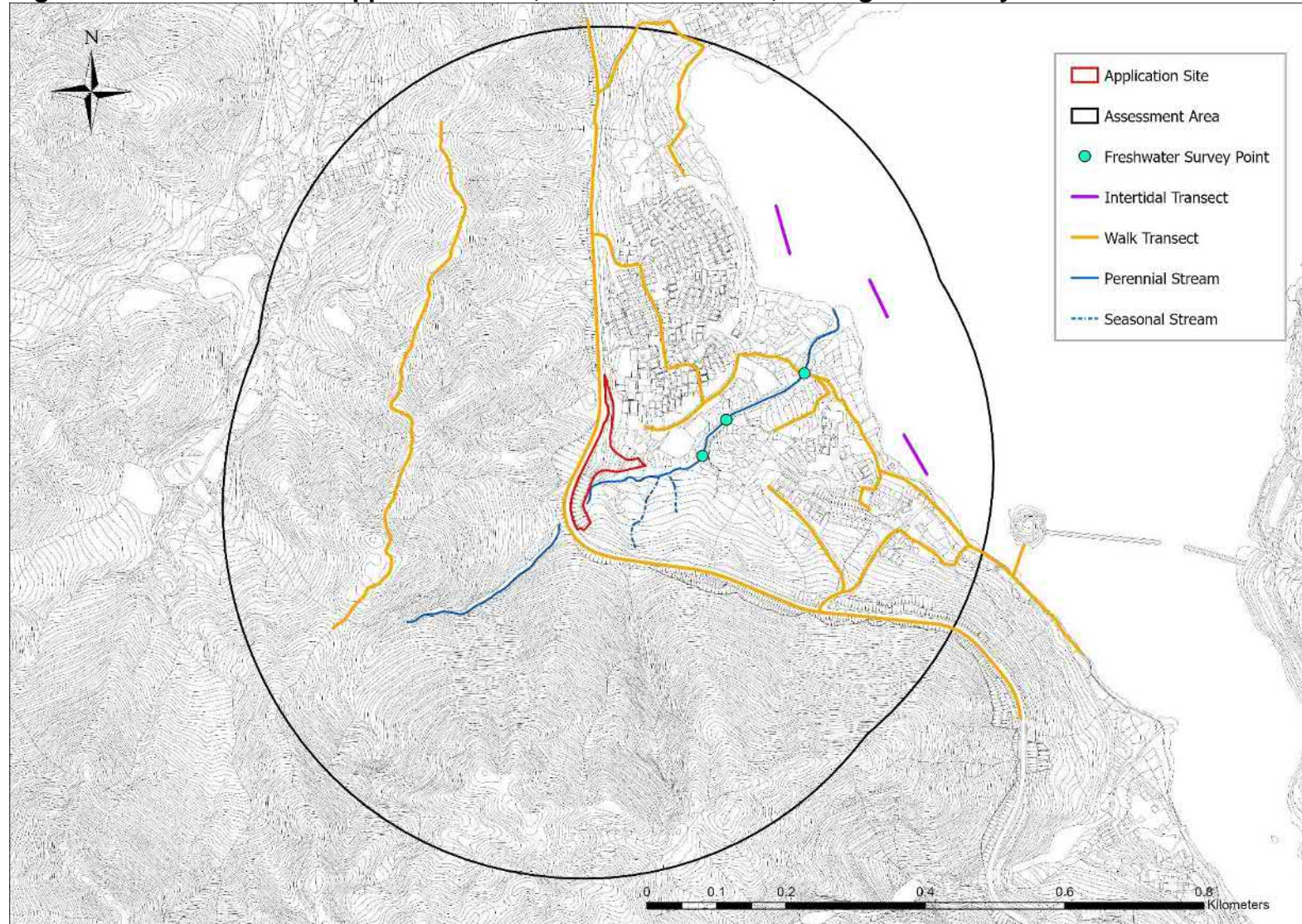
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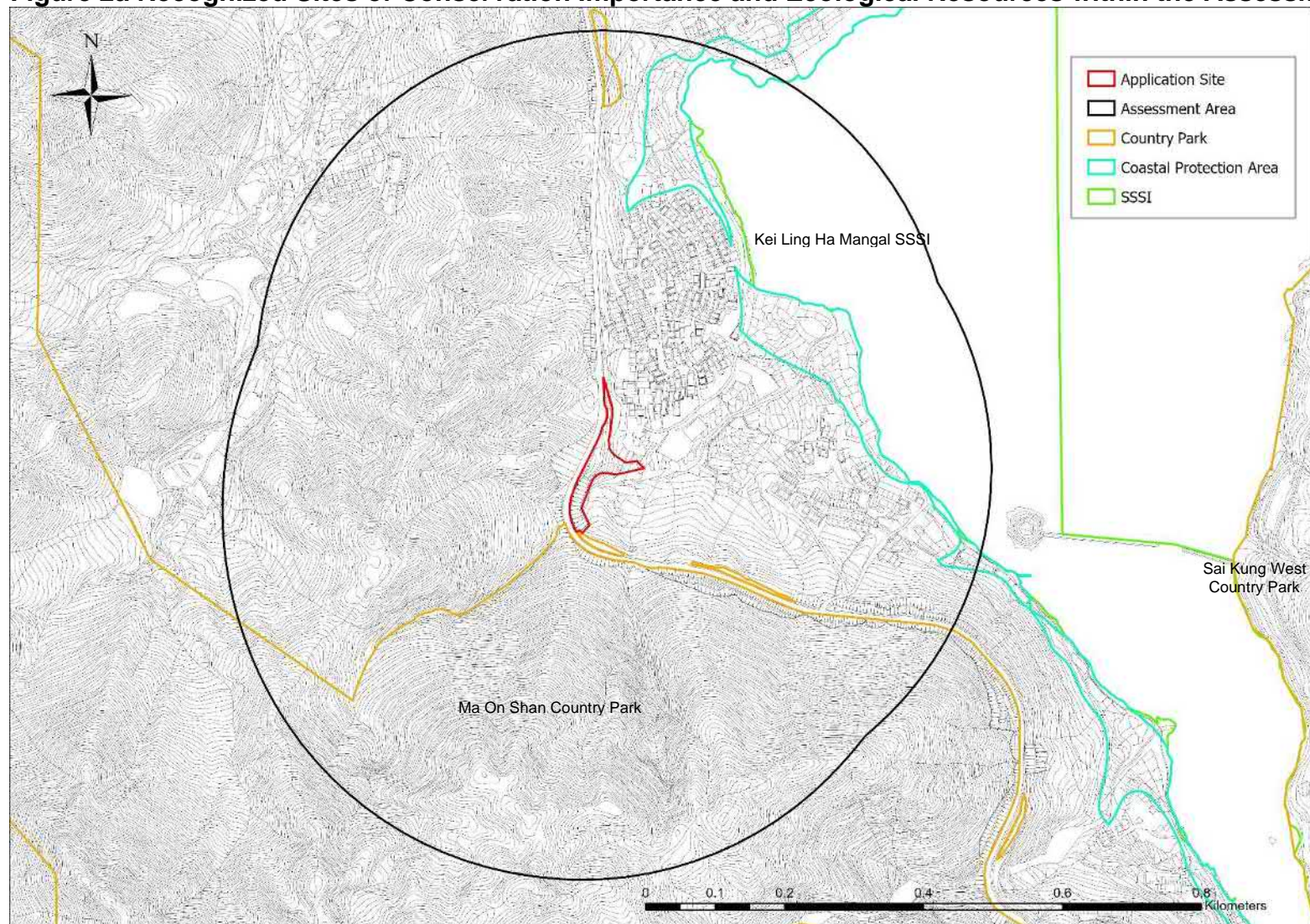
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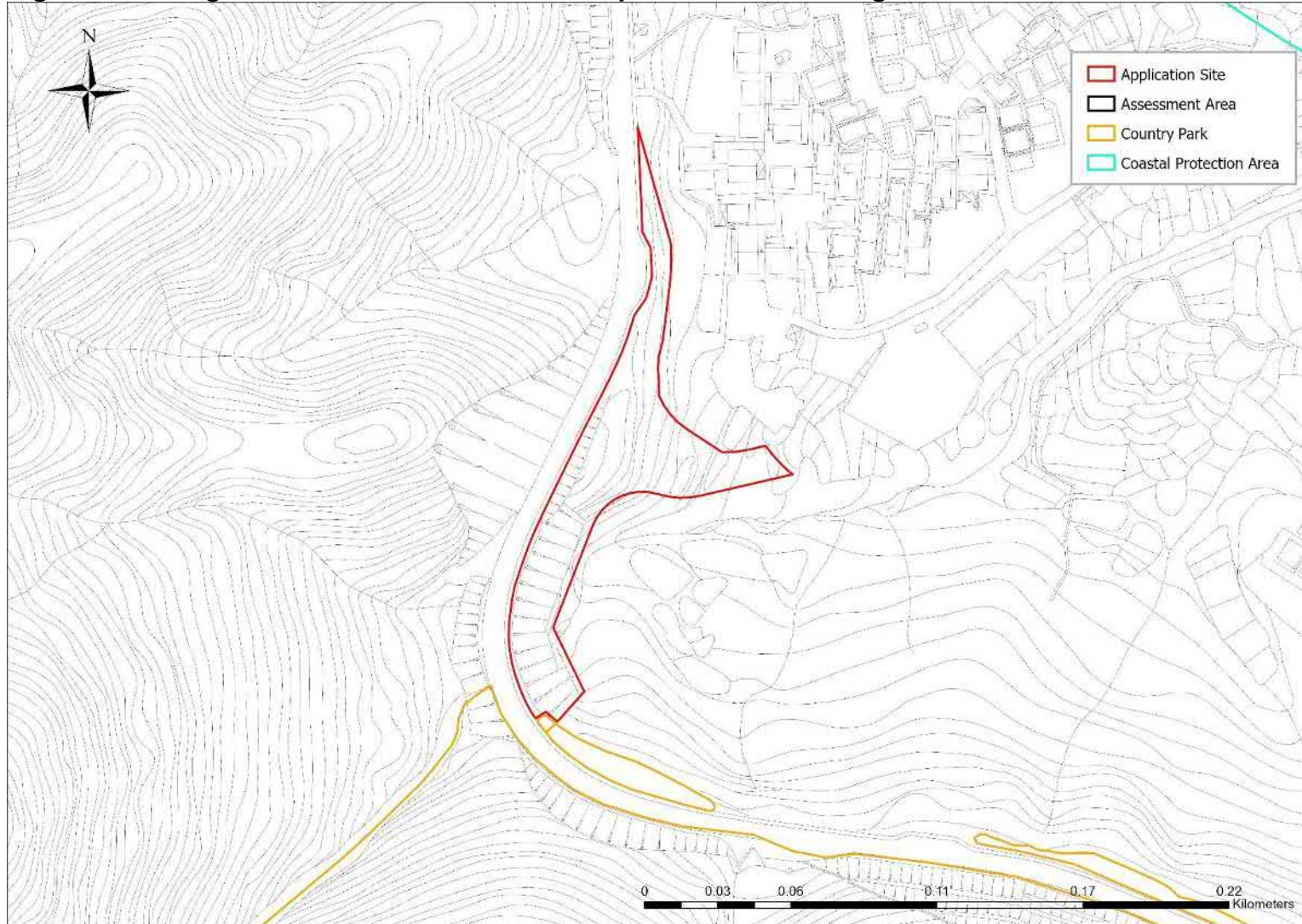
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**Figure 1 Locations of the Application Site, Assessment Area, Ecological Survey Transects and Freshwater Sampling Points**

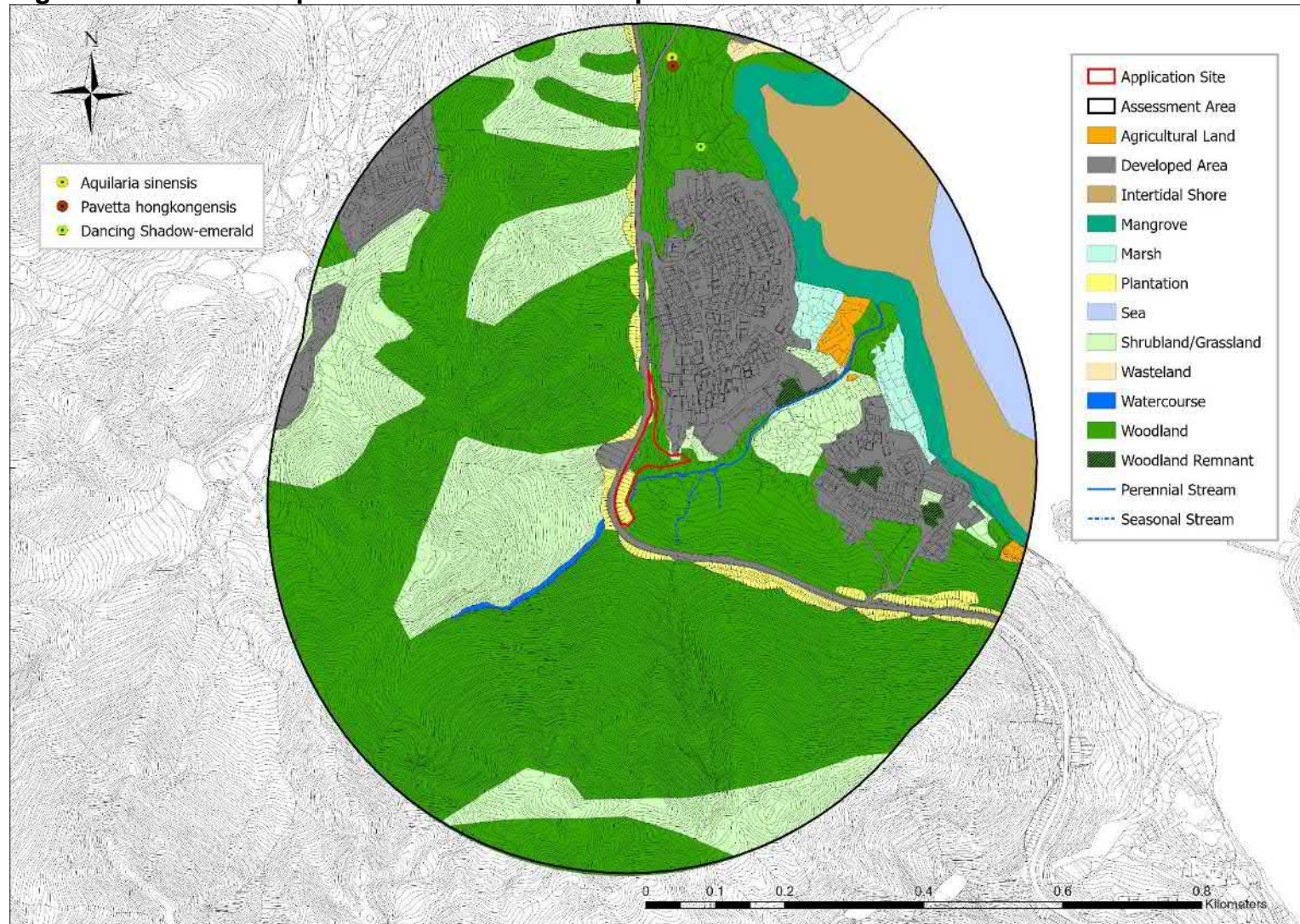


**Figure 2a Recognized Sites of Conservation Importance and Ecological Resources within the Assessment Area**



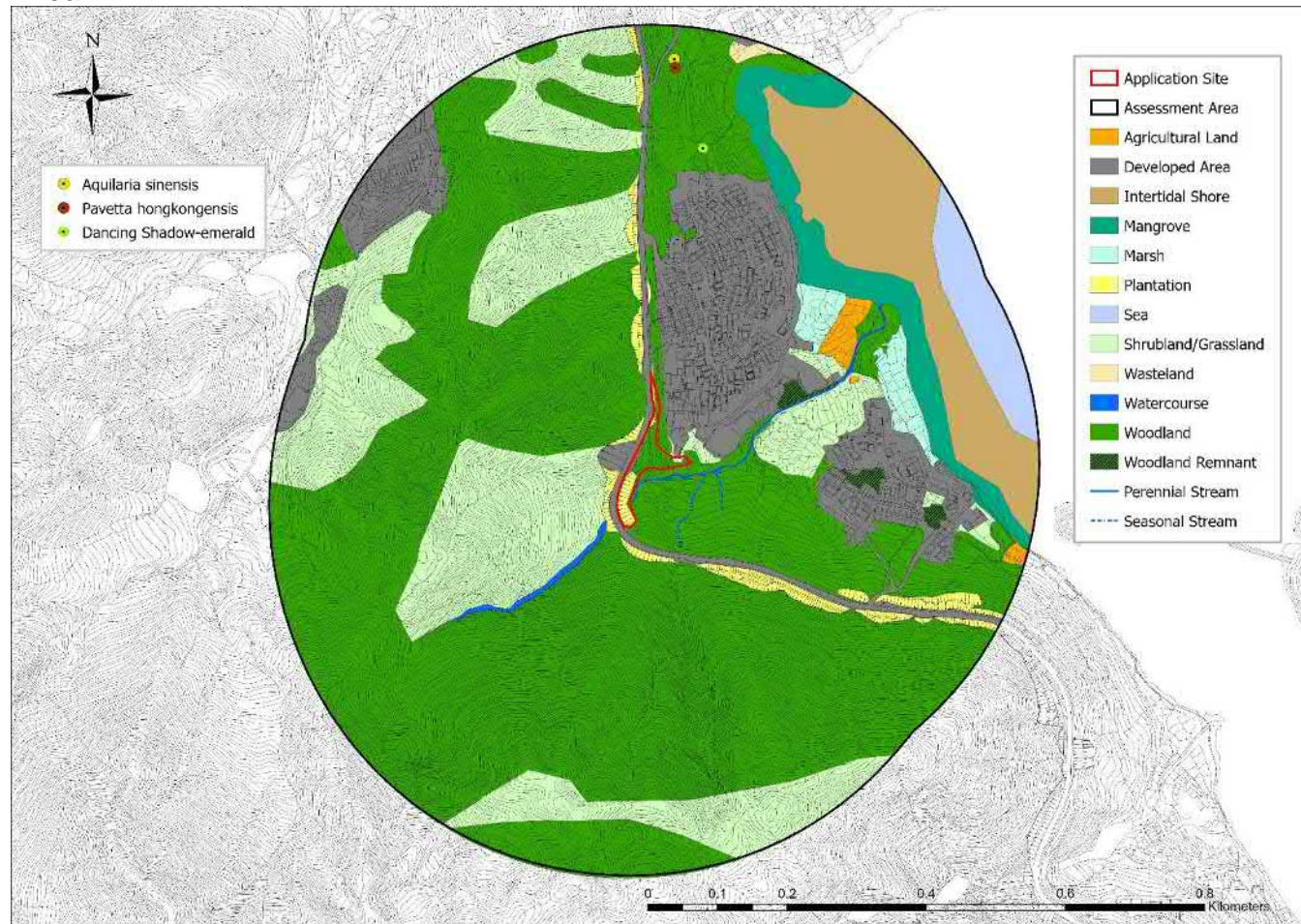
**Figure 2b Recognized Sites of Conservation Importance and Ecological Resources within the Assessment Area (Close up)**



**Figure 3 Location of Species of Conservation Importance from Previous Studies**



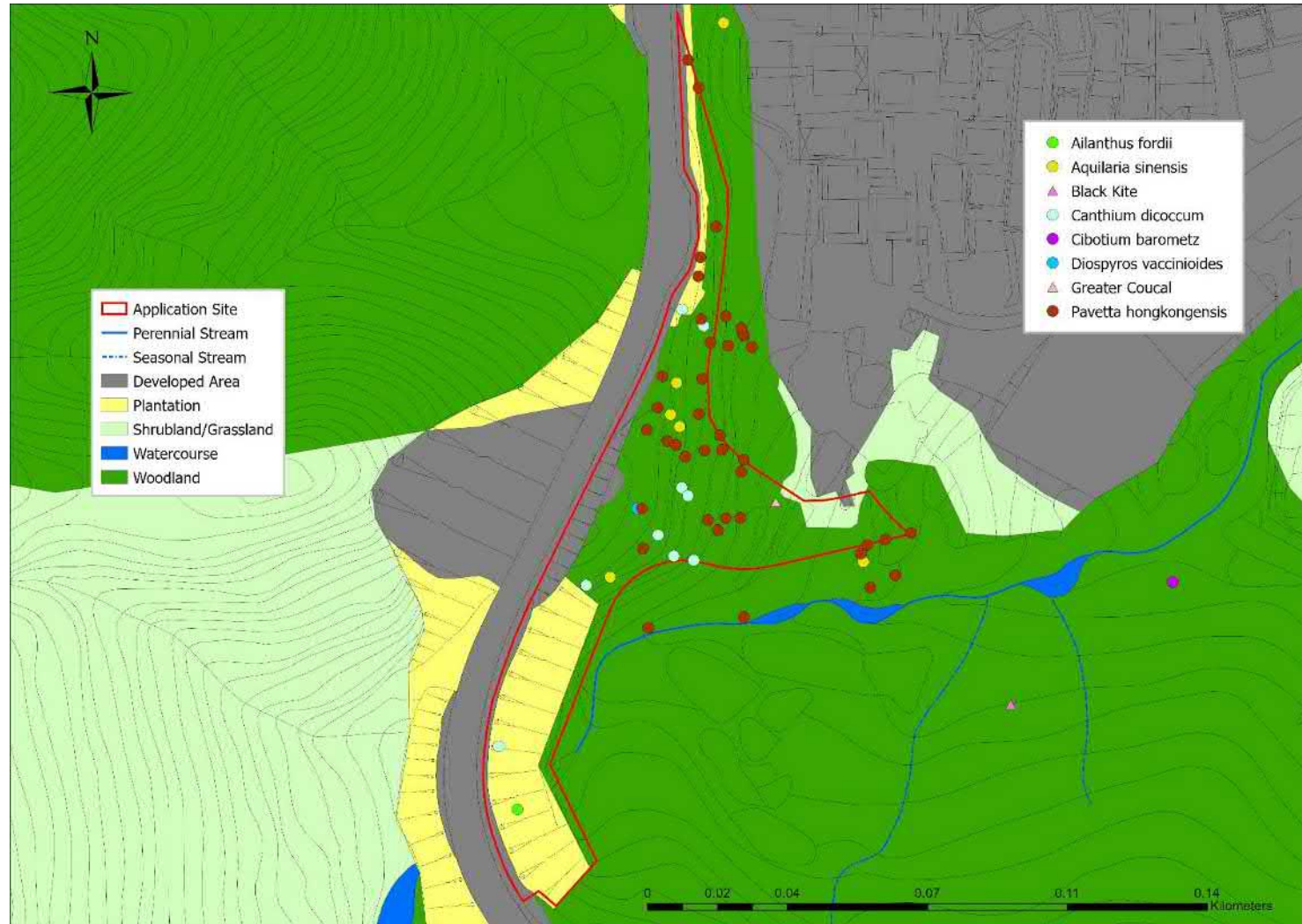
**Figure 4 Habitat Map and Location of Species of Conservation Importance Outside the Application Site but Within the Study Area**



Remark:

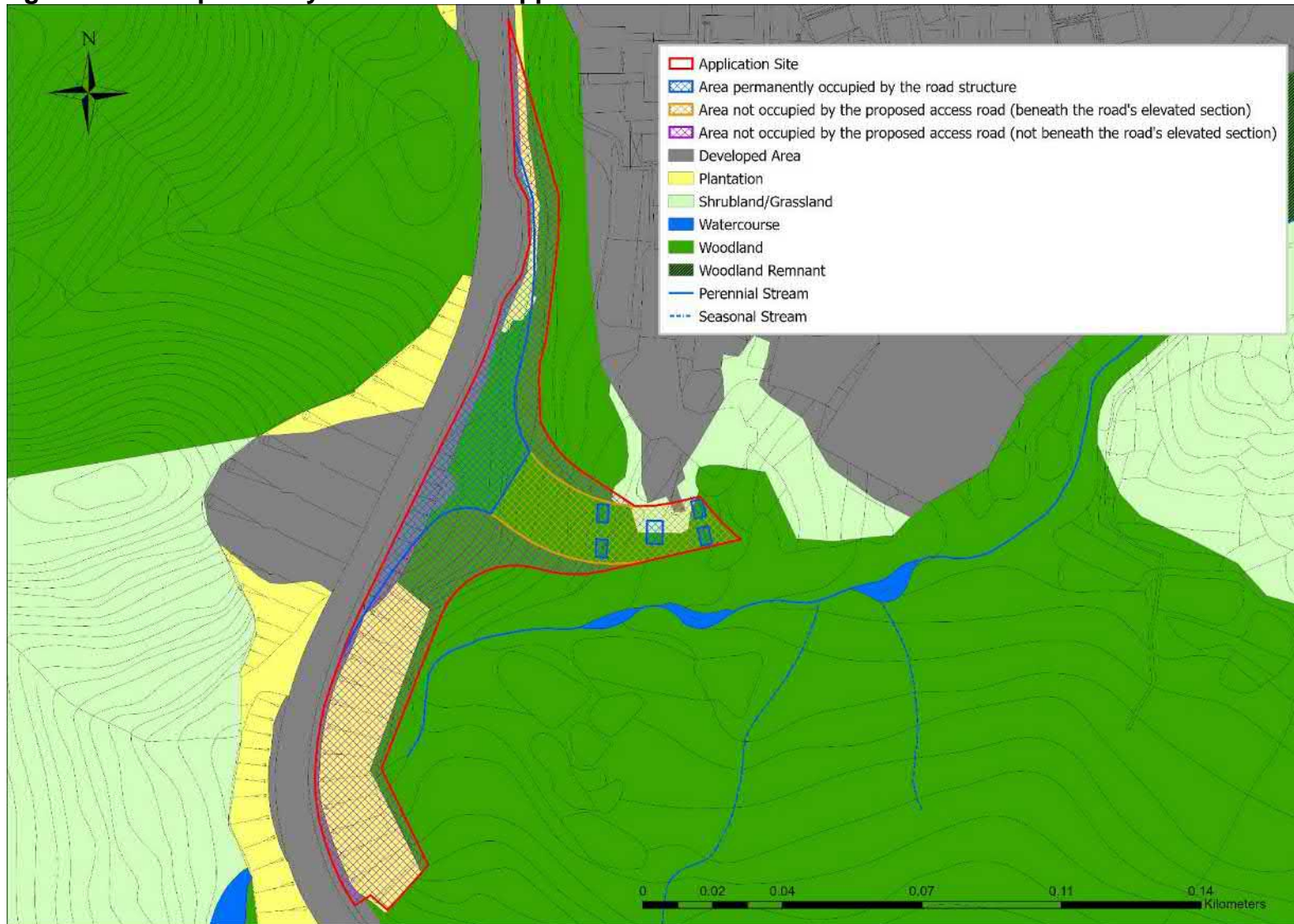
- Species of conservation importance within the Application Site is shown in **Figure 5**.
- *Pavetta hongkongensis* was also recorded to the south of the watercourse.

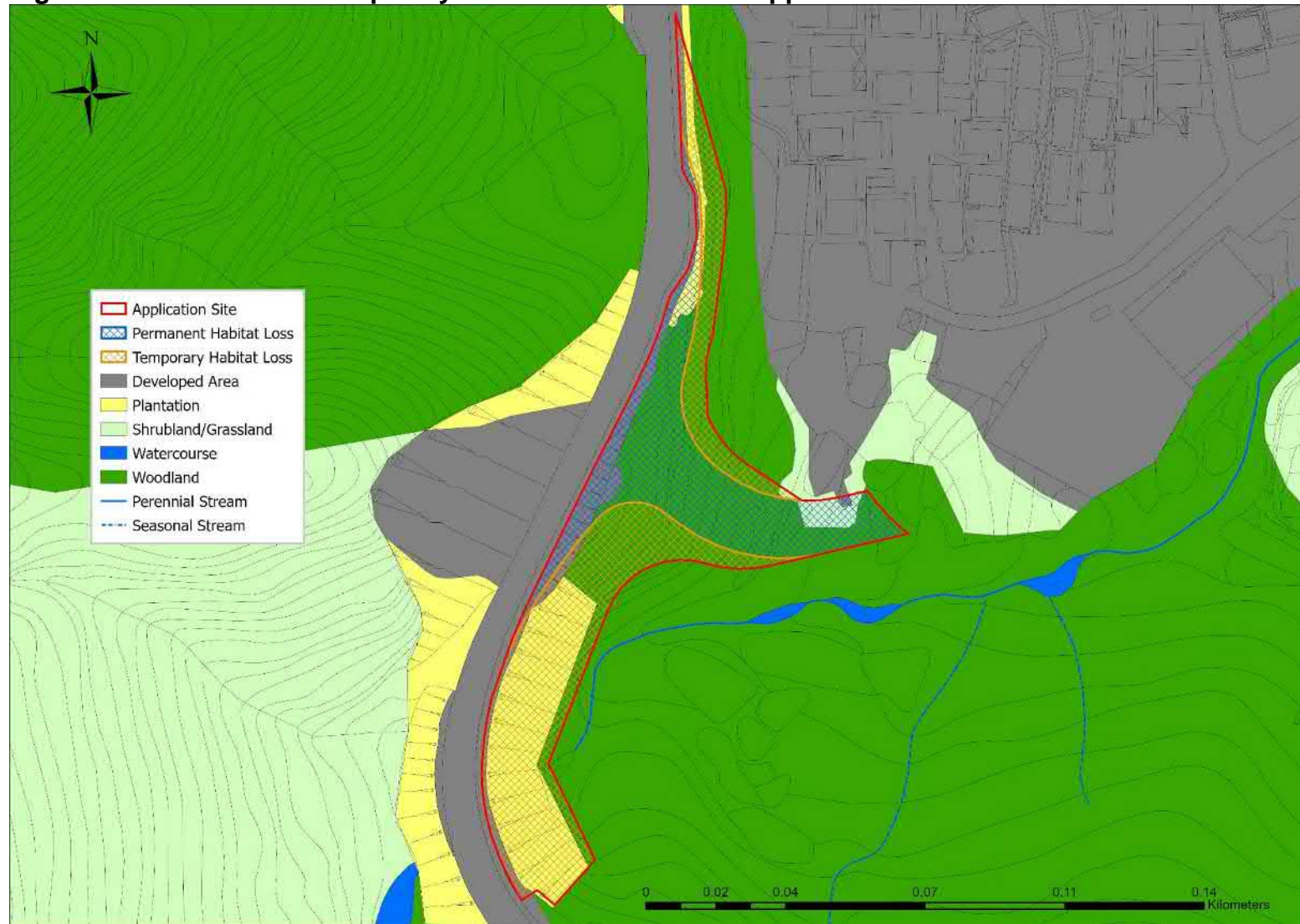
**Figure 5 Habitat Map and Location of Species of Conservation Importance Within and Immediate Adjacent to the Application Site**



Remark: *Pavetta hongkongensis* was also recorded to the south of the watercourse.



**Figure 6 Development layout within the Application Site**

**Figure 7 Permanent and temporary habitat loss within the Application Site**



**Figure 8 Habitat Photos**

 A photograph of an agricultural plot enclosed by a green mesh fence. A banner with the Chinese characters '環保' (Environmental Protection) and '有機蔬果園' (Organic Vegetable and Fruit Garden) is attached to the fence. The plot is surrounded by green vegetation and a concrete path.	 A photograph of a paved parking area with several cars parked. In the background, there are mountains and a building. A large white plastic bag is visible in the foreground.	 A photograph of a wide, flat, muddy intertidal shore with small pools of water. The sky is blue with scattered white clouds.
 A photograph of a mangrove area with dense green trees and a muddy shore. A small boat is visible in the water in the background.	 A photograph of a lush green marshy area with tall grass and small pools of water.	 A photograph of a dense plantation of tall trees, likely eucalyptus, with sunlight filtering through the canopy.





**Sea**



**Shrubland/Grassland**



**Wasteland**



**Watercourse**










**Woodland**



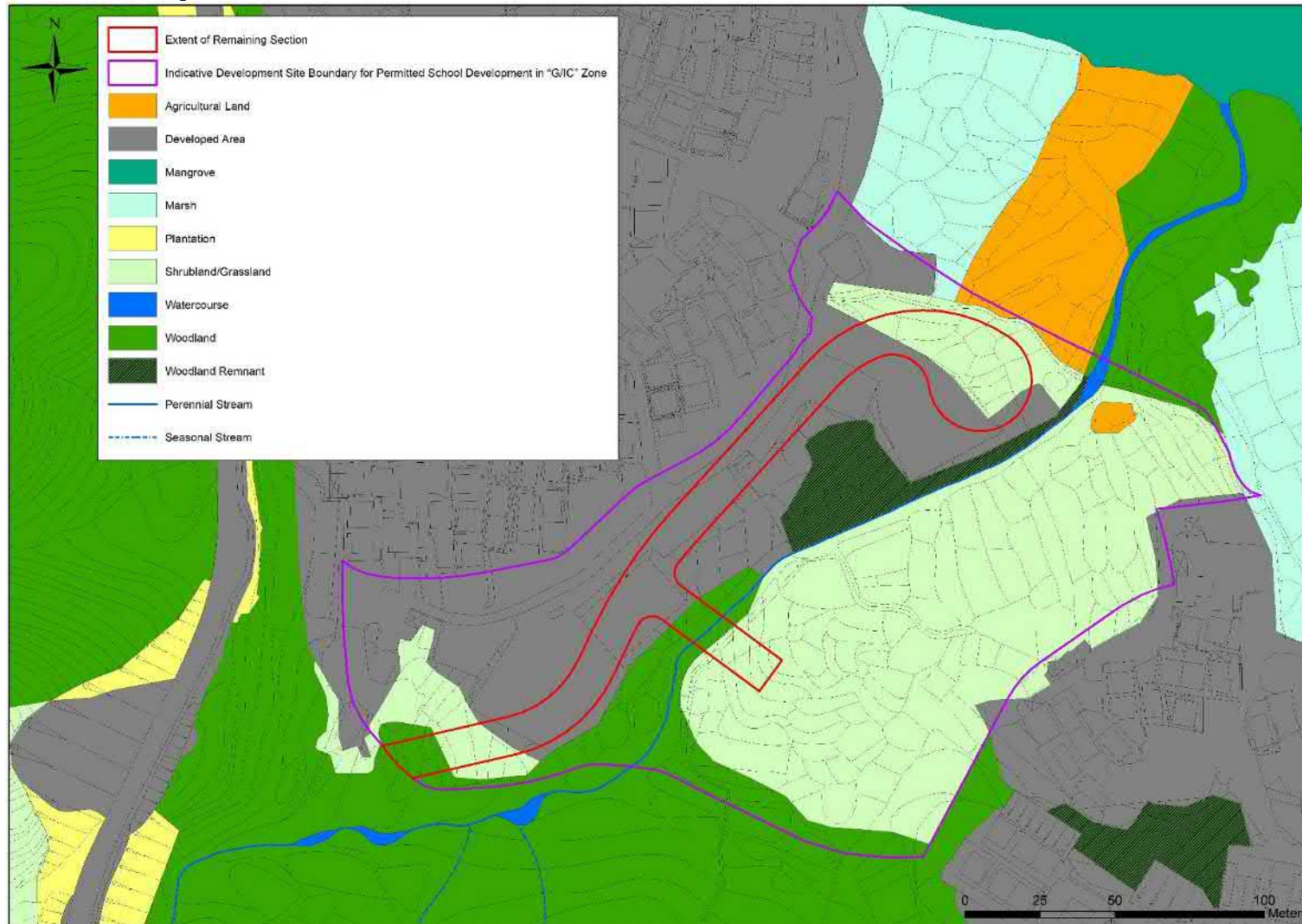
**Woodland Remnant**



**Figure 9 Photos of Selected Species of Conservation Importance within the Assessment Area**

 <p><b><i>Aquilaria sinensis</i></b></p>	 <p><b><i>Canthium dicoccum</i></b></p>	 <p><b><i>Cibotium barometz</i></b></p>	 <p><b><i>Ailanthus fordii</i></b></p>
 <p><b><i>Diospyros vaccinioides</i></b></p>	 <p><b><i>Pavetta hongkongensis</i></b></p>	 <p><b><i>Gnetum luofuense</i></b></p>	

**Figure 10 Tentative Extent of Remaining Section (Indicative and Not for Approval) of the Proposed Access Road Development within the Adjacent “G/IC” Site**





## Appendix A Vascular plant Species Recorded within the Assessment Area

Scientific Name	Growth form	Origin	Rarity in Hong Kong <sup>1</sup>	Protection/Conse rvation status <sup>2 3 4</sup> <small>5 6 7 8 9 10</small>	Relative abundance in each habitat within the Application Site				Relative abundance in each habitat outside the Application Site but within the Assessment Area										
					DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
<i>Abrus mollis</i>	Climber	Native	Restricted	-															O
<i>Acacia confusa</i>	Tree	Exotic	-	-		C		S		O				C					S
<i>Acacia mangium</i>	Tree	Exotic	-	-										S					
<i>Acanthus ilicifolius</i>	Shrub	Native	Common	-								S							
<i>Achyranthes aspera</i>	Herb	Native	Common	-															S
<i>Acmella uliginosa</i>	Herb	-	-	-									S			O	O		
<i>Acorus gramineus</i>	Herb	Native	Very common	-														C	
<i>Acronychia pedunculata</i>	Tree	Native	Very common	-		S		S											S
<i>Adiantum flabellulatum</i>	Herb	Native	Very common	-															S
<i>Adina pilulifera</i>	Tree	Native	Very common	-														S	S
<i>Adinandra millettii</i>	Shrub	Native	Common	-															S
<i>Aegiceras corniculatum</i>	Shrub	Native	Common	-			O					C							
<i>Ageratum conyzoides</i>	Herb	Exotic	Common	-						C			O			C	C		
<i>Ageratum houstonianum</i>	Herb	Exotic	Common	-						O									
<i>Ailanthus fordii</i>	Tree	Native	Rare	Listed in Rare and Precious Plants of Hong Kong (Near threatened in China) <sup>6</sup> Cap. 96A <sup>9</sup>		S													
<i>Alangium chinense</i>	Tree	Native	Common	-		C		O						S					S
<i>Albizia corniculata</i>	Climber	Native	Common	-															S
<i>Alchornea trewioides</i>	Shrub	Native	Common	-			S	O											O
<i>Aleurites moluccana</i>	Tree	Exotic	-			S													

Scientific Name	Growth form	Origin	Rarity in Hong Kong <sup>1</sup>	Protection/Conse rvation status <sup>2 3 4</sup> <small>5 6 7 8 9 10</small>	Relative abundance in each habitat within the Application Site				Relative abundance in each habitat outside the Application Site but within the Assessment Area										
					DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
<i>Allamanda schottii</i>	Shrub	Exotic	-	-						S									
<i>Alocasia macrorrhizos</i>	Herb	native	Very common	-						O			O	S		O		S	S'
<i>Aloe vera</i>	Herb	Exotic	-	-						S									
<i>Alpinia hainanensis</i>	Herb	native	Very common	-		S			S									C	O^
<i>Alternanthera sessilis</i>	Herb	native	Common	-						O			O				S		
<i>Alyxia sinensis</i>	Climber	native	Common	-															S
<i>Amaranthus viridis</i>	Herb	native	Very common	-					O	C			S				O		
<i>Ampelopsis cantoniensis</i>	Climber	native	Very common	-															S
<i>Antidesma bunius</i>	Tree	Native	Common	-				S		S									S
<i>Antirhea chinensis</i>	Tree	Native	Very common	-															S
<i>Aphananthe cuspidata</i>	Tree	Native	Common	-				S											S
<i>Aporosa dioica</i>	Tree	Native	Very common	-		S		S											C
<i>Aquilaria sinensis</i>	Tree	Native	Common	IUCN Red List: Vulnerable <sup>2</sup>  Threatened Species List of China's Higher Plants: Vulnerable in China <sup>3</sup>  China Plant Red Data Book: Vulnerable in China <sup>4</sup>  Included in Illustrations of Rare & Endangered				S		S									S

Scientific Name	Growth form	Origin	Rarity in Hong Kong <sup>1</sup>	Protection/Conse rvation status <sup>2 3 4</sup> <div>5 6 7 8 9 10</div>	Relative abundance in each habitat within the Application Site				Relative abundance in each habitat outside the Application Site but within the Assessment Area										
					DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
				<div>Plant in Guangdong Province <sup>5</sup></div> <div>Listed in Rare and Precious Plants of Hong Kong (Near threatened in China) <sup>6</sup></div> <div>Cap. 586 <sup>7</sup></div> <div>State protection (category II) <sup>8</sup></div> <div>Appendix II of CITES <sup>10</sup></div>															
<i>*Araucaria heterophylla</i>	Tree	Exotic	-	IUCN Red List: Vulnerable <sup>2</sup>															S
<i>Archidendron lucidum</i>	Tree	native	Common	-				S											S
<i>Archontophoenix alexandrae</i>	Tree	Exotic	-	-						S									
<i>Ardisia lindleyana</i>	Shrub	native	Common	-				S											S
<i>Ardisia quinquegona</i>	Shrub	native	Very common	-															S
<i>Asystasia micrantha</i>	Herb	Exotic	-	-														S	
<i>Avicennia marina</i>	Shrub	Native	Common	-								C							
<i>Baeckea frutescens</i>	Tree	Native	Very common	-												O			
<i>Bambusa</i> sp.	Herb	-	-	-															S
<i>Bauhinia championii</i>	Climber	Native	Common	-															S
<i>*Bauhinia corymbosa</i>	Climber	Exotic	Very rare	-		O										S			
<i>Bauhinia glauca</i>	Climber	Native	Very common	-										O					O

Scientific Name	Growth form	Origin	Rarity in Hong Kong <sup>1</sup>	Protection/Conse rvation status <sup>2 3 4</sup> <sub>5 6 7 8 9 10</sub>	Relative abundance in each habitat within the Application Site				Relative abundance in each habitat outside the Application Site but within the Assessment Area										
					DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
<i>Bauhinia purpurea</i>	Tree	Exotic	-	-		S													S^
<i>Bauhinia variegata</i>	Tree	Exotic	-	-						O						S			
<i>Bauhinia</i> x <i>blakeana</i>	Tree	Native	-	-										S					
<i>Begonia cucullata</i> var. <i>hookeri</i>	Herb	Exotic	-	-					S										
<i>Benincasa hispida</i> var. <i>chieh-qua</i>	Climber	Exotic	-	-						S							S		
<i>Berchemia floribunda</i>	Climber	Native	Common	-															S
<i>Bidens alba</i>	Herb	Exotic	Very common	-		S	C	O	O	C		S	O	O		C	O		S^
<i>Bischofia javanica</i>	Tree	Native	Common	-		S		O											O
<i>Blechnum orientale</i>	Herb	Native	Very common	-		S											S		S
<i>Blumea megacephala</i>	Herb	Native	Common	-															S
<i>Bothriochloa bladhii</i>	Herb	Native	Very common	-										S					
<i>Bougainvillea spectabilis</i>	Climber	Exotic	-	-					S										S
<i>Brachiaria mutica</i>	Herb	Exotic	Common	-									O						
<i>Breynia fruticosa</i>	Shrub	Native	Very common	-												S	S		S
<i>Bridelia tomentosa</i>	Shrub	Native	Very common	-		O													O^
<i>Broussonetia kaempferi</i> var. <i>australis</i>	Climber	Native	Restricted	-															S
<i>Broussonetia papyrifera</i>	Tree	Native	Very common	-												S			
<i>Bruguiera gymnorhiza</i>	Tree	Native	Restricted	-								O							
<i>Byttneria grandifolia</i>	Climber	Native	Very common	-													S		C
<i>Caesalpinia crista</i>	Climber	Native	Very common	-								S							C
<i>Calamus tetradactylus</i>	Climber	Native	Common	-															S



Scientific Name	Growth form	Origin	Rarity in Hong Kong <sup>1</sup>	Protection/Conse rvation status <sup>2 3 4</sup> <small>5 6 7 8 9 10</small>	Relative abundance in each habitat within the Application Site				Relative abundance in each habitat outside the Application Site but within the Assessment Area										
					DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
<i>Callicarpa kochiana</i>	Shrub	Native	Common	-				S											S
<i>Canarium album</i>	Tree	Exotic	Restricted	-															S
<i>*Canarium pimela</i>	Tree	Exotic	Rare	-															S
<i>Canna x generalis</i>	Herb	Exotic	-	-												S			
<b><i>Canthium dicoccum</i></b>	<b>Tree</b>	<b>Native</b>	<b>Common</b>	<b>IUCN Red List: Vulnerable <sup>2</sup></b>		<b>S</b>		<b>S</b>											<b>S</b>
<i>Capsicum annuum</i>	Herb	Exotic	-	-						S									
<i>Carallia brachiata</i>	Tree	Native	Common	-															O
<i>Carica papaya</i>	Tree	Exotic	-	-						O									S
<i>Casearia glomerata</i>	Tree	Native	Restricted	-															S
<i>Casearia velutina</i>	Tree	Native	Restricted	-															S
<i>Cassytha filiformis</i>	Climber	Native	Very common	-															S
<i>*Casuarina equisetifolia</i>	Tree	Exotic	Rare	-										S					
<i>Catharanthus roseus</i>	Shrub	Exotic	-	-						S									
<i>Cayratia japonica</i>	Climber	Native	-	-												S			
<i>Celastrus hindsii</i>	Climber	Native	Very common	-															S
<i>Celtis sinensis</i>	Tree	Native	Common	-		O		O	S			S		S		S			O
<i>Celtis timorensis</i>	Tree	Native	Restricted	-															S
<i>Centella asiatica</i>	Herb	Native	Very common	-															S
<i>Cerbera manghas</i>	Tree	Native	Common	-								S							S
<b><i>Cibotium barometz</i></b>	<b>Herb</b>	<b>Native</b>	<b>Very common</b>	<b>Listed in Rare and Precious Plants of Hong Kong (Vulnerable in China) <sup>6</sup></b>															<b>S</b>

Scientific Name	Growth form	Origin	Rarity in Hong Kong <sup>1</sup>	Protection/Conse rvation status <sup>2 3 4</sup> <small>5 6 7 8 9 10</small>	Relative abundance in each habitat within the Application Site				Relative abundance in each habitat outside the Application Site but within the Assessment Area										
					DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
				Cap. 586 <sup>7</sup>  State protection (category II) <sup>8</sup>  Appendix II of CITES <sup>10</sup>															
<i>Cinnamomum burmannii</i>	Tree	Native	-	-		S		O											O
<i>Cinnamomum camphora</i>	Tree	Native	Common	-				S		S									O
<i>Cinnamomum parthenoxylon</i>	Tree	Native	Common	-				S											S
<i>Citrus limon</i>	Tree	-	-						S								S		
<i>Cladium chinense</i>	Herb	Native	-	-									C						
<i>Cleistocalyx nervosum</i>	Tree	Native	Common	-								S						O	O
<i>Clematis crassifolia</i>	Climber	Native	Restricted	-															S
<i>Clerodendrum chinense</i>	Shrub	Native	Common	-															S
<i>Clerodendrum cyrtophyllum</i>	Shrub	Native	Common	-															O
<i>Clerodendrum inerme</i>	Shrub	Native	Common	-								O							
<i>Clerodendrum quadriloculare</i>	Shrub	Exotic	-	-						S									
<i>Cocculus orbiculatus</i>	Climber	Native	Common	-				C											C
<i>Codiaeum variegatum</i>	Shrub	Exotic	-	-					S	S									
<i>Coleus scutellarioides</i>	Herb	Exotic	-	-						S									
<i>Colocasia esculenta</i>	Herb	Exotic	-	-						O			O			O			
<i>Commelina benghalensis</i>	Herb	Native	Restricted	-									S						
<i>Commelina diffusa</i>	Herb	Native	Common	-					O	O						O	O		
<i>Conyza canadensis</i>	Herb	Exotic	Very common	-						O				S		O	S		S

Scientific Name	Growth form	Origin	Rarity in Hong Kong <sup>1</sup>	Protection/Conse rvation status <sup>2 3 4</sup> <sub>5 6 7 8 9 10</sub>	Relative abundance in each habitat within the Application Site				Relative abundance in each habitat outside the Application Site but within the Assessment Area										
					DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
<i>Cordia dichotoma</i>	Tree	Native	Restricted	-												S			
<i>Cordyline fruticosa</i>	Shrub	Exotic	-	-									S						
<i>Crassocephalum crepidioides</i>	Herb	Exotic	Common	-						S									
<i>Cratoxylum cochinchinense</i>	Tree	native	Very common	-				O								S			O
<i>Cucurbita moschata</i>	Climber	Exotic	-	-						S									
<i>Cuscuta campestris</i>	Herb	Native	-	-						S			C			O	S		S
<i>Cyclea hypoglauca</i>	Climber	Native	Common	-														S	S
<i>Cyclosorus interruptus</i>	Herb	Native	Common	-									C						S
<i>Cyclosorus parasiticus</i>	Herb	Native	Very common	-			C			S			S	S	O		O		S
<i>Cynodon dactylon</i>	Herb	native	Very common	-							O			O				C	
<i>Cyperus difformis</i>	Herb	native	Very common	-							S								
<i>Cyperus distans</i>	Herb	native	Common	-												O			
<i>Cyrtococcum patens</i>	Herb	Native	Very common	-															S
<i>Daemonorops jenkinsiana</i>	Climber	Native	Very common	-														S	S
<i>Dalbergia benthamii</i>	Climber	Native	Common	-				O	S							S		S	C
<i>Dalbergia candenatensis</i>	Climber	Native	Restricted	-									S						
<i>Daphniphyllum calycinum</i>	Tree	Native	Common	-															S
<i>Delonix regia</i>	Tree	Exotic	-	-				S											S
<i>Desmodium heterocarpon</i>	Shrub	Native	Very common	-												S			S
<i>Desmodium reticulatum</i>	Shrub	Native	Restricted	-															S
<i>Desmos chinensis</i>	Shrub	Native	Common	-				C											C
<i>Dicranopteris pedata</i>	Herb	native	Very common	-												O			

Scientific Name	Growth form	Origin	Rarity in Hong Kong <sup>1</sup>	Protection/Conse rvation status <sup>2 3 4</sup> <small>5 6 7 8 9 10</small>	Relative abundance in each habitat within the Application Site				Relative abundance in each habitat outside the Application Site but within the Assessment Area										
					DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
<i>Digitaria spp.</i>	Herb	-	-							S			S	O					S
<i>*Dimocarpus longan</i>	Tree	Exotic	Restricted	Threatened Species List of China's Higher Plants: Vulnerable <sup>3</sup>  China Plant Red Data Book: Vulnerable <sup>4</sup>  State Protection (Category II) <sup>8</sup>		S			S										S^
<i>Dioscorea benthamii</i>	Climber	Native	Common	-															S
<i>Dioscorea bulbifera</i>	Climber	Native	Common	-								S							O
<i>Dioscorea cirrhosa</i>	Climber	Native	Common	-															S
<i>Dioscorea fordii</i>	Climber	Native	Common	-															S
<i>Diospyros eriantha</i>	Tree	Native	Very common	-															S
<i>Diospyros vaccinioides</i>	Shrub	Native	Very common	IUCN Red List: Critically endangered <sup>2</sup>				S											
<i>Diploclisia glaucescens</i>	Climber	Native	Common	-															S
<i>Diplospora dubia</i>	Tree	native	Common	-												S			S
<i>Dracaena fragrans</i>	Shrub	Exotic	-	-						S						S			
<i>Dracaena sanderiana</i>	Shrub	Exotic	-	-					S										
<i>Drymaria cordata</i>	Herb	Native	Common	-									S						
<i>Duranta erecta</i>	Climber	Exotic	-	-					S	S									
<i>Dypsis lutescens</i>	Shrub	Exotic	-	-						S									
<i>Echinochloa crusgalli</i> var. <i>austrojaponensis</i>	Herb	native	-	-									O				S		
<i>Eclipta prostrata</i>	Herb	Native	Common	-						S									



Scientific Name	Growth form	Origin	Rarity in Hong Kong <sup>1</sup>	Protection/Conse rvation status <sup>2 3 4</sup> <small>5 6 7 8 9 10</small>	Relative abundance in each habitat within the Application Site				Relative abundance in each habitat outside the Application Site but within the Assessment Area											
					DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W	
<i>Eichhornia crassipes</i>	Herb	Exotic	Common	-										S					S	
<i>Elaeocarpus sylvestris</i>	Tree	Native	Very common	-																S
<i>Elephantopus tomentosus</i>	Herb	Native	Common	-									S				C			S
<i>Eleusine indica</i>	Herb	Native	Very common	-		S						C			S					
<i>Eleutherococcus trifoliatus</i>	Climber	Native	Restricted	-														S		S
<i>Embelia laeta</i>	Climber	Native	Very common	-																S
<i>Embelia ribes</i>	Climber	Native	Common	-			S													O
<i>Emilia sonchifolia</i>	Herb	Native	Very common	-					S			S			S			S		S
<i>Endospermum chinense</i>	Tree	Native	Restricted	-			S			O								S		S
<i>Epipremnum aureum</i>	Climber	Exotic	-	-								S								S
<i>Eragrostis tenella</i>	Herb	Native	Very common	-													O			S
<i>Eucalyptus urophylla</i>	Tree	Exotic	-	-											C					
<i>Euphorbia hirta</i>	Herb	Exotic	Very common	-		S						S			S			O		
<i>Euphorbia pulcherrima</i>	Shrub	Exotic	-	-								S								
<i>Excoecaria agallocha</i>	Tree	Native	Common	-										C						
<i>Ficus binnendijkii</i>	Tree	Exotic	-	-																S
<i>Ficus fistulosa</i>	Tree	Native	Common	-			S												S	S
<i>Ficus formosana</i>	Shrub	Native	Restricted	-																S
<i>Ficus hirta</i>	Shrub	Native	Common	-					S											S
<i>Ficus hispida</i>	Shrub	Native	Very common	-			O							S	S			S		S^
<i>Ficus microcarpa</i>	Tree	Native	Common	-					S					S				S		S^
<i>Ficus pumila</i>	Climber	Native	Very common	-																O
<i>Ficus subpisocarpa</i>	Tree	Native	-	-								S								

Scientific Name	Growth form	Origin	Rarity in Hong Kong <sup>1</sup>	Protection/Conse rvation status <sup>2 3 4</sup> <sub>5 6 7 8 9 10</sub>	Relative abundance in each habitat within the Application Site				Relative abundance in each habitat outside the Application Site but within the Assessment Area										
					DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
<i>Ficus variegata</i> var. <i>chlorocarpa</i>	Tree	Native	Common	-		S								S				S	S^
<i>Ficus variolosa</i>	Tree	Native	Very common	-														S	S
<i>Fimbristylis dichotoma</i>	Herb	Native	Very common	-															S
<i>Fimbristylis</i> sp.	Herb	-	-	-															S
<i>Floscopa scandens</i>	Herb	Native	Common	-									O						
<i>Fuirena umbellata</i>	Herb	Native	Common	-									O						
<i>Garcinia oblongifolia</i>	Tree	Native	Very common	-		S		S											S
<i>Gardenia jasminoides</i>	Shrub	Native	Common	-															S
<i>Glochidion eriocarpum</i>	Shrub	Native	Very common	-															S
<i>Glochidion zeylanicum</i>	Shrub	Native	Common	-												S			S
<i>Gnetum luofuense</i>	Climber	Native	Very common	-															O
<i>Graphistemma pictum</i>	Climber	Native	Common	-															O
<i>Gymnema sylvestre</i>	Climber	Native	Very common	-															S
<i>Hedyotis corymbosa</i>	Herb	Native	Very common	-	S					S									
<i>Hedyotis hedyotidea</i>	Shrub	Native	Very common	-				S						S					S
<i>Hibiscus mutabilis</i>	Shrub	Exotic	-	-													S		
<i>Hibiscus tiliaceus</i>	Tree	Native	Very common	-						O		O	S						
<i>Homalium cochinchinensis</i>	Tree	Native	Common	-				S											S
<i>Hydrocotyle verticillata</i>	Herb	Exotic	-	-									C						
<i>Hypolytrum nemorum</i>	Herb	Native	Common	-															S
<i>Hypserpa nitida</i>	Climber	Native	Very common	-												S			S
<i>Ilex asprella</i>	Shrub	Native	Very common	-				S						S					S

Scientific Name	Growth form	Origin	Rarity in Hong Kong <sup>1</sup>	Protection/Conse rvation status <sup>2 3 4</sup> <sub>5 6 7 8 9 10</sub>	Relative abundance in each habitat within the Application Site				Relative abundance in each habitat outside the Application Site but within the Assessment Area										
					DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
<i>Ilex pubescens</i>	Shrub	Native	Very common	-				S											S
<i>Ilex rotunda</i>	Tree	Exotic	Common	-															S
<i>Ipomoea batatas</i>	Herb	Exotic	-	-					C	S									
<i>Ipomoea cairica</i>	Climber	Exotic	Very common	-			C	O		C		S	S			C		S	S^
<i>Ipomoea triloba</i>	Herb	Native	-	-				S								C			S
<i>Jasminum lanceolaria</i>	Climber	Native	Very common	-															C
<i>Jatropha integrerrima</i>	Shrub	Exotic	-	-						S									
<i>Juniperus chinensis</i> cv. <i>Kaizuca</i>	Tree	Exotic	-	-						S									
<i>Kalanchoe pinnata</i>	Herb	Exotic	Common	-						S									
<i>Kalanchoe tubiflora</i>	Herb	Exotic	-	-						S									
<i>Kandelia obovata</i>	Shrub	Native	Very common	-								C							
<i>Kyllinga nemoralis</i>	Herb	Native	Very common	-						C									
<i>Kyllinga polyphylla</i>	Herb	Exotic	Common	-					O	C			C			C	C		S
* <i>Lagerstroemia speciosa</i>	Tree	Exotic	-	Cap. 96A <sup>9</sup>						S									
<i>Lantana camara</i>	Shrub	Exotic	Very common	-		S				O				O		O	S	S	S^
<i>Leersia hexandra</i>	Herb	Native	Common	-									C						
<i>Lemna minor</i>	Herb	Native	Common	-									S						
<i>Leonurus japonicus</i>	Herb	Native	Restricted	-									S						
<i>Leucaena leucocephala</i>	Tree	Exotic	Common	-		C	O	S		C				C		C	S		S
<i>Ligustrum sinense</i>	Tree	Native	Common	-				O		S				O					S
<i>Lindernia rotundifolia</i>	Herb	Exotic	-										O						
<i>Liriope spicata</i>	Herb	Native	Very common	-													S		O
<i>Litsea cubeba</i>	Shrub	Native	Common	-		S													S

Scientific Name	Growth form	Origin	Rarity in Hong Kong <sup>1</sup>	Protection/Conse rvation status <sup>2 3 4</sup> <small>5 6 7 8 9 10</small>	Relative abundance in each habitat within the Application Site				Relative abundance in each habitat outside the Application Site but within the Assessment Area										
					DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
<i>Litsea glutinosa</i>	Tree	Native	Very common	-				O											S
<i>Litsea monopetala</i>	Tree	Native	Restricted	-				O					S			S			C
<i>Litsea rotundifolia</i> var. <i>oblongifolia</i>	Shrub	Native	Very common	-				S											S
<i>Litsea verticillata</i>	Shrub	Native	Common	-						S									
<i>Lonicera macrantha</i>	Climber	Native	Common	-															O
<i>Lophatherum gracile</i>	Herb	Native	Very common	-		O													S
<i>Loropetalum chinense</i> f. <i>rubrum</i>	Shrub	Exotic	-	-						S									
<i>Ludwigia hyssopifolia</i>	Herb	Native	-	-									O				S		
<i>Ludwigia octovalvis</i>	Herb	Native	Common	-									O						
<i>Ludwigia perennis</i>	Herb	Native	Restricted	-									O						
<i>Lumnitzera racemosa</i>	Shrub	Native	Restricted	-								S							
<i>Lygodium japonicum</i>	Herb	Native	Very common	-												O			C
<i>Lygodium scandens</i>	Herb	Native	Common	-		C								O					C
<i>Macaranga tanarius</i> var. <i>tomentosa</i>	Tree	Native	Common	-		O		O						O				S	O^
<i>Machilus chekiangensis</i>	Tree	Native	Very common	-		O								S					S
<i>Machilus pauhoi</i>	Tree	Native	-	-		S													S
<i>Machilus velutina</i>	Tree	Native	Common	-															S
<i>Macrothelypteris torresiana</i>	Herb	Native	Very common	-					S										
<i>Maesa japonica</i>	Shrub	Native	Common	-															S
<i>Maesa perlarius</i>	Shrub	Native	Common	-															O
<i>Mallotus apelta</i>	Shrub	Native	Common	-														S	
<i>Mallotus paniculatus</i>	Tree	Native	Very common	-		C	S	C				S		O		S		S	O^



Scientific Name	Growth form	Origin	Rarity in Hong Kong <sup>1</sup>	Protection/Conse rvation status <sup>2 3 4</sup> 5 6 7 8 9 10	Relative abundance in each habitat within the Application Site				Relative abundance in each habitat outside the Application Site but within the Assessment Area										
					DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
<i>Mangifera indica</i>	Tree	Exotic	-	-						S									S
<i>Melastoma malabathricum</i>	Shrub	Native	Common	-				S								S		S	S
<i>Melastoma sanguineum</i>	Shrub	Native	Common	-															S
<i>Melia azedarach</i>	Tree	Exotic	Common	-												S			S
<i>Melicope pteleifolia</i>	Shrub	Native	Common	-		S													S
<i>Melodinus suaveolens</i>	Climber	Native	Common	-															O
<i>Memecylon ligustrifolium</i>	Tree	Native	Common	-															S
<i>Merremia hederacea</i>	Climber	Native	Restricted	-															S
<i>Merremia umbellata</i>	Climber	Native	Common	-			O	C		s						C		S	C^
<i>*Michelia x alba</i>	Tree	Exotic	-	Cap. 96A <sup>9</sup>						S									
<i>Microcos nervosa</i>	Shrub	Native	Common	-		S		O		S				S					O
<i>Microstegium ciliatum</i>	Herb	Native	Very common	-		S								O		C		O	S^
<i>Mikania micrantha</i>	Herb	Exotic	Very common	-			C	S					O			C	O	S	S^
<i>Millettia nitida</i>	Climber	Native	Very common	-				O	S										O
<i>Mimosa pudica</i>	Herb	Exotic	Very common	-												O	S	S	
<i>Mirabilis jalapa</i>	Herb	Exotic	-	-						S									
<i>Miscanthus floridulus</i>	Herb	Native	Common	-													O		
<i>Miscanthus sinensis</i>	Herb	Native	Very common	-												O			
<i>Morus alba</i>	Tree	Native	Common	-					S										
<i>Murraya paniculata</i>	Tree	Exotic	-	-					S										
<i>Musa x paradisiaca</i>	Herb	Exotic	-	-					C										
<i>Mussaenda pubescens</i>	Climber	Native	Very common	-															S
<i>Nerium oleander</i>	Shrub	Exotic	-	-															S

Scientific Name	Growth form	Origin	Rarity in Hong Kong <sup>1</sup>	Protection/Conse rvation status <sup>2 3 4</sup> <small>5 6 7 8 9 10</small>	Relative abundance in each habitat within the Application Site				Relative abundance in each habitat outside the Application Site but within the Assessment Area										
					DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
<i>Oplismenus compositus</i>	Herb	Native	Very common	-					O			S						S	S
<i>Osmanthus fragrans</i>	Tree	Exotic	-	-															S
<i>Oxalis corniculata</i>	Herb	Native	Very common	-										S		S			S
<i>Oxalis debilis</i> subsp. <i>corymbosa</i>	Herb	Exotic	Common	-						C						S			
<i>Pachira aquatica</i>	Tree	Exotic	-	-					S							S			
<i>Paederia scandens</i>	Climber	Native	Very common	-					S								S		O
<i>Paliurus ramosissimus</i>	Shrub	Native	Common	-								O							
<i>Pandanus austrosinensis</i>	Herb	Native	-	-														S	S
<i>Pandanus tectorius</i>	Shrub	Native	Very common	-								C	S						
<i>Panicum maximum</i>	Herb	Exotic	Common	-		S				S				O		S			O
<i>Paspalum conjugatum</i>	Herb	Native	Common	-												C			S
<b><i>Pavetta hongkongensis</i></b>	<b>Tree</b>	<b>Native</b>	<b>Common</b>	<b>Cap. 96A <sup>9</sup></b>		<b>S</b>		<b>C</b>						<b>S</b>					<b>C</b>
<i>Peperomia pellucida</i>	Herb	Exotic	Common	-						S									
<i>Pericampylus glaucus</i>	Climber	Native	Restricted	-		O													O
<i>Persicaria barbata</i>	Herb	Native	Common	-									O				O		S
<i>Persicaria chinensis</i>	Herb	Native	Common	-					O							O			
<i>Persicaria kawagoeana</i>	Herb	Native	-	-						S									
<i>Persicaria perfoliatum</i>	Herb	Native	Common	-												S			
<i>Photinia benthamiana</i>	Shrub	Native	Common	-								S							S
<i>Phyllanthus emblica</i>	Tree	Native	Very common	-															S
<i>Phyllanthus reticulatus</i>	Shrub	Native	Common	-												S			S
<i>Phyllanthus tenellus</i>	Herb	-	-	-						O				S		S	S		
<i>Phyllanthus urinaria</i>	Herb	Native	Common	-						S									

Scientific Name	Growth form	Origin	Rarity in Hong Kong <sup>1</sup>	Protection/Conse rvation status <sup>2 3 4</sup> <small>5 6 7 8 9 10</small>	Relative abundance in each habitat within the Application Site				Relative abundance in each habitat outside the Application Site but within the Assessment Area										
					DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
<i>Phyllodium pulchellum</i>	Shrub	Native	Very common	-															S
<i>Physalis angulata</i>	Herb	Native	Restricted	-						S									
<i>Pilea microphylla</i>	Herb	Exotic	Very common	-	S												S		
<i>Pinus elliotii</i>	Tree	Exotic	-	-										O					
* <i>Pittosporum tobira</i>	Shrub	Exotic	Rare	-										C					
<i>Plantago major</i>	Herb	Native	Very common	-					O										
# <i>Podocarpus macrophyllus</i>	Tree	Native	Restricted	Threatened Species List of China's Higher Plants: Vulnerable <sup>3</sup>						S									
<i>Pongamia pinnata</i>	Tree	Native	Common	-						S		O							
<i>Portulaca oleracea</i>	Herb	Native	Very common	-						O									
<i>Pouzolzia zeylanica</i>	Herb	Native	Common	-													O		
<i>Pronephrium simplex</i>	Herb	Native	Very common	-															O
<i>Psychotria asiatica</i>	Tree	Native	Very common	-		C		C									S		C
<i>Psychotria serpens</i>	Climber	Native	Very common	-				S											S
<i>Pteris ensiformis</i>	Herb	Native	Common	-															C
<i>Pteris semipinnata</i>	Herb	Native	Very common	-		O													C
<i>Pteris vittata</i>	Herb	Native	Very common	-					S	S									S
<i>Pueraria lobata</i> var. <i>montana</i>	Climber	Native	Common	-			S	S		O			S			O			S
<i>Pueraria lobata</i> var. <i>thomsonii</i>	Climber	Exotic	-	-												O			
<i>Pueraria phaseoloides</i>	Climber	Native	Very common	-						S						S		S	S

Scientific Name	Growth form	Origin	Rarity in Hong Kong <sup>1</sup>	Protection/Conse rvation status <sup>2 3 4</sup> <small>5 6 7 8 9 10</small>	Relative abundance in each habitat within the Application Site				Relative abundance in each habitat outside the Application Site but within the Assessment Area										
					DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
<i>Pycreus pumilus</i>	Herb	Native	Restricted	-						S									
<i>Pyrrosia adnascens</i>	Herb	Native	Common	-						S									
<i>Rhaphiolepis indica</i>	Shrub	Native	Very common	-												O			
<i>Rhapis excelsa</i>	Shrub	Native	Common	-															S
<i>*Rhododendron pulchrum</i> var. <i>phoeniceum</i>	Shrub	Exotic	-	Cap. 96A <sup>9</sup>										S					
<i>Rhodomirtus tomentosa</i>	Shrub	Native	Very common	-												O			S
<i>Rhus hypoleuca</i>	Shrub	Native	Common	-												S			O
<i>Rhus succedanea</i>	Shrub	Native	Common	-						S									
<i>Rorippa indica</i>	Herb	Native	Common	-										S			S		
<i>Rosa laevigata</i>	Climber	Native	Common	-															O
<i>Rourea microphylla</i>	Climber	Native	Common	-					S										S
<i>Rubus leucanthus</i>	Climber	Native	Common	-				S								C			
<i>Rubus reflexus</i>	Climber	Native	Very common	-		S												S	S
<i>Ruellia coerulea</i>	Herb	Exotic	-	-															S
<i>Rumex japonicus</i>	Herb	Native	Restricted	-										S					
<i>Rumex trisetifer</i>	Herb	Native	Common	-									O						
<i>Sageretia thea</i>	Shrub	Native	Very common	-				S											S
<i>Sapium discolor</i>	Tree	Native	Very common	-				S										S	S
<i>Sapium sebiferum</i>	Tree	Native	Common	-						S						S			
<i>Sarcandra glabra</i>	Shrub	Native	Very common	-		S													S
<i>Saurauia tristyla</i>	Tree	Native	Common	-						S								S	
<i>Schefflera arboricola</i>	Climber	Exotic	-	-						S									S
<i>Schefflera heptaphylla</i>	Tree	Native	Very common	-		O		C	S			S						S	C <sup>8</sup>



Scientific Name	Growth form	Origin	Rarity in Hong Kong <sup>1</sup>	Protection/Conse rvation status <sup>2 3 4</sup> <sub>5 6 7 8 9 10</sub>	Relative abundance in each habitat within the Application Site				Relative abundance in each habitat outside the Application Site but within the Assessment Area										
					DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
<i>Scleria ciliaris</i>	Herb	Native	Very common	-			S	O										S	O
<i>Scleria harlandii</i>	Herb	Native	Common	-															C
<i>Scleria</i> sp.	Herb	-	-	-										S					
<i>Scolopia saeva</i>	Tree	Native	Common	-															S
<i>Scoparia dulcis</i>	Herb	Exotic	Common	-													O		
<i>Sesbania javanica</i>	Herb	Native	-	-							O								
<i>Sida rhombifolia</i>	Shrub	Native	Common	-							S					O	S		
<i>Siegesbeckia orientalis</i>	Herb	Native	Common	-							S								
<i>Sinosideroxylon wightianum</i>	Tree	Native	Common	-			S												
<i>Smilax china</i>	Climber	Native	Very common	-				S											O
<i>Smilax glabra</i>	Climber	Native	Very common	-				S											S
<i>Smilax hypoglauca</i>	Climber	Native	-	-															S
<i>Solanum americanum</i>	Herb	Exotic	-	-							S					O	S		S
<i>Solanum torvum</i>	Shrub	Exotic	Common	-							S					C	S	S	S^
<i>Soliva anthemifolia</i>	Herb	Exotic	Restricted	-						S									
<i>Spermacoce remota</i>	Herb	-	-	-			S				O					S	S	S	S
<i>Sporobolus fertilis</i>	Herb	Native	Very common	-										S					
<i>Sporobolus virginicus</i>	Herb	Native	Very common	-									C						
<i>Stachytarpheta jamaicensis</i>	Shrub	Exotic	Common	-													S		
<i>Stephania longa</i>	Climber	Native	Common	-			S	S	S						S				S^
<i>Sterculia lanceolata</i>	Tree	Native	Very common	-			O		S				S	S	S			S	S
<i>Strophanthus divaricatus</i>	Climber	Native	Common	-					O										O

Scientific Name	Growth form	Origin	Rarity in Hong Kong <sup>1</sup>	Protection/Conse rvation status <sup>2 3 4</sup> <sub>5 6 7 8 9 10</sub>	Relative abundance in each habitat within the Application Site				Relative abundance in each habitat outside the Application Site but within the Assessment Area										
					DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
<i>Strychnos angustiflora</i>	Climber	Native	Common	-														S	O
<i>Symplocos cochinchinensis</i> var. <i>laurina</i>	Shrub	Native	Common	-															S
<i>Synedrella nodiflora</i>	Herb	Exotic	Very common	-													S		O
<i>Syngonium podophyllum</i>	Herb	Exotic	-	-													S		
<i>Syzygium hancei</i>	Tree	Native	Common	-		S		O											O
<i>Syzygium jambos</i>	Tree	Exotic	Common	-														S	O
<i>Syzygium levinei</i>	Tree	Native	Common	-		S													C
<i>Tadehagi triquetrum</i>	Shrub	Native	Very common	-															S
<i>*Talinum paniculatum</i>	Herb	Exotic	Very rare	-					S										
<i>Terminalia mantaly</i>	Tree	Exotic	-	-						S									
<i>Tetracera asiatica</i>	Climber	Native	Very common	-															S
<i>Tetradium glabrifolium</i>	Tree	Native	Common	-				S											S
<i>Thysanolaena latifolia</i>	Herb	Native	Common	-														s	S
<i>Tradescantia zebrina</i>	Herb	Exotic	-	-						S									
<i>Trema tomentosa</i>	Shrub	Native	Common	-				S								S		S	S^
<i>Tridax procumbens</i>	Herb	Exotic	Very common	-						O									
<i>Uraria crinita</i>	Shrub	Native	Common	-															S
<i>Urena lobata</i>	Herb	Native	Common	-						S			S			O			S
<i>Uvaria macrophylla</i>	Climber	Native	Common	-				S											S
<i>Verbena officinalis</i>	Herb	Native	Restricted	-															S
<i>Vernonia cinerea</i>	Herb	Native	Very common	-						S									S
<i>Viburnum odoratissimum</i>	Shrub	Native	Very common	-				S						S			S		S

Scientific Name	Growth form	Origin	Rarity in Hong Kong <sup>1</sup>	Protection/Conse rvation status <sup>2 3 4</sup> <sub>5 6 7 8 9 10</sub>	Relative abundance in each habitat within the Application Site				Relative abundance in each habitat outside the Application Site but within the Assessment Area										
					DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
<i>Viburnum sempervirens</i>	Shrub	Native	Very common	-												S			
<i>Vigna unguiculata</i> subsp. <i>sesquipedalis</i>	Climber	Exotic	-	-					C										
<i>Vitex quinata</i>	Tree	Native	Common	-						S									
<i>Vitis flexuosa</i>	Climber	Native	Restricted	-															S
<i>Wedelia trilobata</i>	Herb	Exotic	Common	-		C	C	O	S	O			O	C		C	C	S	S^
<i>Wikstroemia indica</i>	Shrub	Native	Common	-				S											S
<i>Youngia japonica</i>	Herb	Native	Very common	-					S	S		S				O			S
<i>Zanthoxylum avicennae</i>	Tree	Native	Common	-		S		O											O^
<i>Zanthoxylum nitidum</i>	Climber	Native	Very common	-								S						S	O
<i>Zehneria japonica</i>	Climber	Native	Restricted	-						S									
Total					4	52	12	69	34	95	0	32	43	43	0	72	42	46	226

## Notes:

1. Corlett *et al.* (2000). Hong Kong vascular plants: distribution and status.
  2. International Union of Conservation for Nature. (2019). The IUCN Red List of Threatened Species. Version 2019-2.
  3. Qin *et al.* (2017). Threatened Species List of China's Higher Plants.
  4. Fu & Chin (1992). China Plant Red Data Book – Rare and Endangered Plants.
  5. Wu *et al.* (1988). Illustration of Rare & endangered plant in Guangdong Province.
  6. Hu *et al.* (2003). Rare and Precious Plants of Hong Kong.
  7. Cap. 586 Protection of Endangered Species of Animals and Plants Ordinance.
  8. State Forestry Administration & Ministry of Agriculture. (1999). List of Wild Plants under State Protection (Part 1).
  9. Cap. 96 Forests and Countryside Ordinance.
  10. Convention on International Trade in Endangered Species of Wild Flora and Fauna (2020). Appendices I, II and III.
- **Species in bold are considered of conservation importance.**
  - *\*Araucaria heterophylla*, *Bauhinia corymbosa*, *Canarium pimela*, *Casuarina equisetifolia*, *Dimocarpus longan*, *Lagerstroemia speciosa*, *Michelia x alba*, *Pittosporum tobira*, *Rhododendron pulchrum* var. *phoeniceum* and *Talinum paniculatum* are exotic to Hong Kong and not considered of conservation importance, despite being considered rare/ very rare by Corlett *et al.* (2000), listed as Vulnerable by IUCN (2019), listed as vulnerable in Threatened Species List of China's Higher Plants, listed as vulnerable in China Plant Red Data Book, listed under Category II in the List of Wild Plants under State Protection (Part 1), and/ or listed under Cap. 96 Forests and Countryside Ordinance.
  - *#Podocarpus macrophyllus* was cultivated therefore not considered species of conservation importance, despite being considered as Vulnerable in Threatened Species List of China's Higher Plants.
  - ^ Indicates species also found in Woodland Remnant.

## Abbreviations:

- Habitats: AL: Agricultural land; DA: Developed area; I: Intertidal shore; M: Mangrove; Ma: Marsh; P: Plantation; S: Sea; SG: Shrubland/Grassland; WI: Wasteland; Wa: Watercourse; W: Woodland

- Relative abundance: C = Common; O = Occasional; S = Scarce



## Appendix B Mammal and Herpetofauna Species Recorded within the Assessment Area

Common names	Scientific names	Rarity and distribution in Hong Kong <sup>1</sup>	Protection/Conservation status <sub>2 3 4</sub>	Abundance in each habitat within the Application Site				Abundance in each habitat outside the Application Site but within the Assessment Area										
				DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
Mammal																		
Rhesus Macaque	<i>Macaca mulatta</i>	Found in Kam Shan, Shing Mun, Tai Po Kau, Ma On Shan, Sai Kung and Tai Lam country parks.	Class 2 Protected Animal of China <sup>2</sup> ; Appendix II of CITES <sup>3</sup> ; Cap. 170 <sup>4</sup>															1
Japanese Pipistrelle	<i>Pipistrellus abramus</i>	Widely distributed throughout Hong Kong.	Cap. 170 <sup>4</sup>												3			
Amphibians																		
Asian Common Toad	<i>Bufo melanostictus</i>	Widely distributed in Hong Kong.	-							1						1		
Gunther's Frog	<i>Rana guentheri</i>	Widely distributed throughout Hong Kong.	-						2			6					1	2
Reptiles																		
Chinese Gecko	<i>Gekko chinensis</i>	Widely distributed throughout Hong Kong.	-							3								
Total number of species				0	0	0	0	1	2	0	1	0	0	0	2	1	1	1

### Notes:

1. AFCD (2020). Hong Kong Biodiversity Database.
2. Wild Animal Conservation Law of the People's Republic of China
3. Convention on International Trade in Endangered Species of Wild Flora and Fauna (2019). Appendices I, II and III.
4. Cap. 170 Wild Animals Protection Ordinance

- **Species in bold are considered of conservation importance.**

### Abbreviations:

- Habitats: AL: Agricultural land; DA: Developed area; I: Intertidal shore; M: Mangrove; Ma: Marsh; P: Plantation; S: Sea; SG: Shrubland/Grassland; Wl: Wasteland; Wa: Watercourse; W: Woodland

## Appendix C Bird Species Recorded within the Assessment Area

Common names	Scientific names	Rarity and distribution in Hong Kong <sup>1</sup>	Protection/Conservation status <sup>2 3 4 5 6</sup>	Abundance in each habitat within the Application Site				Abundance in each habitat outside the Application Site but within the Assessment Area										
				DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
Eastern Cattle Egret	<i>Bubulcus coromandus</i>	Resident and common passage migrant. Widely distributed in Hong Kong.	Fellowes <i>et al.</i> (2002): (LC) <sup>2</sup>					2										
Great Egret	<i>Ardea alba</i>	Common resident and winter visitor. Widely distributed in Hong Kong.	Fellowes <i>et al.</i> (2002): PRC, (RC) <sup>2</sup>							2								
Intermediate Egret	<i>Egretta intermedia</i>	Common passage migrant. Found in Deep Bay area, Tai Long Wan, Starling Inlet, Tai O, Cape D'Aguilar.	Fellowes <i>et al.</i> (2002): RC <sup>2</sup>					1				1						
Little Egret	<i>Egretta garzetta</i>	Common resident. Widely distributed in coastal area throughout Hong Kong.	Fellowes <i>et al.</i> (2002): RC <sup>2</sup>							1								
Black Kite	<i>Milvus migrans</i>	Common resident and winter visitor. Widely distributed in Hong Kong.	Fellowes <i>et al.</i> (2002): RC <sup>2</sup> ; Appendix II of CITES <sup>3</sup> , Cap. 586 <sup>6</sup>						1			1						3
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	Common resident. Widely distributed in wetland throughout Hong Kong.	-								2	3					1	
Spotted Dove	<i>Spilopelia chinensis</i>	Abundant resident. Widely distributed in Hong Kong.	-	1				1	1			11			2			2*
Greater Coucal	<i>Centropus sinensis</i>	Common resident. Widely distributed in Hong Kong.	Class 2 Protected Animal of China <sup>4</sup> ; China Red Data Book Status: (Vulnerable) <sup>5</sup>				1								2			2
Asian Koel	<i>Eudynamis scolopaceus</i>	Common resident. Widely distributed in Hong Kong.	-									1						
Plaintive Cuckoo	<i>Cacomantis merulinus</i>	Uncommon summer visitor. Widely distributed in open area throughout Hong Kong.	-															1
Large Hawk Cuckoo	<i>Hierococcyx sparveriioides</i>	Common passage migrant and summer visitor. Widely distributed in woodland throughout in Hong Kong.	-						1						1			2
Long-tailed Shrike	<i>Lanius schach</i>	Common resident. Widely distributed in open areas throughout Hong Kong.	-									1						
Eurasian Magpie	<i>Pica pica</i>	Common resident. Widely distributed in Hong Kong	-															1
Large-billed Crow	<i>Corvus macrorhynchos</i>	Common resident. Widely distributed in Hong Kong	-												1			2
Cinereous Tit	<i>Parus cinereus</i>	Common resident. Widely distributed in Hong Kong.	-						1								1	5*
Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	Abundant resident. Widely distributed in Hong Kong.	-		1		2	4	10			19	3		8		2	28*
Chinese Bulbul	<i>Pycnonotus sinensis</i>	Abundant resident. Widely distributed in Hong Kong.	-					2	1			4	3		3			19*

Common names	Scientific names	Rarity and distribution in Hong Kong <sup>1</sup>	Protection/Conservation status <sup>2 3 4 5 6</sup>	Abundance in each habitat within the Application Site				Abundance in each habitat outside the Application Site but within the Assessment Area										
				DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
Barn Swallow	<i>Hirundo rustica</i>	Abundant passage migrant and summer visitor. Widely distributed in Hong Kong.	-					1	42			16	1		5			
Dusky Warbler	<i>Phylloscopus fuscatus</i>	Common passage migrant and winter visitor. Widely distributed in shrubland and waterside vegetation throughout Hong Kong.	-								2	1						1
Pallas's Leaf Warbler	<i>Phylloscopus proregulus</i>	Common winter visitor. Found in woodland throughout Hong Kong.	-									1						
Yellow-browed Warbler	<i>Phylloscopus inornatus</i>	Common winter visitor. Found in woodland throughout Hong Kong.	-									1						3*
Yellow-bellied Prinia	<i>Prinia flaviventris</i>	Common resident. Widely distributed in Hong Kong.	-					2	3			5	1					6
Plain Prinia	<i>Prinia inornata</i>	Common resident. Widely distributed in grassland throughout Hong Kong.	-									1						
Common Tailorbird	<i>Orthotomus sutorius</i>	Common resident. Widely distributed in Hong Kong.	-				1	1	7		1	3			2		1	20*
<b>Rufous-capped Babbler</b>	<b><i>Stachyridopsis ruficeps</i></b>	<b>Uncommon resident. Found in Shing Mun, Tai Po Kau, Tai Mek Tuk, Ng Tung Chai, Fo Tan, Tai Mo Shan, The Peak and Kadoorie Agricultural Research Centre.</b>	<b>Fellowes et al. (2002): LC<sup>2</sup></b>															<b>4</b>
Masked Laughingthrush	<i>Garrulax perspicillatus</i>	Abundant resident. Widely distributed in shrubland throughout Hong Kong.	-				3					5			4			3*
Greater Necklaced Laughingthrush	<i>Garrulax pectoralis</i>	Common resident. Widely distributed in shrubland and woodland throughout Hong Kong.	-								6							3
Japanese White-eye	<i>Zosterops japonicus</i>	Abundant resident. Widely distributed in Hong Kong.	-		1			1	5			6	1		2	3		22*
Crested Myna	<i>Acridotheres cristatellus</i>	Common resident. Widely distributed in Hong Kong.	-					6	20			17	2		8	2		2*
Black-collared Starling	<i>Gracupica nigricollis</i>	Common resident. Widely distributed in Hong Kong.	-	1			4					6			3	1		
Oriental Magpie Robin	<i>Copsychus saularis</i>	Abundant resident. Widely distributed in Hong Kong.	-		1			1	6		3	4						7*
Verditer Flycatcher	<i>Eumyias thalassinus</i>	Scarce winter visitor. Found in Shek Kong, Tai Po Kau, Mui Tze Lam, Lai Chi Wo, Wun Yiu.	-									1						
Red-flanked Bluetail	<i>Tarsiger cyanurus</i>	Common winter visitor and passage migrant. Widely distributed in woodland throughout Hong Kong.	-					1			1							
Daurian Redstart	<i>Phoenicurus aureus</i>	Common winter visitor. Widely distributed in Hong Kong.	-						1						1			

Common names	Scientific names	Rarity and distribution in Hong Kong <sup>1</sup>	Protection/Conservation status <sup>2 3 4 5 6</sup>	Abundance in each habitat within the Application Site				Abundance in each habitat outside the Application Site but within the Assessment Area										
				DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
Stejneger's Stonechat	<i>Saxicola stejnegeri</i>	Common passage migrant and winter visitor. Widely distributed in open cultivated fields throughout Hong Kong.	-									1						
Scarlet-backed Flowerpecker	<i>Dicaeum cruentatum</i>	Common resident. Widely distributed in wooded area throughout Hong Kong.	-															4
Fork-tailed Sunbird	<i>Aethopyga christinae</i>	Common resident. Widely distributed in Hong Kong.	-															2
Eurasian Tree Sparrow	<i>Passer montanus</i>	Abundant resident. Widely distributed in Hong Kong.	-						29									
Scaly-breasted Munia	<i>Lonchura punctulata</i>	Common resident. Widely distributed in Hong Kong	-									1						2
White Wagtail	<i>Motacilla alba</i>	Common passage migrant and winter visitor. Widely distributed in Hong Kong.	-									1						
Olive-backed Pipit	<i>Anthus godlewskii</i>	Common passage migrant and winter visitor. Widely distributed in Hong Kong.	-						1			1			9			
Total number of species				2	3	0	5	12	15	2	6	25	6	0	14	3	4	23

## Notes:

1. AFCD (2020). Hong Kong Biodiversity Database.
  2. Fellowes *et al.* (2002). Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong.
    - o For conservation status listed by Fellowes *et al.* (2002), letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
  3. Convention on International Trade in Endangered Species of Wild Flora and Fauna (2019). Appendices I, II and III.
  4. Wild Animal Conservation Law of the People's Republic of China
  5. Zheng and Wang (1998). China Red Data Book of Endangered Animals: Aves.
  6. Cap. 586 Protection of Endangered Species of Animals and Plants Ordinance.
- **Species in bold are considered of conservation importance.**
  - All wild birds are protected under Cap. 170 Wild Animals Protection Ordinance
  - \* Indicates species also found in Woodland Remnant.

## Abbreviations:

Habitats: AL: Agricultural land; DA: Developed area; I: Intertidal shore; M: Mangrove; Ma: Marsh; P: Plantation; S: Sea; SG: Shrubland/Grassland; WI: Wasteland; Wa: Watercourse; W: Woodland



## Appendix D Odonate Species Recorded within the Assessment Area

Common names	Scientific names	Rarity and distribution in Hong Kong <sup>1</sup>	Protection/ Conservation status	Abundance in each habitat within the Application Site				Abundance in each habitat outside the Application Site but within the Assessment Area											
				DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W	
Orange-tailed Midget	<i>Agriocnemis femina</i>	Abundant. Widely distribute in disused paddy fields, marshes, ditches and ponds										16			3				
Black-banded Gossamerwing	<i>Euphaea decorata</i>	Abundant. Widely distribute in mountain streams throughout Hong Kong																1	
Russet Percher	<i>Neurothemis fulvia</i>	Common. Widely distribute in cultivated areas and streams throughout Hong Kong													1				
Marsh Skimmer	<i>Orthetrum luzonicum</i>	Abundant. Widely distributed in abandoned paddies, marshy swampy and boggy locations														1			
Crimson Dropwing	<i>Trithemis aurora</i>	Abundant. Widely distribute in marshes, ponds, streams and ornamental ponds throughout Hong Kong															1		
Yellow Featherlegs	<i>Copera marginipes</i>	Abundant. Widely distribute in streams throughout Hong Kong															2		
Black Threadtail	<i>Prodasineura autumnalis</i>	Abundant. Widely distribute in streams throughout Hong Kong															1		
Total number of species				0	0	0	0	0	0	0	0	1	0	0	2	1	3	1	

Notes:

1. AFCD (2020). Hong Kong Biodiversity Database

Abbreviations:

Habitats: AL: Agricultural land; DA: Developed area; I: Intertidal shore; M: Mangrove; Ma: Marsh; P: Plantation; S: Sea; SG: Shrubland/Grassland; Wl: Wasteland; Wa: Watercourse; W: Woodland

## Appendix E Butterfly Species Recorded within the Assessment Area

Common names	Scientific names	Rarity and distribution in Hong Kong <sup>1</sup>	Protection/ Conservation status <sup>2</sup>	Abundance in each habitat within the Application Site				Abundance in each habitat outside the Application Site but within the Assessment Area										
				DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
Common Hedge Blue	<i>Acytolepis puspa</i>	Common. Widely distributed throughout Hong Kong	-															1
Pale Grass Blue	<i>Pseudozizeeria maha</i>	Very Common. Widely distributed throughout Hong Kong	-		1			1										51*
Long-banded Silverline	<i>Spindasis lohita</i>	Common. Common and widespread throughout Hong Kong	-					1										
Dark Grass Blue	<i>Zizeeria karsandra</i>	Uncommon. High Junk Peak, Kat O, Po Toi Island, Shek Mun Kap, Lai Chi Wo, Yung Shue O	-															1
Ceylon Blue Glassy Tiger	<i>Ideopsis similis</i>	Very Common. Widely distributed throughout Hong Kong	-												1			1
Glassy Tiger	<i>Parantica aglea melanoides</i>	Common. Widely distributed throughout Hong Kong	-															1
Angled Castor	<i>Ariadne ariadne</i>	Common. Widely distributed throughout Hong Kong	-													1		
Rustic	<i>Cupha erymanthis</i>	Very Common. Widely distributed throughout Hong Kong	-															2
Common Mapwing	<i>Cyrestis thyodamas</i>	Common. Widely distributed in woodland area throughout Hong Kong	-								1							1
White-edged Blue Baron	<i>Euthalia phemius</i>	Common. Widely distributed in woodland and agricultural field throughout Hong Kong	-															1
Great Egg-fly	<i>Hypolimnias bolina</i>	Common. Widely distributed throughout Hong Kong	-															1
Common Archduke	<i>Lexias pardalis</i>	Suspected species. North Lantau Island, North West New Territories	-						1									
Common Sailer	<i>Neptis hylas</i>	Very Common. Widely distributed throughout Hong Kong	-								1							
Common Jester	<i>Symbrenthia lilaea</i>	Common. Widely distributed throughout Hong Kong	-								1							
Common Duffer	<i>Discophora sondaica</i>	Uncommon. Widely distributed in woodland area throughout Hong Kong	-															1
Large Faun	<i>Faunis eumeus</i>	Common. Widely distributed in woodland throughout Hong Kong.	-															1
Banded Tree Brown	<i>Lethe confusa</i>	Common. Widely distributed in woodland throughout Hong Kong	-															2
Dark Brand Bush Brown	<i>Mycalesis mineus</i>	Very Common. Widely distributed throughout Hong Kong	-								2							2
South China Bush Brown	<i>Mycalesis zonata</i>	Common. Widely distributed in woodland throughout Hong Kong	-					3										1
Common Five-ring	<i>Ypthima baldus</i>	Very Common. Widely distributed in grassland throughout Hong Kong	-				1	2			1					1	1	1
Common Bluebottle	<i>Graphium sarpedon</i>	Very Common. Widely distributed throughout Hong Kong	-				1				1					1		1

Common names	Scientific names	Rarity and distribution in Hong Kong <sup>1</sup>	Protection/ Conservation status <sup>2</sup>	Abundance in each habitat within the Application Site				Abundance in each habitat outside the Application Site but within the Assessment Area										
				DA	P	SG	W	AL	DA	I	M	Ma	P	S	SG	WI	Wa	W
Chinese Peacock	<i>Papilio bianor</i>	Common. Widely distributed throughout Hong Kong	-									1						
Red Helen	<i>Papilio helenus</i>	Very Common. Widely distributed throughout Hong Kong	-					1				1						3
Paris Peacock	<i>Papilio paris</i>	Very Common. Widely distributed throughout Hong Kong	-								1							4
Common Mormon	<i>Papilio polytes</i>	Very Common. Widely distributed throughout Hong Kong	-						1			1			2			5*
Spangle	<i>Papilio protenor</i>	Very Common. Widely distributed throughout Hong Kong	-														2	1
Five-bar Swordtail	<i>Pathysa antiphates</i>	Common. Widely distributed throughout Hong Kong	-									1						
Painted Jezebel	<i>Delias hyparete</i>	Uncommon. Widely distributed throughout Hong Kong	-								1							1
Red-base Jezebel	<i>Delias pasithoe</i>	Very Common. Widely distributed throughout Hong Kong	-															2
Common Grass Yellow	<i>Eurema hecabe</i>	Very Common. Widely distributed throughout Hong Kong	-			1			1		1	1			1	1		5*
Indian Cabbage White	<i>Pieris canidia</i>	Very Common. Widely distributed throughout Hong Kong	-	2	1			2	7		1	13						4*
<b>Spotted Sawtooth</b>	<b><i>Prioneris thestylis</i></b>	<b>Rare. Widely distributed throughout Hong Kong</b>	<b>Fellowes <i>et al.</i> (2002): LC <sup>2</sup></b>						1									
Total number of species				1	2	1	2	6	5	0	10	6	0	0	3	4	2	24

Notes:

1. AFCD (2020). Hong Kong Biodiversity Database
2. Fellowes *et al.* (2002). Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong.
  - **Species in bold are considered of conservation importance.**
  - \* Indicates species also found in Woodland Remnant.

Abbreviations:

Habitats: AL: Agricultural land; DA: Developed area; I: Intertidal shore; M: Mangrove; Ma: Marsh; P: Plantation; S: Sea; SG: Shrubland/Grassland; WI: Wasteland; Wa: Watercourse; W: Woodland

## Appendix F Aquatic Species Recorded within the Assessment Area

Species Name	Common Name	Relative Abundance	Conservation Status <sup>1</sup>
		Assessment Area	
Crustacean			
<i>Caridina cantonensis</i>	Atyid Shrimp	+++	
<i>Macrobrachium formosense</i>	Long-armed Freshwater Shrimp	++	
Fish			
<i>Cyprinus carpio</i>	Varigated Carp	+	
<i>Nicholsicypris normalis</i>		+++	Listed in China Red List
<i>Puntius semifasciolatus</i>	Chinese Barb	+++	
<i>Misgurnus anguillicaudatus</i>	Oriental Weatherfish	+	
<i>Schistura fasciolata</i>	Striped Loach	++	
<i>Eleotris oxycephala</i>	Sharphead sleeper	+	
<i>Glossogobius giuris</i>	Fork Tongue Goby	+	
<i>Pseudogobius javanicus</i>	Javanese Fatnose Goby	+	
<i>Rhinogobius duospilus</i>		+	
<i>Tridentiger trionocephalus</i>	Chameleon Goby	+	
<i>Oreochromis niloticus</i>	Nile Tilapia	+	
<b><i>Channa asiatica</i></b>	<b>Small Snakehead</b>	+	<b>Fellowes <i>et al.</i> (2002): Local Concern<sup>1</sup></b>
<i>Terapon jarbua</i>	Jarbua Terapon	++	
Gastropod			
<i>Brotia hainanensis</i>		+	
Insect			
<i>Metrocoris</i> sp.		+	
<i>Ptilomera tigrina</i>		++	
<i>Enithares</i> sp.		+	
Gyrinidae		+	

Species Name	Common Name	Relative Abundance	Conservation Status <sup>1</sup>
		Assessment Area	
<b><i>Heliogomphus scorio</i></b>	<b>South China Grappletail</b>	+	<b>Fellowes <i>et al.</i> (2002): Local Concern<sup>1</sup></b>
Philopotamidae		+	
<i>Euphaea decorata</i>		+	
Psephenidae		+	
Total number of species		24	

Notes:

1. Fellowes *et al.* (2002). Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong.

- **Species in bold are considered of conservation importance.**
- Relative abundance: +++ = Common; ++ = Occasional; + = Scarce



## Appendix G Intertidal Species Recorded within the Assessment Area

Species	Relative Abundance	
	Dry season	Wet season
<i>Alpheus</i> sp.		+
<i>Archaster typicus</i>		+
<i>Balanus amphitrite</i>	+	++
<i>Batillaria multiformis</i>	+	+
<i>Batillaria zonalis</i>	+	+
<i>Brachidontes variabilis</i>	++	+
<i>Cellana grata</i>	+	+
<i>Cerithidea cingulata</i>	++	+++
<i>Cerithidea diadjariensis</i>	+	+
<i>Cerithidea rhizophorarum</i>	+	+
<i>Clibanarius</i> sp.	+	
<i>Clithon oualaniensis</i>	+++	+++
<i>Clithon faba</i>	++	+
<i>Gafrarium tumidum</i>	++	+
<i>Haliplanella lineata</i>	+	
<i>Hemigrapsus sanguineus</i>	+	
<i>Hydroides</i> sp.	+	+
<i>Ligia exotica</i>	+	++
<i>Liolophura japonica</i>	+	
<i>Lunella coronata</i>	++	++
<i>Metopograpsus</i> sp.		+
<i>Monodonta labio</i>	+++	++

Species	Relative Abundance	
	Dry season	Wet season
<i>Nassarius festivus</i>	+	+
<i>Natica</i> sp.	+	
<i>Ochetostoma erythrogrammon</i>	+	
<i>Onchidium</i> sp.	+	
<i>Pagurus</i> sp.	+	
<i>Parasesarma pictum</i>		+
<i>Patelloida pygmaea</i>	++	+
<i>Periophthalmus cantonensis</i>	+	
<i>Perisesarma bidens</i>	+	+
<i>Perna viridis</i>		+
<i>Planaxis sulcatus</i>	+	++
<i>Saccostrea cucullata</i>	+++	
<i>Scopimera globosa</i>	+	++
<i>Styela plicata</i>		+
<i>Terebralia sulcata</i>	+	+
<i>Thais clavigera</i>	+	+
Total number of species	32	28

Relative abundance: +++ = Common; ++ = Occasional; + = Scarce

## Appendix H Suggested Plant Species for Compensatory Planting

Species name	Chinese name	Growth Form	Origin	Ecological value				
				Host plant for recorded butterfly	Nectar plant for recorded butterfly	Nectar plant for insect	Fruit for wildlife	Seed for wildlife
<i>Ailanthus fordii</i>	常綠臭椿	Tree	Native					
<i>Bischofia javanica</i>	秋楓	Tree	Native		優越斑粉蝶 (Painted Jezebel)		✓	
<i>Breynia fruticosa</i> *	黑面神	Shrub	Native	寬邊黃粉蝶 (Common Grass Yellow)				
<i>Bridelia tomentosa</i>	土蜜樹	Small tree	Native	鈕灰蝶, 寬邊黃粉蝶(Common Hedge Blue, Common Grass Yellow)			✓	
<i>Canthium dicoccum</i>	魚骨木	Small tree	Native			✓	✓	
<i>Celtis sinensis</i>	朴樹	Tree	Native	鈕灰蝶 (Common Hedge Blue)		✓	✓	
<i>Cinnamomum camphora</i>	樟	Tree	Native	青鳳蝶, 玉帶鳳蝶 (Common Bluebottle, Common Mormon)			✓	
<i>Cratogeomys cochinchinense</i>	黃牛木	Small tree	native	中環蛱蝶, 寬邊黃粉蝶( Common Sailer, Common Grass Yellow)	銀線灰蝶 (Long-banded Silverline)	✓		
<i>Dalbergia benthamii</i> *	兩廣黃檀	Climber	Native		報喜斑粉蝶 (Red-base Jezebel)			
<i>Diospyros vaccinioides</i>	小果柿	Shrub	Native				✓	
<i>Ficus microcarpa</i>	榕樹	Tree	Native	網絲蛱蝶, 幻紫斑蛱蝶 (Common Mapwing, Great Egg-fly)		✓	✓	
<i>Ficus subpisocarpa</i>	筆管榕	Small tree	Native	網絲蛱蝶 (Common Mapwing)		✓	✓	
<i>Ficus variegata</i> var. <i>chlorocarpa</i>	青果榕	Tree	Native	網絲蛱蝶 (Common Mapwing)			✓	
<i>Litsea glutinosa</i>	潺槁樹	Small tree	Native	青鳳蝶 (Common Bluebottle)		✓	✓	

Species name	Chinese name	Growth Form	Origin	Ecological value				
				Host plant for recorded butterfly	Nectar plant for recorded butterfly	Nectar plant for insect	Fruit for wildlife	Seed for wildlife
<i>Litsea rotundifolia</i> var. <i>oblongifolia</i> *	豺皮樟	Shrub	Native	青鳳蝶 (Common Bluebottle)		✓		
<i>Melicope pteleifolia</i>	三桠苦	Small tree	Native	巴黎翠鳳蝶 (Paris Peacock)		✓	✓	
<i>Microcos nervosa</i>	破布葉	Small tree	Native	中環蛱蝶 (Common Sailer)		✓	✓	
<i>Mussaenda pubescens</i> *	玉葉金花	Climber	Native		巴黎翠鳳蝶 (Paris Peacock)			
<i>Rhaphiolepis indica</i> *	石斑木	Shrub	Native		優越斑粉蝶 (Painted Jezebel)			
<i>Sapium discolor</i>	山烏柏	Small tree	Native	尖翅翠蛱蝶, 白帶黛眼蝶, 鳳眼方環蝶 (White-edged Blue Baron, Banded Tree Brown, Common Duffer)		✓		✓
<i>Schefflera heptaphylla</i>	鵝掌柴	Small tree	Native		優越斑粉蝶, 絹斑蝶, 擬旖斑蝶 (Painted Jezebel, Glassy Tiger, Ceylon Blue Glassy Tiger)	✓	✓	

\* Herbs, climbers and shrubs recommendations will only be planted given that they will not lower the number/ density of trees can be planted in the woodland compensatory area.

## Appendix I Suggested Shade-tolerant Plant Species for Planting in Available Area under the Viaduct

Species name	Chinese name	Growth Form	Origin	Ecological value				
				Host plant for recorded butterfly	Nectar plant for recorded butterfly	Nectar plant for insect	Fruit for wildlife	Seed for wildlife
<i>Alocasia macrorrhizos</i>	海芋	Herb	Native				✓	
<i>Bridelia tomentosa</i>	土蜜樹	Small tree	Native	鈕灰蝶, 寬邊黃粉蝶 (Common Hedge Blue, Common Grass Yellow)			✓	
<i>Cratogeomys cochinchinense</i>	黃牛木	Small tree	native	中環蛺蝶, 寬邊黃粉蝶 (Common Sailer, Common Grass Yellow)	銀線灰蝶 (Long-banded Silverline)	✓		
<i>Mussaenda pubescens</i>	玉葉金花	Climber	Native		巴黎翠鳳蝶 (Paris Peacock)			
<i>Psychotria asiatica</i>	九節	Shrub	Native				✓	
<i>Rhaphiolepis indica</i>	石斑木	Shrub	Native		優越斑粉蝶 (Painted Jezebel)			
<i>Sarcandra glabra</i>	草珊瑚	Shrub	Native				✓	
<i>Schefflera heptaphylla</i>	鵝掌柴	Small tree	Native		優越斑粉蝶, 絹斑蝶, 擬 旖斑蝶 (Painted Jezebel, Glassy Tiger, Ceylon Blue Glassy Tiger)	✓	✓	



---

## **Appendix F**

# **Geotechnical Planning Review Report**

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(Consolidated Report based on clarifications submitted on 17 May 2021 and Further Information submitted on 16 September 2021, 29 December 2021 & 27 January 2022)

*(No further comments from geotechnical perspective from Civil Engineering and Development Department received in February 2022)*

**SECTION 16 PLANNING APPLICATION**  
**FOR**  
**PROPOSED ACCESS ROAD IN “GREEN BELT” ZONE FOR**  
**PERMITTED USES IN “GOVERNMENT, INSTITUTION OR**  
**COMMUNITY” ZONE AT VARIOUS LOTS AND ADJOINING**  
**GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG,**  
**THE NEW TERRITORIES”**

**GEOTECHNICAL PLANNING REVIEW REPORT**

**SEP 2022**



AECOM Asia Company Limited

Project Title: Section 16 Planning Application for  
Proposed Access Road in “Green Belt” Zone for  
Permitted Uses in “Government, Institution or Community” Zone  
at Various Lots and Adjoining Government Land in D.D. 209,  
Sai Keng, Shap Sz Heung, the New Territories”

Report Title: Geotechnical Planning Review Report

Revision	Date	Description
-	April 2021	GPRR for S16 application
A	June 2021	Update for GEO Comments
B	October 2021	Update for GEO Comments
C	September 2022	-

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## **FIGURES**

Figure 1	Site Layout Plan
Figure 2	Registered Feature Layout Plan
Figure 3	Geological Survey Map
Figure 4	Existing GI Location Plan
Figure 5	Preliminary Plan for NTHS area
Figure 6	Plan for Facilities Grouping

## **APPENDICES**

Appendix A	Preliminary Road Layout Plan
Appendix B	SIS and SIMAR Reports
Appendix C	Existing Utilities Records
Appendix D	Extracts of Relevant Information from GEO
Appendix E	Extracts of Previous Ground Investigation Records
Appendix F	Preliminary Site Formation Plan

## 1. INTRODUCTION

This Geotechnical Planning Review Report is prepared in support of a Section 16 Planning Application for Proposed Access Road in "Green Belt" ("GB") zone (i.e. hereafter referred to as the Proposed Access Road) for permitted development in "Government, Institution or Community" ("G/IC") zone (i.e. hereafter referred to as the Permitted Development) at various lots and adjoining Government land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories (i.e. hereafter referred to as the Application Site).

As the concerned "G/IC" zone has no existing or planned proper access, provision of a proper access road branching off from Sai Sha Road is proposed to serve the operational need of the permitted development. The Application Site of the subject planning application refers to the proposed access road and its works area that falls within "Green Belt"(GB) portion only. The Geotechnical Planning Review Report covers the following objectives:

- a) Describe the geological setting of the Application Site and indicate the location of features within and surrounding the Application Site and the land status;
- b) Review the sufficiency of previous ground investigation and laboratory testing conducted, and state the need, scope and objectives of the proposed additional site investigation and laboratory testing;
- c) Review of how the Proposed Access Road has effects on the man-made slopes or retaining walls; and
- d) Assess on the geotechnical feasibility of the Proposed Access Road.

The Proposed Access Road is presented in the Indicative Master Layout Plan (S16-A-01) in **Appendix A**.



## 2. SITE DESCRIPTION

### 2.1 Site Descriptions and Topography

The Application Site is located to the southwest of Sai Keng Tsuen and northwest of Kei Leng Ha San Wai. It is located in a minor portion of the 'GB' zone lies to the east of Sai Sha Road and to the west of the "G/IC" for permitted development which has no existing or planned proper access. **Figure 1** illustrates the location of the Application Site.

The Application Site with topography varies from +16mPD to +38mPD with approximate coordinates of E-845450 & N-830800.

The Application Site is mainly covered by the natural land, slopes and trees range from approximately +16mPD from the East side to +38mPD near west to existing Sai Sha Road. 4 registered features are located within and in the vicinity of the Application Site. Details of these features shall be referred to sections below.

### 2.3 Existing Features

There are 4 numbers of registered man-made features / slopes located within or in the vicinity of the Application Site. The locations of these 4 features are shown in **Figure 2**. The slope records retrieved from the SIS System of GEO and SIMAR of Lands Department are presented in **Appendix B** and summarized in **Table 2.1**:

Feature No.	Location	Max. Height (m)	Length (m)	Angle (°)	Material	Consequence-to-life	Maintenance Parties
<b>Within the Application Site</b>							
8NW-C/C20	West Side of Site Near Sai Sha Road	5	53	45	Shotcrete Surface	2	HyD
8NW-C/F54	West Side of Site Near Sai Sha Road	8	107	40	Vegetated Surface	2	HyD
8NW-C/FR48	West Side of Site Near Sai Sha Road	Slope: 7 Wall: 3.3	Slope: 72 Wall: 57	Slope: 35 Wall: 85	Slope: Vegetated Surface Wall: Concrete	2	HyD
<b>In vicinity of the Application Site</b>							
8NW-C/C21	~7m west away from the Application Site Near Sai Sha Road	35	120	45	Shotcrete & Vegetated Surface	2	HyD

**Table 2.1 Existing Geotechnical Feature / Slope within and adjoining to the Application Site**

## 2.2 Existing Structures

There are several existing structures, mostly existing 3-4 storeys village houses/structures in Sai Keng Tsuen located to the northeast of the Application Site.

Since the foundation records from the Building Department for the neighboring existing villages are not available, site inspection has been conducted to review the existing 3-4 storeys village houses, and the buildings are likely to be seat on footings.

## 2.4 Existing Utilities

The existing utilities record plans have been attached in the **Appendix C**.

According to the record plans, under the existing carriageway there are HP750 gas main and DI 450 Fresh water mains. Under the existing footpath, there are CLP 11 kV, MP315 gas main and other electrical communication utilities (HKT, TGT etc.).

Utilities	Location	Distance from the Application Site (m)
HP750 gas main	Sai Sha Road	5m
MP315 gas main	Sai Sha Road	5m
DI 450 Fresh water mains	Sai Sha Road	5m
CLP 11 kV cable	Sai Sha Road, South Sai Keng Village	5m
Other electrical communication utilities (HKT, TGT etc.)	Sai Sha Road, South Sai Keng Village	5m

**Table 2.2 Summary for Adjacent Existing Utilities**

Relevant government departments and private utility companies shall be contacted for information regarding their installation in the vicinity of the Application Site before the detailed design stage.

## 2.5 Information Search in Geotechnical Information Unit (GIU)

A search of the available geotechnical information stored in GIU of the Civil Engineering Library has been conducted. The information includes Hong Kong Geological Survey Map as well as ground investigation reports from previous developments and previous landslide incidents within and in the vicinity of the study area. The following publications issued by GEO are relevant:-

### Previous Landslide Incidents

1 minor landslide (ME97/7/52) had occurred at the northern side 74m away from the Application Site for Feature Nos. 8NW-C/C22 on 10 July 1997. No previous landslide incidents within the Application Site area.

### Stage 3 Study Report S3R 116/99

This Stage 3 Study Report was prepared GEO in-house design for Feature No. 8NW-C/C7 in 1999 under LPM programme and upgraded under Contract no. GE/99/01. Site specific ground investigation (GI) including slope stripping, trial pits and drillholes was carried out as part of the study. Installation of soil nails, construction of concrete buttresses, hydroseeding the soil slope surface and spraying concrete over the rock slope were proposed as the upgrading works. The slope was renamed 8NW-C/C21 after upgrading works.

The relevant information from GIU is enclosed in **Appendix D**.

### 3. SITE GEOLOGY

#### 3.1 Solid and Superficial Geology

According to Sheet 8 of the 1:20,000 scale HGM20 Series Solid and Superficial Geology Map published by the GEO, HKSAR, indicates that the Application Site is underlain by Sandstone and Siltstone of Palaeozoic Bluff Head Formation (Sedimentary rock), and rhyolite lava of Clear Water Bay Formation (Volcanic rock), as well as debris flow deposits (Colluvium) and Alluvium of the Pleistocene and Holocene Period.

The geological settings and ground conditions of the Application Site are interpreted and confirmed based on the GI information obtained from the previous GI information obtained in GIU.

A part plan extract from the geological map is shown in **Figure 3**.

#### 3.2 Existing Ground Investigation Information

GIU records that GI in vicinity to the Application Site as below:

GIU report no.	Title of the Report	Done By	Date
28176	Ground Investigation Request Slope No. 8NW-C/C7, Location Sai Sha Road, Sai Kung	Enpack (Hong Kong) Limited	1998
51469	Agreement No. CE 30/2007 (HY) Cycle Tracks Connecting North West New Territories with North East New Territories (Extension), Major Sections Volume 1 of 2	Fugro Geotechnical Services Limited	2010
51470	Agreement No. CE 30/2007 (HY) Cycle Tracks Connecting North West New Territories with North East New Territories (Extension), Major Sections Volume 2 of 2	Fugro Geotechnical Services Limited	2010

Limited existing ground investigation (GI) information is available within the Application Site. The closest identified borehole (BH) is SK/DH2 (*Geotechnical Information Unit (GIU) report reference 51469*). The BH indicates a 2.5m thick layer of colluvium underlain by zones of completely to highly decomposed (Grades V to IV) and moderately to slightly (Grades III to II) decomposed Metasiltstone. This BH initially encounters weathered metasiltstone (Grade IV) at 2.6m depth (31.54mPD) and in general, continuous Grade III/II Metasiltstone from 8m depth (+26mPD).

#### 3.3 Groundwater Condition

Standpipe records nearest the proposed alignment (SK/DH2) indicate groundwater to be at a standing level of 16m below GL (+18.1mPD), where ground level is stated as +34.1mPD, and within moderately decomposed Metasiltstone.

### **3.4 Project Specific Ground Investigation**

Given a lack of existing GI data within the Application Site, a project specific GI is recommended to confirm the subsurface geological profile, groundwater conditions, as well as soil and rock material design parameters.

The GI should comprise of vertical boreholes within both superficial and solid stratum. In respect to the upper superficial materials, appropriate sampling and in-situ testing should be undertaken in accordance with the principles set out in *Geoguide 2*. Rotary coring of the underlying solid likely bearing stratum should also be undertaken to establish a suitable bearing stratum with core recovery to enable the scheduling of appropriate laboratory tests. Allowances should also be made for the installation of groundwater monitoring instrumentation i.e. standpipe/standpipe-piezometers. Groundwater samples will be collected and checked for contaminants. Details of proposed GI and laboratory testings are to be confirmed during detailed design stage.



#### **4. PROPOSED ACCESS ROAD**

Construction of the Proposed Access Road in "GB" zone connecting the Permitted Development and Sai Sha Road will involve site formation works near junction with existing Sai Sha Road and foundation works for new road piers.

##### **4.1 Schematic Site Formation Works**

For proposed junction and widening of existing Sai Sha Road, local open cut will be formed and retaining walls (e.g. L-shaped wall or gravity wall etc.) for maximum 5m retaining height between proposed formation level and existing ground level will be constructed. Registered features 8NW-C/C20, 8NW-C/F54 and 8NW-C/FR48 will be modified/ upgraded as presented below. The preliminary site formation plan is shown in **Appendix F**.

###### Feature No. 8NW-C/C20

For the access road from Sai Sha Road, part of the existing feature 8NW-C/C20 shall be re-profiled to facilitate the construction of the vehicular accessway and road widening works at this junction. Cut slope will be re-profiled along proposed road edge to match with road abutment wall.

###### Feature No. 8NW-C/F54

For road widening works in the north, the existing fill slope 8NW-C/F54 shall be enlarged/widened using retaining walls where level difference is higher. A slope stability analysis will need to be carried out at detail design stage to finalize the Application Site arrangement and formation works.

###### Feature No. 8NW-C/FR48

For road widening works in the south, the proposed road alignment will not enter into the existing feature 8NW-C/FR48. However, the change of slope crest facility to more sensitive receivers (i.e. higher traffic density road). Preliminarily, the fill slope and retaining wall shall be upgraded to flatter slope and strengthen wall is required to upto standard. Slope stability analysis for whole feature will need to be carried out at detail design stage to finalize the site arrangement and formation works.

According to recommendations from Highway Slope Manual and Geoguide 5, adequate and safe access should be provided to highway slopes for carrying out maintenance inspections and maintenance works. Detail in access arrangement to cover slope areas to road shall be designed during detail design stage. Preliminary, 600mm width staircase with handrail should be provided and facilitated as safe access.

## 4.2 Preliminary Natural Terrain Hazard Review

The topographic plan indicates a flattening of the sloping terrain towards the toe of this historical landslide catchment. With reference to GEO Report No.138 (2nd edition), the Application Site does not meet the “In-principle Objection Criteria” and satisfies the “Alert Criteria” and the preliminary findings are summarized as below:

Angular Elevation	Within 50m of ground sloping at $>15^{\circ}$	Alert Criteria met
$27^{\circ}$	Yes	Yes

As the development involves Group 3 & 4 facilities (including road with moderate vehicular or pedestrian traffic density and woodland planting area) and there are natural hillsides of slope  $>15^{\circ}$  within 50m horizontally of the application site boundary.

The Grouping of Facilities for the application site is summarized as below:

Items	Locations	Facilities	Facilities Group
Access Road	From North to middle of the application site	road with moderate vehicular or pedestrian traffic density	3
Woodland Planting Area	At north nearby the access road, & at the south of the application site	lightly-used open-air recreation area (Woodland area)	4

Further, the Grouping of Facilities is illustrated on plan in **Figure 6**. With the view of the Group of Facilities of 4 near south part of the application site, the catchment and NTHS at south would be required.

Preliminary study area and section have been developed and are shown in **Figure 5** to assess the angular elevation. A detailed natural terrain hazard study will be carried out in detailed design stage. Implementation of the mitigation measures if necessary (such as rigid barrier, flexible barrier etc.) will be conducted at construction stage. Therefore, the application site is considered geotechnically feasible from the NTH.

## 4.3 Proposed Foundation Works

For the vehicular accessway, the Proposed Access Road will be an elevated deck supported by piers and abutment structures, in part to ensure that the Proposed Access Road traverses the landscape and existing stream with the minimum impact.

For the construction of the new junction and widening of Sai Sha Road, on grade road and abutment wall will be feasible for relative small level difference.

For the large level difference, the proposed foundation type could be driven pile, pre-bored H-pile or large diameter bored piles for piers. Design of the foundation piles

and pile cap and assessment of loading capacity of the proposal foundation will be carried out in the detailed design stage.

For construction of pile caps, temporary excavation will be carried out after completion of foundation pile construction. Open-cut excavation and excavation with lateral supports using piled wall, such as sheet pile, pipe pile etc, may be adopted to facilitate the foundation construction. Detailed design including the assessment of the ground movements and design of shoring system will be carried out in the detailed design stage. For the excavation, the ELS system will be subject to the findings of the proposed GI works and a foundation type and depth. Both open cut excavation and pile wall – strutting system will be considered in detailed ELS design.

The tentative sequence of piling works for piers will be as below:

1. Piled foundation and installation of temporary lateral support walls
2. Temporary excavation and lateral support
3. Construction of pile cap
4. Piers construction

## **5. MONITORING SCHEME**

A comprehensive monitoring programme, which comprises the followings, shall be implemented on site in order to safeguard the adjacent utilities and/or structures:

1. Settlement check points around the Application Site;
2. Settlement check points on surrounding utilities;
3. Tilting checkpoints on retaining walls and nearby buildings; and
4. Piezometers/standpipes at locations around the Application Site.

The initial readings of all the above monitoring points and piezometers/standpipes shall be taken prior to the commencement of construction works on site and these devices shall be monitored regularly throughout the construction works.

## **6. CONCLUSIONS**

A geotechnical planning review has been conducted for Application Site. The physical conditions as well as the geological conditions of the Application Site have been reviewed and discussed.

All slopes affecting or being affected by the Proposed Access Road will be assessed, if necessary, upgrading works will be carried out in detailed design.

In conclusion, development of the Proposed Access Road at the Application Site located in "GB' zone is considered geotechnically feasible.

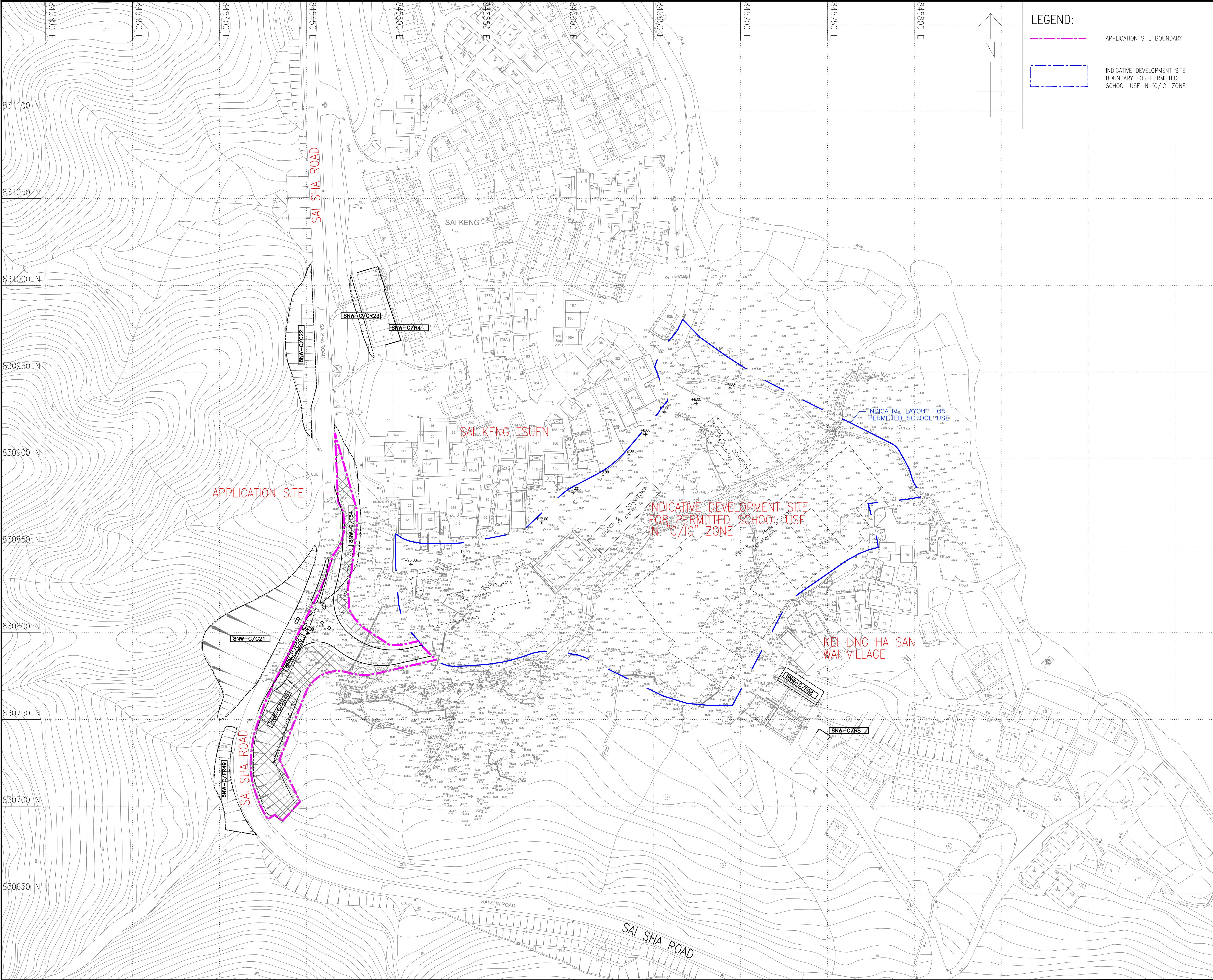
## 7. REFERENCE

- Code of Practice for the Structural Use of Foundation 2017.
- Code of Practice for the Structural Use of Steel 2011.
- Code of Practice for the Structural Use of Concrete 2013.
- Geoguide 1, Guide to Retaining wall design, 2nd Edition (GEO, 2017 Reprinted Version).
- Geoguide 2, Guide to Site Investigation, (GEO, 2017 Reprinted Version).
- Geoguide 3, Guide to Rock and Soil Descriptions, (GEO, 2017 Reprinted Version).
- Geoguide 5, Guide to Slope Maintenance, (GEO, 2003).
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- Foundation Design & Construction, GEO Publication No. 1/2006. GEO, CEDD (GEO, 2006).
- Geotechnical Engineering Office (1994), Geotechnical Manual for Slopes (Second Edition). Geotechnical Engineering Office, Hong Kong.
- Hong Kong Geological Survey, Sheet No. 8 –Solid and Superficial Geology Map, Series HGM20, scale 1:20,000, GEO (GEO, 2012)



**Figure**





LEGEND:

- APPLICATION SITE BOUNDARY
- INDICATIVE DEVELOPMENT SITE BOUNDARY FOR PERMITTED SCHOOL USE IN "G/IC" ZONE

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PROJECT

PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

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-	APR 21	GPRR FIGURE	MHYW

STATUS

PRELIMINARY

SCALE

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A3 1:2000

DIMENSION UNIT

METRES

KEY PLAN

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PROJECT NO.

CONTRACT NO.

CONTRACT NO.

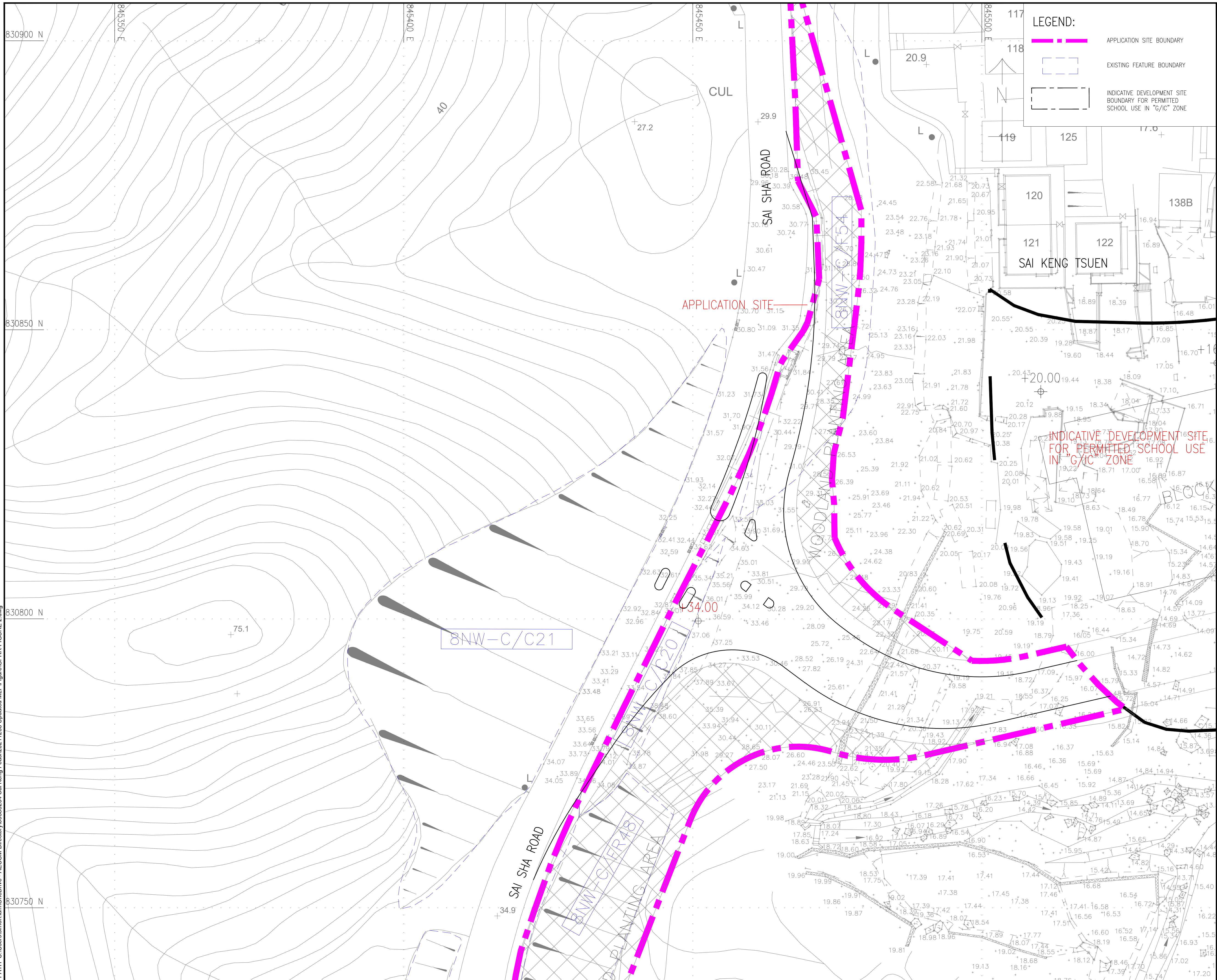
SHEET TITLE

SITE LOCATION PLAN

SHEET NUMBER

GPRR/FIGURE 1





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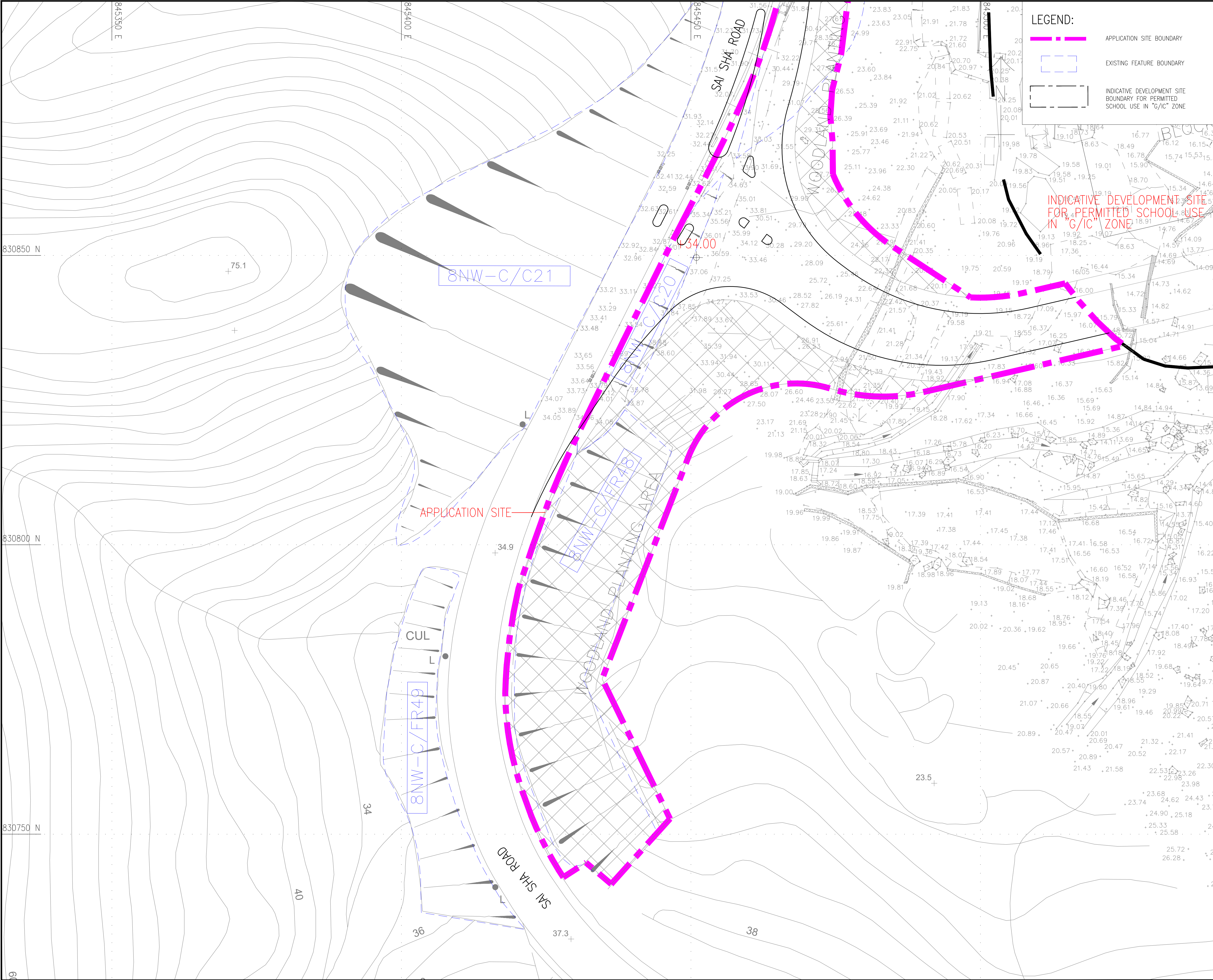
ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:



**LEGEND:**

- APPLICATION SITE BOUNDARY
- EXISTING FEATURE BOUNDARY
- INDICATIVE DEVELOPMENT SITE BOUNDARY FOR PERMITTED SCHOOL USE IN "G/IC" ZONE

INDICATIVE DEVELOPMENT SITE  
BOUNDARY FOR PERMITTED  
SCHOOL USE IN "G/IC" ZONE

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**PROJECT**  
項目

PROPOSED ACCESS ROAD IN  
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USES IN "GOVERNMENT, INSTITUTION OR  
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**STATUS**  
階段

PRELIMINARY

**SCALE**  
比例尺

A1 1:300  
A3 1:600

**DIMENSION UNIT**  
尺寸單位

METRES

**KEY PLAN**  
索引圖

**PROJECT NO.**  
項目編號

**CONTRACT NO.**  
合約編號

**SHEET TITLE**  
圖紙名稱

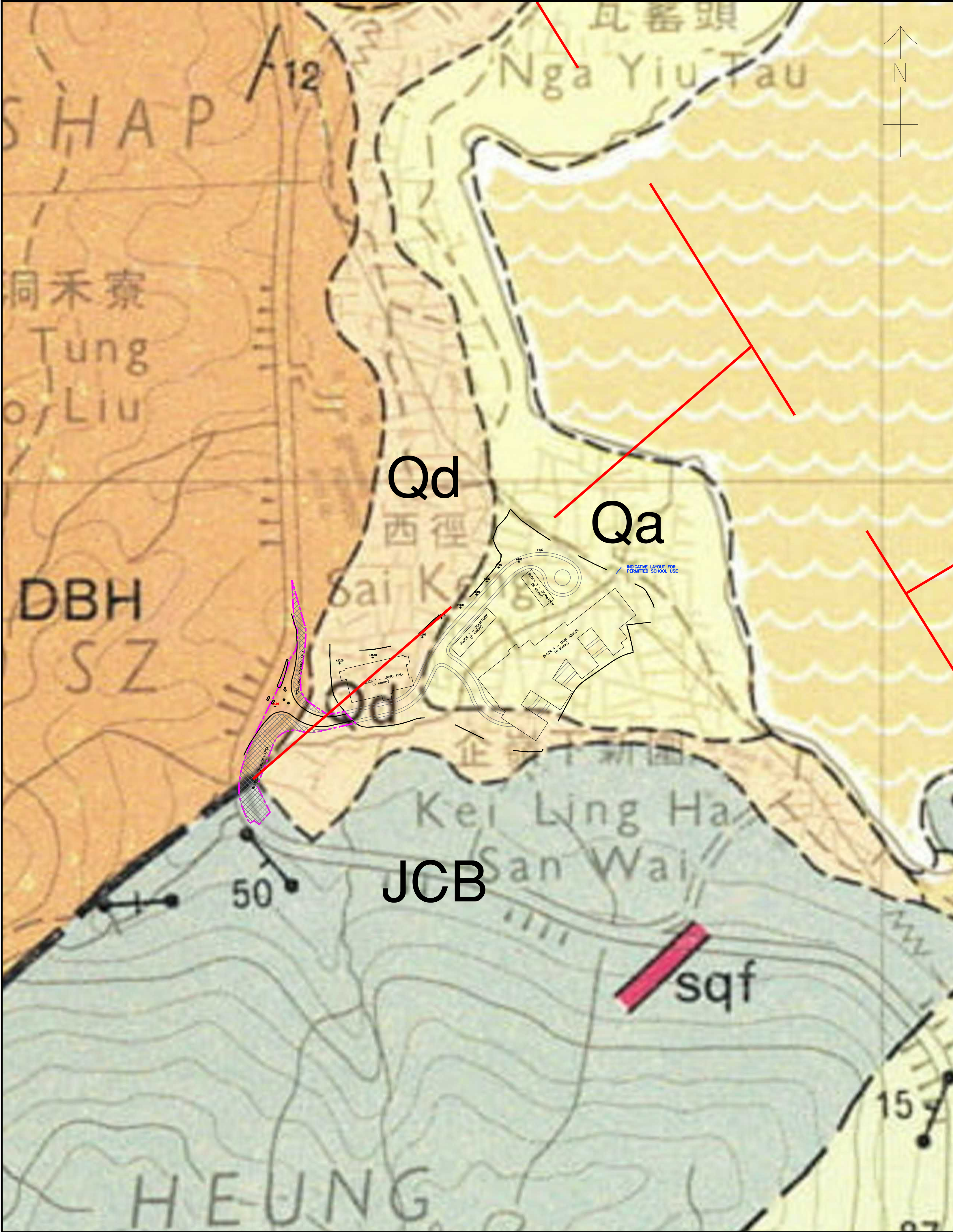
EXISTING FEATURE LAYOUT PLAN

**SHEET NUMBER**  
圖紙編號

GPRR/FIGURE 2 - 2

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NOTES:  
1. THE DRAWING IS PARTLY EXTRACTED FROM SOLID AND SUPERFICIAL GEOLOGY MAP SERIES HGM20 SHEET 8 (EDITION 1 :1989).

LEGEND:  
SUPERFICIAL DEPOSITS 表土沉積

GENETIC CLASSIFICATION		成因類型	主要物質成份		PRINCIPAL MATERIALS		
第四系 QUATERNARY	全新統 HOLOCENE	Fill	填土	填泥和廢物	Natural earth and waste		
		Beach deposits	海灘沉積	Qb	砂	Sand	
				Qbb	中礫和漂礫	Cobbles and boulders	
		更新-全新統 PLEISTOCENE AND HOLOCENE	洪口組 HANG HAU FORMATION	QHH	主要為深灰色海相泥(未分)	Undivided, mainly dark grey marine mud	
	ms			海相砂、部份粉砂質	Marine sand, part silty		
	更新統 PLEISTOCENE	香港海組 CHEK LAP KOK FORMATION	Alluvium	沖積物	Qa	分選性良好至中等的黏土/粉砂、砂和礫石	Clay/silt, sand and gravel, well-sorted to semi-sorted
			Debris flow deposits	坡積、洪積物	Qd	未分選的砂、礫至漂礫 基質為黏土/粉砂	Unsorted sand, gravel, cobbles and boulders; clay/silt matrix
			Talus (rockfall) deposits	岩屑(岩崩)堆積物	Qt	礫石、中礫和漂礫	Gravel, cobbles and boulders
			Mixed debris flow and talus deposits	坡積、崩積物	Qdt	Qd和Qt的混合物	Mixed Qd and Qt
	更新統 PLEISTOCENE	香港海組 CHEK LAP KOK FORMATION	QCK	紅色、黃色和灰色的黏土、粉砂、砂和礫石(未分)	Undivided; red, yellow and grey clay, silt, sand and gravel		

SOLID GEOLOGY 基岩地質

SEDIMENTARY AND VOLCANIC ROCKS		沉積岩和火山岩						
中生界 MESOZOIC	上侏羅統至下白堊統 UPPER JURASSIC TO LOWER CRETACEOUS	清水灣群 REPULSE BAY VOLCANIC GROUP	br	外生角礫岩	Epiclastic breccia			
			JHI	主要為細火山灰凝灰岩(未分)	Undivided, mainly fine ash tuff			
			JCB	自角礫岩化Autobrecciated礫泥灘段Lan Nai Wan Member太墩段Tai Tun Member	主要為粗面英安質和流紋質熔岩(未分)	Undivided, mainly trachydacite and rhyolite lava		
			Jln	沉凝灰岩和凝灰岩	Tuffite and tuff			
			Jtt	條紋斑雜岩	Eutaxite			
			cat	粗火山灰凝灰岩	Coarse ash tuff			
			t	沉凝灰岩	Tuffite			
			tb	凝灰角礫岩	Tuff-breccia			
			JMK	主要為凝灰質泥岩、粉砂岩和角礫岩(未分)	Undivided, mainly tuffaceous mudstone, siltstone and breccia			
			r	流紋質熔岩	Rhyolite lava			
下侏羅統 LOWER JURASSIC	下侏羅統 LOWER JURASSIC	Tolo Channel Formation	fa	細火山灰凝灰岩	Fine ash tuff			
			JSS	主要為條紋斑雜岩(未分)	Undivided, mainly eutaxite			
			tt	沉凝灰岩	Tuffite			
			JTM	主要為粗火山灰晶屑凝灰岩(未分)	Undivided, mainly coarse ash crystal tuff			
			JAC	主要為細火山灰玻屑凝灰岩(未分)	Undivided, mainly fine ash vitric tuff			
			JTC	泥岩和粉砂岩	Mudstone and siltstone			
			古生界 PALAEOZOIC	二疊系 PERMIAN	Tolo Harbour Formation	PTH	泥岩、粉砂岩和砂岩	Mudstone, siltstone and sandstone
						DBH	砂岩和粉砂岩	Sandstone and siltstone

Structural Geology

--- Fault

--- Flow Fabric

--- Fault (Inferred from 1:100,000 Geological Map of Hong Kong, 2006)

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PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

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-	APR 21	GPRR FIGURE	LKC

STATUS  
階段

PRELIMINARY

SCALE  
比例尺

A1 1:2000  
A3 1:4000

DIMENSION UNIT  
尺寸單位

METRES

KEY PLAN  
索引圖

PROJECT NO.  
項目編號

CONTRACT NO.  
合約編號

SHEET TITLE  
圖紙名稱

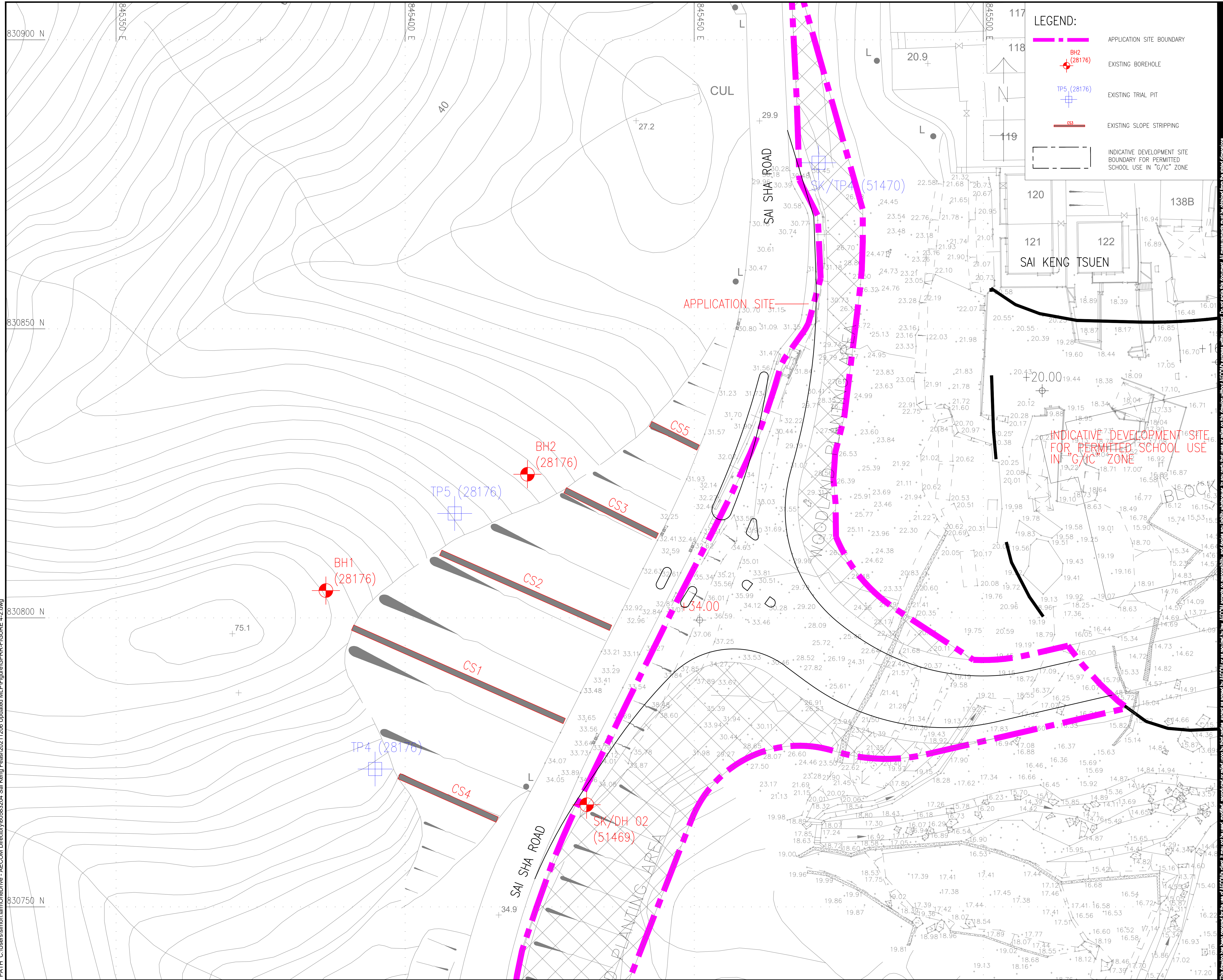
GEOLOGICAL MAP

SHEET NUMBER  
圖紙編號

GPRR/FIGURE 3

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## PROJECT 項目

**CLIENT**  
業主

**CONSULTANT**  
工程顧問公司

**SUB-CONSULTANTS**  
分判工程顧問公司

**ISSUE/REVISION**  
作訂

-	APR 21	GPRR FIGURE	LKC
<b>I/R 修訂</b>	<b>DATE 日期</b>	<b>DESCRIPTION 內容摘要</b>	<b>CHK. 被核</b>

## STATUS

PRELIMINARY

**SCALE**  
比例

A1 1 : 300  
A3 1 : 600

**DIMENSION UNIT**  
尺寸單位

METRES

## KEY PLAN

---

**PROJECT NO.**  
項目編號

**CONTRACT NO.**  
合約編號

**SHEET TITLE**  
圖紙名稱

**SHEET NUMBER**  
圖紙編號

GPRR/FIGURE 4 - 1

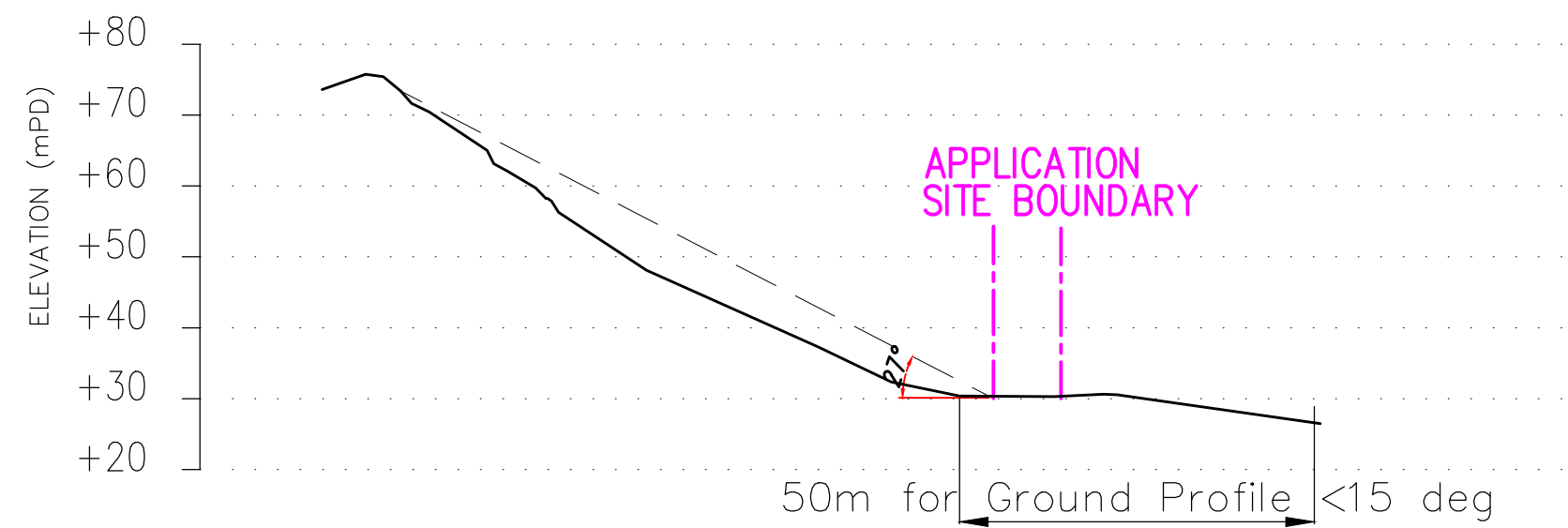
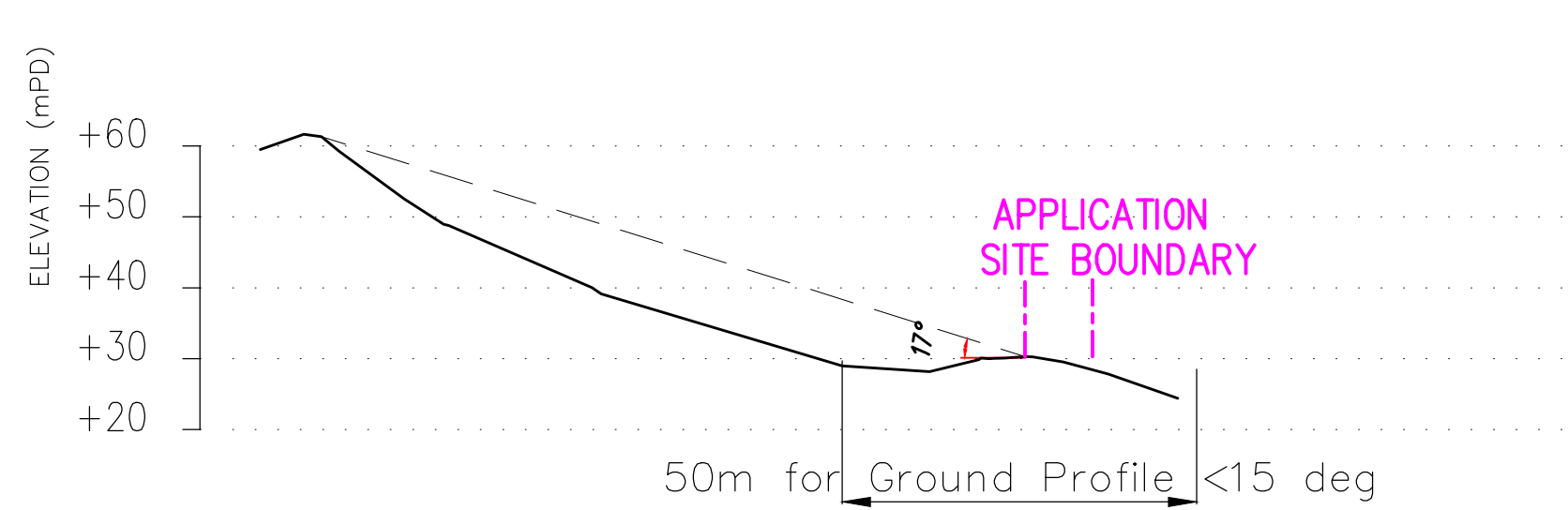
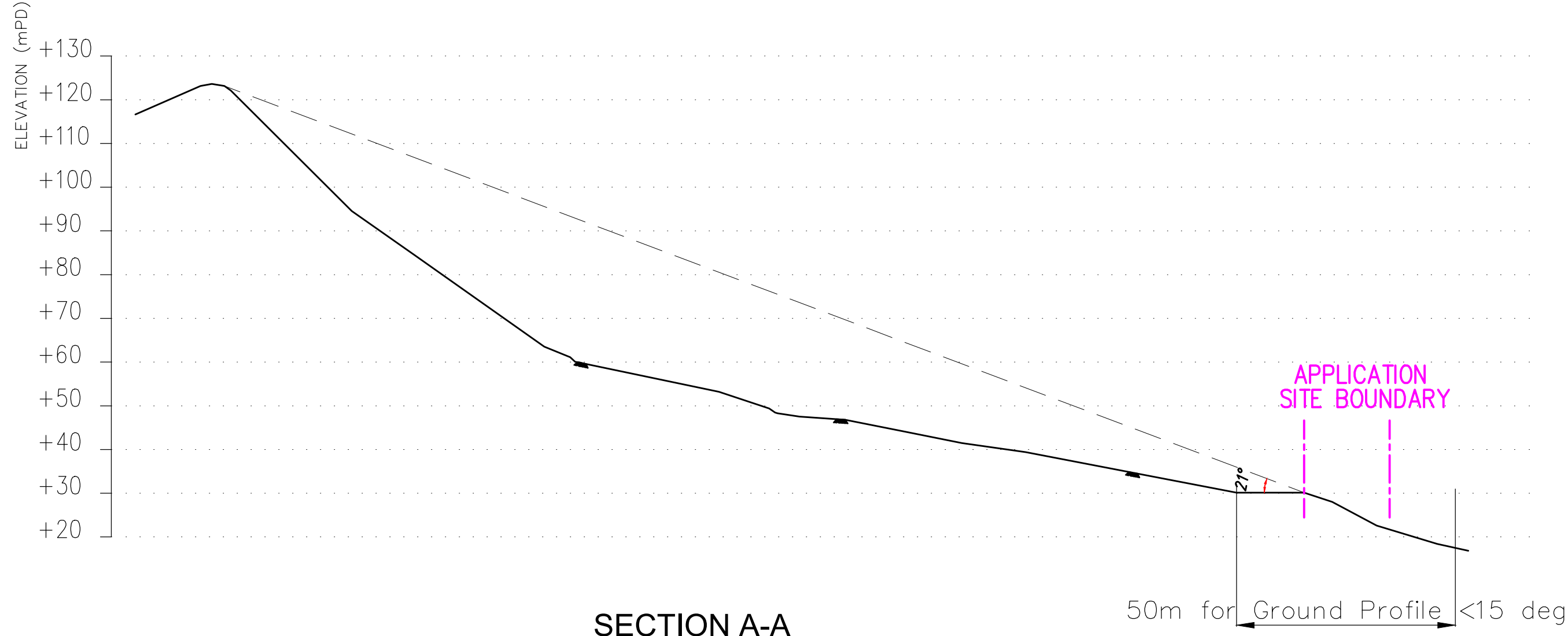
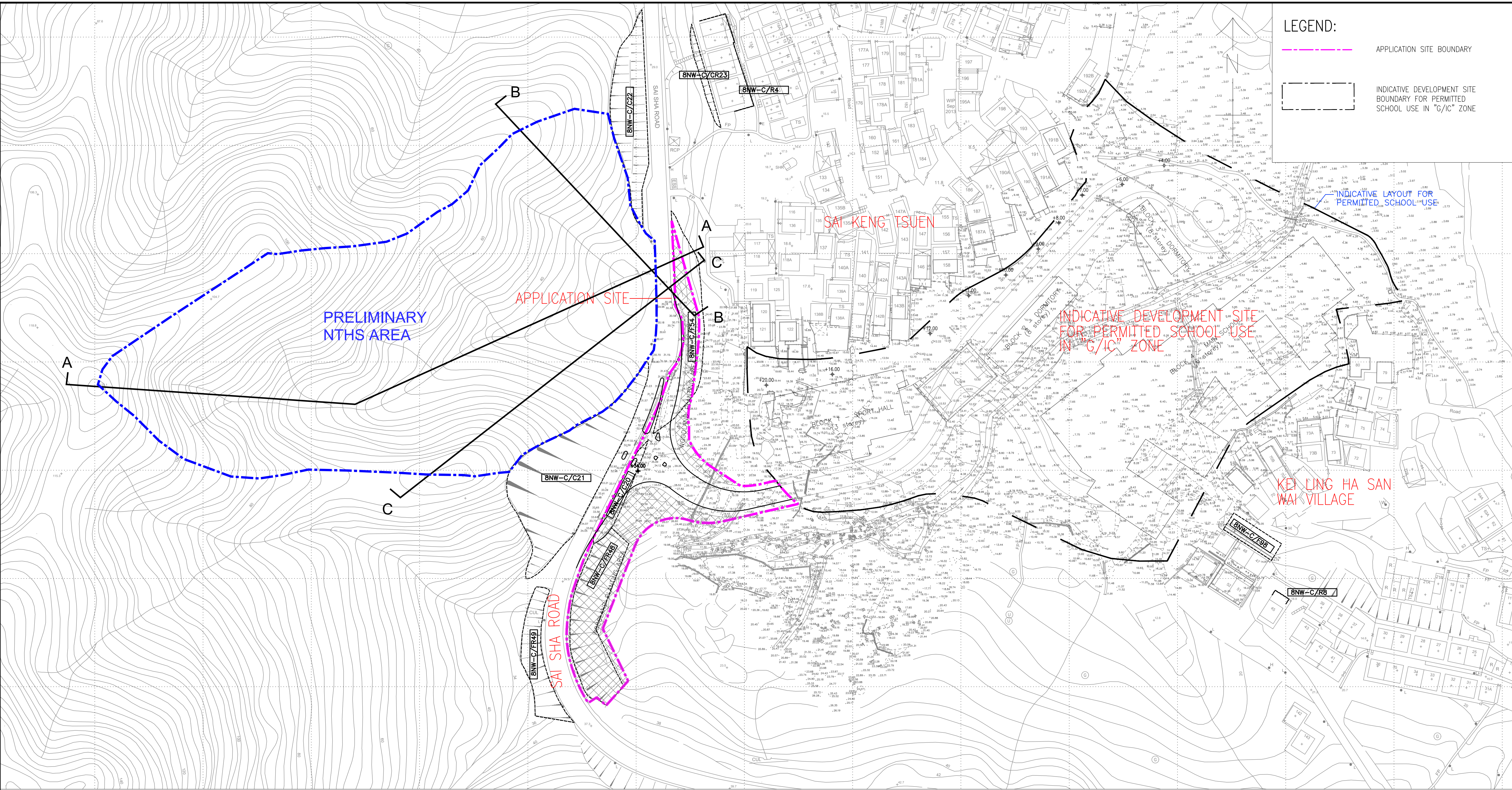




GPRR/FIGURE 4 - 2



ISO A1 594mm x 841mm  
Approved:  
Checked:  
Designer:  
Project Management Initials:  
Preliminary  
07/12/2021  
PATH: C:\Users\simon.lam\OneDrive - AECOM\Director\60593204\_Sai Keng Feai\20211206 Updated MLP\Figure\GPRR-FIGURE 5.dwg



LEGEND:  
APPLICATION SITE BOUNDARY  
INDICATIVE DEVELOPMENT SITE BOUNDARY FOR PERMITTED SCHOOL USE IN "G/IC" ZONE

INDICATIVE LAYOUT FOR PERMITTED SCHOOL USE

INDICATIVE DEVELOPMENT SITE FOR PERMITTED SCHOOL USE IN "G/IC" ZONE

AECOM

PROJECT

PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

CLIENT

CONSULTANT

AECOM Asia Company Ltd.  
www.aecom.com

SUB-CONSULTANTS

ISSUE/REVISION

I/R	DATE	DESCRIPTION	CHK.
-	JUN 21	GPRR FIGURE	MHYW

STATUS

PRELIMINARY

SCALE

A1 1:1000  
A3 1:2000

DIMENSION UNIT

METRES

KEY PLAN

PROJECT NO.

CONTRACT NO.

SHEET TITLE

PRELIMINARY NTHS AREA

SHEET NUMBER

GPRR/FIGURE 5

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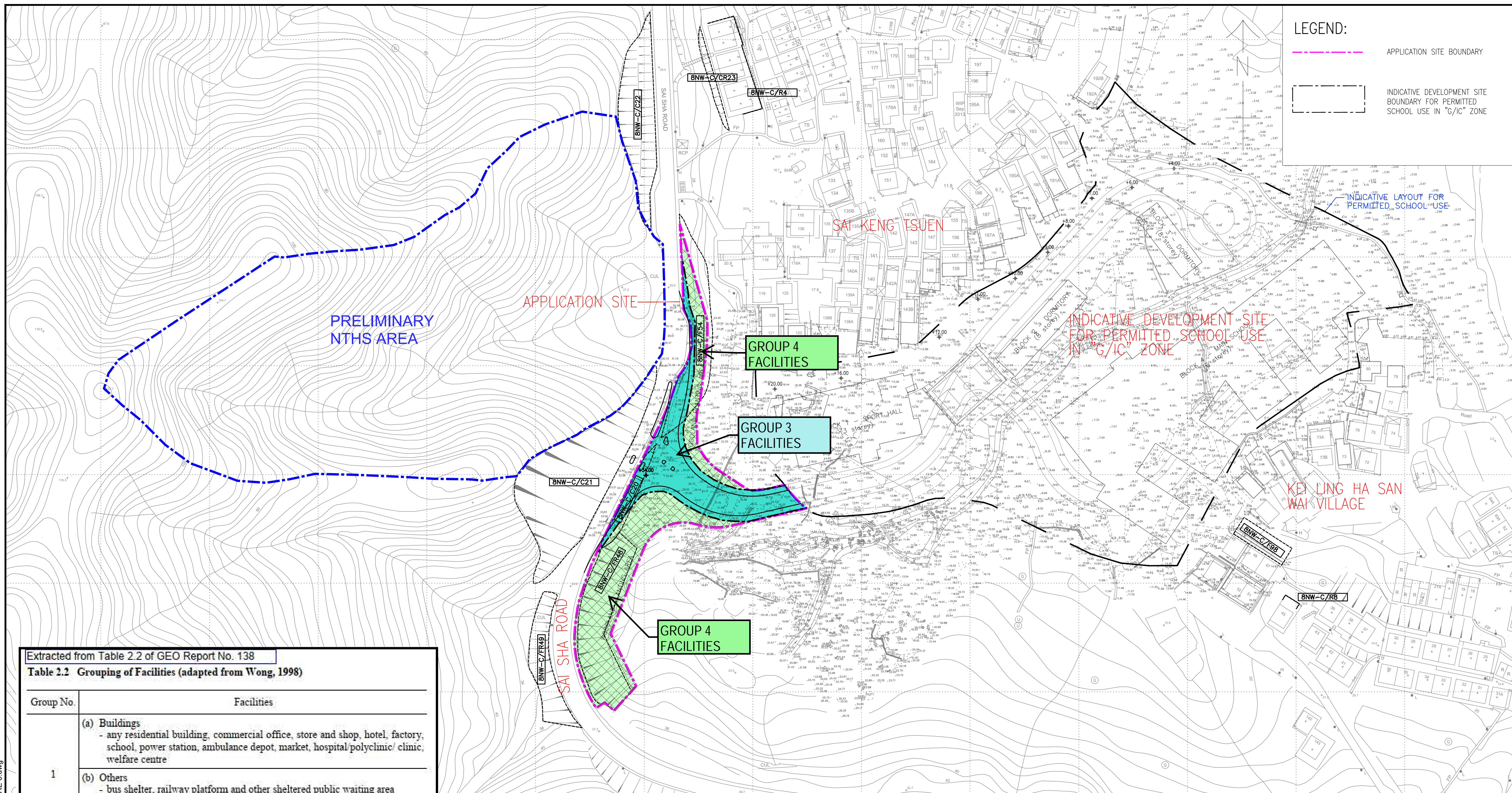
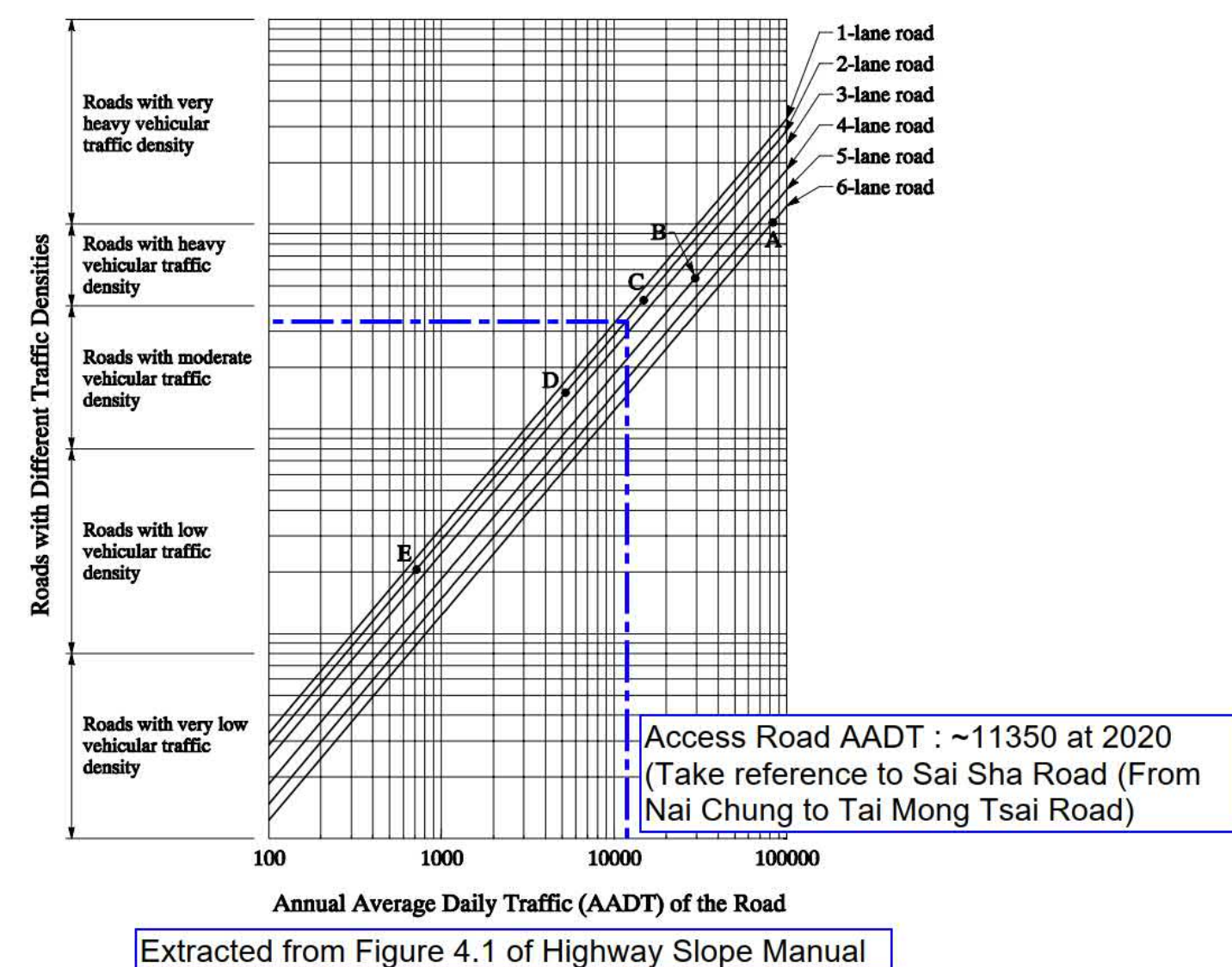


Table 2.2 Grouping of Facilities (adapted from Wong, 1998)

Group No.	Facilities
1	<p>(a) Buildings</p> <ul style="list-style-type: none"> <li>- any residential building, commercial office, store and shop, hotel, factory, school, power station, ambulance depot, market, hospital/polyclinic/ clinic, welfare centre</li> </ul> <p>(b) Others</p> <ul style="list-style-type: none"> <li>- bus shelter, railway platform and other sheltered public waiting area</li> <li>- cottage, licensed and squatter area</li> <li>- dangerous goods storage site (e.g. petrol station)</li> <li>- road with very heavy vehicular or pedestrian traffic density</li> </ul>
2	<p>(a) Buildings</p> <ul style="list-style-type: none"> <li>- built-up area (e.g. indoor car park, building within barracks, abattoir, incinerator, indoor games' sport hall, sewage treatment plant, refuse transfer station, church, temple, monastery, civic centre, manned substation)</li> </ul> <p>(b) Others</p> <ul style="list-style-type: none"> <li>- road with heavy vehicular or pedestrian traffic density</li> <li>- major infrastructure facility (e.g. railway, tramway, flyover, subway, tunnel portal, service reservoir)</li> </ul>
3	<ul style="list-style-type: none"> <li>- densely-used open space and public waiting area (e.g. densely-used playground, open car park, densely-used sitting out area, horticultural garden)</li> <li>- quarry</li> <li>- road with moderate vehicular or pedestrian traffic density</li> </ul>
4	<ul style="list-style-type: none"> <li>- lightly-used open-air recreation area (e.g. district open space, lightly-used playground, cemetery, columbarium)</li> <li>- non-dangerous goods storage site</li> <li>- road with low vehicular or pedestrian traffic density</li> </ul>
5	<ul style="list-style-type: none"> <li>- remote area (e.g. country park, undeveloped green belt, abandoned quarry)</li> <li>- road with very low vehicular or pedestrian traffic density</li> </ul>

Note:

- (1) For roads, the Facility Group should be based on Figure 4.1 of Highway Slope Manual (GEO, 2000) taking into account the actual Annual Average Daily Traffic and the number of road lanes<sup>5</sup>.
- (2) For footpaths alongside roads, it may be assumed that footpaths are within the same group as the adjoining roads, except for Expressways (EX), Urban Trunk Roads (UT) and Rural Trunk Roads (RT). Footpaths alongside EX, UT and RT roads may be taken, by default, as a Group 5 facility, unless dictated otherwise by site-specific conditions.

**AECOM**

**PROJECT**  
項目

PROPOSED ACCESS ROAD IN  
"GREEN BELT" ZONE FOR PERMITTED  
USES IN "GOVERNMENT, INSTITUTION OR  
COMMUNITY" ZONE  
AT VARIOUS LOTS AND ADJOINING  
GOVERNMENT LAND IN D.D. 209,  
SAI KENG, SHAP SZ HEUNG,  
THE NEW TERRITORIES

**CLIENT**  
業主

**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

-	OCT 21	GPRR FIGURE	MHYW
<b>I/R</b> 修訂	<b>DATE</b> 日期	<b>DESCRIPTION</b> 內容摘要	<b>CHK</b> 審核

**STATUS**  
階段

PRELIMINARY

**SCALE**  
比例

A1 1 : 1000  
A3 1 : 2000

**DIMENSION UNIT**  
尺寸單位

METRES

## KEY PLAN

PROJECT NO.  
項目編號

**CONTRACT NO.**  
合約編號

**SHEET TITLE**  
圖紙名稱

## PLAN FOR FACILITIES GROUPING

**SHEET NUMBER**  
圖紙編號

GPRR/FIGURE 6

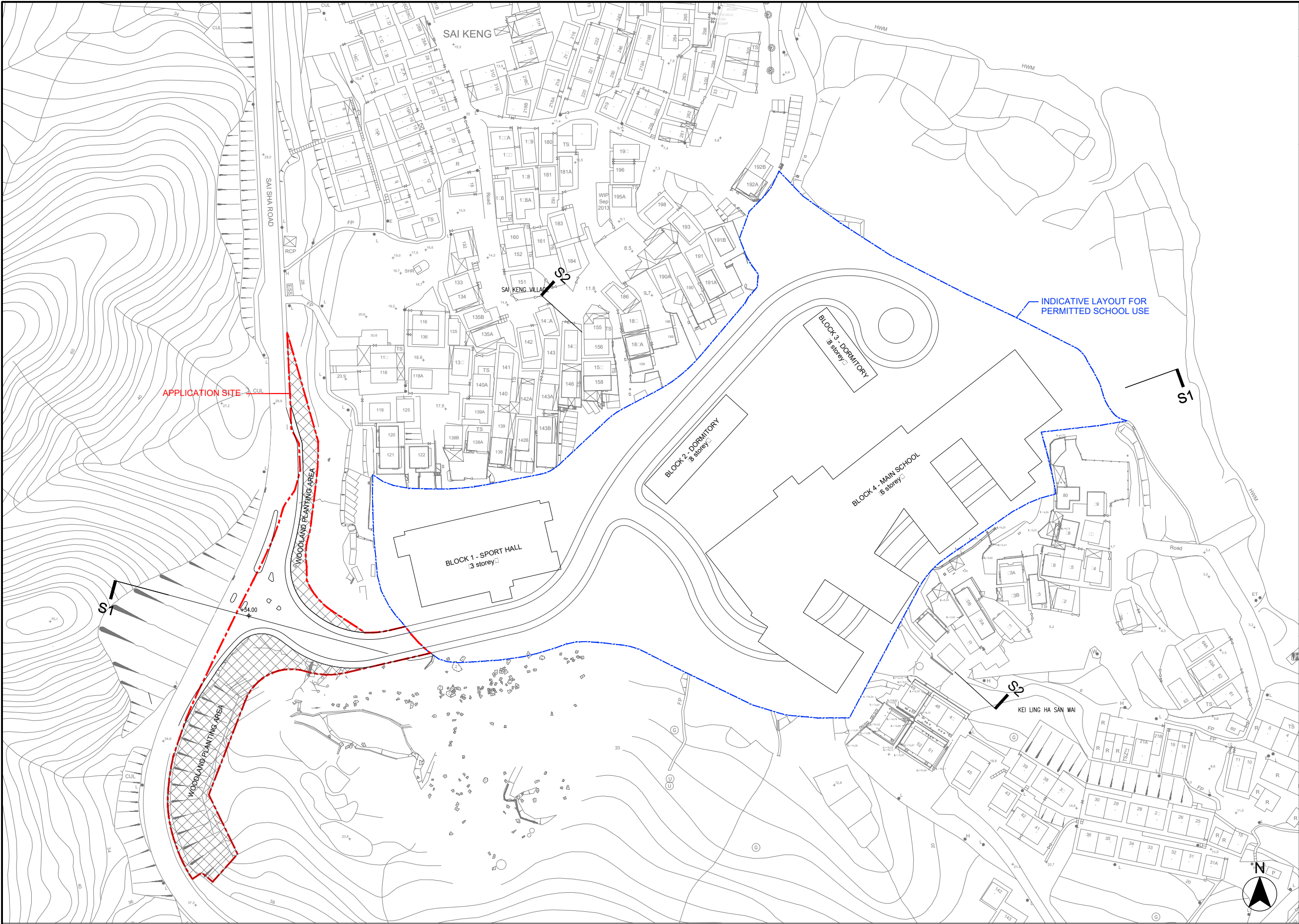


# Appendix



# **Appendix A**

## **Preliminary Road Layout Plan**

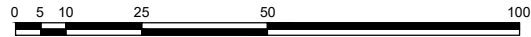


LEGEND

--- APPLICATION SITE BOUNDARY --- DEVELOPMENT SITE BOUNDARY

Remark:

- The Proposed Access Road in the Application Site is to facilitate the permitted school use in the adjoining "G/IC" zone. The permitted school use is not the subject matter of this S16 planning application.
- During the construction stage, the woodland planting area will be used as temporary works area for the Proposed Access Road.



B.D. REF. :

F.S.D. REF. :

REVISIONS :

NO.	DESCRIPTION	DATE

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ARCHIPLUS INTERNATIONAL (HK) LIMITED

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PROJECT :  
PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

DRAWING TITLE :  
INDICATIVE  
MASTER LAYOUT PLAN

DATE : SEP 2022 PAPER SIZE : A3

SCALE : 1:1500 DRAWN : AIL

PROJECT NO. : 952

DWG. NO. : S16-A-01

## **Appendix B**

### **SIS and SIMAR Reports**

## Slope Maintenance Responsibility Report

(8NW-C/F54)



**ESTATE MANAGEMENT SECTION  
LANDS DEPARTMENT**

### List of Slope Maintenance Responsibility Area(s)

1	8NW-C/F54		Sub-Division	Not Applicable
	Location	ADJOINING SAI SHA RD NEAR SPOT LEVEL 29.9		
	Responsible Lot/Party	Highways Department	Maintenance Agent	Highways Department
	Remarks	For enquiries about the maintenance of this slope / sub-division of the slope, please contact the Maintenance Agent direct.		

- End of Report -

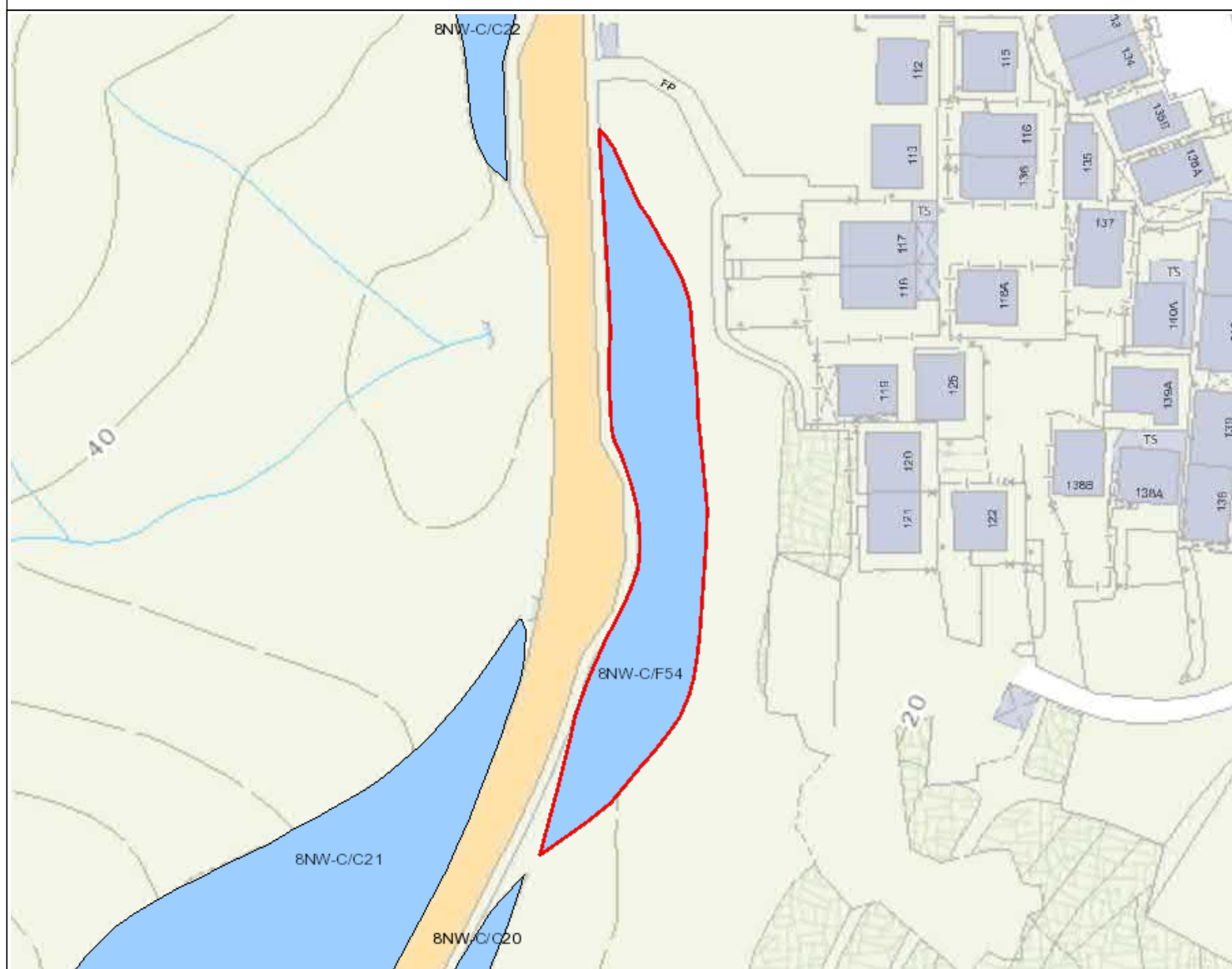
#### Notes:

- (i) The location plan in Annex is for identification purposes of slope(s) only.
- (ii) The slope(s) as listed in the Slope Maintenance Responsibility Report may not be shown on the location plan in Annex.

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Search Criteria: 8NW-C/F54

## Location Plan



## Legend

- Slope Area(s)
- - - - - Search Location
- Slope(s) Maintained by Government
- Slope(s) Maintained by Private Party/Parties
- Slope(s) Maintained by Government and Private Party/Parties



**ESTATE MANAGEMENT SECTION**  
**LANDS DEPARTMENT**

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Printed on: 07/11/2019

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Search Criteria: 8NW-C/F54





## BASIC INFORMATION

Location: SAI SHA ROAD, SK

Registration Date: 17-02-1998

Ranking Score (NPRS): 0 (LPMit)

Date of Construction/  
Modification: Pre-1977

Data Source: EI(HyD)

Approximate Coordinates: Easting : 845477    Northing : 830862

## CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Road/footpath with moderate traffic density

Distance of Facility from Crest (m): 0

Facility at Toe: Undeveloped green belt

Distance of Facility from Toe (m): 0

Consequence-to-life Category: 2

Remarks: N/A

## SLOPE PART

(1)    Max. Height (m): 8    Length (m): 107    Average Angle (deg): 40

## WALL PART

N/A



## MAINTENANCE RESPONSIBILITY

(1) Sub Div.: 0    Government Feature    Party: HyD    Agent: HyD    Land Cat.: 5b(iii)    Reason Code: 56    MR Endorsement Date: 05-05-1998

## DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 04-10-2010  
Data Source: EI(HyD)  
Slope Part Drainage: (1) Position: Stepped    Size(mm): 300  
(2) Position: Toe    Size(mm): 225

Wall Part Drainage: N/A

## SLOPE PART

Slope Part (1)  
Surface Protection (%): Bare: 0    Vegetated: 100    Chunam: 0    Shotcrete: 0    Other Cover: 0  
Material Description: Material type: Soil    Geology: N/A  
Berm: No. of Berms: N/A    Min. Berm Width (m): N/A  
Weepholes: Size (mm): N/A    Spacing (m): N/A



## WALL PART

N/A

## SERVICES

- |     |                             |               |                    |                                   |
|-----|-----------------------------|---------------|--------------------|-----------------------------------|
| (1) | Utilities Type: Cable       | Size(mm): 0   | Location: Crest    | Remark: Size cannot be determined |
| (2) | Utilities Type: Electricity | Size(mm): 0   | Location: On slope | Remark: Size cannot be determined |
| (3) | Utilities Type: Electricity | Size(mm): 0   | Location: Crest    | Remark: Size cannot be determined |
| (4) | Utilities Type: Electricity | Size(mm): 0   | Location: Toe      | Remark: Size cannot be determined |
| (5) | Utilities Type: Gas         | Size(mm): 0   | Location: Toe      | Remark: Size cannot be determined |
| (6) | Utilities Type: Gas         | Size(mm): 0   | Location: On slope | Remark: Size cannot be determined |
| (7) | Utilities Type: Telecom     | Size(mm): 0   | Location: Toe      | Remark: Size cannot be determined |
| (8) | Utilities Type: Water Main  | Size(mm): 150 | Location: Crest    | Remark: N/A                       |



## CHECKING STATUS INFORMATION

N/A

## BACKGROUND INFORMATION

GIU Cell Ref.: 8NW21A5  
Map Sheet Reference (1:1000): 8NW-21A  
Aerial Photos: 7181-2 (1973),

Nearest Rainguage Station (Station Number): Ma On Shan Treatment Works(N47)

Data Collected On: 04-10-2010  
Date of Construction, Subsequent Modification and Demolition: Modification: Constructed Before: 1973 After: N/A

Related Reports/Files or Documents: File/Report: LWC Ref. No.: GC4/1/2-5 (6) f3(A), GC4/1/2-3 f19 PtVI  
File/Report: LWC Ref. No.: GC4/1/2-5 (6) f3(A), GC4/1/2-3 f19 PtVI

Remarks: N/A

Follow Up Actions: N/A



DH-Order (To Be Confirmed  
with Buildings Department):      None

Advisory Letter (To Be Confirmed  
with Buildings Department):      None

LPMIS:      None

## **ENHANCED MAINTENANCE INFORMATION**

From Maintenance Department: (Last Updated Date: 30/06/2019)

Upgraded by:

Prescriptive Design Using GEO Report No. 56: N/A

Non-prescriptive Design Including Conventional Design: N/A

Improved by:

Type 1 / Type 2 Prescriptive Measures: Yes

Type 3 Prescriptive Measures (not up to upgrading standard): N/A

Actual Completion Date: 23-09-2011





## STAGE 1 STUDY REPORT

Inspected On:

Weather:

District: ME

Section No: 1-1

Height(m):

Type of Toe Facility: Undeveloped green belt

Distance from Toe(m): 0

Type of Crest Facility: Road/footpath with moderate traffic density

Distance from Crest(m): 0

Consequence Category:

Engineering Judgement:

Section No: 2-2

Type of Toe Facility:

Distance from Toe(m):

Type of Crest Facility:

Distance from Crest(m):

Consequence Category:

Engineering Judgement:

Sign of Seepage:

Criterion A satisfied:

Sign of Distress:

Criterion D satisfied:

Non-routine maintenance required:

Note:

Masonry wall/Masonry facing:

Note:

Consequence category (for critical section):

Observations: N/A

Emergency Action Required:

Action By: N/A

### ACTION TO INITIATE PREVENTIVE WORKS

Criterion A/Criterion D: N/A

Action By: N/A

Further Study:

Action By: N/A

### OTHER EXTERNAL ACTION

Check / repair Services:

Action By: N/A

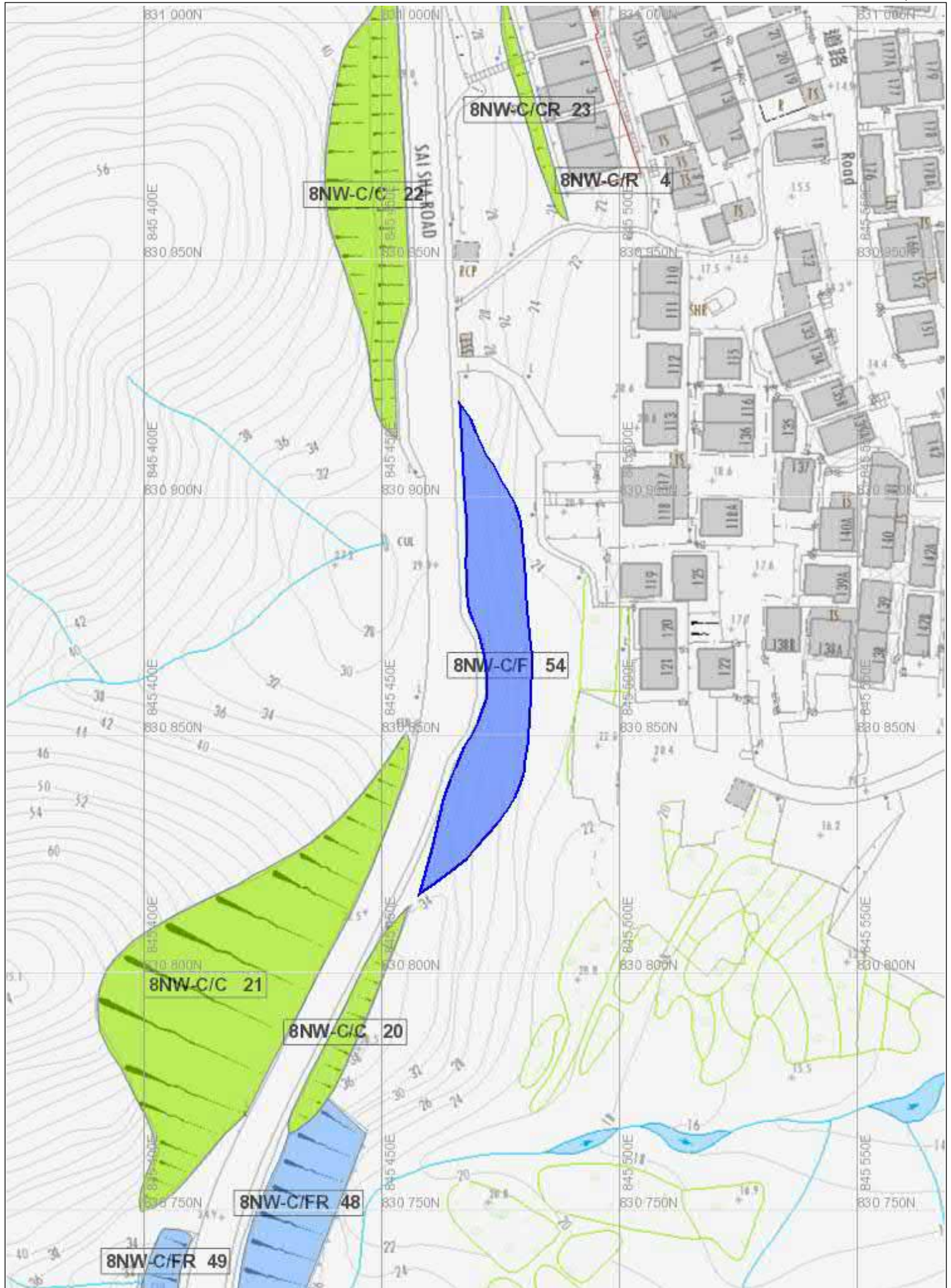
Non-routine Maintenance:

Action By: N/A

**PHOTO**







## Slope Maintenance Responsibility Report

(8NW-C/FR48)



**ESTATE MANAGEMENT SECTION  
LANDS DEPARTMENT**

### List of Slope Maintenance Responsibility Area(s)

1	8NW-C/FR48		Sub-Division	Not Applicable
	Location	ADJOINING SAI SHA RD NEAR SPOT LEVEL 37.3		
	Responsible Lot/Party	Highways Department	Maintenance Agent	Highways Department
	Remarks	For enquiries about the maintenance of this slope / sub-division of the slope, please contact the Maintenance Agent direct.		

- End of Report -

#### Notes:

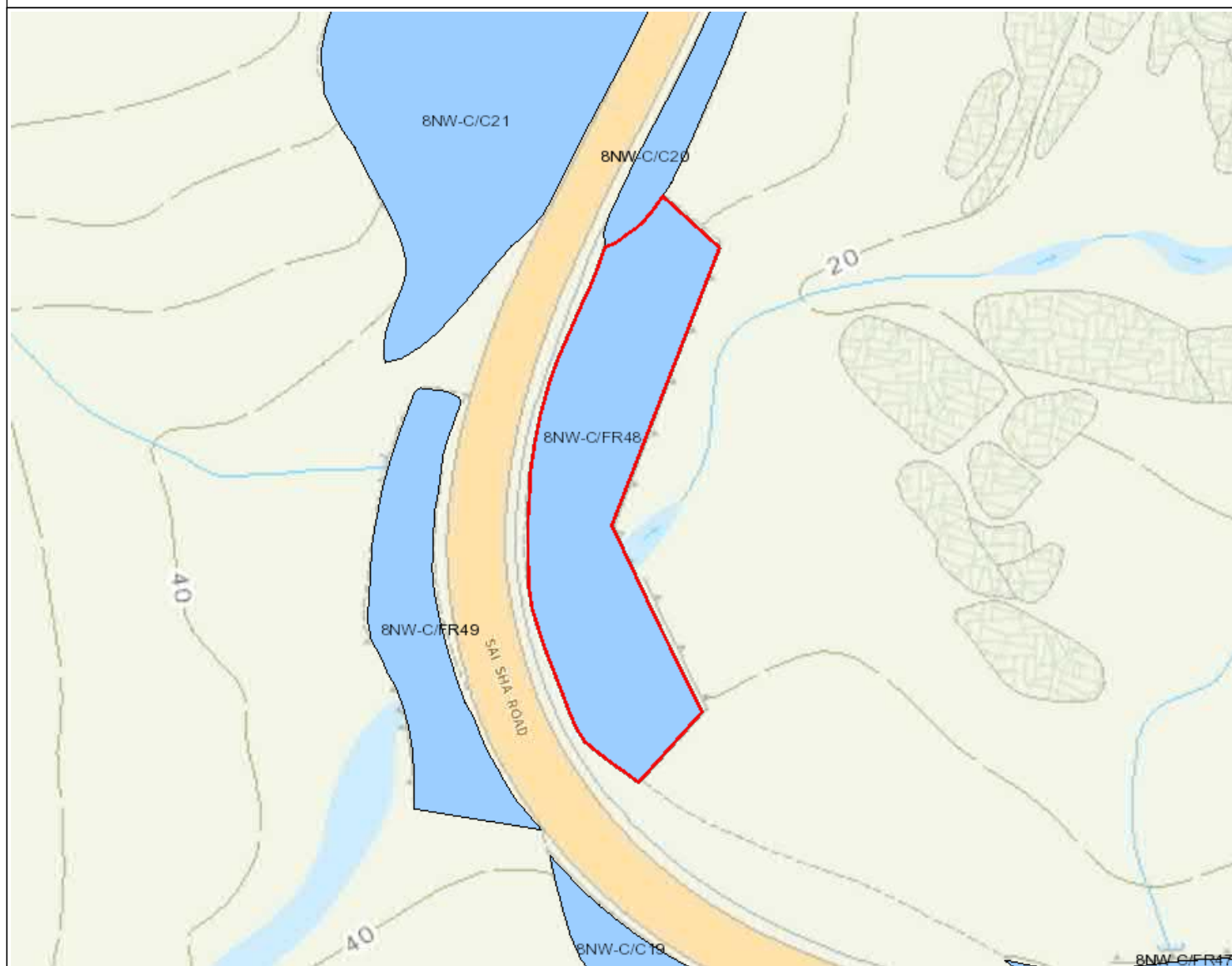
- (i) The location plan in Annex is for identification purposes of slope(s) only.
- (ii) The slope(s) as listed in the Slope Maintenance Responsibility Report may not be shown on the location plan in Annex.

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Search Criteria: 8NW-C/FR48



## Location Plan



## Legend

- Slope Area(s)
- - - - - Search Location
- Slope(s) Maintained by Government
- Slope(s) Maintained by Private Party/Parties
- Slope(s) Maintained by Government and Private Party/Parties



**ESTATE MANAGEMENT SECTION**  
**LANDS DEPARTMENT**

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Printed on: 07/11/2019

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Search Criteria: 8NW-C/FR48



## BASIC INFORMATION

Location: Sai Sha Road, SK

Registration Date: 17-02-1998

Ranking Score (NPRS): 3 (EI)

Date of Construction/  
Modification: Pre-1977

Data Source: EI(HyD)

Approximate Coordinates: Easting : 845428    Northing : 830733

## CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Road/footpath with moderate traffic density

Distance of Facility from Crest (m): 0

Facility at Toe: Remote area or abandoned facilities

Distance of Facility from Toe (m): 0

Consequence-to-life Category: 2

Remarks: N/A

## SLOPE PART

(1)    Max. Height (m): 7    Length (m): 72    Average Angle (deg): 35

## WALL PART

(1)    Max. Height (m): 2    Length (m): 57    Face Angle (deg): 85

(1)    Max. Height (m): 3.3    Length (m): 57    Face Angle (deg): 85



## MAINTENANCE RESPONSIBILITY

(1) Sub Div.: 0    Government Feature    Party: HyD    Agent: HyD    Land Cat.: 5b(iii)    Reason Code: 56    MR Endorsement Date: 04-08-1998

## DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 22-01-2009  
Data Source: EI(HyD)  
Slope Part Drainage: (1) Position: On slope    Size(mm): 300  
(2) Position: Toe    Size(mm): 300

Wall Part Drainage: (1) Position: Crest    Size(mm): 300

## SLOPE PART

Slope Part (1)  
Surface Protection (%): Bare: 0    Vegetated: 100    Chunam: 0    Shotcrete: 0    Other Cover: 0  
Material Description: Material type: Soil    Geology: N/A  
Berm: No. of Berms: N/A    Min. Berm Width (m): N/A  
Weepholes: Size (mm): N/A    Spacing (m): N/A



## WALL PART

### Wall Part (1)

Type of Wall: Wall Material: N/A Wall Location: N/A  
Berm: No. of Berms: N/A Min. Berm Width (m): N/A  
Weepholes: Size (mm): N/A Spacing (m): N/A

### Wall Part (2)

Type of Wall: Wall Material: Concrete Wall Location: N/A  
Berm: No. of Berms: N/A Min. Berm Width (m): N/A  
Weepholes: Size (mm): 80 Spacing (m): 1.5

## SERVICES

(1) Utilities Type: Water Main Size(mm): 150 Location: On crest Remark: N/A





## CHECKING STATUS INFORMATION

N/A

## BACKGROUND INFORMATION

GIU Cell Ref.: 8NW21A8  
Map Sheet Reference (1:1000): 8NW-21A  
Aerial Photos: N/A

Nearest Rainguage Station  
(Station Number): Ma On Shan Treatment Works(N47)

Data Collected On: 22-01-2009  
Date of Construction, Subsequent  
Modification and Demolition: N/A

Related Reports/Files or Documents: N/A

Remarks: N/A

Follow Up Actions: N/A



DH-Order (To Be Confirmed  
with Buildings Department):      None

Advisory Letter (To Be Confirmed  
with Buildings Department):      None

LPMIS:      None

## **ENHANCED MAINTENANCE INFORMATION**

From Maintenance Department: (Last Updated Date: 30/06/2019)



## STAGE 1 STUDY REPORT

Inspected On:

Weather:

District: ME

Section No: 1-1

Height(m):

Type of Toe Facility: Remote area or abandoned facilities

Distance from Toe(m): 0

Type of Crest Facility: Road/footpath with moderate traffic density

Distance from Crest(m): 0

Consequence Category:

Engineering Judgement:

Section No: 2-2

Type of Toe Facility:

Distance from Toe(m):

Type of Crest Facility:

Distance from Crest(m):

Consequence Category:

Engineering Judgement:



Sign of Seepage:

Criterion A satisfied:

Sign of Distress:

Criterion D satisfied:

Non-routine maintenance required:

Note:

Masonry wall/Masonry facing:

Note:

Consequence category (for critical section):

Observations: N/A

Emergency Action Required:

Action By: N/A

## ACTION TO INITIATE PREVENTIVE WORKS

Criterion A/Criterion D: N/A

Action By: N/A

Further Study:

Action By: N/A

## OTHER EXTERNAL ACTION

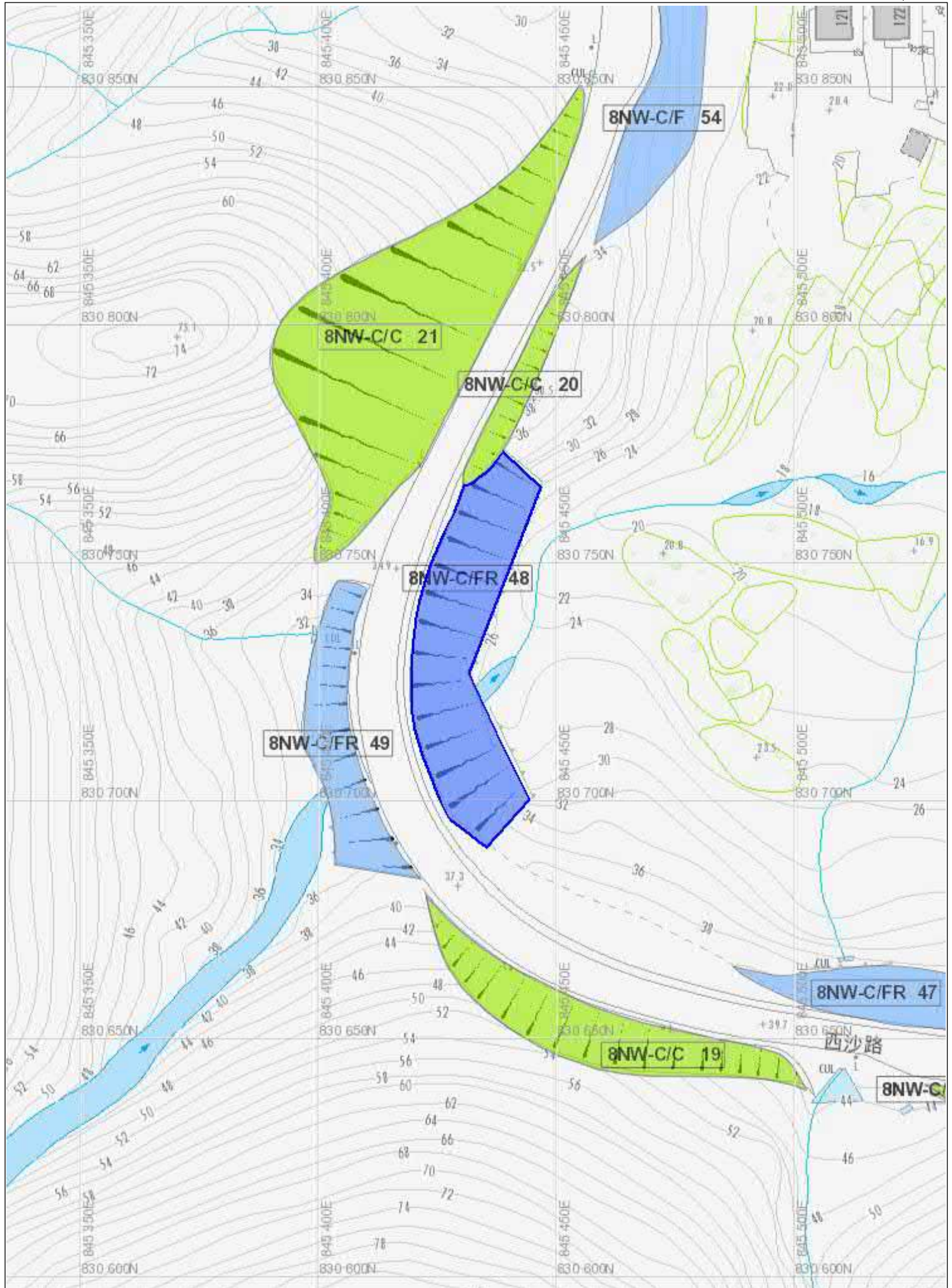
Check / repair Services:

Action By: N/A

Non-routine Maintenance:

Action By: N/A





## Slope Maintenance Responsibility Report

(8NW-C/C20)



**ESTATE MANAGEMENT SECTION  
LANDS DEPARTMENT**

### List of Slope Maintenance Responsibility Area(s)

1	8NW-C/C20		Sub-Division	Not Applicable
	Location	ADJOINING SAI SHA RD NEAR SPOT LEVEL 32.5		
	Responsible Lot/Party	Highways Department	Maintenance Agent	Highways Department
	Remarks	For enquiries about the maintenance of this slope / sub-division of the slope, please contact the Maintenance Agent direct.		

- End of Report -

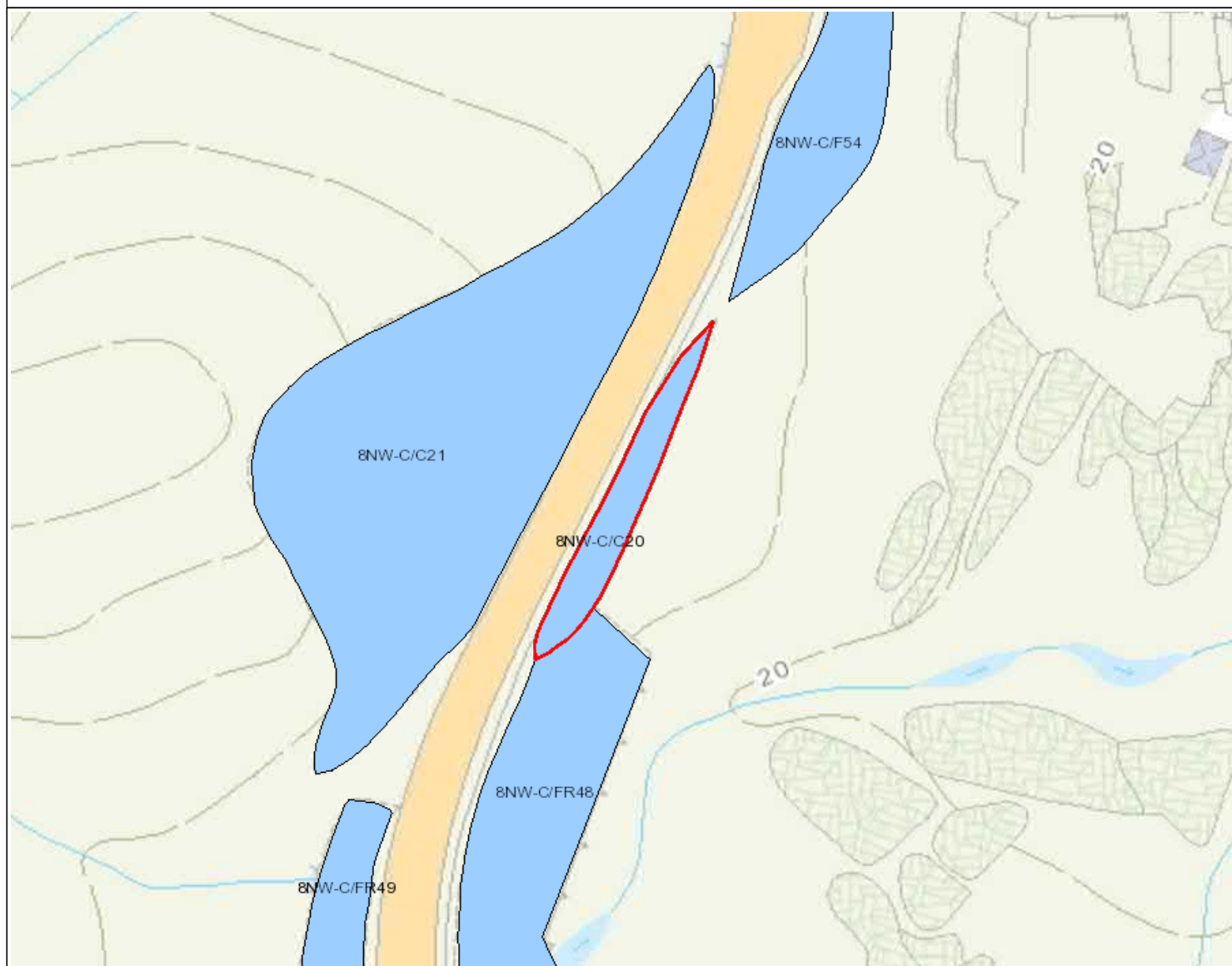
#### Notes:

- (i) The location plan in Annex is for identification purposes of slope(s) only.
- (ii) The slope(s) as listed in the Slope Maintenance Responsibility Report may not be shown on the location plan in Annex.

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Search Criteria: 8NW-C/C20

## Location Plan



## Legend

- Slope Area(s)
- - - - - Search Location
- Slope(s) Maintained by Government
- Slope(s) Maintained by Private Party/Parties
- Slope(s) Maintained by Government and Private Party/Parties



**ESTATE MANAGEMENT SECTION**  
**LANDS DEPARTMENT**

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Printed on: 07/11/2019

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Search Criteria: 8NW-C/C20



## BASIC INFORMATION

Location: SAI SHA ROAD, SK

Registration Date: 17-02-1998

Ranking Score (NPRS): 1 (EI)

Date of Construction/  
Modification: Pre-1977

Data Source: EI(HyD)

Approximate Coordinates: Easting : 845444 Northing : 830791

## CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Undeveloped green belt

Distance of Facility from Crest (m): 0

Facility at Toe: Road/footpath with moderate traffic density

Distance of Facility from Toe (m): 0

Consequence-to-life Category: 2

Remarks: N/A

## SLOPE PART

(1) Max. Height (m): 5 Length (m): 53 Average Angle (deg): 45

## WALL PART

N/A





## MAINTENANCE RESPONSIBILITY

(1) Sub Div.: 0    Government Feature    Party: HyD    Agent: HyD    Land Cat.: 5b(iii)    Reason Code: 56    MR Endorsement Date: 05-05-1998

## DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 23-12-2013  
Data Source: EI(HyD)  
Slope Part Drainage: N/A

Wall Part Drainage: N/A

## SLOPE PART

Slope Part (1)

Surface Protection (%): Bare: 0    Vegetated: 0    Chunam: 0    Shotcrete: 100    Other Cover: 0

Material Description: Material type: Soil    Geology: N/A

Berm: No. of Berms: N/A    Min. Berm Width (m): N/A

Weepholes: Size (mm): 65    Spacing (m): 1.2



**WALL PART**

N/A

**SERVICES**

N/A



## CHECKING STATUS INFORMATION

N/A

## BACKGROUND INFORMATION

GIU Cell Ref.: 8NW21A8  
Map Sheet Reference (1:1000): 8NW-21A  
Aerial Photos: 7181-2 (1973),

Nearest Rainguage Station (Station Number): Ma On Shan Treatment Works(N47)

Data Collected On: 23-12-2013  
Date of Construction, Subsequent Modification and Demolition: Modification: Constructed Before: 1973 After: N/A

Related Reports/Files or Documents: File/Report: LWC Ref. No.: GC 4/1/2-5 (6) f3A, GC 4/1/2-3 f19 pt VI  
File/Report: LWC Ref. No.: GC 4/1/2-5 (6) f3A, GC 4/1/2-3 f19 pt VI

Remarks: N/A

Follow Up Actions: N/A



DH-Order (To Be Confirmed  
with Buildings Department):      None

Advisory Letter (To Be Confirmed  
with Buildings Department):      None

LPMIS:      None

## **ENHANCED MAINTENANCE INFORMATION**

From Maintenance Department: (Last Updated Date: 30/06/2019)



## STAGE 1 STUDY REPORT

Inspected On: 14-08-1997

Weather: Some Rain

District: ME

Section No: 1-1

Height(m): H1 : 5 , H2 : 0

Type of Toe Facility: Road/footpath with moderate traffic density

Distance from Toe(m): 0

Type of Crest Facility: Undeveloped green belt

Distance from Crest(m): 0

Consequence Category: 2

Engineering Judgement: P

Section No: 2-2

Type of Toe Facility: N/A

Distance from Toe(m): 0

Type of Crest Facility: N/A

Distance from Crest(m): 0

Consequence Category: 2

Engineering Judgement: P

Sign of Seepage:	Slope : No signs of seepage Wall : N/A
Criterion A satisfied:	N
Sign of Distress:	Slope : N/A Wall : N/A
Criterion D satisfied:	N
Non-routine maintenance required:	N
Note:	N/A
Masonry wall/Masonry facing:	N
Note:	N/A
Consequence category (for critical section):	2
Observations:	N/A
Emergency Action Required:	N
Action By:	N/A

### ACTION TO INITIATE PREVENTIVE WORKS

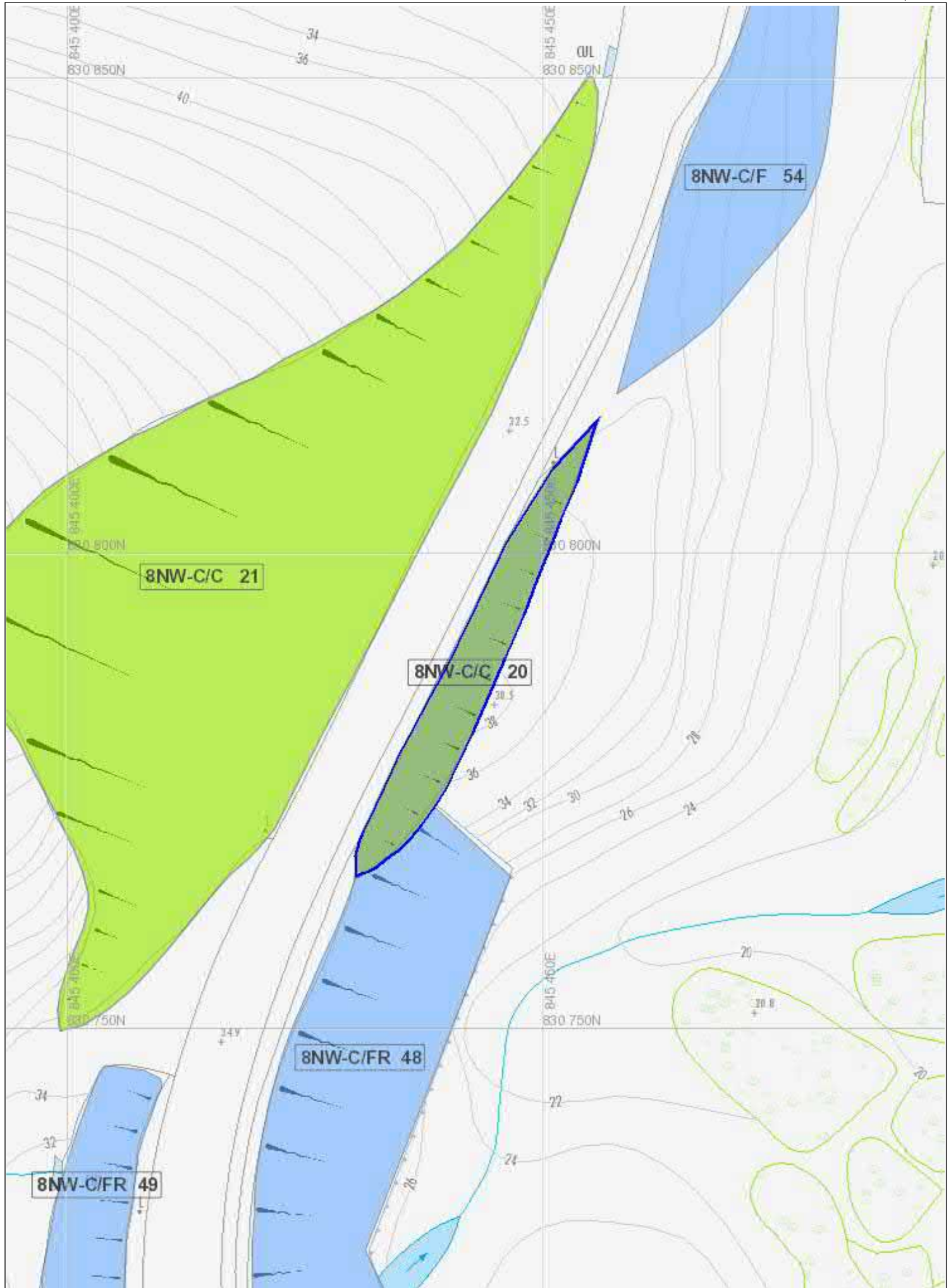
Criterion A/Criterion D:	N/A
Action By:	N/A
Further Study:	Y
Action By:	Mixed

### OTHER EXTERNAL ACTION

Check / repair Services:	N
Action By:	N/A
Non-routine Maintenance:	N
Action By:	N/A

**PHOTO**







## Slope Maintenance Responsibility Report

(8NW-C/C21)



**ESTATE MANAGEMENT SECTION  
LANDS DEPARTMENT**

### List of Slope Maintenance Responsibility Area(s)

1	8NW-C/C21		Sub-Division	Not Applicable
	Location	ADJOINING SAI SHA ROAD NEAR SPOT LEVEL 32.5		
	Responsible Lot/Party	Highways Department	Maintenance Agent	Highways Department
	Remarks	For enquiries about the maintenance of this slope / sub-division of the slope, please contact the Maintenance Agent direct.		

- End of Report -

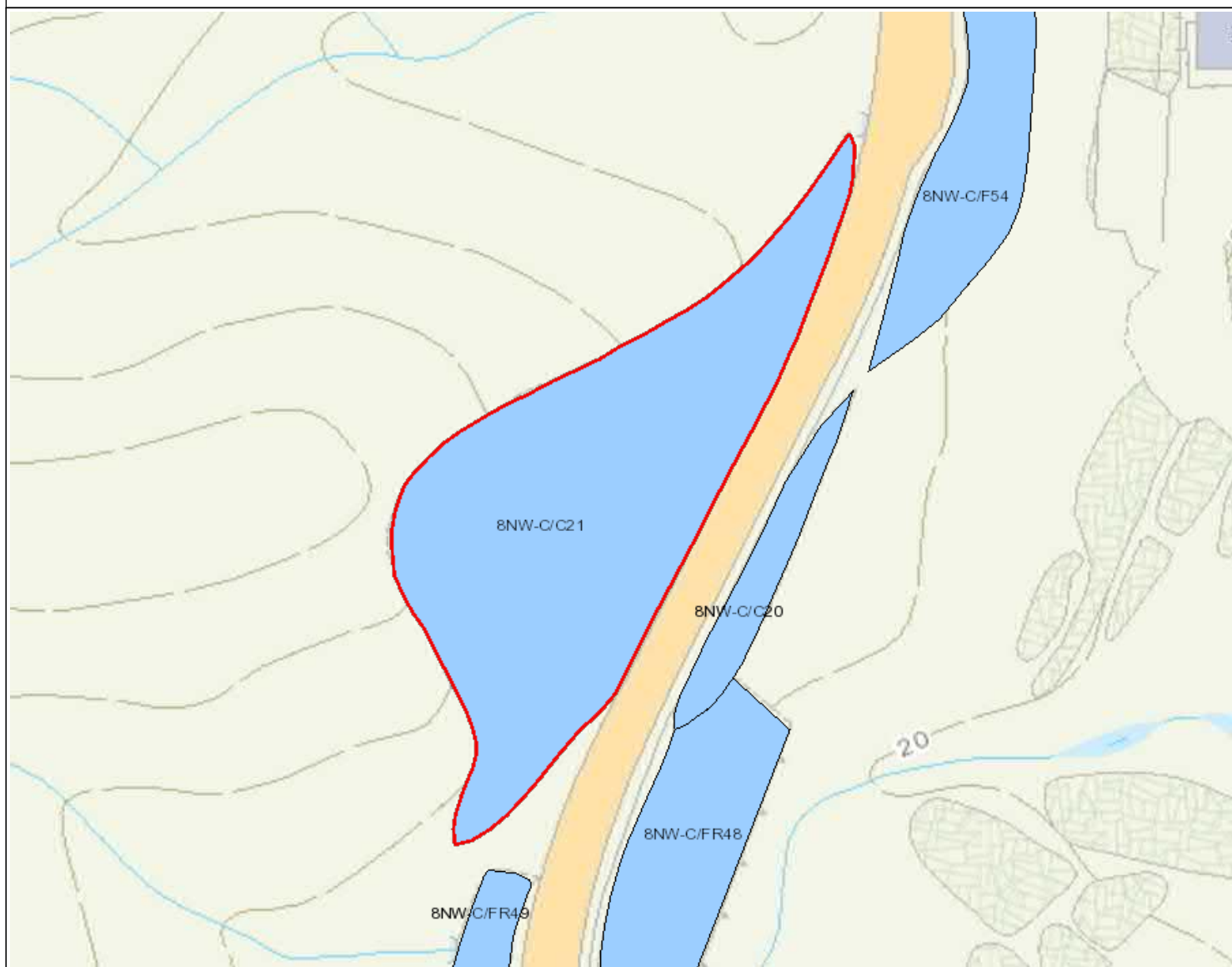
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- (i) The location plan in Annex is for identification purposes of slope(s) only.
- (ii) The slope(s) as listed in the Slope Maintenance Responsibility Report may not be shown on the location plan in Annex.

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Search Criteria: 8NW-C/C21

## Location Plan



## Legend

- Slope Area(s)
- - - - - Search Location
- Slope(s) Maintained by Government
- Slope(s) Maintained by Private Party/Parties
- Slope(s) Maintained by Government and Private Party/Parties



**ESTATE MANAGEMENT SECTION  
LANDS DEPARTMENT**

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Printed on: 07/11/2019

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Search Criteria: 8NW-C/C21



## BASIC INFORMATION

Location: SAI SHA ROAD, SK

Registration Date: 17-02-1998

Ranking Score (NPRS): 0 (EI)

Date of Construction/  
Modification: Pre-1977

Data Source: EI(HyD)

Approximate Coordinates: Easting : 845416    Northing : 830795

## CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Undeveloped green belt

Distance of Facility from Crest (m): 0

Facility at Toe: Road/footpath with moderate traffic density

Distance of Facility from Toe (m): 0

Consequence-to-life Category: 2

Remarks: N/A

## SLOPE PART

(1)    Max. Height (m): 35    Length (m): 120    Average Angle (deg): 45

## WALL PART

N/A



## MAINTENANCE RESPONSIBILITY

(1) Sub Div.: 0    Government Feature    Party: HyD    Agent: HyD    Land Cat.: 5b(iii)    Reason Code: 56    MR Endorsement Date: 05-05-1998

## DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 08-10-2012  
Data Source: EI(HyD)  
Slope Part Drainage: (1) Position: Berm    Size(mm): 300  
(2) Position: On slope    Size(mm): 300  
(3) Position: Toe    Size(mm): 300  
  
Wall Part Drainage: N/A

## SLOPE PART

Slope Part (1)  
Surface Protection (%): Bare: 0    Vegetated: 40    Chunam: 0    Shotcrete: 60    Other Cover: 0  
Material Description: Material type: Soil    Geology: N/A  
Berm: No. of Berms: 3    Min. Berm Width (m): 1.5  
Weepholes: Size (mm): 65    Spacing (m): 1.2





## WALL PART

N/A

## SERVICES

- |     |                             |               |               |                                   |
|-----|-----------------------------|---------------|---------------|-----------------------------------|
| (1) | Utilities Type: Cable       | Size(mm): 0   | Location: Toe | Remark: Size cannot be determined |
| (2) | Utilities Type: Electricity | Size(mm): 0   | Location: Toe | Remark: Size cannot be determined |
| (3) | Utilities Type: Gas         | Size(mm): 0   | Location: Toe | Remark: Size cannot be determined |
| (4) | Utilities Type: Sewer/Drain | Size(mm): 0   | Location: Toe | Remark: Size cannot be determined |
| (5) | Utilities Type: Water Main  | Size(mm): 150 | Location: Toe | Remark: N/A                       |
| (6) | Utilities Type: Water Main  | Size(mm): 450 | Location: Toe | Remark: N/A                       |



## CHECKING STATUS INFORMATION

N/A

## BACKGROUND INFORMATION

GIU Cell Ref.: 8NW21A8  
Map Sheet Reference (1:1000): 8NW-21A  
Aerial Photos: 7181-2 (1973),

Nearest Rainguage Station (Station Number): Ma On Shan Treatment Works(N47)

Data Collected On: 08-10-2012  
Date of Construction, Subsequent Modification and Demolition: N/A

Related Reports/Files or Documents: File/Report: LWC Ref. No.: GC 4/1/2-5 (6) f3A, GC 4/1/2-3 f19 pt VI  
File/Report: LWC Ref. No.: GC 4/1/2-5 (6) f3A, GC 4/1/2-3 f19 pt VI

Remarks: N/A

Follow Up Actions: N/A



DH-Order (To Be Confirmed  
with Buildings Department):      None

Advisory Letter (To Be Confirmed  
with Buildings Department):      None

LPMIS:      Agreement No.: In-house Design      Report No.: S3R116/99

### **ENHANCED MAINTENANCE INFORMATION**

From Maintenance Department: (Last Updated Date: 30/06/2019)

## STAGE 1 STUDY REPORT

Inspected On: 14-08-1997

Weather: Some Rain

District: ME

Section No: 1-1

Height(m): H1 : 35 , H2 : 0

Type of Toe Facility: Road/footpath with moderate traffic density

Distance from Toe(m): 0

Type of Crest Facility: Undeveloped green belt

Distance from Crest(m): 0

Consequence Category: 2

Engineering Judgement: P

Section No: 2-2

Type of Toe Facility: N/A

Distance from Toe(m): 0

Type of Crest Facility: N/A

Distance from Crest(m): 0

Consequence Category: 2

Engineering Judgement: P



Sign of Seepage:	Slope : No signs of seepage Wall : N/A
Criterion A satisfied:	N
Sign of Distress:	Slope : N/A Wall : N/A
Criterion D satisfied:	N
Non-routine maintenance required:	N
Note:	N/A
Masonry wall/Masonry facing:	N
Note:	N/A
Consequence category (for critical section):	2
Observations:	N/A
Emergency Action Required:	N
Action By:	N/A

### ACTION TO INITIATE PREVENTIVE WORKS

Criterion A/Criterion D:	N/A
Action By:	N/A
Further Study:	Y
Action By:	Mixed

### OTHER EXTERNAL ACTION

Check / repair Services:	N
Action By:	N/A
Non-routine Maintenance:	N
Action By:	N/A

## eLPMIS

### LPM/LPMit Details Report

LPM Study Feature No.: 8NW-C/C 7

Location: SAI SHA ROAD, SAI KUNG

District Council: Tai Po

Maintenance Responsibility (At the Time of Selection): Government

Responsible Party for Maintenance of Government Portion: HyD

Private Lot No.: N/A

### LPM/LPMit Study

Agreement No.: In-house Design

Study Type: Stage 3 Study Under Remeasurement Contract

Consultant: N/A

GEO Managing Section / Engineer: LPM2 / N/A

Study Status: Study completed

Design Approach: Conventional (G1 + Analysis)

Option Assessment Accepted: N/A

Study Report No.: S3R116/99

Programme / Actual Commencement: 01-02-1997

Programme / Actual Completion: 01-07-1999

Report Recommendation (For Stage 2 Study): Upgrading Works

District Check Status: Exempted from checking

Checking Certificate No.: N/A

GEO Engineer's Remarks: Feature renamed as 8NW-C/C21.

### LPM/LPMit Works

Works Contract No.: GE/99/01

GEO Managing Section / Engineer: Works / CM21

Contractor: Yick Hing Construction Company Limited

Progress Status: Maintenance completed

Reason of Study Termination / Works Deletion (If Necessary): N/A

Forecast Commencement Date: 02-12-2001

Forecast Completion Date: 31-05-2002

Completion Cert. Issued: N/A

Site Handed Over to Maintenance Department on: N/A

Estimated Cost for Upgrading (HK\$M): 2.15

Maintenance Manual No.: MM213/2002

Actual Works: Hard Cover (Sprayed concrete/Stone pitching, etc.), Raking drain, Soil nail, Typical rock slope treatment

No. of Tree Felled: N/A

No. of Tree Planted (Incl. Transplant): 42

% Bare of Slope Surfacing: N/A

% Vegetated of Slope Surfacing: N/A

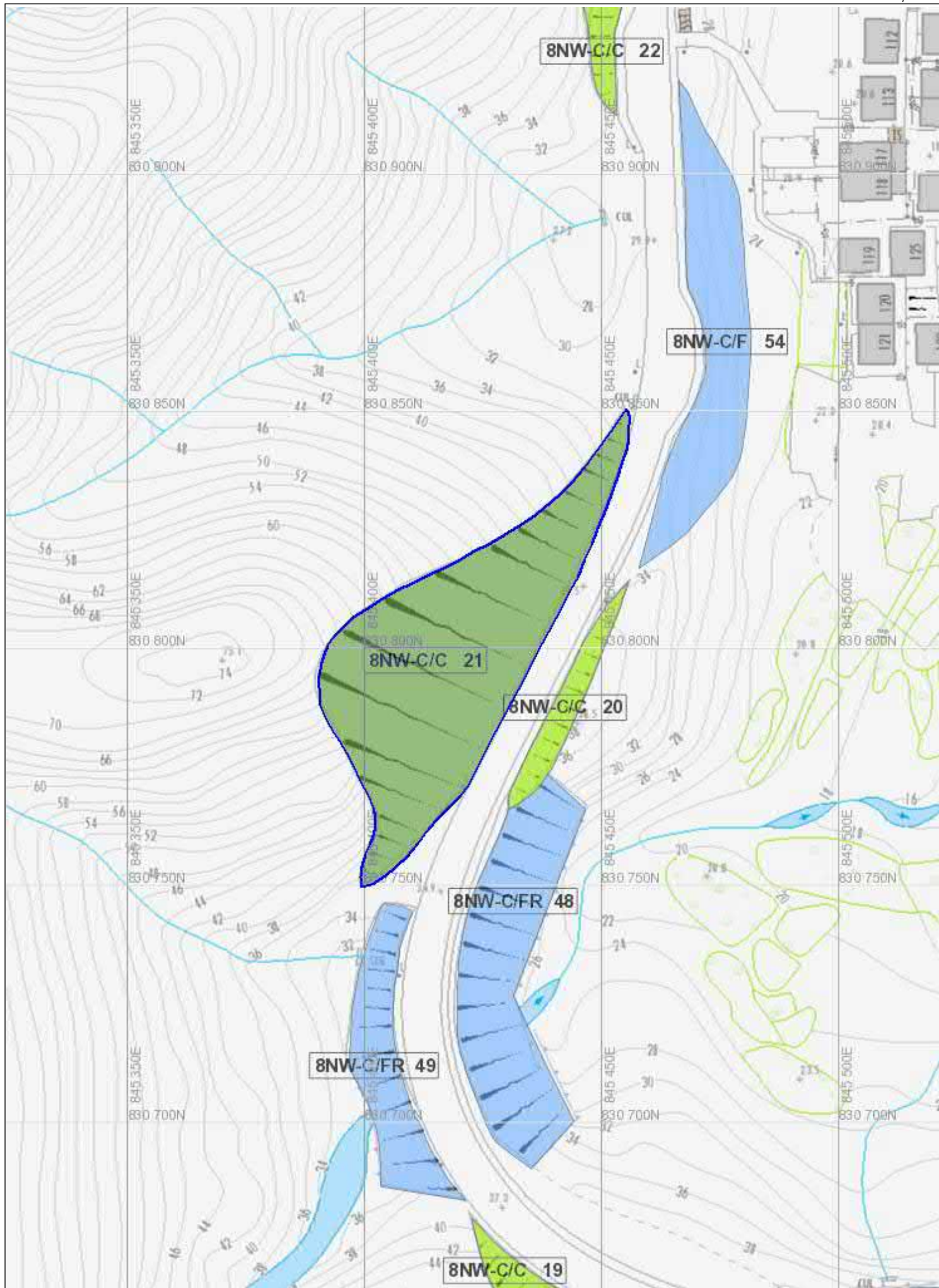
% Shotcrete of Slope Surfacing: N/A

Other Hard Surface of Slope Surfacing: N/A

**PHOTO**



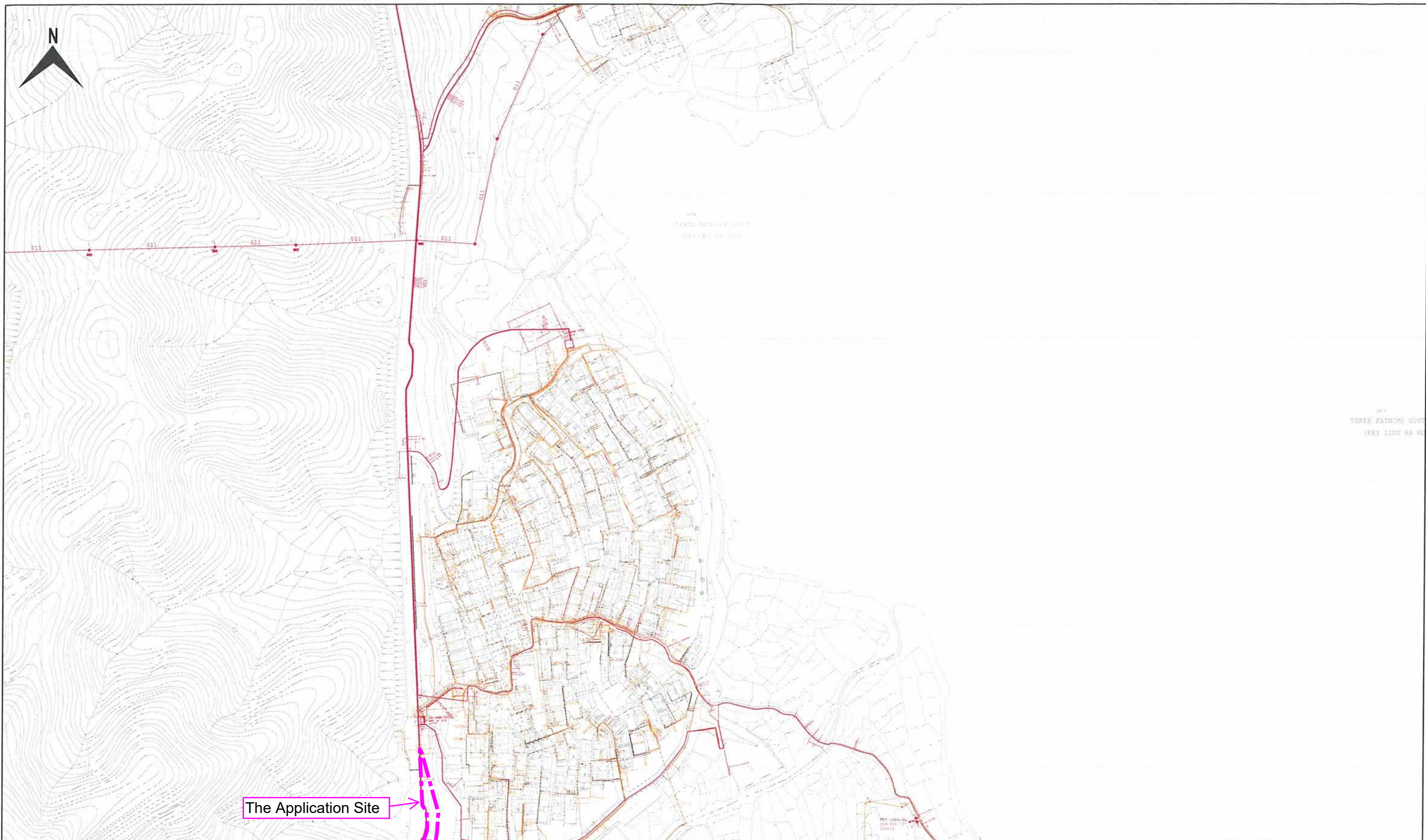






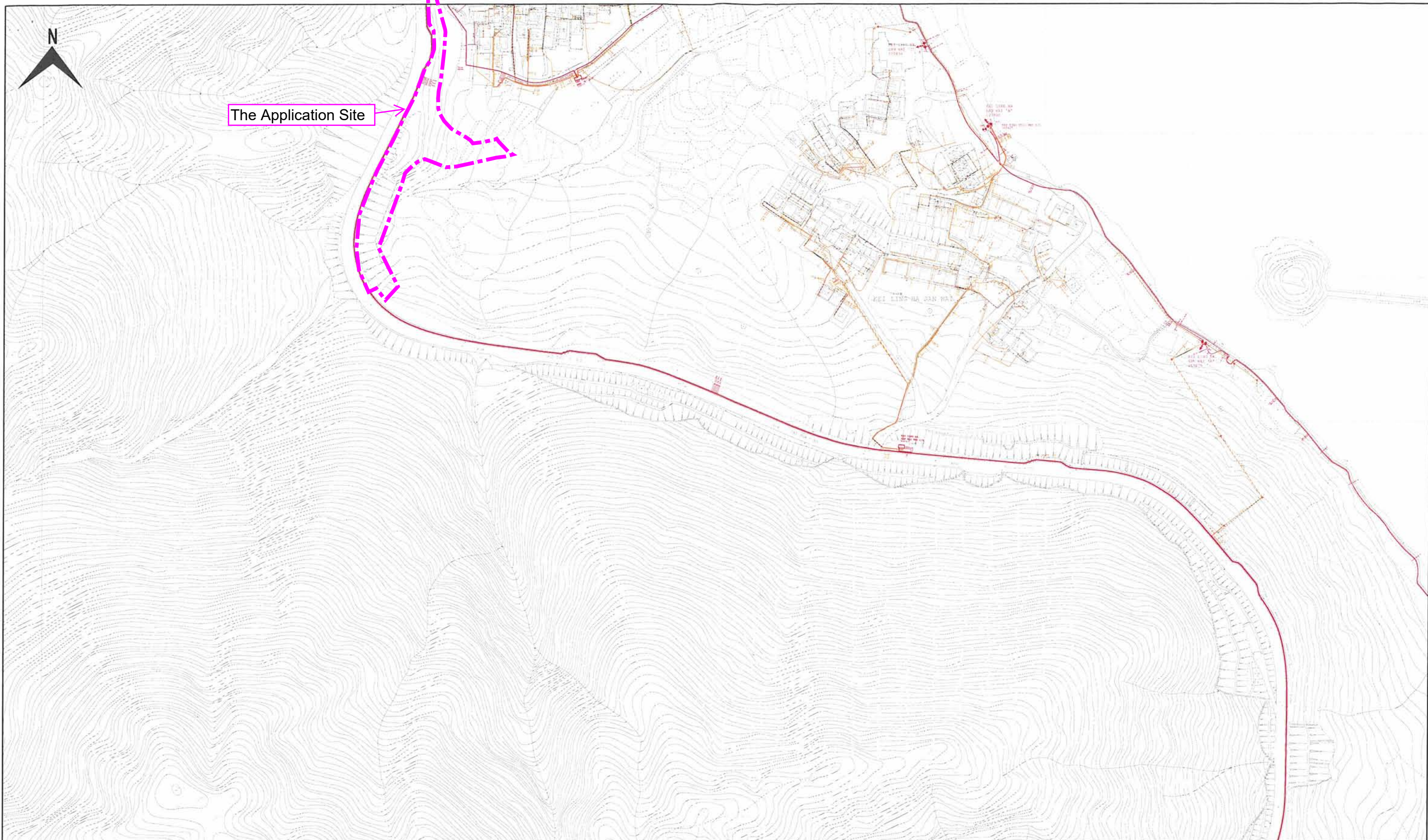
# **Appendix C**

## **Existing Utilities Records**



Legend					ALL LOCATIONS, MEASUREMENTS, DIMENSIONS AND DISTANCES ARE FOR CLP POWER INTERNAL USE ONLY. THEY SHOULD NOT BE SCALED AND ASSUMED ACCURATE. CLP POWER ACCEPTS NO RESPONSIBILITY IN THE EVENT OF ANY INACCURACY. EXTREME CARE MUST BE EXERCISED WHEN WORKING IN CLOSE PROXIMITY TO OUR EQUIPMENT. PLEASE CONTACT OUR REGIONAL OFFICE AS SOON AS YOU ARE READY TO COMMENCE WORK.
400kV CABLE/SUBMARINE CABLE/OHL	ABANDONED TRANSMISSION CABLE	SUBMARINE 11kV CABLE	L.V. OVERHEAD LINE (PVC)	TEMPERATURE SENSING CABLE (DTS)	
THROUGH DUCT 400kV CABLE	33kV CABLE	11kV OVERHEAD LINE	L.V. OVERHEAD LINE (Wall Mounted)	AERIAL EARTH WIRE (AEW)	CLP 400/132/66kV SUBSTATION
AS BUILT 400kV CABLE	THROUGH DUCT 33kV CABLE	11kV STEEL POLE	L.V. STEEL POLE	OVERHEAD LINE FIBRE OPTIC	
400kV OVERHEAD LINE TOWER	AS BUILT 33kV CABLE	11kV WOOD POLE	L.V. WOOD POLE	OVERHEAD LINE FIBRE OPTIC	CLP 33kV SUBSTATION
132kV CABLE/SUBMARINE CABLE/OHL	33kV SUBMARINE CABLE	POLE MOUNT TRANSFORMER	L.V. PILLAR	SHALLOW COVER INSTALLATION	CLP 11kV SUBSTATION
THROUGH DUCT 132kV CABLE	33kV OVERHEAD LINE	L.V. CABLE	PILOT CABLE	CLP 400/132/66kV SUBSTATION	400kV CABLE JOINT BAY
AS BUILT 132kV CABLE	33kV STEEL POLE	THROUGH DUCT L.V. CABLE	THROUGH DUCT PILOT CABLE	CLP 33kV SUBSTATION	132kV CABLE JOINT BAY
132kV OVERHEAD LINE TOWER	33kV WOOD POLE	AS BUILT / ABANDONED L.V. CABLE	AS BUILT / ABANDONED PILOT CABLE	CLP 11kV SUBSTATION	
132kV TERMINAL OHL POLE	11kV CABLE	L.V. OVERHEAD LINE (1 PHASE)	FIBRE OPTIC		
132kV DOUBLE OHL POLE	THROUGH DUCT 11kV CABLE	L.V. OVERHEAD LINE (3 PHASE)	THROUGH DUCT FIBRE OPTIC		
132kV SINGLE OHL POLE	AS BUILT / ABANDONED 11kV CABLE	L.V. OVERHEAD LINE (ABC)	AS BUILT FIBRE OPTIC		





The Application Site

Legend									
400kV CABLE/SUBMARINE CABLE/OHL	ABANDONED TRANSMISSION CABLE	SUB	SUBMARINE 11kV CABLE	P	L.V. OVERHEAD LINE (PVC)	TEMPERATURE SENSING CABLE (DTS)	<p>ALL LOCATIONS, MEASUREMENTS, DIMENSIONS AND DISTANCES ARE FOR CLP POWER INTERNAL USE ONLY. THEY SHOULD NOT BE SCALED AND ASSUMED ACCURATE. CLP POWER ACCEPTS NO RESPONSIBILITY IN THE EVENT OF ANY INACCURACY. EXTREME CARE MUST BE EXERCISED WHEN WORKING IN CLOSE PROXIMITY TO OUR EQUIPMENT. PLEASE CONTACT OUR REGIONAL OFFICE AS SOON AS YOU ARE READY TO COMMENCE WORK.</p>		
THROUGH DUCT 400kV CABLE	33kV CABLE	11	11kV OVERHEAD LINE	W	L.V. OVERHEAD LINE (Wall Mounted)	AERIAL EARTH WIRE (AEW)			
AS BUILT 400kV CABLE	THROUGH DUCT 33kV CABLE	11	11kV STEEL POLE		L.V. STEEL POLE	OVERHEAD LINE FIBRE OPTIC			
400kV OVERHEAD LINE TOWER	AS BUILT 33kV CABLE	11	11kV WOOD POLE		L.V. WOOD POLE	OVERHEAD LINE FIBRE OPTIC			
132kV CABLE/SUBMARINE CABLE/OHL	33kV SUBMARINE CABLE	11	POLE MOUNT TRANSFORMER		L.V. PILLAR	SHALLOW COVER INSTALLATION			
THROUGH DUCT 132kV CABLE	33kV OVERHEAD LINE	11	L.V. CABLE		PILOT CABLE	CLP 400/132/66kV SUBSTATION			
AS BUILT 132kV CABLE	33kV STEEL POLE	11	THROUGH DUCT L.V. CABLE		THROUGH DUCT PILOT CABLE	CLP 33kV SUBSTATION			
132kV OVERHEAD LINE TOWER	33kV WOOD POLE	11	AS BUILT / ABANDONED L.V. CABLE		AS BUILT / ABANDONED PILOT CABLE	CLP 11kV SUBSTATION			
132kV TERMINAL OHL POLE	11kV CABLE	11	L.V. OVERHEAD LINE (1 PHASE)		FIBRE OPTIC	400kV CABLE JOINT BAY			
132kV DOUBLE OHL POLE	THROUGH DUCT 11kV CABLE	11	L.V. OVERHEAD LINE (3 PHASE)		THROUGH DUCT FIBRE OPTIC	132kV CABLE JOINT BAY			
132kV SINGLE OHL POLE	AS BUILT / ABANDONED 11kV CABLE	11	L.V. OVERHEAD LINE (ABC)		AS BUILT FIBRE OPTIC	DUCT LINE			

MAP NO: CLP Facility Records Map

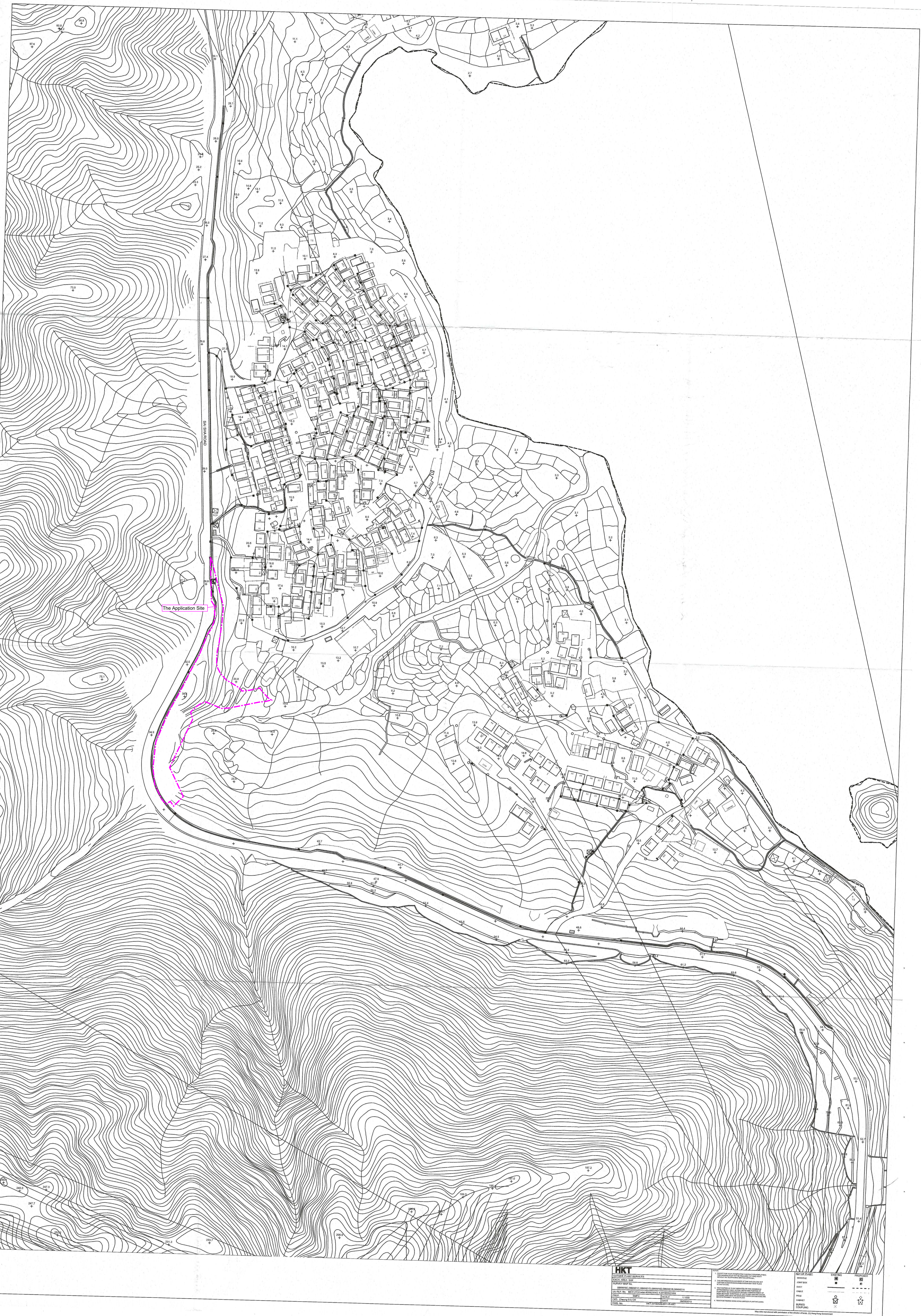
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08NW21D	08NW21A

SCALE: 1:2500      PRINTED ON: 28-05-2019

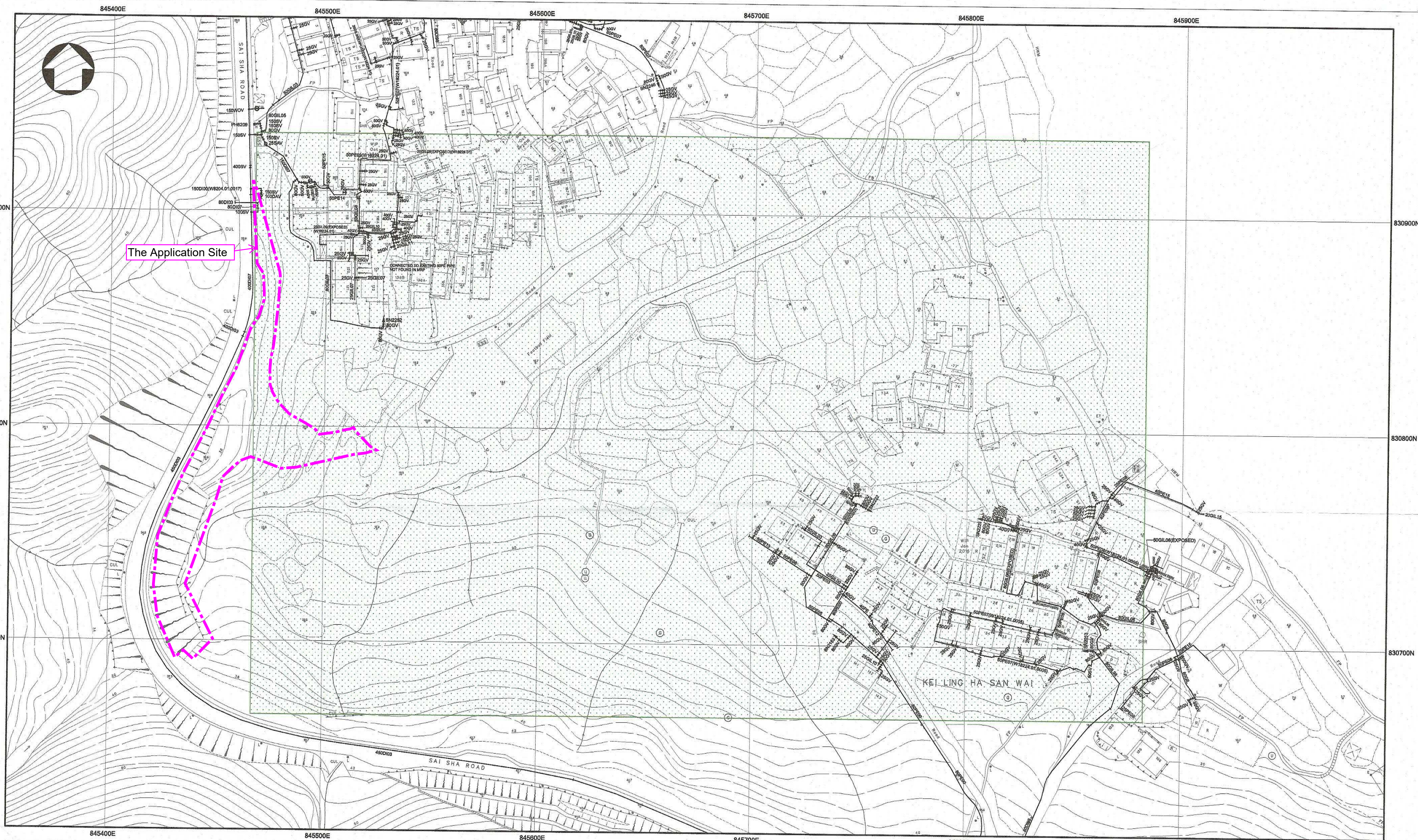












The Application Site

KEI LING HA SAN WAI

- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
  2. ALL LEVELS ARE IN METRES ABOVE PRINCIPAL DATUM.
  3. INFORMATION ON ALIGNMENT OF MAINS IS OF INDICATIVE VALUE ONLY. WHERE POSITIONAL ACCURACY MAY BE OF IMPORTANCE, DETAILS SHOULD BE SITE CHECKED.
  4. FOR MAINS RECORDS SIGN CONVENTIONS AND DESIGNATIONS SEE SKETCH NO. 3988.
  5. NO EXISTING WSD CABLE IN THE VICINITY OF THE SITE.
  6. NO PROPOSED WSD CABLE IN THE VICINITY OF THE SITE.
  7. THE SITE IS NOT WITHIN WSD GATHERING GROUNDS.
  8. NO WSD LAND ALLOCATION / WWR WITHIN THE SITE AREA.
  9. NO WSD SLOPES ARE AFFECTED IN THE VICINITY OF THE SITE.

SUBJECT SITE

PART COPY OF FRESH WATER MAINS RECORD PLAN(S)

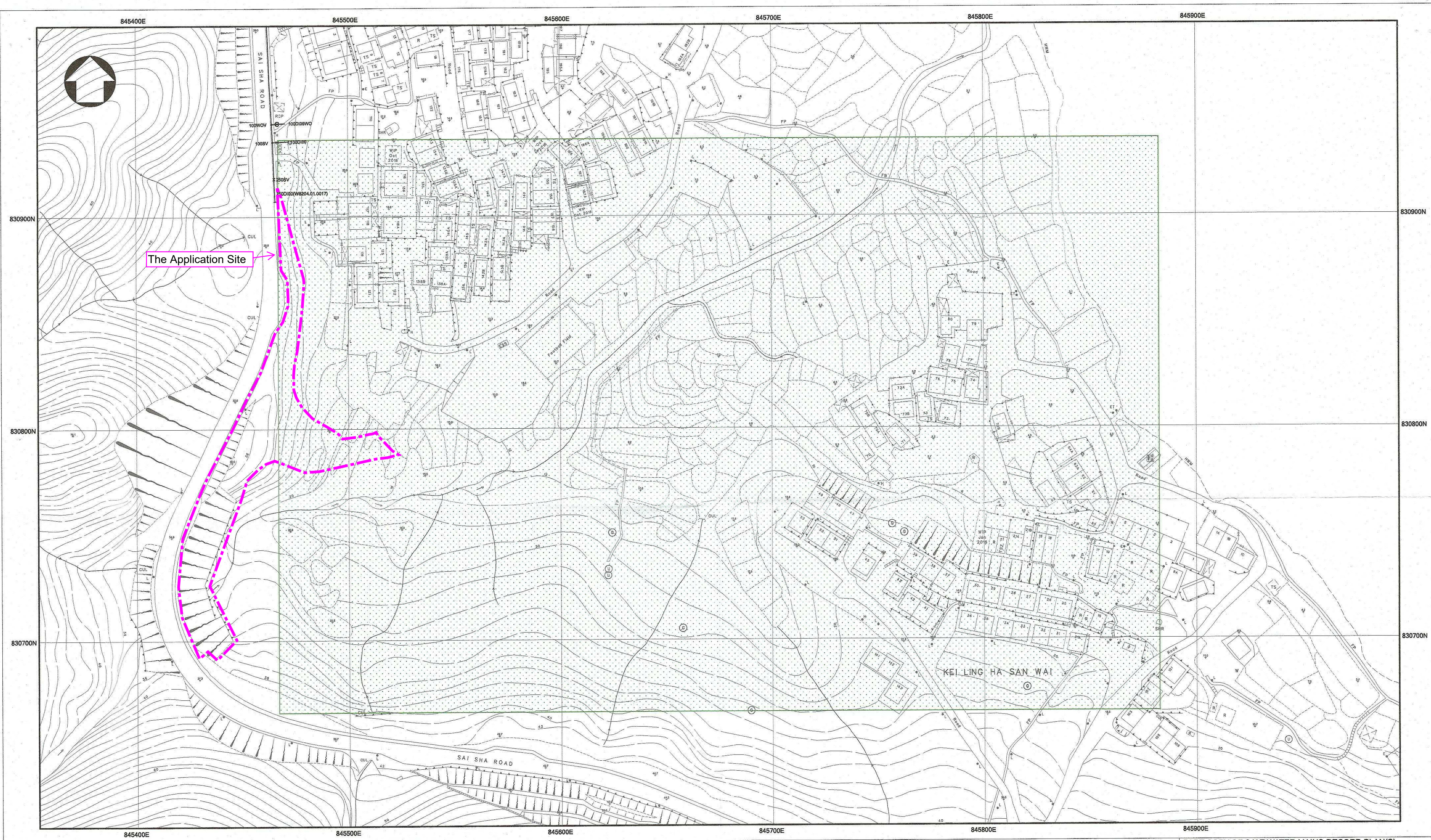
W67880/8-NW-21A & 21B

REF. CODE: 22W19M SHEET 1 OF 1 SCALE 1:1200



水務署  
Water Supplies Department





- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
  2. ALL LEVELS ARE IN METRES ABOVE PRINCIPAL DATUM.
  3. INFORMATION ON ALIGNMENT OF MAINS IS OF INDICATIVE VALUE ONLY. WHERE POSITIONAL ACCURACY MAY BE OF IMPORTANCE, DETAILS SHOULD BE SITE CHECKED.
  4. FOR MAINS RECORDS SIGN CONVENTIONS AND DESIGNATIONS SEE SKETCH NO. 3988.
  5. NO EXISTING WSD CABLE IN THE VICINITY OF THE SITE.
  6. NO PROPOSED WSD CABLE IN THE VICINITY OF THE SITE.
  7. THE SITE IS NOT WITHIN WSD GATHERING GROUNDS.
  8. NO WSD LAND ALLOCATION / WWR WITHIN THE SITE AREA.
  9. NO WSD SLOPES ARE AFFECTED IN THE VICINITY OF THE SITE.



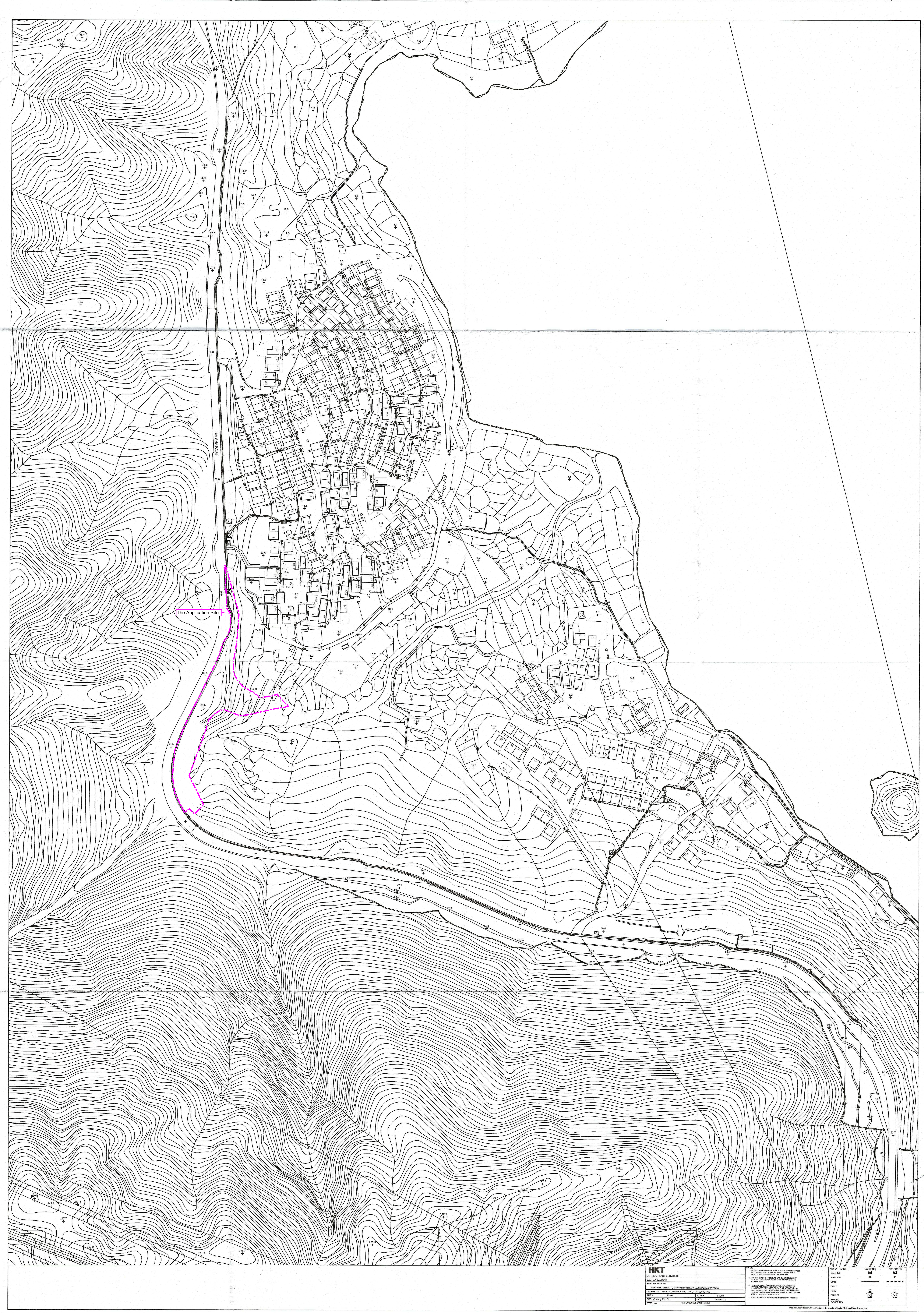
PART COPY OF SALT WATER MAINS RECORD PLAN(S)

W67881/8-NW-21A & 21B

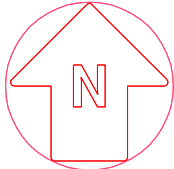
REF. CODE: 22W19M SHEET 1 OF 1 SCALE 1:1200











The Application Site



LEGEND :

- EXISTING DUCT ROUTE
- EXISTING JOINT BOX
- PROPOSED DUCT ROUTE
- PROPOSED JOINT BOX

START DATE :  
END DATE :  
SURVEY MAP NO.

CROSS SECTIONAL DIMENSIONS OF  
TYPICAL DUCT ROUTE FORMATIONS



ALL DUCT UNLESS OTHERWISE STATED IS PVC 114mm EXTERNAL  
DIAMETER MULTIPLE WAY DUCT ROUTES CAN BE FORMED IN  
EITHER EARTH OR CONCRETE.

IN ACCORDANCE WITH HIGHWAYS OFFICE 'CONDITIONS OF PERMIT'  
THE PROPOSED MINIMUM DEPTH OF DUCT WILL BE 450mm IN FOOTWAY  
AND 750mm IN CARRIAGEWAY. HOWEVER THE ACTUAL COURSE DEPTH  
AND FORMATION OF PROPOSED DUCT ROUTES MAY BE SUBJECT TO  
DEVIATION DUE TO UNFORESEEN OBSTRUCTIONS.

LOCALITY

TITLE

LAY DUCT (m)	R/W	C/W	C/T	TOTAL LENGTH
JOINT-BOX			NIL	
DRN			CKD	
SCALE	N.T.S.		DATE	
OFTA REF NO.				
PLAN NO.				
DRAWING NO.				

# **Appendix D**

## **Extracts of Relevant Information from GEO**



## STAGE 3 STUDY REPORT

Extracted from S3R 116/99

**S3R 116/99**

RID No. 34909

3 DEC 1999

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Ref:(39), (55) in GCSP 4/14/36Pt.II dd.11.3.2000, 2.5.2000.

# SLOPE 8NW-C/C7 SAI SHA ROAD SAI KUNG

Y. K. HO

CIVIL ENGINEERING DEPARTMENT  
CIVIL ENGINEERING LIBRARY

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November 1999  
Design Division GEO

## MEMO

From CGE/D  
 Ref. in GCD2/A1/8NW-C/C7  
 Tel no. 2762 5417  
 Fax no. 2710 5104  
 Date 23 November 1999

To AL I, CEL  
 (Attn.: \_\_\_\_\_)  
 Your Ref. \_\_\_\_\_ in \_\_\_\_\_  
 dated \_\_\_\_\_ Fax No. \_\_\_\_\_  
 Total Pages \_\_\_\_\_

AL/I	AL/II
CA/CEI	CA/CEII
CA/CEL	CA/GIU
CA/GEN	File:
c.c.	b.u.

Submission of Documents to CEL/GH

Title: Slope No. 8NW-C/C7, Sai Sha Road

Consultant/Contractor/Author: Y. K. Ho

Client Department/Owner (if applicable): Highways Department

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The document can be made open to public: Yes/No \* (The sender is advised to seek approval from the relevant authority where necessary before answering yes)

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Name of study: Stage 3 Study

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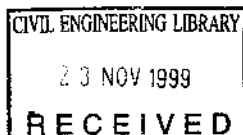
Top Left (E,N): \_\_\_\_\_ Top Right (E,N): \_\_\_\_\_

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For documents related to slope features, please provide below the representing coordinates of any feature covered by the document:

Feature No.: 8NW-C/C7 E,N Coordinates: 845410 E, 830790 N

Feature No.: \_\_\_\_\_ E,N Coordinates: \_\_\_\_\_



*(Signature)*  
 (Y. K. Ho)  
 for CGE/D

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## Reply Slip

To: D/13 Design Div

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GCD16 (1/1)  
 Date: 10/06/99

[DESIGN][C:FEATURES\8NW-C\C7\GCD16.DOC][23-11-99][MMKC]



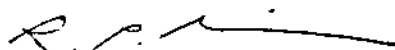
## FOREWORD

This report presents the results of a detailed study of slope 8NW-C/C7 located along Sai Sha Road, and the design of landslide preventive works required to improve the stability of this slope to the current safety standards.

The study included an information search, aerial photograph interpretation, visual inspection, ground investigation, laboratory testing and stability analysis. It concludes that the slope is below the current safety standards. The proposed landslide preventive works comprise installing soil nails, constructing concrete buttresses, providing a sprayed concrete cover on the rock slope, hydroseeding the soil slope surface, providing a planter toe wall with shrubs and creepers, and constructing surface drainage channels as well as a maintenance staircase.

Mr. Y. K. Ho carried out the study and design with the assistance of Messrs C. K. Tam, K. W. Ho and C. W. Lo under the supervision of Messrs K. B. Ling and W. W. Ding.

The Geotechnical Engineering Office prepared this report for the sole and specific use of the Government of the Hong Kong Special Administrative Region. Any other persons who use any information contained in it do so at their own risk.



(R. P. Martin)  
Chief Geotechnical Engineer/Design

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## 1. INTRODUCTION

### 1.1 Background

The Geotechnical Engineering Office (GEO) carried out a Stage 1 Study of slope 8NW-C/C7 in 1991. The study recommended no further action for the slope owing to its low priority at that time. A copy of the report is attached at Appendix A.

At meeting no. 1/97 held on 8 January 1997, the LPMC endorsed inclusion of the slope in the Landslip Preventive Measures (LPM) Programme under the busy road category. The slope will be upgraded under Remeasurement Contract no. GE/99/01.

### 1.2 Site Description

The slope is situated alongside Sai Sha Road between Sai Keng and Kei Ling Ha San Wai in Sai Kung at Hong Kong grid reference 845410 E and 830790 N, as shown on Figure 1. There is a gentle natural terrain beyond the slope crest whereas Sai Sha Road runs along the slope toe. Plates 1 to 3 show the general appearance of the slope and its vicinity.

### 1.3 Maintenance Responsibility

The slope report from the SIMAR Consultants of the Lands Department confirms that the Highways Department is responsible for maintaining the slope. A copy of the report is enclosed in Appendix B.

## 2. GEOTECHNICAL INVESTIGATION

### 2.1 Desk Study

An information search at the Geotechnical Information Unit (GIU) revealed that no previous ground investigation or laboratory testing was carried out at the slope and its vicinity. Prior to this study, a Stage 1 Study was conducted in 1991 as mentioned in Section 1.1 and it recommended no further action for this slope owing to its low priority at that time. District records in the GEO do not indicate any previous landslip at the site.

### 2.2 Aerial Photograph Interpretation

Scott Wilson Kirkpatrick (Hong Kong) Ltd. conducted an aerial photograph interpretation (API) of the site in May 1997. A copy of the report is given in Appendix C.

The slope was formed between 1964 and 1973 during the construction of Sai Sha Road. The 1990 aerial photos indicate that the original surface cover of the slope was replaced with an impervious layer which was confirmed as sprayed concrete during site inspection made for this study. Since then, there were no apparent changes at the site and its close vicinity.



Rock outcrops were observed at various locations over the slope, especially near the slope toe. This indicated that bedrock may be very close to the slope surface. No colluvium or fill was identified at the slope. Also, no evidence of past instability was revealed by the API.

### 2.3 Visual Inspection

The slope is about 120 m long and 34 m high at a gradient of 45°. It consists of four batters separated by three 1 m wide berms. At present, the slope surface is covered by sprayed concrete with minor unplanned vegetation growing through the cracks of the cover at some locations. Rock outcrops can be clearly seen at many locations on the slope surface. The natural slope beyond the crest of the slope is heavily vegetated with mature trees and shrubs. There are channels along the crest and berms of the slope but most of them are in fair state of maintenance.

### 2.4 Ground Investigation

Enpack (Hong Kong) Limited carried out ground investigation in February 1998 under CED Contract GE/97/13. The works comprised two drillholes (BH1 and BH2), two trial pits (TP1 to TP2) and five surface strips (CS1 to CS5). A total of four piezometers were installed in the drillholes to monitor groundwater behaviour: one above the rockhead and the others within the bedrock. The locations of the boreholes, trial pits and surface strips are shown in Figure 2. The ground investigation results are given in GIU report no. 28176 (EHK, 1998).

### 2.5 Laboratory Testing

Soils & Materials Engineering Company Limited performed laboratory tests in May 1998. Both classification and consolidated undrained triaxial tests were conducted on samples retrieved from the ground investigation at the slope. The results are contained in GIU report no. 28763 (SME, 1998) and are summarised in Table 1.

### 2.6 Rock Joint Survey

A rock joint survey was carried out to assess the stability of the rock slope portion. Since most of the slope is covered by sprayed concrete, the rock slope could not be mapped. The possible areas for measuring rock joints were the exposed rock surfaces at the surface strips. The discontinuities data are enclosed in Appendix D. The kinematic stability of the rock slope is further discussed in Section 3.4.1.2.

## 3. GEOTECHNICAL ASSESSMENT

### 3.1 Ground Conditions

From Hong Kong Geological Survey (HKGS) Sheet 8 (GCO, 1989), the site is within an area of sandstone and siltstone of Palaeozoic Bluff Head Formation of Devonian

age, being the oldest rock found in Hong Kong. The sandstone and siltstone strata dip at about  $12^\circ$  in direction  $S68^\circ E$  as measured at the road cuttings near Nga Yiu Tau. To the south of the site, there is a NE-SW trending fault at the contact zone between the aforesaid rock type and trachydacite and rhyolite lava of Clear Water Bay Formation. According to HKGS Memoir No. 4 (GCO, 1990), the Bluff Head Formation consists mainly of fine-grained quartzitic sandstone, with occasional siltstone, often displaying cross-bedding structures. In thin sections of the rock samples obtained from the ground investigation of this study, recrystallized quartz and secondary sericite were observed. This suggests that the sandstone and siltstone at the site had undergone low-grade regional metamorphism. Based on the geomorphology of the site, colluvium may exist along the valley beyond the southern end of the slope.

The findings obtained from the ground investigation agree with the above geological information. The sandstone interbedded with siltstone covers about 70% of the slope except at its southern end where colluvium is found overlying the bedrock. According to the zonal weathering classification as described in Geoguide 3 (GCO, 1988), the central part of the slope is within mass weathering zone of PW50/90 whereas its northern part belongs to PW0/30 as depicted in Figure 3. The ground conditions of the slope as interpreted from the ground investigation are shown on Figures 4 to 7.

### 3.2 Groundwater Conditions

Based on the piezometer monitoring records from March 1998 to September 1999, the highest groundwater levels were recorded in September 1999. This groundwater rise is inferred as an effect from a heavy rainstorm between 23 and 25 August 1999 that represented a 11-year return period rainfall. Although another rainstorm which happened on 9 June 1998 had a 55-year return period, there were little responses in the piezometers from that rainstorm. Such a phenomenon may be due to the prolonged rainstorm effect since the 11-year return period rainfall lasted for three days whereas the 55-year one only occurred in one day. Based on the Geotechnical Manual for Slopes (GCO, 1984), slopes should be designed for the groundwater conditions resulting from a minimum 10-year return period rainfall. Therefore, the water levels measured in September 1999 are considered adequate for determining the groundwater table for the stability analysis. The rainfall records together with the piezometer monitoring data are attached at Appendix E.

No piezometer was installed within the colluvium. A 2 m high perched water table above the rock head was assumed in this layer for the stability analysis.

### 3.3 Soil Strength Parameters

Single-stage consolidated undrained tests were carried out on undisturbed samples of the completely decomposed siltstone and sandstone (CDSS). The soil strength parameters were determined from the  $p'$ - $q$  plot of the triaxial test results as shown in Figure 8. In determining the best straight line, two sets of the data were neglected as they are remarkably higher than others. The following shear strength parameters were obtained from the  $p'$ - $q$  plot and were assumed for mass weathering zone of PW0/30 which is dominated by CDSS:

<u>Soil Type</u>	<u><math>c'</math> (kPa)</u>	<u><math>\phi'</math> (<math>^\circ</math>)</u>	<u><math>\gamma'</math> (kN/m<sup>3</sup>)</u>
CDSS	2	34	19

No colluvium samples were retrieved from the ground investigation for laboratory testing. According to the trial pit log, the colluvium is gravelly sandy clayey silt with cobble sized moderately decomposed siltstone and sandstone. For design purposes, the following shear strength parameters were adopted for the stability analysis by ignoring the cohesion component of CDSS:

<u>Soil Type</u>	<u>c' (kPa)</u>	<u><math>\phi'</math> (°)</u>	<u><math>\gamma</math> (kN/m<sup>3</sup>)</u>
Colluvium	0	34	19

### 3.4 Stability Analysis

#### 3.4.1 Soil Slope Portion

The stability of the soil portions at the northern and southern end of the slope was analysed based on the inferred geological model, groundwater conditions and soil strength parameters. The results indicate that the slope has a minimum calculated factor of safety of 0.880 at PW0/30 portion and 0.43 at colluvium zone which are both below the required standard of 1.2 (GCO, 1984 and GEO, 1998). Therefore, upgrading works are required. A summary of the stability analysis is shown in Figures 9 to 11.

#### 3.4.2 Rock Slope Portion

The rock slope portion is composed of moderately decomposed sandstone and siltstone with medium to closely spaced, occasionally very closely spaced joints and has been cut at a gradient of 45°. From the rock joint survey described in Section 2.6, a total of 54 joints were measured from the surface strips. The stereographic projection of the rock joint data as shown in Figure 12 gives the following six joint sets (J1 to J6) by using a minimum of 4% occurrence:

<u>Joint Set</u>	<u>Dip (degrees)</u>	<u>Dip Direction (degrees)</u>
J1	77	303
J2	46	057
J3	77	085
J4	25	091
J5	81	152
J6	72	194

The results indicate that no major plane, wedge or toppling failure is kinematically possible at the slope. However, it was noted that joint set 1 is very close to the toppling envelope (Figure 13). Therefore, site reconnaissance was conducted to ascertain the existence of this joint set and to determine appropriate preventive works. As most rock joints at the site are closely spaced, large-scale plane, wedge or toppling failure is unlikely to take place. In addition, the existing sprayed concrete cover is capable of preventing small-scale rock fall. Therefore, no major preventive works are required to the rock slope except three concrete buttresses to support the local depression zones showing potential toppling instability (locations see Drawing no. GED3457).



#### 4. PROPOSED LANDSLIP PREVENTIVE WORKS

##### 4.1 Option Assessment

Initially, the option review meeting held on 8 January 1998 concluded that slope upgrading works should cater for widening of Sai Sha Road. As a result, an option combining both cutting-back and soil nailing methods was chosen. At that time, the ground investigation and laboratory testing had not yet started and the options tabled were based on an assumption that the slope is entirely composed of completely decomposed material.

Upon completion of the ground investigation and laboratory testing, it was found that most of the slope is underlain by moderately to slightly decomposed rock. Detailed analysis showed that only the soil slope portion would have a major stability concern. As such, the estimated cost and scale of works would be much different when comparing the options with and without road widening. Finally, an option reassessment meeting was held on 21 January 1999 and the following options were tabled for consideration:-

##### Option 1 - Construction of Retaining Wall (Road Widening Scheme)

- Excavate the lowest berm of the slope and construct a mass concrete wall.
- Install soil nails to the southern part of the slope.

##### Option 2 - Soil Nailing (Non-road widening Scheme)

- Install soil nails to soil slopes of stability concern.

##### Option 3 - Cutting-back + Soil Nailing (Non-road widening Scheme)

- Cut back the northern part of the slope to a flatter angle.
- Install soil nails to the southern part of the slope.

Both the Transport Department and Highways Department suggested that LPM works planned for Sai Sha Road should include road widening simultaneously with a view to improving the traffic capacity and safety. Option 1 takes into account this recommendation but it is most expensive and requires the longest construction time. However, since the Highways Department has no definite programme to widen Sai Sha Road, such cost is beyond the scope of LPM funds. It is considered not worthwhile just to widen this section of the road in a piece meal manner. As a result, option 1 was not adopted.

Options 2 and 3 are non-widening schemes with more or less the same construction cost. Option 3 needs a longer construction period as a result of the required earthwork. Moreover, tree felling is required which is environmentally undesirable. Finally, option 2 was selected as it is more cost-effective and will cause less disturbance to the surrounding environment.

Detailed discussion of the option assessment is enclosed in Appendix F.

##### 4.2 Description of the Landslip Preventive Works

The soil slope portion will be upgraded by soil nails. Prescriptive raking drains will be installed to the slope to dissipate any unpredicted groundwater rise. The existing hard cover will be removed and replaced by a hydroseeded surface to rehabilitate the growth of vegetation. For the rock slope portion, concrete buttresses will be constructed to support the

local depression zones with potential toppling instability. A new sprayed concrete cover will be provided over the existing one. To enhance the visual appearance of the slope, the sprayed concrete will be painted light green and provided with planter holes for climbers. Moreover, a wall planter with shrubs and climbers will be built at the slope toe to further reduce the visual impact of the sprayed concrete. As part of the works, all the existing drainage channels and slope berms will be reconstructed and a concrete staircase will be provided along the slope edge for future maintenance.

Sections showing the finished slope profile are shown on Figures 13 to 16. The design calculations for the soil nails are attached at Appendix G. Based on GCO (1984) and GEO (1998), 1.2 was adopted as the design minimum factor of safety since rigorous geological and geotechnical investigations were carried out for the study. Details of the proposed LPM works are shown on Drawing Nos. GED3456 to 3458 at Appendix H.

## 5. CONCLUSION AND RECOMMENDATION

A detailed study of slope 8NW-C/C7 has been carried out and LPM works have been designed to upgrade the slope to the current safety standards. The proposed works comprise installing soil nails, constructing concrete buttresses, hydroseeding the soil slope surface, spraying concrete over the existing chunam surface at the rock slope, building a planter toe wall with shrubs and creepers, and constructing surface drainage channels as well as a maintenance staircase. The estimated cost of the works is about HK\$3.2M.

## 6. REFERENCES

- EHK (1988). Contract No. GE/97/13, Works Order No. GE/97/13.24, Slope No. 8NW-C/C7, Sai Sha Road, Sai Kung, Final Field Work Report. Empack (Hong Kong) Ltd. (GIU No. 28176)
- GCO (1984). Geotechnical Manual for Slopes (2nd Edition). Geotechnical Control Office, Hong Kong Government.
- GCO (1988). Geoguide 3: Guide to Rock and Soil Descriptions. Geotechnical Control Office, Hong Kong Government.
- GCO (1989). Sai Kung: Solid and superficial geology. Hong Kong Geological Survey, Map Series HGM 20, Sheet 8, 1:20 000 scale. Geotechnical Control Office, Hong Kong Government.
- GCO (1990). Hong Kong Geological Survey Memoir No. 4: Geology of Sai Kung and Clear Water Bay. Geotechnical Control Office, Hong Kong Government.
- GEO (1998). GEO Circular No. 9: Geotechnical Manual for Slopes – Guidance on Interpretation. Geotechnical Engineering Office, the Government of the Hong Kong Special Administrative Region.
- SME (1998). Works Order No. GE/97/14.31, Slope No. 8NW-C/C7, Sai Sha Road, Sai Kung, Laboratory Test Report. Soils & Materials Engineering Co. Ltd. (GIU No. 28763)

URGENT BY HAND

Amended Mar., 97

## GEO INCIDENT REPORT

(to be filled in by District Division)

To: ☒ CGE/ME/MT\* (See also section 16)

File No. GCHC 2/52/97 (E)/HE

Done ☒ PM/LIC (Fax : 2827 8352)

Incident No. ME 97/7/52

Feature No. 8NW-C/CS

also known as 8NW-C/CS (5/7/94)

FILL IN OR TICK OR DELETE (FOR ITEM MARKED \*) AS APPROPRIATE

1. Incident Reported: Date 10/7/1997 Time ..... hrs  
☐ thro' Pager No. 4554\*/6780\* ☐ from ETC Mr ..... (ETC Incident No. ....)  
☒ from Mr/Ms S. C. Sun Tel. No. ....  
of ☐ Arch SD ☐ DLO/ ☐ BD ☐ DO/ ☐ HD  
☒ HyD/NT/ ☐ Police ☐ FSD ☐ WSD
2. Location of Failure Slope 8NW-C/CS2 Sai Sha Road, Sai Kung, Sai Kung  
Co-ordinates of centre of failure S30°55'N 84°5'45"E  
(Attach a 1:1000 survey plan to show location of failure, and Slope Reference Number if possible)
3. Date of Inspection 17/7/1997 Inspection by N. X. Ng  
with Mr/Mrs/Ms S. C. Sun of HyD Tel. No. 2762 3983 Time arrived on site 10:10 hrs  
Mr/Mrs/Ms C. K. Fung of HyD Tel. No. 2762 3986 Time left site 10:40 hrs  
Mr/Mrs/Ms ..... of ..... Tel. No. ....  
Mr/Mrs/Ms ..... of ..... Tel. No. ....
4. Time and Date of Failure ..... Weather Condition at time of inspection Rainy  
(It is important to give exact time if possible; ask residents or others)
5. Type of Failure ☒ Significant sign of distress with no failure mass cracked chunam ☐ Washout  
☐ Landslide ☐ Boulder fall from natural slope ☐ Retaining wall failure ☐ Rock fall  
☐ Non landslide case (tree fall/ building collapse\*)  
(Circle ☐ to indicate principal type of failure if more than one type is involved)
6. Feature Type ☐ Natural slope ☐ Rock slope ☐ RC Retaining wall ☐ Masonry wall  
☐ Fill slope ☒ Soil cut slope ☐ Soil/rock cut slope ☐ Others .....  
(Circle ☐ to indicate principal feature type if more than one type is involved)
7. Material and Mass Description of the Feature (The Geoguide 3 classification system should be adopted)  
☐ Fill ..... ☐ Colluvium ..... ☐ Residual Soil .....  
☒ Partially Weathered Rock (✓ PW 0/30, ✓ PW 30/50, ✓ PW 50/90, ✓ PW 90/100, ✓ unclear)  
☐ Others .....  
(Circle ☐ to indicate dominant material if more than one material is involved)
8. Scale of Failure 20 m<sup>3</sup> (Volume of slip scar\*/debris\*)  
For boulder fall from natural slope (Approx. trajectory to be shown in item 15)  
Number of boulders involved ..... Dimension and shape of boulders .....
9. Feature Condition  
Evidence of poor state of maintenance: ☒ Damaged chunam/shotcrete/stone-pitching\*, location on slope  
☐ Bare slope surface (poorly maintained vegetation), location .....  
☐ Blocked/broken drains, location ..... ☐ Others ..... location .....  
Capacity of surface drainage system ☒ adequate ☐ inadequate ☐ not present ☐ not known  
Coverage of hard protection surface against infiltration ☒ adequate ☐ inadequate ☐ not present  
Surface Protection Material chunam  
Field evidence of past instability at or adjoining the failure location ☐ yes ☒ no  
Groundwater seepage observed at the failure location ☐ yes (location to be shown in item 15) ☒ no
10. Possible Contributing Causes of Failure (tick one or more) ☒ Infiltration ☐ wash-out  
☐ seepage behind an impermeable surface ☐ groundwater (main/perched/unclassified)\* ☐ rupture of watermain  
☐ Insufficient maintenance contributed to failure ☐ Others .....  
(Circle ☐ to indicate primary cause if more than one cause is involved)
11. Consequence of Failure ☐ ..... person(s) killed ☐ ..... person(s) injured ☐ Squatter huts affected ☐ Car parks affected  
☐ ..... lane(s) of road blocked ☐ Building lot affected ☐ Construction site affected ☒ Pedestrian pavement affected  
☐ Country park affected ☐ Open space affected ☐ Building access affected



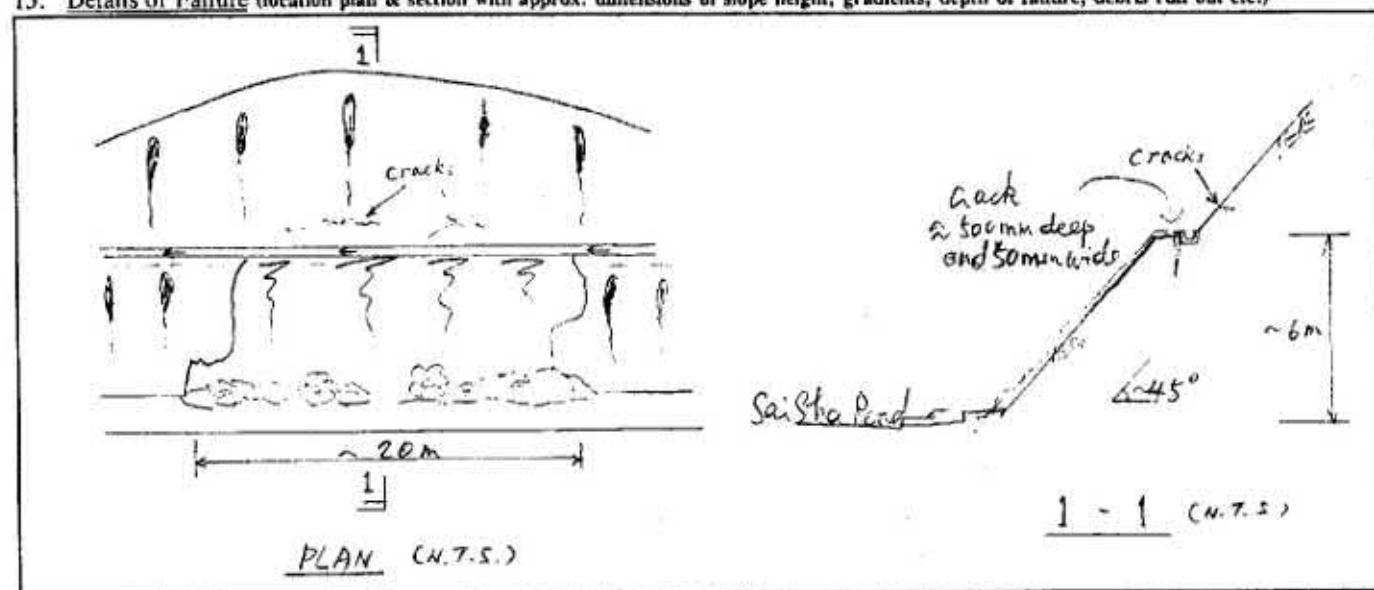
Amended Mar., 97

12. Immediate Advice Given To: Mr/Ms/Ms S.C. Sun of Hyd/NIE  
☐ Squatter huts permanently evacuated Hut No(s) Ca. K. Fung  
☐ Squatter huts temporarily evacuated Hut No(s) Hyd/NIE  
☐ Flats evacuated/Closure Order Recommended.  
 Building/Flat No. Hyd/NIE  
☒ Close one lane(s) of road  
☐ Close pedestrian pavement
- ☒ Divert surface runoff from reaching failure area  
☒ Cover failure scar with tarpaulin properly secured against wind  
☐ Fence off area in danger  
☒ Trim back failure surface  
☒ Provide surface protection (with weepholes) to trimmed failure surface  
☒ Provide/reconstruct drainage system  
☐ Isolate water-carrying services  
☐ Check land status  
☐ Buttressing  
☐ Warn nearby occupants of possible danger during heavy rainstorm

13. Is Further Inspection by District GE Required?  
 if Yes, Reason Hyd/NIE ☐ Yes ☒ No

14. Is Landslip Record Card Required: ☐ Yes (for debris vol. > 50 m<sup>3</sup> or involving death)

15. Details of Failure (location plan & section with approx. dimensions of slope height, gradients, depth of failure, debris run out etc.)



Inspection Officer's Signature

NAME IN BLOCK LETTER, POST

DATE

16. District Action Required (to be filled in by District Division)

- 16.1 Feature to be registered (GEO Circular 8/96)?

☐ Yes ☒ No (Decision to be made by District GE)

- 16.2 Feature previously studied, upgraded or checked by GEO

☐ Yes ☒ No (TO to carry out file search)

If Yes, state action taken in file

Additional Remarks

District GE's Signature

NAME IN BLOCK LETTER

Date

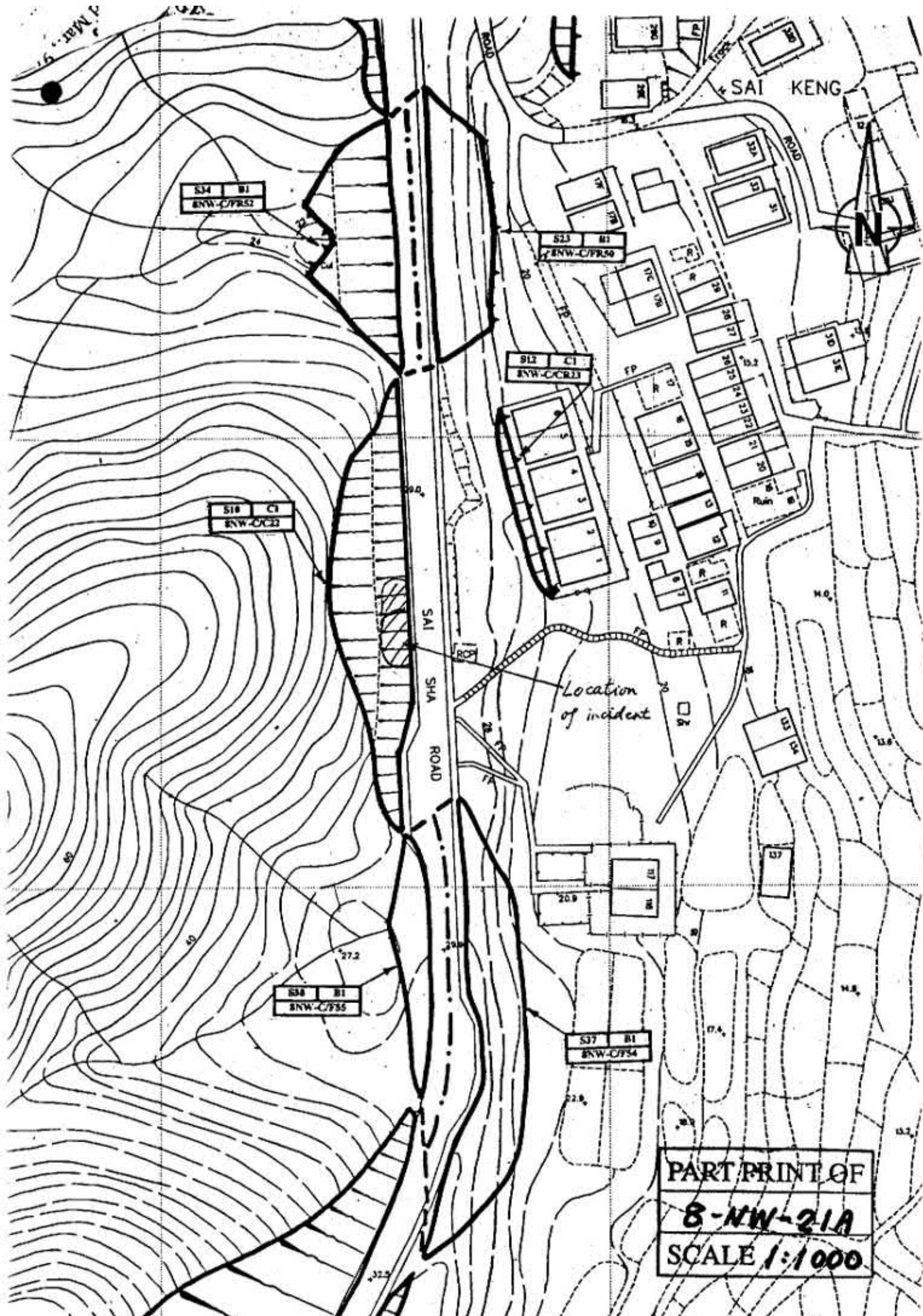
District SGE's Signature

NAME IN BLOCK LETTER

Date

- C.C. ☒ CGE/SP (with photo) thro' GGE I/M\* , PGGE  
☒ CGE/LI (with photo) Q  
☐ CGE/SS (for boulder fall from natural slope only)  
☐ CBS/DB (for private site only)

- 1/. One incident report should be filled in for each incident. Report to be continued on supplementary sheets if necessary.  
 2/. Section 1 to 15 to be filled in by Inspecting GE. On returning to the office, the copy should be despatched to CGE/District and PM/LIC asap. The remaining sections (Top box & Section 16) to be completed by District GE and despatched accordingly.  
 3/. Useful observation which supplement information given in the Incident Report to be made on separate sheets.



PART PRINT OF  
**8-NW-21A**  
SCALE 1:1000



# PHOTOGRAPHS

File Ref. No.: GCMC  
2/E2/97/ME

Neg. No.: ME 97 / 123 / 2  
136 / 12

Date Taken: 10-7-97  
17.7.97

Location: Slope 8NW-C/C22 San She Road, San Keng, S.K.

(ME 97/7/52)



Geotechnical Engineering Office

Mainland East Division





# **Appendix E**

## **Extracts of Previous Ground Investigation Records**

Extract from GIU Report 28176

**WORKS ORDER NO. GE/97/13.24**

**Location Sai Sha Road, Sai Kung**

Sheet 1 of 6

Prepared By: Y.M. Leung Checked By: Richard C.K. Chan

**Date of Issue: 25th March, 1998**

**Table 2 - Investigation Station Co-ordinates and Ground Levels**

**Works Order No. GE/97/13.24**

**Project:** Ground Investigation Request Slope No. 8NW-C/C7

**Location : Sai Sha Road, Sai Kung**

**DATE : 11/03/1998**

**SHEET 1 OF 1**

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<b>ENPACK (HONG KONG) LIMITED</b> Civil Engineers & Contractors <small>Astoria Building, 9th Floor, 34 Ashley Road          Kowloon, Hong Kong          Tel: 2778 2131 Fax: 2778 0252</small>		DRILLHOLE RECORD				HOLE NO. <b>BH 1</b>											
		CONTRACT NO. <b>GE/97/13</b>				SHEET <b>1</b> of <b>3</b>											
PROJECT <b>Ground Investigation Request Slope No. 8NW-C/7, Location: Sai Sha Road, Sai Kung.</b>																	
METHOD <b>RC</b>				CO-ORDINATES		W.O. No <b>GE/97/13.24</b>											
MACHINE & No. <b>DR 73</b>				<b>E 845386.31</b> <b>N 830804.72</b>		DATE: <b>07/02/1998</b> to <b>12/02/1998</b>											
FLUSHING MEDIUM <b>WATER</b>				ORIENTATION <b>VERTICAL</b>		GROUND LEVEL <b>89.04</b> mPD											
Drilling Progress	Casing size	Water level (m) Shift start/end	T.C.R.(%)	S.C.R.(%)	R.Q.D.(%)	F.I.	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description				
1	PX		76	17	0	NI		0.20				III	Moderately strong, light grey striped purple and yellow, dappled white, moderately decomposed, coarse grained SANDSTONE, locally highly fractured. Joints are closely to medium occasionally very closely spaced, rough, planar, extremely to very narrow, iron stained and clayey silt infilled (<1mm), dipping at 25°-30°, 40°-50° and 70°.				
			100	71	36	11.9		0.60									
			100	38	26	>20 14.0		1.00									
			94	82	49	1.40											
	2	HX	0.25m at 18:00 0.78m at 08:00					NI						2.30	III	Moderately strong, light grey and purple, moderately decomposed, fine grained SANDSTONE locally highly fractured. Joints are closely to medium spaced, rough, planar and undulating, extremely to very narrow, iron stained and clayey silt infilled (<1mm), dipping at 30°-50° and 65°.	
				100	74	38		8.4						2.82			
				100	73	73		NI 7.0						65.99			3.05
				100	90	83		>20 7.0									
								7.1									
				100	65	65		5.35									
3.70m at 18:00	100	12	0	>20	6.35												
3	6v	at 08:00	100	79	45	11.7	6.88	61.64	7.40	III	Moderately strong, brownish yellow, grey, moderately decomposed, coarse grained quartz-rich SANDSTONE. Joints are very closely to closely occasionally medium spaced, rough, planar, extremely to very narrow, iron stained, dipping at 20°, 30°-40° and 60°.						
			100	66	38	>20 12.4	6.25										
4	6v		100	78	63		9.75	72-101		III	Moderately strong, light purple and light reddish brown, moderately decomposed, fine grained SANDSTONE. Joints are very closely to closely spaced, rough, planar, extremely narrow, iron stained locally clayey silt and manganese infilled (<1mm), dipping at 20°-30° and 40°-50°.						

**Small Disturbed Sample**      **Standard Penetration Test**

**Piston Sample**                      **In-situ Vane Shear Test**

**U78 Undisturbed Sample**          **Permeability Test**

**U100 Undisturbed Sample**        **Impression Packer Test**

**Mudrot Sample**                      **Packer Test**

**SPT Liner Sample**                  **Piezometer Tip**

**Water Sample**                        **Standpipe Tip**

LOGGED F.S.Woo

DATE 13/02/1998

CHECKED C.K. Chan

DATE 20/02/1998

**REMARKS**

1. Standpipe piezometer tips installed at 15.00m and 23.20m depth respectively.
















<b>ENPACK (HONG KONG) LIMITED</b> Civil Engineers & Contractors <small>Artistic Building, 8th Floor, 34 Ashley Road, Kowloon, Hong Kong          Tel: 2378 2121 Fax: 2378 0252</small>		<b>DRILLHOLE RECORD</b>		HOLE NO. <b>BH 1</b>									
CONTRACT NO. <b>GE/97/13</b>				SHEET <b>2</b> of <b>3</b>									
PROJECT <b>Ground Investigation Request Slope No. 8NW-C/C7, Location: Sai Sha Road, Sai Kung.</b>													
METHOD <b>RC</b>			CO-ORDINATES <b>E 845388.31</b> <b>N 830804.72</b>		W.O. No <b>GE/97/13.24</b>								
MACHINE & No. <b>DR 73</b>					DATE: <b>07/02/1998</b> to <b>12/02/1998</b>								
FLUSHING MEDIUM <b>WATER</b>			ORIENTATION <b>VERTICAL</b>		GROUND LEVEL <b>69.04</b> <b>mPD</b>								
Drilling Progress	Casing size	Water level (m) Shift start/end	T.C.R.(%)	S.C.R.(%)	R.Q.D.(%)	F.I.	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
11			100	85	85	>20 7.2		12-101	10.70				As sheet 1 of 3.
12			100	60	35			12-113					
13		9.30m at 18:00				>20 14.6		13-140					
11/02		Dry at 08:00	100	73	63			14-30					
14			100	6	0	NI >20 NI							Moderately strong, brownish yellow, moderately decomposed, coarse grained quartz-rich SANDSTONE, highly fractured. Joints are closely to medium spaced, rough, undulating and planar, extremely narrow, iron stained, dipping at 20°-35° and 60°-70°.
15			100	85	80	9.2		15-28					
16			100	77	60			16-42	62.82	16.42		III	
17			100	85	80			16-84					
18			100	86	80			18-00					Moderately strong, purple locally light grey, moderately decomposed, fine grained SANDSTONE. Joints are closely to medium occasionally very closely spaced, rough, planar and undulating, extremely narrow, iron stained locally clayey silt and manganese infilled (<1mm), dipping at 25°-30° and 70°.
19						6.1		18-64	50.64	18.40		III	
20		17.70m	100	100	97			19-28					

Small Disturbed Sample  
 Piston Sample  
 U78 Undisturbed Sample  
 U100 Undisturbed Sample  
 Mixer Sample  
 SPT Liner Sample  
 Water Sample

Standard Penetration Test  
 In-situ Vane Shear Test  
 Permeability Test  
 Impression Packer Test  
 Packer Test  
 Piezometer Tip  
 Standpipe Tip

LOGGED F.S. Woo  
 DATE 13/02/1998  
 CHECKED C.K. Chen  
 DATE 20/02/1998

REMARKS

 <b>ENPACK (HONG KONG) LIMITED</b> Civil Engineers & Contractors Antenna Building, 8th Floor, 31 Hing Fong Road Kowloon, Hong Kong Tel: 2378 2333 Fax: 2378 0282										<b>DRILLHOLE RECORD</b>										HOLE NO. <b>BH 1</b>	
										CONTRACT NO. <b>GE/97/13</b>										SHEET <b>3</b> of <b>3</b>	
<b>PROJECT</b> Ground Investigation Request Slope No. 8NW-C/C7, Location: Sai Sha Road, Sai Kung.																					
<b>METHOD</b> RC										<b>CO-ORDINATES</b> <b>E 845386.31</b> <b>N 830804.72</b>										<b>W.O. No</b> GE/97/13.24	
<b>MACHINE &amp; No.</b> DR 73																				<b>DATE:</b> 07/02/1998 to 12/02/1998	
<b>FLUSHING MEDIUM</b> WATER										<b>ORIENTATION</b> VERTICAL										<b>GROUND LEVEL</b> 69.04 mPD	
Drilling Progress	Casing size	Water level (m) Shift start/end	T.C.R. (%)	S.C.R. (%)	R.Q.D. (%)	F.I.	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description								
12/02		18:00 dry 18:00	100	90	88	>20 5.8		12-101	20.28				As sheet 2 of 3.								
21			100	92	92	>20 6.3			21.08												
22																					
23			100	55	55	18.8 5.8		12-101	22.58												
24		17.90m 18:00	75	50	0	NA		23.70	45.34 45.14	23.70 23.90	1011	V	Extremely weak to weak, purplish red, completely decomposed, SILTSTONE. (Sandy SILT with some coarse gravel sized moderately weak rock fragments) End of investigation hole at 23.90m.								
25																					
26																					
27																					
28																					
29																					
30																					
 Small Disturbed Sample  Piston Sample  U75 Undisturbed Sample  U100 Undisturbed Sample  Mud Sample  SPT Liner Sample  Water Sample								 Standard Penetration Test  Vane Shear Test  Permeability Test  Impression Packer Test  Friction Test  Piezometer Tip  Sonde Tip								<b>LOGGED</b> <u>F.S. Woo</u> <b>DATE</b> <u>13/02/1998</u> <b>CHECKED</b> <u>C.K. Chan</u> <b>DATE</b> <u>20/02/1998</u>		<b>REMARKS</b>			



<b>ENPACK (HONG KONG) LIMITED</b> Civil Engineers & Contractors <small>Artistic Building, 9th Floor, 34 Austin Road          Tsimshatsui, Hong Kong          Tel: 2759 2121 Fax: 2759 0252</small>										<b>DRILLHOLE RECORD</b>										HOLE NO. <b>BH 2</b>									
CONTRACT NO. <b>GE/97/13</b>																				SHEET <b>1</b> of <b>3</b>									
PROJECT <b>Ground Investigation Request Slope No. 8NW-C/C7, Location: Sai Sha Road, Sai Kung.</b>																													
METHOD <b>W + RC</b>															CO-ORDINATES <b>E 845421.17</b> <b>N 830824.84</b>										W.O. No <b>GE/97/13.24</b>				
MACHINE & No. <b>DR 21</b>																									DATE: <b>07/02/1998 to 11/02/1998</b>				
FLUSHING MEDIUM <b>WATER</b>															ORIENTATION <b>VERTICAL</b>										GROUND LEVEL <b>48.81 mPD</b>				
Drilling Progress	Casing size	Water level (m) Shift start/end	T.C.R.(%)	S.C.R.(%)	R.Q.D.(%)	F.I.	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description																
7/2	PX							1 0.40					Firm to stiff, brownish yellow (10YR 8/8), sandy clayey SILT with some subangular coarse gravel sized moderately weak to moderately strong siltstone and sandstone rock fragments. (DEBRIS FLOW DEPOSIT ?)																
1			93					2 1.40	47.41	1.40			Extremely weak, yellow, red dappled yellowish brown, completely to highly decomposed SILTSTONE. (Slightly clayey SILT)  From 3.40-3.50m and 7.40-7.50m: With some medium to coarse gravel sized weak to moderately weak rock fragments.																
2							3 1.80																						
3							4 2.80																						
4	HX		95				5 2.80																						
5							6 3.40																						
6							7 3.50																						
7							8 4.50																						
8							9 4.60																						
9			100				10 5.40																						
10							11 5.50																						
11							12 5.90																						
12							13 6.00																						
13							14 7.40																						
14			96				15 7.50																						
15		4.85m at 18:00					16 8.50																						
16		5.85m at 08:00	82	0	0	NR	17 9.70	39.91	8.90			III	Moderately strong light grey and yellowish brown, moderately decomposed coarse grained SANDSTONE, highly fractured.																
17												IV/III	Moderately weak to moderately strong, purplish red highly to moderately decomposed SILTSTONE, highly fractured.																
18			79	23	13	NR						V/V	Where intact, joints are close to medium spaced.																
19												IV/III																	

Small Disturbed Sample  
 Piston Sample  
 U75 Undisturbed Sample  
 U100 Undisturbed Sample  
 Mud Sample  
 SPT Liner Sample  
 Water Sample

Standard Penetration Test  
 In-situ Vane Shear Test  
 Permeability Test  
 Impression Packer Test  
 Packer Test  
 Piezometer Tip  
 Sonde Tip

LOGGED F.S.Woo

DATE 12/02/1998

CHECKED C.K. Chan

DATE 21/02/1998

REMARKS

1. Two piezometer tips installed at 8.70m and 17.50m depths.

<b>ENPACK (HONG KONG) LIMITED</b> Civil Engineers & Contractors Arcade Building, 401-403, 34 Aikway Road Kowloon, Hong Kong Tel: 2376 8121 Fax: 2376 0253		<b>DRILLHOLE RECORD</b>		HOLE NO. <b>BH 2</b>										
		CONTRACT NO. <b>GE/97/13</b>		SHEET <b>2</b> of <b>3</b>										
PROJECT <b>Ground Investigation Request Slope No. 8NW-C/C7, Location: Sai Sha Road, Sai Kung.</b>														
METHOD <b>W+RC</b>			CO-ORDINATES <b>E 848421.17</b> <b>N 830824.84</b>		W.O. No <b>GE/97/13.24</b>									
MACHINE & No. <b>DR 21</b>					DATE: <b>07/02/1998 to 11/02/1998</b>									
FLUSHING MEDIUM <b>WATER</b>			ORIENTATION <b>VERTICAL</b>		GROUND LEVEL <b>48.81</b> mPD									
Drilling Progress	Casing size	Water level (m) Shift start/end	T.C.R.(%)	S.C.R.(%)	R.Q.D.(%)	F.I.	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description	
11			100	13	8	NR		T2-M1				V/IV IV/III	rough, planar and undulating, iron stained and kaolin (< 1mm), infilled, dipping at 20°, 40° and subvertical. From 9.60-9.70m and 10.00-10.20m: No recovery assumed to be completely to highly decomposed siltstone.	
			>20	NI										
			100	29	13	>20								
			100	63	47	NI								>20
			100	54	0	10.0								
			NI	>20	NI	15.0								
			NI	>20	NI	11.5								
			100	78	48	>20								6.7
			100	0	0	NI								
			100	89	43	8.0								
			100	81	38	NI								13.1
10/2		5.00m at 18:00 7.03m at 08:00	98	65	38	>20 11.5			14.38	34.51	14.30	III	Moderately strong, light grey, moderately decomposed, fine grained SANDSTONE. Joints are closely spaced, rough, planar, extremely narrow, iron stained, locally clayey silt infilled (< 1mm), dipping at 30°-40°.	
15														
16									18.72	23.01	15.80	III	Moderately weak to moderately strong, light grey, purplish red, moderately decomposed SILTSTONE. Joints are closely to medium spaced, rough planar, extremely narrow, iron stained dipping at 30° and 70°.	
17									17.09	31.81	17.00	IV/III	Weak to moderately weak, light grey, brownish yellow and purplish grey, highly to moderately decomposed quartz-rich SANDSTONE highly fractured.	
18									17.80					
19									19.00	30.01	18.80	IV/III	Moderately weak to moderately strong, purplish red to purplish grey, highly to moderately decomposed, fine grained SANDSTONE. Joints are closely spaced, rough, planar, extremely narrow, iron stained occasionally clayey silt infilled (< 1mm), dipping at 5°.	
11/2		8.85m at 18:00 Dry at 08:00	100	80	33	>20 13.3			18.80					
20														
<div style="display: flex; justify-content: space-between;"> <div>  Small Disturbed Sample   Piston Sample   U75 Undisturbed Sample   U100 Undisturbed Sample   Master Sample   SPT Linear Sample   Water Sample         </div> <div>  Standard Penetration Test   In-situ Vane Shear Test   Permeability Test   Impression Packer Test   Packer Test   Piezometer Tip   Standpipe Tip         </div> </div>								LOGGED <u>F.S.Woo</u> DATE <u>12/02/1998</u> CHECKED <u>C.K. Chan</u> DATE <u>21/02/1998</u>		REMARKS				

<b>ENPACK (HONG KONG) LIMITED</b> Civil Engineers & Contractors Automatic Building, 8th Floor, 24 Aikway Road Hong Kong Tel: 2370 2121 Fax: 2370 0955										<b>DRILLHOLE RECORD</b>										HOLE NO. <b>BH 2</b>									
CONTRACT NO. <b>GE/97/13</b>																				SHEET <b>3</b> of <b>3</b>									
PROJECT <b>Ground Investigation Request Slope No. 8NW-C/C7, Location: Sai Sha Road, Sai Kung.</b>																													
METHOD <b>W + RC</b>															CO-ORDINATES <b>E 845421.17</b> <b>N 830824.84</b>										W.O. No <b>GE/97/13.24</b>				
MACHINE & No. <b>DR 21</b>																									DATE: <b>07/02/1998 to 11/02/1998</b>				
FLUSHING MEDIUM <b>WATER</b>															ORIENTATION <b>VERTICAL</b>										GROUND LEVEL <b>48.81 mPD</b>				
Drilling Progress	Casing size	Water level (m) Shift start/end	T.C.R. (%)	S.C.R. (%)	R.Q.D. (%)	F.I.	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description																
		Dry at 18:00							27.39	20.82	• • • • •		20°-30° and 60°-70°.																
21													End of investigation hole at 20.82m.																
22																													
23																													
24																													
25																													
26																													
27																													
28																													
29																													
30																													
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Small Disturbed Sample</p> <p>Piston Sample</p> <p>U78 Undisturbed Sample</p> <p>U100 Undisturbed Sample</p> <p>Mudbar Sample</p> <p>SPT Linear Sample</p> <p>Water Sample</p> </div> <div style="width: 45%;"> <p>Standard Penetration Test</p> <p>In-situ Vane Shear Test</p> <p>Permeability Test</p> <p>Impression Packer Test</p> <p>Partial Test</p> <p>Piezometer Tip</p> <p>Sandpipe Tip</p> </div> </div>								LOGGED <u>F.S. Woo</u> DATE <u>12/02/1998</u> CHECKED <u>C.K. Chan</u> DATE <u>21/02/1998</u>										REMARKS											



<b>ENPACK (HONG KONG) LIMITED</b> Civil Engineers & Contractors Assets Building, 6th Floor, 54 Austin Road Kowloon, Hong Kong Tel: 2770 5171 Fax: 2770 8052		<b>PROJECT :</b> Ground Investigation Request Slope No. 8NW-C/C7, Location: Sai Sha Road, Sai Kung.		<b>LOGGED BY :</b> F.S.Woo <b>DATE :</b> 21/02/1998		<b>CO-ORDINATES :</b> E 845393.33 N 830773.94		<b>GROUND LEVEL :</b> 52.65 m.P.D. <b>EXCAVATION DATE :</b> 16/02/1998 to 17/02/1998 <b>BACKFILL DATE :</b> 06/03/1998 to 06/03/1998		<b>TRIAL PIT NO. :</b> TP 4					
<b>CONTRACT NO. :</b> GE97/13		<b>WORK ORDER NO. :</b> GE/97/13.24		<b>CHECKED BY :</b> C.K. Chan <b>DATE :</b> 24/03/1998											
<b>Samples &amp; Tests</b>		<b>Depth (m)</b>		<b>Sketch</b> Face A : 1.50 m    Face B : 1.50 m    Face C : 1.50 m    Face D : 1.50 m				<b>Depth (m)</b>		<b>Legend (Face D)</b>		<b>Weathering Grade</b>		<b>Description</b>	
		1.00						1.00		IV/III		Firm to stiff, yellow (10YR 7/8), sandy, clayey SILT with many angular to subangular coarse gravel and cobble sized moderately weak to moderately strong siltstone and sandstone fragments. (DEBRIS FLOW DEPOSIT)			
		2.00						2.00				Very weak to moderately weak, orangish brown to purple, highly to moderately decomposed, SILTSTONE with many cracks at top part (<10mm). Joints : 1. 35°/022° : rough, planar, clayey silt (<2mm). 2. 80°/166° : rough, planar, clayey silt infilled (<2mm).			
PLAN		SECTION				SYMBOL				REMARKS					
						1. Disturbed Sample 2. Undisturbed Sample Hori. ( ) 3. Undisturbed Sample Vert. ( ) 4. Block Sample 5. In situ Density Test 6. Water Sample 7. Schmidt Hammer 8. Seepage				1. Groundwater was not encountered. 2. Average depth of pit : 2.30m. 3. The trial pit was stable during excavation.					

TRIAL PIT RECORD

Trial Pit No.  
TP 4

ENPACK (HONG KONG) LIMITED Civil Engineers & Contractors Avenue Building, 8th Floor, 34 Hubble Road Kowloon, Hong Kong Tel: 2375 2121 Fax: 2375 8257		PROJECT : Ground Investigation Request Slope No. 8NW-C/C7, Location: Sai Sha Road, Sai Kung.		LOGGED BY : F.S. Woo DATE : 21/02/1998		CO-ORDINATES : E 845408.60 N 830818.43		GROUND LEVEL : 55.51 m.P.D. EXCAVATION DATE : 16/02/1998 to 17/02/1998 BACKFILL DATE : 06/03/1998 to 06/03/1998		TRIAL PIT NO : TP 5			
CONTRACT NO. : GE/97/13		WORK ORDER NO. : GE/97/13.24		CHECKED BY : C.K. Chan DATE : 24/03/1998									
Samples & Tests	Depth (m)	Sketch				Depth (m)	Legend (Face D)	Weathering Grade	Description				
		Face A : 1.50 m	Face B : 1.50 m	Face C : 1.50 m	Face D : 1.50 m								
	0.10					0.10			Stiff, dark brown, organic, sandy, clayey SILT with subangular gravel, roots scattered throughout the layer. (TOPSOIL)  Soft to stiff, yellow (10YR 7/8), sandy, clayey SILT with many angular to subangular coarse gravel and cobble sized moderately weak to moderately strong siltstone and sandstone fragments. (DEBRIS FLOW DEPOSIT)				
	1.30												
	2												
	3.40												
	4					4			Very weak to moderately weak, light grey and purplish brown, highly to moderately decomposed, SILTSTONE. From 1.30-2.40m : 33°/094°, rough, planar, clayey silt infilled (<8mm) joints.  Below 2.40m : 30°/092°, rough, planar, clayey silt infilled (<4mm) joints.				
	5					5							
PLAN		SECTION		SYMBOL		REMARKS							
				! Disturbed Sample □ Undisturbed Sample Hori. ( ) ▢ Undisturbed Sample Vert. ( ) ▣ Block Sample U Insitu Density Test △ Water Sample ▼ Schmidt Hammer † Seepage		1. Groundwater was not encountered. 2. Average depth of pit : 3.00m. 3. The trial pit was stable during excavation.							

TRIAL PIT RECORD

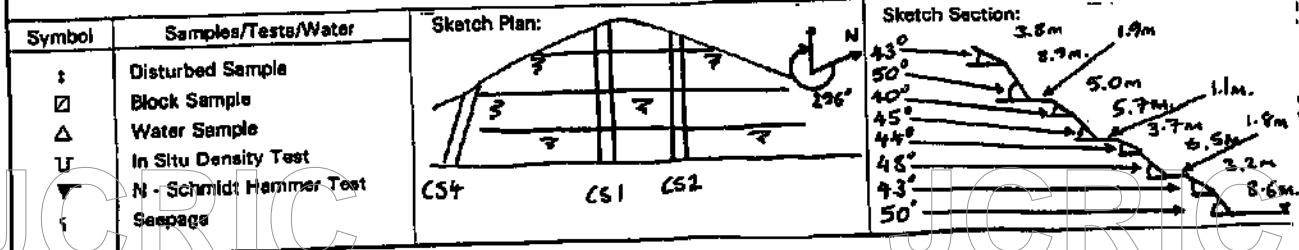
Trial Pit No.  
TP 5

# SLOPE STRIPPING RECORD

<b>CONTRACTOR:</b> Enpack (H.K.) Ltd.				<b>CONTRACT NO.:</b> GE/97/13	
<b>W.O. No.:</b> GE/97/13.24		<b>Datum (Toe)</b>		<b>Datum (Crest)</b>	
<b>Project:</b> Ground Investigation Request Slope No. 8NW-C/C7, Location: She Sai Road Sai Kung.		<b>Co-ordinates:</b>		<b>Slope No.:</b> CS 1	
		<b>Easting</b> 845427.11		<b>Easting</b> 845395.45	
		<b>Northing</b> 830782.24		<b>Northing</b> 830802.19	
<b>Level</b> 33.87 mPD		<b>Level</b> 86.75 mPD		<b>Sheet 1 of 3</b>	
<b>Date Started:</b> 19/02/1998		<b>Date Completed:</b> 20/02/1998		<b>Date Reinstated:</b> 09/03/1998	
		<b>Logged by:</b> F.S. Woo <i>off</i>		<b>Checked by:</b> C.K. Chan <i>h</i>	

Discontinuities								
Distance from Datum (m)	Slope Angle (°)	Reduced Level (mPD)	Samples and Tests	Description	Legend	Grade	Dip/ Dip Direction	Nature & Infilling
1 1.80 2 3 4	43	86.76	1 ± 2 ±	Extremely weak, yellow, completely decomposed, SANDSTONE. (Silty coarse SAND)		V		
				Weak to moderately weak, purple and grey, highly decomposed, SILTSTONE, highly fractured.		IV		
				Moderately strong, purple and yellow, moderately decomposed, quartz rich SANDSTONE.		III		
				Joints are closely to medium spaced, rough, planar, tight or iron stained locally clayey silt infilled (<3mm).		III		
5 5.00 6 6.00 7 8 9 10 11 12 13 14	60			Very weak to weak, purple to purplish grey, moderately decomposed, SANDSTONE. Joints are closely to medium spaced, rough, planar, tight or iron stained locally clayey silt infilled (<3mm).			25°/105° 80°/301°	rough undulating iron stained
	40						48°/325°	clayey silt (<3mm)
							87°/358° 84°/080° 86°/182° 20°/110°	rough, planar rough, planar rough, planar possible bedding plane

Remark: 1. Chunam protection (<25mm).





# SLOPE STRIPPING RECORD

<b>CONTRACTOR:</b> Enpack (H.K.) Ltd.				<b>CONTRACT NO.:</b> GE/97/13			
<b>W.O. No.:</b> GE/97/13.24		<b>Datum (Toe)</b>		<b>Datum (Crest)</b>		<b>Strip No.:</b> CS 1	
<b>Project:</b> Ground Investigation Request Slope No. BNW-C/C7, Location: She Sai Road Sai Kung.		<b>Co-ordinates:</b>		<b>Co-ordinates:</b>		<b>Slope No.:</b> 8 NW-C/C 7	
		Easting 845427.11		Easting 845395.45		Sheet 2 of 3	
		Northing 830782.24		Northing 830802.19			
Level 33.87 mPD		Level 55.75 mPD					
<b>Date Started:</b> 19/02/1998		<b>Date Completed:</b> 20/02/1998		<b>Date Reinstated:</b> 09/03/1998		<b>Logged by:</b> F.S. Wong	
						<b>Checked by:</b> C.K. Chan	

Distance from Datum (m)	Slope Angle (°)	Reduced Level (mPD)	Samples and Tests	Description	Legend	Grade	Discontinuities	
							Dip/ Dip Direction	Nature & Infilling
16	45	18.80		As sheet 1 of 3.		III	28°/340°	rough, planar iron stained
17				Moderately strong, yellow, moderately decomposed, SANDSTONE. Joints are closely spaced, rough, planar, tight.			40°/340°	rough, planar tight
18							55°/065°	rough, planar tight
19							80°/152°	rough, planar tight
20	44	23.40		Moderately strong to strong, yellowish brown, moderately decomposed, SANDSTONE. Joints are medium spaced, rough and smooth, planar and undulating, extremely narrow to tight, iron stained and clean locally clayey silt infilled (<3mm).		III		
21								
22								
23								
24	48	26.50		Weak, purple and light grey, highly to moderately decomposed, SILTSTONE. Joints are medium spaced, rough and smooth, planar and undulating, extremely narrow to tight, iron stained and clean locally clayey silt infilled (<3mm).		IV/III	20°/065°	rough, planar iron stained
25								
26								
27								
28							85°/305°	smooth undulating
29								
30								

**Remark:**

<b>Symbol</b> □ Disturbed Sample ■ Block Sample △ Water Sample ▮ In Situ Density Test ▴ N - Schmidt Hammer Test ▾ Seepage	<b>Samples/Tests/Water</b>	<b>Sketch Plan:</b>	<b>Sketch Section:</b>
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# SLOPE STRIPPING RECORD

<b>CONTRACTOR:</b> Enpack (H.K.) Ltd.				<b>CONTRACT NO.:</b> GE/97/13			
<b>W.O. No.:</b> GE/97/13.24		<b>Datum (Toe)</b>		<b>Datum (Crest)</b>		<b>Strip No.:</b> CS 1	
<b>Project:</b> Ground Investigation Request Slope No. 88W-CIC7, Location: She Sai Road Sai Kung.		<b>Co-ordinates:</b>		<b>Co-ordinates:</b>		<b>Slope No.:</b> 8 NW-C/C 7	
		Easting 845427.11		Easting 845395.45		Sheet 3 of 3	
		Northing 830782.24		Northing 830802.19			
		Level 33.87 mPD		Level 65.75 mPD			
<b>Date Started:</b> 19/02/1998		<b>Date Completed:</b> 20/02/1998		<b>Date Reinstated:</b> 09/03/1998		<b>Logged by:</b> F.S. Woo <i>ell</i>	
						<b>Checked by:</b> C.K. Chan <i>h</i>	

Distance from Datum (m)	Slope Angle (°)	Reduced Level (mPD)	Samples and Tests	Description	Legend	Grade	Discontinuities	
							Dip/ Dip Direction	Nature & Infiling
31.00	43			As sheet 2 of 3.		III	28°/045°	clayey silt (<3mm)
32				Moderately strong, yellowish brown and purplish red, moderately decomposed, SANDSTONE. Joints are medium to widely spaced, rough, planar and slickensided undulating, extremely narrow, iron stained.			75°/182° 76°/195°	slickensided undulating
33								
34	50			From 35.90-36.90m : quartz rich sandstone.		III		
35								
36								
37.00				Weak, purplish red, moderately decomposed, SILTSTONE. Joints are medium spaced, rough, planar, extremely narrow, iron stained.		III	34°/043°	rough, planar
38								
39								
40				Moderately strong, yellowish brown, moderately decomposed, quartz rich SANDSTONE. Joints are medium spaced, rough, planar, extremely narrow, iron stained.		III	82°/142° 88°/153° 87°/195° 74°/087°	rough, planar iron stained rough, planar rough, planar
41								
42								
41.50								
43								
44								
44.40				End of stripping at 44.40m.				
45								

<b>Remark:</b>			


  

Symbol	Samples/Tests/Water	Sketch Plan:	Sketch Section:
⊞ Disturbed Sample ▣ Block Sample △ Water Sample ⊏ In Situ Density Test ▼ N - Schmidt Hammer Test ‡ Seepage			

SLOPE STRIPPING RECORD									
CONTRACTOR: Enpack (H.K.) Ltd.					CONTRACT NO.: GE/97/13				
W.O. No.: GE/97/13.24		Datum (Toe)			Datum (Crest)			Strip No.: CS 2	
Project: Ground Investigation Request Slope No. NW-C/C7, Location : She Sai Road Sai Kung.		Co-ordinates:			Co-ordinates:			Slope No.: 8 NW-C/C 7	
		Easting 845434.63			Easting 845409.81				
		Northing 830796.81			Northing 830812.14				
		Level 33.31 mPD			Level 57.02 mPD			Sheet 1 of 3	
Date Started: 18/02/1998		Date Completed: 19/02/1998		Date Reinstated: 09/03/1998		Logged by: F.S.Woo		Checked by: C.K. Chan	
Distance from Datum (m)	Slope Angle (°)	Reduced Level (mPD)	Samples and Tests	Description	Legend	Grade	Discontinuities		
							Dip/ Dip Direction	Nature & Infilling	
	44	57.02	1 ± 2 ± 3 ±	Very weak, yellow, highly decomposed, SILTSTONE, highly fractured.		IV			
1.70	45			Moderately weak, light grey, moderately decomposed, SILTSTONE, highly fractured.		III			
3.20				Moderately strong, yellow, moderately decomposed, SANDSTONE. Joints are closely to medium spaced, rough, planar, extremely narrow, iron stained.		III			
5.20				Weak to moderately weak, purplish red, highly to moderately decomposed, SILTSTONE. Joints are closely to medium spaced, rough, planar, extremely narrow, iron stained.		IV/III	70°/300°	rough, planar	
6									
7									
8									
9									
10							45°/076°	rough, planar iron stained	
11							80°/330°	rough, planar	
12.00	45								
13				Weak to moderately strong, light grey and purple, moderately decomposed, SILTSTONE. Joints are closely to medium spaced, rough, planar, extremely narrow, iron stained.		III			
14									
15									
Remark:									
Symbol	Samples/Tests/Water	Sketch Plan:			Sketch Section:				
<input type="checkbox"/> Disturbed Sample <input checked="" type="checkbox"/> Block Sample <input type="checkbox"/> Water Sample In Situ Density Test N-Schmidt Hammer Test Seepage		 CS1      CS2			 45°    50°    35°    53°				

Symbol	Samples/Tests/Water
I	Disturbed Sample
☐	Block Sample
△	Water Sample
U	In Situ Density Test
▼	N - Schmidt Hammer Test
⋮	Seepage

**Sketch Plan:**



CS1 CS2

1.3m

2.96

**Sketch Section:**

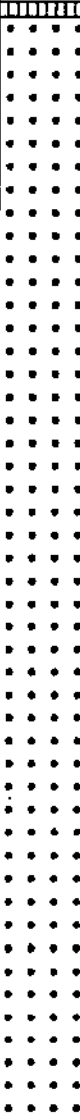
The sketch shows a series of connected roof segments with the following dimensions and angles:

- Segment 1: Angle  $44^\circ$ , Length  $1.7\text{m}$
- Segment 2: Length  $1.8\text{m}$
- Segment 3: Length  $10.0\text{m}$
- Segment 4: Length  $1.2\text{m}$
- Segment 5: Angle  $45^\circ$ , Length  $4.5\text{m}$
- Segment 6: Angle  $45^\circ$ , Length  $6.3\text{m}$
- Segment 7: Length  $1.6\text{m}$
- Segment 8: Angle  $50^\circ$
- Segment 9: Angle  $35^\circ$ , Length  $4.0\text{m}$
- Segment 10: Angle  $53^\circ$ , Length  $7.8\text{m}$




# SLOPE STRIPPING RECORD

<b>CONTRACTOR:</b> Enpack (H.K.) Ltd.				<b>CONTRACT NO.:</b> GE/97/13			
<b>W.O. No.:</b> GE/97/13.24		<b>Datum (Toe)</b>		<b>Datum (Crest)</b>		<b>Strip No.:</b> CS 2	
<b>Project:</b> Ground Investigation Request Slope No. BHW-C/C7, Location: Sha Sai Road Sai Kung.		<b>Co-ordinates:</b>		<b>Co-ordinates:</b>		<b>Slope No.:</b> 8 NW-C/C 7	
		Easting 845434.63		Easting 845409.81		Sheet 2 of 3	
		Northing 830796.81		Northing 830812.14			
		Level 33.31 mPD		Level 57.02 mPD			
<b>Date Started:</b> 18/02/1998		<b>Date Completed:</b> 19/02/1998		<b>Date Reinstated:</b> 09/03/1998		<b>Logged by:</b> F.S. Wao <i>RS</i> <b>Checked by:</b> C.K. Chan <i>h</i>	

Distance from Datum (m)	Slope Angle (°)	Reduced Level (mPD)	Samples and Tests	Description	Legend	Grade	Discontinuities	
							Dip/ Dip Direction	Nature & Infilling
15.20	50			As sheet 1 of 3. Moderately strong, yellowish gray to yellowish brown, moderately decomposed, SANDSTONE. Joints are medium to widely occasionally closely spaced, rough, planar, extremely narrow, iron stained.		III	75°/098°	rough, planar
76°/084°							rough, planar	
35°/040°							rough, planar	
42°/116°							rough, planar	
80°/118°							rough, planar iron stained	
16	53						87°/210°	rough, planar
17							44°/082°	rough, planar
18								
19								
20							35	
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

**Remark:**  



Symbol	Samples/Tests/Water	Sketch Plan:	Sketch Section:
⊕	Disturbed Sample		
⊗	Block Sample		
△	Water Sample		
⊥	In Situ Density Test		
⌋	N - Schmidt Hammer Test		
⌋	Seepage		



# SLOPE STRIPPING RECORD

CONTRACTOR: Enpack (H.K.) Ltd.				CONTRACT NO.: GE/97/13			
W.O. No.: GE/97/13.24		Datum (Toe)		Datum (Crest)		Strip No.: CS 3	
Project: Ground Investigation Request Slope No. SNW-C/C7, Location: Bha Sai Road Sai Kung.		Co-ordinates:		Co-ordinates:		Slope No.: 8 NW-C/C 7	
		Easting 845442.43		Easting 845427.47		Sheet 1 of 2	
		Northing 830813.13		Northing 830820.93			
		Level 32.66 mPD		Level 47.86 mPD			
Date Started: 18/02/1998		Date Completed: 18/02/1998		Date Reinstated: 10/03/1998		Logged by: F.S. Woo <i>[Signature]</i> Checked by: C.K. Chan <i>[Signature]</i>	

Distance from Datum (m)	Slope Angle (°)	Reduced Level (mPD)	Samples and Tests	Description	Legend	Grade	Discontinuities			
							Dip/ Dip Direction	Nature & Infilling		
1	45	47.86	1 *	Extremely weak to very weak, yellow and purple, completely decomposed, SILTSTONE. (Firm to stiff, locally sandy, clayey SILT to locally coarse SAND with many cobble sized moderately weak to moderately strong rock fragments)  At 4.30m and 5.00m : relict joints.		V	72°/309°	rough, planar		
2 *										
3 *										
4 *										
5 *										
6 *										
5.60										
6				Extremely weak to very weak, red, completely decomposed, SILTSTONE. (Firm to stiff, clayey SILT)		V	45°/321°	rough, planar		
7 7.00				Extremely weak to weak, yellow and red, completely to highly decomposed, SILTSTONE. (Firm to stiff, clayey SILT)		V/IV	70°/088°	rough, planar		
8				At 9.00m : relict joint.						
9										
10										
10.70										
11	43			Weak to moderately weak, light gray and purple, highly to moderately decomposed, SILTSTONE, highly fractured.		IV/III				
12 12.00										
13						Moderately weak, light gray and purple, moderately decomposed, SILTSTONE. Joints are closely to medium spaced, rough, planar, extremely narrow, iron stained locally clayey silt infilled (< 2mm).		III	30°/080°	rough, planar iron stained
14										
15										

Remark:

Symbol * Disturbed Sample □ Block Sample △ Water Sample U In Situ Density Test ▽ N - Schmidt Hammer Test S Seepage	Samples/Tests/Water	Sketch Plan: 	Sketch Section: 
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# SLOPE STRIPPING RECORD

CONTRACTOR: Enpack (H.K.) Ltd.				CONTRACT NO.: GE/97/13				
W.O. No.: GE/97/13.24		Datum (Toe)		Datum (Crest)		Strip No.: CS 3		
<b>Project:</b> Ground Investigation Request Slope No. BW-C/C7, Location: She Sai Road Sai Kung.		Co-ordinates:		Co-ordinates:		Slope No.: 8 NW-C/C 7		
		Easting 845442.43		Easting 845427.47		Sheet 2 of 2		
		Northing 830813.13		Northing 830820.93				
		Level 32.56 mPD		Level 47.85 mPD				
Date Started: 18/02/1998		Date Completed: 18/02/1998		Date Reinstated: 10/03/1998		Logged by: F.S. Woo <i>ff</i> Checked by: C.K. Chan <i>h</i>		
Distance from Datum (m)	Slope Angle (°)	Reduced Level (mPD)	Samples and Tests	Description	Legend	Grade	Discontinuities	
							Dip/ Dip Direction	Nature & Infilling
16				As sheet 1 of 2.			76°/024°	rough, planar
17								
18								
19								
20								
21								
22	22.00			End of stripping at 22.00m.				
23								
24								
25								
26								
27								
28								
29								
30								
Remark:								
Symbol		Samples/Tests/Water		Sketch Plan:		Sketch Section:		
I Disturbed Sample □ Block Sample △ Water Sample U In Situ Density Test N - Schmidt Hammer Test S Seepage								

# SLOPE STRIPPING RECORD

CONTRACTOR: Enpack (H.K.) Ltd.				CONTRACT NO.: GE/97/13			
W.O. No.: GE/97/13.24		Datum (Toe)		Datum (Crest)		Strip No.: CS 4	
<b>Project:</b> Ground Investigation Request Slope No. 8NW-C/C7, Location : She Sai Road Sai Kung.		Co-ordinates:		Co-ordinates:		Slope No.: 8 NW-C/C 7	
		Easting 845417.02		Easting 845397.71		Sheet 1 of 2	
		Northing 830765.03		Northing 830775.94			
		Level 34.89 mPD		Level 52.09 mPD			
Date Started: 20/02/1998		Date Completed: 20/02/1998		Date Reinstated: 10/03/1998		Logged by: F.S.Woo <i>af</i>	
						Checked by: C.K. Chan <i>h</i>	

Distance from Datum (m)	Slope Angle (°)	Reduced Level (mPD)	Samples and Tests	Description	Legend	Grade	Discontinuities	
							Dip/ Dip Direction	Nature & Infilling
1	42	82.09	1 ±	Soft to firm, light brownish grey (10YR 6/2), sandy, clayey SILT with angular to subangular coarse gravel and cobble sized moderately weak to moderately strong siltstone and sandstone fragments. (DEBRIS FLOW DEPOSIT)				
2			2 ±					
3			3 ±					
4	36		4 ±					
5			5 ±					
6			6 ±					
7			7 ±					
8			8 ±					
9			9 ±					
10	40		10 ±					
11			11 ±					
12			12 ±					
13			13 ±					
14			14 ±					
15			15 ±					
16			16 ±					
17			17 ±					
18			18 ±					
19			19 ±					
20			20 ±					
21			21 ±					
22	50		22 ±					
23			23 ±					
24			24 ±					
25			25 ±					
26			26 ±					
27			27 ±					
28			28 ±					
29			29 ±					
30			30 ±					
31			31 ±					
32			32 ±					
33			33 ±					
34			34 ±					
35			35 ±					
36			36 ±					
37			37 ±					
38			38 ±					
39			39 ±					
40			40 ±					
41			41 ±					
42			42 ±					
43			43 ±					
44			44 ±					
45			45 ±					
46			46 ±					
47			47 ±					
48			48 ±					
49			49 ±					
50			50 ±					
51			51 ±					
52			52 ±					
53			53 ±					
54			54 ±					
55			55 ±					
56			56 ±					
57			57 ±					
58			58 ±					
59			59 ±					
60			60 ±					
61			61 ±					
62			62 ±					
63			63 ±					
64			64 ±					
65			65 ±					
66			66 ±					
67			67 ±					
68			68 ±					
69			69 ±					
70			70 ±					
71			71 ±					
72			72 ±					
73			73 ±					
74			74 ±					
75			75 ±					
76			76 ±					
77			77 ±					
78			78 ±					
79			79 ±					
80			80 ±					
81			81 ±					
82			82 ±					
83			83 ±					
84			84 ±					
85			85 ±					
86			86 ±					
87			87 ±					
88			88 ±					
89			89 ±					
90			90 ±					
91			91 ±					
92			92 ±					
93			93 ±					
94			94 ±					
95			95 ±					
96			96 ±					
97			97 ±					
98			98 ±					
99			99 ±					
100			100 ±					

**Remark:**

1

Symbol	Samples/Tests/Water	Sketch Plan:	Sketch Section:
+ Disturbed Sample □ Block Sample △ Water Sample U In Situ Density Test ▼ N - Schmidt Hammer Test S Seepage			

# SLOPE STRIPPING RECORD

<b>CONTRACTOR:</b> Enpack (H.K.) Ltd.				<b>CONTRACT NO.:</b> GE/97/13			
<b>W.O. No.:</b> GE/97/13.24		<b>Datum (Toe)</b>		<b>Datum (Crest)</b>		<b>Strip No.:</b> CS 4	
<b>Project:</b> Ground Investigation Request: Slope No. 8NW-C/C7, Location: She Sai Road Sai Kung.		<b>Co-ordinates:</b>		<b>Co-ordinates:</b>		<b>Slope No.:</b> 8 NW-C/C 7	
		Easting 845417.02		Easting 845397.71		Sheet 2 of 2	
		Northing 830765.03		Northing 830775.94			
Level 34.89 mPD		Level 52.09 mPD					
<b>Date Started:</b> 20/02/1998		<b>Date Completed:</b> 20/02/1998		<b>Date Reinstated:</b> 10/03/1998		<b>Logged by:</b> F.S.Woo <i>ll</i>	
						<b>Checked by:</b> C.K. Chan <i>W</i>	

Distance from Datum (m)	Slope Angle (°)	Reduced Level (mPD)	Samples and Tests	Description	Legend	Grade	Discontinuities	
							Dip/ Dip Direction	Nature & Infilling
16.00			27 ±	Moderately weak, yellowish brown, moderately decomposed, SILTSTONE. Joints are closely to medium spaced, rough, planar, iron stained.  Soft to firm, light brownish gray (10YR 8/2), sandy, clayey SILT with angular to subangular coarse gravel and cobble sized moderately weak to moderately strong siltstone and sandstone fragments. (DEBRIS FLOW DEPOSIT)			47°/100°	rough, planar
		28 ±	68°/235°				rough, planar	
17			29 ±					
		30 ±						
18			31 ±					
		32 ±						
19			33 ±					
		34 ±						
20			35 ±					
		36 ±						
21.50			37 ±	Yellowish brown and purple, subangular to angular coarse GRAVEL and COBBLE sized moderately weak to strong siltstone and sandstone fragments. (FILL / DEBRIS FLOW DEPOSIT?)				
	32	38 ±						
22			39 ±					
		40 ±						
23			41 ±					
		42 ±						
24			43 ±					
		44 ±						
25			45 ±					
		46 ±						
25.70			47 ±					
26				End of stripping at 25.70m.				
27								
28								
29								
30								

**Remark:**

Symbol	Samples/Tests/Water	Sketch Plan:	Sketch Section:
⊗	Disturbed Sample		
⊠	Block Sample		
△	Water Sample		
⊔	In Situ Density Test		
▼	N - Schmidt Hammer Test		
⋮	Seepage		



# SLOPE STRIPPING RECORD

CONTRACTOR: Enpack (H.K.) Ltd.				CONTRACT NO.: GE/97/13			
W.D. No.: GE/97/13.24		Datum (Toe)		Datum (Crest)		Strip No.: CS 5	
<b>Project:</b> Ground Investigation Request Slope No. 8NW-C/C7, Location: She Sai Road Sai Kung.		Co-ordinates:		Co-ordinates:		Slope No.: 8 NW-C/C 7	
		Easting 845448.58		Easting 845440.74		Sheet 1 of 1	
		Northing 830827.08		Northing 830830.00			
		Level 32.02 mPD		Level 39.68 mPD			
Date Started: 21/02/1998		Date Completed: 21/02/1998		Date Reinstated: 10/03/1998		Logged by: F.S.Woo <i>FL</i>	
						Checked by: C.K. Chen <i>h</i>	

Distance from Datum (m)	Slope Angle (°)	Reduced Level (mPD)	Samples and Tests	Description	Legend	Grade	Discontinuities	
							Dip/ Dip Direction	Nature & Intilling
1 1.00	35	39.68	1 ±	Firm, yellow, sandy, clayey SILT with some subangular to subrounded medium to coarse gravel sized moderately weak to moderately strong rock fragments. (RESIDUAL SOIL?)		VI		
2 ±			Extremely weak to weak, yellowish grey and purple, completely decomposed, SILTSTONE. (Firm to stiff, clayey SILT)		V			
3			Very weak, yellowish purple and light grey, completely to highly decomposed, SILTSTONE. (Stiff, clayey SILT)		V/IV			
4	50		4	Very weak to weak, yellowish grey and red, highly decomposed, SILTSTONE.		IV	48°/352D	rough, planar
5			3 ±	At 9.00m : relict joint.		IV		
6								
7								
8	10 10.00		4 ±	Moderately weak to moderately strong, purple and yellowish brown, highly to moderately decomposed, SILTSTONE. Joints are closely spaced, rough, planar, tight.		IV/III	57°/380°	rough, planar
9								
10	11 11.90			End of investigation hole at 11.90m.				
11								
12								
13								
14								
15								

**Remark:**

Symbol	Sample/Tests/Water	Sketch Plan:	Sketch Section:
⊕	Disturbed Sample		
⊠	Block Sample		
△	Water Sample		
⊥	In Situ Density Test		
⊥	N - Schmidt Hammer Test		
⊥	Seepage		

JCRIC

JCRIC

***Appendix H - Groundwater Records***

JCRIC

JCRIC

JCRIC

Works Order No. GE/97/13.24  
Ground Investigation Request  
Slope No. 8NW-C/C7  
Location : Sai Sha Road, Sai Kung

### GROUNDWATER RECORDS

Drillhole No.	BH 1	BH 1	BH 2	BH 2			
Type of Installation	Piezometer	Piezometer	Piezometer	Piezometer			
Date of Installation	12/2/1998	12/2/1998	12/2/1998	12/2/1998			
Installation Depth (m)	14.80	23.60	7.00	17.50			
Ground Level (mPD)	+69.04	+69.04	+48.81	+48.81			
Date	Water Level (m) (depth measured below ground level)						
1 - 2 - 1998							
2 - 2 - 1998							
3 - 2 - 1998							
4 - 2 - 1998							
5 - 2 - 1998							
6 - 2 - 1998							
7 - 2 - 1998							
8 - 2 - 1998							
9 - 2 - 1998							
10 - 2 - 1998							
11 - 2 - 1998							
12 - 2 - 1998							
13 - 2 - 1998	Dry	22.94					
14 - 2 - 1998	Dry	22.90	4.05	Dry			
15 - 2 - 1998							
16 - 2 - 1998	Dry	22.85	4.03	Dry			
17 - 2 - 1998	Dry	22.78	3.98	Dry			
18 - 2 - 1998	Dry	22.76	3.98	Dry			
19 - 2 - 1998	Dry	22.79	4.02	Dry			
20 - 2 - 1998	Dry	22.83	4.04	Dry			
21 - 2 - 1998			4.07	Dry			
22 - 2 - 1998							
23 - 2 - 1998							
24 - 2 - 1998							
25 - 2 - 1998							
26 - 2 - 1998							
27 - 2 - 1998							
28 - 2 - 1998							

Recorded by : Y. M. Leung

Issued Date : 11/3/1998

Checked by : Richard C. K. Chan

Revision No. :



FUGRO FUGRO GEOTECHNICAL SERVICES LTD		DRILLHOLE RECORD		HOLE No. SK/DH2										
CONTRACT No.: GE/2007/13		SHEET: 1 of 4												
PROJECT: Agreement No. CE 30/2007 (HY), Cycle Tracks Connecting North West New Territories with North East New Territories (Extension), Major Sections														
METHOD: Rotary Drilling		CO-ORDINATES:		WORKS ORDER No. GE/2007/13.15										
MACHINE & No.: FDR-55		E 845431.40 N 830767.68		DATE from: 17/12/2009 to 21/12/2009										
FLUSHING MEDIUM: Water		ORIENTATION: Vertical		GROUND LEVEL + 34.14 mPD										
Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
17/12/2009	PW								No. Type Depth	34.14	0.00			
1									1 INSPECTION PIT	0.00				Light yellowish brown (2.5YR/6/4), angular to subangular fine to coarse GRAVEL of extremely weak to weak metasiltstone with a little sandy clayey silt matrix. (COLLUVIUM)
2									2	0.00				
3								1, 2, 4, 3, 2, 2 N=11	3	0.00				Weak, light yellowish brown, highly decomposed METASILTSTONE. (Recovered as angular fine to coarse gravel)
4									4	0.00				
5		3.60m at 18:00							5	0.00				
6		4.00m at 08:00							6	0.00				
7	PW 6.15 HW							3, 7, 13, 17, 27, 38 N=95	7	0.00				Extremely weak to very weak, dark brown (7.5YR/3/4), completely decomposed METASILTSTONE. (Sandy clayey SILT with some angular gravel)
8									8	0.00				
9									9	0.00				
10									10	0.00				
11									11	0.00				
12									12	0.00				
13									13	0.00				
14									14	0.00				
15									15	0.00				
16									16	0.00				
17									17	0.00				
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27									27	0.00				
28									28	0.00				
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121									121	0.00				
122									122	0.00				
123									123	0.00				
124														


<b>FUGRO GEOTECHNICAL SERVICES LTD</b>		<b>DRILLHOLE RECORD</b>		HOLE No. <b>SK/DH2</b>	
		CONTRACT No.: <b>GE/2007/13</b>		SHEET: <b>2</b> of <b>4</b>	
PROJECT: <b>Agreement No. CE 30/2007 (HY), Cycle Tracks Connecting North West New Territories with North East New Territories (Extension), Major Sections</b>					
METHOD: <b>Rotary Drilling</b>		CO-ORDINATES:		WORKS ORDER No. <b>GE/2007/13.15</b>	
MACHINE & No.: <b>FDR-55</b>		E <b>845431.40</b> N <b>830787.68</b>		DATE from: <b>17/12/2009</b> to <b>21/12/2009</b>	
FLUSHING MEDIUM: <b>Water</b>		ORIENTATION: <b>Vertical</b>		GROUND LEVEL <b>+ 34.14</b> mPD	










  











Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RQD %	F1	Tests	Samples		Reduced Level	Depth (m)	Legend	Grade	Description
									No.	Type					
11			80	100	76	47	12.7		TB-105		23.64	10.50		III	10.50 - 10.83m : Moderately weak to moderately strong.
						10.65									
						23.31			10.83						
12			80	100	27	0	12.7		TB-106					III	
13			80	100	93	26	12.7		TB-107					III	
14			80	100	95	79	5.2		TB-108					III	
15			80	100	73	49	5.2		TB-109		19.94	14.20		IV	Weak, yellowish brown, highly decomposed METASILTSTONE. (Recovered as angular and subangular gravel and cobbles with a little clayey sandy silt matrix)
16		HW 16.92	80	85	0	0	>20		TB-110					IV	Moderately weak to moderately strong, highly decomposed METASILTSTONE. (Recovered as angular gravel and cobbles)
17		14.15m at 08:00	80	100	36	0	14.7		TB-111		18.72	16.42		IV	Moderately strong, greyish brown, moderately decomposed, silicified, METASILTSTONE. Joints are closely spaced, smooth planar, extremely narrow, iron and manganese oxide stained, locally kaolin infilled (<2mm), dipping at 15°-25°, 35°-45°, 45°-55°, 60°-70° and 75°-85°. 16.58 - 18.50m : Highly silicified.
18			80	100	29	18	14.7		TB-112		18.22	15.92		III	Moderately strong, greyish brown, moderately decomposed, silicified, METASILTSTONE. Joints are closely spaced, smooth planar, extremely narrow, iron and manganese oxide stained, locally kaolin infilled (<2mm), dipping at 15°-25°, 35°-45°, 45°-55°, 60°-70° and 75°-85°. 16.58 - 18.50m : Highly silicified.
19			80	100	26	0	12.0		TB-113		17.69	16.58		II	19.42 - 20.67m : Strong, grey, slightly decomposed METASILTSTONE. Joints are closely to medium spaced, smooth
20			80	100	11	0	12.0		TB-114		15.92	15.92		II	
21			80	100	42	19	12.0		TB-115		17.00			II	
22			80	100	46	22	12.0		TB-116		17.53			II	
23			80	100	64	0	12.0		TB-117		17.98			II	
24			80	100	46	22	12.0		TB-118		18.50	18.50		II	
25			80	100	64	0	12.0		TB-119		19.16			II	
26			80	100	64	0	12.0		TB-120		19.37	19.42		II	

Small Disturbed Sample Piston sample U78 Undisturbed Sample U100 Undisturbed Sample Mazier Sample 76mm Vibrocore Sample 100mm Vibrocore Sample Vibrocore Sub-sample SPT Litter Sample	Standard Penetration Test In-situ Vane Shear Test Permeability Test Pressuremeter Test Televiometer Survey Packer Test Impression Packer Test Water Sample Standpipe Piezometer Tip	LOGGED <u>P. Zhang</u> DATE <u>23/12/2009</u> CHECKED <u>S.M. Pyke</u> DATE <u>24/12/2009</u>	REMARKS
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 <b>FUGRO GEOTECHNICAL SERVICES LTD</b>		<b>DRILLHOLE RECORD</b>		HOLE No. <b>SK/DH2</b>										
		CONTRACT No.: <b>GE/2007/13</b>		SHEET: <b>3</b> of <b>4</b>										
<b>PROJECT:</b> Agreement No. CE 30/2007 (HY), Cycle Tracks Connecting North West New Territories with North East New Territories (Extension), Major Sections														
<b>METHOD:</b> Rotary Drilling		<b>CO-ORDINATES:</b>		<b>WORKS ORDER No.</b> GE/2007/13.15										
<b>MACHINE &amp; No.:</b> FDR-55		E <b>845431.40</b> N <b>830767.68</b>		<b>DATE from:</b> 17/12/2009 <b>to</b> 21/12/2009										
<b>FLUSHING MEDIUM:</b> Water		<b>ORIENTATION:</b> Vertical		<b>GROUND LEVEL</b> + 34.14 mPD										
Drilling Progress	Casing depth/size	Water Level (m) Shift start/end	Water Return %	TCR %	SCR %	RCD %	FI	Tests	Samples No. Type Depth	Reduced Level 14.14	Depth (m) 28.00	Legend	Grade	Description
21			80	100	100	78	4.8		T2001				II	and rough planar, extremely narrow, iron stained, locally clay cemented dipping at 20°-30° and 40°-70°.
									20.57	23.47	20.57	III		
22			80	100	80	32	9.2		T2004					
23			80	100	97	68			T2008					23.45 - 24.10m : Strong, grey, slightly decomposed METASILTSTONE.
							6.1		23.65	10.89	23.45	II		
24			80	100	92	81			T2001				III	
25		12.00m at 18:00 18.85m at 08:00												25.30 - 26.42m : Strong, grey, slightly decomposed METASILTSTONE.  Joints are closely to medium spaced, smooth and rough planar, extremely narrow, iron stained, dipping at 20°-30°, 40°-50° and 70°-80°.
26			80	100	93	51			T2001				II	
							14.8		26.65	7.72	26.42	III		
27			80	100	92	70			T2001					26.10 - 26.55m : Strong, grey, slightly decomposed METASILTSTONE.  26.55 - 29.02m : Moderately weak, highly decomposed METASILTSTONE.
28			80	100	40	15			28.10	6.04	28.10	II		
							12.8		T2008				IV	
29							>20							Strong, grey, slightly decomposed METASILTSTONE.  Joints are closely to medium spaced, locally very closely spaced, smooth and rough planar, extremely narrow, iron and manganese oxide
			80	100	92	19	10.2		T2001				II	
30		18.00m												


 Small Disturbed Sample  
 Piston sample  
 U76 Undisturbed Sample  
 U100 Undisturbed Sample  
 Mazzer Sample  
 76mm Vibrocore Sample  
 100mm Vibrocore Sample  
 Vibrocore Sub-sample  
 SPT Limer Sample









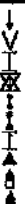
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 In-situ Vane Shear Test  
 Permeability Test  
 Pressuremeter Test  
 Televiometer Survey  
 Packer Test  
 Impression Packer Test  
 Water Sample  
 Standpipe  
 Piezometer Tip











**LOGGED** P. Zhang  
**DATE** 23/12/2009  
**CHECKED** S.M. Pyle  
**DATE** 24/12/2009

**REMARKS**



 <b>FUGRO GEOTECHNICAL SERVICES LTD</b>		<b>DRILLHOLE RECORD</b>		HOLE No. <b>SK/DH2</b>													
		CONTRACT No.: <b>GE/2007/13</b>		SHEET: <b>4</b> of <b>4</b>													
PROJECT: <b>Agreement No. GE 30/2007 (HY), Cycle Tracks Connecting North West New Territories with North East New Territories (Extension), Major Sections</b>																	
METHOD: <b>Rotary Drilling</b>		CO-ORDINATES: E <b>845431.40</b> N <b>830767.68</b>		WORKS ORDER No. <b>GE/2007/13.15</b>													
MACHINE & No.: <b>FDR-55</b>				DATE from: <b>17/12/2009</b> to <b>21/12/2009</b>													
FLUSHING MEDIUM: <b>Water</b>		ORIENTATION: <b>Vertical</b>		GROUND LEVEL <b>+ 34.14</b> mPD													
Drilling Progress	Casing depth/size	Water Level (m) Shift start/ end	Water Return %	TCR %	SCR %	RQD %	FI	Tests	Samples			Reduced Level	Depth (m)	Legend	Grade	Description	
									No.	Type	Depth						
30									12	+	30.20	3.94	30.20				stained, dipping at 20°-30°, 30°-40°, 40°-50° and 70°-80°.
31																	End of investigation hole at 30.20m.
32																	
33																	
34																	
35																	
36																	
37																	
38																	
39																	
40																	

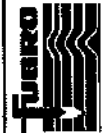
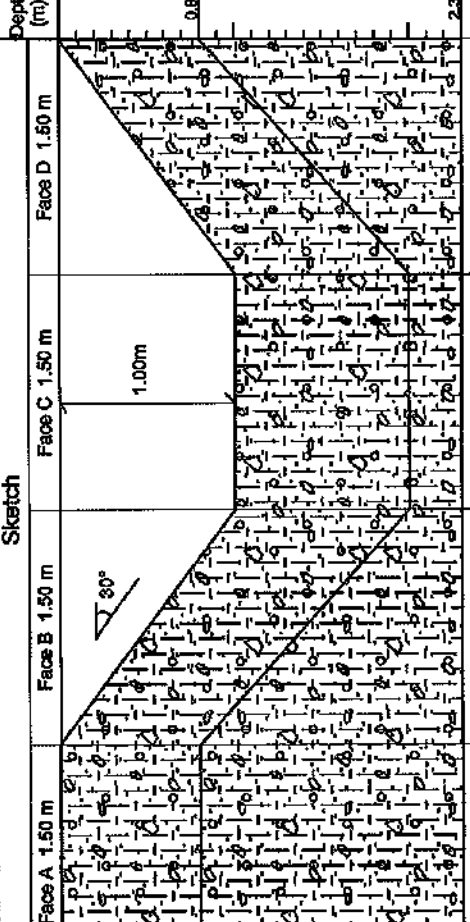
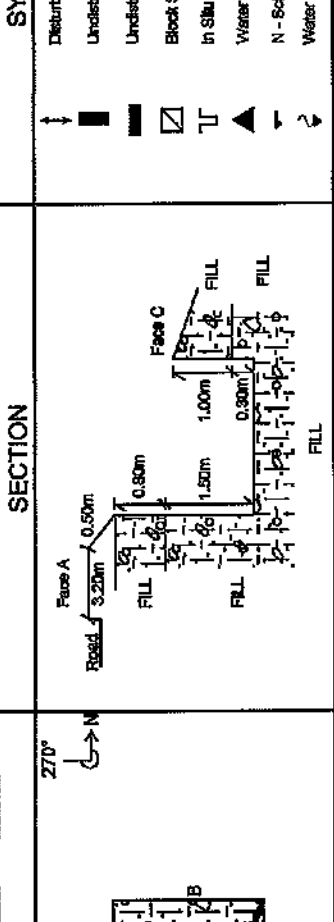
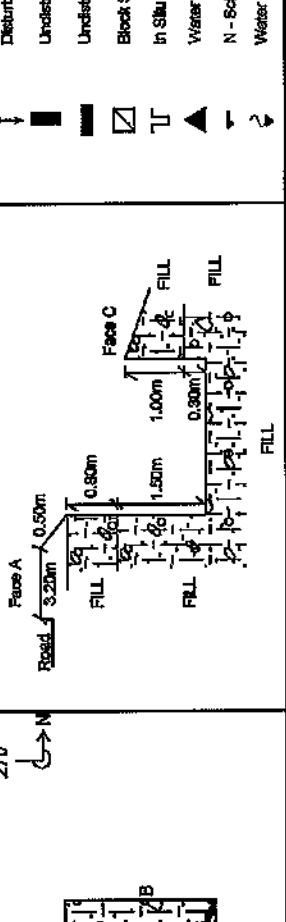
 Small Disturbed Sample  
 Piston sample  
 U76 Undisturbed Sample  
 U100 Undisturbed Sample  
 Mazda Sample  
 75mm Vibrocore Sample  
 100mm Vibrocore Sample  
 Vibrocore Sub-sample  
 SPT Limer Sample

 Standard Penetration Test  
 In-situ Vane Shear Test  
 Permeability Test  
 Pressuremeter Test  
 Televiometer Survey  
 Packer Test  
 Impression Packer Test  
 Water Sample  
 Standpipe  
 Piezometer Tip

LOGGED P. Zou  
 DATE 23/12/2009  
 CHECKED S.M. Pyle  
 DATE 24/12/2009

**REMARKS**

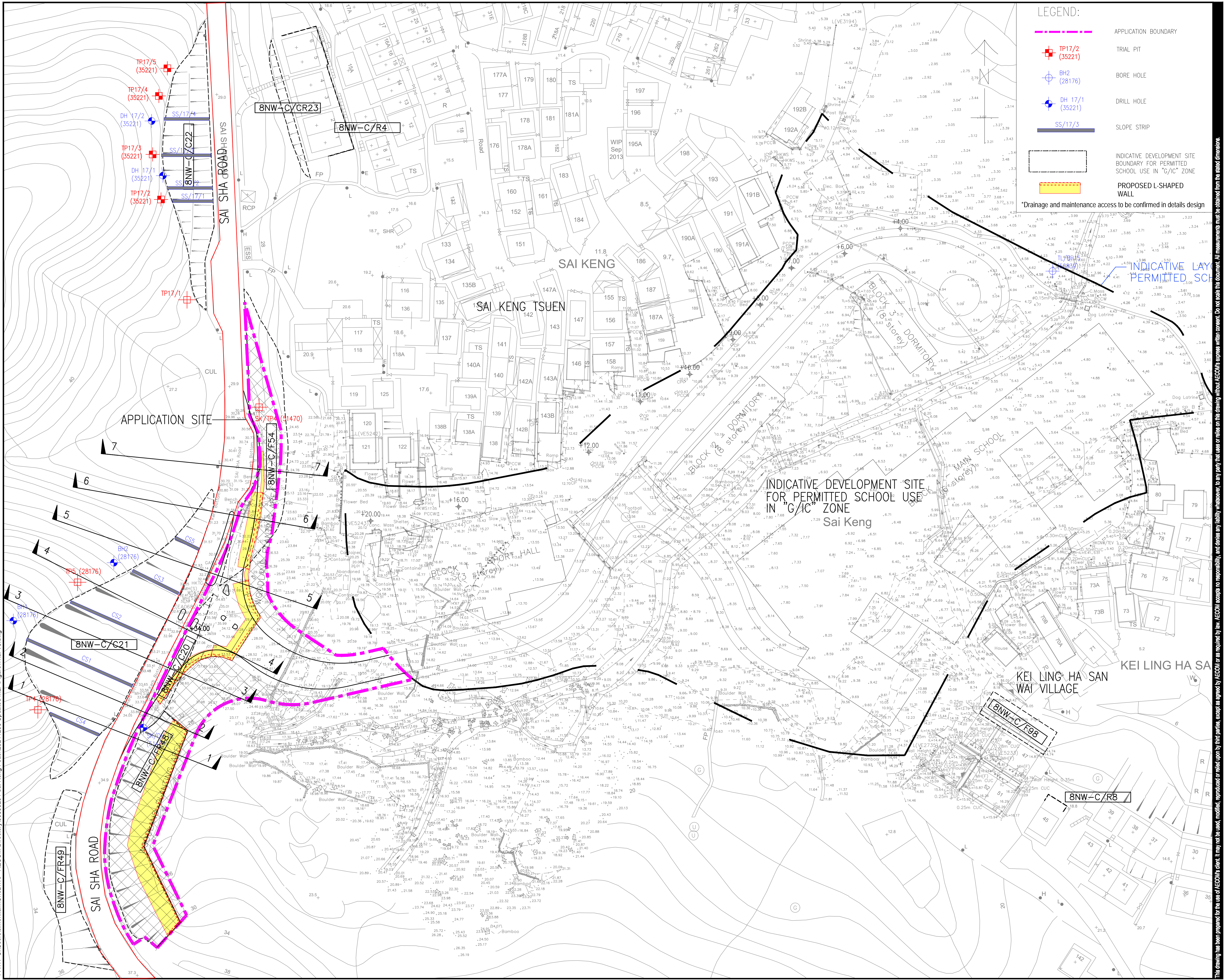
## TRIAL PIT RECORD

	Project : Agreement No. CE 30/2007 (HY), Cycle Tracks Connecting North West New Territories with North East New Territories (Extension), Major Sections	Logged by : P. S.M. Pyle Date logged : 31/12/2009 Checked by : S.M. Pyle Data checked : 11/01/2010	Co-ordinates : E 846470.85 m N 880881.78 m Ground Level : +29.12 mPD	Excavation Dates : 28/12/2009 to 30/12/2009 Backfill Date : 02/01/2010	Trial Pit No.: SK/TP4
Contract No.: GE/2007/13	WORKS ORDER No.: GE/2007/13.15	Sketch	Depth (m) Face D 1.50 m Face C 1.50 m Face B 1.50 m Face A 1.50 m	Description	
Sample & Tests		Legend (Face)	Depth (m) 0.50 1.00 1.50 2.00 2.50 3.00 3.50 4.00 4.50	Very stiff, yellowish brown (10YR/5/6), sandy clayey SILT with some angular fine to coarse gravel and occasional cobbles of weak to moderately strong tuff and rootlets. (FILL)  Very stiff, light yellowish brown (2.5Y/6/4), clayey sandy SILT matrix with much angular fine to coarse gravel and cobbles of weak to moderately strong tuff and occasional free roots and rootlets. (FILL)	End of Trial Pit at 2.30m.
PLAN		SECTION	SYMBOL	REMARKS	
	Disturbed Sample Undisturbed Sample Vert. Undisturbed Sample Hor. Block Sample In Situ Density Test Water Sample N - Schmidt Hammer Test Water Seepage	Shoring: No Stability: Stable Maximum Depth: 2.30m Average Depth: 1.30m 1. All sample depths are relative to Face A. 2. Small disturbed samples were taken at 0.50m, 1.00m, 1.50m and 2.00m below existing ground level. 3. Large disturbed samples were taken at 0.50m and 1.50m below existing ground level. 4. 100 sample was taken at 0.50m below existing ground level. 5. In situ density tests were performed at 0.50m and 1.50m below existing ground level.			

# **Appendix F**

## **Preliminary Site Formation Plan**





# AECOM

**PROJECT**  
項目

PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

**CLIENT**  
業主

**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 日期	DATE 日期	DESCRIPTION 內容摘要	CHK 核對

**STATUS**  
階段

PRELIMINARY

**SCALE**  
比例

A1 1: 600  
A3 1: 1200

**KEY PLAN**  
索引圖

**PROJECT NO.**  
項目編號

**CONTRACT NO.**  
合約編號

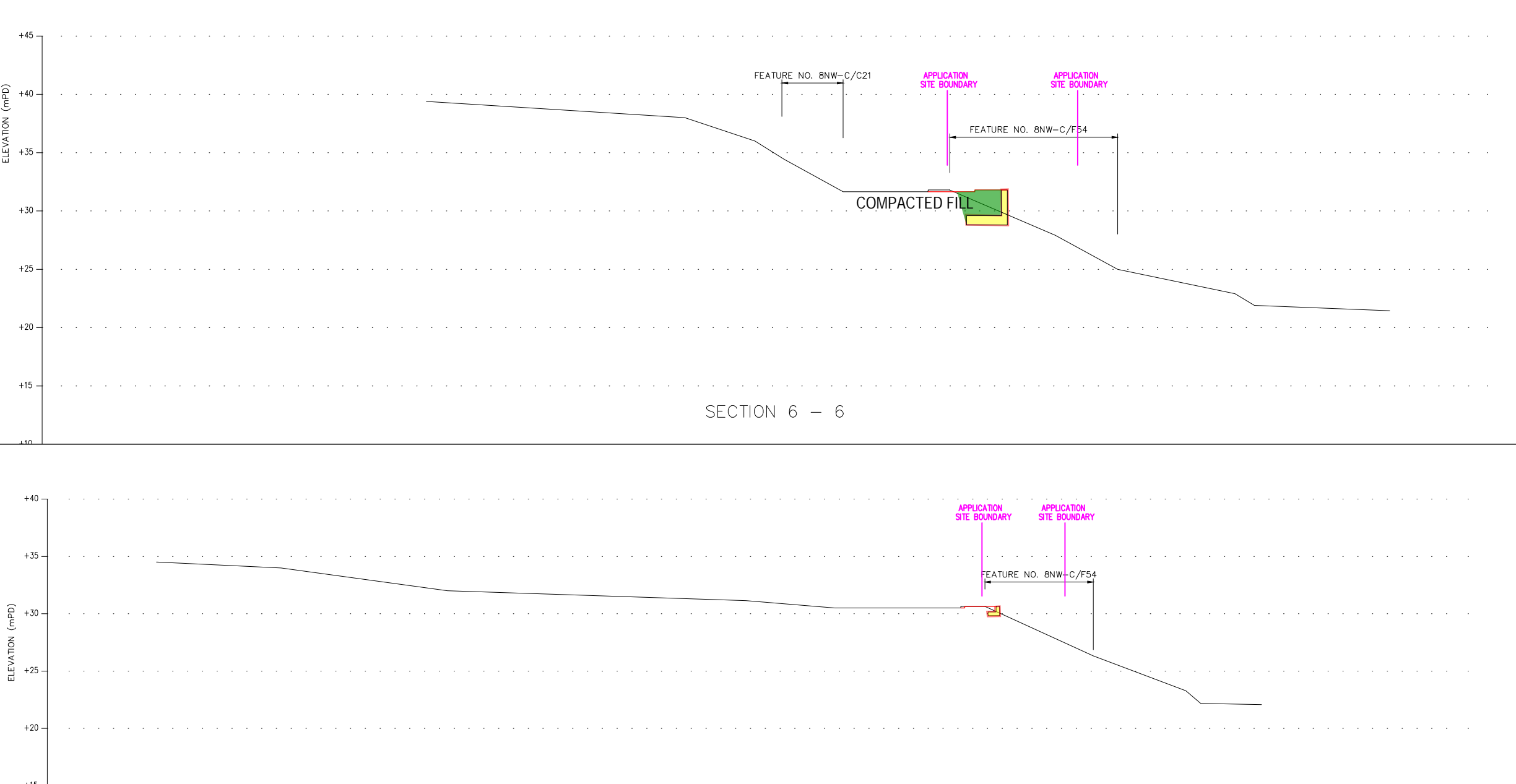
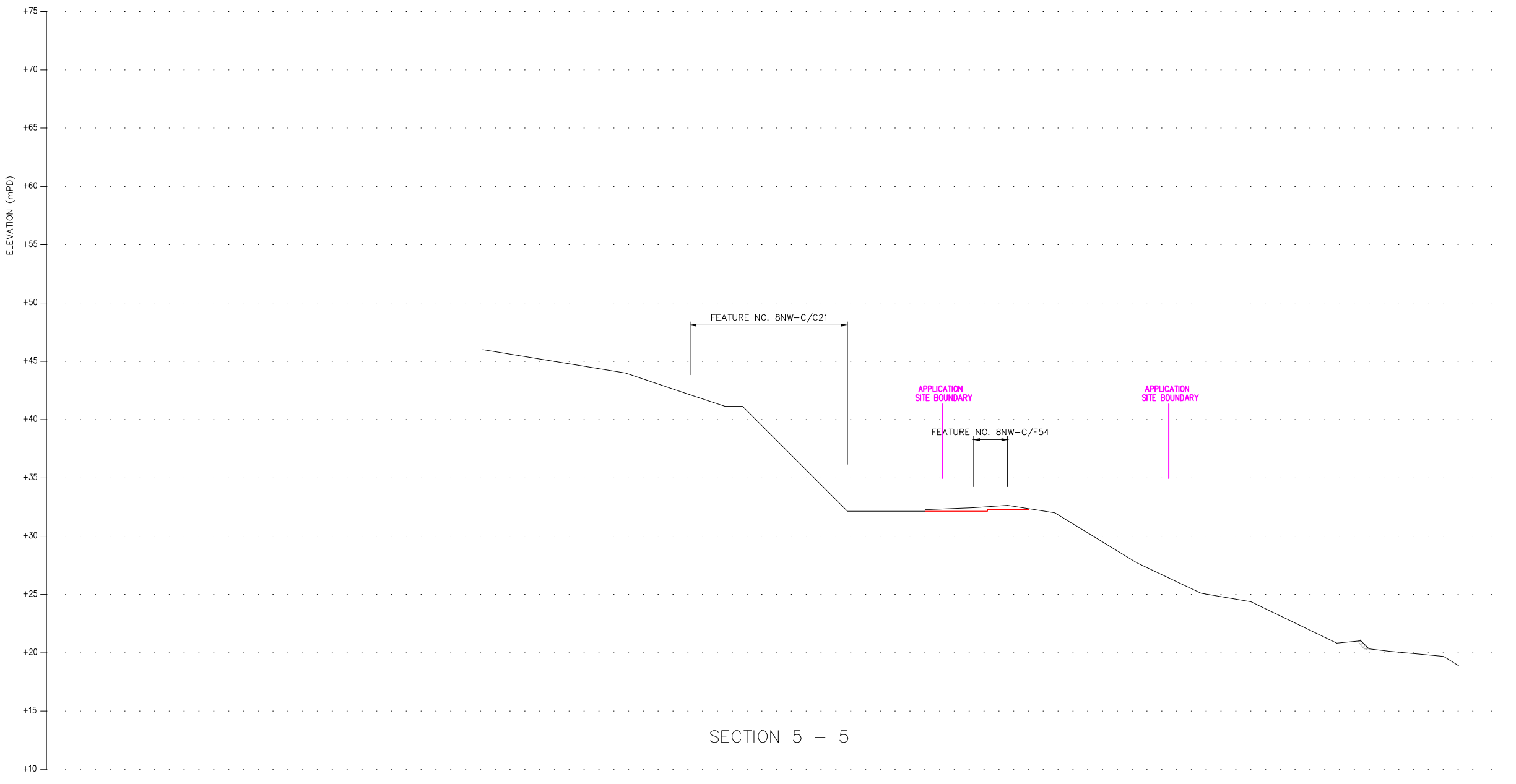
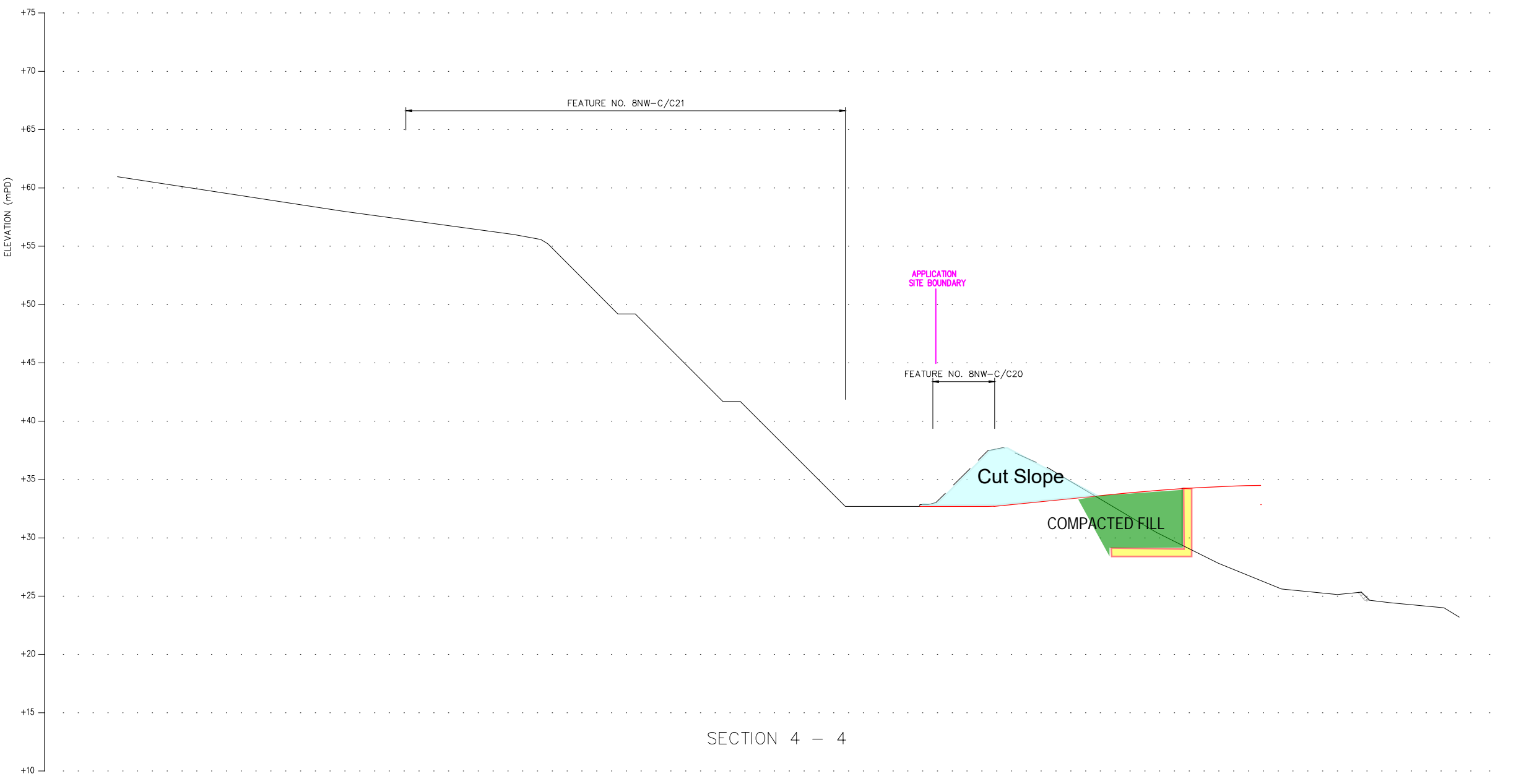
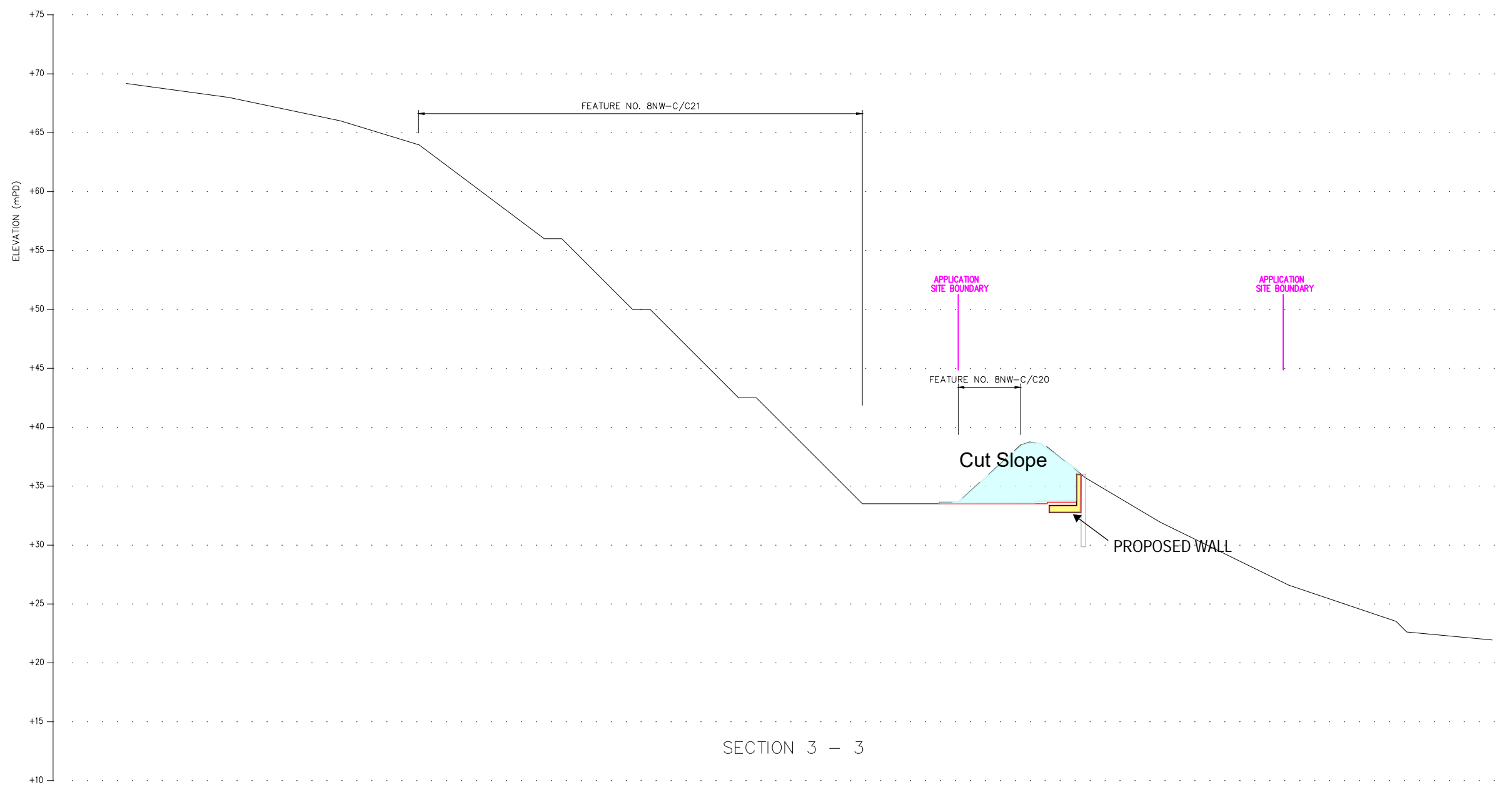
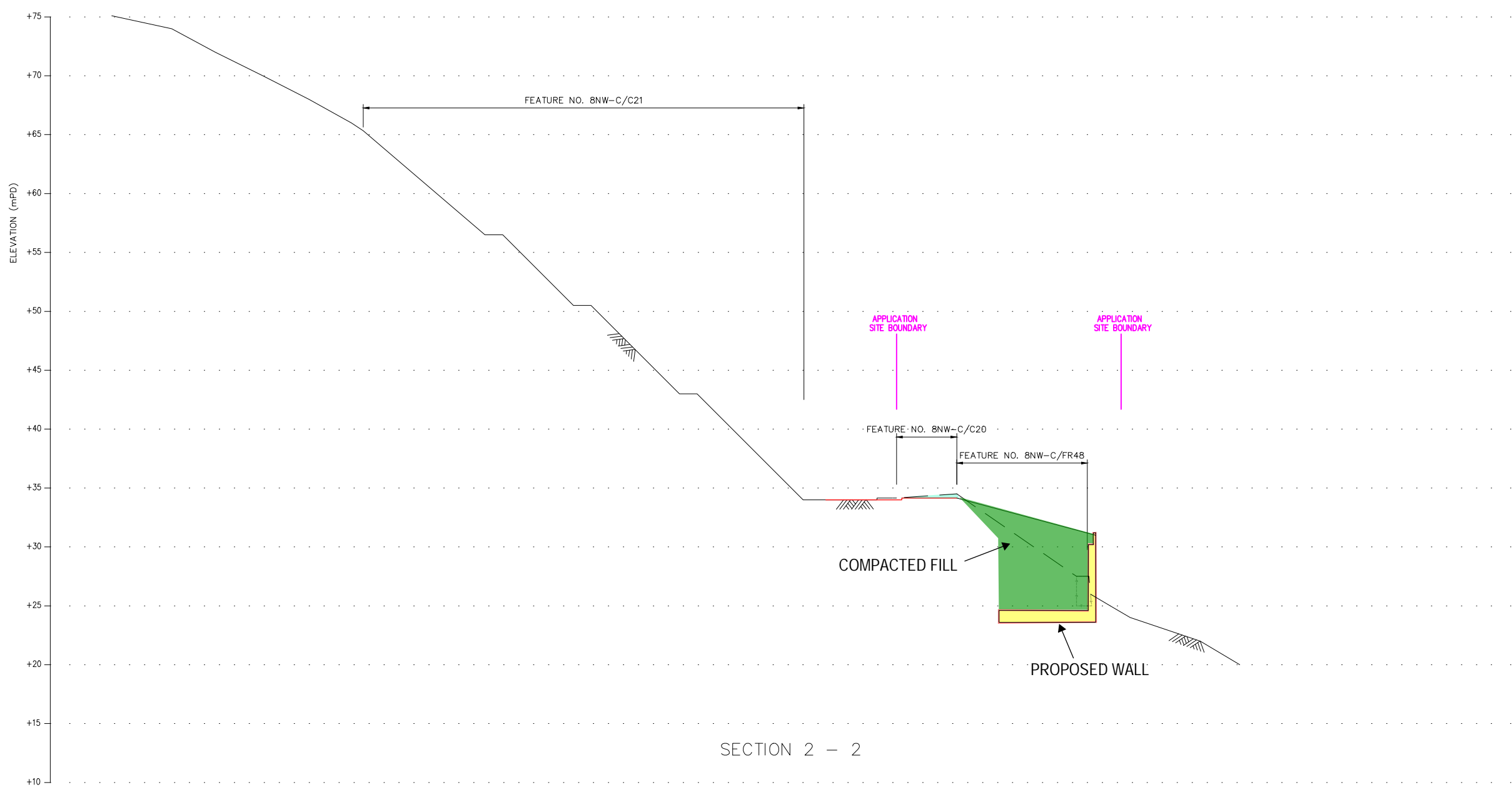
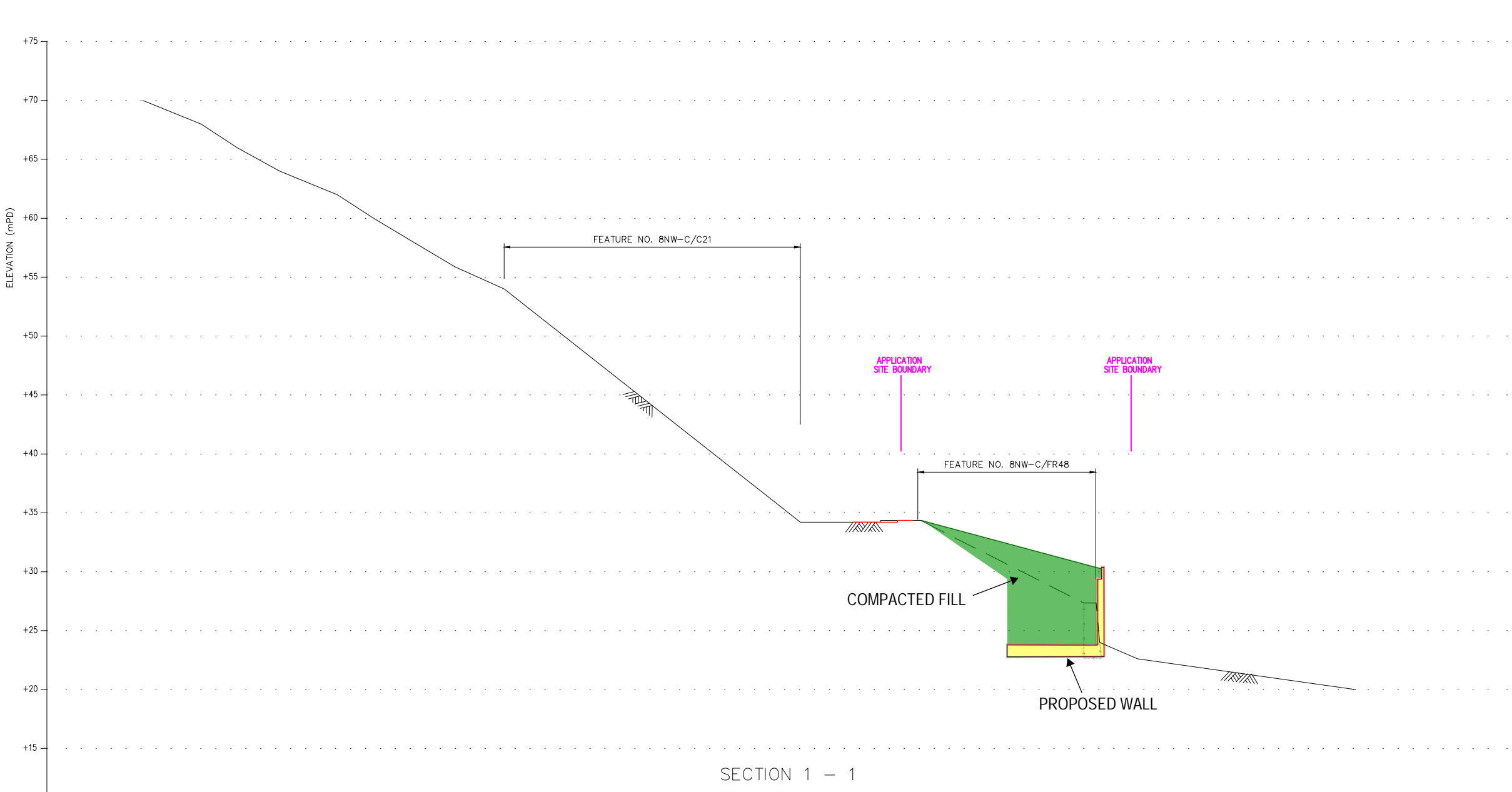
**SHEET TITLE**  
圖紙名稱

PRELIMINARY SITE FORMATION PLAN

**SHEET NUMBER**  
圖紙編號

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AECOM

PROJECT

PROPOSED ACCESS ROAD IN  
"GREEN BELT" ZONE FOR PERMITTED  
USES IN "GOVERNMENT, INSTITUTION OR  
COMMUNITY" ZONE  
AT VARIOUS LOTS AND ADJOINING  
GOVERNMENT LAND IN D.D. 209,  
SAI KENG, SHAP SZ HEUNG,  
THE NEW TERRITORIES

CLIENT

業主

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	DATE	DESCRIPTION	CHK.

STATUS

審核

SCALE

比例

DIMENSION UNIT

尺寸單位

KEY PLAN

索引圖

PROJECT NO.

項目編號

CONTRACT NO.

合約編號

SHEET TITLE

圖紙名稱

PRELIMINARY SECTIONS

SHEET NUMBER

圖紙編號

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## **Appendix G**

### **Clarification on Area of Filling and Excavation**

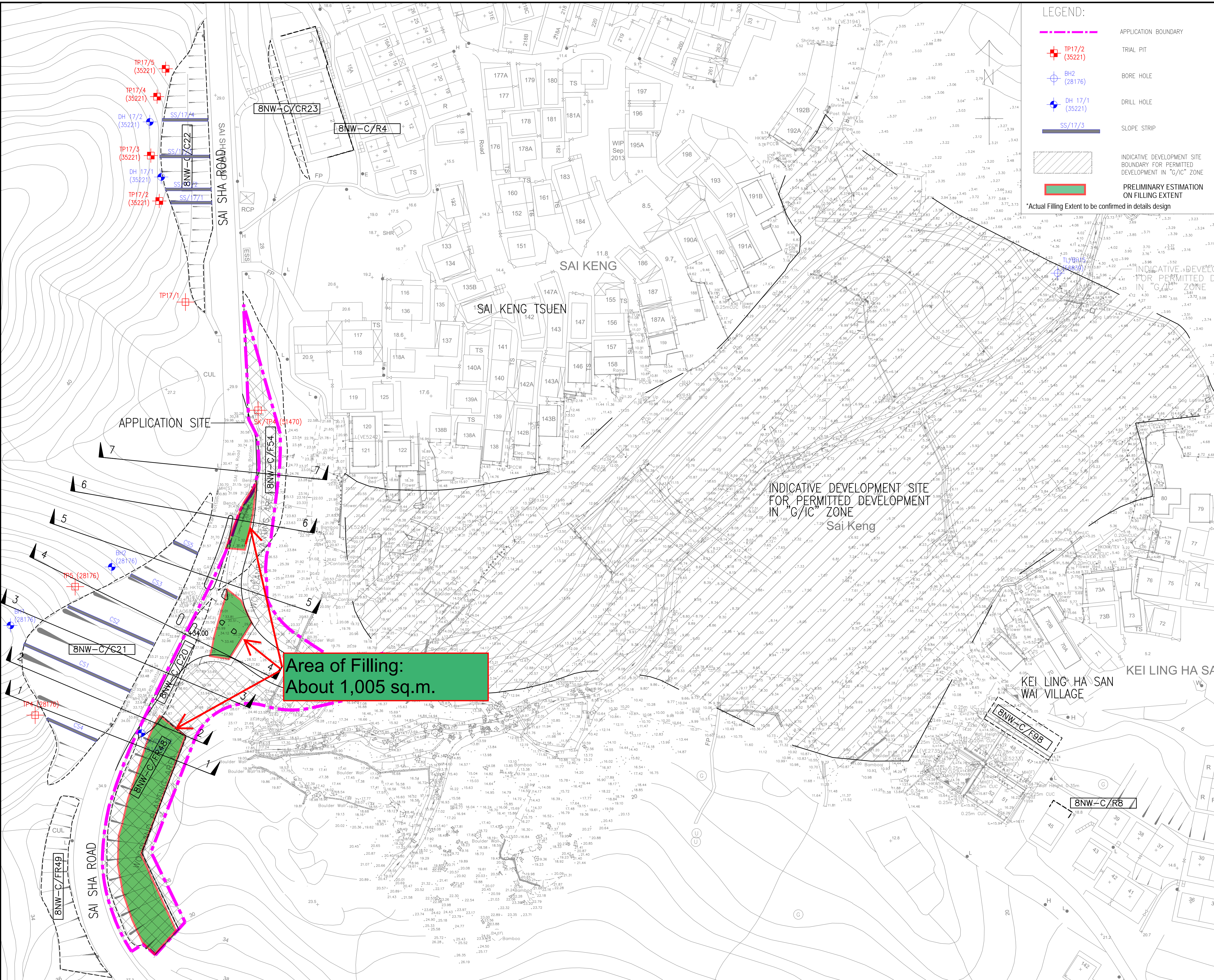
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(Consolidated Submission based on clarifications submitted on 25 May 2021 and Further  
Information submitted on 24 September 2021)



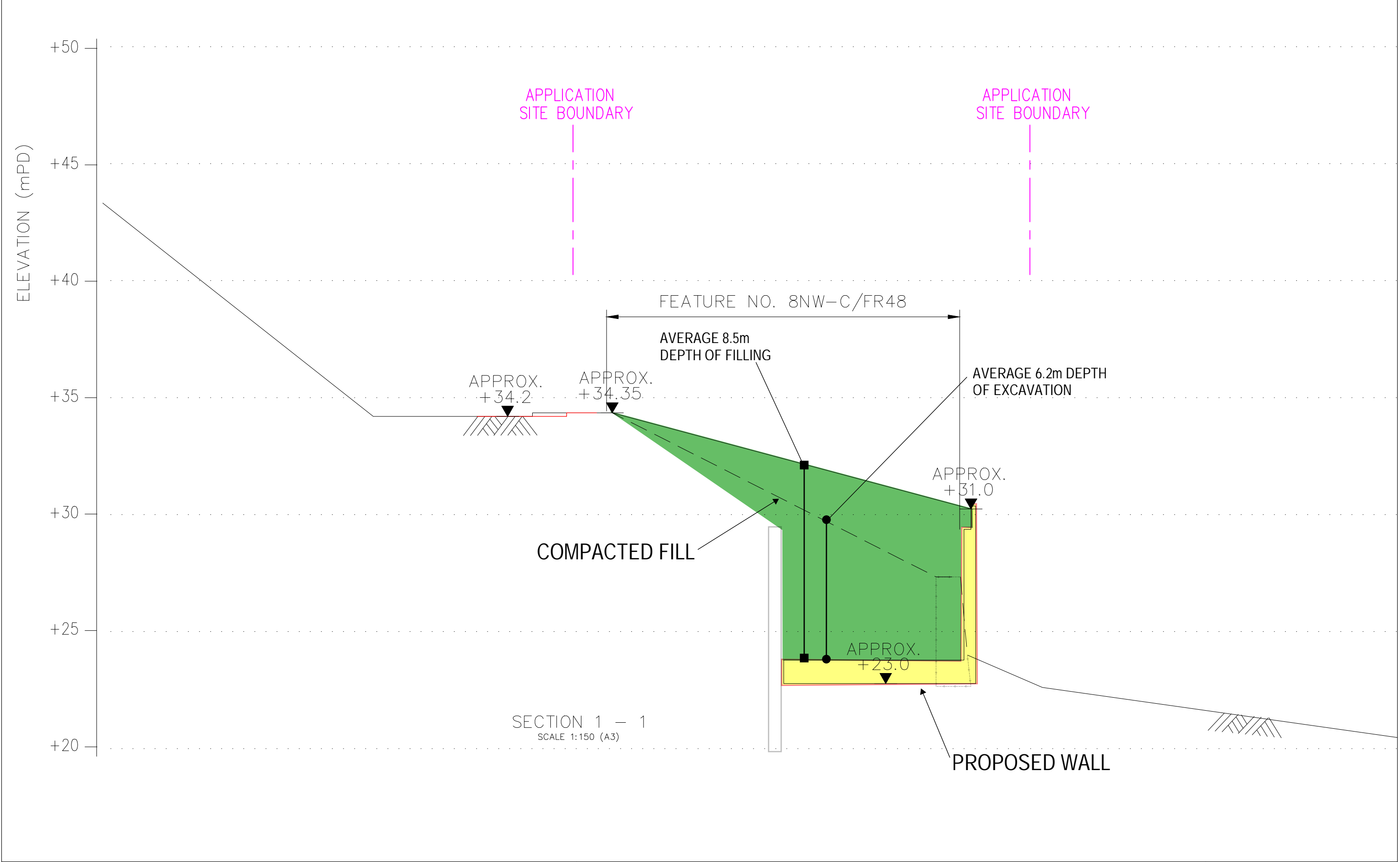






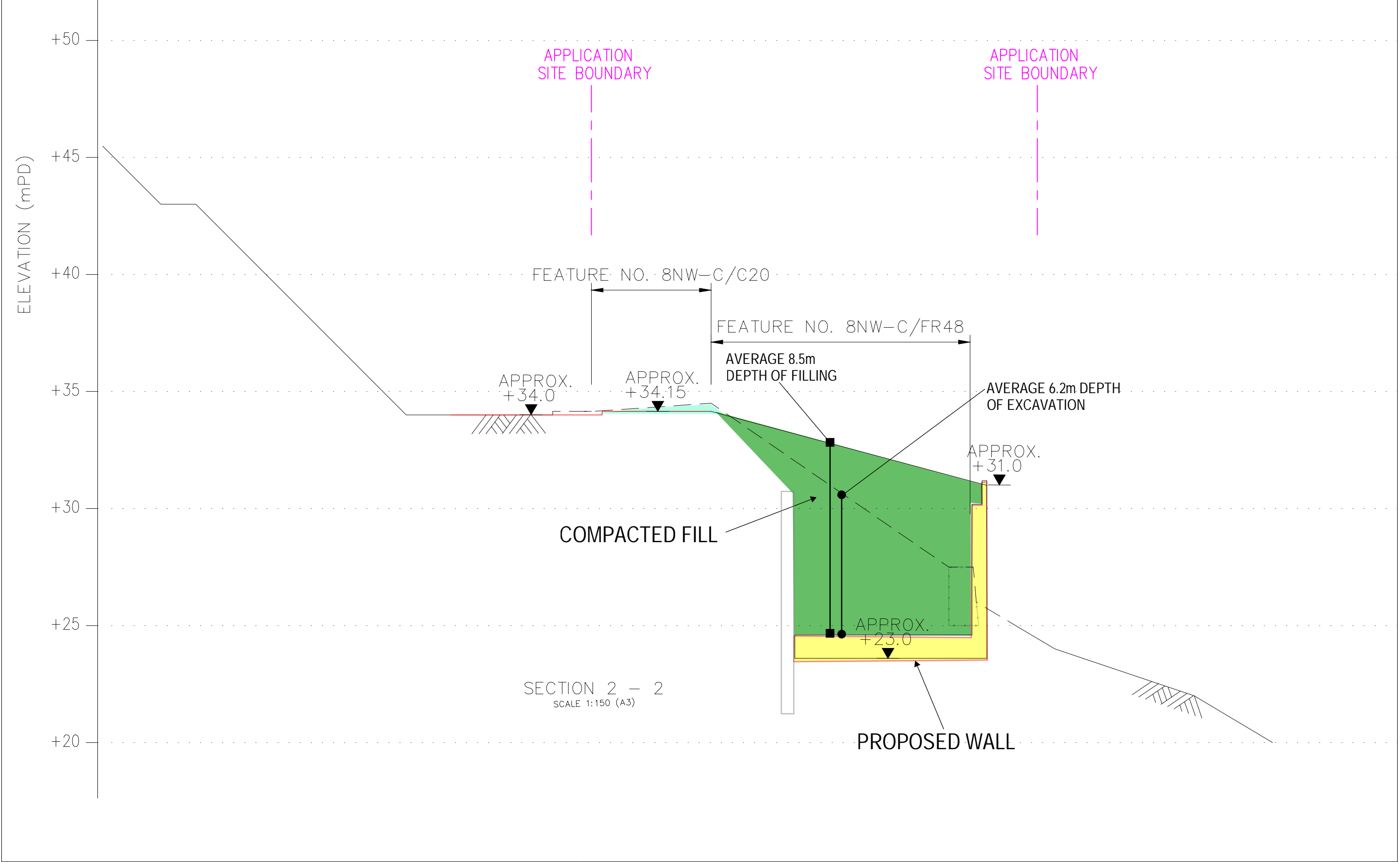
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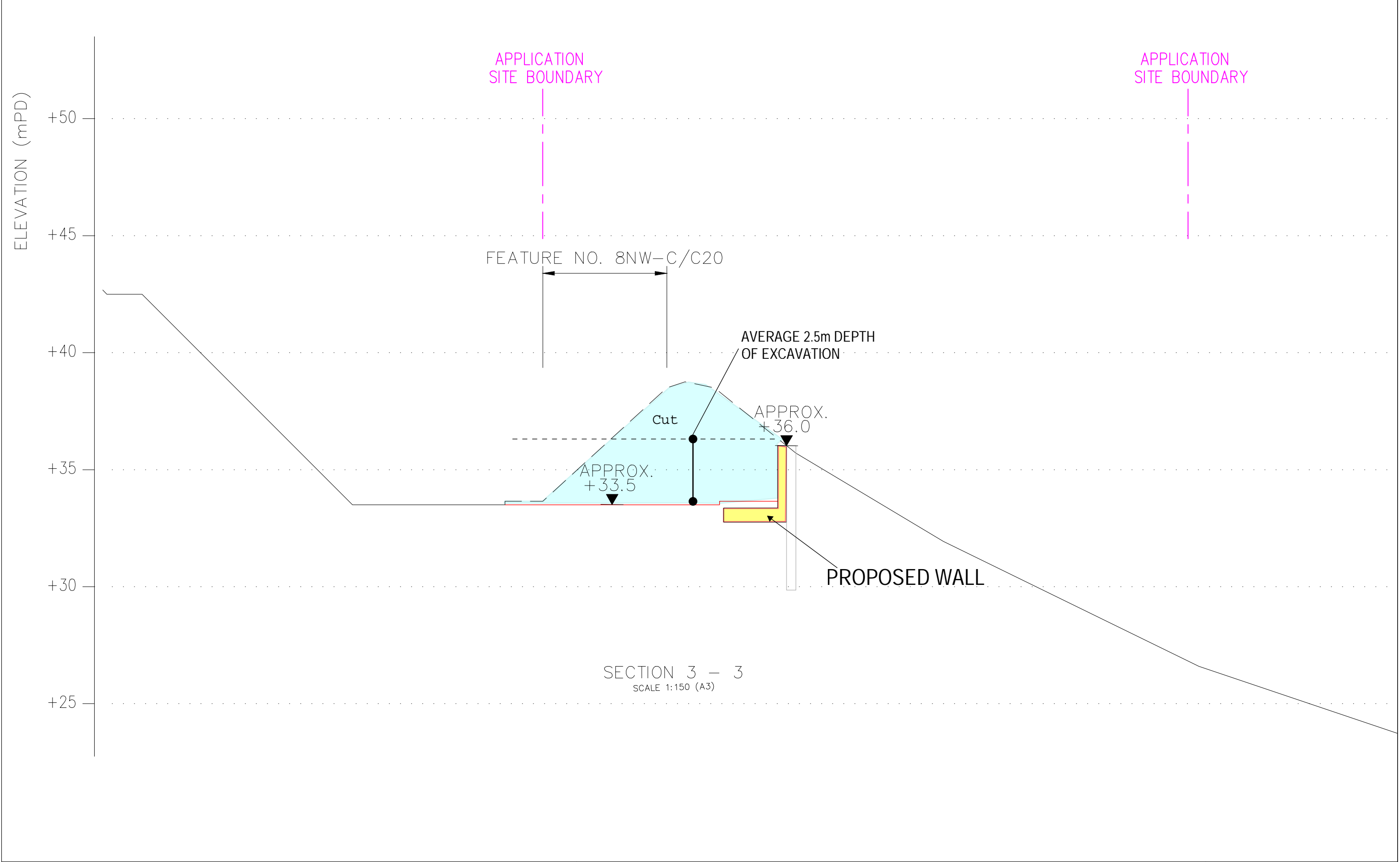


PROJECT TITLE PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES	SHEET NO. SECTION 1-1	
	CHK. BY LKC	
	DATE SEP 2022	

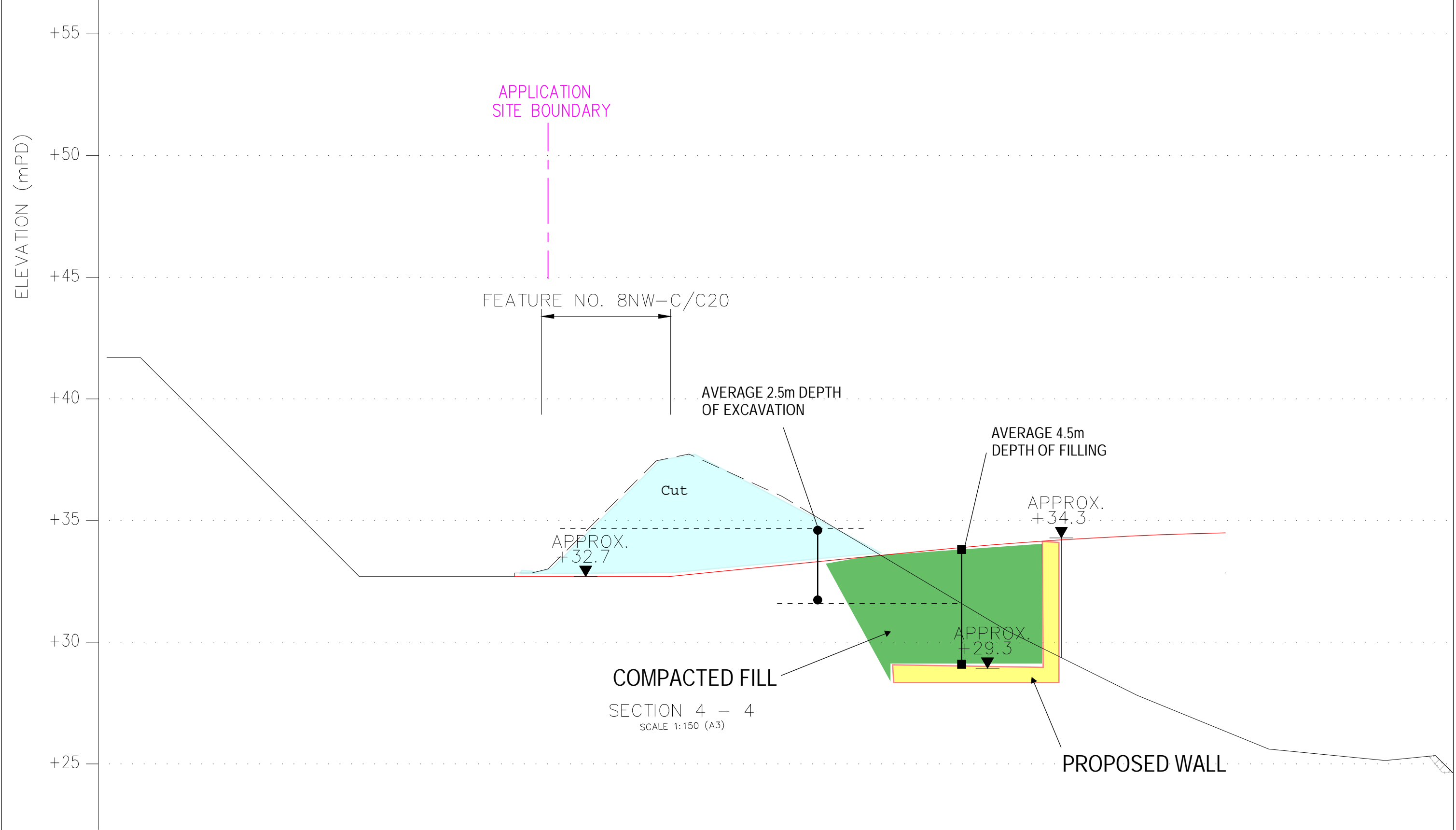




PROJECT TITLE PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES	SHEET NO. SECTION 2-2	<b>AECOM</b>
	CHK. BY LKC	
	DATE SEP 2022	

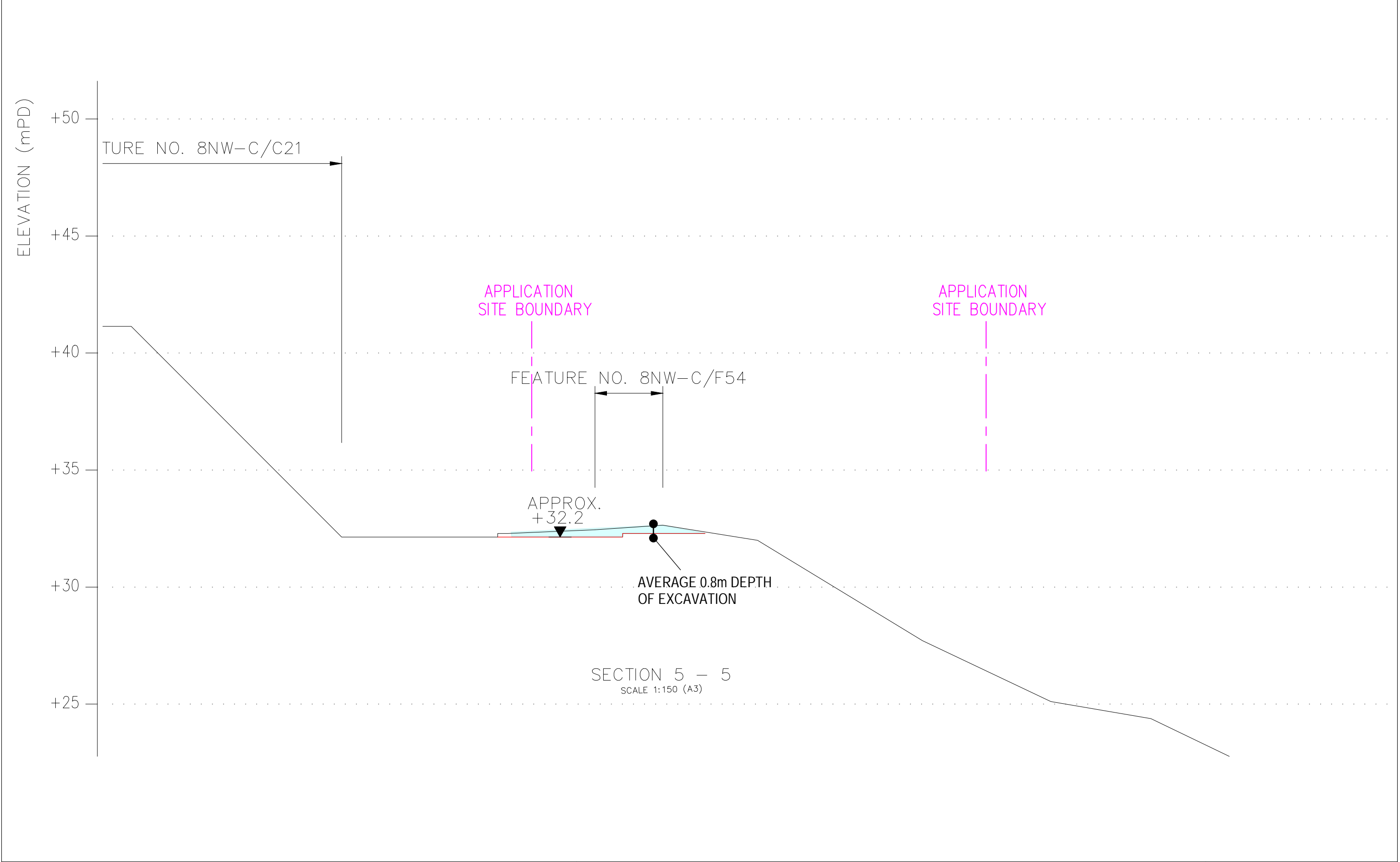


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	CHK. BY LKC	
	DATE SEP 2022	

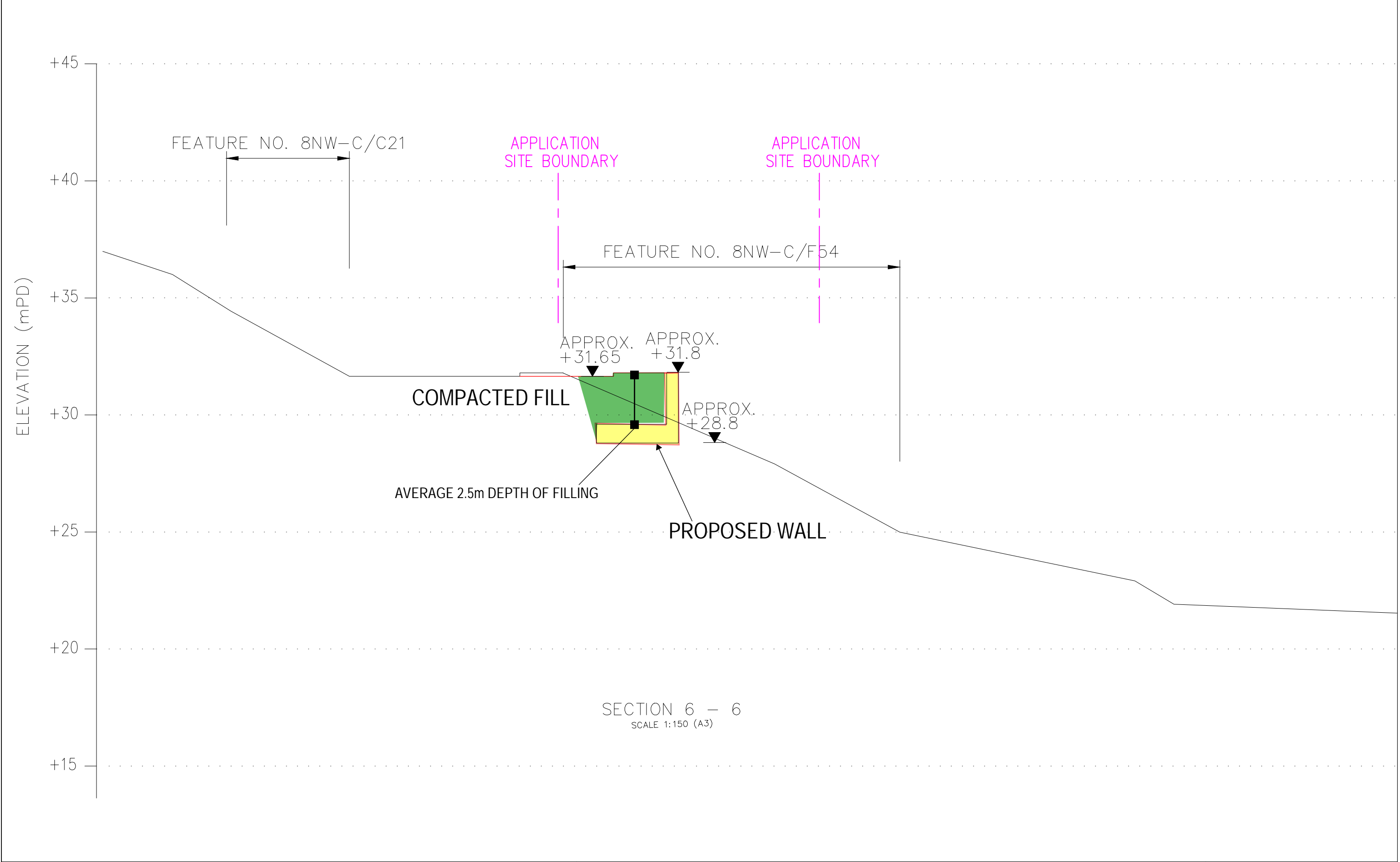


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	DATE SEP 2022	

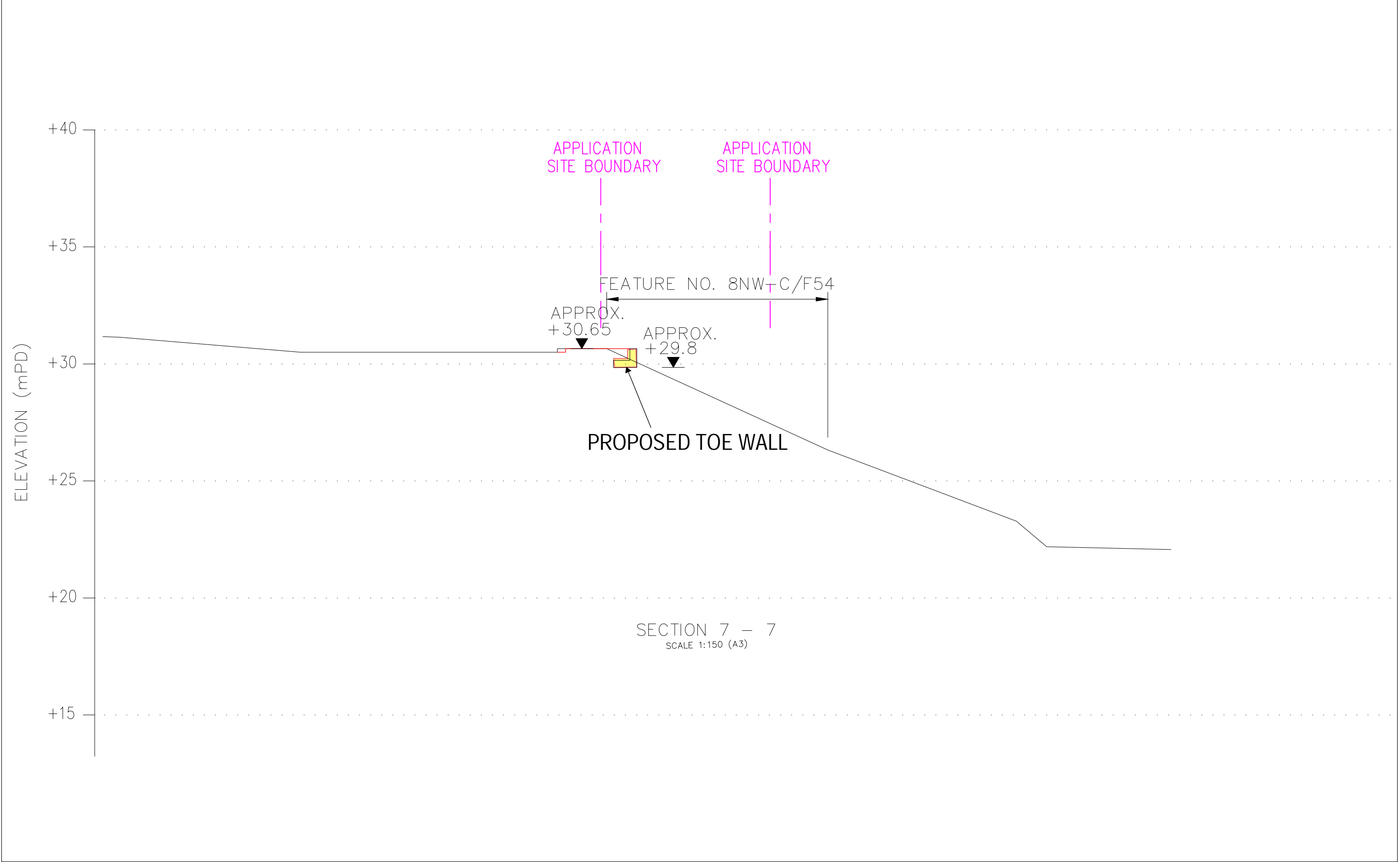




PROJECT TITLE PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES	SHEET NO. SECTION 5-5	<b>AECOM</b>
	CHK. BY LKC	
	DATE SEP 2022	



PROJECT TITLE PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES	SHEET NO. SECTION 6-6	<b>AECOM</b>
	CHK. BY LKC	
	DATE SEP 2022	



PROJECT TITLE PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES	SHEET NO. SECTION 7-7	
	CHK. BY LKC	
	DATE SEP 2022	



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## **Appendix H**

### **Explanatory Statement Providing Background Information of the Planning Application**

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(Same as that under Further Information submitted on 29 December 2021)

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No. S/NE-SSH/11
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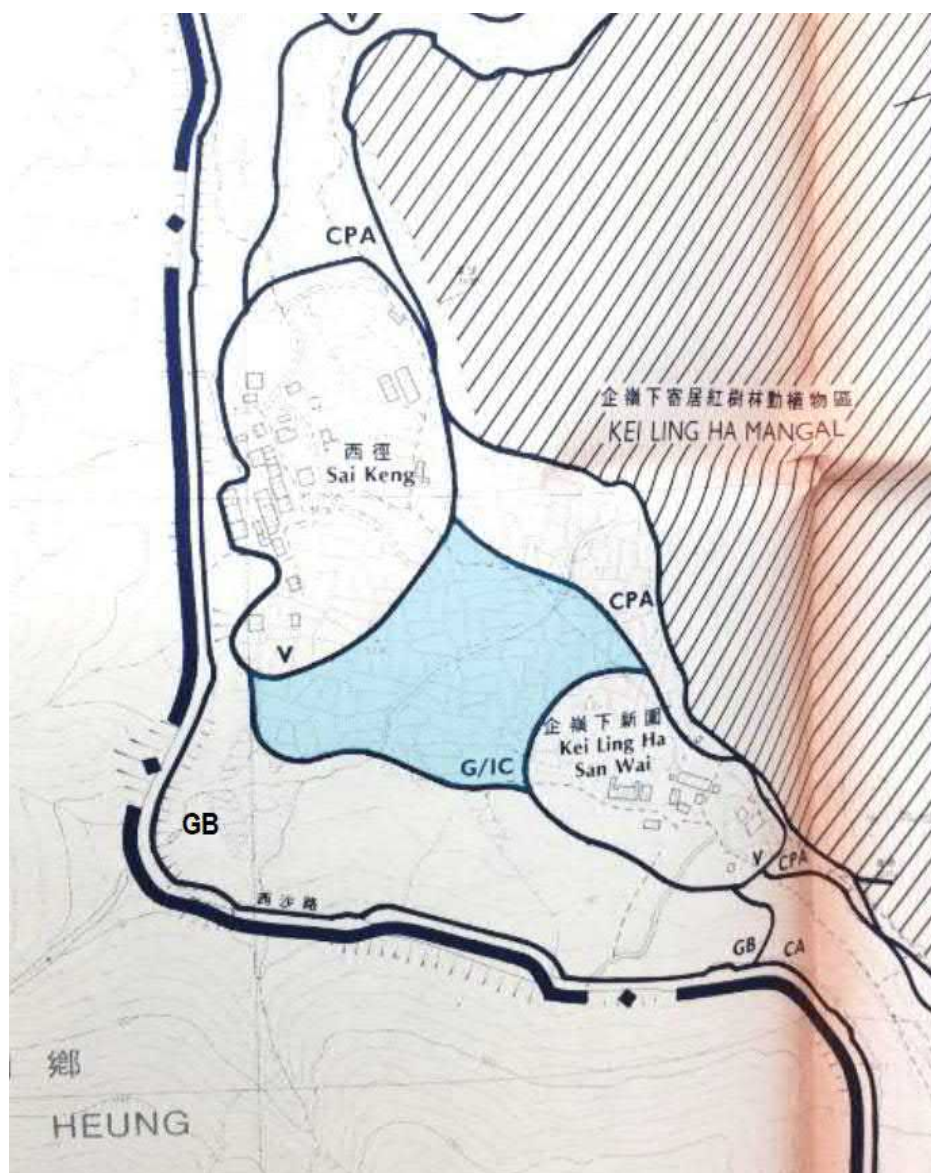
## **1 Introduction**

1.1 This Section 16 (S16) application involves the Proposed Access Road with filling and excavation of land falling within the "Green Belt" zone (i.e. the subject matter) to serve the immediate adjacent "Government, Institution or Community" ("G/IC") zone. Under the indicative Scheme, a school is proposed at the "G/IC" zone in which 'School' is a permitted use which does not require planning application. The submission of this explanatory statement is to provide further background information and explanation about the subject matter of this S16 application. The following aspects will be discussed in this explanatory statement:

- Zoning history of the "G/IC" site
- The reason why this S16 application is required
- Landholding involved in the Application Site and Development Site
- Indicative layout and development parameters of the permitted school use in the "G/IC" zone (i.e. for reference only; not the subject matter of this S16 application)
- Control mechanism in relation to the Proposed Access road and future development in the "G/IC" zone

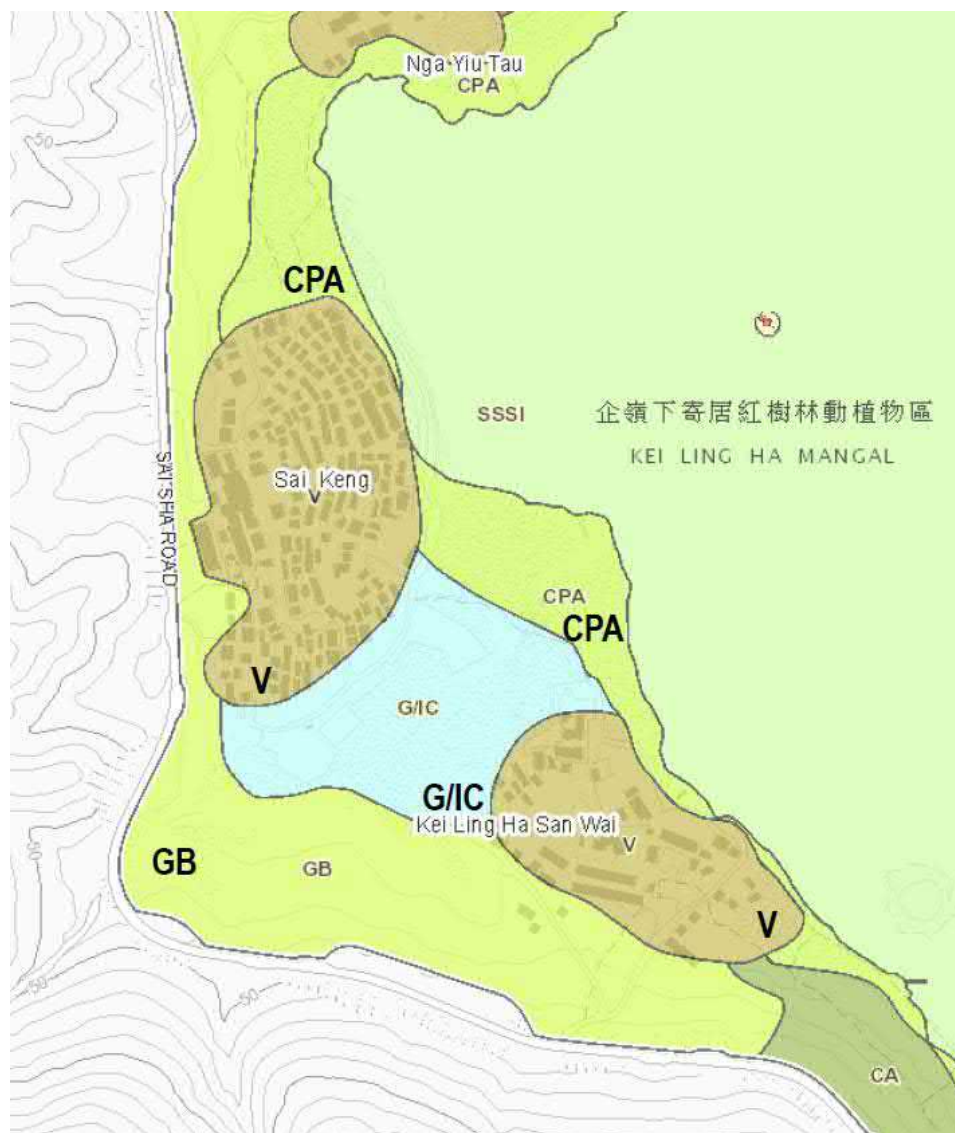
## 2 Zoning History of the “Government, Institution or Community” Site and the Absence of Standard Access Road Serving it

- 2.1 Since the gazettal of the first Outline Zoning Plan (OZP) for the Shap Sz Heung area (Draft Shap Sz Heung OZP No. S/NE-SSH/1 gazetted on 1.7.1994), a “G/IC” zone was planned in this area sandwiched between Sai Keng Tsuen and Kei Ling Ha San Wai. This “G/IC” zone is surrounded by “Village Type Development” (“V”), “Coastal Protection Area” (“CPA”) and “Green Belt” (“GB”) zones. There is no planned access road connecting this “G/IC” zone to Sai Sha Road (the only proper public road in the area). The subject “G/IC” zone is segregated by the “GB” zone.



**The “G/IC” Zone in Sai Keng**  
**(as extracted from the first OZP gazetted on 1.7.1994)**

- 2.2 On the extant OZP (Approved Shap Sz Heung OZP No. S/NE-SSH/11 gazetted on 16.10.2015), this zoning and boundary of the "G/IC" zone has remained largely similar to the first OZP. Despite the fact that this "G/IC" zone is situated closely to Sai Sha Road to its west, there is no standard and direct road access connecting it to Sai Sha Road from the past till now. As of 2021, this "G/IC" zone has been underutilised for over 27 years since there is no proper road access to serve the Site. It is currently only accessible via two local tracks through the nearby villages which are sub-standard, with village houses constructed closely along the tracks that constrain any possible widening. Encroachment onto third party's private lots also makes it infeasible for any possible widening of the local tracks. In view of the constraints, possible access road connecting this "G/IC" zone to Sai Sha Road will be through the "GB" zone only.



**Approved Shap Sz Heung OZP No. S/NE-SSH/11 gazetted on 16.10.2015**



### **3 Reason for the Subject S16 Planning Application – Provision of Necessary Access Road through “Green Belt” Zone Requires Planning Permission**

- 3.1 Before formal submission of this S16 application, a set of General Building Plan (GBP) for permitted ‘School’ use in the “G/IC” zone with a Proposed Access Road from Sai Sha Road through the “GB” zone was submitted by the Authorized Person of the Applicant to the Buildings Department (BD) in September 2019 (extract of the GBP submission is enclosed in **Annex 1** for reference). During the circulation of the GBP, the Planning Department (PlanD) stated in their reply dated 30.10.2019 (**Annex 2** refers) that according to the Notes of the OZP, while ‘School’ use is always permitted in the “G/IC” zone, the Proposed Access Road falling within the “GB” zone that supports the ‘School’ use is a Column 2 use requiring planning permission from the Board. As no planning permission was approved at that time for the Proposed Access Road falling within the “GB” zone, the GBP was disapproved by BD on 13.11.2019 (**Annex 3** refers).
- 3.2 Against the above background, the Applicant therefore submits this S16 application to seek permission from the Board for the Proposed Access Road falling within the “GB” zone, which is the subject matter of this planning application. For the ‘School’ use in the “G/IC” zone, it is an always permitted use in the “G/IC” zone in statutory planning terms and does not require any planning application, hence it is not and could not be the subject matter of this planning application under the current planning mechanism.
- 3.3 Nonetheless, to better illustrate the purpose of the Proposed Access Road, the Applicant encloses a set of revised drawings to clearly annotate the Proposed Access Road falling within the “GB” zone as the **Application Site** (i.e. the subject matter of this S16 application) and the permitted ‘School’ use in the “G/IC” zone as the **Development Site** (which is not the subject matter of this S16 application, but included for reference only). Please refer to the **List of Figures** enclosed.

#### **4 Landholding Involved in the Application Site and Development Site**

- 4.1 As the “GB” zone sandwiched between Sai Sha Road and the “G/IC” zone is largely covered by government land, it is inevitable that the Proposed Access Road passing through this “GB” zone to link up the “G/IC” zone and the existing Sai Sha Road will mainly involve the government land. The Applicant has already tried her best effort in exploring the shortest and most direct alignment to connect the “G/IC” zone to Sai Sha Road, hence minimising the utilisation of Government land as far as practicable and not encroaching onto other third party’s private lots (**Figure 2.3** in the List of Figures refers).
- 4.2 While the Application Site mainly involves government land, the Development Site mainly consists of private lots under the Applicant’s ownership (**Figure 2.3** in the List of Figures refers). The tables below summarize the landholding involved in the Application Site and Development Site respectively. It should be noted that the landholding information provided in the Development Site is for reference only. The updated landholding information in the Development Site shall be subject to changes upon submission of the future GBP and land exchange application in support of the permitted ‘School’ use in the “G/IC” zone.

**Table 4.1 – Landholding Schedule of Application Site and Development Site**

	<b>Within Application Site in “GB” Zone (Subject Matter of this Application)</b>	<b>Within Development Site in “G/IC” Zone (Not the Subject Matter of this Application)</b>	<b>Total</b>
<b>Private Lots under Applicant’s Ownership</b>	About 307m <sup>2</sup> (about 6.6% of total Application Site Area)	About 22,224m <sup>2</sup> (about 68.3% of total Development Site area)	About 22,531m <sup>2</sup> (about 60.6% of the total Application and Development Site area)
<b>Other Private Lots under Acquisition</b>	/	About 3,731.6m <sup>2</sup> (about 11.5% of total Development Site area)	About 3,731.6m <sup>2</sup> (about 10.0% of total Application and Development Site area)
<b>Government Land</b>	About 4,333m <sup>2</sup> (about 93.4% of total Application Site area)	About 6,565.6m <sup>2</sup> (about 20.2% of total Development Site area)	About 10,898.6m <sup>2</sup> (about 29.3% of total Application and Development Site area)
<b>Total</b>	About 4,640m <sup>2</sup>	About 32,521.2m <sup>2</sup>	About 37,161.2m <sup>2</sup>

Remarks: The above percentages may not add up to 100% due to rounding.

- 4.3 In summary, if looking into the landholding schedule involved in the Application Site and the Development Sites as a whole, the proportion of private land (including lots under the Applicant’s ownership and those under acquisition) and government land involved will be about 70.6% and 29.3% respectively. Upon approval of this S16 application for the Proposed Access Road, the Applicant will proceed to land exchange application for the permitted ‘School’ use together with the Proposed Access Road.



## 5 The Permitted ‘School’ Use in “G/IC” Zone

- 5.1 While ‘School’ use in “G/IC” zone does not require planning permission from the Board, the indicative school layout and development parameters are also presented below for the Board’s and concerned departments’ information. The design and parameters of the ‘School’ use shall be subject to changes upon submission of the future GBP and land exchange application in support of the permitted ‘School’ use in the “G/IC” zone.
- 5.2 Based on the indicative layout (**Figure 3.1** in the List of Figures refers), the proposed school will be subject to a total GFA of about 39,846m<sup>2</sup>. It comprises: (i) the main school building, sports hall and ancillary boarding house within the “G/IC” zone and (ii) the access connecting Sai Sha Road to the Proposed School Site falling within the “GB” zone. The proposed school will provide a total of 47 classrooms, comprising kindergarten, primary and secondary school education. The indicative development parameters are summarised as follows:

**Table 5.1 - Indicative Development Schedule of the Permitted ‘School’ Use in “G/IC” Zone (not the subject matter of this S16 application)**

Development Site Area	About 32,521.2m <sup>2</sup>
Site Coverage	About 30%
Total GFA	About 39,846m <sup>2</sup>
- Main School and Sports Hall	About 31,186m <sup>2</sup>
- Ancillary Boarding House	About 8,660m <sup>2</sup>
No. of Storeys	
- Main School	6 Storeys
- Sports Hall	3 Storeys
- Ancillary Boarding House	8 Storeys
Total Number of Classrooms	47
- Kindergarten	5
- Primary School	18
- Secondary School	24

## **6 Control Mechanism for Proposed Development in the “G/IC” Zone**

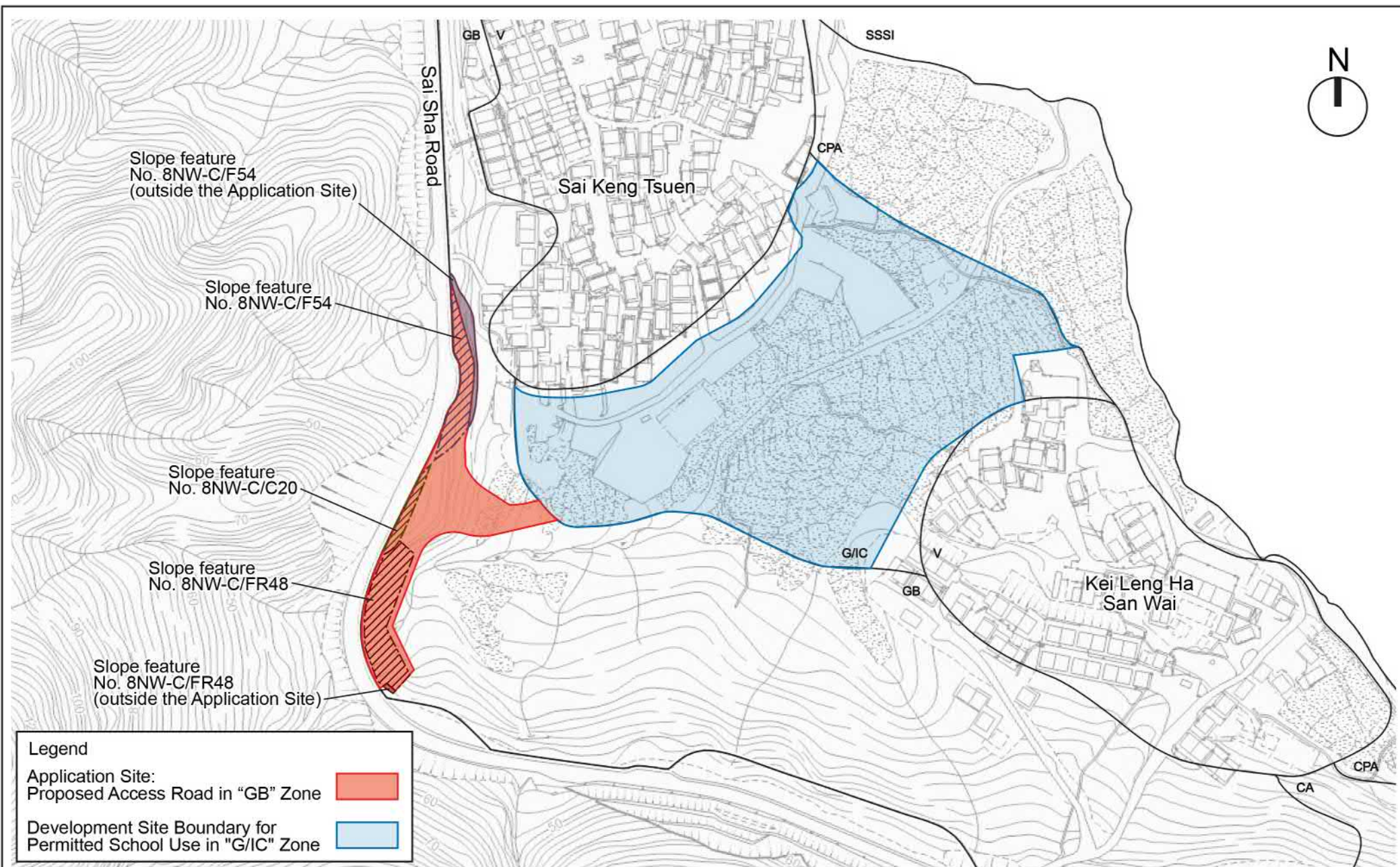
- 6.1 The submission of this S16 application to obtain planning approval for the Proposed Access Road connecting Sai Sha Road to the “G/IC” zone through the “GB” zone is only the first step in the whole development process for the permitted ‘School’ use in the “G/IC” zone. Imposition of relevant approval conditions such as the submission of a revised Traffic Impact Assessment (TIA) and implementation of traffic mitigation measures identified therein to the satisfaction of Transport Department could be imposed upon approval of this S16 application.
- 6.2 Upon approval of this S16 application, the Applicant will have to apply to the Lands Department (LandsD) for the land exchange to implement the ‘School’ use in the “G/IC” zone (Development Site) and the Proposed Access Road in the “GB” zone (Application Site). During land exchange application stage, relevant Government departments would be consulted and special conditions (e.g. Traffic Impact Assessment clause) could be imposed under Lease should the relevant departments consider necessary, even though the Development Site is not subject to planning application.
- 6.3 In addition, upon approval of this S16 application, the Applicant will need to submit a new set of GBP for the ‘School’ use (in the Development Site) and the Proposed Access Road (in the Application Site) to BD for approval. A full set of detailed plans and development parameters in GBP submission will be circulated by BD to relevant Government departments for vetting before approval.
- 6.4 With the control mechanism under three different authorities, it is evident that sufficient control is in place to ensure proper development in the “G/IC” zone. Approvals from authorities will have to be obtained at different development stages before realising the development.

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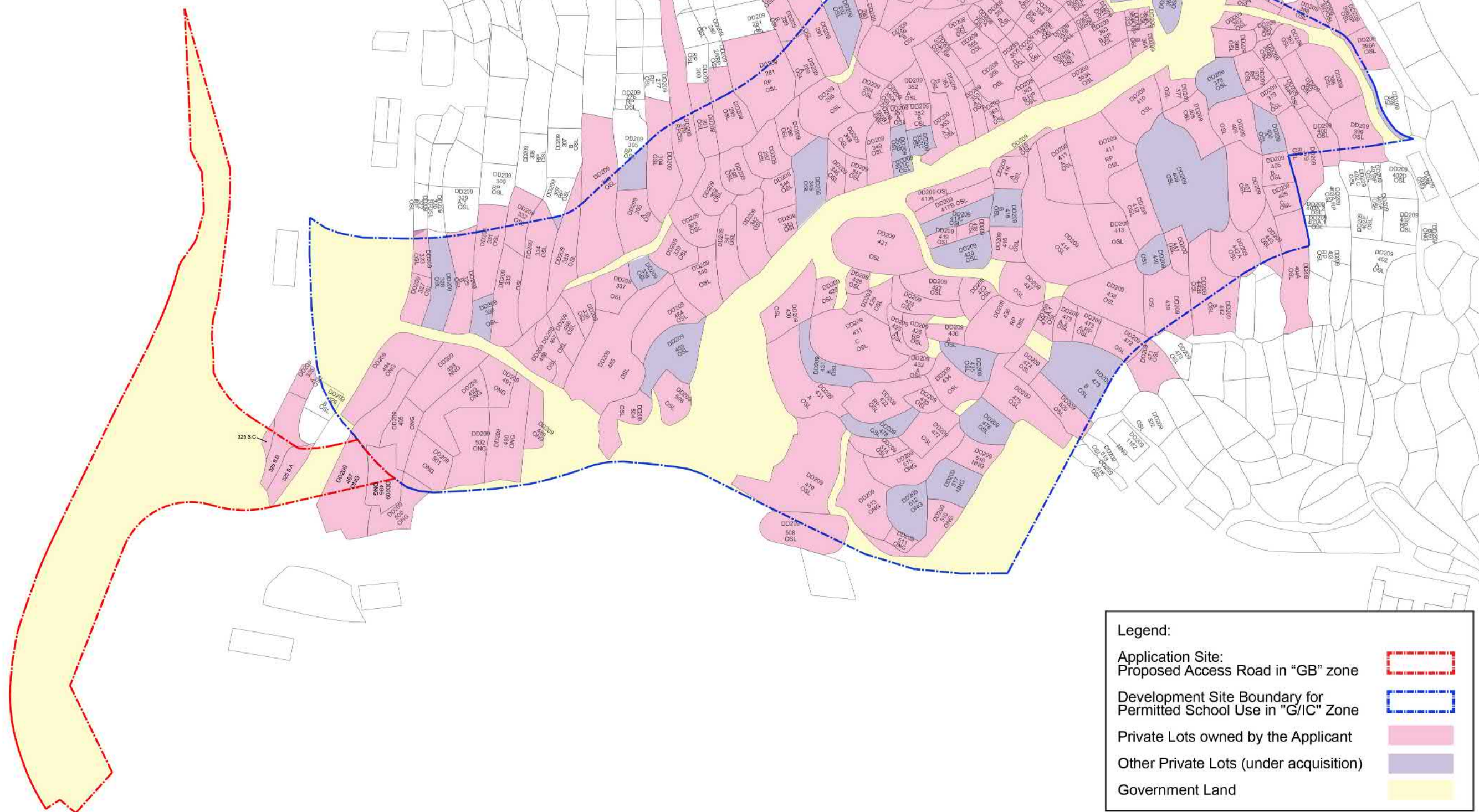
## Figures

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**Legend:**

Application Site: Proposed Access Road in "GB" zone	
Development Site Boundary for Permitted School Use in "G/IC" Zone	
Private Lots owned by the Applicant	
Other Private Lots (under acquisition)	
Government Land	



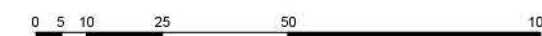


LEGEND

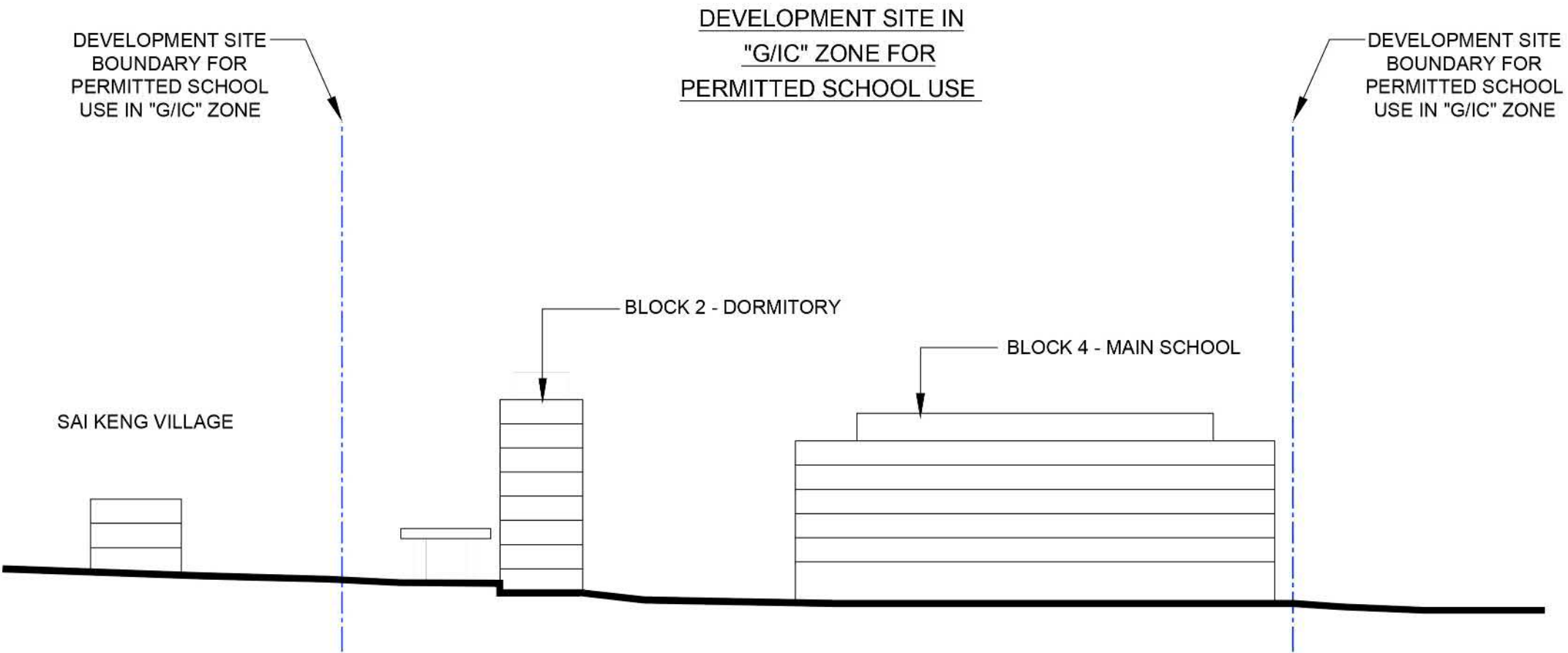
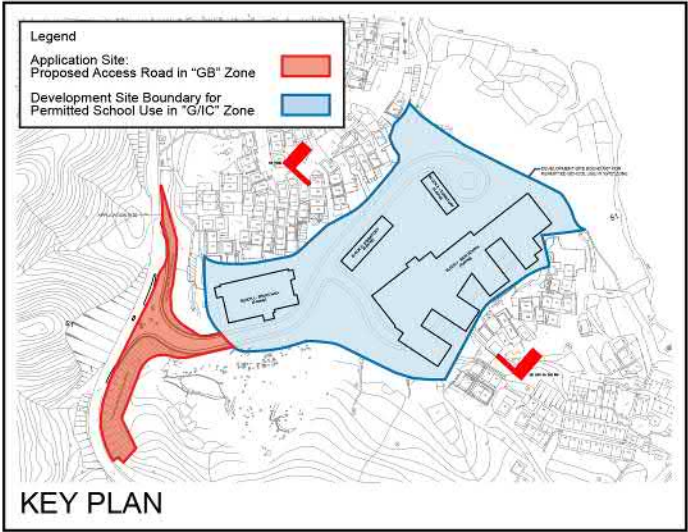
--- APPLICATION SITE BOUNDARY --- DEVELOPMENT SITE BOUNDARY FOR PERMITTED SCHOOL USE IN "G/IC" ZONE

Remark:

- The Proposed Access Road in the Application Site is to facilitate the permitted school use in the adjoining "G/IC" zone. The permitted school use is not the subject matter of this S16 planning application.
- During the construction stage, the woodland planting area will be used as temporary works area for the Proposed Access Road.



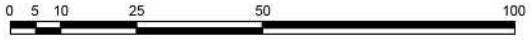




**LEGEND**  
 - - - APPLICATION SITE BOUNDARY - - - DEVELOPMENT SITE BOUNDARY FOR PERMITTED SCHOOL USE IN "G/IC" ZONE

**Remark:**

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- During the construction stage, the woodland planting area will be used as temporary works area for the Proposed Access Road.



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**Annex 1**

**Extracted General Building Plan Submission for  
Permitted School Use at Sai Keng in 2019**

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## GENERAL NOTES :

- THE FOLLOWING PLANS TO BE SUBMITTED SEPARATELY :
  - FOUNDATION PLANS
  - DRAINAGE PLANS
  - EXTERNAL CIRCULARS, CURB WALL PLANS, DETAILS & CALCULATIONS
  - STRUCTURAL PLANS, DETAILS
  - MINOR & CLASS WALL SYSTEM
- ALL BUILDING WORKS SHALL BE TO COMPLY WITH THE BUILDING (CONSTRUCTION) REGULATIONS.
- BARRIER FREE ACCESS SHALL BE PROVIDED TO THE WHOLE SCHEDULE OF THE BUILDING (PLANNING) REGULATION AND DESIGN MANUAL BARRIER FREE ACCESS 2008.
- THE BUILDING TO BE DESIGNED IN ACCORDANCE WITH THE CODE OF PRACTICE FOR FIRE SAFETY IN BUILDING 2001.
- ALL DIMENSIONS SHOWN ARE REFERRED TO THE STRUCTURE AND ARE IN MILLIMETERS UNLESS STATED OTHERWISE. ALL LEVELS ARE IN METERS AND REFER TO SPOTNAIL DATUM (P.D.).
- ALL WORKS TO COMPLY WITH PART 10 OF THE BUILDING (CONSTRUCTION) REGULATIONS.
- ALL EXISTING CONCRETE OR MASONRY BLOCK WORKS TO BE REINFORCED IN 1 : 2 CEMENT MORTAR. ALL R.C. WORKS TO BE 1 : 2 : 4 MAX. UNLESS OTHERWISE NOTED.
- ALL REINFORCED CONCRETE TO BE MORE THAN 150mm WIDE AND TO HAVE HANGERS ON BOTH SIDES.
- ALL STAIRCASES TO HAVE A CLEAR HEADROOM OF NOT LESS THAN 2000mm.
- REQUIRED STAIRCASES TO BE VENTILATED AT THE UPPERSTORY LEVEL. PERMANENT ARTIFICIAL LIGHTING SYSTEM TO BE PROVIDED TO THE STAIRCASE ON ALL FLOORS WITH 30 LUX MIN. LIGHTING LEVEL BASED UPON AN EMERGENCY LIGHTING SYSTEM COMPLYING WITH THE CODE OF PRACTICE FOR MINIMUM FIRE SERVICE INSTALLATIONS AND EQUIPMENT / REQUIREMENTS OF THE DIRECTOR OF FIRE SERVICE AND BS 5266 PART 1 : 1988, AND MAINTAINED IN EFFECTIVE WORKING ORDER.
- ALL VARIABLE ROOMS SHALL HAVE A HEIGHT OF NOT LESS THAN 2500mm MEASURED FROM FLOOR TO UNDERSTUD OF BEAM. ALL VARIABLE ROOMS SHALL HAVE A HEIGHT OF NOT LESS THAN 2500mm MEASURED FROM FLOOR TO CEILING.
- ALL PLAT ROOFS SHALL BE FINISHED WITH CEMENT / SAND SCREENING ON WATERPROOFING MEMBRANE ON LEAK HEAVY WEIGHT SLOPING LAY TO FALL AT 1 : 10 UNLESS OTHERWISE NOTED.
- ALL LIFT PROVISIONS AND INSTALLATION SHALL BE INSTALLED TO THE SATISFACTION OF ENDO. LIFT LOUVER SHOULD HAVE AN AREA OF NOT LESS THAN THAT OF THE FIRE BARRIERS THEREWITH REGARD TO INTEGRITY, OR NOT LESS THAN : 1700mm.
- ALL FIRE DUCTS SHALL BE ACCESSIBLE FROM COMMON AREA.
- AN UNOCCUPIED WORKING SPACE OF NOT LESS THAN 1700mm IN FRONT OF THE PIPES, SHALL BE PROVIDED FOR MAINTENANCE AND REPAIR OF THE PIPES.
- THE SIZE OF DOORS OR FRAMES PROVIDING ACCESS TO THE FIRE EXITS SHALL BE NOT LESS THAN 1000mm x 2000mm.
- ALL IMPARTIAL DOORS SHALL BE MINIMUM 1000mm ABOVE FINISHED FLOOR LEVEL.
- ALL PROTECTIONS ARE NOT TO BE MORE THAN 500mm UNLESS INDICATED FROM BUILDING DRILLING.
- THE FIRE DAMPERS OF SAME F.R.P. WILL BE PROVIDED FOR OPENINGS THROUGH COMPARTMENTS.
- Mechanical Ventilation and Air Pumping Facilities shall be provided for refuse storage and material recovery chamber in accordance with building refuse storage and material recovery chambers and refuse chutes regulation 1924 and PMP APP-35.
- ALL FIRE EXITS SHALL BE SEALED AT EACH FLOOR LEVEL.
- PIPE DUCT SYSTEMS THROUGH SUCH COMPARTMENT WALL AND FLOOR SHOULD BE PROTECTED BY SEALING SYSTEM AROUND THE DUCT NOT LESS THAN 2 HRS. F.R.P. CONSTRUCTION.
- Clear headroom of not less than 2000mm is provided to all parking area for private cars.
- The internal storage of every kitchen shall be a height of at least 2000mm above finished floor level or extended in cement mortar, not less than 120mm in thickness, or other non-absorbent material.
- Electric or gas cookers to be used in all kitchens.
- A smoke hot water heater shall be provided and installed prior to O.P. application. The hot water pipe from the smoke water heater to the bathroom is not greater than 10m as required by waterproofing regulation 1924.
- All bathroom windows to be provided door with louvers or transfer air duct or wall opening having a minimum size of 25 of the floor area of the room.
- INTERNAL BATHROOMS FOR BOARDING HOUSE TO BE MECHANICALLY VENTILATED PROVIDING 5 AIR CHANGES PER HOUR MINIMUM AND TO HAVE ARTIFICIAL LIGHTING TO THE SATISFACTION OF BUILDING AUTHORITY.
- Artificial lighting shall be provided to all staircases and exit routes with emergency lighting system provided a horizontal illuminance at floor level of not less than 2 lux complying with the code of practice for minimum fire service installations and equipment / requirements of the director of fire service and BS 5266 PART 1 : 1988, AND PERMANENTLY MAINTAINED IN EFFECTIVE WORKING ORDER.
- INTERNAL LAVATORIES FOR RESIDENTIAL RECREATIONAL FACILITIES TO BE MECHANICALLY VENTILATED PROVIDING 5 AIR CHANGES PER HOUR MINIMUM AND TO HAVE ARTIFICIAL LIGHTING TO THE SATISFACTION OF THE BUILDING AUTHORITY.
- Electric hot water heater system to be installed in boarding house and sport hall's changing room prior to completion of building.
- A/C for international school, boarding house and sport house should be installed prior to occupation.
- SEPARATE FRESH AIR DUCT TO BE PROVIDED FOR INTERNAL W.C.
- 40 PPM PMP APP-2 APPROVED C SECTION A PARAGRAPH 4, AND CAR-PARKING SPACES DISREGARDED FROM SPA ARE ELECTRIC VEHICLE (EV) STANDARD CHARGING FACILITIES IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED UNDER THE TECHNICAL SPECIFICATIONS ON CHARGING FACILITIES FOR ELECTRIC VEHICLES (EV) ISSUED BY THE ELECTRICAL AND MECHANICAL SERVICES DEPARTMENT.
- THE WINDOW SASH OF AN OPERABLE TOP-HING WINDOW SHOULD BE CAPABLE OF BEING OPENED TO SUCH FRAME OR TRANSOM AS NOT LESS THAN 100mm FROM THE EXISTING WINDOW FRAME.
- IN HEIGHT, THE DISTANCE BETWEEN THE BOTTOM OF THE OPERABLE SASH AND THE BOTTOM WINDOW FRAME OR TRANSOM SHOULD BE NOT LESS THAN THE HEIGHT OF THE OPERABLE SASH.
- ALL PRESERVED WINDOWS OF CURTAIN WALL SHALL BE OPENED WITH 90 DEGREE ANGLE.
- NO CURTAIN WALL SHALL BE PROVIDED FOR KITCHEN / PAINTY DOORS.
- TO COMPLY WITH SUBSECTION B(5) OF THE CODE OF PRACTICE FOR FIRE SAFETY IN BUILDINGS 2001, A DIRECT INTERCOM LINK TO BE PROVIDED FOR ALL DOMESTIC LIFT LOBBY CONNECTING WITH THE MANAGEMENT OFFICE OF THE BUILDING.
- THE DESIGN AND CONSTRUCTION REQUIREMENTS FOR ENERGY EFFICIENCY OF PROPOSED BOARDING HOUSE ARE TO COMPLY WITH THE REQUIREMENTS OF 10TH WALL, 10TH ROOF, 10TH FLOOR, 10TH GLASS AND 10TH GLASS UNDER THE PMP APP-52.
- THE EXTERNAL REFLECTANCE OF THE GLASS USED IN THE CURTAIN WALL SYSTEM DOES NOT EXCEED 20%.
- THE FOLLOWING PLAN/ AREA TO BE SUBMITTED SEPARATELY :
  - LANDSCAPE PLAN
  - TREE REMOVAL APPLICATION

## FIRE SERVICES NOTES :

- FIRE SERVICES SYSTEMS**
  - FIRE SERVICES INSTALLATIONS CONSISTING THE FOLLOWINGS SHALL BE INSTALLED AT THE POSITION AS INDICATED ON PLANS :
    - FIRE SERVICES INLET
    - HORIZONTAL OUTLET
    - HOSE REEL
    - 4500 GPM FIRE EXTINGUISHER
    - 80 LITRES WATER TYPE FIRE EXTINGUISHER (3 LITRES F.E.)
    - SAND BUCKET
    - SPRINKLER INLET AND SPRINKLER CONTROL VALVE SET
    - STREET FIRE HYDRANT
  - FIRE SERVICES PANEL**
    - ONE MAIN FIRE SERVICES CONTROL PANEL SHALL BE PROVIDED IN F.S. CONTROL ROOM AT G/F OF SCHOOL. AREAS INDICATED ON THE DRAWINGS.
    - ONLY ONE MAIN FIRE SERVICES CONTROL PANEL COMPRISES ALL FIRE CONTROL / ANNUNCIATOR PANELS FOR THE WHOLE DEVELOPMENT TO INDICATE ALL F.S. SIGNALS.
    - F.S. REPEATER PANELS SHALL BE PROVIDED IN MANAGEMENT OFFICES OF RESPECTIVE SCHOOL BUILDING.
    - BOARDING HOUSE AND THE SPORT HALL.
    - THE MAIN FIRE SERVICES CONTROL PANEL SHALL BE ARRANGED TO RELAY ALL AUTOMATIC FIRE PROTECTION SYSTEM INCLUDING MANUAL FIRE ALARM SYSTEM, AUTOMATIC FIRE DETECTION SYSTEM AND SPRINKLER FLOW SERVICE INSTALLATIONS AND EQUIPMENT / REQUIREMENTS OF THE DIRECTOR OF FIRE SERVICE AND BS 5266 PART 1 : 1988, AND MAINTAINED IN EFFECTIVE WORKING ORDER.
- STREET FIRE HYDRANT SYSTEM**
  - STREET FIRE HYDRANT SYSTEM SHALL BE PROVIDED ALONG THE E.V.A. AS INDICATED ON PLAN AND IN ACCORDANCE WITH FSD CIRCULAR LETTER NO. 4/96 PART X PARAGRAPH 3 AND 1925 CP 2012 EDITION.
  - STREET FIRE HYDRANT SHALL BE CAPABLE OF DELIVERING NOT LESS THAN 4,000 LITRES PER MINUTE FROM TWO 50mm DIA. OUTLETS AT MINIMUM RUNNING PRESSURE OF 170 kpa.
- AUTOMATIC SPRINKLER SYSTEM**
  - SPRINKLER SYSTEM SHALL BE PROVIDED IN ACCORDANCE WITH LPC RULES INCORPORATING BS EN 12845 : 2003 AND FSD CIRCULAR LETTER NO. 2/2008 & 3/2012 TO PROTECT ALL COMMON AREAS OF SCHOOL, BOARDING HOUSE AND SPORT HALL.
  - SPRINKLER SYSTEM SHALL BE DESIGNED TO ORDINARY HAZARD (OL).
  - A 47,000 LITRES SPRINKLER WATER TANK SHALL BE PROVIDED TO SERVE THE SPRINKLER SYSTEM WHICH IS FED FROM GOVERNMENT WATER SUPPLY MAIN. SPRINKLER ALARM SIGNAL SHALL BE TRANSMITTED TO THE FIRE SERVICES COMMUNICATION CENTRE VIA A DIRECT LINE.
  - SPRINKLER CONTROL VALVE SET AND INLETS SHALL BE PROVIDED AT THE LOCATION AS INDICATED ON THE DRAWINGS.
  - A SPRINKLER ANNUNCIATOR PANEL INCORPORATED INTO F.S. MAIN PANEL IN F.S. CONTROL ROOM SHALL BE PROVIDED TO INDICATE THE FLOOR SPIN WHICH SPRINKLES ARE OPERATING.
  - NO SPRINKLER SYSTEM SHALL BE PROVIDED FOR E.A.M PLANT ROOMS PROTECTED BY AUTOMATIC FIRE DETECTION SYSTEM INCLUDING TRANSFORMER ROOM, SWITCH ROOM, ELECTRICAL METER ROOM, EMERGENCY GENERATOR ROOM, THE ROOM, FAN ROOM, PUMP ROOM, LIFT MACHINE ROOM, F.S. CONTROL ROOM, ETC.
  - NO SPRINKLER SYSTEM SHALL BE PROVIDED FOR CABLE DUCT (C.D.), FIRE DUCT (F.D.), SMOKE VENT (S.V.), SMOKE OUTLET (S.O.), ELECTRICAL METER CABINET, WATER METER CABINET, HOSE REEL CABINET, VALVE CABINET / PIT, F.S. INLET CABINET, COVERED LANDSCAPE AREA & CANOPY / ARCHITECTURAL FEATURE.
- FIRE HYDRANT / HOSE REEL SYSTEM** IN ACCORDANCE WITH FSD'S CP 2012 EDITION & FSD CIRCULAR LETTER NO. 2/2008.
  - FOR SCHOOL BLOCK, BOARDING HOUSE AND SPORT HALL RESPECTIVELY :
    - A 3,000 LITRES F.S. WATER TANK SHALL BE PROVIDED TO SERVE THE FIRE HYDRANT / HOSE REEL SYSTEM WHICH IS FED FROM GOVERNMENT WATER SUPPLY MAIN.
    - F.S. INLETS SHALL BE PROVIDED AT LOCATIONS AS SHOWN ON PLANS & ALL F.S. INLETS SHALL BE WITH THE CODE OF PRACTICE FOR MINIMUM FIRE SERVICE INSTALLATIONS AND EQUIPMENT / REQUIREMENTS OF THE DIRECTOR OF FIRE SERVICE AND BS 5266 PART 1 : 1988, AND PERMANENTLY MAINTAINED IN EFFECTIVE WORKING ORDER.
    - THE HYDRANTS SHALL BE PROVIDED IN ALL APPROACH LOBBIES TO REQUIRED STAIRCASES OR REQUIRED STAIRCASE ENCLOSURES ON EACH FLOOR.
    - HOSE REELS AND FIRE HYDRANT SHALL BE PROVIDED TO ENSURE THAT EVERY PART OF THE BUILDING CAN BE REACHED BY A LENGTH OF NOT MORE THAN 30m OF FIRE SERVICES HOSE REEL TUBING AND F.S. HOSE.
    - NO HOSE REEL SET SHALL BE PROVIDED FOR OPEN LANDSCAPED AREAS.
- FIRE ALARM SYSTEMS**
  - A MANUAL OPERATED FIRE ALARM SYSTEM IN ACCORDANCE WITH BS 5839-1 : 2002 & A2 : 2008 AND FSD CIRCULAR LETTER NO. 1/2009 & 2/2010 & 2/2012.
  - FOR SCHOOL BLOCK, BOARDING HOUSE AND SPORT HALL BUILDINGS, AND INCORPORATED IN THE F.A. / H.R. INSTALLATION.
  - ONE ACTUATING POINT (BREAK GLASS UNIT) AND ONE AUDIO WARNING DEVICE (FIRE ALARM BELL) TO BE LOCATED AT EACH HOSE REEL POINT.
  - VISUAL ALARM SIGNALS IN THE FORM OF FLASHING RED LIGHTS SHALL BE PROVIDED IN ACCORDANCE WITH BARRIER FREE ACCESS 2008 & FSD CIRCULAR LETTER 2/2002.
- FIRE DETECTION SYSTEM**
  - FIRE DETECTION SYSTEM SHALL COMPLY WITH BS 5839-1 : 2002 & A2 : 2008 AND FSD CIRCULAR LETTER NO. 1/2009 & 2/2010 & 2/2012.
  - FIRE DETECTION SYSTEM SHALL BE PROVIDED IN THE AREAS WHERE NOT COVERED BY AUTOMATIC SPRINKLER SYSTEM FOR ALL E.A.M PLANT ROOMS AREAS.
  - HEAT DETECTOR SHALL BE ADAPTED FOR THE FIRE DETECTION SYSTEM FOR ALL E.A.M PLANT ROOMS.
  - NO FIRE DETECTION SYSTEM SHALL BE PROVIDED AT PIPE DUCT (P.D.), CABLE DUCT (C.D.), SMOKE VENT (S.V.), SMOKE OUTLET (S.O.), ELECTRICAL METER CABINET, HOSE REEL CABINET, WATER METER CABINET, VALVE CABINET / PIT, F.S. INLET CABINET, ETC.
  - HEAT DETECTOR SHALL BE PROVIDED FOR F.S. CONTROL ROOM.
  - NO FIRE DETECTION SYSTEM SHALL BE PROVIDED FOR THE AREAS WHERE TO BE SERVED FOR BOARDING HOUSE BUILDING.

## LEGEND

	REINFORCED CONCRETE WORKS
	SOLID CONCRETE BLOCK
	BRICK WORKS
	CEMENT RENDERING OR PLASTER
	FLOOR TILES
	WALL TILES
	METAL WORKS
	TIMBER WORKS
	GLASS WORKS
	SANITARY FITTINGS
	2 HRS. F.R.P. SOLID CONCRETE BLOCK
	STRUCTURAL FLOOR LEVEL
	FINISHED FLOOR LEVEL
	STRUCTURAL FLOOR LEVEL
	FINISHED FLOOR LEVEL

## LEVEL

## LEVEL

## EXIT

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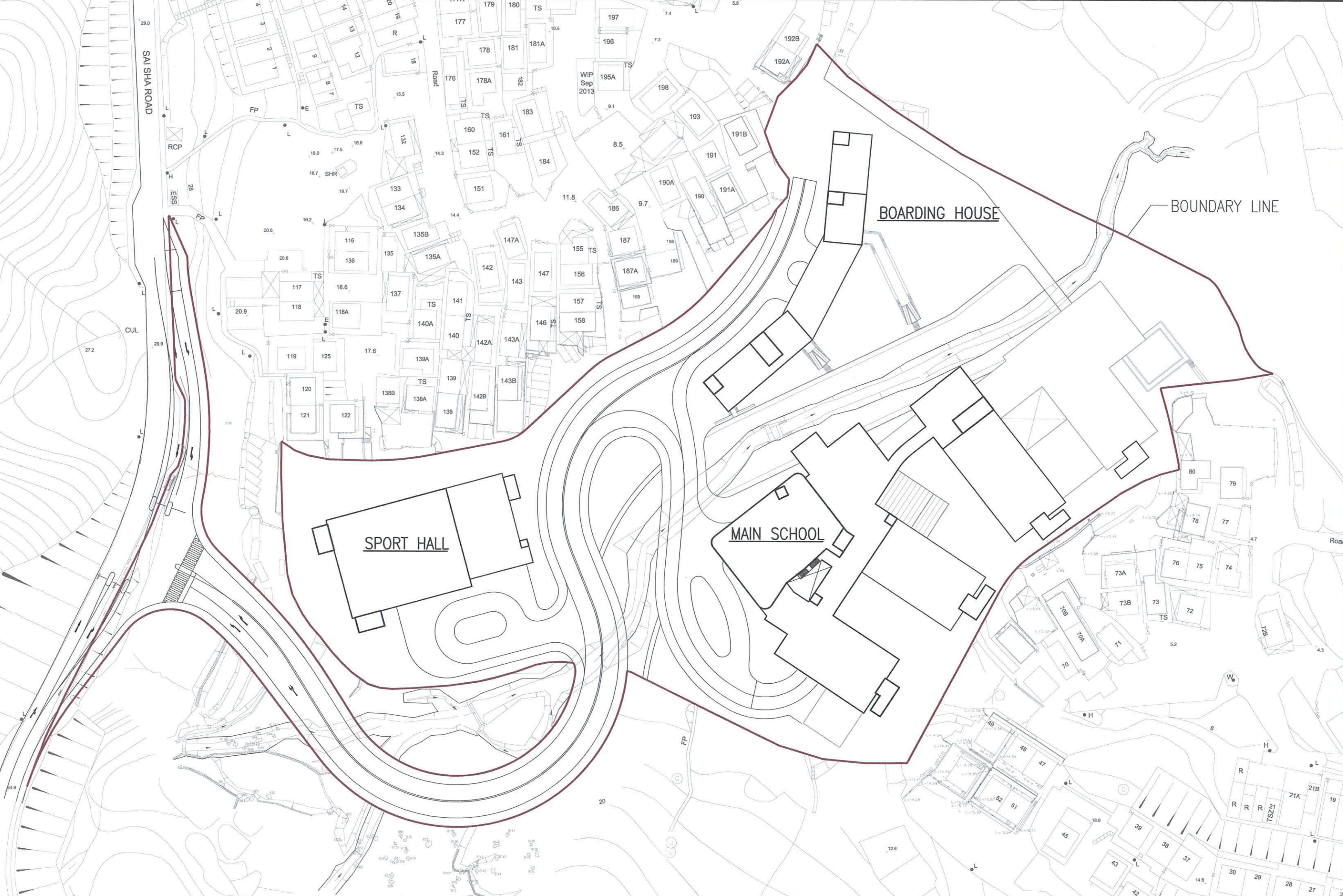
## EXIT

## DOOR MARK

- 60/60/60 F.R.P. APPROVED TYPE SELF-CLOSING DOOR WITH VISION PANEL.
- 120/120/120 F.R.P. APPROVED TYPE SELF-CLOSING DOOR WITH VISION PANEL.

## ABBREVIATION

R.C.	REINFORCED CEMENT CONCRETE
C.C.	CEMENT CONCRETE
W.G.	WOUND GLASS
F.W.G.L.	FIBRED WOUND GLASS LOUVRES
H.W.	HIGH LEVEL GLASS LOUVRES
M.L.	METAL LOUVRES
P.D.	PIPE DUCT
C.D.	CABLE DUCT
A.P.F.	ARCHITECTURAL FEATURE
A.F.F.L.	ABOVE FINISHED FLOOR LEVEL
DN	DOWN
mm	MILLIMETRE
LEV.	LEVEL
P.	PERSON
S.	SHOWER
COM.	COMPUTER
F.A.	240x240 FLUE APERTURE



BLOCK PLAN 1:1000

## PLOT RATIO & SITE COVERAGE CALCULATIONS

SITE AREA	= 37000.384 m <sup>2</sup>
MAIN STREET LEVEL	= 2.00m P.D.
HEIGHT OF BUILDING	= (2.00m P.D. - 7.00m P.D.) = 31.80m

## IN ACCORDANCE WITH THE BUILDING (PLANNING) REGULATIONS

CLASS OF SITE	= "A"
PERMITTED NON-DOMESTIC SITE COVERAGE (BUILDING HEIGHT OVER 30m BUT NOT EXCEEDING 36m) =	80.00 %

PROPOSED NON-DOMESTIC SITE COVERAGE	= 9025.719 m <sup>2</sup> / 37000.384 m <sup>2</sup> x 100%
= 24.39 % < 80.00 %	

NATIONAL USED SITE AREA FOR NON-DOMESTIC SITE COVERAGE	= 9025.719 m <sup>2</sup> / 80.00 % = 11282.149 m <sup>2</sup>
REMAINING SITE AREA FOR DOMESTIC COVERAGE	= 37000.384 m <sup>2</sup> - 11282.149 m <sup>2</sup> = 25718.235 m <sup>2</sup>

PERMITTED DOMESTIC SITE COVERAGE (BUILDING HEIGHT OVER 30m BUT NOT EXCEEDING 36m) =	39.00 %
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PROPOSED DOMESTIC SITE COVERAGE	= 1164.127 m <sup>2</sup> / 25718.235 m <sup>2</sup> x 100%
= 4.53 % < 39.00 %	

PROPOSED NON-DOMESTIC C.F.A.	= 25533.752 m <sup>2</sup> + 5320.083 m <sup>2</sup> = 30853.835 m <sup>2</sup>
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PROPOSED DOMESTIC C.F.A.	= 332.487 m <sup>2</sup> + 8892.543 m <sup>2</sup> = 8925.030 m <sup>2</sup>
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TOTAL C.F.A.	= 30853.835 m <sup>2</sup> + 8925.030 m <sup>2</sup> = 39778.865 m <sup>2</sup>
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PROPOSED PLOT RATIO	= 39778.865 m <sup>2</sup> / 37000.384 m <sup>2</sup> = 1.08
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## SANITARY FITMENT PROVISION (MAIN SCHOOL)

(FOR STAFF ONLY)																					
FLOOR	USE	CAPACITY OF EACH FLOOR (PERSON)	RATIO OF MALE TO FEMALE			SANITARY FITMENT															
						W.C.						BATH				URINAL		SHOWER			
						MALE		FEMALE		MALE		FEMALE		MALE		MALE		FEMALE			
			REQ.	PRO.	REQ.	PRO.	REQ.	PRO.	REQ.	PRO.	REQ.	PRO.	REQ.	PRO.	REQ.	PRO.					
GROUND FLOOR	ADMIN & OFFICE / BOARD HOUSE	7	1 : 1	3	4	1	1	1	1	1	1	1	1	-	-	-	-				
3RD FLOOR	PRIMARY OFFICE / HEADMASTER / DEPUTY HEADMASTER	39	1 : 1	51	52	3	7	5	7	3	7	3	7	2	-	-	-				
4TH FLOOR	SECONDARY OFFICE	64																			
	UNIT A	*** 2	-	-	-																
	UNIT B	*** 4																			
PROVIDED 1 x W.C. , 1 x BATH , 1 x SHOWER																					
PROVIDED 2 x W.C. , 2 x BATH , 2 x SHOWER																					
(FOR STUDENT ONLY)																					
FLOOR	USE	CAPACITY OF EACH FLOOR (PERSON)	RATIO OF MALE TO FEMALE			SANITARY FITMENT															
						W.C.						BATH				URINAL		SHOWER			
						MALE		FEMALE		MALE		FEMALE		MALE		MALE		FEMALE			
			REQ.	PRO.	REQ.	PRO.	REQ.	PRO.	REQ.	PRO.	REQ.	PRO.	REQ.	PRO.	REQ.	PRO.					
GROUND FLOOR	CLASS ROOM (KINDERGARTEN)	* NO. OF KINDERGARTEN STUDENT 5 CLASSROOM x 18 STUDENTS EACH = 90 STUDENTS	1 : 1	25	25	2	3	2	6	-	3	-	3	2	3	-	-				
1ST FLOOR	CLASS ROOM (PRIMARY & SECONDARY STUDENT)	* NO. OF PRIMARY STUDENT 2 CLASSROOM x 25 STUDENTS EACH = 50 STUDENTS																			
2ND FLOOR	CLASS ROOM (PRIMARY & SECONDARY STUDENT)	* NO. OF PRIMARY STUDENT 18 CLASSROOM x 25 STUDENTS EACH = 450 STUDENTS																			
3RD FLOOR	CLASS ROOM (PRIMARY & SECONDARY STUDENT)	* NO. OF SECONDARY STUDENT 24 CLASSROOM x 25 STUDENTS EACH = 600 STUDENTS	1 : 1	568	568	40	40	40	40	-	41	-	41	40	40	-	-				
4TH FLOOR	CLASS ROOM (LABORATORY)																				
5TH FLOOR	FUNCTION ROOM	TOTAL = 1176																			



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**Annex 2**

**Planning Department's Reply on  
GBP Submission in 2019**

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**Urgent by Fax and Email****M E M O**

<i>From</i>	District Planning Officer/STN, PlanD	<i>To</i>	Chief Building Surveyor/NTW, BD
<i>Ref.</i>	( ) in PD/TP1/01/3L	<i>(Attn.:</i>	Ms. LEUNG Yuen-yee, Debby )
<i>Tel. No.</i>	2158 6220	<i>Fax No.</i>	2691 2806
<i>Email</i>	jhfchu@pland.gov.hk	<i>Your Ref:</i>	(3) in BD 2/9188/19
<i>Date</i>	30 October 2019	<i>dated</i>	20.9.2019
		<i>Fax No.</i>	2845 1559
		<i>Total Pages</i>	2

**D.D. 209 Sai Keng, N.T.**  
**Proposed International School and Boarding House**  
**(New Submission)**

I refer to your above-quoted memo enclosing a set of building plans (Drawings No. N-1, P-01 to P-20, E-01 to E-05 and C-01 to C-10) for our comment.

**Statutory Comments**

2. The subject site falls within an area zoned partly "Government, Institution or Community" ("G/IC") and partly "Green Belt" ("GB") on the approved Shap Sz Heung Outline Zoning Plan (OZP) No. S/NE-SSH/11. The proposed development comprises three components, including the main school, a boarding house and a sport hall within the "G/IC" zone and also an access road from Sai Sha Road falling entirely within the "GB" zone. According to the Notes of the OZP, 'School' is always permitted in "G/IC" zone. However, it is a Column 2 use requiring planning permission from the Town Planning Board. As the proposed school comprises a component (the access road) within "GB" zone, planning permission should be sought.

3. According to our record, no planning application has been received on the proposed development. As such, carrying out of the proposed building works as shown on the current building plans submitted will contravene the OZP, thus it is recommended to reject the building plans submission under s16(1)(d) of the Buildings Ordinance.

**Other Comments**

4. It is understood that under the prevailing policy, a new international school would only be recognised by the Education Bureau (EDB) upon successful application under a 'School Allocation Exercise'. There is no information on whether such an application has been approved by the EDB. To ensure that the proposed development falls within the definition of 'school', the AP/ the applicant is advised to liaise with EDB and obtain the relevant approval before further proceeding with the proposal.

5. The above comments on the building plans submitted may be subject to revision should there be a change in circumstances before a decision on the building plans is made by the Building Authority.

- 2 -



( Ms. Jessica CHU )  
for District Planning Officer/  
Sha Tin, Tai Po & North,  
Planning Department

C.C.

AP  
DLO/TP, LandsD  
SED  
C for T  
CHE/NTE, HyD

(Attn.: Mr. C. K. FUNG)  
(Attn.: Ms. M. L. WONG)  
(Attn.: Ms. CHAN Wing-chi)  
(Attn.: Ms. Cynthia KWOK)  
(Attn.: Mr. Y.W. WONG)

(Fax: 2793 2983)  
(Fax: 2650 9896)  
(Fax: 2119 9107 )  
(Fax: 2381 3799)  
Fax No. 2714 5228

Internal

Site Record (SK/93)

JC/TW/SC/sc  
JS



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**Annex 3**

**Buildings Department's Reply on  
GBP Submission in 2019**

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YOUR REF 來函編號：  
OUR REF 本署編號：  
FAX 圖文傳真：  
TEL 電話：  
www.bd.gov.hk

BD 2/9188/19  
2845 1559  
2626 1455

13 November 2019

Lai Chi Leung Henry  
9<sup>th</sup> Floor, 133 Wai Yip Street,  
Kowloon, Hong Kong

Dear Sir,

**Proposed Development of International School and Boarding House  
Sai Keng – D.D.209**

I refer to your application received on 16 September 2019 for approval of proposals in respect of Building.

2. Your submission of plans has been checked under the curtailed check system announced in Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers ADM-19. On this basis, the submission has been found to be fundamentally unacceptable and I hereby **disapprove** the submission for the reasons detailed in paragraph 7 of this letter.

3. You are reminded that the curtailed check system covers only the fundamental issues of a building proposal. Although non-fundamental issues will not be raised as reasons for disapproving a submission, I expect that all contraventions of the Buildings Ordinance (BO) and its subsidiary legislation are rectified as and when they are discovered and in any event, before completion of the works is certified. In this connection, I ask you to note that the Building Authority (BA) attaches great importance to the proper assumption of duties and responsibilities by authorized persons, registered structural engineers and registered geotechnical engineers.

4. Your client has been sent a copy of this letter but I would request that you ensure that the contents are understood by him.

5. With the exception of one set of plans which I will retain for record purposes, the remaining copies of your submission are returned herewith.

6. You are advised that under section 44(1) of the BO, any person aggrieved by a decision made by the BA may appeal from that decision. Should your client wish to appeal against my decision in this letter, please refer to the provisions of Part VI of the BO. In particular, please note that a Notice of Appeal should be served by your client in writing directly on the Secretary to the Appeal Tribunal to be received by him not later than 21 days from the date of this letter.

7(A) Your proposal is not acceptable under the BO s.16(1)(b) as your plans have not been endorsed by or accompanied with a certificate from the Director of Fire Services.

7(B) Your plans are disapproved under the BO s.16(1)(d) in that carrying out of the building works as shown on the current building plans submitted will contravene the Outline Zoning Plan as per comments from District Planning Officer/STN conveyed to you in paragraph 11 below.

SL 8

... / 7(C)

- 2 -

Our Ref.: BD 2/9188/19

7(C) Under BO s.16(1)(d), the following contraventions are noted:

- (a) The following areas have not been included in gross floor area calculation under Building (Planning) Regulation (B(P)R) 23(3)(a):
  - (i) Void underneath the grand staircase in main school;
  - (ii) Glass canopy above the grand staircase in main school; and
  - (iii) Covered landscape and high headroom at the covered landscape in boarding house;
- (a) Documentary proof of ownership or realistic prospect of control of the land forming the site is not sufficient. As the land (and its area) forming the site cannot be established, the building works shown on your plans would contravene Regulations 20 and 21 of the Building (Planning) Regulations. Your attention is also drawn to the Building Authority's Circular Letter dated 20 October 2010 to all AP, RSE and RGE on the Application for Approval of Building Plans - Proof of Ownership of Land. Further documentary proof for registered owners, e.g. Certificate of Incorporation for Company shall be submitted / clarified;
- (b) The means of escape of the building is not acceptable under B(P)R 41 in that:
  - (i) Inadequate width of exit route outside the ST-4 on G/F. (FS code B8.1 refers);
  - (ii) Inadequate width of exit route at protected lobby near ST- 6 on 2/F. (FS code B8.1 refers);
  - (iii) Inadequate exits in Main Hall on 1/F. (FS code B8.1 and Table B2 refer);
  - (iv) Horizontal distance between two required staircases on 2-6/F of boarding house exceeding 48m. (FS code B11.3(b) refers); and
  - (v) Return for walls enclosing the exit route less than 450mm at the final discharge of ST-9 on G/F in Sports Hall. (FS code B5.7 refers);
- (c) The Fire Resisting Construction of the building is not acceptable under Building (Planning) Regulation (B(C)R) 90 in that:
  - (i) Inadequate fire barrier for main hall of the main school exceeding Fire Resistance Rating and Fire Compartment Limitations with accordance with FS code 2011 Table C1. (FS Code 2011C4.1 refers);
- (d) The Barrier Free Access of the building is not acceptable under B(P)R72 in that:
  - (i) Disable car parking space not provided for the proposed development. (Division 3 of Chapter 4 refers);
  - (ii) Accessible urinal not provide for male toilets in the proposed development. (Division 11 of Chapter 4 refers)

7(D) Under BO s.16(1)(i), the following (which are not exhaustive) should be clarified / demonstrated:

- (a) To demonstrate the provision of access to the subject site. Position under Building (Planning) regulation 5 is reserved;
- (b) To justify the site classification in accordance with B(P)R 18A(3). My position under B(P)R20 & 21 is reserved. Details and width of the access road should be submitted;
- (c) Justify the site area by a Land Survey Plan or a lease plan with lot area, boundaries and setting-out coordinates to substantiate the site area and site boundaries. Your attention is drawn to PNAP ADM-21 on the documentary proof for site parameters. My comment under B(P)R23(3)(a) is reserved;

SL 8

... / 7(D)(d)



- 3 -

Our Ref.: BD 2/9188/19

- (d) To demonstrate the pre-requisites in para. 6 & 7 of PNAP APP-151 and the overall cap of 10% in para. 4 of PNAP APP-151 are complied with as the proposed refuse storage room has been disregarded from GFA calculation under B(P)R23(3)(b) but it is not mandatory required under Building (Refuge Storage and Material Recovery Chambers and Refuse Chutes) Regulations;
- (e) To demonstrate all deadend travel distance and travel distance for the proposed buildings in accordance with Clause B11.2 and B11.3 of FS Code 2011;
- (f) To demonstrate the provision of temporary refuge space for the proposed buildings in accordance with Subsection B30 of FS Code 2011;
- (g) To justify the GFA calculation by residual method to demonstrate the plot ratio and site coverage for domestic and non-domestic GFA;
- (h) Service lane is not provided for boarding house. (B(P)R28 refers);
- (i) To demonstrate the discharge value and occupant capacity for each staircase separately in the discharge value calculation;
- (j) To demonstrate the provision of required staircases for use Classification 5b in accordance with Clause B14.2 of FS Code 2011;
- (k) To clarify the headroom of overhead structure Emergency Vehicular Access in accordance with Clause B22.2(b) of FS Code 2011;
- (l) To demonstrate horizontal distance measured on plan of the exit route between required staircases not exceed 48m in accordance with Clause B11.3 OF FS code 2011;
- (m) To justify the size and provision of the essential plant rooms with plant layout or quantitative assessments. My comment under B(P)R 23(3)(b) is reserved;
- (n) To demonstrate the staircase numbers of for the required exit staircases;
- (o) To demonstrate the FRR of all doors required under FS Code 2011;
- (p) To clarify the disable access from the lot boundary to the proposed buildings and disable access to the all facilities in accordance with table 2 in DM BFA 2008. My comment under B(P)R 72 is reserved; and
- (q) To clarify the comments from Chief Highways Engineer/NT East of Highways Departments as per comments from Chief Highways Engineer/NT East conveyed to you in paragraph 9 below

8. The grounds set out for any refusal to approve plans shall not be treated as being exhaustive, and no such refusal shall be construed as implying any approval of any part of such plans. Your attention should also be drawn to Buildings Ordinance Section 15(2).

9. Chief Highways Engineer/NT East of Highways Department (contact officer: Mr. Ronald W K SIU at tel.: 2762 4948) has conveyed his comments to you in her memo dated 21 October 2019.

10. Comments from District Lands Officer / Tai Po of Lands Department, if any, will be addressed to you directly.

11. It is noted that District Planning Officer/STN (Ms. Jessica CHU at 2158 6220) has conveyed her comments to you in her memo dated 30 October 2019.

- 4 -

Our Ref.: BD 2/9188/19

12. Chief Geotechnical Engineer/Mainland East, GEO, CEDD (contact person: Mr. Jack Y KWOK at 2762 5198) has the following comments:

(a) Please refer to the attached Appendix I -


13. Project Manager (North), CEDD (contact person: Ms. P Y MAK at 3152 3576) has no comment on the plans from project interface point of view.

14. Comments from Commissioner of Transport and Secretary of Education, if any, will be conveyed to you upon receipt.

15. Your submitted Forms BA16 will be considered in next submission.

16. You are reminded that under regulation 29(3) of the Building (Administration) Regulations (B(A)R) and without prejudice to regulation 30(3) of the B(A)R, the submission of further particulars or other plans consequent upon the refusal of the BA to give his approval under sections 16(1)(i) or (2)(f) of the BO shall be deemed to be a fresh application in respect of the plans which the BA had refused to approve. Your future re-submission of plans for the subject proposal will be considered as plans submitted for the first time to the BA for approval, which regulation 30(3)(a) of the B(A)R applies.

Yours faithfully,

  
(HUNG Ling-chi, Anthony)  
Chief Building Surveyor  
for Building Authority

c.c. Light Time Investments Limited  
c/o Rm 1002, Tower 1,  
New World Tower,  
18 Queen's Road Central,  
Hong Kong

DLO/TP  
DPO/STN  
DFS  
CHE/NTE, HyD  
C for T  
CGE/ME, GEO  
S for E  
PM/N, CEDD

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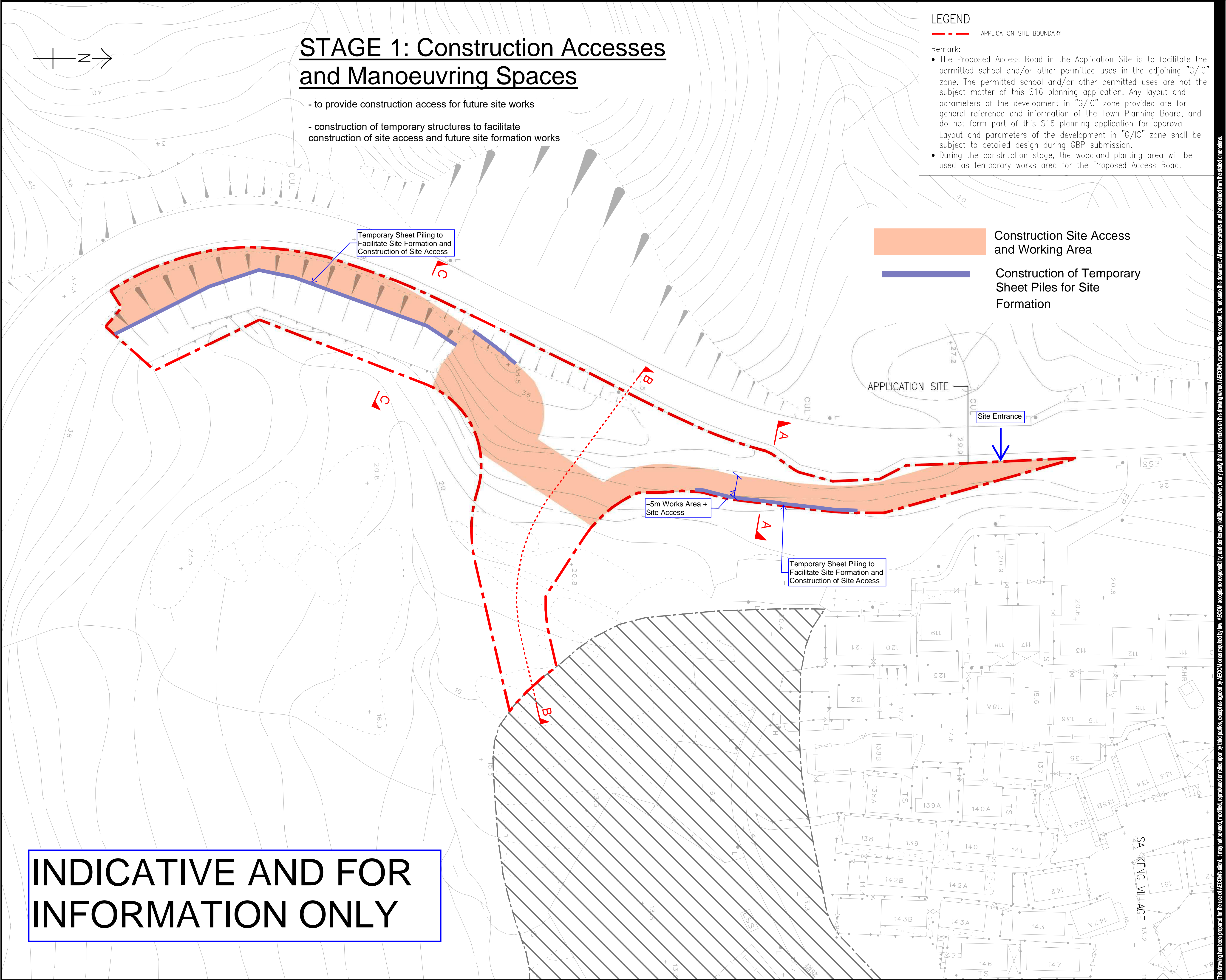
## **Appendix I**

### **Proposed Work and Construction Sequence**

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(Same as that under Further Information submitted on 29 December 2021)





# STAGE 1: Construction Accesses and Manoeuvring Spaces

- to provide construction access for future site works
- construction of temporary structures to facilitate construction of site access and future site formation works

## LEGEND

--- APPLICATION SITE BOUNDARY

### Remark:

- The Proposed Access Road in the Application Site is to facilitate the permitted school and/or other permitted uses in the adjoining "G/IC" zone. The permitted school and/or other permitted uses are not the subject matter of this S16 planning application. Any layout and parameters of the development in "G/IC" zone provided are for general reference and information of the Town Planning Board, and do not form part of this S16 planning application for approval. Layout and parameters of the development in "G/IC" zone shall be subject to detailed design during GBP submission.
- During the construction stage, the woodland planting area will be used as temporary works area for the Proposed Access Road.



Construction Site Access and Working Area



Construction of Temporary Sheet Piles for Site Formation

APPLICATION SITE

Site Entrance

~5m Works Area + Site Access

Temporary Sheet Piling to Facilitate Site Formation and Construction of Site Access

Temporary Sheet Piling to Facilitate Site Formation and Construction of Site Access

INDICATIVE AND FOR INFORMATION ONLY

AECOM

## PROJECT

PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

## CLIENT

## CONSULTANT

AECOM Asia Company Ltd.  
www.aecom.com

## SUB-CONSULTANTS

## ISSUE/REVISION

I/R	DATE	DESCRIPTION	CHK.
01	2024/01/10	Initial Issue	ABC
02	2024/02/15	Revised for client feedback	ABC
03	2024/03/20	Final design for construction	ABC

## STATUS

PRELIMINARY

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## DIMENSION UNIT

METRES

## KEY PLAN

## PROJECT NO.

PROJECT NO.

## CONTRACT NO.

CONTRACT NO.

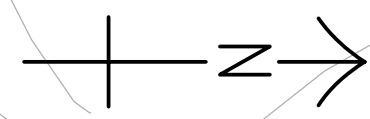
## SHEET TITLE

SHEET TITLE

## SHEET NUMBER

SHEET NUMBER





# STAGE 2: Initial Earthwork & Slope Work

- excavation works to the required site formation level and also to facilitate the construction of permanent retaining structures

## LEGEND

--- APPLICATION SITE BOUNDARY

Remark:

- The Proposed Access Road in the Application Site is to facilitate the permitted school and/or other permitted uses in the adjoining "G/IC" zone. The permitted school and/or other permitted uses are not the subject matter of this S16 planning application. Any layout and parameters of the development in "G/IC" zone provided are for general reference and information of the Town Planning Board, and do not form part of this S16 planning application for approval. Layout and parameters of the development in "G/IC" zone shall be subject to detailed design during GBP submission.
- During the construction stage, the woodland planting area will be used as temporary works area for the Proposed Access Road.

- Construction Site Access and Working Area
- Excavation Works for Site Formation and Retaining Wall Construction

~5m Works Area + Site Access

~5m Works Area + Site Access

APPLICATION SITE

Site Entrance

INDICATIVE AND FOR INFORMATION ONLY

AECOM

PROJECT  
項目  
PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

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DIMENSION UNIT  
尺寸單位  
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索引圖

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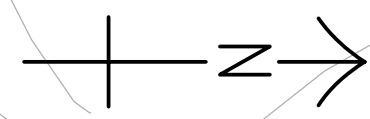
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合約編號

SHEET TITLE  
圖紙名稱

SHEET NUMBER  
圖紙編號

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# STAGE 3: Retaining Structure & Bridge Foundation

- construction of retaining wall to support level differences in the proposed final ground profile
- construction of foundation to support the bridge structure of the proposed access road

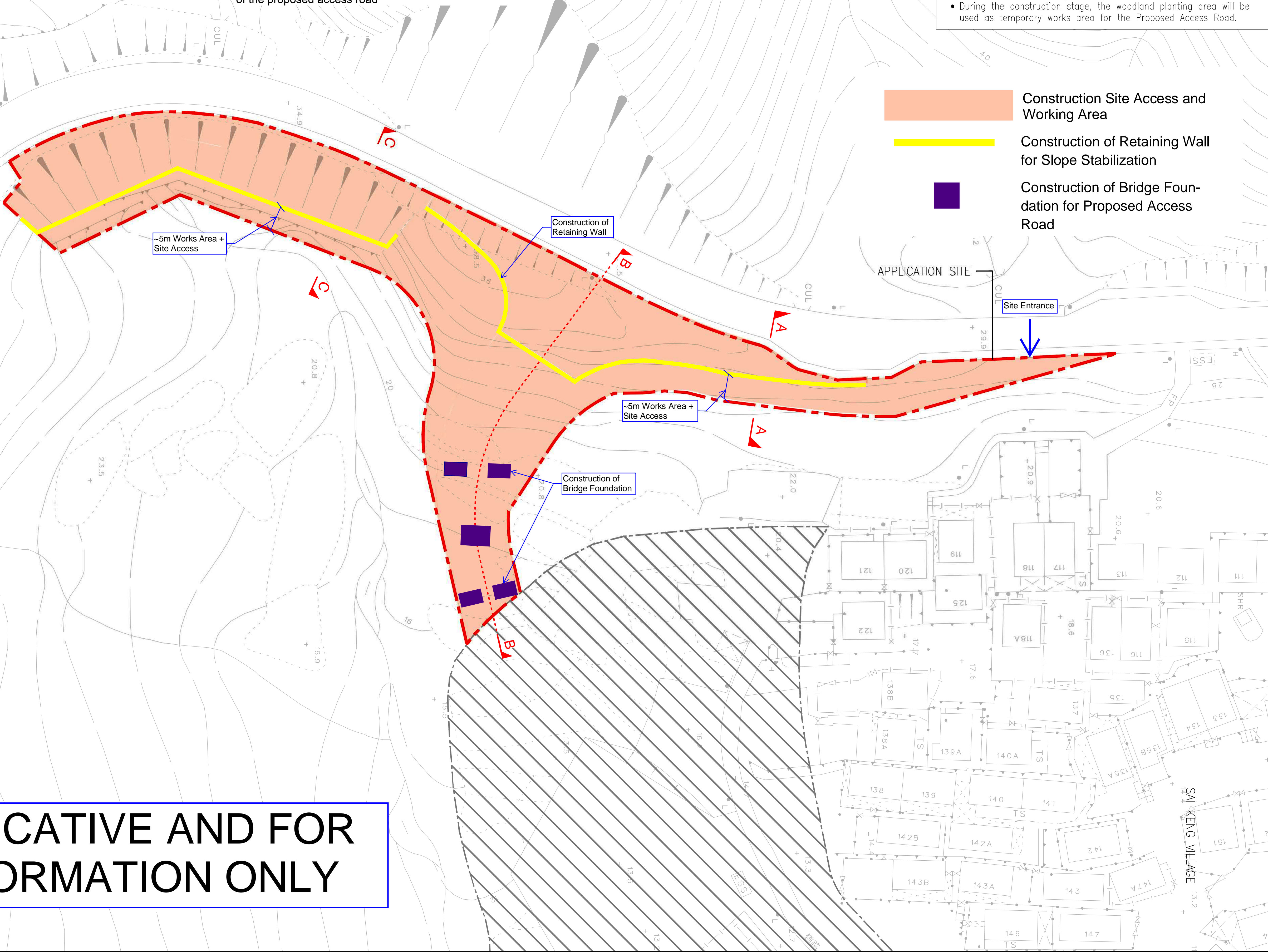
## LEGEND

--- APPLICATION SITE BOUNDARY

Remark:

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- During the construction stage, the woodland planting area will be used as temporary works area for the Proposed Access Road.

- Construction Site Access and Working Area
- Construction of Retaining Wall for Slope Stabilization
- Construction of Bridge Foundation for Proposed Access Road



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**PROJECT**  
項目  
PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

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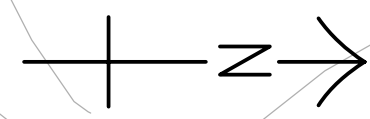
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# STAGE 4: Bridge Decking

- construction of bridge deck for the proposed access road

## LEGEND

--- APPLICATION SITE BOUNDARY

Remark:

- The Proposed Access Road in the Application Site is to facilitate the permitted school and/or other permitted uses in the adjoining "G/IC" zone. The permitted school and/or other permitted uses are not the subject matter of this S16 planning application. Any layout and parameters of the development in "G/IC" zone provided are for general reference and information of the Town Planning Board, and do not form part of this S16 planning application for approval. Layout and parameters of the development in "G/IC" zone shall be subject to detailed design during GBP submission.
- During the construction stage, the woodland planting area will be used as temporary works area for the Proposed Access Road.

- Construction Site Access and Working Area
- Construction of Bridge Deck for Proposed Access Road
- Extent of Retaining Wall for Slope Stabilization

~5m Works Area + Site Access

Location of Mobile Crane

~5m Works Area + Site Access

Construction of Bridge Deck

APPLICATION SITE

Site Entrance

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## PROJECT

PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

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I/R	DATE	DESCRIPTION	CHK.
01	2024.08.01	Issue for Information	01
02	2024.08.01	Issue for Information	02
03	2024.08.01	Issue for Information	03
04	2024.08.01	Issue for Information	04
05	2024.08.01	Issue for Information	05

## STATUS

PRELIMINARY

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## DIMENSION UNIT

METRES

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## CONTRACT NO.

CONTRACT NO.

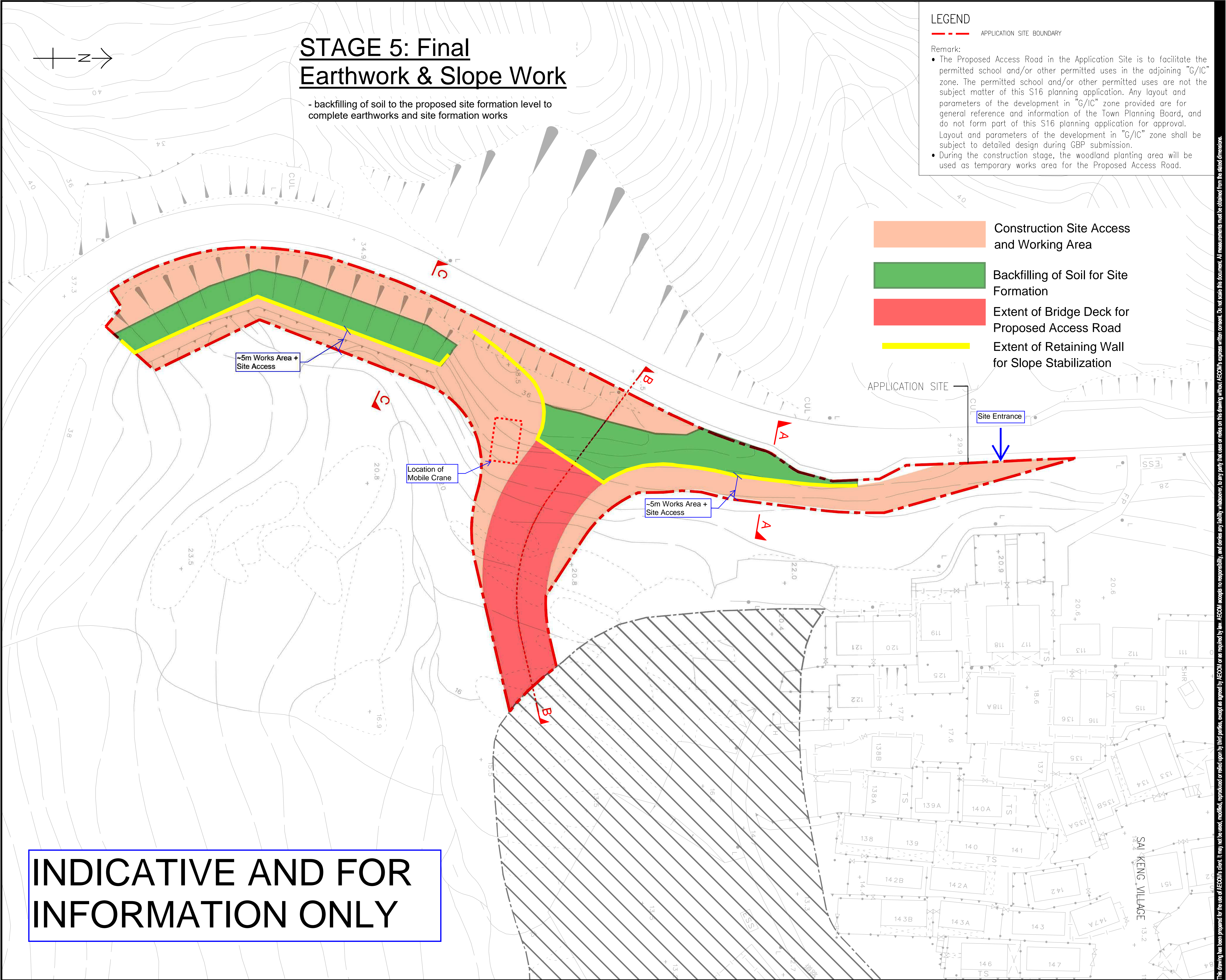
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## SHEET NUMBER

SHEET NUMBER





# STAGE 5: Final Earthwork & Slope Work

- backfilling of soil to the proposed site formation level to complete earthworks and site formation works

## LEGEND

--- APPLICATION SITE BOUNDARY

Remark:

- The Proposed Access Road in the Application Site is to facilitate the permitted school and/or other permitted uses in the adjoining "G/IC" zone. The permitted school and/or other permitted uses are not the subject matter of this S16 planning application. Any layout and parameters of the development in "G/IC" zone provided are for general reference and information of the Town Planning Board, and do not form part of this S16 planning application for approval. Layout and parameters of the development in "G/IC" zone shall be subject to detailed design during GBP submission.
- During the construction stage, the woodland planting area will be used as temporary works area for the Proposed Access Road.

- Construction Site Access and Working Area
- Backfilling of Soil for Site Formation
- Extent of Bridge Deck for Proposed Access Road
- Extent of Retaining Wall for Slope Stabilization

**AECOM**

**PROJECT**  
項目

PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

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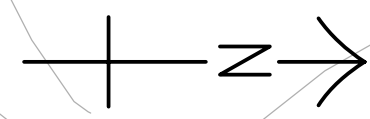
圖紙名稱

## SHEET NUMBER

圖紙編號

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# STAGE 6: Pavement, Street Furniture & Landscaping

- to complete roadworks and associated street furniture for the proposed access road
- final landscaping works for the proposed woodland planting area

## LEGEND

--- APPLICATION SITE BOUNDARY

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- During the construction stage, the woodland planting area will be used as temporary works area for the Proposed Access Road.

- Construction Site Access and Working Area
- Landscaping Works for Proposed Woodland Planting Area
- Construction of Pavement and Street Furniture for Proposed Access Road
- Extent of Retaining Wall for Slope Stabilization

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PROJECT  
項目  
PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

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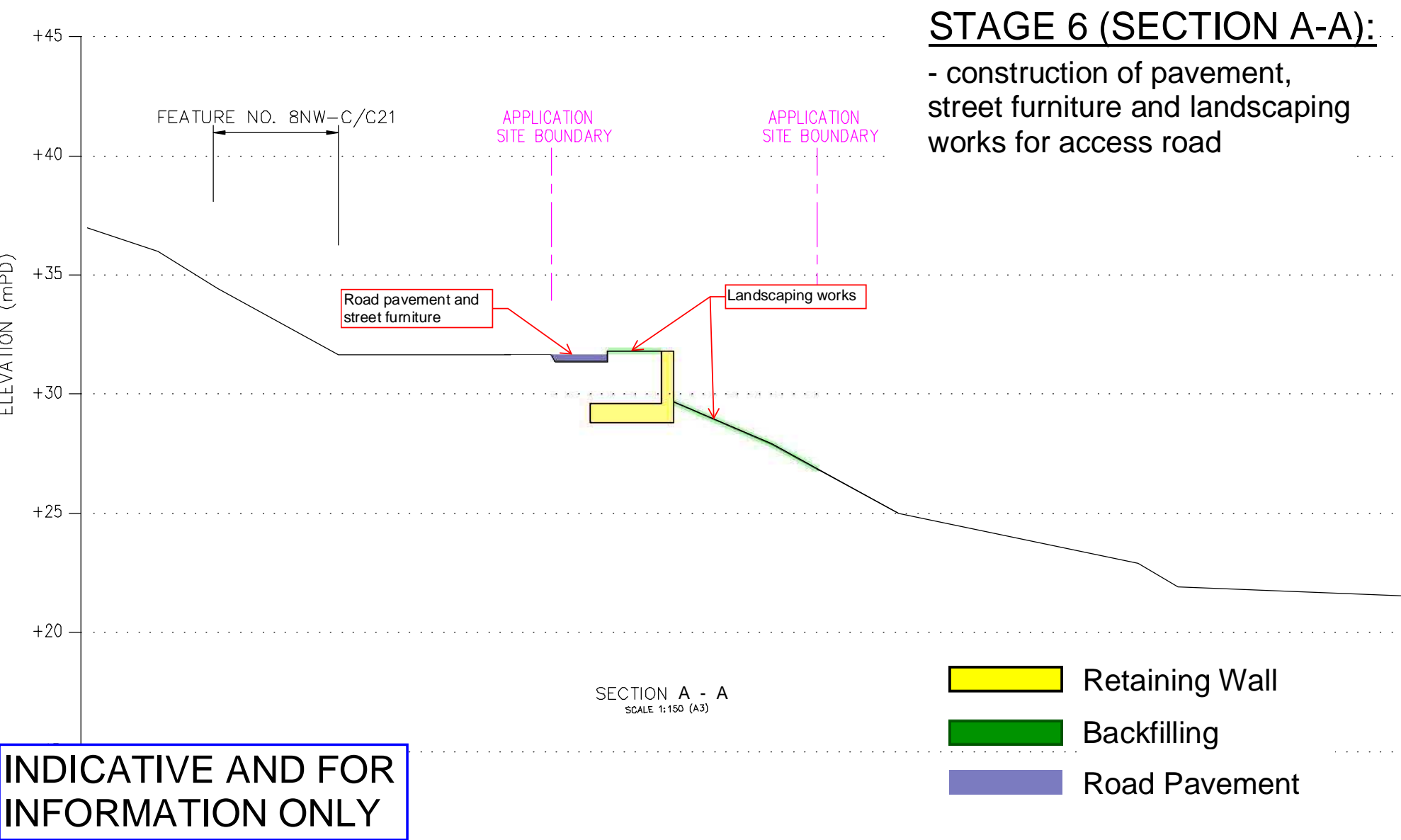
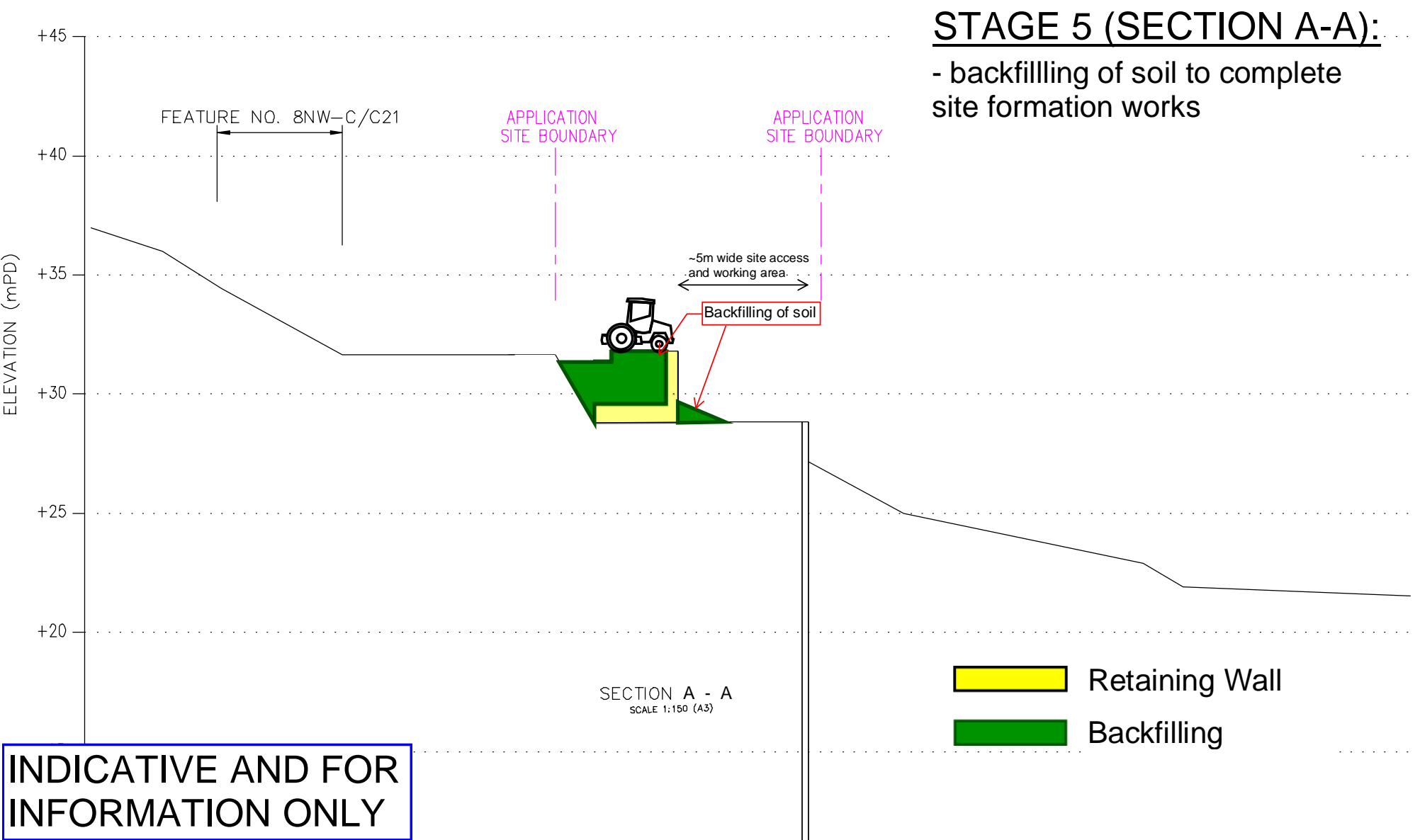
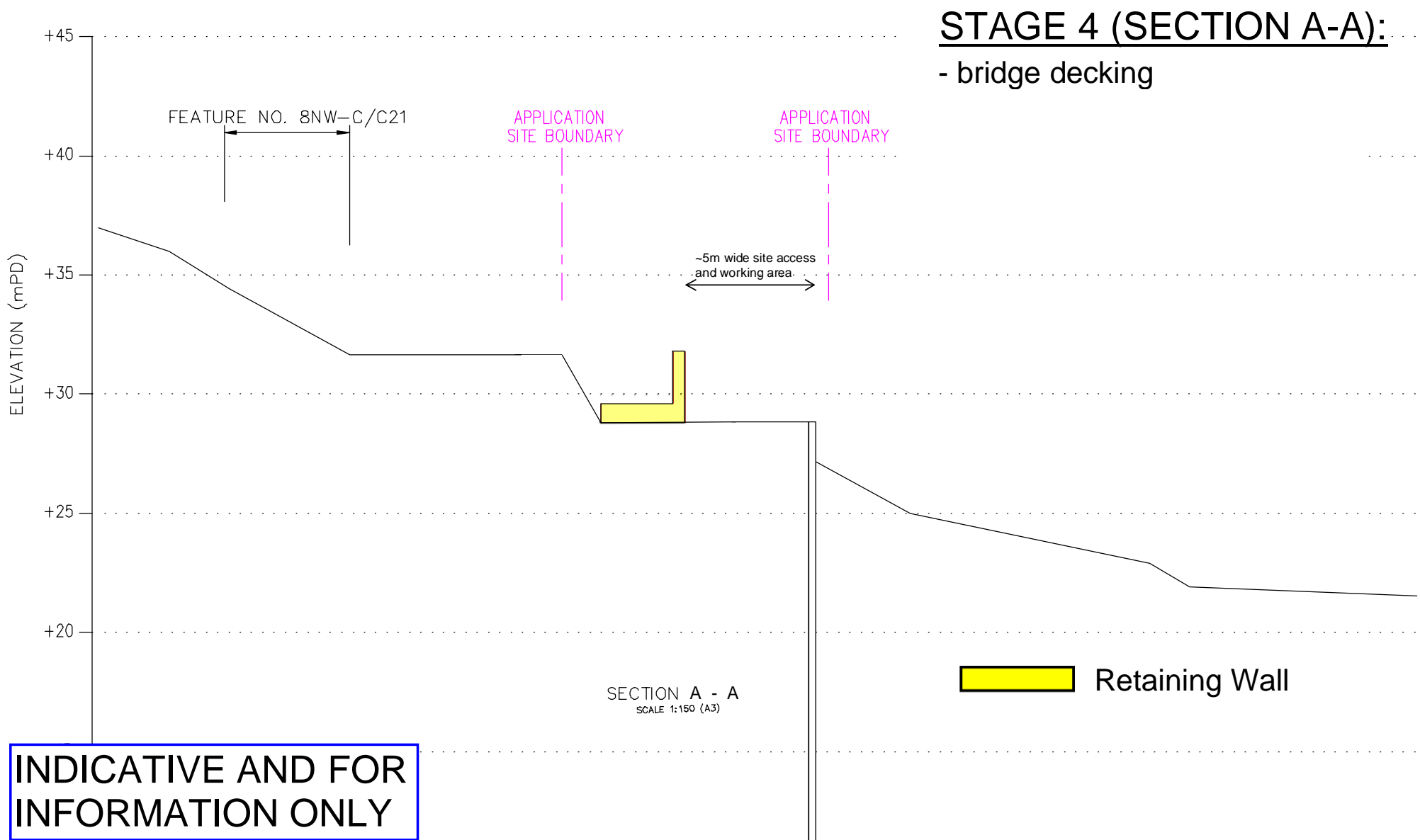
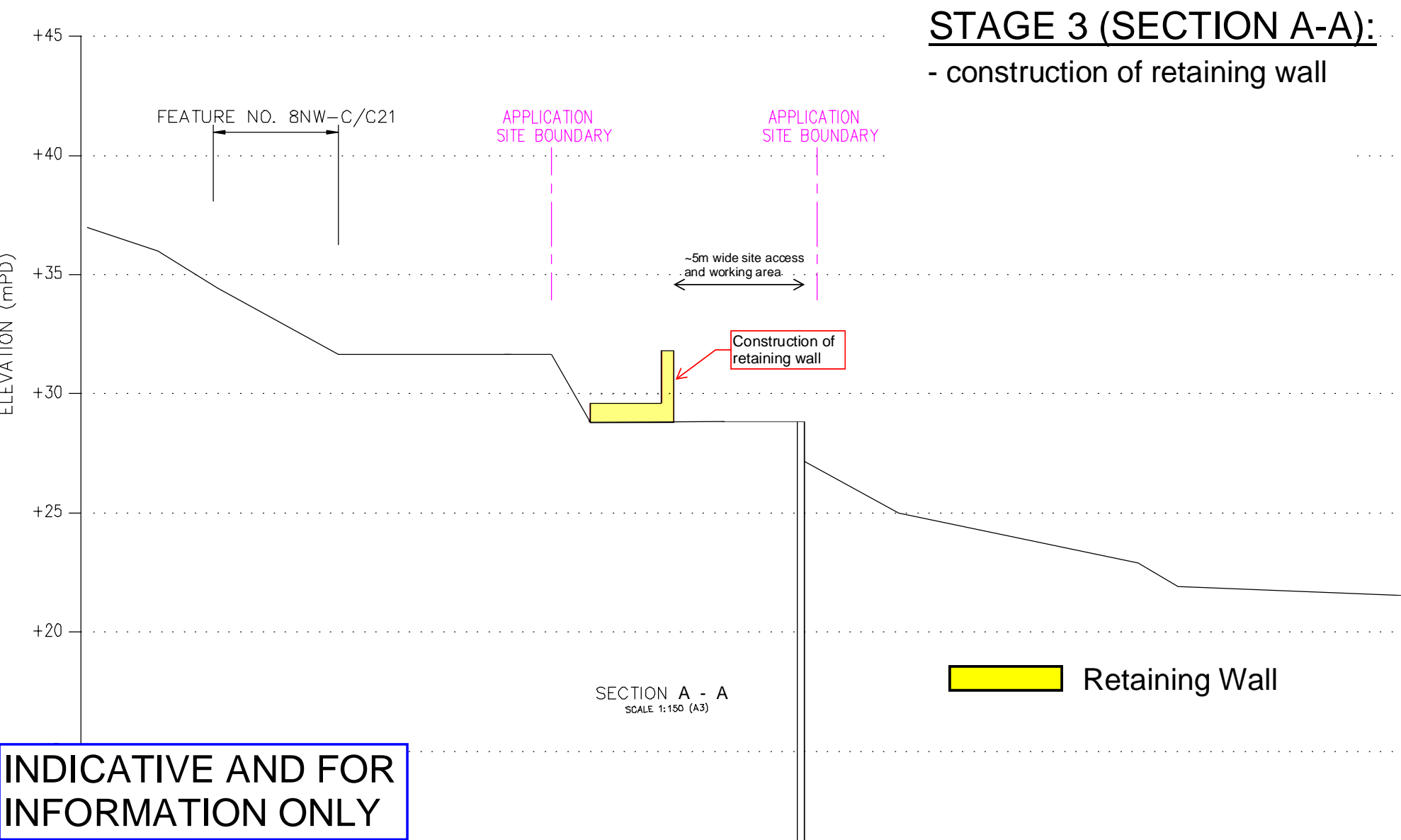
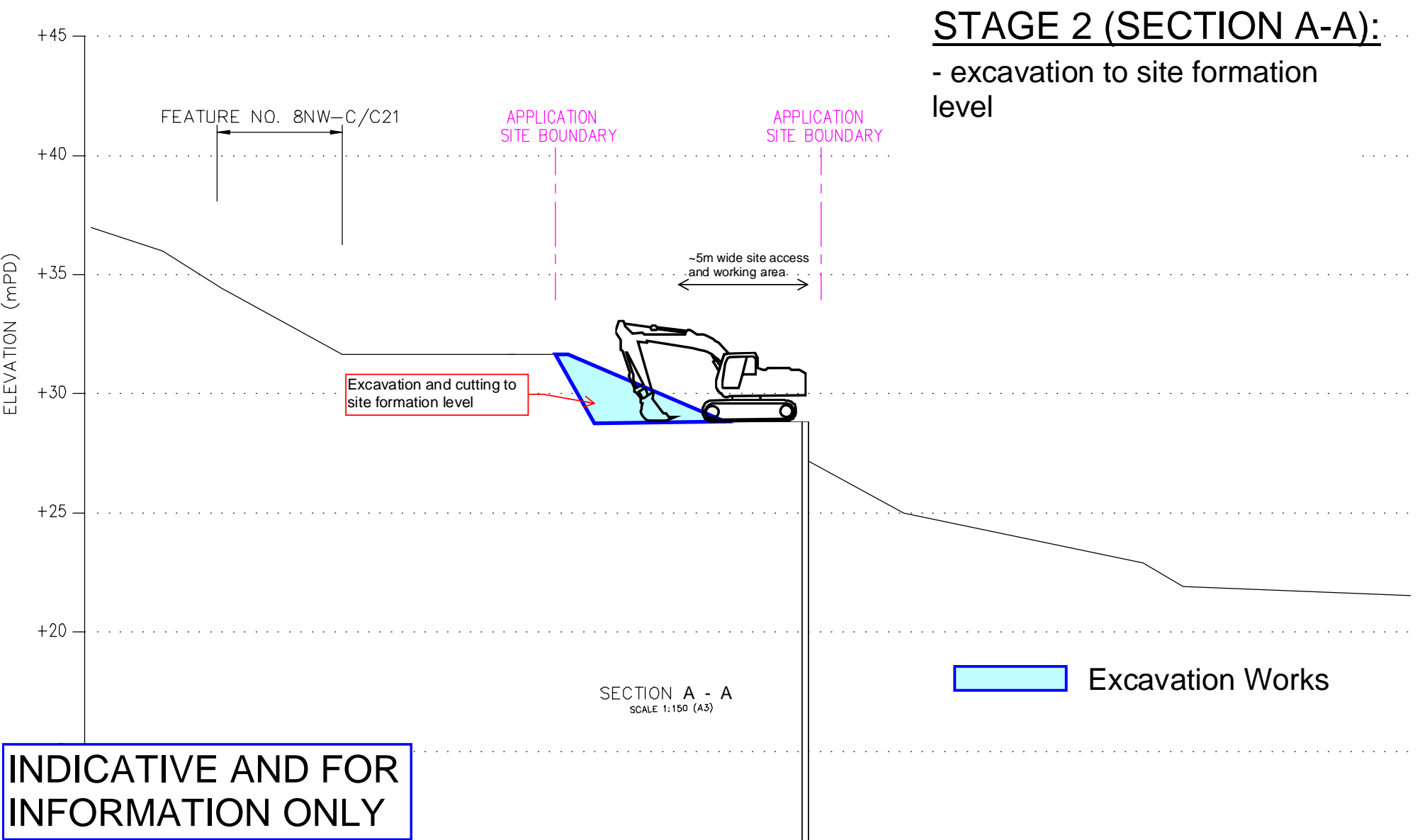
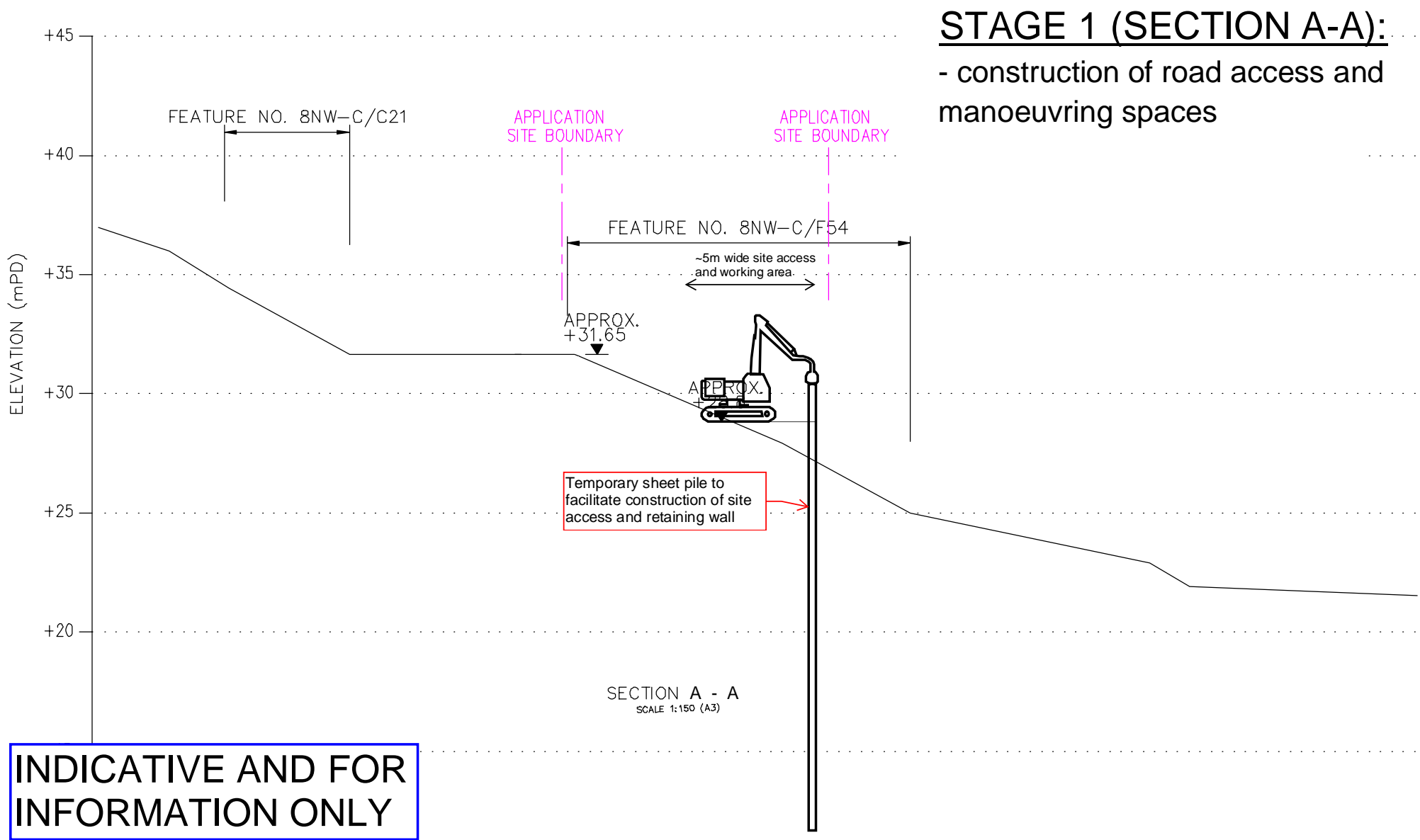
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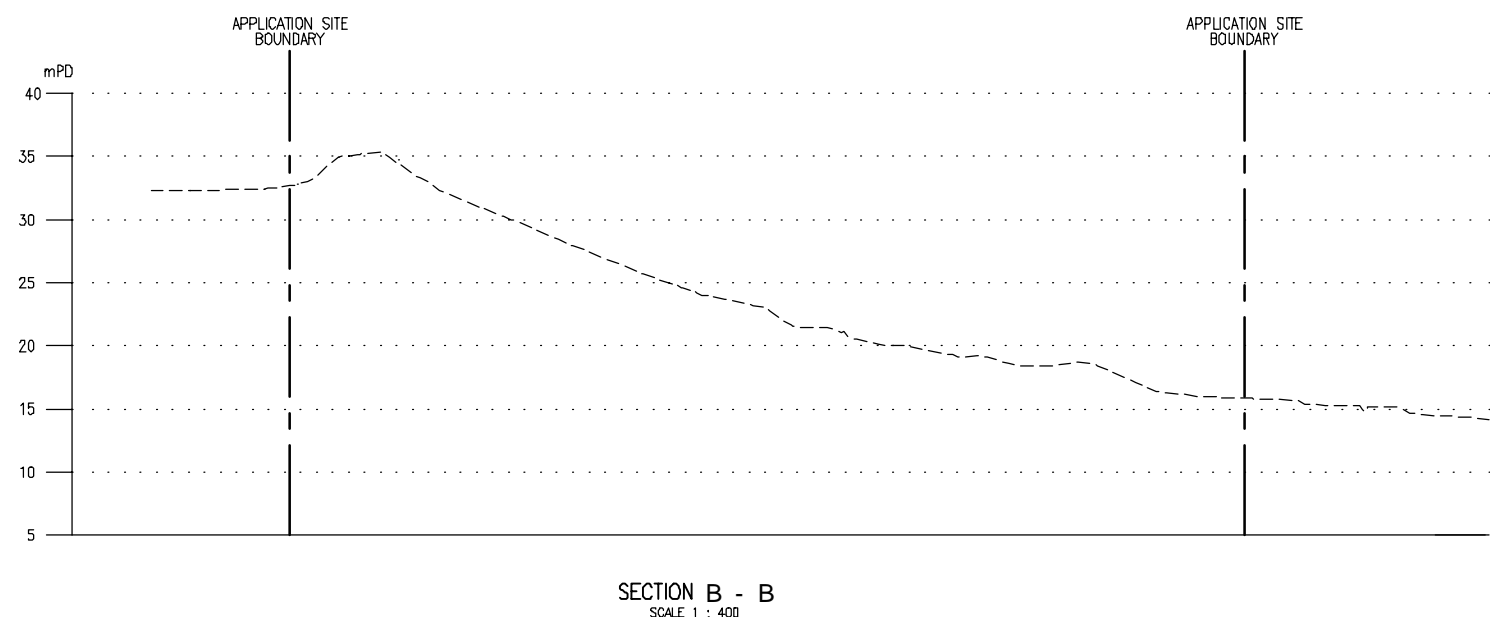


# Construction Sequence (Section A - A)



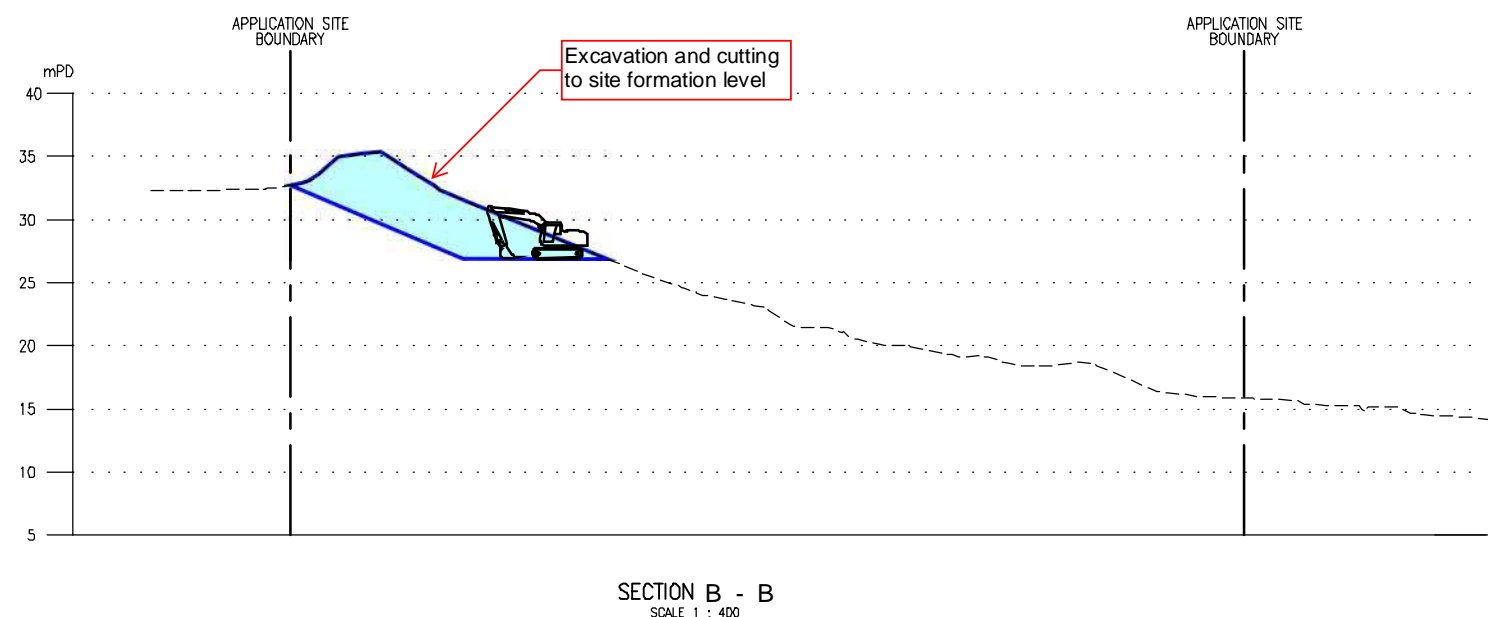
# Construction Sequence (Section B - B)

**STAGE 1 (SECTION B-B):**  
- construction of accesses and manoeuvring spaces



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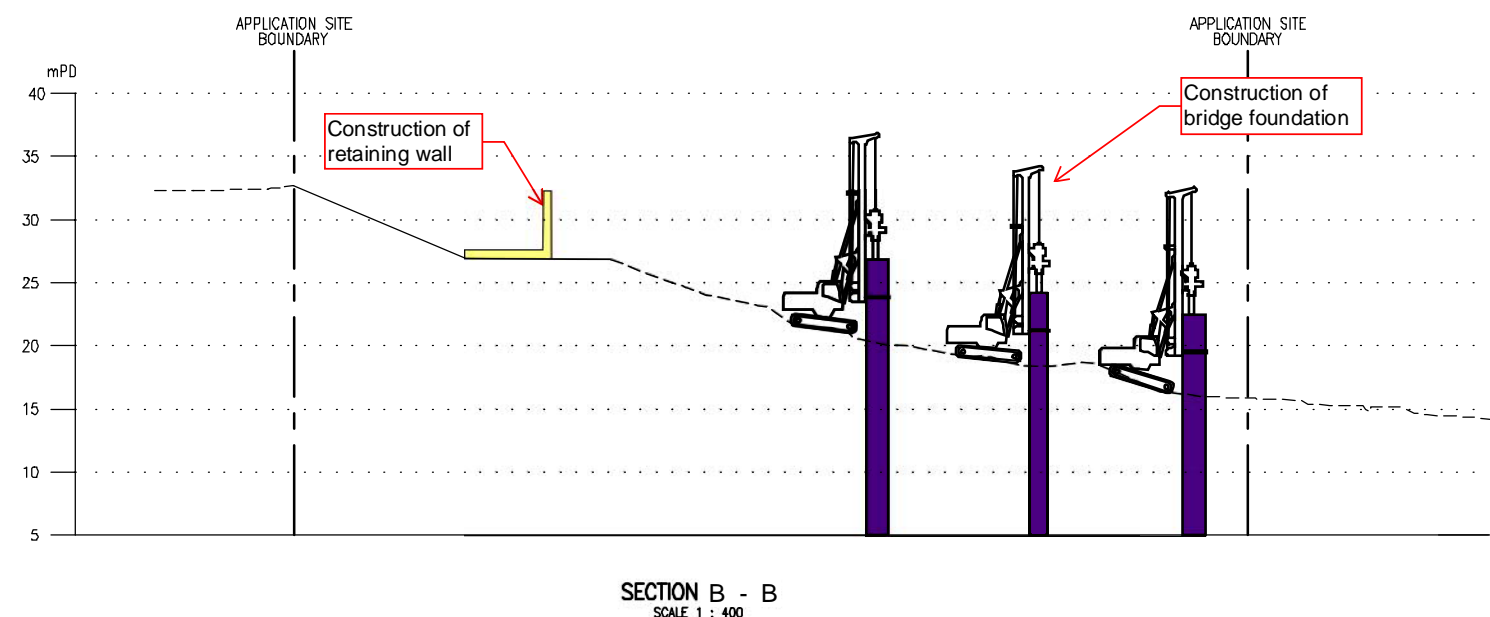
**STAGE 2 (SECTION B-B):**  
- excavation to site formation level



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Excavation Works

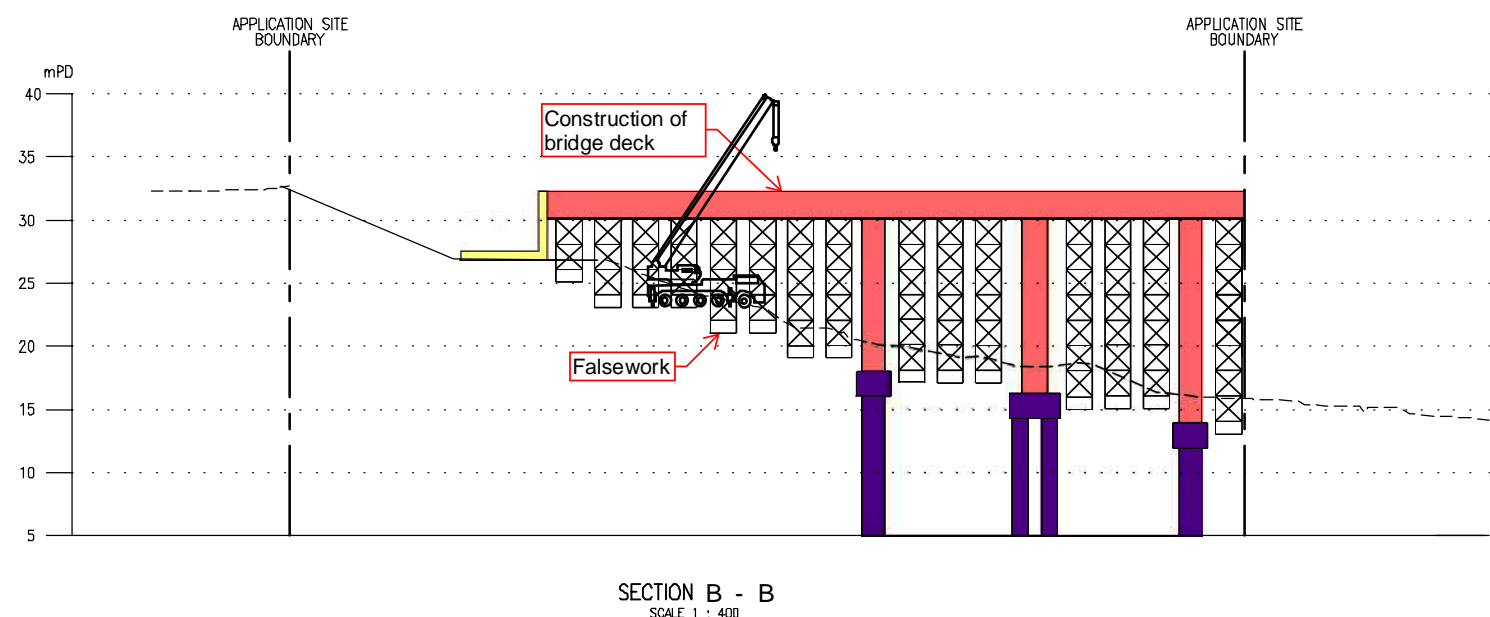
**STAGE 3 (SECTION B-B):**  
- construction of retaining wall  
- construction of bridge foundation



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INFORMATION ONLY

Retaining Wall  
Bridge Foundation

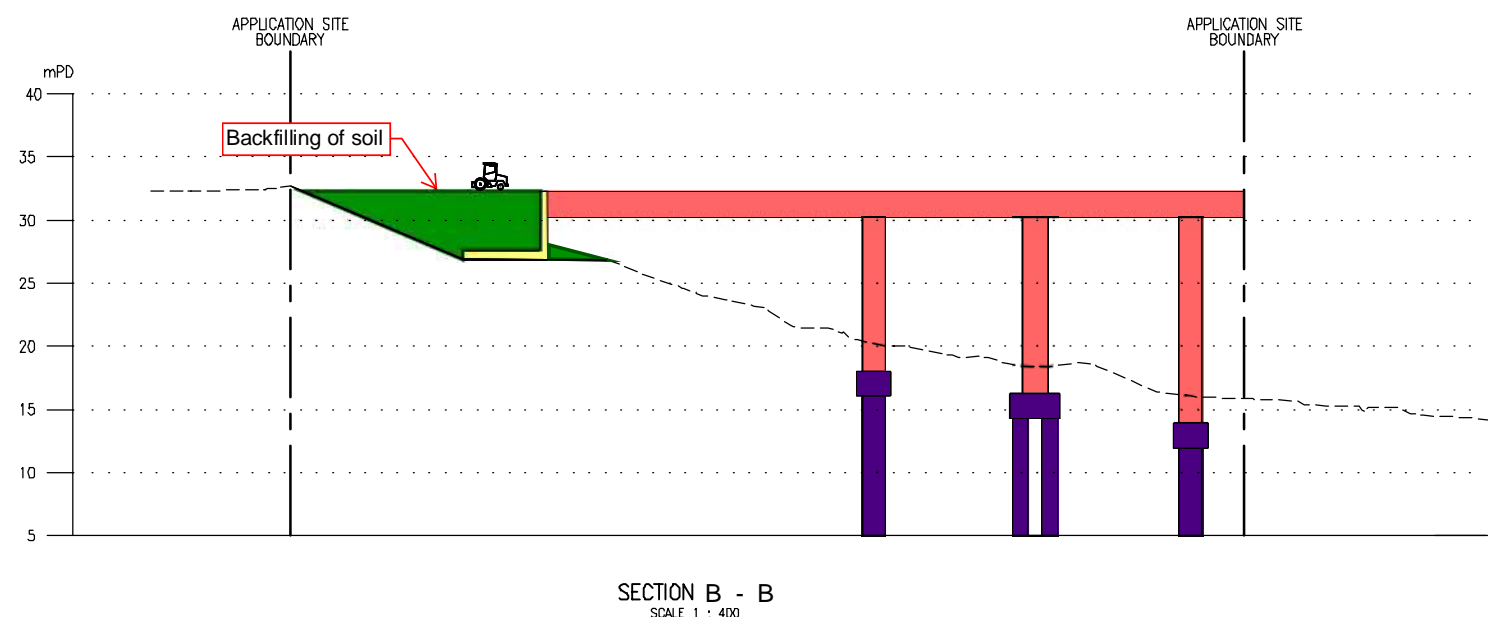
**STAGE 4 (SECTION B-B):**  
- construction of bridge



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INFORMATION ONLY

Retaining Wall  
Bridge Foundation  
Bridge Superstructure

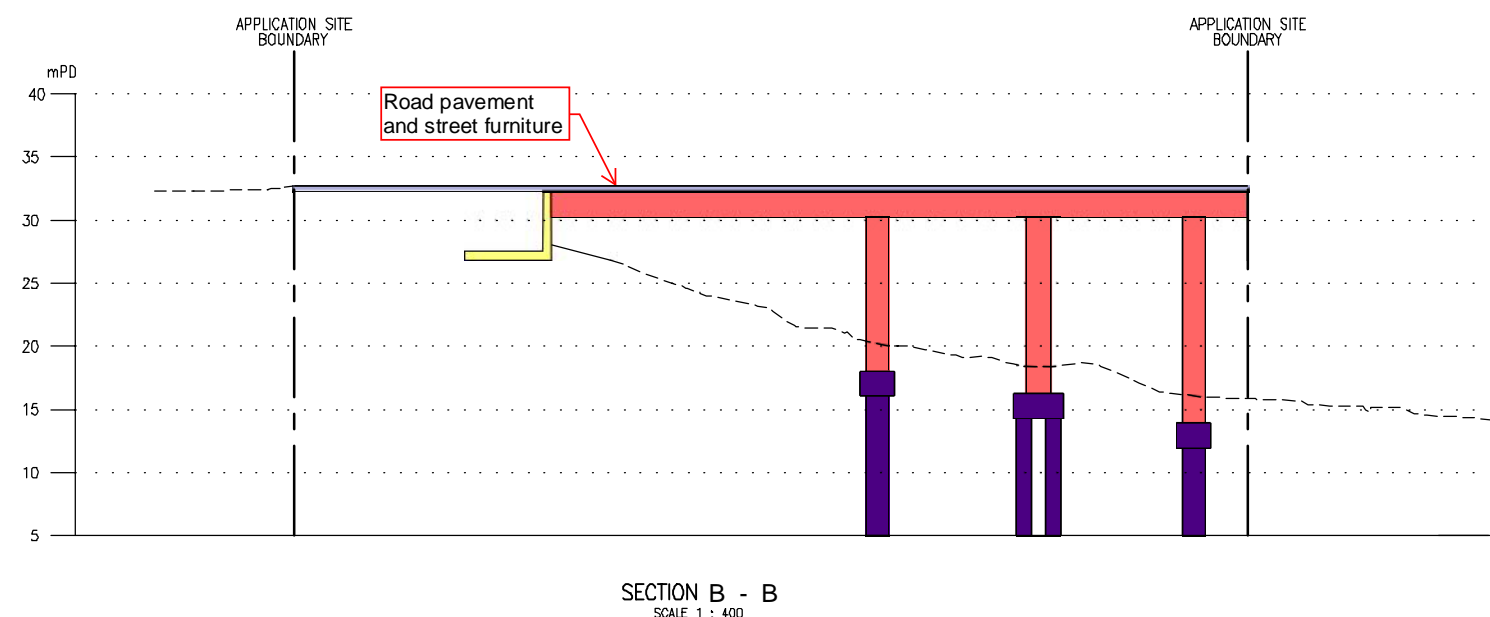
**STAGE 5 (SECTION B-B):**  
- backfilling of soil to complete site formation works



INDICATIVE AND FOR  
INFORMATION ONLY

Retaining Wall  
Bridge Foundation  
Bridge Superstructure  
Backfilling

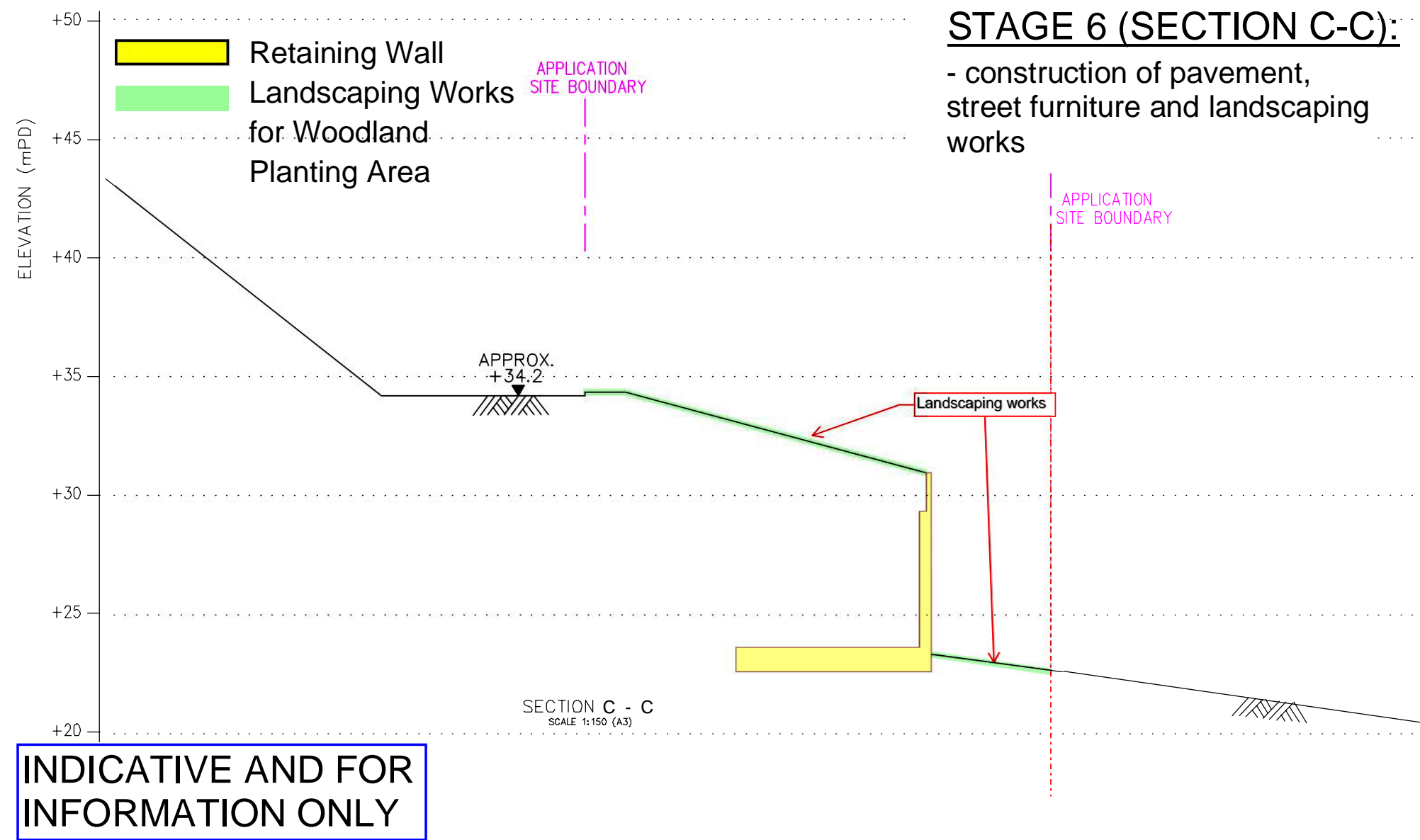
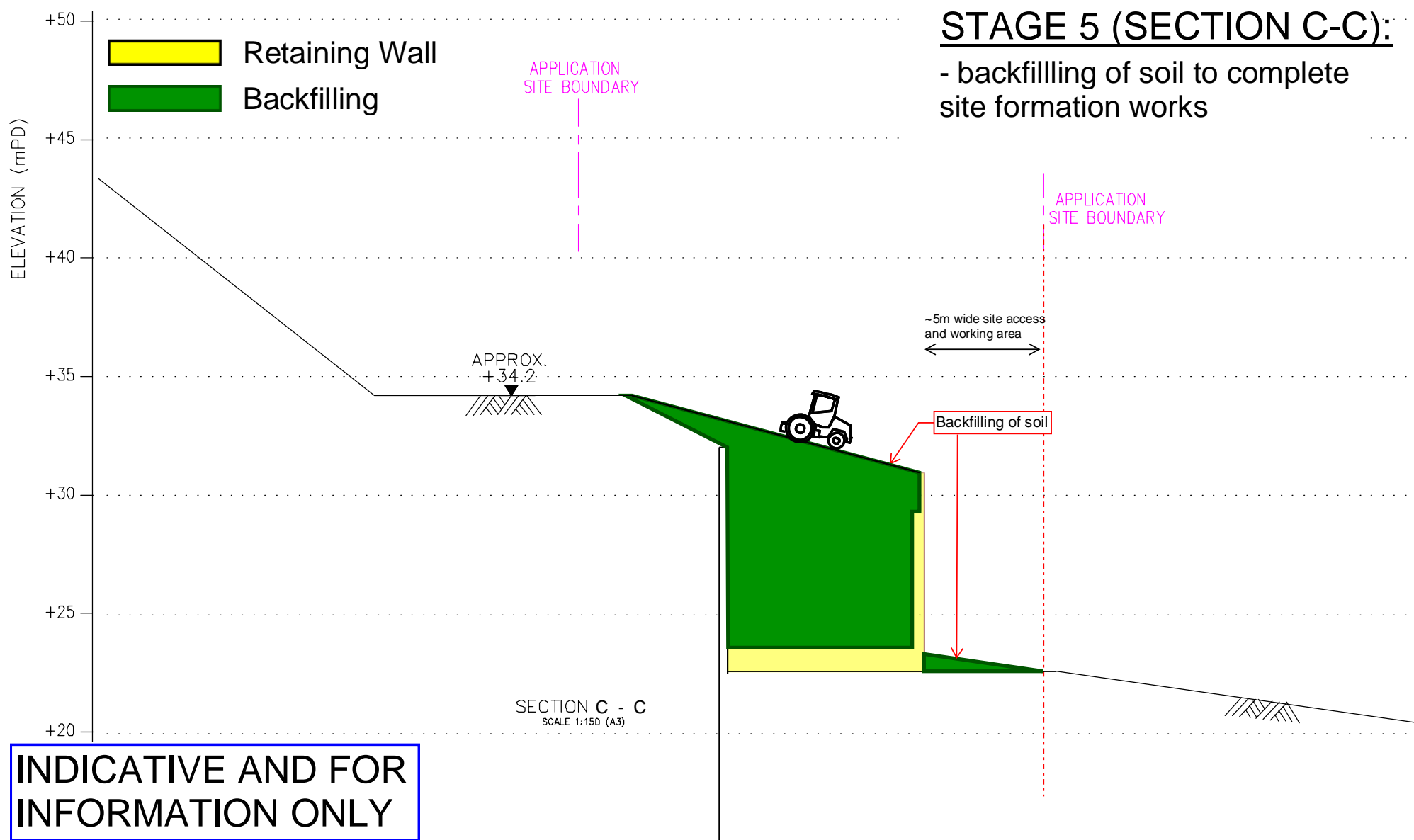
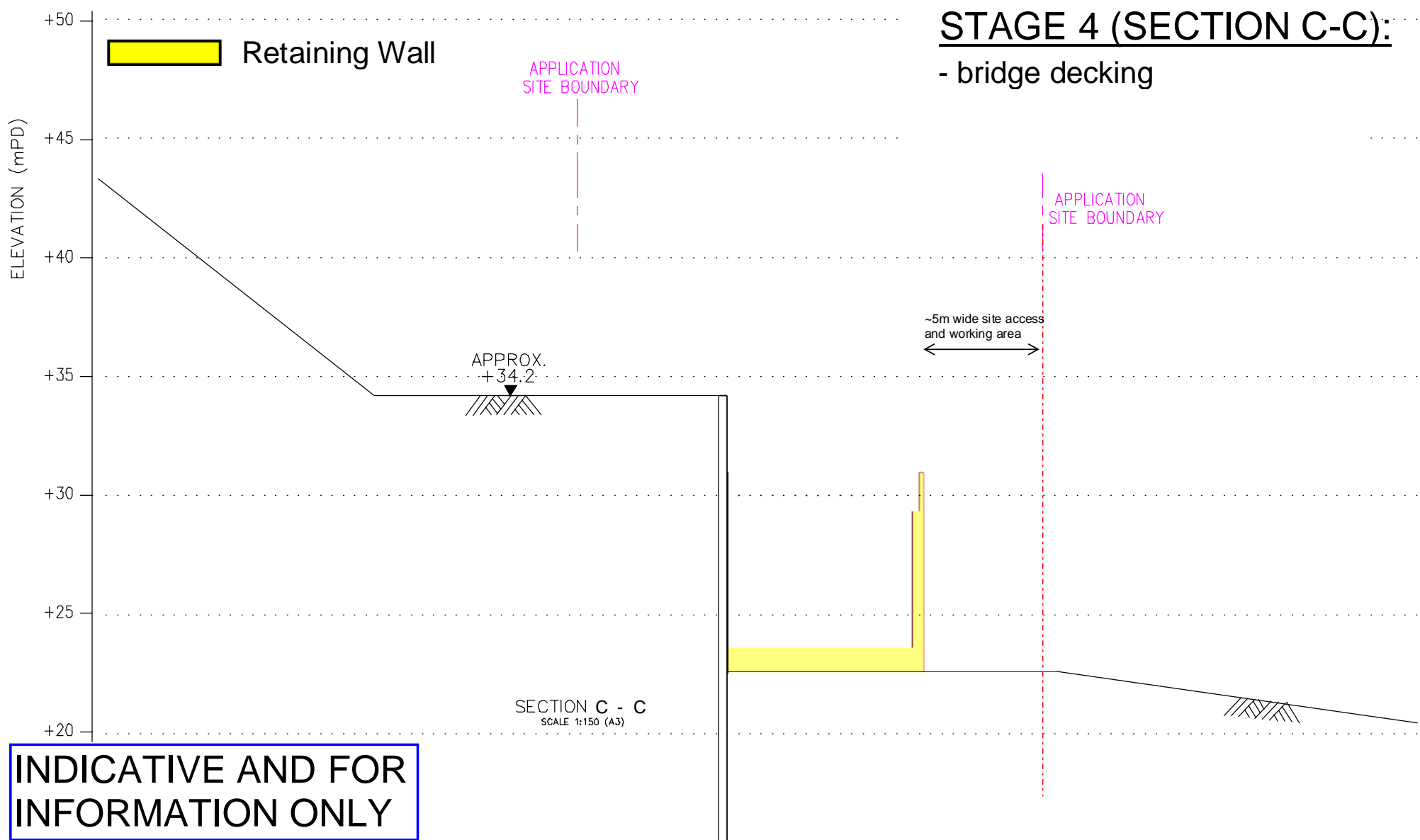
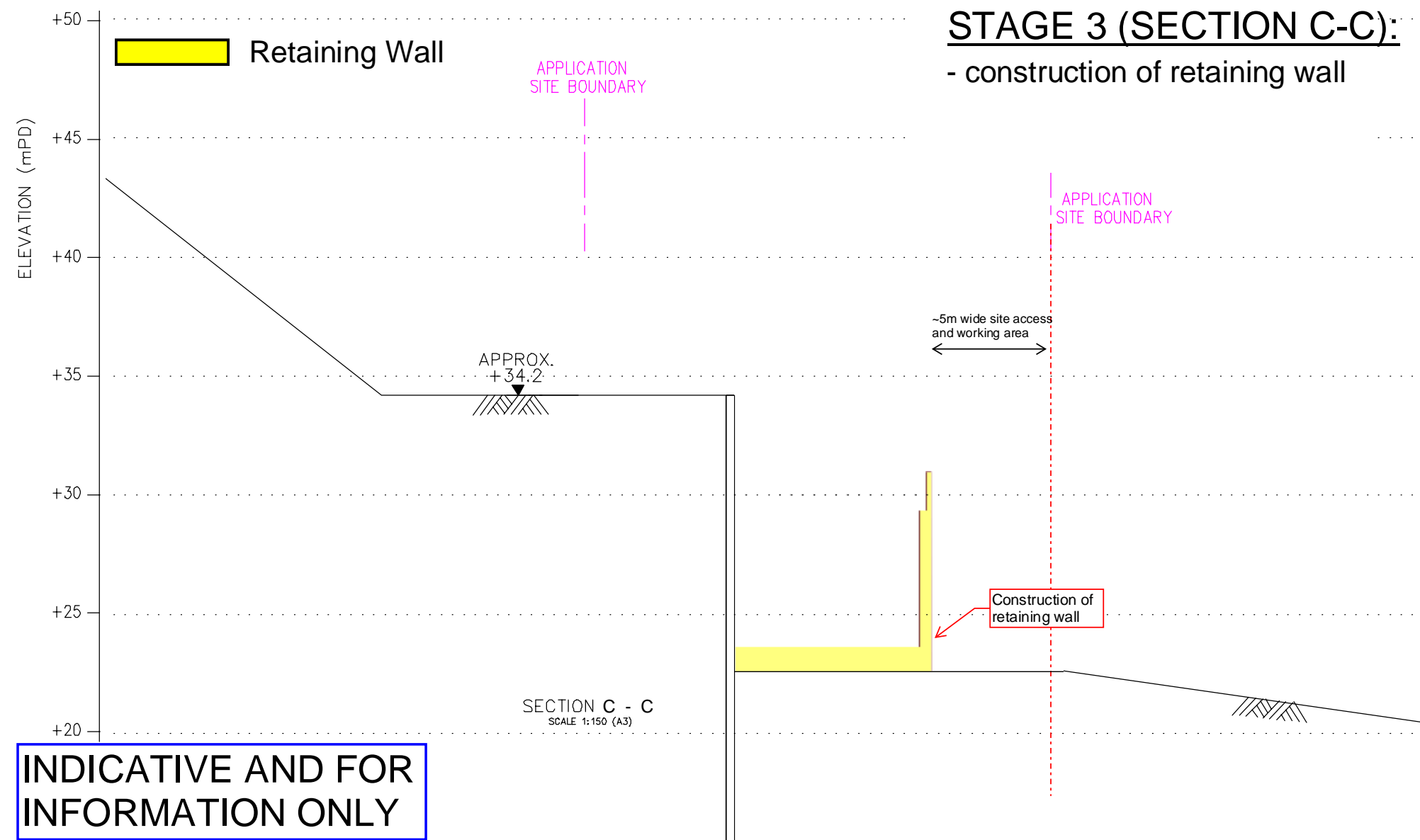
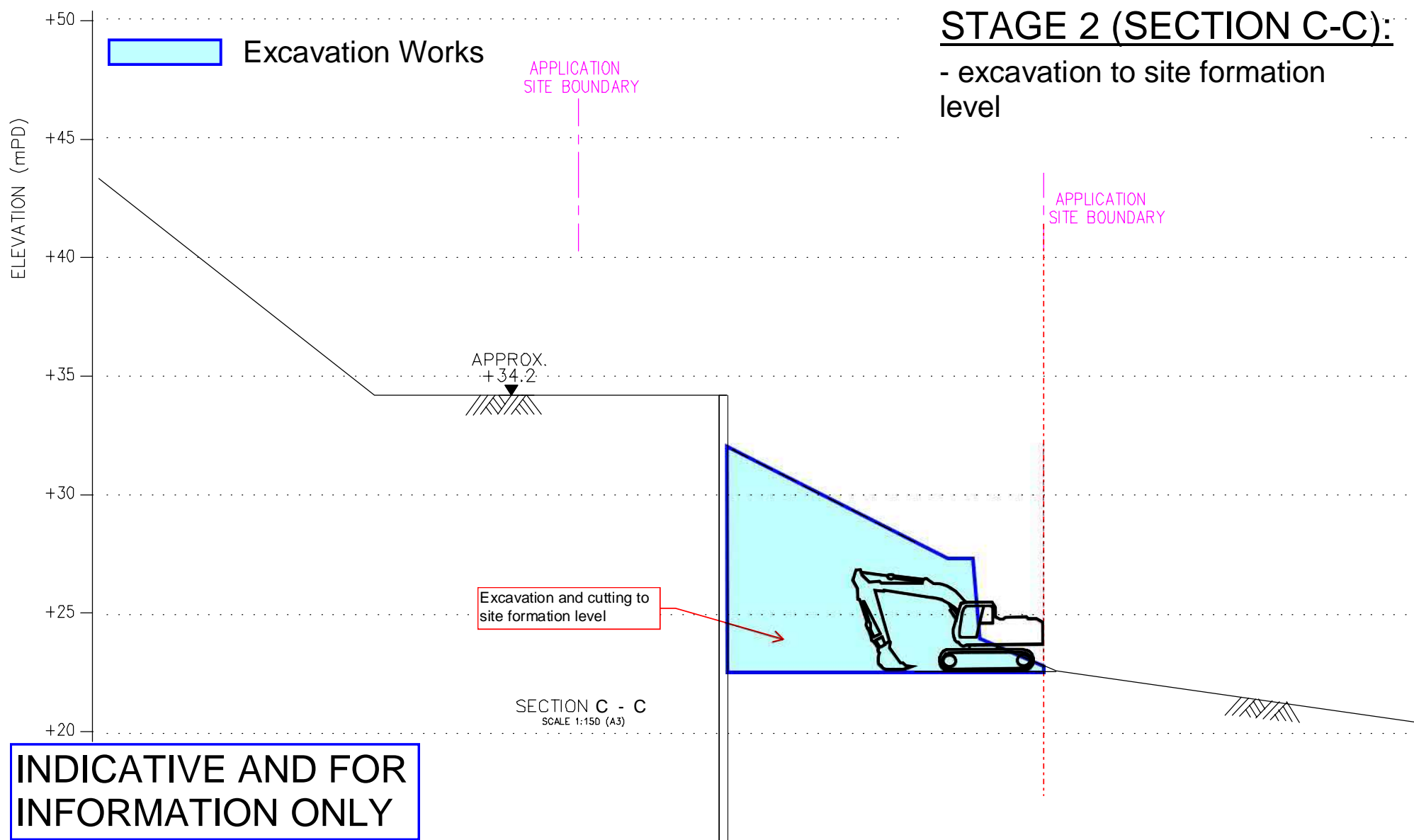
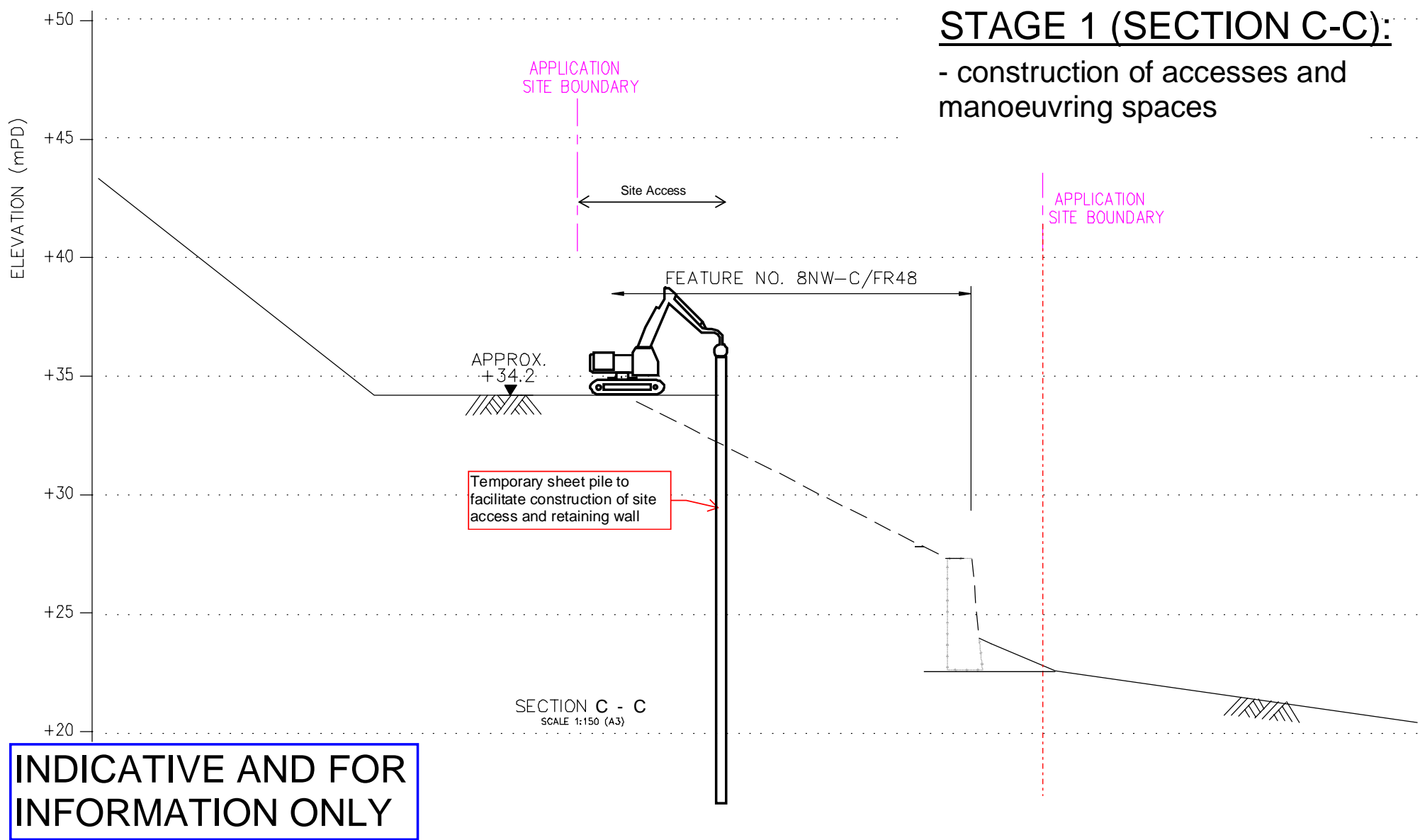
**STAGE 6 (SECTION B-B):**  
- construction of pavement and street furniture



INDICATIVE AND FOR  
INFORMATION ONLY

Retaining Wall  
Bridge Foundation  
Bridge Superstructure  
Road Pavement

# Construction Sequence (Section C - C)





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## **Appendix J**

### **Explanatory Statement on Road Alignment Options**

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(Same as that under Further Information submitted on 8 August 2022)

**Section 16 Planning Application for Proposed Access Road with Filling and  
Excavation of Land in “Green Belt” Zone for Permitted uses in “Government,  
Institution or Community” Zone at Various Lots and Adjoining Government  
Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories**

**Explanatory Statement**

**(September 2022)**

**llewelyn  
davies**

ARCHITECTS PLANNERS DESIGNERS  
Llewelyn-Davies Hong Kong Ltd

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- 3.2 Comparison of Vegetated Area Affected by Proposed Access Road and Option 2 Respectively
- 4.1 Summary of Comparison of Option 1, Option 2 and the Proposed Access Road Alignment

## 1 BACKGROUND

### 1.1 Background

- 1.1.1 This Section 16 (S16) application involves the proposed access road falling within the “Green Belt” (“GB”) zone (i.e. the subject matter) to serve the adjacent “Government, Institution or Community” (“G/IC”) zone. Under the Indicative Scheme, a school is proposed at the “G/IC” zone in which ‘School’ is a permitted use that does not require planning application.
- 1.1.2 Prior to the submission of the subject planning application, the Applicant has explored various access road options, namely (1) the access road alignment under the General Building Plan (GBP) submission made in 2019 (hereafter referred to as Option 1) and (2) the access road alignment being closer to the adjacent Sai Keng Tsuen connecting Sai Sha Road and the subject “G/IC” zone (hereafter referred to as Option 2) (**Figures 1.1a and 1.1b** refer), which are presented and discussed in section 3.2 of the Planning Statement submitted to the Town Planning Board (the Board) on 30.4.2021. The Proposed Access Road alignment was considered to be the optimal option after considering all factors including involvement of the Applicant’s acquired private lots only, minimising encroachment to “Green Belt” (“GB”) zone and minimal impacts to Sai Keng Tsuen.
- 1.1.3 In response to the recent verbal comments from the Sha Tin, Tai Po and North District Planning Office of Planning Department, this Explanatory Statement will provide justifications and make further comparison of Option 1 and Option 2 with the Proposed Access Road alignment for the Board’s consideration.

## 2 COMPARISON OF OPTION 1 ACCESS ROAD ALIGNMENT WITH THE PROPOSED ACCESS ROAD ALIGNMENT

### 2.1 Option 1 Alignment Is Not Desirable as It Involves Significantly Larger Area of "GB" Zone and Vegetated Area than Proposed Access Road Alignment

2.1.1 Option 1 was formulated under the GBP submission made in 2019. The alignment of Option 1 with associated works area is shown on **Figure 2.1**. As compared with the Proposed Access Road alignment, although it is located farthest away from Sai Keng Tsuen with minimal potential nuisance to the village, the routing is less direct from Sai Sha Road to the subject "G/IC" zone. With longer and more winding alignment, Option 1 will inevitably affect a larger extent of "GB" zone. Together with the associated works area, Option 1 will affect a total of about 8,337m<sup>2</sup> of land in "GB" zone which is about 3,697m<sup>2</sup> more than the Proposed Access Road. The comparison of affected area in "GB" Zone between Proposed Access Road and Option 1 is summarised in **Table 2.1** below.

**Table 2.1 – Comparison of Affected Area in "GB" Zone between Proposed Access Road and Option 1**

"GB" Area Affected	Proposed Access Road in S16 Scheme (a)	Option 1 (b)	Difference (b) – (a)
Total Site Area	About 4,640m <sup>2</sup>	About 8,337m <sup>2</sup>	+ About 3,697m <sup>2</sup>
Access Road Area	About 1,844m <sup>2</sup>	About 3,815m <sup>2</sup>	+ About 1,971m <sup>2</sup>
Works Area (including Woodland Planting Area)	About 2,796m <sup>2</sup>	About 4,522m <sup>2</sup>	+ About 1,726m <sup>2</sup>

2.1.2 To assess the potential impact on the existing landscape resources associated with the Proposed Access Road and Option 1, their respective total site boundary (including works area) is superimposed on the latest aerial photo dated 19 January 2021 (**Figure 2.2** refers). It is estimated that about 7,957m<sup>2</sup> of vegetated land will be affected by Option 1, which is 3,693m<sup>2</sup> more than that of the Proposed Access Road. **Table 2.2** shows the vegetated area respectively affected by the Proposed Access Road and Option 1. Besides, it should also be noted that, not



only the area affected by Option 1 is significantly larger, a part of the access road will encroach on an existing stream course (**Figures 1.1a and 1.1b** refer) which would pose potential ecological impact thereon.

**Table 2.2 – Comparison of Vegetated Area Affected by Proposed Access Road and Option 1 Respectively**

<b>Vegetated Area Affected</b>	<b>Proposed Access Road in S16 Scheme (a)</b>	<b>Option 1 (b)</b>	<b>Difference (b) – (a)</b>
Total Site Area	About 4,264m <sup>2</sup>	About 7,957m <sup>2</sup>	+ About 3,693m <sup>2</sup>

2.1.3 As detailed above, Option 1 involves substantive area in "GB" zone and affects significantly larger vegetated area than the Proposed Access Road alignment. Part of the Option 1 alignment also encroaches on an existing stream course. Hence, Option 1 has been ruled out from further review and study.

### **3 COMPARISON OF OPTION 2 ACCESS ROAD ALIGNMENT WITH THE PROPOSED ACCESS ROAD ALIGNMENT**

#### **3.1 Option 2 Alignment Not Feasible Due to Encroachment into Third Party Lot**

3.1.1 When formulating the alignment of the Proposed Access Road, the Applicant has endeavoured to minimise the potential impact on "GB" zone by proposing the shortest and most direct route from Sai Sha Road to the subject "G/IC" zone. While the length of access road and area within "GB" zone are the major considerations in determining the proposed alignment, landholding involved for the access road and associated works area is fundamental to ensure the implementation of access road. The Proposed Access Road alignment hence avoided encroachment into third party lot.

3.1.2 In comparison, Option 2 access road alignment, in spite of being shorter in length between Sai Sha Road and "G/IC" zone, will encroach into a private lot owned by a third party (i.e. Lot No. 804 in D.D. 209) (**Figure 3.1** refers) which is currently in active use (with several cars parked there) by the respective land owner. It would not be practical for the Applicant to acquire this third party lot under active use for the construction of the proposed vehicular bridge / access road.

3.1.3 Between Option 2 access road and the Proposed Access Road is another third party lot namely Lot No. 326 S.A in D.D. 209 (**Figure 3.1** refers). In order to avoid any possible encroachment into the lots, the alignment of Proposed Access Road would need to be further shifted southward. In this regard, the Proposed Access Road has already adopted the most optimal and practical alignment taking into account the need to avoid third party lots while maintaining a reasonable short distance in the concerned "GB" zone.

#### **3.2 Option 2 Alignment will Involve Larger Total Area Due to the Need for Re-provision of Village Facilities**

3.2.1 Despite Option 2 alignment is not feasible due to landholding issue, the Applicant has still assessed its potential impacts. Although Option 2 access road involves smaller area in "GB" zone due to shorter distance between Sai Sha Road and the subject "G/IC" zone as compared to the Proposed Access Road, it should be noted that the alignment as shown in **Figure 1.1a** only indicates the access road portion of the three access road options but the associated works areas and

woodland planting area are not yet taken into account. Indeed, with all access road portion, works areas and woodland planting area included, the total area encroached into "GB" zone by Option 2 access road alignment is significantly larger than that of the Proposed Access Road alignment.

3.2.2 To facilitate the construction of Option 2 access road, about 6m-wide works area would have to be reserved for access of construction vehicles along the eastern side of Option 2 access road. In view of the close proximity to Sai Keng Tsuen, the northern end of the about 6m-wide works area for site access will inevitably encroach upon the two existing village access points and footpaths, an electric substation (ESS), a refuse collection point (RCP) and a pedestrian crossing. Relocation and re-provision of these affected facilities would in turn affect additional "GB" area for associated construction works. The works areas will therefore be further expanded northward for the re-provision of existing features such as the ESS, footpath, pedestrian crossing and the RCP.

3.2.3 Therefore, under the Option 2, the affected area in "GB" zone (i.e. the total site area) after taking into account all works areas and woodland planting area is indeed significantly more than the Proposed Access Road (**Figure 3.2a, 3.2b and 3.3** refer). The following table shows the area in comparison:

**Table 3.1 – Comparison of Affected Area in "GB" Zone between Proposed Access Road and Option 2**

<b>"GB" Area Affected</b>	<b>Proposed Access Road in S16 Scheme (a)</b>	<b>Option 2 (b)</b>	<b>Difference (b) – (a)</b>
<b>Total Site Area</b>	<b>About 4,640m<sup>2</sup></b>	<b>About 5,546m<sup>2</sup></b>	<b>+ About 906m<sup>2</sup></b>
Access Road Area	About 1,844m <sup>2</sup>	About 1,530m <sup>2</sup>	- About 314m <sup>2</sup>
Works Area (including Woodland Planting Area)	About 2,796m <sup>2</sup>	About 3,013m <sup>2</sup>	+ About 217m <sup>2</sup>
Re-provision of Existing Features Area	Nil	About 1,003m <sup>2</sup>	+ About 1,003m <sup>2</sup>



- 3.2.4 Same as Option 1, to review the potential impact on existing vegetation, the total site area of Option 2 has also been overlaid with the latest aerial photo (**Figure 2.2** refers). It is estimated that about 4,338m<sup>2</sup> of vegetated land will be affected by Option 2, which is 74m<sup>2</sup> more than that of the Proposed Access Road. The vegetated area affected by the Proposed Access Road and Option 2 is summarised in **Table 3.2**.

**Table 3.2 – Comparison of Vegetated Area Affected by Proposed Access Road and Option 2 Respectively**

Vegetated Area Affected	Proposed Access Road in S16 Scheme (a)	Option 2 (b)	Difference (b) – (a)
Total Site Area	About 4,264m <sup>2</sup>	About 4,338m <sup>2</sup>	+ About 74m <sup>2</sup>

### 3.3 Option 2 Alignment will Bring Greater Nuisance to Sai Keng Tsuen due to Narrow Buffer from Access Road and Inconvenience associated with Re-provisioning of Village Facilities

- 3.3.1 As shown in **Figure 3.4**, Option 2 access road is located very close to Sai Keng Tsuen. The works areas and access road structure would be around 8m away from the nearest house in Sai Keng Tsuen and less than 13m in general. In addition, there is about 200m elevated road frontage towards Sai Keng Tsuen. The narrow buffer fronting Sai Keng Tsuen could create greater nuisances to residents of Sai Keng Tsuen at both construction and operation stages in visual and environmental terms as compared to the Proposed Access Road.
- 3.3.2 The Proposed Access Road alignment, at a farther distance from Sai Keng Tsuen, offers a reasonable buffer distance of about 60m. The sufficient buffer distance along the road would minimise possible visual and environmental impacts.
- 3.3.3 Besides, as detailed in Section 3.2, the access road and associated works area of Option 2 will encroach on existing facilities serving Sai Keng Tsuen, including the two existing village access points and footpaths, an ESS, RCP and a pedestrian crossing. While it is feasible in engineering terms to re-provide the affected facilities near their existing locations, the interim arrangement during construction and ultimate re-location will bring considerable inconvenience to the local villagers,

which can be avoided under the Proposed Access Road alignment. It will also likely prolong the implementation programme of the access road due to the multiple parties involved in the reprovisioning process.

## **4 CONCLUSION**

- 4.1 Option 1 is the least desirable alignment as it involves the largest site area and hence greatest potential impact on "GB" zone and existing vegetation. As for Option 2, although the access road portion seems to cover less area in "GB" zone between Sai Sha Road and the subject "G/IC" zone compared to the Proposed Access Road, after taking account of: (1) the third party lot involved; (2) the larger associated works areas in "GB" zone; (3) larger vegetated area involved; and (4) potential greater nuisances to the adjoining Sai Keng Tsuen, the Proposed Access Road alignment is the most optimal option among all. The table below summarizes the comparison of Option 1, Option 2 and the proposed access road alignment.



**Table 4.1 – Summary of Comparison of Option 1, Option 2 and the Proposed Access Road Alignment**

	<b>Option 1 Access Road Alignment</b>	<b>Option 2 Access Road Alignment</b>	<b>Proposed Access Road Alignment</b>
<b>(1) Third Party Lot</b>	Involving only the Applicant's private lots  Longest route adopted after avoiding all third party lots	Encroachment on a private third party lot  One other third party lot located between Option 2 Access Road and Proposed Access Road Alignment	Involving only the Applicant's private lots  Shortest route adopted after avoiding all third party lots
<b>(2) Total "GB" Area Affected</b>	<b>Largest (about 8,337m<sup>2</sup>)</b> Does not affect existing facilities but involves largest area due to longest and winding alignment	<b>Larger (about 5,546m<sup>2</sup>)</b> - relocation and re-provision of affected facilities - About 906m <sup>2</sup> larger in total site area	<b>Least (about 4,640m<sup>2</sup>)</b> Does not affect existing facilities
<b>(3) Total Vegetated Area Affected</b>	<b>Largest with encroachment on existing stream course (about 7,957m<sup>2</sup>)</b>	<b>Larger (about 4,338m<sup>2</sup>)</b>	<b>Least (about 4,264m<sup>2</sup>)</b>
<b>(4) Nuisance to Sai Keng Tsuen</b>	<b>Minimal</b> - similar to Proposed Access Road alignment	<b>Greater</b> - about 200m elevated frontage - buffer distance of about 8m	<b>Minimal</b> - buffer distance of about 60m

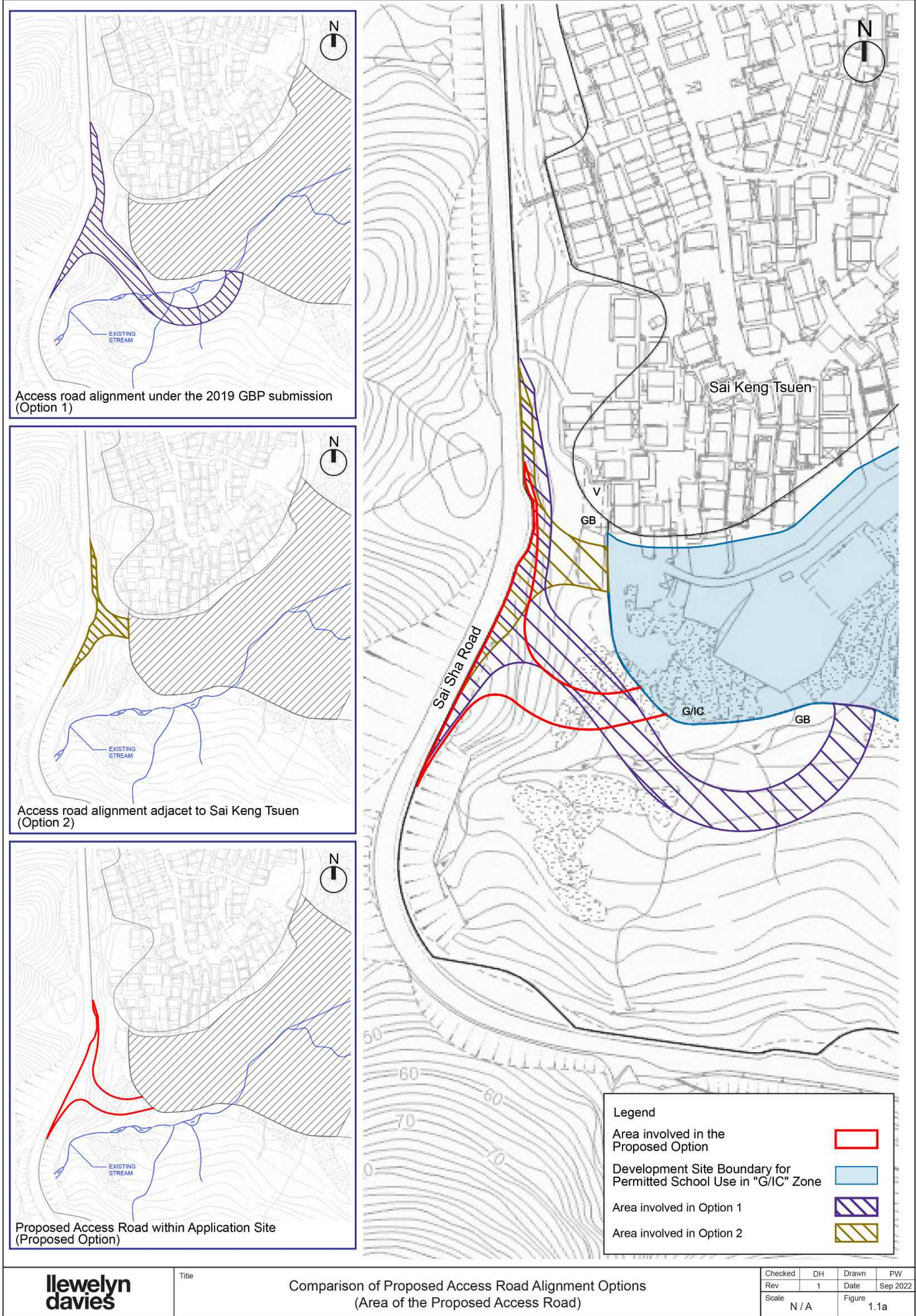
4.2 In light of the above, the Proposed Access Road alignment is considered optimal which shall warrant favourable consideration by the Board.

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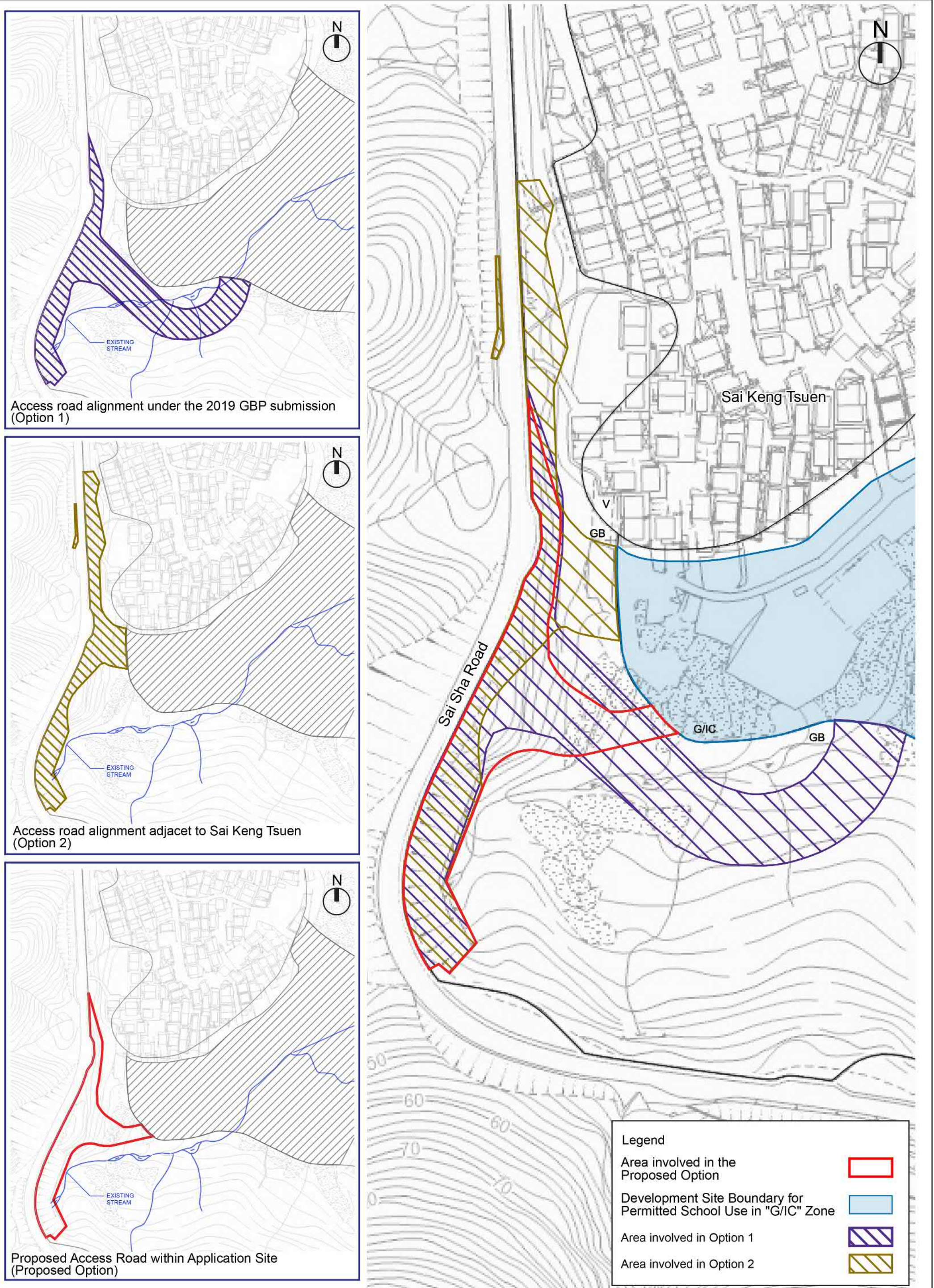
## Figures

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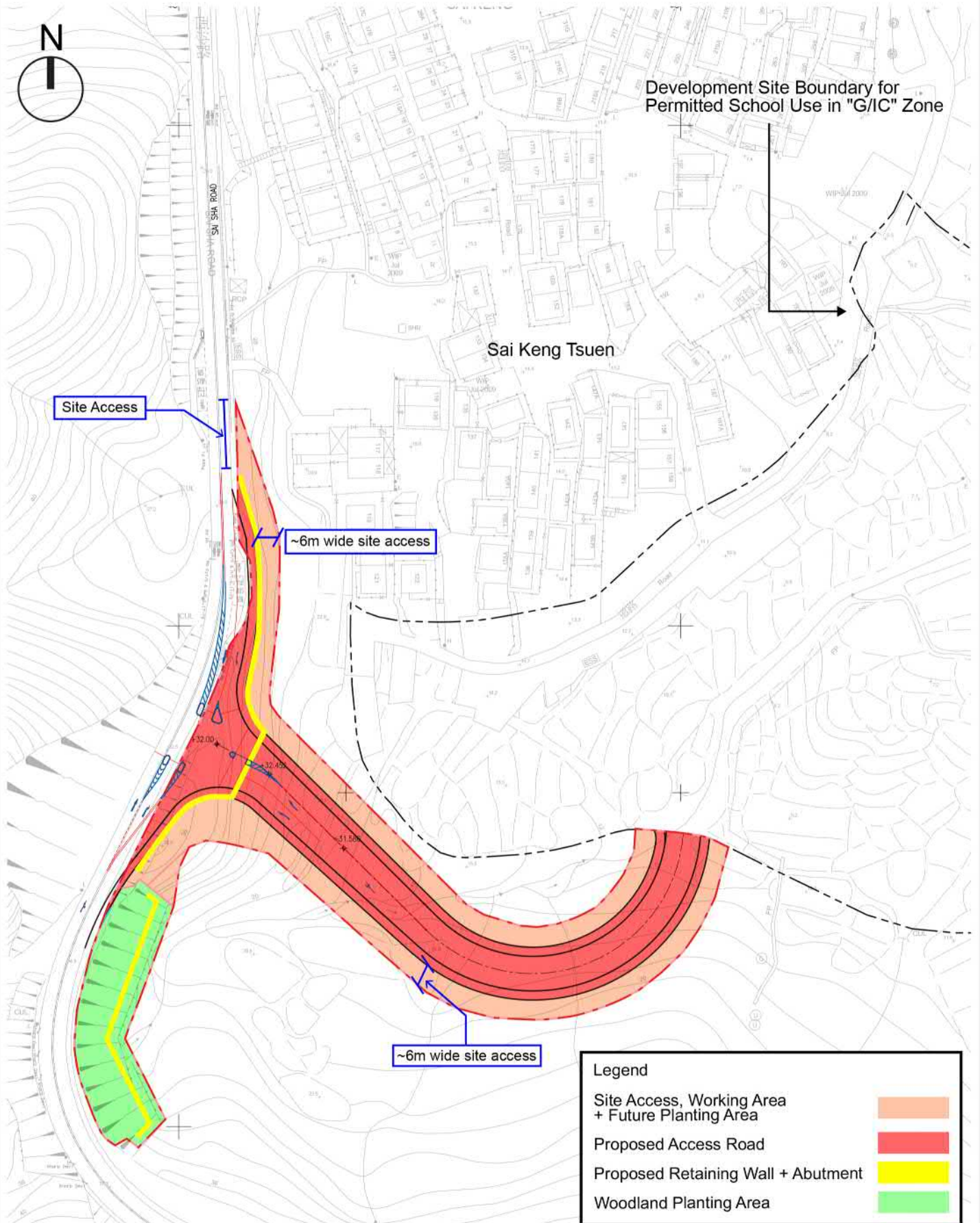








# Option 1



Remarks: For information only. This is rough estimation based on the proposed alignment.

**llewelyn  
davies**

Title

Option 1 Alignment with Works Area  
(including Woodland Planting Area)

Checked	DH	Drawn	PW
Rev	0	Date	Sep 2022
Scale	Figure		
NA	2.1		





Option 1



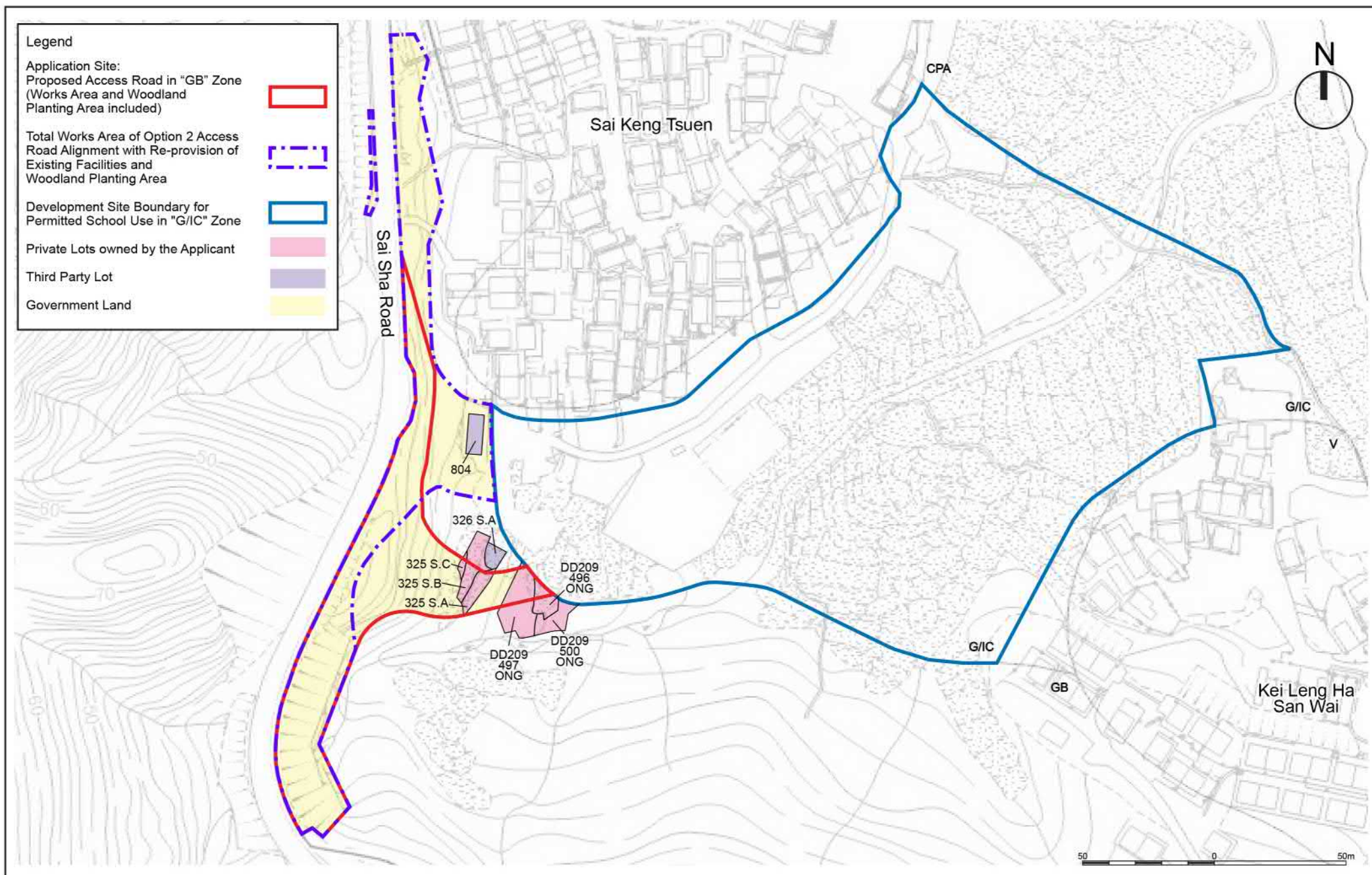
Option 2



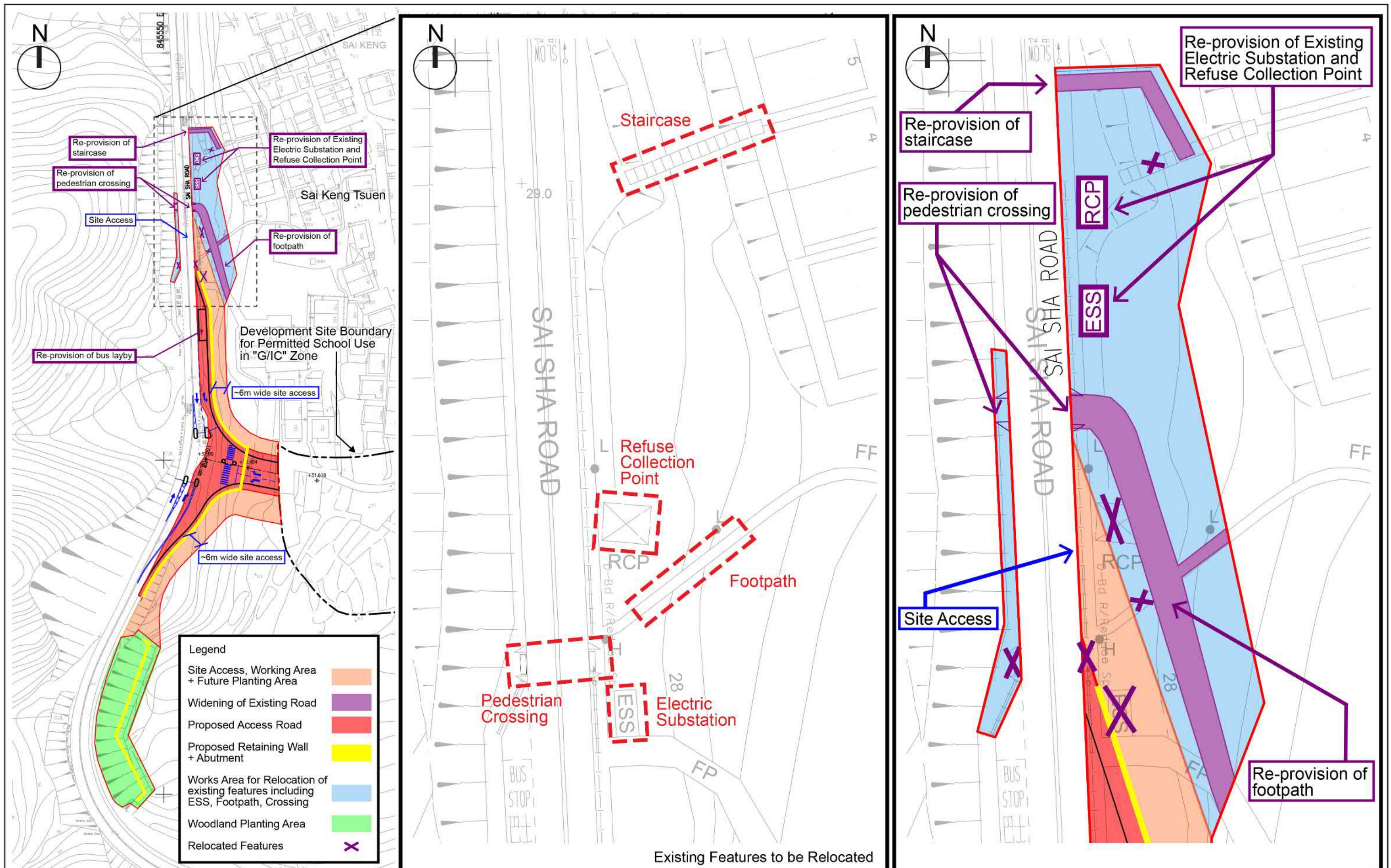
Proposed Access Road

	Option 1	Option 2	Proposed Access Road
Estimated Vegetated Area	7,957 (m <sup>2</sup> )	4,338 (m <sup>2</sup> )	4,264 (m <sup>2</sup> )



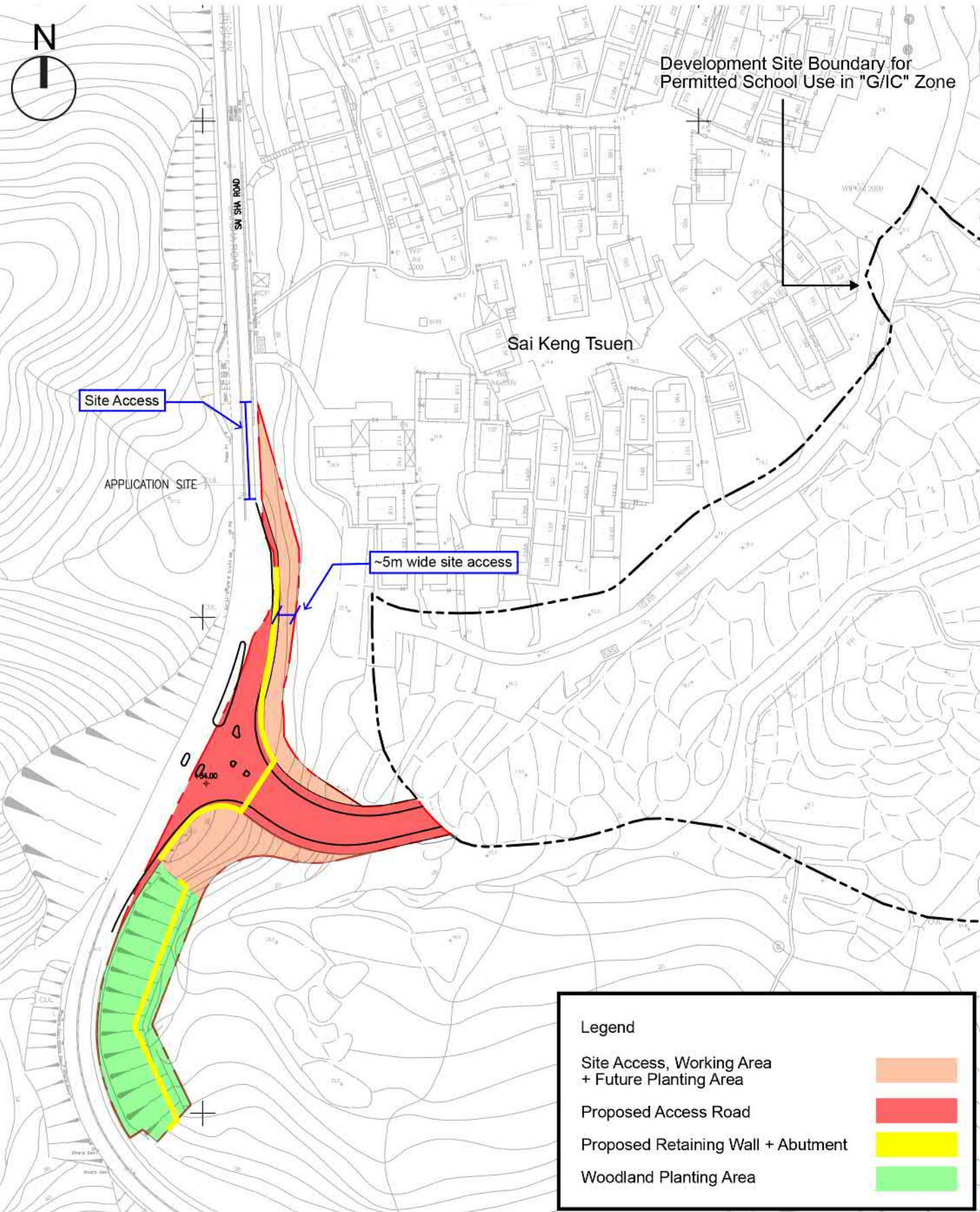






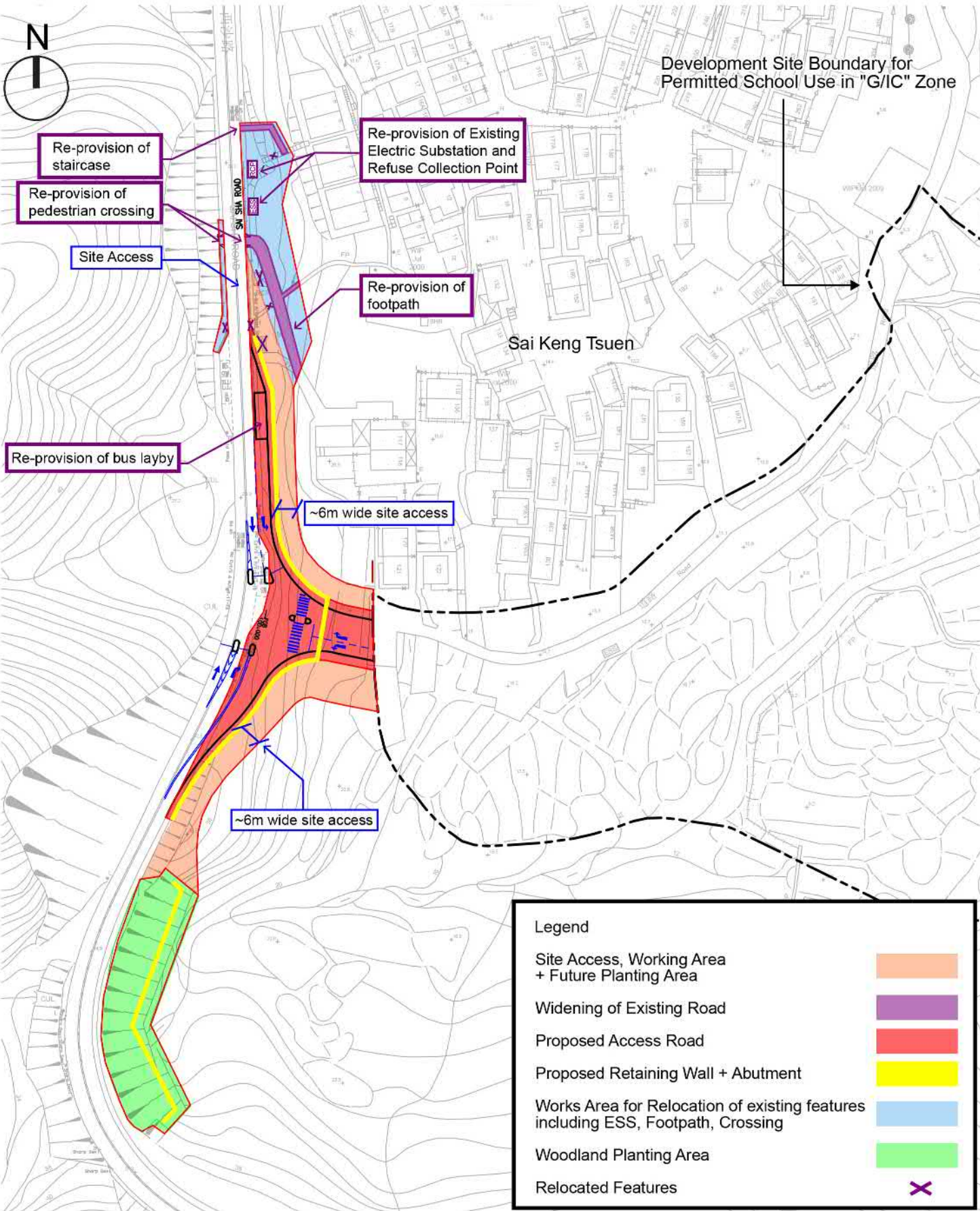


Proposed Access Road Scheme



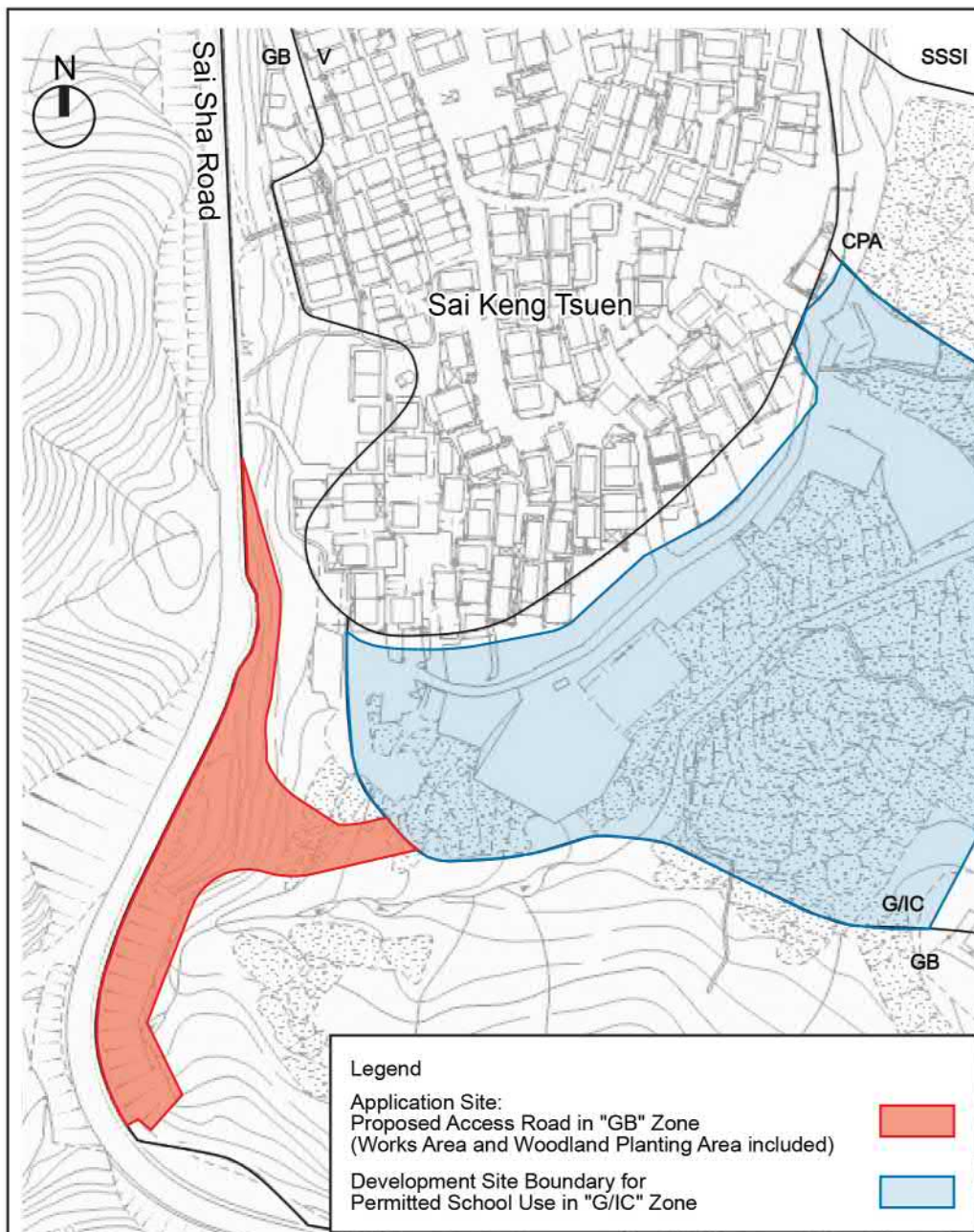
Remarks: For information only. This is rough estimation based on the proposed alignment.

Option 2

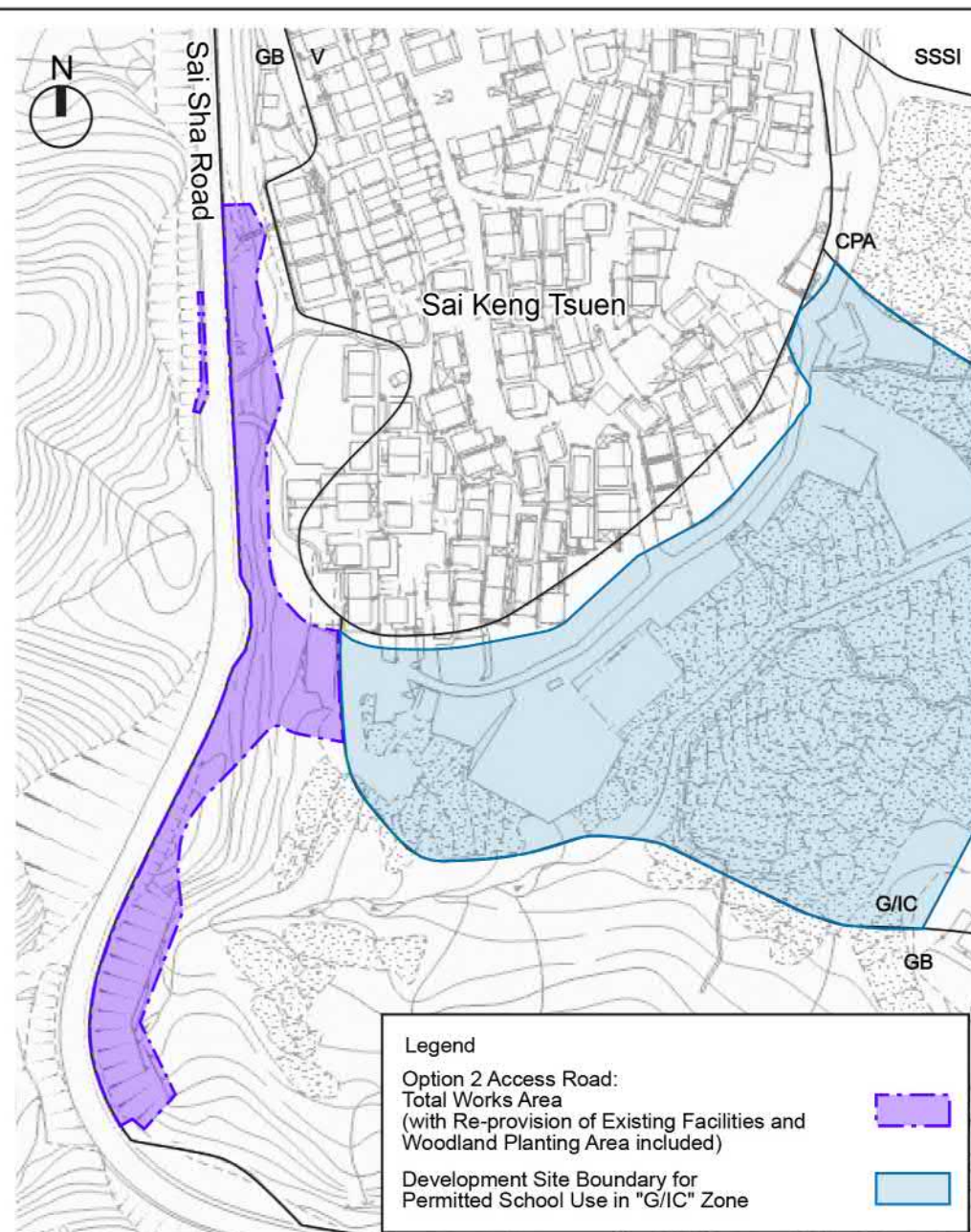


Remarks: For information only. This is rough estimation based on the proposed alignment.

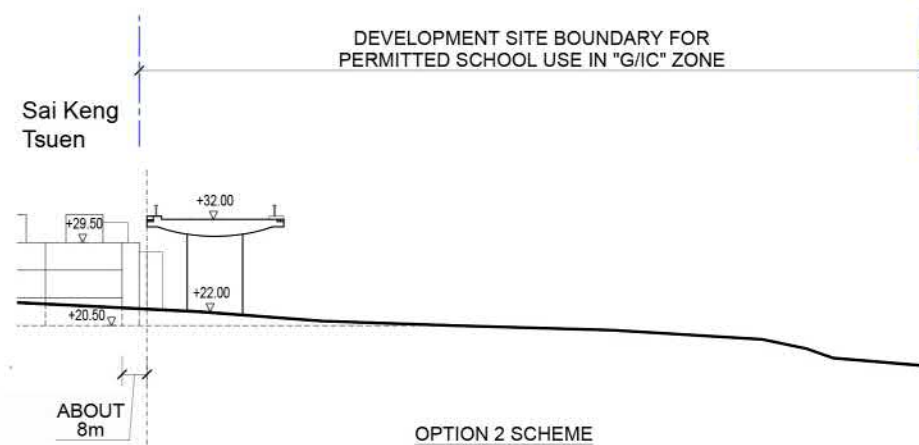
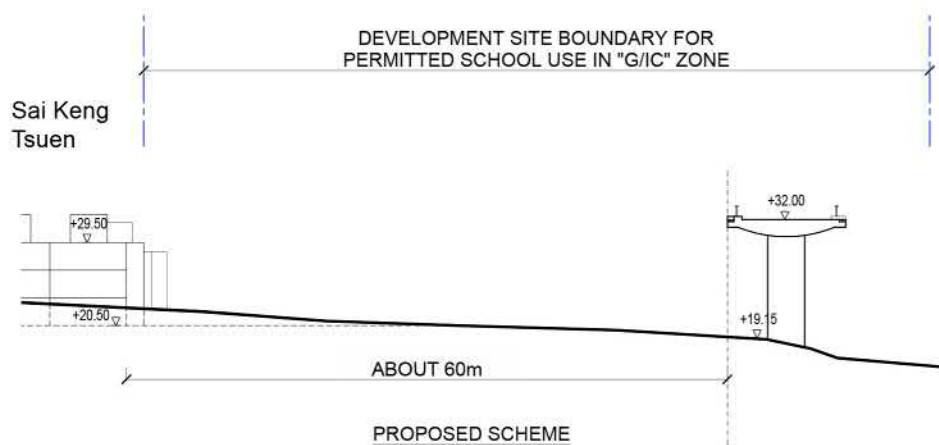
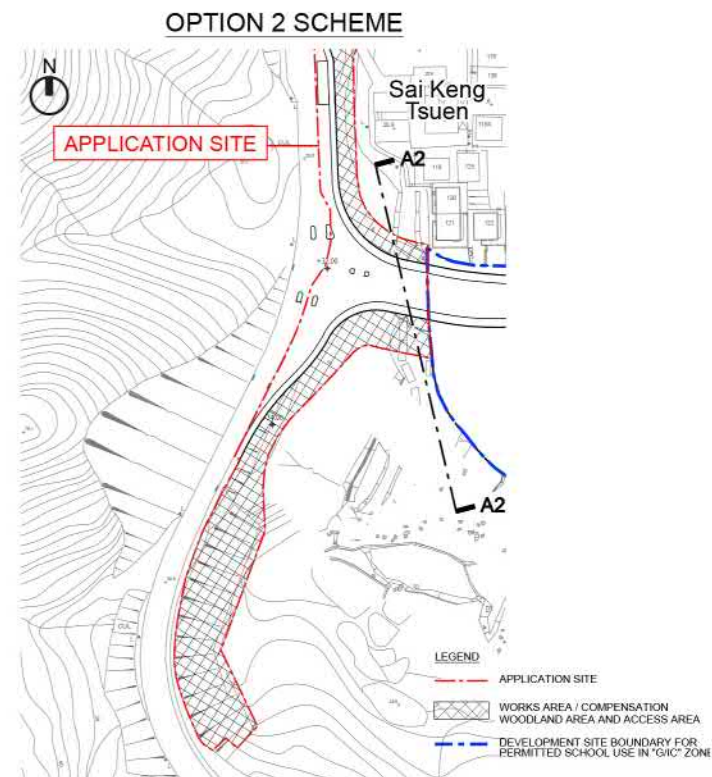
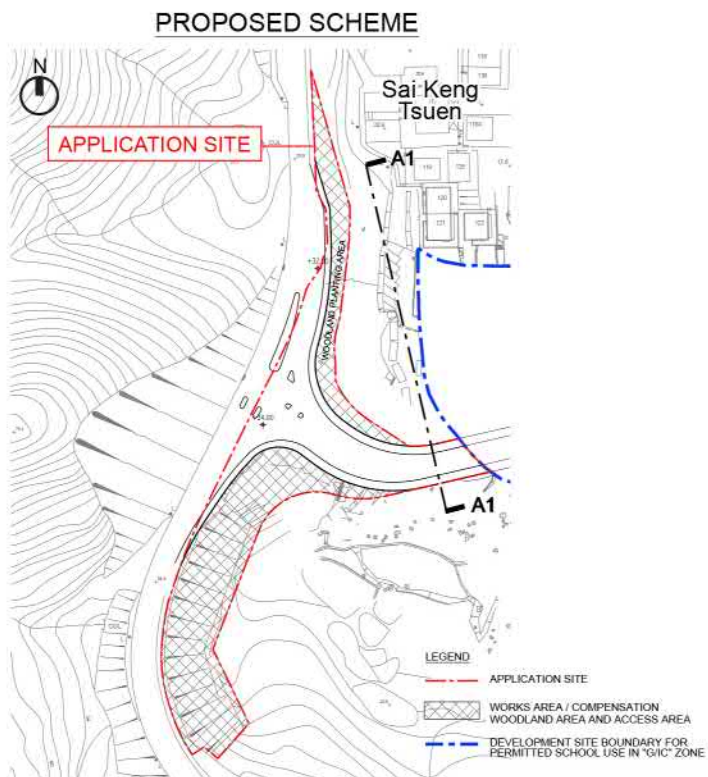




Proposed Access Road Scheme



Option 2





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## **Appendix K**

### **Plan Showing Existing Condition of Village Tracks**

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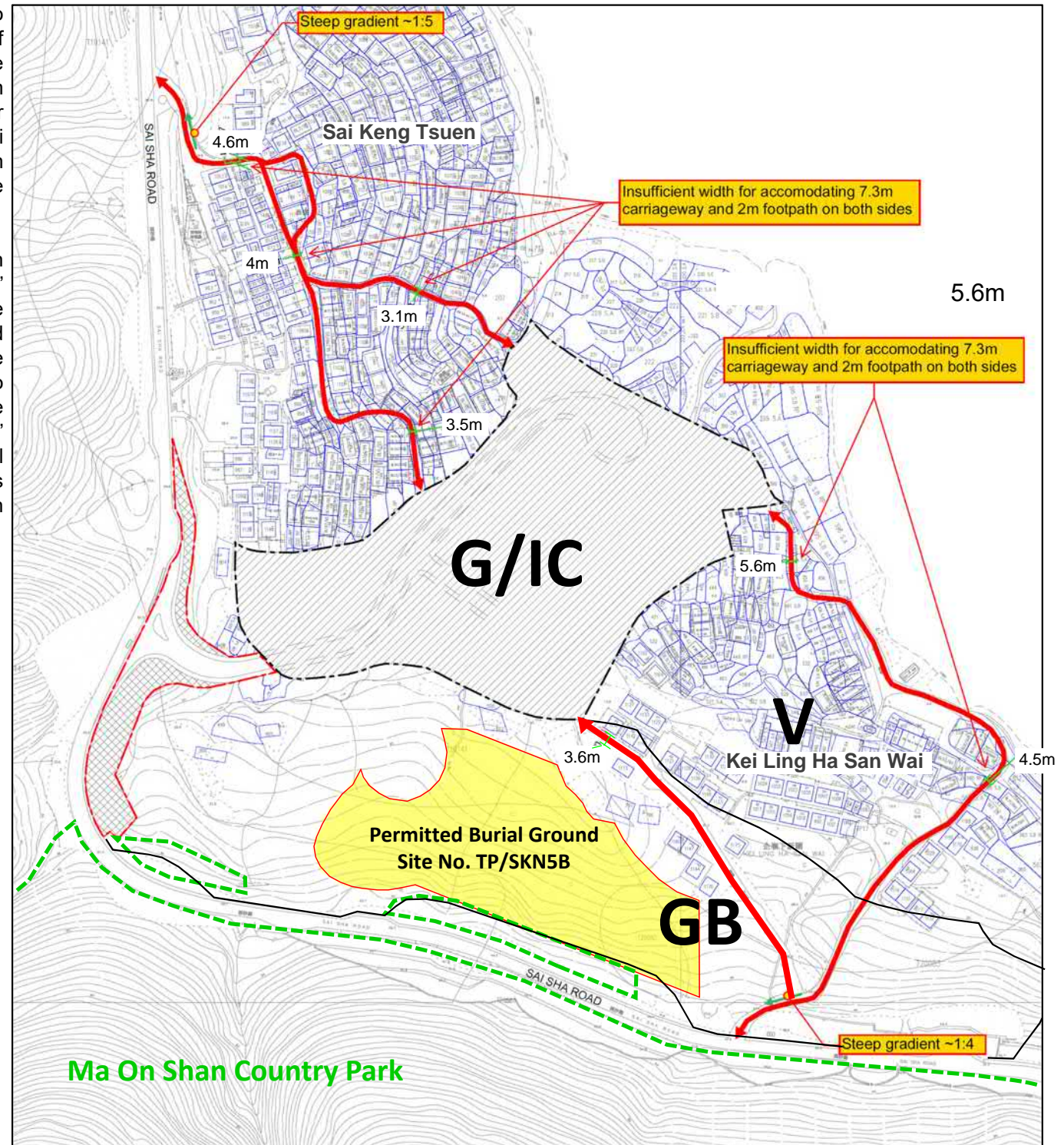
(Same as that under Further Information submitted on 8 August 2022)



# Infeasibility of Upgrading the Existing Village Tracks to Serve as Vehicular Access for the “G/IC” Site

According to HKPSG, a standard access road to school development should be a carriageway of minimum 7.3m-wide (straight section) with 2m-wide footpath at both sides. The existing village tracks from Sai Sha Road to the “Government, Institution or Community” (“G/IC”) site via Sai Keng Tsuen and Kei Leng Ha San Wai are very narrow (ranging from 3.1m to 5.6m only). Hence, they do not meet the requirements mentioned above.

In addition, due to prominent level difference between Sai Sha Road and the villages as well as the “G/IC” site, the sections between Sai Sha Road and the existing tracks are very steep with gradient of around 1:4/1:5, which are not in compliance with the acceptable gradient of 1:10 for school coaches. Due to the presence of the existing village houses and the need to encroach into private lots or other “no-go” areas like country park and the permitted burial ground, further widening of the existing village tracks and modification of their alignments to achieve an acceptable gradient is not practicable.



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## **Appendix L**

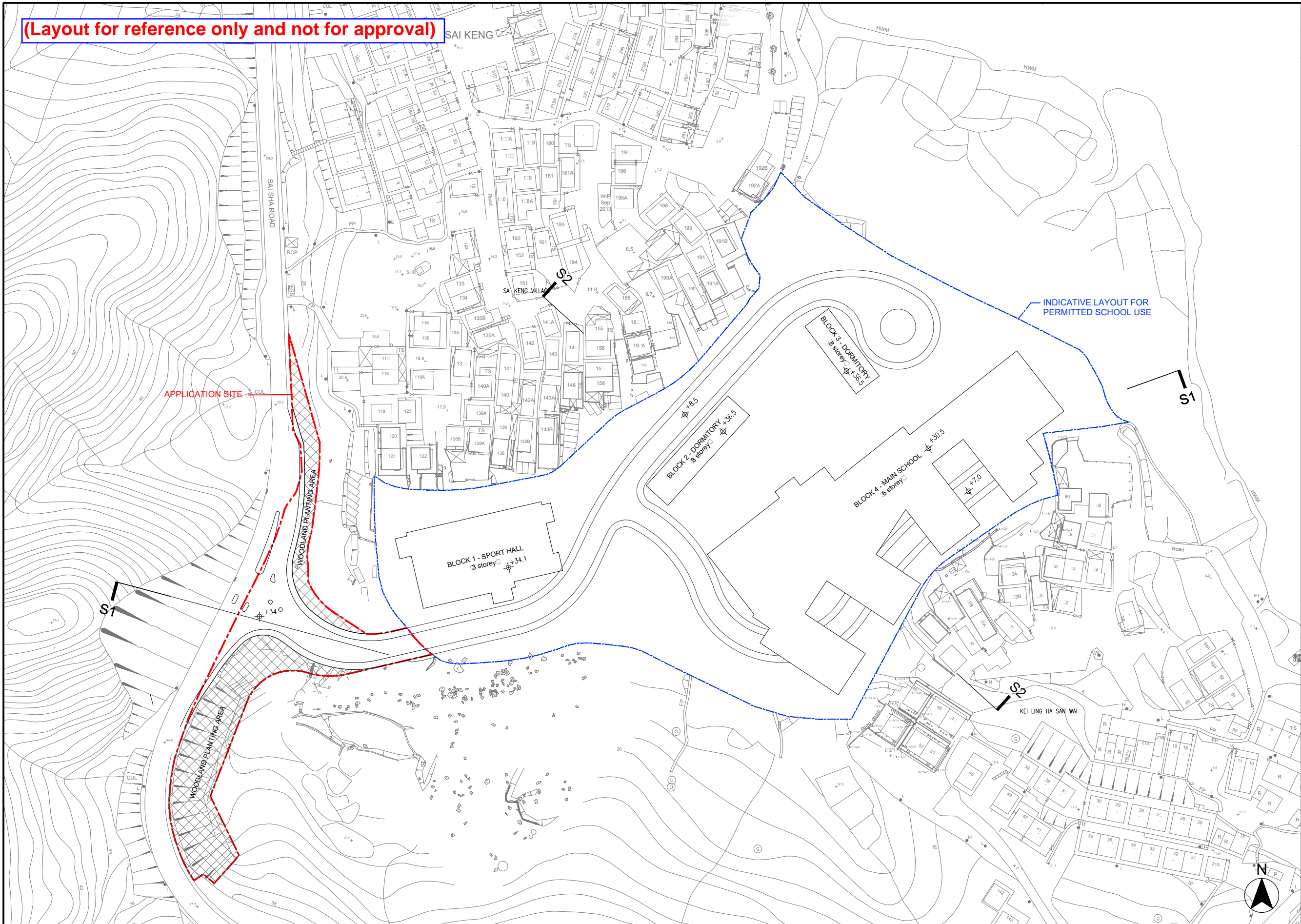
# **Indicative Plans and Development Schedule for School Development**

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(Same as that under Further Information submitted on 8 August 2022)

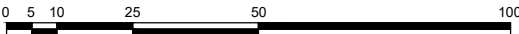


(Layout for reference only and not for approval)



**LEGEND**  
--- APPLICATION SITE BOUNDARY --- DEVELOPMENT SITE BOUNDARY FOR PERMITTED SCHOOL USE IN "G/IC" ZONE

- Remark:**
- The Proposed Access Road in the Application Site is to facilitate the permitted school use in the adjoining "G/IC" Zone. The permitted school use is not the subject matter of this S16 planning application. The layout and development parameters presented are indicative and for reference only, which will be subject to change at detailed design stage.
  - During the construction stage, the woodland planting area will be used as temporary works area for the Proposed Access Road.



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**PROJECT :**  
PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

**DRAWING TITLE :**  
INDICATIVE  
BLOCK PLAN

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SCALE : 1:1500	DRAWN : AIL
PROJECT NO. : 952	
DWG. NO. : S16-A-01	



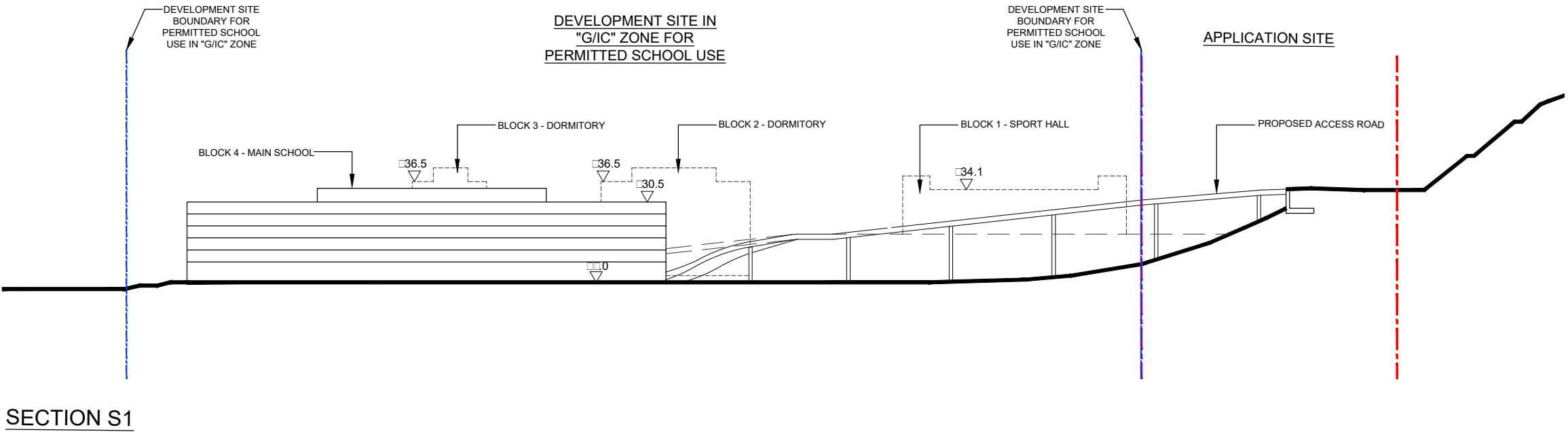
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REVISIONS :

NO.	DESCRIPTION	DATE

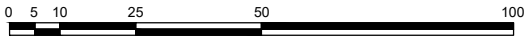


LEGEND

--- APPLICATION SITE BOUNDARY --- DEVELOPMENT SITE BOUNDARY FOR PERMITTED SCHOOL USE IN "G/I/C" ZONE

Remark:

- The Proposed Access Road in the Application Site is to facilitate the permitted school use in the adjoining "G/I/C" zone. The permitted school use is not the subject matter of this S16 planning application. The layout and development parameters presented are indicative and for reference only, which will be subject to change at detailed design stage.
- During the construction stage, the woodland planting area will be used as temporary works area for the Proposed Access Road.



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PROJECT :  
PROPOSED ACCESS ROAD IN  
"GREEN BELT" ZONE FOR  
PERMITTED USES IN "GOVERNMENT,  
INSTITUTION OR COMMUNITY" ZONE  
AT VARIOUS LOTS AND ADJOINING  
GOVERNMENT LAND IN D.D. 209, SAI  
KENG, SHAP SZ HEUNG, THE NEW  
TERRITORIES

DRAWING TITLE :  
INDICATIVE  
SCHEMATIC SECTION S1

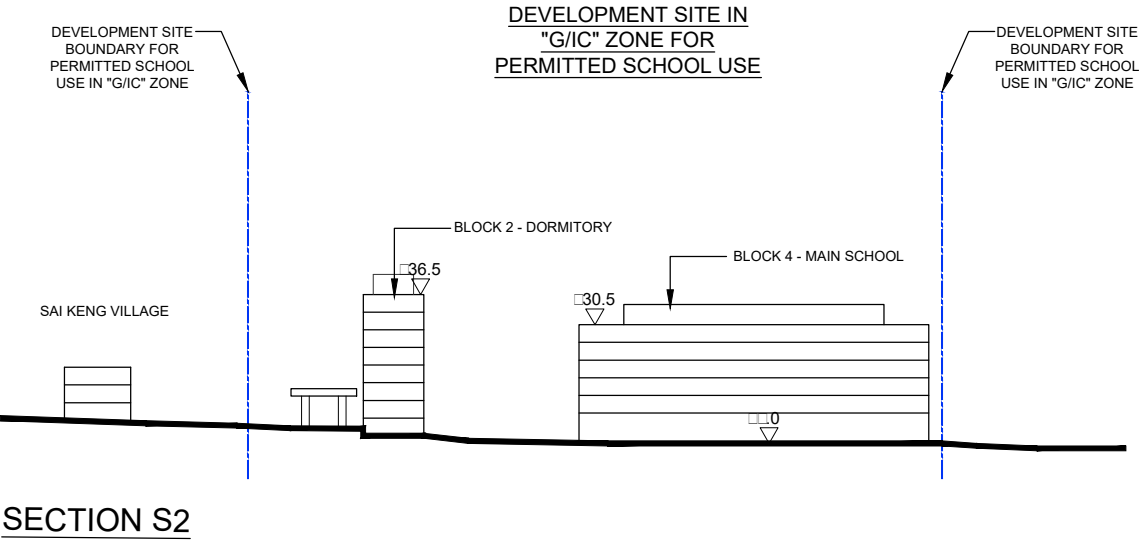
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DWG. NO. : S16-S-01A

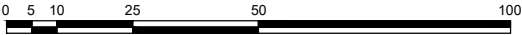
(Layout for reference only and not for approval)



LEGEND

APPLICATION SITE BOUNDARY DEVELOPMENT SITE BOUNDARY FOR PERMITTED SCHOOL USE IN "G/IC" ZONE

- Remark:
- The Proposed Access Road in the Application Site is to facilitate the permitted school use in the adjoining "G/IC" zone. The permitted school use is not the subject matter of this S16 planning application. The layout and development parameters presented are indicative and for reference only, which will be subject to change at detailed design stage.
  - During the construction stage, the woodland planting area will be used as temporary works area for the Proposed Access Road.



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PROJECT :  
PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES

DRAWING TITLE :  
INDICATIVE  
SCHEMATIC SECTION S2

DATE : SEP 2022	PAPER SIZE : A3
SCALE : 1:1500	DRAWN : AIL
PROJECT NO. : 952	
DWG. NO. : S16-S-02A	

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## **Appendix M**

### **Previous Responses-to-Comments**

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(Previously submitted under Further Information dated 16 September 2021, 24 September 2021, 29 December 2021, 27 January 2022, 18 May 2022, 30 June 2022 & 17 August 2022)

(Please note that the numbering of the attachments mentioned in the R-to-C table has been superseded.)



**Section 16 Planning Application for Proposed Access Road with Filling and Excavation of Land in “Green Belt” Zone for Permitted uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, N.T (Application No.: A/NE-SSH/139)**

	Departmental Comments	Responses to Comments
<b>1.</b>	<b>Comments from Chief Highway Engineer/New Territories East, Highways Department</b>	
	I have the following comments relating to highways landscape and slope vegetation maintenance:	
1.1	Instead of tree group assessment, tree assessment on individual trees under HyD's purview should be provided for further consideration. In this regard, this department reserves comment upon receipt of the submission of TPRP prepared in accordance with the requirements stipulated in DEVB TC(W) No. 4/2020.	The SIMAR slope under HyD's maintenance is inaccessible to land surveyor's optical survey equipment due to understorey shrubs and groundcovers, which must be cleared off for our land surveyor to set up their equipment for a tree location survey. Such large-scale vegetation removal at this early planning application stage is not recommended. A detailed, individual tree assessment and a Tree Preservation and Removal Proposal (TPRP) within the SIMAR slope under HyD's maintenance will be prepared and submitted in accordance with DEVB TC(W) No. 4/2020 at detailed design stage subsequent to the approval of the subject planning application.
1.2	Apart from the application site boundary and the proposed works layout, the proposed works extent (including the associated construction activities, excavation and storage area) should be demarcated on the Tree Survey Plan (Dwg. No. 60639068/LMP/TSP) to demonstrate more realistic conflicts between the proposed works and existing trees.	Proposed works extent (including the associated construction activities, excavation and storage area) is now indicated on the Tree Survey Plan provided in the revised Landscape Design and Tree Preservation Proposal in <b>Attachment 3</b> of the current submission.  The detailed works demarcation will be provided at detailed design stage subsequent to the approval of the subject planning application.
1.3	Assessment on "Structural Condition" is missing in Annex D - Tree Assessment Schedule. The applicant is reminded to follow the format shown in Appendix C(1) of DEVB TC(W) No. 4/2020 in preparing the Tree Assessment Schedule.	A detailed, individual tree assessment and a TPRP within the SIMAR slope under HyD's maintenance will be prepared and submitted in accordance with DEVB TC(W) No. 4/2020 at detailed design stage subsequent to the approval of the subject planning application.

1.4	Noting from the Tree Assessment Schedule that the "Suitability for Transplanting" of T0005 and T0010 were rated "Low" but proposed to be transplanted. The applicant should review the tree assessment and proposed treatment for consistency.	Tree T0005 has a co-dominant trunk and an overall height of 10m. Tree T0010 is heavily leaning and moderately vined, and is of a species that is difficult to transplant. These trees have "low" survivability after transplanting, but there is still possibility that the trees may survive and thrive after transplanting. Given that they are of rare/ protected species, extra caution and safe handling effort will be exercised and committed by the Applicant to maximise the chance of successful transplantation.
1.5	Heavy standard trees were proposed as compensatory trees in para. 6.2 of Appendix A, but whip trees were proposed as compensatory trees in Table 6.1 and the Indicative Landscape Plan (Dwg. No. 60639068/LMP/LP). The Applicant should clarify this discrepancy.	Whip trees are proposed as compensatory planting trees. Para. 6.2 has been updated in the Landscape Design and Tree Preservation Proposal in <b>Attachment 3</b> of the current submission.
1.6	The applicant is reminded to provide detailed compensatory planting proposal with relevant information of the proposed plantings i.e. planting plan with locations of compensatory tree, planting schedule, matrix, etc in the captioned submission for consideration. According to the para. 40 of DEVB TC(W) No. 4/2020 and "Proper Planting Practices" promulgated by Greening, Landscape and Tree Management Section of DevB, feasible receptor locations with adequate space for the compensatory trees considering their mature height and spread should be explored and identified.	Noted.
1.7	With due consideration of the slope gradient, the applicant should review if additional planting of shrubs, groundcovers, ferns or climbers is feasible on these features in addition to the proposed compensatory tree planting with reference to GEO Publication No. 1/2011 - Technical Guidelines on Landscape Treatment for Slopes.	<p>The guidelines in GEO Publication No. 1/2011 would be followed. The slope gradient would be one of the criteria to select suitable native shrub, groundcovers, ferns or climbers and the planting of these would not affect the number/density of trees which can be planted in the woodland compensatory area.</p> <p>In addition to compensatory tree planting, opportunities for maximising floristic and structural diversity, enhancing the overall ecological value and greening of the site will also be adopted through planting of shrubs and groundcovers in the understory of compensatory planting. Planting of shade-tolerant plants underneath the viaduct as well as planting of climbers on boulder walls and in</p>

		areas unsuitable for tree and shrub planting (i.e. with a gradient >35°) will also be carried out within the Application Site. For details please refer to para. 7.1 of the Landscape Design and Tree Preservation Proposal in <b>Attachment 3</b> of the current submission.
1.8	The applicant should take up maintenance responsibility of the entire affected slopes (including its planting works) during construction period.	The Applicant would take up the maintenance responsibility of the entire affected slopes (including its planting works) during construction period before handing over the slope vegetation maintenance responsibility to HyD.
1.9	12 month Maintenance Period should be provided for the new planting works and the existing vegetation within the slope features to be maintained by HyD. Defects of existing trees, such as dead trees and dead branches, shall be rectified before handing over the slope vegetation maintenance responsibility to HyD. All invasive, parasitic weeds and vines (e. g. <i>Leucaena leucephala</i> 銀合歡, <i>Pueraria</i> 野葛, <i>Cassytha</i> 無根藤 and <i>Mikania micrantha</i> 薇甘菊), if any, should be removed.	Noted.
1.10	Landscape consultant/tree specialist should be assigned to oversee and monitor the works to ensure proper implementation of preservation and protection to the existing trees before commencement of works. Regular site inspection by the tree Specialist is required to closely monitor the site activities in order to avoid or minimize any possible adverse impact to the retained trees during construction.	Noted.
1.11	Upon completion of works, the Consultant should arrange site inspection with representatives from LandscapeD/HyD to agree on the date of commencement for Establishment Period/Maintenance Period.	Noted.
1.12	The prevailing version of “Requirements for Handover of Vegetation to Highways Department” (available at: <a href="https://www.hyd.gov.hk/en/publications_and_publicity/publications/technical_document/handover_of_vegetation/index.html">https://www.hyd.gov.hk/en/publications_and_publicity/publications/technical_document/handover_of_vegetation/index.html</a> ) should be complied with.	Noted.



<p><b>2.</b></p> <p>2.1</p>	<p><b>Comments from Director of Fire Services</b></p> <p>Having concern on the statement of the applicant that the proposed access road 'would also serve as the EVA for the adjacent "G/IC" zone', as no details of the EVA have been provided, comments could not be offered by D of FS at the present stage. Nevertheless, the applicant is advised to observe the requirements of EVA as stipulated in Section 6 Part D of Code of Practice for Fire Safety in Buildings 2011 which is administered by BD.</p>	<p>The Applicant will observe the requirements of EVA as stipulated in Section 6 Part D of Code of Practice for Fire Safety in Buildings 2011. Details of the EVA will be provided at detailed design stage subsequent to the approval of the subject planning application.</p>
<p><b>3.</b></p> <p>3.1</p>	<p><b>Comments from Chief Town Planner/Urban Design &amp; Landscape</b></p> <p>Having examined the submitted information including Visual Appraisal, the applicant has proposed woodland planting areas to minimise the potential visual impact on the surrounding areas. As such, adverse visual impact by the proposed work is not anticipate.</p>	<p>Noted.</p>
<p><b>4.</b></p> <p>4.1</p>	<p><b>Comments from Director of Agriculture, Fisheries and Conservation</b></p> <p><u>General Comments</u></p> <p>Please note the southern tip of the Application Site adjoining slope No. 8NW-C/FR48 falls within Ma On Shan Country Park (MOSCP). Attached please find the application plans marked with MOSCP boundary for your reference. The applicant should revise the application site boundary to avoid MOSCP. Please note prior consent from the Country and Marine Parks Authority is required for any works that fall within Country Park areas. Should the TPB decides to approve the application, the following approval condition is recommended: The submission and implementation of a transplantation and compensatory planting proposal supported by a detailed vegetation survey to the satisfaction of DAFC or of the Town Planning Board.</p>	<p>The Application Site boundary has been adjusted to avoid overlapping with the MOSCP area. MOSCP would not be encroached and no direct impact to MOSCP is anticipated.</p> <p>The Applicant has no objection for the Board to impose an approval condition related to submission and implementation of a transplantation and compensatory planting proposal supported by a detailed vegetation survey to the satisfaction of DAFC or of the Town Planning Board under the subject S.16 planning approval.</p>

4.2	Some revisions and clarifications are required for the EcolA. Please refer to the specific comments below. The applicant should provide the revised EcolA for our further consideration.	Noted.
4.3	Although we have no strong view on the application given its limited scope, there are no details yet for the transplantation and compensatory planting proposal pending further site investigation and detailed design.  <u>Specific Comments on EcolA</u>  <u>S5.1.1:</u>	Noted. Details for the transplantation and compensatory planting proposal will be provided upon further site investigation at detailed design stage subsequent to the approval of the subject planning application.
4.4	The SSSI should read as “Kei Ling Ha Mangal Site of Special Scientific Interest”. Please revise.	Noted. S5.1.1 has been updated accordingly in the revised EcolA report in <b>Attachment 4</b> of the current submission.
4.5	Please provide the nearest distance between the Application Site and the Kei Ling Ha Mangal SSSI.	The shortest distance between the SSSI and the Application Site is about 500m. S5.1.1 has been updated accordingly in the revised EcolA report in <b>Attachment 4</b> of the current submission.
4.6	There are typos in the scientific names of the following mangroves: Acanthus ilicifolius, Bruguiera gymnorhiza, Clerodendrum inerme, Excoecaria agallocha, and Lumnizera racemosa. Please revise.	Noted. S5.1.1 has been updated accordingly in the revised EcolA report in <b>Attachment 4</b> of the current submission.
4.7	A closing bracket is missing after “(previously known as Kandelia candel)”. Please revise.	Noted. S5.1.1 has been updated accordingly in the revised EcolA report in <b>Attachment 4</b> of the current submission.
4.8	Please delete the sentence “The site is also a study place for course organized by the Field Study Centre of Education Department at Sai Kung.”	Noted. S5.1.1 has been updated accordingly in the revised EcolA report in <b>Attachment 4</b> of the current submission.
4.9	Please elaborate the last sentence “Invertebrates new to science have been found here”.	Noted. S5.1.1 has been updated accordingly in the revised EcolA report in <b>Attachment 4</b> of the current submission.

4.10	Please be advised that <i>Haberma tingkok</i> , an endemic arboreal crab species with limited distribution over Hong Kong, was recorded by this department in the Kei Ling Ha Mangal SSSI mangrove stand within the Assessment Area. Please include this information in this section and S5.2.44.	Noted. “ <i>Haberma tingkok</i> , an endemic arboreal crab species with limited distribution over Hong Kong, was recorded by AFCD in the Kei Ling Ha Mangal SSSI mangrove stand within the Assessment Area” has been included in S5.2.44 accordingly in the revised EcolA report in <b>Attachment 4</b> of the current submission.
4.11	<u>S5.1.3 and S7.5.10</u> MOSCP is located within and to the west, south and north of the Application Site. Please review the description of the location of the MOSCP and hence the impact assessment related to MOSCP. Our general comment (1) is relevant.	Noted. S5.1.3 and S7.5.10 have been updated accordingly in the revised EcolA report in <b>Attachment 4</b> of the current submission.
4.12	<u>S5.2.3</u> Please revise <i>Eleusine indica trilobata</i> as <i>Eleusine indica</i> .	Noted. S5.2.3 has been updated accordingly in the revised EcolA report in <b>Attachment 4</b> of the current submission.
4.13	<u>S5.2.30</u> The first sentences are incomplete. Please revise.	Noted. S5.2.30 has been updated accordingly in the revised EcolA report in <b>Attachment 4</b> of the current submission.
4.14	<u>S5.2.45</u> At the beginning of the section, please add the following sentences “ <u>The endemic crab <i>Haberma tingkok</i> was first recorded at Ting Kok in 2017. It is an arboreal species associated with mangrove <i>Kandelia obovata</i>. There were unpublished records of this species in the mangrove stand within the Assessment Area (AFCD in litt.). Apart from this species,</u> no species of conservation importance was recorded...”.	Noted. S5.2.45 has been updated accordingly as “The endemic crab <i>Haberma tingkok</i> was first recorded at Ting Kok in 2017. It is an arboreal species, associated with mangrove <i>Kandelia obovata</i> (Cannicci and Ng 2017). There were unpublished records of this species in the mangrove stand within the Assessment Area (AFCD in litt.). Apart from this species, no species of conservation importance was recorded during the intertidal surveys.” in the revised EcolA report in <b>Attachment 4</b> of the current submission.
4.15	<u>Diversity criterion of Table 5</u> According to Appendix D, no dragonfly species was recorded from “Agricultural Land” within the Assessment Area. Please clarify.	“Abundance/richness of wildlife” in Table 5 has been updated as “Very low abundance of bird and butterfly” in the revised EcolA report in <b>Attachment 4</b> of the current submission.



4.16	<p><u>Tables 8 and 17</u> Please include <i>Haberma tingkok</i> in the evaluation and update both tables.</p>	<p><i>Haberma tingkok</i> is added into Table 8 and the overall ecological value is re-evaluated with considering this endemic crab. Meanwhile, as <i>Haberma tingkok</i> is not recorded during the current ecological survey and Table 17 only shows fauna species of conservation importance recorded from the survey, thus <i>Haberma tingkok</i> shall not be included in Table 17. Please refer to the revised EcolA report in <b>Attachment 4</b> of the current submission for details.</p>
4.17	<p><u>Table 9</u> Please review the description in “Diversity” and “Abundance/ richness of wildlife” criteria, which are unsubstantiated by the results shown in the Appendices. Besides, it is noted from the habitat from the habitat maps that marsh does not exist as a continuous strip within the Assessment Area. Please review and revise.</p>	<p>“Diversity” in Table 9 has been updated as “Low floral and fauna diversity” and “Fragmentation” has been updated as “Present at two separate locations”. Please refer to the revised EcolA report in <b>Attachment 4</b> of the current submission for details.</p>
4.18	<p><u>“Abundance/ richness of wildlife” criterion in Table 11</u> According to Appendices C-E, no bird or odonates were recorded. Only 1 butterfly species was recorded. Please clarify.</p>	<p>Table 11 provides evaluation of the shrubland/grassland habitat within the assessment area outside the Application Site. Within the assessment area, 14 bird species were recorded in SG (shrubland/grassland), 2 odonates species were recorded in SG and 3 butterfly species were recorded. Abundance/richness of wildlife of shrubland / grassland within the assessment area is thus considered as low to moderate. Please refer to the revised EcolA report in <b>Attachment 4</b> of the current submission for details.</p>
4.19	<p><u>Table 13 and Appendices A-I</u> The Appendices did not provide flora and fauna data for “woodland Remnant” habitat. Please review the description under “Diversity” and “Abundance/ richness of wildlife” criteria and substantiate the description with data in the appendices.</p>	<p>The flora and fauna species found in woodland remnant are indicated in Appendix A to E. The description under “Diversity” and “Abundance/ richness of wildlife” in Table 13 tallies with our field observation. Please refer to the revised EcolA report in <b>Attachment 4</b> of the current submission for details.</p>
4.20	<p><u>S7.2.2</u> “Sha Sai Road” at line 9 should be “Sai Sha Road”.</p>	<p>S7.2.2 has been updated accordingly in the revised EcolA report in <b>Attachment 4</b> of the current submission.</p>

4.21	<u>S7.5.9</u> Please assess and address the potential impacts <i>Haberma tingkok</i> .	The endemic crab <i>Haberma tingkok</i> has been recorded from nearby mangroves (AFCD <i>in litt.</i> ). Given that there is no mangrove found within the Application Site, combined with the arboreal nature of this species, and the extensive, suitable habitat within the wider area, no direct impact to this species is anticipated.
4.22	<u>S7.5.10</u> There is a typo in “Kei Ling Ha Mangal SSSI”. Please revise.	Noted. S7.5.10 has been updated accordingly in the revised EcolA report in <b>Attachment 4</b> of the current submission.
4.23	<u>S8.1</u> Please confirm the total area of compensatory woodland. According to S7.3 of the planning statement, there will be 0.28 ha of woodland planting area.	It is confirmed that a total of 0.28ha on-site woodland planting area are proposed to fully mitigate the unavoidable woodland loss.
4.24	<u>Figure 2</u> Please update the boundary of MOSCP. Our general comment (1) is relevant. Please also include Kei Ling Ha Mangal SSSI.	Figures 2a and 2b have been updated accordingly in the revised EcolA report in <b>Attachment 4</b> of the current submission.
4.25	<u>Figure 8</u> Please include a photo of woodland remnant.	Figure 8 has been updated accordingly in the revised EcolA report in <b>Attachment 4</b> of the current submission.
4.26	<u>Figure 9</u> Please include photos of <i>Ailanthus fordii</i> and <i>Gnetum luofuense</i> .	The photos of <i>A. fordii</i> and <i>G. luofuense</i> have been added in Figure 9 in the revised EcolA report in <b>Attachment 4</b> of the current submission.
4.27	<u>Appendices B to G</u> For each fauna group, please provide the total number of species recorded in each habitat.	Noted. The total number of species recorded in each habitat has been added in Appendices B to G in the revised EcolA report in <b>Attachment 4</b> of the current submission.
4.28	<u>S12</u> Please add the book “Illustration of Rare and Endangered Plant in Guangdong Province”, which was cited in Tables 2 and 16 and Appendix A, and the China Red Data Book of Endangered Animals: Mammalia to the list of reference.	Noted. S12 has been updated accordingly in the revised EcolA report in <b>Attachment 4</b> of the current submission.

<b>5.</b>	<b>Comments from Head of Geotechnical Engineering Office, Civil Engineering and Development Department</b>	
5.1	It is noted that the applicant has committed, in the Geotechnical Planning Review Report (GPRR), to undertake a natural terrain hazard study (NTHS). However, this Office has following geotechnical comments on the captioned planning application.	Noted.
5.2	The GPRR should indicate the recommended extent of the NTHS study area and a commitment to carry out any necessary mitigation measures as part of the proposed development.	The preliminary extent of the NTHS study area is provided in the revised Geotechnical Planning Review Report (GPRR) in <b>Attachment 5</b> of the current submission. The detailed NTHS report will be submitted in detail design stage subsequent to the approval of the subject planning application.
5.3	The applicant should assess the geotechnical feasibility of the development and conclude the possible adverse effects by the possible natural terrain hazards in the GPRR.	The potential natural terrain hazards will be assessed in detail in the NTHS report to be provided at detailed design stage subsequent to the approval of the subject planning application. Relevant mitigation measures (such as rigid barrier, flexible barrier etc.) will be provided, if required, during the construction stage. Thus, the proposed access road is considered feasible from geotechnical point of view. For details, please refer to the revised GPRR in <b>Attachment 5</b> of the current submission.
5.4	Should the application be approved, an approval condition on the submission of a NTHS and implementation of the mitigation measures recommended therein, as part of the development, is required.	Noted. The Applicant has no objection for the Board to impose an approval condition related to the submission of a NTHS and implementation of the mitigation measures recommended therein under the subject S.16 planning approval.
5.5	Presumably, the applicant will submit all necessary details, including but not limited to the relevant design, construction sequence, site control measures and monitoring plan etc., associated with the works for the proposed access road as mentioned in the planning application to the relevant authorities, such as Buildings Department, for approval prior to its implementation.	Noted. The applicant will submit all necessary details, including but not limited to the relevant design, construction sequence, site control measures and monitoring plan etc., associated with the works for the proposed access road as mentioned in the planning application to the relevant authorities, such as Buildings Department, for approval prior to its implementation.



<b>6.</b>	<b>Comments of the Chief Architect/ Central Management Division 2, Architectural Services Department</b>	
6.1	We have the following comments from architectural and visual impact point of view:	Noted.
6.2	It is noted that the proposed access road involves minor associated filling and excavation works only, which may not be incompatible with adjacent "AGB": area on the approved OZP (No. S/NE-SSH/11). In this regard, we would have no comment from architectural and visual impact point of view.	Noted.
6.3	The land issue of the proposed access road passing through Government land should be settled at the planning application stage.	The land issue of the proposed access road passing through Government land will be settled at the land exchange stage subsequent to the approval of the subject planning application. Details of the land issue will be agreed with Lands Department and relevant departments during the land exchange application.
<b>7.</b>	<b>Comments of Chief Engineer/ Mainland North, Drainage Services Department</b>	
7.1	I have no in-principle objection to above application from public drainage viewpoint. Nevertheless, I have the following general comments/ requirements:	Noted.
7.2	Upon completion of the works, I presume the concerned access road is maintained and managed by the Applicant. If the access road is proposed to be handed over to government departments, the maintenance matrix should be agreed with all concerned government departments.	Noted. Details related to the management and maintenance issues of the proposed access road will be agreed with Lands Department and relevant departments during the land exchange application subsequent to the approval of the subject planning application.

7.3	Please ensure that the internal road has been adequately designed in accordance with the latest HyD Guidance Notes on Road Pavement Drainage design (RD/GN/035A) to which special considerations on double gullies, overflow weir, gullies provisions at stage points and junction design have been duly covered in the submission.	Noted. The design of the Proposed Access Road has fully considered and has complied with all relevant guidelines and regulations including the latest HyD Guidance Notes on Road Pavement Drainage design (RD/GN/035A). The detailed drainage arrangement of the Proposed Access Road will be provided at detailed design stage subsequent to the approval of the subject planning application.
7.4	All site formation works should not obstruct any overland flow. All existing flow paths as well as the runoff falling onto and passing through the site should be intercepted and disposed of via proper discharge points. In addition, sufficient openings should be provided at the bottom of the boundary wall/ fence to allow surface runoff to pass through the site if any boundary wall/ fence are to be erected. The A.P./ developer shall also ensure that no works, including any site formation works, shall be carried out as may adversely interfere with the free flow condition of the existing drain, channels and watercourses on or in vicinity of the subject site any time during or after works.	Noted. The detailed drainage arrangement of the Proposed Access Road will be provided at detailed design stage subsequent to the approval of the subject planning application.
7.5	The applicant should take all precautionary measures to prevent any disturbance, damage and pollution from the development to any parts of the existing drainage facilities in the vicinity of the lot. In the event of any damage to the existing drainage facilities, the applicant would be held responsible for the cost of all necessary repair works, compensation and any other consequences arising therefrom.	Noted. The Applicant will take all precautionary measures to prevent any disturbance, damage and pollution to any parts of the existing drainage facilities in the vicinity of the lot. The detailed drainage arrangement of the Proposed Access Road will be provided at detailed design stage subsequent to the approval of the subject planning application.
7.6	Temporary stockpile of excavated materials should be at a location where it will not affect any existing drainage system and the A.P./ developer is required to ensure that no construction debris, sit and sediments, or cementitious materials will be discharged or washed into any existing public drains or sewers from the Site.	The Applicant will ensure that no construction debris, sit and sediments, or cementitious materials will be discharged or washed into any existing public drains or sewers from the Site. The detailed drainage arrangement of the Proposed Access Road will be provided at detailed design stage subsequent to the approval of the subject planning application.

<b>8.</b>	<b>Comments of Chief Engineer / Construction, Water Supplies Department</b>	
8.1	No objection to the application. Water supply is available for the site.	Noted.
8.2	Existing water mains are in close proximity to the proposed lot and is likely to be affected. The applicant is required to either divert or protect the water mains found on site.	Noted.
8.3	If diversion is required, existing Water mains inside the proposed lot are needed to be diverted outside the site boundary of the proposed development to lie in Government land. A strip of land of minimum 1.5 metres in width should be provided for diversion of existing water mains. The cost of diversion of existing water mains upon request will have to be borne by the applicant; and the applicant shall submit all relevant proposals to WSD for consideration and agreement before the works commence.	Noted.
8.4	<p>If diversion is not required, the following conditions shall apply:</p> <ul style="list-style-type: none"> <li>(i) existing water mains are affected and no development which requires resiting of water mains will be allowed;</li> <li>(ii) details of site formation works shall be submitted to the Director of Water Supplies (DWS) for approval prior to commencement of works;</li> <li>(iii) no structures shall be built or materials stored within 1.5m from the centre line(s) of water main(s). Free access shall be made available at all times for staff of DSW or their contractor to carry out construction, inspection, operation. maintenance and repair works;</li> </ul>	Noted.



	<p>(iv) no trees or shrubs with penetrating roots may be planted in the vicinity of the water main(s). No change of existing site condition may be undertaken within the aforesaid area without the prior agreement of DWS. Rigid root barriers may be required if the clear distance between the proposed tree and the pipe is 2.5m or less, and the barrier must extend below the invert level of the pipe;</p> <p>(v) no planting or obstruction of any kind except turfing shall be permitted within the space of 1.5m around the cover of any valve or within a distance of 1m from any hydrant outlet; and</p> <p>(vi) tree planting may be prohibited in the event that the Director of Water Supplies considers that there is any likelihood of damage being caused to water mains.</p>	
<b>9.</b>	<b>Comments of Chief Town Planner / Urban Design &amp; Landscape (Landscape), Planning Department</b>	
9.1	According to aerial photo of 2020, the site is situated in an area of rural coastal plains landscape character surrounded by densely vegetated woodland in the subject "GB" zone. Based on our site record taken in June 2021, the site is an existing woodland densely occupied by existing trees. Despite most existing trees within the site are of common species, some sensitive landscape resources; i.e. trees/vegetation of rare/protected species, are observed within the site.	Noted.
9.2	With reference to Section 5 of the planning statement; all existing trees (i.e. approx. 299 nos.) and vegetation within the site are proposed to be removed due to the development except two trees of rare/protected species (i.e. <i>Ailanthus fordii</i> and <i>Aquilaria sinensis</i> ) and some undersized rare/protected species (i.e. <i>Aquilaria sinensis</i> and <i>Pavetta hongkongensis</i> ) are proposed to be transplanted. Significant impact on existing landscape resources and landscape character arising from the proposed to be transplanted. Significant impact on existing landscape resources and landscape character arising from the proposed development is anticipated.	Noted. As mentioned in the Landscape Design and Tree Preservation Proposal, due to genuine need for the Access Road, all options to reduce potential landscape impact have been explored. Under the current proposal, compensatory planting is proposed to restore the landscape character of the site as far as possible to minimise impact on existing landscape resources and landscape character. Selection of species to be used in the compensatory planting has been meticulously selected to opt for those that are already present in the existing landscape within and surrounding the site.

9.3	<p>Although the above-mentioned rare/protected trees and vegetation are proposed to be transplanted to a “Transplantation Zone” (TZ) with reference to Annex D – Tree Assessment Schedule, the two trees proposed to be transplanted are both rated “low” in terms of suitability for transplanting. Moreover, according to Annex F - Indicative Landscape Plan, the TZ is located on slope feature No. SNW-C/F20 as shown in Fig. 1.1; based on the information provided, the proposed tree transplantation is considered inappropriate as a long-term sustainable mitigation measure.</p>	<p>Due to their protection status, Tree T0005 and T0010 are proposed to be “Transplanted” despite their low suitability for transplantation.</p> <p>The trees are currently growing on sloped ground, and are proposed to be transplanted to the TZ which shares similar physical characteristics (i.e. gradient) to the trees’ existing locations.</p> <p>Like other tree transplanting, suitable temporary tree support will be provided until the trees’ root system regrows and are adapted to the receptor site’s environment. Extra caution and safe handling will be exercised during the transplantation process to maximise the chance of successful transplantation of these trees.</p> <p>Should any of these trees die despite the Applicant’s intensive transplantation effort and care, sufficient compensatory trees will be provided.</p>
9.4	<p>Furthermore, it is noted in para. 6.2 of the planning statement (Appendix A) that, no less than 299 nos. of new tree plantings in heavy standard size have been proposed to mitigate landscape impact of removing approx. 299 existing trees; however, according to Annex F - no information on the gradient of the “woodland planting area”, feasibility of the proposed new tree plantings could not be ascertained. In view of the above, we have reservation on the application from the landscape planning perspective.</p> <p><u>Advisory Comments:</u></p>	<p>Please note that whip-sized trees will be used for the compensatory planting as stated in the updated Table 6.1 and Annex F of the revised Landscape Design and Tree Preservation Proposal in <b>Attachment 3</b> of the current submission.</p> <p>Please note that based on the preliminary site formation sections provided in Annex B of the Landscape Design and Tree Preservation Proposal, the gradients of the “woodland planting area” would not exceed 15° on the reformed “8NW-C/FR48” slope and 35° on other parts.</p>
9.5	<p>According to para.6.2 of the planning statement (Appendix A), new tree plantings in heavy standard size have been proposed, which do not tally with the information provided in Table 6.1 and Annex F of the same submission (i.e. whip trees are proposed instead of heavy standard size trees).</p>	<p>Whip-sized trees will be used for compensatory planting as stated in updated Table 6.1 and Annex F of the revised Landscape Design and Tree Preservation Proposal in <b>Attachment 3</b> of the current submission.</p>

9.6	The estimated area (m <sup>2</sup> ) of the proposed “woodland planting area” should be indicated on Annex F - Indicative Landscape Plan.	Estimated area of planting area is now added to the Indicative Landscape Plan in Annex F of the revised Landscape Design and Tree Preservation Proposal in <b>Attachment 3</b> of the current submission.
<b>10.</b>	<b>Comments of District Lands Officer / Tai Po, Lands Department</b>	
10.1	The application site comprises mainly Government land, with portions of 5 private lots (Lots no.s 325 s.A, 325 S.B, 325 S.C, 496 & 497, all in D.D. 209) at the eastern end, and a corner of Government land allocation No. GLA-TP195 (allocation to AFCD for the purpose of picnic area) at the southern end of the site. The Government land portion involves 2 registered slopes (8NW-C/FR48 and 8NW-C/C/20) which are maintained by HyD. These private lots are held under Government Lease and demised for agriculture use.	Noted.
10.2	Any excavation works on unleased Government land require prior approval. The applicant shall clarify the future maintenance party of the proposed access road and its associated slope works.	Noted.
10.3	It is noted that the proposed access road is serving the proposed development within the adjoining “G/IC” zone, which is not forming part of this planning application. This office has not received any application about the development within the “G/IC” zone and reserve our comment on that development at this stage.	Noted.
<b>11.</b>	<b>Comments of Director of Environmental Protection, Environmental Protection Department</b>	
11.1	<u>Air Quality</u>	
11.1.1	General – From Figure 2.1, please clarify if there is be any existing or planned ASR at the southeastern/ southern parts of the proposed access road. If affirmative, please supplement and demonstrate the HKPSG’s buffer distance requirement for road will be fulfilled.	Please note that there are no ASR at the southern part of the proposed access road as there are only a greenery area and slope. Meanwhile, ASRs (i.e the residential units of Kei Ling Ha San Wai) have been noted in the southeastern part of the proposed access road, Figure 2.1 of the Environmental Assessment (EA) report has been updated accordingly. Please refer to <b>Attachment 6</b> of the current submission for details.



11.1.2	Figure 2.1 – Please check the Figure title and rectify the typo “noise sensitive receiver”. Please provide legend for clear illustration.	Figure 2.1 of the EA report has been updated accordingly. Please refer to <b>Attachment 6</b> of the current submission for details.
11.1.3	Section 2.3.2 – Please check the typo “The separation of the Proposed Access Road to the nearest ASR is more than ~20m” against Figure 2.1.	Section 2.3.2 of the EA report has been updated accordingly. Please refer to <b>Attachment 6</b> of the current submission for details.
11.1.4	Section 4.4.4 - Apart from dust impact during construction phase, there will be exhaust emissions from the construction plants and machineries. The corresponding potential air quality impacts shall be evaluated. Requirements stipulated in the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation and Air Pollution Control (Fuel Restriction) Regulations (i.e. use of ultra-low sulphur diesel) should be fulfilled to minimize the exhaust emissions from construction plants and machineries. Please supplement.	The evaluation and mitigation measures regarding the exhaust emission have been added in Section 4.4.5 and 4.4.6 of the EA report accordingly. Please refer to <b>Attachment 6</b> of the current submission for details.
11.2	<u>Water Quality</u>	
11.2.1	Water Sensitive Receivers within a 500m assessment area shall be identified and show in a figure. Please also assess whether there are impact to the WSRs.	The WSRs have been identified and can be found in Figure 4 of the EA report. The impacts to the WSRs have been evaluated. Please refer to <b>Attachment 6</b> of the current submission for details.
11.2.2	Please elaborate to assess the water quality impact during operation phase, such as non-point source pollution.	Since the subject planning application only consists of a proposed access road, there will only be normal urban surface runoff as the non-point source runoff. The water quality impact during the operation phase has been provided in Section 5 of the EA report. Please refer to <b>Attachment 6</b> of the current submission for details.
11.2.3	S4.5 - Please elaborate on how the sewage from construction works would be handled.	The handling of silt, fuel oils and wastewater has been included at S4.5.5 to S4.5.8. The handling of chemical waste and different kinds of bentonite rising from the construction work has been included in S4.5.14. Meanwhile, the handling of wastewater from temporary toilet has been added in S4.5.9 and S4.5.14. For details, please refer to the revised EA report in <b>Attachment 6</b> of the current submission.

11.3	<u>Noise</u>	
11.3.1	Given that the TD's endorsement for the adopted traffic flow forecast is not available yet, we reserve further comments on this draft EA report.	Noted. The TD's endorsement letter will be provided once available.
11.3.2	S.3.2.1 – Please make reference to EIAO Guidance Note. 12/2010 for the road traffic noise impact assessment of proposed access road.	The assessment criteria of TNIA of proposed access road has been included in S3.2.1 of the revised EA report in <b>Attachment 6</b> of the current submission.
11.3.3	S.3.3.2 – Please revise the typo "...representative facades (NSRs)" to "...representative noise sensitive receivers (NSRs)".	The typo has been amended. Please refer to S3.3.2 of the revised EA report in <b>Attachment 6</b> of the current submission.
11.3.4	S.3.6.2 – Please elaborate the meaning of the contribution of traffic noise level from the proposed access road to the NSR-01 is not larger than 1dB(A) with reference to EIAO Guidance Note. 12/2010.	S3.6.2 of the revised EA report in <b>Attachment 6</b> of the current submission has been elaborated with reference to the EIAO Guidance Note 12/2010.
11.3.5	S.4.3.5 – Please check and revise the typo "Table C3" to read as "Table 4.1". The noise criteria for day time construction activities should refer to PN 2/93 instead of "Recommended Pollution Control Clauses for Construction Contracts".	The typo has been rectified, also content about day time construction activities has been amended to be referring to PN 2/93. Please refer to S4.3.5 of the revised EA report in <b>Attachment 6</b> of the current submission for details.
11.3.6	S.4.3.7 – The consultant shall consider any quieter construction methods for proposed access road to minimize potential noise impacts during construction.	The Applicant will adopt construction methods that would minimize potential noise impacts to the surroundings. The details of the construction method will be provided at detailed design stage to the satisfaction of EPD and relevant Government departments subsequent to the approval of the subject planning application.
11.3.7	S.4.3.9 – Please revise the typo "the predication of construction noise level ..." to "the prediction of construction noise level ...".	The typo has been amended. Please refer to S4.3.9 of the revised EA report in <b>Attachment 6</b> of the current submission for details.
11.3.8	Table 4.1 in S.4.3.5 – Please consider to remove the note "the standard for a proposed private school (i.e. educational institutions including kindergartens, nurseries) is assumed under this planning application for technical assessment purpose." Below Table 4.1.	The note under Table 4.1 has been removed. Please refer to the revised EA report in <b>Attachment 6</b> of the current submission for details.

11.3.9	S.3.6.3 & S.5.1.3 – The statements in S.3.6.3 and S.5.1.3 i.e. “The predicted noise levels at all existing representative NSRs due to the proposed access road would comply with the noise limit of 70dB(A)” are inconsistent with the findings of the assessment, i.e. NSP-01 would exceed the noise limit of 70 dB(A). Please revise accordingly.	S.3.6.3 and S.5.1.3 have been updated accordingly. Please refer to the revised EA report in <b>Attachment 6</b> of the current submission for details.
11.3.10	Figures 1.1 to 3.1 – Please provide the scale bar and legend for Figures 1.1 to 3.1.	Both the legend and scale bar have been included in the concerned figures in the revised EA report in <b>Attachment 6</b> of the current submission.
11.3.11	Figure 3.1 – Please revise the drawing title of Figure 3.1 to read as “Location of Representative Existing Noise Sensitive Receivers for Road Traffic Noise Impact Assessment”.	The title has been amended. Please refer to Figure 3.1 of the revised EA report in <b>Attachment 6</b> of the current submission for details.
11.3.12	Figure 3.2 – The floor numbers and mPD levels of buildings are not shown in Fig. 3.2. Please check and revise.	Figure 3.2 of the revised EA report in <b>Attachment 6</b> of the current submission has been updated accordingly.
11.3.13	Appendix 2 – Please revise the typo of “2046 Traffic Forecase” for the title of Appendix 2. Besides, please indicate whether the traffic flow is am or pm and clarify the worst case scenario.	The title has been amended and the worst case scenario has been clarified. Please refer to Appendix 2 of the revised EA report in <b>Attachment 6</b> of the current submission for details.
11.3.14	Appendix 3 – Please indicate that the mPDs as shown in Tables of Appendix 3 are 1.2m above the floor slabs. Besides, please show the noise contribution from the project road for all representative NSRs within 300m assessment area. In addition, please include the missing label “Table 3” for the table namely “Comparison of the TNIA result with and without the proposed access road at NSR-01” and clarify the assessment year for existing condition and future condition.	The mPD has been indicate as 1.2m above the floor slabs. The noise contribution from the project road for all representative NSRs has been shown at Table 3 of Appendix 3. The missing label has been included. The assessment year has been included in Table 4. Please refer to Appendix 3 of the revised EA report in <b>Attachment 6</b> of the current submission for details.
	<u>Traffic Noise Model</u>	
11.3.15	Please include all buildings, roads and other features within 300m radius from the boundary of proposed project in the noise model.	Please note that all buildings, roads and other features within 300m radius from the boundary of proposed project have been included in the noise model.



11.3.16	The road segments ID 1 and 12 are not connected. Please check and revise.	The concerned road segments have been updated in the noise model.
12.	<b>Comments of Chief Building Surveyor/New Territories West, Buildings Department</b>	
12.1	Noting that the proposed works involve construction of an access road, formal submission under the BO is required for any proposed new works, including site formation works like filling and excavation of land. Detailed comments under BO will be provided at the building plan submission stage.	Noted. The required submission(s) under the BO for the proposed road works will be provided at the building plan submission stage subsequent to the approval of the subject planning application.
13.	<b>Comments of Commissioner of Transport, Transport Department</b>	
13.1	We noticed in Table 2.1 of the planning statement that only 6.6% of the total Application Site area is owned by the applicant and 93.4% of the total Application site area is government land. The extent of the proposed access road to the land owned by the applicant is considered excessive;	Please be noted that the Application Site mainly includes the Proposed Access Road to serve the adjacent "G/IC" zone which is currently unserved by any form of proper and up-to-standard road access. Hence the Proposed Access Road is considered necessary to materialize the "G/IC" zone which is currently underutilized. Subsequent to the approval of the subject planning application, the Applicant will liaise with Lands Department regarding the relevant land matters at land exchange application stage subsequent to the approval of the subject planning application.

13.2	<p>It is suggested in both the planning statement and TIA that the proposed access road is to support the GIC development. We considered the proposed access road should form part and parcel of the GIC development and thus application site under the planning application should include the proposed development in the GIC site.</p>	<p>The concern from TD is well-noted. Indeed, the current arrangement of Application Site boundary is in full compliance with relevant statutory planning requirements. There are also various prevailing control mechanism for the proposed access road and development in the adjoining GIC development:-</p> <p><b>The Application Site boundary is in full compliance with the statutory planning framework</b></p> <p>Kindly note that under the extant statutory planning framework, the development of the permitted school (including the ancillary access road within the “G/IC” zone) and/or other permitted Column 1 uses at the adjacent “G/IC” zone do not require planning permission from TPB. Hence, inclusion of the development in “G/IC” zone is not required as per the ambit of TPB and in fact, no planning application for Column 1 uses in full compliance with the OZP development restrictions could be processed or considered by TPB. Only the portion of Proposed Access Road falling within “GB” zone requires planning permission from TPB. Hence, the Application Site of the subject planning application shall only include the area within “GB”, whereas the said permitted uses in the “G/IC” zone shall not form part of the Application Site.</p> <p><b>Similar approved planning applications for proposed access road with Application Site confined to “GB” zone only</b></p> <p>There were quite a number of previously approved Section 16 planning applications for similar proposed access road in other “GB” zones in Hong Kong with planning permissions granted by TPB. <b>Table A</b> provides a list of the relevant Section 16 planning applications for proposed access road in “GB” zones to facilitate the always permitted developments outside the “GB” zones in recent years which proves that inclusion of the permitted development as part of the Application Site is not required for the proposed ancillary access road in “GB” zone.</p>
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**Table A: Previously Approved S.16 Planning Applications for Proposed Access Road in “GB” Zones to Facilitate Permitted Developments outside the “GB” zones in Recent Years**

Application No.	Applied Uses	Zoning Involved	Remarks
A/H14/61 (approved on 24.7.2009)	Proposed Access Road with Guardhouse and Gate for Permitted House Development	“GB”	Permitted Residential Development in “R(C)3” zone was not included as the Application Site
A/H14/66 (approved on 18.3.2011)	Proposed Access Road for Residential Development	“GB” & Area Shown as ‘Road’	Permitted Residential Development in “R(C)1” zone was not included as the Application Site
A/SK-HC/223 (approved on 8.2.2013)	Proposed House (Ancillary Road)	“GB”	Permitted Residential Development in “R(C)1” zone was not included as the Application Site
A/TWW/114 (approved on 16.11.2018)	Proposed Access Road for Residential Development	“GB” & “Road”	Permitted Residential Development in “R(C)” zone was not included as the Application Site

**Well-established mechanisms to provide adequate scrutiny on the permitted development in the adjacent “G/IC” zone**

Although the inclusion of “G/IC” zone with permitted school development therein the Application Site is not required, there are well established mechanisms to provide adequate scrutiny on the permitted development in the adjacent “G/IC” zone and to ensure the



<p>14.</p> <p>14.1</p>	<p><b>The following departments have no objection to/ comment on the application:</b></p> <ul style="list-style-type: none"> <li>• Project Manager (North), Civil Engineering and Development Department</li> <li>• District Officer/Tai Po, Home Affairs Department</li> <li>• Commissioner of Police, Hong Kong Police Force</li> </ul>	<p>permitted GIC development would induce no adverse traffic impacts.</p> <p>In addition, subsequent to the approval of the subject planning application, the Applicant would proceed to land exchange application to the Lands Department (LandsD) and GBP submission to the Buildings Department (BD). The submissions will incorporate the whole development i.e. the Proposed Access Road in “GB” zone and the permitted GIC uses in the adjacent “G/IC” zone for LandsD/BD for vetting. The Applicant would be required to address comments from Government departments on the whole development including but not limited to any requirements imposed by TD at the subsequent stage during land exchange application. Thus, TD could effectively scrutinise and ensure that the design and implementation of the whole development together with the proposed access road would induce no adverse traffic impacts and would not deviate from the wider transport planning of the area subsequent to the approval of the subject planning application.</p> <p>Noted.</p>
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**Appendix 1 – Responses-to-Comments Table**

**Section 16 Planning Application for Proposed Access Road with Filling and Excavation of Land in “Green Belt” Zone for Permitted uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories (Application No.: A/NE-SSH/139)**

	Departmental Comments	Responses to Comments
<b>1.</b>	<b>Comments from Chief Highway Engineer/New Territories East, Highways Department received on 18.10.2021</b>	
1.1	As specific treatment proposal on the affected trees and detailed compensatory planting plan are not provided in the submission, we are unable to ascertain the impact on the trees at this stage. The applicant should review and submit the tree assessment and TRRP at design stage for our comments.	Noted.
1.2	For the affected trees outside HyD's slopes, please seek comments from other tree maintenance department(s).	Noted.
<b>2.</b>	<b>Comments from Chief Town Planner/Urban Design &amp; Landscape (Landscape) received on 18.10.2021</b>	
2.1	The applicant has clarified in the RtoC that, the proposed new tree plantings to mitigate loss of approx. 299 existing trees are whip trees instead of heavy standard size trees. Removal of approx. 299 existing trees (except trees of rare/protected species proposed to be transplanted) and vegetation within the site arising from the proposed development remain unchanged. Significant impact on existing landscape resources and landscape character is still anticipated. In view of the above, we maintain <b>having reservation</b> to the application from the landscape planning perspective.	<p>As explained in the Planning Statement submitted on 30 April 2021, there is a genuine need for the proposed access road to serve the existing G/IC zone, which will otherwise be inaccessible. Various alignment options had been explored and the current alignment is the shortest. Furthermore, the site area of the Application Site had been reduced to the absolute minimum such that only area necessarily for the construction works to be carried out is included, and thus resulting in the fewest number of affected trees.</p> <p>To better explain how the area of construction works has been minimized, a set of drawings illustrating the preliminary site formation plan and construction sequences (the enclosed Proposed Work and Construction Sequence in <b>Attachment 2</b> refers) has been prepared. A Workspace Demarcation Plan (Annex G) is also included in the Landscape Design and Tree Preservation Proposal for reference (<b>Attachment 3</b> refers).</p>

	Departmental Comments	Responses to Comments
2.2	<p>It is noted in the preliminary site formation plans that, some portions within the site are not subject to any excavation/land filling works. The applicant should consider if preservation of existing trees not affected by site formation works is feasible to further minimize landscape impact arising from the development.</p>	<p>In view of the inevitable landscape impact, mitigation measures in the form of compensatory planting are proposed, including the incorporation of a mix of native tree species which resemble the existing floristic structure in surrounding landscape, as well as species that are of higher ecological value such as secondary woodland species and species which offer ecological functions and services for existing fauna assemblages.</p> <p>Light-standard size planting will be used in the compensatory planting. S6.2, S8.3, Table 6.1 and Annex F of the Landscape Design and Tree Preservation Proposal are revised to reflect as such (<b>Attachment 3</b> refers). Larger planting size (i.e. Heavy standard) is not recommended given that most formed slope would have a gradient exceeding 15°.</p> <p>Moreover, as mentioned in S7.1 of the Landscape Design and Tree Preservation Proposal, to further maximise floristic and structural complexity of the site, planting of shrubs and groundcovers in the understory, planting of shade-tolerant plants, and planting of climbers in areas with steep slope gradient will also be incorporated (<b>Attachment 3</b> refers).</p> <p>With these recommended mitigation measures in place, no unacceptable residual impact in landscape planning perspective is anticipated.</p> <p>A set of drawings illustrating the preliminary site formation plan and construction sequences (the enclosed Proposed Work and Construction Sequence in <b>Attachment 2</b> refers), and the conflict between the required workspace and existing trees (Annex G of <b>Attachment 3</b> refers) are provided to show the genuine need of working space.</p>



	Departmental Comments	Responses to Comments
<b>3.</b>	<b>Comments from Director of Agriculture, Fisheries and Conservation received on 18.10.2021</b>	
	We have no major comment on the FI submission, including the replacement pages. Below please note our minor comments on the FI.	Noted.
3.1	Table 3 of Attachment 4: Please review if the habitats within the Assessment Area sum up to 105.08ha instead.	Noted and the total area within the Assessment Area shall be 105.08ha. Table 3 in <b>Attachment 4</b> has been updated.
3.2	S7.5.2 of Attachment 4: With reference to S6.2 of Attachment 2 of the replacement pages of the FI submission, please update that the directly impacted areas of <i>Ailanthus fordii</i> and <i>Auilaria sinensis</i> are proposed to be transplanted.	S7.5.2 has been revised as “The potential impact to <i>Ailanthus fordii</i> , <i>Aquilaria sinensis</i> and <i>Pavetta hongkongensis</i> , i.e., species which are protected by Hong Kong laws, is ranked as Moderate. The directly impacted individuals of these three species are recommended to be transplanted as far as practicable. Due to the protection status, tree T0005 ( <i>A. fordii</i> ) and T0010 ( <i>A. sinensis</i> ) are proposed to be transplanted despite their low suitability for transplantation.” S8.5.1 and S11.1.1 have also been revised accordingly (revised pages of the Ecological Impact Assessment report in <b>Attachment 4</b> refers).
<b>4.</b>	<b>Comments from Head of Geotechnical Engineering Office, Civil Engineering and Development Department received on 18.10.2021</b>	
	This Office has the following geotechnical comments on the submitted further information providing a revised Geotechnical Planning Review Report (GPRR).	
4.1	It is stated in this revision of GPRR that the development involves Group 3 & 4 facilities. The applicant is reminded that no Natural Terrain Hazard Study (NTHS) would be required for Group 4 facilities. Please ask the applicant to review the grouping of facilities.	The Group of facilities within the Application Site’s boundary is presented in Figure 6 of the GPRR report. The proposed access road and part of the widened road will be Group 3 – road with moderate traffic density. For other woodland area, they will be classified as Group 4 ( <b>Attachment 5</b> refers).

	Departmental Comments	Responses to Comments
4.2	Should the applicant find that the development involves Group 3 facilities after review of grouping of facilities, the applicant is required to conduct a NTHS. However, it is noted that the hillsides to the south of the Preliminary NTHS study area shown in Figure 5 of the GPRR appear to meet the "Alert Criteria" with reference to GEO Report No.138 (2 <sup>nd</sup> edition). Please ask the applicant to review the extent of the Preliminary NTHS study area to include all overlooking hillsides meeting the "Alert Criteria".	According to Figure 6 of the GPRR report, since the hillside catchment in the southern portion of the application site belongs to Group 4 facilities, no Natural Terrain Hazard Study would be required ( <b>Attachment 5</b> refers).
<b>5.</b>	<b>Comments from Director of Environmental Protection received on 26.10.2021</b>	
5.1	<u>General</u> Please confirm if TD's endorsement on the adopted methodology of traffic flow forecast for traffic noise assessment has been obtained.	TD's endorsement on the adopted methodology of traffic flow forecast for traffic noise assessment will be provided once available.
5.2	<u>Traffic Noise Model</u> It is noted from the traffic noise model and Appendix 3 that the road levels of Sai Sha Road concerned in this assessment are all above the assessment levels among the identified NSRs (i.e. 24.8mPD). To better reflect this in the noise model, please add barriers with height equivalent to the road segments along the edge of the southbound of the Sai Sha Road (Link A) to minimize overestimation of noise levels due to the model constraints. Please review the noise level at NA-01 and consider revising S.3.3.4 and S.3.6 if no exceedance against the stipulated noise criterion is predicted after model revision.	Barriers have been added along the edge of Sai Sha Road which is close to the NSRs in the model. Therefore, there is no more noise exceedance at all NSRs. Contents about noise exceedance in S.3.6 has been removed. Also, Table 2-4 from Appendix 3 has also been removed. Besides, the model "base_withOUT proposed road.mas" has been excluded since there is no noise exceedance anymore. Comparison about the exceeding NSR is also not necessary. Relevant pages in the EA report have been updated ( <b>Attachment 6</b> refers).
5.3	<u>Traffic Data for Without Project Scenario</u> Appendix 3 - It is noted that traffic data of 2020 was adopted to predict noise level without proposed access road whilst traffic data of 2041 was adopted to predict that with proposed access road. Traffic data of same year (i.e. 2041) shall be used to compare the difference in noise levels with and without project, if such a comparison is necessary.	As the comparison is no longer necessary for the current "no noise exceedance" situation, Table 4 has been removed from the EA report ( <b>Attachment 6</b> refers). To clarify, there was a typo previously, of which the "existing condition – Year 2020" should be read "Year 2041" instead. Please note that the traffic flow data for both "with" and "without" proposed road scenario has used the same year (i.e. Year 2041) in the previous model calculation ( <b>Attachment 6</b> refers).

	Departmental Comments	Responses to Comments
5.4	<p><u>Other Comments</u></p> <p>S.3.3.4 &amp; S.2.3.1 - It is noted that the section of Sai Sha Road to which the proposed access road would be connected to is a Rural Road. Please confirm the road type of the proposed access road, and review and revise the statement on the potential EIAO implication given in S.3.3.4 accordingly. Please seek TD's advice on the road type as appropriate.</p>	TD's advice on the road type of Proposed Access Road will be provided once available.
5.5	S.3.6.1 & S.3.6.2 - Please revise the typo "NSR-01" to "NA-01".	Text about this NSR has been removed ( <b>Attachment 6</b> refers).
5.6	S.4.2.2 - Please review if the 1st sentence shall be revised as "...and the major <del>exaction</del> <u>construction</u> work would therefore involve the site formation...".	Text has been amended ( <b>Attachment 6</b> refers).
5.7	RtC item 11.3.6 & S.4.3.7 - It is noted from the response to RtC item 11.3.6 that <u>quieter construction methods</u> would be adopted for the proposed access road to minimize potential noise impacts during construction. Please supplement in S.4.3.7.	Contents about quieter construction methods have been included in the section ( <b>Attachment 6</b> refers).
5.8	S.3.3.3 & Appendix 2 - Please indicate whether the worst case peak traffic flow is am or pm.	The worst case peak traffic flow refers to AM peak traffic flow.
<b>6.</b>	<b>The following departments have no objection to/comment on the FI:</b>	
6.1	<ul style="list-style-type: none"> <li>• Chief Engineer/Construction, Water Supplies Department</li> <li>• Chief Town Planner/Urban Design &amp; Landscape (Urban Design and Visual Perspective)</li> <li>• Director Fire Services</li> <li>• District Lands Officer/Tai Po, Lands Department</li> </ul>	Noted.



**Appendix 1 – Responses-to-Comments Table**

**Section 16 Planning Application for Proposed Access Road with Filling and Excavation of Land in “Green Belt” Zone for Permitted uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories**

**(Application No.: A/NE-SSH/139)**

	<b>Departmental Comments</b>	<b>Responses to Comments</b>
<b>1.</b>	<b>Comments from Principal Project Coordinator/Special Duty Division, Drainage Services Department received on 18.10.2021</b>	
1.1	Please be advised that the planned village sewerage system under the project “Tolo Harbour Sewerage of Unsewered Areas Stage 2” is in vicinity of the proposed access road. The project is currently in design stage and the programme for commencement of construction works is still under review. The applicant should coordinate with this office for interface issues.	Noted. The Applicant will actively coordinate and liaise with DSD and other relevant government departments for interface issues regarding the project “Tolo Harbour Sewerage of Unsewered Areas Stage 2” later at detailed design stage subsequent to the approval of the subject planning application.
<b>2.</b>	<b>Comments from Chief Engineer/Mainland North, Drainage Services Department received on 5.1.2022</b>	
2.1	I have no objection to above application from the proposed application from public drainage and sewerage view of point.  Please be reminded on the following matters: The GIC land connected by the proposed access road may have interfaces with the proposed public sewerage system to be implemented under the project “Tolo Harbour Sewerage of Unsewered Areas Stage 2” in vicinity of the proposed access road undertaken by Special Duty Division, DSD. PCC/SDD, DSD should be consulted for possible interfacing issue in due course;	Noted. The Applicant will actively coordinate and liaise with DSD and other relevant government departments for interface issues regarding the project “Tolo Harbour Sewerage of Unsewered Areas Stage 2” later at detailed design stage subsequent to the approval of the subject planning application.
2.2	The Planning Application only covers the proposed access road and, does not cover the proposed school. Since there is no existing sewerage and there is a DSD planned sewerage project in the vicinity, PPC/SDD, DSD and EPD should be consulted on possible scheme to collect and dispose the sewage generated from the school and resolve the interfacing issue with the project mentioned in item (a);	Noted. The Applicant will actively coordinate and liaise with DSD, EPD and other relevant government departments for possible scheme to collect and dispose the sewage generated from the school and to resolve the interfacing issues regarding the project “Tolo Harbour Sewerage of Unsewered Areas Stage 2” later at detailed design stage subsequent to the approval of the subject planning application.

	Departmental Comments	Responses to Comments
2.3	The concerned section of Sai Sha Road had repeated flooding record due to sufficient drainage and sagging in topography. The proposed access road on the Planning Application will lead the flooded water entering the proposed site for the school and the existing village areas. Sufficient drainage on the access road should be provided to intercept the surface runoff; and	Sufficient drainage on the access road will be provided to intercept the surface runoff, in order to prevent flooded water entering the proposed site for School and the existing village areas. The detailed drainage system on the access road will be provided at detailed design stage.
2.4	The formulation level of the site for the School should be sufficient high to avoid flooding due to high tide in Tolo Harbour.	Site formation level for the School will take into account possible flooding due to high tide in Tolo Harbour at detailed design stage subsequent to the approval of the subject planning application.
3.	<b>Comments from Senior Engineer, Transport Department received on 22.10.2021</b>	
3.1	As mentioned previously, only 6.6% of the total Application Site area is owned by the applicant and 93.4% of the total Application site area is government land. The application site does not have any proposed development that would necessitate a vehicular access and the extent of the proposed access road to the land owned by the applicant is considered excessive.	<p>As explained in our previous Further Information submitted on 29 December 2021, we would like to reiterate that the proposed access road within the “GB” zone (i.e. Application Site) is to serve the permitted ‘School’ use in the adjacent “G/IC” zone (i.e. Development Site).</p> <p>Under the statutory planning framework, the <b>development of the permitted ‘School’ use and/or other permitted Column 1 uses at the adjacent “G/IC” zone <u>do not require</u> planning permission from the TPB. Hence, inclusion of the Development Site that falls within the “G/IC” zone as part of the Application Site is not required.</b> Only the portion of Proposed Access Road falling within the “GB” zone requires planning permission from the TPB, i.e. the subject matter. Hence, the Application Site of the subject planning application was so demarcated to cover the area falling within the “GB” zone. Such approach of demarcating areas that require planning permission from the TPB as the Application Site, while demarcating areas that do not require planning permission from the TPB as the Development Site, has all along been an acceptable approach by the TPB. There were similar precedent applications in the past.</p> <p>Nonetheless, to present the whole proposal covering both the</p>

	Departmental Comments	Responses to Comments
		<p>Application Site and Development Site, indicative plans and development parameters of the permitted 'School' use in the Development Site have already been submitted under our previous Further Information submitted on 29 December 2021. A landholding schedule covering both the Application Site and Development Site has also been included in our previous Further Information submitted on 29 December 2021. In gist, while the Application Site mainly involves government land which is inevitable due to the "GB" zone sandwiched between the "G/IC" site and the nearest Sai Sha Road, the Development Site for the permitted 'School' use mainly consists of private lots either under the Applicant's ownership or to be acquired by the Applicant.</p>
3.2	<p>We noted that the planning statement has not stated the development parameters of the proposed G/IC development which the road was designed to support. It was also noted that the TIA submitted for supporting the subject application had assumed the site would be developed into a School with boarding house with mandatory school bus policy. The applicant should include the assumed development in the planning statement and confirm that the proposed access road would form part and parcel of the development.</p>	<p>Development parameters of the proposed 'School' use and the ancillary facilities in the "G/IC" zone have been included in Table 5.1 of <b>Attachment 1 in the previous Further Information submitted on 29.12.2021.</b></p> <p>The Proposed Access Road would form part of the 'School' development. Please refer to Figure 3.1 of <b>Attachment 1 in the previous Further Information submitted on 29.12.2021.</b></p>
3.3	<p>We noted that the applicant suggested various traffic control measures, such as mandatory school bus policy for the proposed GIC development in the TIA report which forms an important assumption for the assessment.</p>	<p>Noted.</p>
3.4	<p>The traffic impact of the potential GIC development forms the fundamental requirement on the design of the road and the scale of the proposed works. In the absence of development parameters of the destinations where the proposed access road leads to, TD is unable to provide advice on the appropriateness of the scale of the proposed access road as well as the traffic impact to be induced by the proposed access road. Actually, the 6.6% of the private land does not generate need for the proposed roadworks.</p>	<p>Details of the proposed 'School' use in the "G/IC" zone have been included in Table 5.1 of <b>Attachment 1 in the previous Further Information submitted on 29.12.2021.</b></p> <p>The need for the proposed roadworks is well justified in Section 3.1 above and <b>Attachment 1 in the previous Further Information submitted on 29.12.2021.</b></p>



	Departmental Comments	Responses to Comments
3.5	In summary and from traffic angle, we consider that the proposed roadworks is not necessary for the development (actually there is no development) on the 6.6% land. In this regard, we do not support the application from traffic angle.	<p>Details of the proposed 'School' use in the "G/IC" zone have been included in Table 5.1 of <b>Attachment 1 in the previous Further Information submitted on 29.12.2021</b>.</p> <p>The need for the proposed roadworks is justified in Section 3.1 above and <b>Attachment 1 in the previous Further Information submitted on 29.12.2021</b>.</p>
4.	<b>Further Comments from Senior Engineer, Transport Department received on 1.12.2021</b>	
4.1	<p>We had reviewed the TIA with the following preliminary comments. Please review and revise the TIA taking into consideration of our comments and arrange the presentation session afterwards to enable a more fruitful discussion.</p> <p><u>General</u></p> <p>Implementation programme of the proposed access road inside and outside the GB and the GIC development to be served by the proposed access road should be provided to justify the proposed completion year of 2026 and design year of 2029, i.e. 3 years after the anticipated completion) adopted in the TIA;</p>	<p>The tentative implementation programme of the Proposed Access Road (subject to further update) is as below:</p> <ul style="list-style-type: none"> <li>• Planning permission obtained for the access road (a pre-requisite for GBP approval of the permitted 'School' use in G/IC zone) – Q1 2022</li> <li>• GBP submission and approval obtained for the permitted 'School' use – Q1-Q3 2022</li> <li>• Land exchange submission and approval for the permitted 'School' use – Q1 2022 – Q1 2023</li> <li>• Completion of construction works (the permitted 'School' use together with its access road) completed – year 2026</li> </ul>
4.2	The implementation, management and maintenance agent of the proposed access road within GB and within the GIC site respectively should be clarified for agreement.	Please note that the proposed access road will be implemented, maintained and managed by the Applicant/ future operator of the project.
4.3	<p><u>Proposed Works</u></p> <p>Please clarify and justify that the indicative development schedule demonstrates the worse scenario from traffic terms.</p>	The Applicant intends to develop a School at the subject "G/IC" Site. The indicative development schedule of the proposed school use

	Departmental Comments	Responses to Comments
		<p>has been included in Table 2.1 of the revised TIA (<b>Attachment 1</b> refers). Mandatory school-bus policy (traffic mitigation measures) is proposed for the permitted school use. Based on the development schedule together with the mandatory school-bus policy, the revised TIA demonstrated the future traffic condition in the design year.</p> <p>In developing a School at the subject “G/IC” Site, submission of this S16 application to obtain planning approval for the proposed access road connecting Sai Sha Road to the “G/IC” zone through the “GB” zone is only the first step in the whole development process for the permitted ‘School’ use in the “G/IC” zone. Imposition of relevant approval conditions such as the submission of a revised Traffic Impact Assessment (TIA) and implementation of traffic mitigation measures identified therein to the satisfaction of Transport Department could be imposed upon approval of this S16 application.</p> <p>Upon approval of this S16 application, the Applicant will have to apply to the Lands Department (LandsD) for the land exchange to implement the permitted ‘School’ use in the “G/IC” zone (Development Site) and the Proposed Access Road in the “GB” zone (Application Site). During land exchange application stage, relevant Government departments would be consulted and special conditions (e.g. Traffic Impact Assessment clause) could be imposed under lease should the relevant departments consider necessary, even though the Development Site is not subject to planning application.</p> <p>In addition, upon approval of this S16 application, the Applicant will need to submit a new set of GBP for the permitted ‘School’ use (in the Development Site) and the Proposed Access Road (in the Application Site) to Buildings Department (BD) for approval. A full set of detailed plans and development parameters in GBP submission will be circulated by BD to relevant Government departments for vetting before approval.</p> <p>With the control mechanism under three different authorities, it is evident that sufficient control is in place to ensure proper</p>

	Departmental Comments	Responses to Comments
		development in the “G/IC” zone. Approvals from authorities will have to be obtained at different development stages before realizing the School development.
4.4	Table 2.1 – ancillary boarding house is suggested under the indicative development schedule, please clarify with PlanD if such is considered as ‘Residential Institution’ under column 2 use requiring planning permission from the Town Planning Board.	Please note that since the boarding house is a part of the proposed school in the adjoining “G/IC” zone, it is considered to be an ancillary use to the school development and hence should be regarded as ‘School’ use in planning terms.
4.5	<p>The Consultant should explain the design requirements of the proposed access road with reference to all relevant guidelines and standards including but not limited to HKPSG &amp; TPDM. Nevertheless, we have the following observation on the proposed road layout in figure 2.1:</p> <ol style="list-style-type: none"> <li>The existing bus stop is found too close to the proposed signalised junction;</li> <li>Queue length assessment should be provided to justify the road geometry and extend of road works within GB;</li> <li>Width standard for footpath near school should be adopted;</li> <li>Road marking at north bound of Sai Sha Road should be reviewed;</li> <li>Measures and assessment to ensure no traffic will be tailed back to Sai Sha Road should be deduced for agreement.</li> </ol>	<p>The design of Proposed Access Road (outside the GIC zone) have followed the TPDM requirements. For the access road within the GIC zone, the requirements as given in Building (Private Street and Access Road) Regulations would be followed.</p> <ol style="list-style-type: none"> <li>The existing bus stop is about 40m away from the stop line of proposed signalised junction Sai Sha Road / Proposed Access Road. As shown in Table 5.9 of the revised TIA (<b>Attachment 1</b> refers), queue length assessment of the revised TIA, the estimated queue length for Sai Sha Road Southbound (SB) left turn traffic is only about 18m and would not affect the existing bus stop.</li> <li>Noted and included in Table 5.2, 5.6, 5.9 of the revised TIA (<b>Attachment 1</b> refers).</li> <li>Mandatory school-bus policy is proposed for the permitted school use. Hence the students using the public footpath along Sai Sha Road and the Proposed Access Road would be minimal. Nevertheless, 2.75m wide footpaths are provided on both sides of the Proposed Access Road.</li> <li>Noted and amended in the revised TIA.</li> <li>Mandatory school-bus policy is proposed for the permitted school use. As shown in Table 5.9 queue length assessment of revised TIA (<b>Attachment 1</b> refers), the estimated queue length for Sai Sha Road SB left turn and Sai Sha Road Northbound (NB) right turn are 18m and 6m respectively. The available queue distance for Sai Sha Road SB left turn traffic and Sai Sha Road NB right turn traffic are about 40m and 20m respectively. Hence the traffic to/from</li> </ol>



	Departmental Comments	Responses to Comments
		the Proposed Access Road would not tail back and block the Sai Sha Road straight ahead traffic.
4.6	<p><u>Existing Traffic Condition</u></p> <p>Refer to the planning statement para. 1.1.2, the subject GIC site to be served by the proposed access road is currently accessible via two local tracks. Traffic data of these two existing local tracks and their junctions with Sai Sha Road should be provided in the assessment. The Consultant should also advise if the proposed access road would form a network with these two existing local tracks to appraise the traffic demand. Details under paras. 3.1.3 and 3.1.5 should be reviewed.</p>	The traffic data of two existing local tracks and their junctions with Sai Sha Road have been included in the revised TIA ( <b>Attachment 1</b> refers). A Public Vehicle Park (PVP) would be considered to be provided within the GIC site for the re-provisioning of affected car parks. Under the current proposal, the Proposed Access Road would serve only the proposed school and the PVP and the Proposed Access Road would not form a network with these two existing local tracks.
4.7	Section 3.2 – Traffic count was carried out in May 2019 which is considered outdated. Updated traffic data shall be provided in the assessment.	Updated traffic count was carried out and included in the revised TIA ( <b>Attachment 1</b> refers).
4.8	Table 3.3 - Please supplement the table with road width and justify the link capacity adopted in the calculation.	Noted and included in the revised TIA ( <b>Attachment 1</b> refers).
4.9	We noticed that part of the adjoining GIC site is currently used as car park. Please advise if the proposed access road would be used by those vehicles and whether the existing car park would be affected by the GIC development. If affirmative, please also advise if the affected parking spaces would be re-provided in the GIC development where PVP is under column 1 use and the corresponding traffic demand on the proposed access road should be included in the assessment.	The concerned existing temporary car park falls within the GIC zone adjacent to the Application Site (Proposed Access Road), which is not the subject matter of the current S16 planning application. The Applicant would consider provision of Public Vehicle Park (PVP) within the GIC site for the re-provisioning of affected car parks. In addition, the Applicant has always been closely communicating with representatives of the neighbouring villages to inform them on the planning and development of the area and to understand their concerns. The Applicant will continue to liaise with the neighbouring villagers regarding the parking arrangements when a proposed development at the adjacent “G/IC” zone is to be implemented in future. In any event, “Public Vehicle Park” is a Column 1 use that is always permitted within the “G/IC” zone and the provision of which should induce no particular implication from planning point of view. The traffic demand generated by the PVP using the Proposed Access Road has been taken into account in the revised TIA.

	Departmental Comments	Responses to Comments
4.10	<p><u>Traffic Forecast</u></p> <p>The base year traffic data and design year should be reviewed together with the latest traffic data and implementation programme of the development in the GIC site;</p>	The updated traffic count was adopted and the implementation programme of the development in the GIC site has been reviewed as given above in Section 4.1.
4.11	The implementation programme and impact of construction traffic at design year due to various planned developments should also be taken into consideration in the assessment;	All the various planned developments were assumed to be completed in the design year. The development traffic generations due to those planned developments would be higher than its construction traffic and all the development traffic generations have been taken into account in the traffic forecasting as conservative approach.
4.12	The consultant should advise and justify the assumed trip split of the proposed development in the TIA;	Traffic count on school coach was carried at roundabout Sai Sha Road / Hang Fai Street to identify the directional split of school coach from Renaissance College & Ma On Shan Methodist Primary School located at Hang Ming Street. It is observed that about 85% of school coach travelling towards Ma On Shan Direction while 15% of school coach travelling towards Sai Kung Direction.
4.13	<p><u>Traffic Impact Assessment</u></p> <p>Refer to para. 5.1.1 &amp; 5.1.2, according to the approved planning application no. A/NE-SSH/120-1, the Sai Sha Road widening works would be completed in year 2023 which is also remarked underneath table 5.1. Please review and clarify.</p>	Noted. According to the latest programme of Sai Sha Road widening, the roadworks would still be completed in year 2023. A remark as added to the Table 5.1 of the revised TIA ( <b>Attachment 1</b> refers)
4.14	The traffic impact assessment results should be reviewed after incorporating our comments above.	Noted.
4.15	The public transport and pedestrian impact assessment should be carried out for consideration.	Mandatory school-bus policy is proposed for the permitted school use. Hence the impact to the existing public transport and pedestrian facilities along Sha Sai Road are minimal.

	Departmental Comments	Responses to Comments
5.	Further Comments from Senior Engineer, Transport Department received on 24.1.2022	
5.1	<p>The subject application site has an area of 4,640m<sup>2</sup>, of which 93.4% is currently GL and the remaining 6.6% are private lots. The small private lots portion of the subject application site has no development on it. Yet, the applicant is proposing large scale and disproportional, in relation to the size of the private lots of the subject application site, roadworks for providing access to a potential development outside the subject application site. On this strange arrangement, TD has the following comment/queries:</p> <p>The proposed roadworks are considered NOT necessary for the existing and possible uses of the private lot of the subject application site. As such, TD does NOT support the proposal.</p>	<p>Please refer to our responses in Section 3.1 above.</p> <p>The proposed roadworks in the Application Site is necessary to provide access to the permitted 'School' use in the Development Site that falls within the "G/IC" zone which is not served by any standard roads at present. Without the proposed roadworks, the only available access to the Development Site is through the existing local village tracks which are narrow and substandard and have limited rooms for widening to meet the current road standards and requirements. The need for the proposed roadworks is well justified in Section 3.1 above and <b>Attachment 1 in the previous Further Information submitted on 29.12.2021.</b></p>
5.2	<p>The school site has no access to Sai Sha Road and is separated by about 62m of Government Land. Will approval of this case open up a flood gate for similar hinterland sites in future?</p>	<p>Under the Approved Shap Sz Heung OZP No. S/NE-SSH/11, along Sai Sha Road which is the major road in the area, there are only a few zones with development intentions, namely the "CDA" zone near Che Ha, a number of "V" zones, as well as the subject "G/IC" zone. While the "CDA" zone near Che Ha has already obtained planning permission from the TPB to implement their development with approved access road connection to Sai Sha Road and the "V" zones are served by existing village accesses to Sai Sha Road, the subject "G/IC" zone is the only developable zone with permitted uses allowed under Column 1 of its Schedule of Uses under the OZP that has no access to Sai Sha Road and yet to be materialised. As such, the subject "G/IC" zone is unique in its planning context and would not set an undesirable precedent to open up a flood gate for similar</p>



	Departmental Comments	Responses to Comments
		hinterland sites in future.
<b>6.</b>	<b>Comments from Chief Town Planner/Urban Design and Landscape (Landscape), Planning Department received on 11.1.2022</b>	
6.1	<p>It is noted in this FI that, size of the proposed 299 new trees has been updated from “whips” in the previous FI (Sept 2021) to “light-standard” under this FI. Despite the above, removal of approx. 299 existing trees (except two trees of rare/protected species proposed to be transplanted) and vegetation within the site arising from the proposed development remain unchanged. Significant impact on existing landscape resources and landscape character within the site in the subject “GB” zone is anticipated. In view of the above, we maintain our view of having reservation to the application form landscape planning perspective.</p>	<p>The proposed access road within “GB” in the current application is to serve the permitted school within “G/IC” zone, which are flanked by “CPA” and “V” zones. The proposed access road is a necessity for the proposed school.</p> <p>As in Para. 6.7, among all existing trees:</p> <ul style="list-style-type: none"> <li>• Only 0.7% are of Category 1 which is rare/ protected species and 19.3% are of Category 2 species which is secondary woodland species (totalling 20%)</li> <li>• About 16.6% are of Category 5 species which is exotic, plantation species</li> </ul> <p>With the proposed transplanting and re-planting as mitigation, the species composition will be significantly upgraded:</p> <ul style="list-style-type: none"> <li>• 5% will be of Category 1 species, 37% will be of Category 2 species (totalling 42%, more than 2 times enhancements compared to the existing situation)</li> <li>• 0% will be of Category 5 species and all 100% trees will be of native, woodland species</li> </ul> <p>With the due and careful consideration of species, the residual impact after mitigation should be slight (or even somewhat positive).</p>

	Departmental Comments	Responses to Comments
7.	Comments from Head of Geotechnical Engineering office, Civil Engineering and Development Department received on 11.1.2022	
7.1	Please ask the applicant to review the preliminary Natural Terrain Hazard Study (NTHS) boundary. The NTHS boundary should be delineated along spur line to encompass the natural terrain immediately adjacent to slope feature No. 8NW-C/C21.	Please find the revised NTHS boundary in the updated Figure 5 and 6 in the revised GPRR ( <b>Attachment 2</b> refers).
8.	Comments from the Director of Environmental Protection (DEP) received on 17.1.2022	
8.1	Please be advised that the applicant is required to address our comments given below before we could form a view on the application:  We have yet to receive TD's endorsement on the adopted methodology of traffic flow forecast for traffic noise assessment and advice on road type of the proposed access road as requested in our previous comments; and	The revised TIA is under active liaison with TD. TD's endorsement on the adopted methodology and advice on road type will be provided once available.
8.2	Regarding item 5.8 of the RtoC, the consultant should indicate in Section 3.3.3 and Appendix 2 of the revised EA report that AM peak traffic flow was adopted in the assessment.	Section 3.3.3 and Appendix 2 of the revised EA report are updated accordingly ( <b>Attachment 3</b> refers).
9.	The following departments have no objection to/comment on the FI:	
9.1	<ul style="list-style-type: none"> <li>Chief Highway Engineer/New Territories East, Highways Department</li> <li>Director of Agriculture, Fisheries and Conservation</li> <li>District Lands Officer/Tai Po, Lands Department</li> </ul>	Noted.

**Attachment 2 – Responses-to-Comments Table**

**Section 16 Planning Application for Proposed Access Road with Filling and Excavation of Land in “Green Belt” Zone for Permitted uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories**

**(Application No.: A/NE-SSH/139)**

	Departmental Comments	Responses to Comments
1.	Comments from Director of Environmental Protection received on 15.2.2022	
	Based on the information provided, we note that:	
1.1	The access road is proposed to be a single 2-lane carriageway with footpaths on both sides and is intended to serve the permitted school and/or other permitted G/IC use in the adjoining “G/IC” zone;	Noted.
1.2	The proposed access road is considered a local road and since the distance from the kerb side of the proposed access road to the nearby air sensitive receiver is more than 20m, the relevant HKPSG buffer distance requirement for local road (i.e. 5m) could be fulfilled.	Noted.
1.3	Based on the traffic noise assessment results, no exceedance is anticipated at all the existing noise sensitive receivers due to the proposed access road;	Noted.
1.4	Good side practices and measures recommended in the “Recommended Pollution Control Clauses” will be implemented during the construction phase to minimise the potential environmental impacts; and	Noted.
1.5	TD’s advice on the road type of the proposed access roads and their endorsement on the traffic forecast data is pending.	The revised TIA is under active liaison with TD. TD’s endorsement on the adopted methodology and advice on road type will be provided once available.



	Departmental Comments	Responses to Comments
1.6	Given the above, please be advised that we have <u>no in-principle objection</u> to the case subject to the provision of item 1.5 above. Besides, a textual comment to be address by the applicant is given below which should not affect our stance on the case:	Noted.
1.7	Please remove S.3.3.4 in the EA as it is clarified in the previous RtC submitted by the applicant the comparison of traffic noise level between the with and without project scenario is not required.	Noted. S.3.3.4 of the EA has been removed. Besides, to tally with the traffic assumptions under the latest revised TIA, the replacement pages of relevant sections in EA has also been updated. ( <b>Attachment 2</b> refers).
<b>2.</b>	<b>Comments from District Planning Officer/Shia Tin, Tai Po and North received on 15.2.2022</b>	
2.1	It is noted that the site boundary of the application site at Figures 1.1 and 1.2 of the TIA is not up to date. Please remind the consultant to update the figures with the updated site boundary.	Noted and amended accordingly ( <b>Attachment 3</b> refers).
<b>3.</b>	<b>Comments from Commissioner for Transport, Transport Department received on 24.2.2022</b>	
3.1	The subject application site has an area of 4,640m <sup>2</sup> , of which 93.4% is currently GL and the remaining 6.6 % are private lots. The small private lots portion of the subject application site has no development on it. Yet the applicant is proposing large scale and disproportional, in relation to the size of the private lots of the subject application site, roadworks for providing access to a potential development outside the subject application site. The proposed roadworks are considered NOT necessary for the existing and possible uses of the private lots of the subject application site.	As explained in our previous Further Information submitted on 29 December 2021, we would like to reiterate that the proposed access road within the “GB” zone (i.e. Application Site) is to serve the permitted ‘School’ use in the adjacent “G/IC” zone (i.e. Development Site).

	Departmental Comments	Responses to Comments
	(continued)	<p>Under the statutory planning framework, the <b>development of the permitted ‘School’ use and/or other permitted Column 1 uses at the adjacent “G/IC” zone <u>do not require</u> planning permission from the Town Planning Board (the Board).</b> Hence, inclusion of the Development Site that falls within the “G/IC” zone as part of the Application Site is not required. Only the portion of Proposed Access Road falling within the “GB” zone requires planning permission from the Board, i.e. the subject matter. Hence, the Application Site of the subject planning application was so demarcated to cover the area falling within the “GB” zone. Such approach of demarcating areas that requires planning permission from the Board as the Application Site, while demarcating areas that do not require planning permission from the Board as the Development Site, has all along been an acceptable approach by the TPB. There were similar precedent applications in the past.</p> <p>Nonetheless, to present the whole proposal covering both the Application Site and Development Site, indicative plans and development parameters of the permitted ‘School’ use in the Development Site have already been submitted under our previous Further Information submitted on 29 December 2021. A landholding schedule covering both the Application Site and Development Site has also been included in our previous Further Information submitted on 29 December 2021. In gist, while the Application Site mainly involves government land which is inevitable due to the “GB” zone sandwiched between the “G/IC” site and the nearest Sai Sha Road, the Development Site for the permitted ‘School’ use mainly consists of private lots either under the Applicant’s ownership.</p>

	Departmental Comments	Responses to Comments
3.2	The applicant suggested special conditions such as TIA clause could be incorporated into the lease of the GIC development as a mechanism for development control. First, the applicant should obtain LandsD's in principle agreement to such proposal. Second, a draft "TIA clause" should be circulated to TD, LandsD, PlanD and the relevant departments for consideration.	Upon approval of this S16 application, the Applicant will have to apply to the LandsD for the land exchange to implement the permitted 'School' use in the "G/IC" zone (Development Site) and the Proposed Access Road in the "GB" zone (Application Site). During land exchange application stage, relevant Government departments (including TD and PlanD) would be consulted and special conditions (e.g. TIA clause) could be imposed under lease should the relevant departments (including EDB) consider necessary, even though the Development Site is not subject to planning application.
3.3	The applicant should clarify the implementation, management and maintenance agent of the proposed access road.	The Proposed Access Road will be designed, implemented, managed and maintained by the future school operator subject to detailed design and terms with the future school operator.
3.4	Whether or not the school would be operated as an international school or local school must be clarified. The traffic impact of international school in Hong Kong cannot be overlooked. Sufficient space for picking up and dropping off students must be provided inside the school otherwise a long traffic queue of parent cars may be developed along Sai Sha Road, in particular for international school. This point has not been addressed.	<p>The proposed school would be operated as a private school. Whether or not it would be operated as an international school or local school, it shall be subject to the future licensing applications to EDB at detailed design stage. Nonetheless, the concerns of pick-up / drop-off and long traffic queue of parent cars are very well noted. Accordingly, mandatory school bus policy would be adopted. Under the mandatory school bus policy, all enrolled students would be required to take school bus to school/ home and no picking up/ dropping off activities shall be allowed along Sai Sha Road). Only students who live within walking distance in Sai Keng Village and Kei Ling Ha San Wai could be exempted from taking school bus to school/home. Parents of the admitted students will be required to sign and return the Mandatory School Bus Scheme Agreement before the start of each new school year.</p> <p>Under the above arrangement, no student would be allowed to walk via the Proposed Access Road and only school staff (with entry pass) could walk from Sai Sha Road via the Proposed Access Road to the school. For students living in Sai Keng Village, pedestrian access would be allowed in northern boundary of the development site (close to Sai Keng Village) and only students living in Sai Keng Village (with entry pass) could walk via the said pedestrian access to the school during school arrival/dismissal period.</p>



	Departmental Comments	Responses to Comments
3.5	<p>(continued)</p> <p>We notice that part of the adjoining GIC site is currently used as car-park accommodating over 400 nos. of vehicles. Development of the GIC site would cause 'closure of the carpark. The impact arising from the closure of the carpark has not been assessed. Mitigation measures should also be identified if necessary.</p>	<p>Security booth/drop bar would be provided at the Proposed Access Road. Through the security booth/drop bar, the future school operator could check if there is any parent of the admitted students violating the school bus policy. If students are found going to school/home by private cars/taxis, a warning letter would be issued to their parents for the first time. If they are caught for the second time, the student's place at the proposed school will be reviewed, subject to the final decision of the proposed school.</p> <p>In addition, the length of the Proposed Access Road leading to the school development is longer than 250m. Even with some parents using private car /taxi via the Proposed Access Road violating the school bus policy (for which warning letter would be issued as mentioned above), there should still be sufficient buffer area to avoid any traffic queue along Sai Sha Road.</p> <p>The concerned existing temporary car park falls within the "G/IC" zone adjacent to the Application Site (Proposed Access Road), which is not the subject matter of the current S16 planning application. Nonetheless, the Applicant would consider the provision of a Public Vehicle Park (PVP) within the "G/IC" site for the re-provisioning of affected car parks. In addition, the Applicant has always been closely communicating with the representatives of the neighbouring villagers to inform them on the planning and development of the area and to understand their concerns. The Applicant will continue to liaise with the neighbouring villagers regarding the parking arrangements when a proposed development at the adjacent "G/IC" zone is to be implemented in future.</p> <p>In principle, requirements on provision of PVP could be dealt with in the subsequent land exchange application subject to the result of parking demand survey at the time of land exchange application and satisfaction to TD.</p>

	Departmental Comments	Responses to Comments
3.6	Implementation programme of the proposed access road should be provided to justify the proposed completion year of 2026 and design year of 2029 in the TIA.	<p>Regarding traffic impact arising from PVP, the revised TIA has already taken into account the traffic generated by the PVP. It is assumed that 90% of traffic to/from existing Sai Keng Village diverted using the Proposed Access Road as a worst case scenario for assessment.</p> <p>As stated in Section 4.1.1 of the revised TIA, the tentative implementation programme of the Proposed Access Road (subject to further update) is as below:</p> <ul style="list-style-type: none"> <li>• Planning permission obtained for the access road (a pre-requisite for GBP approval of the proposed private school use in G/IC zone) – Q2 2022</li> <li>• GBP submission and approval obtained for the proposed private school – Q2-Q3 2022</li> <li>• Land exchange submission and approval for the proposed private school – Q2 2022 – Q2 2023</li> <li>• Completion of construction works (the proposed private school together with its access road) completed – year 2026</li> </ul>
3.7	The construction traffic impacts due to various planned developments should be considered in the assessments.	Before the completion of Sai Sha Road Widening, all the construction traffic for the construction of Access Road would only be allowed access to/from the development site during the non-peak period (i.e. between 10am- 4pm).
3.8	The applicant should advise and justify the assumed trip split of the proposed development in the TIA.	As stated in Section 4.6.1 of the revised TIA ( <b>Attachment 3</b> refers), traffic count on school coach was carried at roundabout Sai Sha Road / Hang Fai Street to identify the directional split of school coach from Renaissance College & Ma On Shan Methodist Primary School located at Hang Ming Street. It is observed that about 85% of school coach travelling towards Ma On Shan Direction while 15% of school coach travelling towards Sai Kung Direction. In addition, based on the population in Ma On Shan New Town and Sai Kung Area, a sensitivity test was also included in the revised TIA.

	Departmental Comments	Responses to Comments
3.9	Public transport and pedestrian impact assessments have not been carried out. Why?	Mandatory school-bus policy is proposed for the permitted school use. The impact to the existing public transport and pedestrian facilities due to the school staff have been included in the revised TIA ( <b>Attachment 3</b> refers).
3.10	The applicant should justify the extent of the proposed access road and identify the traffic impacts to be induced by the development and their associated mitigation measures. In the revised TIA the applicant did not justify the extent of the proposed access road under the application and thus we are not able to advise if the proposed extent is reasonable.	Taken into consideration the traffic generation by the school development, a minimum road width of 7.3m (for a standard single 2-lane carriageway) is proposed for the Access Road. At the junction of Sai Sha Road/ Proposed Access Road, Sai Sha Road would be widened locally at the junction to provide exclusive Sai Sha Road SB left turn lane and exclusive Sai Sha Road NB right turn lane so as to provide sufficient junction capacity and not block the Sai Sha Road straight ahead traffic. The extent of the Proposed Access Road within the Application Site has been designed to meet the above traffic requirements as stated in Section 2.3 of the revised TIA ( <b>Attachment 3</b> refers).



	Departmental Comments	Responses to Comments
3.11	<p>The proposed access road itself is not an attraction that would generate any traffic demand. The applicant had provided revised TIA based on 'indicative' development schedule that the access road would serve while its development parameters would be subjected to detailed design during GBP submission. In other words, the associated traffic impact would also subject to further changes.</p>	<p>The development parameters of school development as given in the previous GBP submission were adopted in the traffic impact assessment. The wording "indicative" has been deleted in the revised TIA. Table 2.1 of the revised TIA shows the parameters of the permitted school development in "G/IC" zone that the proposed access road would serve (<b>Attachment 3</b> refers).</p> <p>As proposed by the Applicant, an approval condition for submission of revised TIA could be imposed by the Board to assess the potential traffic impact of the school development within the Development Site based on its development parameters. The revised TIA under approval condition can review the latest traffic condition of the surrounding road network and proposed additional traffic mitigation measures if deemed necessary. Similar special condition for submission of TIA under lease could also be considered at land exchange stage. It should also be noted that relevant Government departments (including TD) will be consulted during general building plan approval stage. Any associated traffic impacts from further changes in detailed design or development parameter will be subject to vetting and approval from the relevant Government departments. Therefore, it is considered that sufficient control has been allowed on the future developments.</p>
3.12	<p>Traffic count was carried out on a typical weekday in November 2021. The flow data are found lower than our records. Additional survey should be carried out to ascertain the existing conditions. Raw data should also be provided for our checking.</p>	<p>Based on the observed traffic flows in Nov 2021, the highest two-way flows at Sai Sha Road (east of Sai Sha Road/ Nin Wah Road roundabout) was about 2,065 pcus/hr (between 7:30am-8:30am). As compared with the traffic flows in May 2019 (ie 1,665 pcus/hr), the traffic flows have been increased by about 24%. To account for observed higher traffic flow in Ma On Shan Direction during the period between 7:00am-8:00am, the traffic flow in Ma On Shan Direction during this period would be adopted as observed flows as given in revised Figure 3.10 (<b>Attachment 3</b> refers) for conservative approach.</p>

	Departmental Comments	Responses to Comments
3.13	Table 3.1 and figure 3.1 are confusing as future road layout after completion of Sai Sha Road Widening was adopted for presentation of existing performance.	Noted and Table 3.1 was amended in the revised TIA. ( <b>Attachment 3</b> refers)
3.14	The road width as indicated in table 3.1 of the revised TIA is not consistent with our record, so as the link capacity. In addition, the AP should justify the proposed pcu factor.	Table 3.3 was amended in the revised TIA. ( <b>Attachment 3</b> refers)
3.15	Table 4.1 of the revised TIA indicated ATC data up to 2017 only. The AP should justify why more recent information was not adopted.	Noted and Table 4.1 was amended to indicate ATC data up to 2020 in the revised TIA.
3.16	The consultant should justify the proposed trip rates for the GIC development.	The traffic generations of the school development were estimated based on the number of coach spaces together with the number of staff carparking spaces provided as given in Table 4.4 of the revised TIA.
3.17	It is suggested that mandatory school bus policy would be adopted which is one of the key assumptions adopted in the TIA. The AP should elaborate the proposed arrangement. DLO/TP &EDB should also confirm how such could be ensured during implementation.	<p>Under the proposed mandatory school bus policy, all enrolled students would be required to take school bus to school/ home. Only students who live within walking distance in Sai Keng Village and Kei Ling Ha San Wai could be exempted from taking school bus to school/home. Parents of the admitted students will be required to sign and return the Mandatory School Bus Scheme Agreement before the start of each new school year.</p> <p>Under the above arrangement, no student would be allowed to walk via the Proposed Access Road and only school staff (with entry pass) could walk from Sai Sha Road via the Proposed Access Road to the school. For students living in Sai Keng Village and Kei Leng Ha San Wai, pedestrian access would be allowed in the northern and southern boundary of the development site (close to Sai Keng Village and Kei Ling H Sun Wai respectively) and only students living in Sai Keng Village and Kei Ling Ha San Wai (with entry pass) could walk via the said pedestrian access to the school during school arrival/dismissal periods.</p>

	Departmental Comments	Responses to Comments
	(continued)	<p>Security booth/drop bar would be provided at the Proposed Access Road. Through the security tooth/drop bar, the future school operator could check if there is any parent of the admitted students violating the school bus policy. If students are found going to school/home by private cars/taxis, a warning letter would be issued to their parents for the first time. If they are caught for the second time, the student's place at the proposed school will be reviewed, subject to the final decision of the proposed school.</p> <p>In addition, the operation hour of primary/ secondary schools would be staggered by 30 minutes to minimize the traffic impact. The proposed arrangement is elaborated in Section 2.2.2 of the revised TIA (<b>Attachment 3</b> refers).</p> <p>Upon approval of this S16 application, the Applicant will have to apply to the LandsD for the land exchange to implement the permitted 'School' use in the "G/IC" zone (Development Site) and the Proposed Access Road in the "GB" zone (Application Site). During land exchange application stage, relevant Government departments would be consulted and special conditions (e.g. TIA clause) could be imposed under lease should the relevant departments (including EDB) consider necessary, even though the Development Site is not subject to planning application.</p> <p>In addition, upon approval of this S16 application, the Applicant will need to submit a new set of GBP for the permitted 'School' use (in the Development Site) and the Proposed Access Road (in the Application Site) to BD for approval. A full set of detailed plans and development parameters in GBP submission will be circulated by BD to relevant Government departments for vetting before approval.</p>



	Departmental Comments	Responses to Comments
3.18	<p>About the proposed road layout in figure 2.1:</p> <ul style="list-style-type: none"> <li>a. The existing bus stop is found too close to the proposed signalized junction.</li> <li>b. Queue length assessment provided under table 5.2 should be supplemented with a marked up layout plan to clearly justify the road geometry and extend of road works within GB.</li> <li>c. Measures and assessment should be provided to ensure no traffic will be tailed back to Sai Sha Road for comment.</li> <li>d. Width of footpath is now proposed as 2.75m. Capacity assessment should be provided.</li> </ul>	<p>The existing bus stop is about 50m away from the proposed signalised junction Sai Sha Road / Proposed Access Road and complies with the requirement of TPDM. As shown in Table 5.5, queue length assessment of the revised TIA, the estimated queue length for Sai Sha Road Southbound (SB) left turn traffic during PM Peak is only about 18m and would not affect the existing bus stop.</p> <p>Noted and included as Annex D of the revised TIA (<b>Attachment 3</b> refers).</p> <p>Mandatory school bus policy is proposed for the permitted school use. As shown in Table 5.5 queue length assessment of revised TIA (<b>Attachment 3</b> refers), the estimated queue length for Sai Sha Road SB left turn and Sai Sha Road Northbound (NB) right turn during PM Peak are 18m and 6m respectively. The available queue distance for Sai Sha Road SB left turn traffic and Sai Sha Road NB right turn traffic during PM Peak are about 40m and 20m respectively. Hence, the traffic to/from the Proposed Access Road would not tail back and block the Sai Sha Road straight ahead traffic. In addition, the length of the Proposed Access Road leading to the school development is longer than 250m which could also serve as a buffer area to avoid any traffic queue along Sai Sha Road.</p> <p>Mandatory school bus policy is proposed for the permitted school use. Based on the number of school staff, capacity assessment has been included in the revised TIA.</p>

	Departmental Comments	Responses to Comments
<b>4.</b>	<b>Comments from Chief Town Planner/Urban Design &amp; Landscape (Landscape), Planning Department received on 24.2.2022</b>	
4.1	It is noted in this FI that no new information on the landscape aspect of the site is provided, our previous comments are still valid.	Noted.
<b>5.</b>	<b>Comments from Head of Geotechnical Engineering Office, Civil Engineering and Development Department received on 24.2.2022</b>	
5.1	No further comment on the submitted FI providing revised pages of the Geotechnical Planning Review Report	No further comment on the application is well-noted.

**Responses-to-Comments Table**

**Section 16 Planning Application for Proposed Access Road with Filling and Excavation of Land in “Green Belt” Zone for Permitted uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories**

**(Application No.: A/NE-SSH/139)**

	Departmental Comments	Responses to Comments
<b>1.</b>	<b>Comments from Commissioner of Transport, Transport Department received on 23.6.2022</b>	
1.1	<p>The subject application site has an area of 4,640m<sup>2</sup>, of which 93.4% is currently GL and the remaining 6.6% are private lots. The small private lots portion of the subject application site has no development on it. Yet, the applicant is proposing large scale and disproportional, in relation to the size of the private lots of the subject application site, roadworks for providing access to a potential development outside the subject application site. The proposed roadworks are considered NOT necessary for the existing and possible uses of the private lots of the subject application site.</p>	<p>As explained in our previous Further Information submitted on 29 December 2021, we would like to reiterate that the proposed access road within the “GB” zone (i.e. Application Site) is to serve the permitted ‘School’ use in the adjacent “G/IC” zone (i.e. Development Site).</p> <p>Under the statutory planning framework, the <b>development of the permitted ‘School’ use and/or other permitted Column 1 uses at the adjacent “G/IC” zone do not require planning permission from the Town Planning Board (the Board). Hence, inclusion of the Development Site that falls within the “G/IC” zone as part of the Application Site is not required.</b> Only the portion of Proposed Access Road falling within the “GB” zone requires planning permission from the Board, i.e. the subject matter. Hence, the Application Site of the subject planning application was so demarcated to cover the area falling within the “GB” zone. Such approach of demarcating areas that requires planning permission from the Board as the Application Site, while demarcating areas that do not require planning permission from the Board as the Development Site, has all along been an acceptable approach by the TPB. There were similar precedent applications in the past.</p>



	Departmental Comments	Responses to Comments
	(cont'd)	Nonetheless, to present the whole proposal covering both the Application Site and Development Site, indicative plans and development parameters of the permitted 'School' use in the Development Site have already been submitted under our previous Further Information submitted on 29 December 2021. A landholding schedule covering both the Application Site and Development Site has also been included in our previous Further Information submitted on 29 December 2021. In gist, while the Application Site mainly involves government land which is inevitable due to the "GB" zone sandwiched between the "G/IC" site and the nearest Sai Sha Road, the Development Site for the permitted 'School' use mainly consists of private lots either under the Applicant's ownership.
1.2	As mentioned in the application, the proposed access road under this application was to provide an access to a development site at the adjacent GIC zone depending on the type and scale of the development. We consider that the proposed road is only necessary if and only if there is such a development, otherwise it would not be necessary.	Noted. Please be re-iterated that the Proposed Access Road is designed to serve the permitted 'School' use in the adjacent "G/IC" zone.
	<u>Technical comments on the TIA submitted</u>	
1.3	The TIA report should be self-contained and included all necessary information and data.	Noted. All necessary information has been included in Annex of revised TIA in <b>Attachment 2</b> of the current submission.
1.4	The commissioning year of 2026 is considered not realistic. The design year should be revised.	Design year has been revised to 2031. Please refer to <b>Attachment 2</b> of the current submission for details.
1.5	No parent cars are assumed in the TIA. The applicant suggested in the TIA that mandatory school bus policy would be adopted. The applicant should elaborate the proposed arrangement.	The mandatory school bus policy has been elaborated in Section 2.1.2 of the revised TIA in <b>Attachment 2</b> of the current submission.

	Departmental Comments	Responses to Comments
1.6	Table 4.1, the applicant should justify the selection criteria of each ATC stations with a location plan, in particular 5005, 5683, 5877 and 5883. There are many other ATC stations close to them but not selected. Please justify your rationale. In addition, please review how the traffic flow pattern from Sai Kung bound would be considered.	All the ATC stations in Ma On Shan area have been included in the Table 4.1 of revised TIA. The locations of those ATC station have also been provided in Annex B of the revised TIA. Besides, ATC station no. 6056 has also been selected taking into account the traffic flow pattern from Sai Kung bound. Please refer to Sections 4.2.3 and 4.2.6 of the revised TIA in <b>Attachment 2</b> of the current submission.
1.7	Table 2.2 Remark no. 3 and table 4.4 remark nos. 3 & 4, the applicant should justify these are conservative assumptions to derive the pick up/ drop off bays and trip ends.	Please refer to the revised remarks of Tables 2.2 and 4.4 of the revised TIA justifying that these are conservative assumptions to derive the pick up / drop off bays and trip ends. Please refer to <b>Attachment 2</b> of the current submission for details.
1.8	Table 3.1 and figure 3.1 are confusing as future road layout after completion of Sai Sha Road Widening was adopted for presentation of existing performance. Sai Sha Road is under active construction, please review the terms adopted in section 3 and all the relevant figures.	A remark has been added in Table 3.1 of the revised TIA to clarify the meaning of the 3 different junctions. Figure 3.1 of the revised TIA has also been revised accordingly. Please refer to <b>Attachment 2</b> of the current submission for details.
1.9	Table 3.1, there are 3 different junction numbers for J3. Please clarify in the report the respective meaning.	A remark has been added in Table 3.1 of the revised TIA to clarify the meaning of the 3 different junctions. Please refer to <b>Attachment 2</b> of the current submission for details.
1.10	Date of survey should be stated in the report.	Noted. The date of survey has been stated in Section 3.2.1 of the revised TIA. Please refer to <b>Attachment 2</b> of the current submission for details.
1.11	The identified AM/ PM peak hour period should be stated clearly in the figure 3.10.	Noted. The identified AM/ PM peak hour period has been stated in Figure 3.10 of the revised TIA. Please refer to <b>Attachment 2</b> of the current submission for details.
1.12	<u>Table 4.3</u>	
1.12.1	Zoning of each site should be included	The zonings of each site have been included in the revised TIA in <b>Attachment 2</b> of the current submission.

	Departmental Comments	Responses to Comments
1.12.2	How the trip rates are derived for each site should be detailed. It is noticed that lower limit rate was adopted for some sites as the basis for derivation, e.g. site ID 4, which is not a conservative assumption while mean rate was adopted for some others, e.g. site ID 8.	The mean trip rates as stated in TPDM have been adopted for all sites. The adopted trip rates are detailed in Table 4.3 of the revised TIA in <b>Attachment 2</b> of the current submission.
1.12.3	There are two sites with same site ID. The applicant should review.	Noted. The site IDs have been amended in the revised TIA in <b>Attachment 2</b> of the current submission.
1.12.4	It seems that sites ID 1-3 are CDA site, the applicant should provide details to justify why only trip rate for one development type is adopted to derive the trip ends.	All the private residential developments within the "CDA(1)" zone have been completed. STTL 600 is the only remaining development site within this "CDA(1)" zone. This lot is planned for student hostel use. "CDA(2)" zone is a residential zone covering the whole STTL 601. A residential development called Altissimo (泓碧) has been completed within this zone / lot.
	<u>Additional comments from DPO/ STN</u>	
1.12.5	According to notes (11) of table 4.3, the information adopted was 'based on Sai Sha Development TIA under recently approved planning application no. A/NE-SSH/120'. Such information does not tally with the quoted 'no. of flats' of 9,700 which is based on latest approved scheme under planning application no. A/NE-SSH/120-1. The applicant should review and clarify.	Noted. It has been updated as planning application no. A/NE-SSH/120-1 in the revised TIA in <b>Attachment 2</b> of the current submission.
1.13	The sources of the planned/ committed developments indicating the adopted development parameters should be appended in the TIA for completeness. A technical note should be prepared to detail and justify the proposed trip rates.	The committed / planned developments in the vicinity of the Application Site have been have been updated in Table 4.3 accordingly. The sources of the committed / planned developments have been included in Annex C of the revised TIA. The adopted trip rates have been included in the Table 4.3 of the revised TIA with details/justifications given in the remark. Please refer to <b>Attachment 2</b> of the current submission for details.
1.14	The applicant should justify the proposed trip rates for the GIC development.	The adopted traffic generation for the GIC development has been included in the Table 4.3 of the revised TIA with details and justifications given in the remark. Please refer to <b>Attachment 2</b> of the current submission for details.



	Departmental Comments	Responses to Comments
1.15	Flow split of each development in table 4.3 and how the traffic flows evolve from the observed flow in 2021 to those in Figures 4.3 and 4.5 should be detailed in the report for checking.	The relevant information is detailed in the Annex D of the revised TIA in <b>Attachment 2</b> of the current submission.
1.16	The completion year of Sai Sha Road Widening is found different in different parts of the report.	Noted. The completion year of Sai Sha Road Widening has been amended in the revised TIA in <b>Attachment 2</b> of the current submission.
1.17	<u>Figure 2.1</u>	
1.17.1	The proposed layout would cause conflict to the operation of the bus stop.	Please note that an exclusive free flow left turn lane at southbound of Sai Sha Road is proposed at the junction of Sai Sha Road / Proposed Access Road. Conflict to the operation of the bus stop is not anticipated.
1.17.2	<p>Since Sai Sha Road is a single two carriageway with heavy traffic flow, disruption to the through traffic shall be avoided. The MOC should be further simplified and the proposed control means should be reviewed to minimize the impact to the Sai Sha Road, in particular there is almost no demand to the GIC site for most of the time. The following schemes should be investigated:</p> <p>(1) Priority junction arrangement with sufficient length of exclusive left turning and right turning lane on each side of Sai Sha Road;</p> <p>(2) Signalised junction with free flowing left turning lane from Sai Sha Road Sai Kung bound and banning of right turn from Sai Sha Road Shatin bound to the proposed access road with appropriate traffic aids.</p>	Two options on the junction layout of Sai Sha Road/ Proposed Access Road, including sign-controlled and priority-controlled, have been explored in Sections 2.3.3- 2.3.6 of the revised TIA. In conclusion, the signal control option is recommended for the junction of Sai Sha Road/ Proposed Access Road. Please refer to <b>Attachment 2</b> of the current submission for details.
1.18	Cycle time of 120 second is adopted in the junction calculation for some proposed junctions and effect of gradient of the road had not been taken into consideration in the junction calculation which does not comply with TPDM requirements. Queue length assessment should also be included in the calculation sheet.	Cycle time of the proposed signalised junction of J6 has been revised to 90 seconds in junction calculation. The effect of gradient and the queue length assessment have been included in the calculation sheet as given in Annex A of revised TIA. Please refer to <b>Attachment 2</b> of the current submission for details.

	Departmental Comments	Responses to Comments
1.19	Details including the methodology and assumptions adopted in the queue length estimation should be provided for checking.	As mentioned in Section 5.2.3 of the revised TIA, the assessments were based on the methodology as given in TPDM Volume 4 Section 2.5. Please refer to <b>Attachment 2</b> of the current submission for details.
1.20	On the understanding that the trip patterns of school operation may not be coincided with the general AM/ PM peak pattern of the critical road links/ junctions. The applicant should clarify if AM/ PM peak period for the assumed/ identified trip generations of the development and those of the subsequent assessment.	In general, the school hours for primary / secondary school starts at about 8:00 am and ends at about 3:00 pm. Hence the peak school traffic during the AM peak period would largely overlap with the general AM peak period (i.e. between 7:30 am – 8:30 am). For the peak school traffic during PM peak period, it would occur at about 3:00 pm – 4:00 pm, and entirely not overlap with the general PM peak period. Nevertheless, the estimated trip generations of the school development would add to the general AM / PM peak period traffic as to represent worse scenario in traffic terms. The clarifications have been included as Section 4.5.2 of the revised TIA in <b>Attachment 2</b> of the current submission.
1.21	The construction traffic impacts due to various planned developments should be considered in the assessment. The conclusion of no impact should be justified. Assessment on the cumulative impact of various planned developments/ on-going projects during construction stage of the GIC development and the proposed access road had not been provided.	As the future construction traffic would be significantly less than the future school traffic, hence all the road junctions/ links should still be operated within capacity. Please refer to Section 5.4.1 of the revised TIA in <b>Attachment 2</b> for details.
1.22	Pedestrian impact assessment is found incomplete, e.g. the footpath at the proposed bus stop has not been assessed. In addition, design of the footpath and bus layby should comply with the latest interim guidelines.	The footpath next to the proposed bus stop has been assessed in revised Section 5.5 of the revised TIA. A minimum 3.5 footpath would be provided along the bus layby to meet the latest interim guidelines. Please refer to <b>Attachment 2</b> of the current submission for details.

	Departmental Comments	Responses to Comments
<b>2.</b>	<b>Comments from Director of Environmental Protection, Environmental Protection Department received on 23.6.2022</b>	
2.1	Based on the information provided in Attachment 2 of FI04, we noted that the applicant has updated the design of the proposed access road mainly at the segment fallen within the "G/IC" zone under the approved Shap Sz Heung OZP (No. S/NE-SSH/11) and submitted the revised Noise Impact Assessment (NIA) of the Environmental Assessment Report with updated road traffic noise assessment findings. In the revised NIA, it is noted that no exceedance to noise criteria is anticipated with all the existing noise sensitive receivers due to the current proposed access road. Meanwhile, we also noted in RtoC Item 1.5 of Attachment 2 that the revised Traffic Impact Assessment is under active liaison with TD and TD's advice on road type of the proposed access road and their endorsement on the traffic forecast data are still pending.	<p>Please note that the Applicant is still liaising with TD for advice on road type and endorsement of traffic forecast data. They will be provided for information in due course.</p> <p>On the other hand, in view that the traffic data adopted in the revised TIA has been updated in the current submission, the EA has been updated accordingly with replacement pages appended in <b>Attachment 3</b>.</p>
2.2	In view of the above, please be advised that we maintained our previous stance to have no in-principle objection to the application subject to the provision of TD's advice on the road type of the proposed access road and their endorsement on the traffic forecast data.	Noted. The Applicant is still liaising with TD for advice on road type and endorsement of traffic forecast data. They will be provided for information in due course.



**Responses-to-Comments Table**

**Section 16 Planning Application for Proposed Access Road with Filling and Excavation of Land in “Green Belt” Zone for Permitted uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories**

**(Application No.: A/NE-SSH/139)**

	Departmental Comments	Responses to Comments
<b>1.</b>	<b>Comments from Commissioner for Transport, Transport Department received on 5.8.2022</b>	
	<u>Key Comments</u>	
1.1	The TIA report should be self-contained and included all necessary information and data.	All the information and data have been included in Annex A-F of the report.
1.2	No parent cars are assumed in the TIA. The applicant suggested in the TIA that mandatory school bus policy would be adopted. The applicant should elaborate on how to implement the proposed arrangement.	The proposed arrangement of the mandatory school bus policy has been elaborated in Section 2.1.2 of the report.
1.3	Junction performance for <u>both</u> options of the junction of the proposed school should be assessed. No information is provided on the junction performance for option 2 in the TIA. Assessment should be provided to come up on the recommendations and confirm the extent of excavation/ filling in this application.	The junction performance together with the pros and cons for both options have been added in Section 2.3 of the revised TIA. There is only slight difference on road kerb at the junction in the two options.
1.4	Para. 2.3.8 suggested that option 1 is recommended mainly because the road alignment would be <u>slightly</u> skewed is considered not convincing. The applicant should justify with technical data, e.g. whether the R value is not up to standard, etc. Pros and cons for both options in quantitative and qualitative terms should be provided for comparison.	Noted. The pros and cons for both options have been added in Section 2.3 of the revised TIA. Both options are feasible in traffic engineering point of view. The choice of control type (i.e. priority or signal controlled) could be further studied at the detailed design stage.

	Departmental Comments	Responses to Comments
1.5	In the last TIA submission in Apr, the applicant stated that the trip generated/ attracted from the proposed school development would happen in 30 mins. We note that the trip rates adopted span across 1 hour in this submission which may not reflect the actual traffic behavior and leading to an underestimated result. The applicant should review and justify.	The operation hour of kindergarten + primary school / secondary school would be staggered each by 30 minutes. As most of the students would likely come to school 30 minutes before the school starts, it is assumed that the trips generated / attracted to / from the school would happen in 30 minutes. For conservative assessment purpose, the number of secondary school students (which has more numbers of students than primary school) is adopted. The details are given in Section 4.5 of the revised TIA.
1.6	We noticed that appropriate pcu conversion factor as detailed in TPDM was not appropriately adopted in the junction assessment which would lead to a less conservative junction performance results. The applicant should review and update their calculation accordingly.	According to the TPDM Volume 2 Chapter 4 of Appendix 2 – Calculation of Capacity at Roundabout, the pcu factor for HGV is 2. In our assessment, a pcu factor of 2.5 was adopted for MGW / HGV / Bus and has fulfilled the requirements for the calculation of the roundabout capacity. We noted that under the TPDM Volume 2.3.1 Table 2.3.1, the pcu factor of those MGW / HGV / Bus is 2.8. In view of the low proportion of MGW / HGV / Bus along the Sai Sha Road, the traffic impact due to the said factor is minimal. Nevertheless, the pcu factor of 2.8 would be adopted for the calculation of junction performance of J1.
1.7	Para. 5.1.1, the applicant quoted the planning application no. A/NE-SSH/120 but some of the junction improvement works as detailed in para. 5.1.2 are proposed under planning application no. A/NE-SSH/120-1, e.g. J1. The applicant should rectify the discrepancies. For figures 5.1-5.5, the key parameters adopted in the junction improvement calculation should be clearly indicated.	Noted and amended in the revised TIA. The key parameters adopted in the junction improvement calculation are included in the revised Figures 5.1 – 5.5.
1.8	Figure 5.1, some proposed improvement works was indicated (by others). The applicant should confirm the implementation timeline and agent for clarity.	Noted and included in the revised Figure 5.1.

	Departmental Comments	Responses to Comments
1.9	Table 5.1, traffic performance of J1 is sensitive to the proposed development. DFC of 0.85 was based on a very stringent assumption that there would not be parent car under an effective implementation arrangement. Taking into consideration of the above comments, e.g. calculation error and suppressed trips generation assumptions, the DFC of the junction would exceed 0.85. The applicant should propose traffic improvement schemes, e.g. signalized the junction for our consideration.	<p>Please refer to our response in item 1.6 above for details regarding the pcu factor and junction calculation of J1. For the proposed mandatory school bus policy, stringent requirements (such as security booth / drop bar provided at the proposed access road as elaborated in Section 2.1.2 of the report) have been proposed. With the said requirements, the assumption at no parent car should be valid.</p> <p>The possibility of converting J1 into signalized junction has been explored as detailed in Section 5.2.3 of the revised TIA. In conclusion, the junction J1 in the form of signalized junction would not be feasible in terms of capacity problem and long detour required for the banning of right turn movement at the junction.</p>
1.10	Table 5.2, the cycle time adopted for assessment should be included in the table for clarity. The RC for J3 is calculated as 18%, the applicant should clarify if the trips from the two primary schools had been taken into consideration in the calculation. Details calculation of this junction should be provided for checking.	Noted and cycle time adopted has been included in Table 5.2 of revised TIA. The trips to / from the primary schools have been taken into consideration in the traffic forecasting. A sensitivity test for the possible increase of traffic generation in the two primary schools has been carried out and given in Section 5.7 of the revised TIA.
1.11	<p>Figures 2.1 &amp; 2.2, both proposals would still induce conflict and affect the operation of buses at the bus stop nearby. The applicant should revise the scheme, e.g. consider relocating the bus stop and provision of a front taper to avoid the said conflict.</p> <p><u>Other Comments</u></p>	As shown in the conceptual schemes in Figures 2.1 and 2.2, the bus stop is technically feasible to be relocated further away from junction with the provision of a front taper, subject to further investigation in the detailed design stage.
1.12	Para. 3.1, figure 3.1 is not the existing road networks. The figure or the para. should be revised.	Noted and amended in the revised TIA.
1.13	Note 1 of table 3.1 indicates J3a but such junction number if not found in the table. The applicant should check, revise and clarify.	J3a is the existing junction at Sai Sha Road / Access Road to Kwun Hang and included in Table 3.1
1.14	As the above comments had not been addressed satisfactorily and the information provided for the proposed junction layout of the proposed access road is insufficient. We reserve our further comments on the application.	Noted.



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## **Appendix N**

### **Previous Responses-to-Public-Comments**

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(Previously submitted under Further Information dated 16 September 2021 & 18 May 2022)

**Section 16 Planning Application for Proposed Access Road in “Green Belt” Zone for Permitted uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories  
(Application No.: A/NE-SSH/139)**

	<b>Public Comments</b>	<b>Applicant's Responses</b>
(a)	The Applicant should clarify whether the Proposed Access Road would serve Sai Keng Tsuen in future.	The Applicant has always been closely communicating with representatives of the neighbouring villages to inform them on the planning and development of the area and to understand their concerns. The Applicant will continue to liaise with the neighbouring villages subsequent to the approval of the subject planning application at detailed design stage to address their major concerns.
(b)	Development at the adjacent G/IC zone might affect the existing temporary car parking facilities located therein, the Applicant should clarify whether the existing car parking facilities will be re-provided upon development of the GIC site.	The concerned existing temporary car park falls within the “G/IC” zone adjacent to the Application Site, which is not the subject matter of the current S16 planning application. Nevertheless, the Applicant has always been closely communicating with representatives of the neighbouring villages to inform them on the planning and development of the area and to understand their concerns. The Applicant will continue to liaise with the neighbouring villages regarding the parking arrangements when a proposed development at the adjacent “G/IC” zone be implemented in future. In any event, “Public Vehicle Park” is a Column 1 use that is always permitted within the “G/IC” zone and the provision of which should induce no particular implication from planning point of view.

**Attachment 4 – Responses-to-Public Comments Table**

**Section 16 Planning Application for Proposed Access Road with Filling and Excavation of Land in “Green Belt” Zone for Permitted uses in “Government, Institution or Community” Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories**

**(Application No.: A/NE-SSH/139)**

	Public Comments for FI(3)	Applicants’ Responses
(a)	The Proposed Access Road might reduce the foraging and roosting areas of cattle and/or other wildlife.	<p>The Proposed Access Road will be mostly an elevated driveway, which allows continuous woodland growth and wildlife activities below. The access road allows free and safe access of wildlife underneath. Effects to cattle and/or other wildlife should be minimal.</p> <p>During the construction phase, the contractor would be reminded to observe and coordinate to direct any passing feral cattle from the main road or construction area for their safety.</p>
(b)	Endangered species of animals would be in the road and possibly be killed by traffic.	<p>This section of Sai Sha Road is notorious for speeding before traffic improvement works of the Proposed Access Road. It will be slightly widened to add a junction for the Proposed Access Road. Latest traffic design standards with visual and physical clues to drivers will be applied to discourage speeding. Slower traffic should in theory reduce animal road kill. Please also refer to the response (a) above.</p> <p>Referring to Appendix B of the EcolA submitted to the Board on 29 December 2021, there were a low number of common mammals, amphibians and reptiles recorded within the Assessment Area outside the Application Site. None of these are endangered species. The wildlife corridors for these small animals are more commonly the hill streams underneath Sai Sha Road through culverts. These wildlife corridors would not be affected by the current project. The potential road kill impact of the current project is thus considered to be low.</p> <p>During the construction phase, the contractor would be reminded to observe and coordinate to direct any passing feral cattle from the main road or construction area for their safety.</p>



	Public Comments for FI(3)	Applicants' Responses
(c)	The Proposed Access Road would pose adverse traffic impacts to Sai Sha Road considering it is formerly an accident blackspot.	It should be noted that Sai Sha Road would be widened locally at the junction of Sai Sha Road/ Proposed Access Road to provide exclusive Sai Sha Road SB left turn lane and exclusive Sai Sha Road NB right turn lane so as to provide sufficient junction capacity and not block the Sai Sha Road straight ahead traffic. The extent of the proposed access road within the Application Site has been designed to meet the above traffic requirements as stated in Section 2.1.4 of the revised TIA ( <b>Attachment 3</b> refers).
(d)	There will be a reduction of parking spaces in the area.	The Applicant would consider provision of Public Vehicle Park (PVP) within the "G/IC" site for the re-provisioning of affected car parks. In addition, the Applicant has always been closely communicating with representatives of the neighbouring villages to inform them on the planning and development of the area and to understand their concerns. The Applicant will continue to liaise with the neighbouring villagers regarding the parking arrangements when a proposed development at the adjacent "G/IC" zone is to be implemented in future.
(e)	The Proposed Access Road would damage the tranquil living environment of Sai Keng Tsuen.	The alignment of the Proposed Access Road has adopted an optimal design. The alignment offers a reasonable buffer distance of about 60m with plenty of planting opportunities along the road to minimise possible visual and environmental impacts to Sai Keng Tsuen.
(f)	The Proposed Access Road would induce adverse ecological, traffic, air quality and noise impact.	Comprehensive technical assessments including Landscape, Visual, Traffic, Environmental, Ecological and Geotechnical have been carried out to prove no insurmountable impacts to the surrounding areas.

**Llewelyn  
davies**

ARCHITECTS PLANNERS DESIGNERS  
Llewelyn-Davies Hong Kong Ltd

22 September 2022

RECEIVED

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

22 SEP 22 P 2:40

*By Hand and Email*

TOWN PLANNING BOARD

Dear Sir

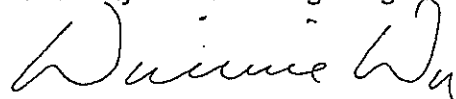
**Section 16 Planning Application for Proposed Access Road with Filling and Excavation of Land in "Green Belt" Zone for Permitted uses in "Government, Institution or Community" Zone at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, the New Territories  
(Application No.: A/NE-SSH/139)**

Reference is made to the captioned application submitted to the Town Planning Board (the Board) on 30 April 2021 and the consolidated Planning Statement recently submitted to the Board on 16 September 2022. In response to the verbal comments from Sha Tin, Tai Po and North District Planning Office of the Planning Department dated 22 September 2022, the Applicant herewith submits 70 copies of the attached replacement page of Figure 1.1 of the Traffic Impact Assessment enclosed in Appendix C of the consolidated Planning Statement.

It should be highlighted that the current submission of replacement page and the consolidated Planning Statement submitted to the Board on 22 September 2022 mainly serve to consolidate previous Supplementary Submissions in one report and to supersede all previous submissions to facilitate processing and approval of this planning application. As this submission contains no changes to the Proposed Development, the Board is cordially invited to approve the captioned application at the meeting as scheduled on 14 October 2022.

Thank you for your kind attention. Should there be any queries, please do not hesitate to contact the undersigned at 2957 9602 or our Mr. Arnold Koon at 2957 9667 / Miss Cody Yu at 2957 9615.

Yours faithfully  
for Llewelyn-Davies Hong Kong Ltd



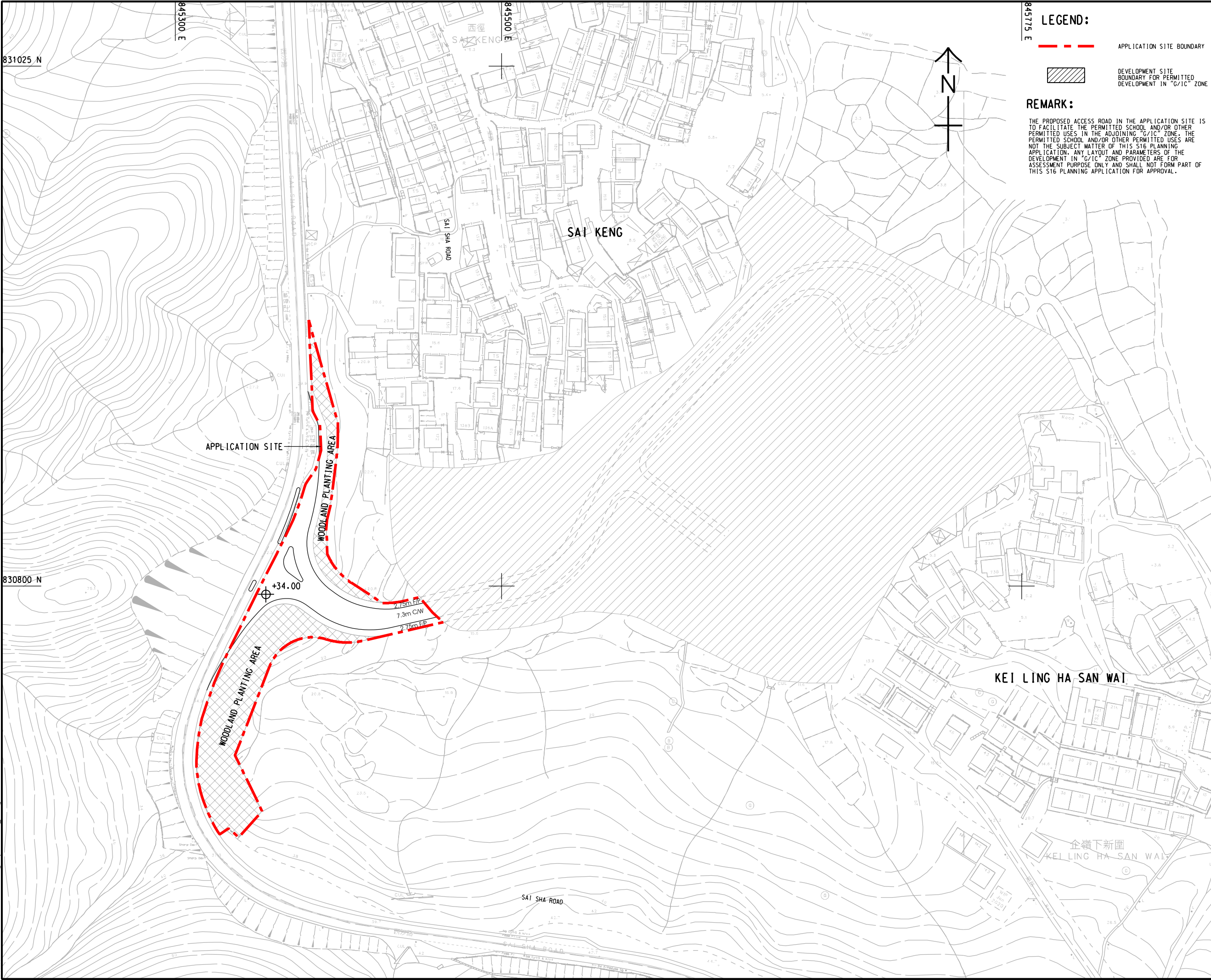
Winnie Wu  
Associate Director

cc w/encl  
DPO/STN

Attn: Mr Harris Liu and Ms Sharon CHAN

(by email)

WW/AK/cy  
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# AECOM

## PROJECT

SECTION 16 PLANNING APPLICATION FOR PROPOSED ACCESS ROAD IN "GREEN BELT" ZONE FOR PERMITTED USES IN "GOVERNMENT, INSTITUTION OR COMMUNITY" ZONE AT VARIOUS LOTS AND ADJOINING GOVERNMENT LAND IN D.D. 209, SAI KENG, SHAP SZ HEUNG, THE NEW TERRITORIES"

## CLIENT

業主

## CONSULTANT

(顧問公司)

AECOM Asia Company Ltd.  
www.aecom.com

## SUB-CONSULTANTS

分包 / 顧問公司

## ISSUE/REVISION

次修

I/R	DATE	DESCRIPTION	CHK.
01	11/08	ISSUE FOR 4	01

## STATUS

現狀

## SCALE

比例

A3 1: 1500

## DIMENSION UNIT

尺寸單位

METRES

## KEY PLAN

索引圖



## PROJECT NO.

項目編號

60638233

## CONTRACT NO.

合約編號

## SHEET TITLE

圖紙名稱

SITE LOCATION PLAN AND LAYOUT PLAN

## SHEET NUMBER

圖紙編號

60638233/TIA/FIGURE 1.1



7 October 2022

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

***By Email***

Dear Sir

**Section 16 Planning Application for Proposed Access Road for Permitted School Development at the adjoining “Government, Institution or Community” Zone and associated Filling and Excavation of Land at Various Lots and Adjoining Government Land in D.D. 209, Sai Keng, Shap Sz Heung, N.T.  
(Application No.: A/NE-SSH/139)**

Reference is made to the tele-con (LIU/KOON) with Sha Tin, Tai Po and North District Planning Office (DPO/STN) of the Planning Department on 5 October 2022.

In response to the comments from DPO/STN, the Applicant would like to provide the following justifications on the necessity to include the existing slope feature (i.e. Slope No. 8NW-C/FR48) in the southern part of the Application Site and clarifications on the enhancement brought by the proposed compensatory planting therein:

***Necessity of including the existing slope feature to the south as part of the works area***

The Applicant has carefully considered the proposed work and construction sequence of the proposed access road (please refer to Appendix I of the Consolidated Planning Statement submitted on 16 September 2022 for details). There are mainly two proposed works area, one located to the north of the proposed access road (i.e. the northern works area), and another one located to the south of the proposed access road (i.e. the southern works area).

To minimize nuisances during construction stage to Sai Keng Tsuen and an existing bus layby at Sai Sha Road, both of which located to the north of the proposed access road, the Applicant has minimized the extent of the northern works area as far as practicable. The northern works area would mainly be used as the construction site entrance and access. Major works and associated storage of construction materials and machineries would mainly be at the southern works area. Hence, apart from the proposed access road alignment itself which would encroach partly onto the concerned slope feature, the whole slope feature would have to be included as the southern works area to allow adequate space during construction stage.

In addition, from geotechnical engineering point of view, the stability of the concerned slope feature shall be assessed as a whole in both construction and operation stages. As already explained in Section 4.1 of the submitted GPRR report, it is anticipated that the old existing retaining wall at toe of the concerned slope feature would be required to be strengthened up to the current standard. Therefore, the whole slope feature has to be included for further assessment and any potential upgrading works if necessary at detailed design stage.

.../2

Town Planning Board  
Page 2 of 2  
7 October 2022

Enhancement brought by the proposed compensatory planting

After completion of the construction, the works area will be reinstated with landscaping. Compensatory planting will be provided based on 1:1 ratio in terms of quantity. To further enhance the landscape quality of the affected area, the compensatory planting will be of 100% native tree species, as compared to the existing condition which comprises both exotic (about 16.6%) and native (about 83.4%) tree species. Please refer to Appendix A of the Consolidated Planning Statement submitted on 16 September 2022 for details.

Thank you for your kind attention. Should there be any queries, please do not hesitate to contact the undersigned at 2957 9602 or our Mr Arnold Koon at 2957 9667 / Miss Cody Yu at 2957 9615.

Yours faithfully  
for Llewelyn-Davies Hong Kong Ltd



Winnie Wu  
Associate Director

cc  
DPO/STN

Attn: Mr Harris LIU and Ms Sharon CHAN

(by email)

WW/AK/cy  
S:\13457 Sai Keng (S16 for access road in GB zone)\\_FI\FI(11)\_clarification on works area\20221006\_Sai Keng\_Cover  
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