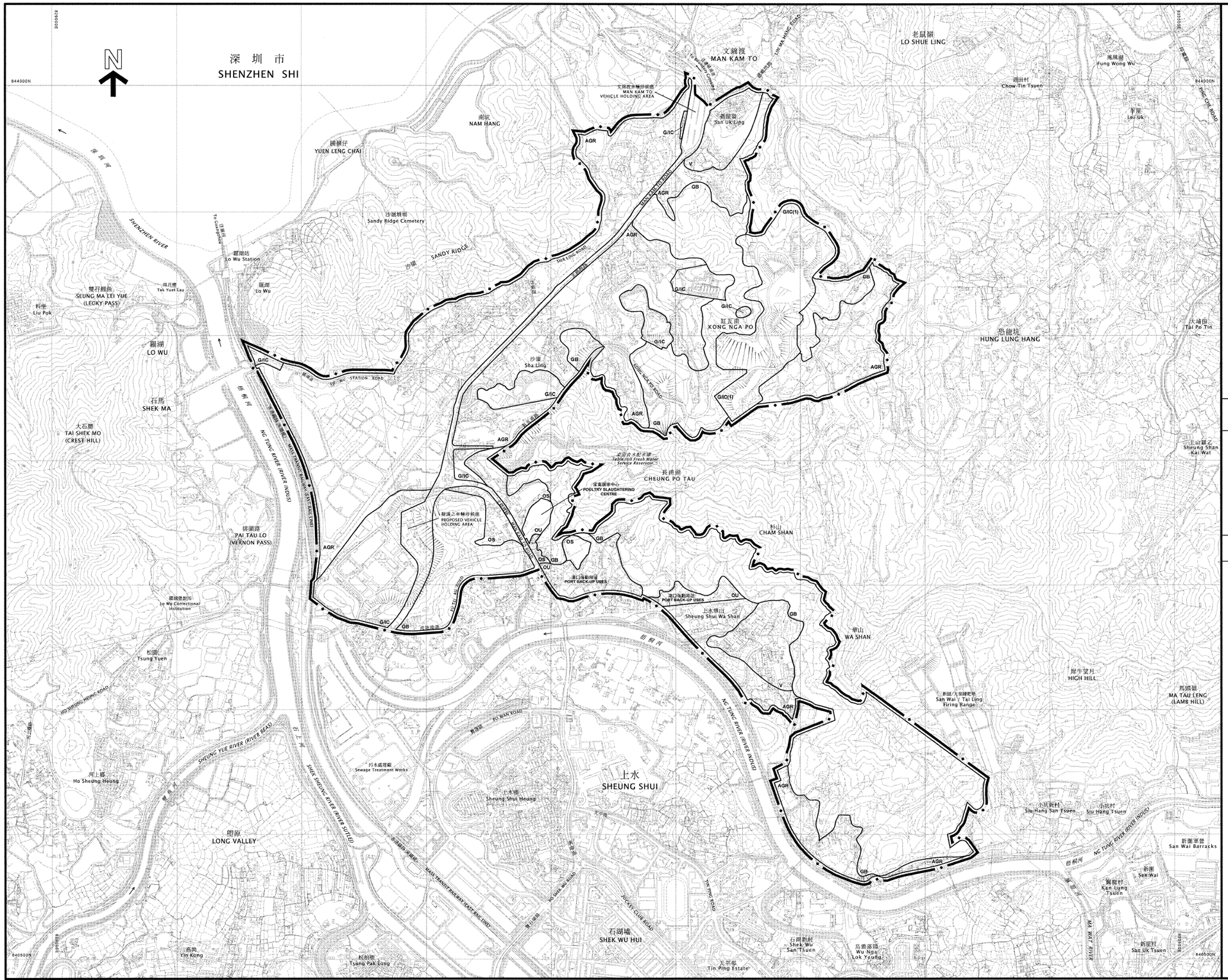


圖例
NOTATION

ZONES		地帶
VILLAGE TYPE DEVELOPMENT	V	鄉村式發展
OPEN STORAGE	OS	露天貯物
GOVERNMENT, INSTITUTION OR COMMUNITY	G/IC	政府、機構或社區
OTHER SPECIFIED USES	OU	其他指定用途
AGRICULTURE	AGR	農業
GREEN BELT	GB	綠化地帶

COMMUNICATIONS		交通
MAJOR ROAD AND JUNCTION		主要道路及路口

MISCELLANEOUS		其他
BOUNDARY OF PLANNING SCHEME		規劃範圍界線

土地用途及面積一覽表
SCHEDULE OF USES AND AREAS

USES	大約面積及百分率 APPROXIMATE AREA & % 公頃 HECTARES	% 百分率	用途
VILLAGE TYPE DEVELOPMENT	12.65	3.98	鄉村式發展
OPEN STORAGE	7.19	2.26	露天貯物
GOVERNMENT, INSTITUTION OR COMMUNITY	42.82	13.48	政府、機構或社區
OTHER SPECIFIED USES	8.78	2.76	其他指定用途
AGRICULTURE	129.24	40.68	農業
GREEN BELT	105.92	33.34	綠化地帶
MAJOR ROAD ETC.	11.09	3.50	主要道路等
TOTAL PLANNING SCHEME AREA	317.69	100.00	規劃範圍總面積

夾附的《註釋》屬這份圖則的一部分
THE ATTACHED NOTES ALSO FORM PART OF THIS PLAN

行政長官會同行政會議於２０１７年１２月５日　根據城市規劃條例第９（１）（ａ）條核准的圖則
APPROVED BY THE CHIEF EXECUTIVE IN COUNCIL UNDER SECTION 9(1)(a) OF THE TOWN PLANNING ORDINANCE ON 5 DECEMBER 2017

Ms Wendy LEUNG　梁蘊儀女士
CLERK TO THE EXECUTIVE COUNCIL　行政會議秘書

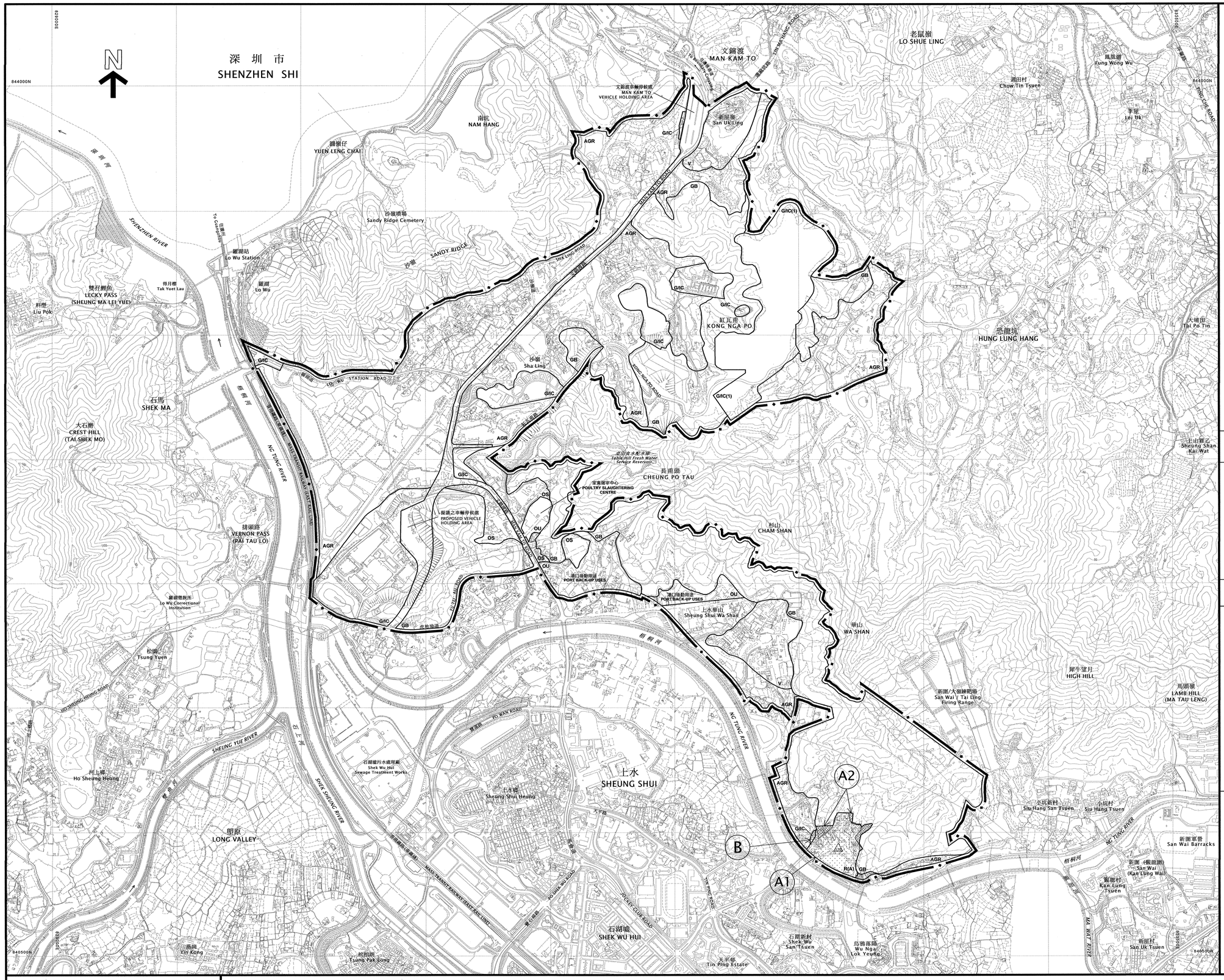
香港城市規劃委員會依據城市規劃條例擬備的虎地坳及沙嶺分區計劃大綱圖
TOWN PLANNING ORDINANCE, HONG KONG TOWN PLANNING BOARD
FU TEI AU & SHA LING - OUTLINE ZONING PLAN

SCALE ~~1:7,500~~ 比例尺

※ METRES 200 0 200 400 600 800 1 000 METRES ※

規劃署遵照城市規劃委員會指示擬備
PREPARED BY THE PLANNING DEPARTMENT UNDER THE DIRECTION OF THE TOWN PLANNING BOARD

圖則編號 PLAN No. **S/NE-FTA/16**



圖例
NOTATION

ZONES — 地帶

RESIDENTIAL (GROUP A)	R(A)	住宅（甲類）
VILLAGE TYPE DEVELOPMENT	V	鄉村式發展
OPEN STORAGE	OS	露天貯物
GOVERNMENT, INSTITUTION OR COMMUNITY	G/IC	政府、機構或社區
OTHER SPECIFIED USES	OU	其他指定用途
AGRICULTURE	AGR	農業
GREEN BELT	GB	綠化地帶

COMMUNICATIONS — 交通

MAJOR ROAD AND JUNCTION		主要道路及路口

MISCELLANEOUS — 其他

BOUNDARY OF PLANNING SCHEME		規劃範圍界線
MAXIMUM BUILDING HEIGHT (IN METRES ABOVE PRINCIPAL DATUM)	170	最高建築物高度（在主水平基準上若干米）

土地用途及面積一覽表
SCHEDULE OF USES AND AREAS

USES	大約面積及百分率 APPROXIMATE AREA & % 公頃 HECTARES	% 百分率	用途
RESIDENTIAL (GROUP A)	3.72	1.17	住宅（甲類）
VILLAGE TYPE DEVELOPMENT	12.65	3.98	鄉村式發展
OPEN STORAGE	7.19	2.26	露天貯物
GOVERNMENT, INSTITUTION OR COMMUNITY	42.88	13.50	政府、機構或社區
OTHER SPECIFIED USES	8.78	2.76	其他指定用途
AGRICULTURE	125.90	39.63	農業
GREEN BELT	105.49	33.21	綠化地帶
MAJOR ROAD ETC.	11.08	3.49	主要道路等
TOTAL PLANNING SCHEME AREA	317.69	100.00	規劃範圍總面積

夾附的《註釋》屬這份圖則的一部分，
現經修訂並按照城市規劃條例第5條展示。
THE ATTACHED NOTES ALSO FORM PART OF THIS PLAN AND HAVE BEEN AMENDED FOR EXHIBITION UNDER SECTION 5 OF THE TOWN PLANNING ORDINANCE

核准圖編號 S/NE-FTA/16 的修訂
AMENDMENTS TO APPROVED PLAN No. S/NE-FTA/16

AMENDMENTS EXHIBITED UNDER SECTION 5 OF THE TOWN PLANNING ORDINANCE	按照城市規劃條例第5條展示的修訂
AMENDMENT ITEM A1	修訂項目A1項
AMENDMENT ITEM A2	修訂項目A2項
AMENDMENT ITEM B	修訂項目B項

（參看附表）
(SEE ATTACHED SCHEDULE)

香港城市規劃委員會依據城市規劃條例擬備的虎地坳及沙嶺分區計劃大綱圖
TOWN PLANNING ORDINANCE, HONG KONG TOWN PLANNING BOARD
FU TEI AU & SHA LING - OUTLINE ZONING PLAN

SCALE 1:7500 比例尺

米 METRES 200 0 200 400 600 800 1 000 METRES 米

規劃署遵照城市規劃委員會指示擬備
PREPARED BY THE PLANNING DEPARTMENT UNDER THE DIRECTION OF THE TOWN PLANNING BOARD

圖則編號 PLAN No. **S/NE-FTA/16A**

~~APPROVED~~ *DRAFT* FU TEI AU AND SHA LING OUTLINE ZONING PLAN NO. S/NE-FTA/16*A*

(Being an ~~Approved~~ ***Draft*** Plan for the Purposes of the Town Planning Ordinance)

NOTES

(N.B. These form part of the Plan)

(1) These Notes show the uses or developments on land falling within the boundaries of the Plan which are always permitted and which may be permitted by the Town Planning Board, with or without conditions, on application. Where permission from the Town Planning Board for a use or development is required, the application for such permission should be made in a prescribed form. The application shall be addressed to the Secretary of the Town Planning Board, from whom the prescribed application form may be obtained.

(2) Any use or development which is always permitted or may be permitted in accordance with these Notes must also conform to any other relevant legislation, the conditions of the Government lease concerned, and any other Government requirements, as may be applicable.

(3) No action is required to make the use of any land or building which was in existence immediately before the first publication in the Gazette of the notice of the interim development permission area plan conform to this Plan, provided such use has continued since it came into existence. Any material change of such use or any other development (except minor alteration and/or modification to the development of the land or building in respect of such use which is always permitted) must be always permitted in terms of the Plan or in accordance with a permission granted by the Town Planning Board.

(4) A use or development of any land or building permitted under an earlier draft or approved plan including interim development permission area plan for the area and effected or undertaken during the effective period of that plan is always permitted under this Plan. Any material change of such use or any other development (except minor alteration and/or modification to the completed development of the land or building which is always permitted) must be always permitted in terms of the Plan or in accordance with a permission granted by the Town Planning Board.

(5) Except to the extent that paragraph (3) or (4) applies, any use or development falling within the boundaries of the Plan and also within the boundaries of the interim development permission area plan, unless always permitted in terms of the Plan, shall not be undertaken or continued on or after the date of the first publication in the Gazette of the notice of the interim development permission area plan without permission from the Town Planning Board.

(6) Except as otherwise specified by the Town Planning Board, when a use or material change of use is effected or a development or redevelopment is undertaken, as always permitted in terms of the Plan or in accordance with a permission granted by the Town Planning Board, all permissions granted by the Town Planning Board in respect of the site of the use or material change of use or development or redevelopment shall lapse.

(7) Road junctions, alignment of roads, and boundaries between zones may be subject to minor adjustments as detailed planning proceeds.

(8) The following uses or developments are always permitted on land falling within the boundaries of the Plan except where the uses or developments are specified in Column 2 of the Notes of individual zones:

(a) maintenance, repair or demolition of a building;

(b) provision, maintenance or repair of plant nursery, amenity planting, open space, rain shelter, refreshment kiosk, footpath, bus/public light bus stop or lay-by, cycle track, taxi rank, public utility pipeline, electricity mast, lamp pole, telephone booth, telecommunications radio base station, automatic teller machine and shrine;

(c) maintenance or repair of road, watercourse, nullah, sewer and drain;

(d) geotechnical works, local public works, road works, sewerage works, drainage works, environmental improvement works, marine related facilities and waterworks (excluding works on service reservoir) and such other public works co-ordinated or implemented by Government;

(e) rebuilding of New Territories Exempted House;

(f) replacement of an existing domestic building i.e. a domestic building which was in existence on the date of the first publication in the Gazette of the notice of the interim development permission area plan, by a New Territories Exempted House; and

(g) provision, maintenance or repair of a grave of an indigenous New Territories villager or a locally based fisherman and his family members for which permission has been obtained from Government.

(9) In any area shown as 'Road', all uses or developments except those specified in paragraphs (8)(a) to (8)(d) and (8)(g) above and those specified below require permission from the Town Planning Board:

road, toll plaza and on-street vehicle park.

(10) (a) Temporary use or development of any land or building not exceeding a period of two months is always permitted provided that no site formation (filling or excavation) is carried out and that the use or development is a use or development specified below:

structures for carnivals, fairs, film shooting on locations, festival celebrations, religious functions or sports events.

(b) Except as otherwise provided in paragraph (10)(a), temporary use or development of any land or building not exceeding a period of three years requires permission from the Town Planning Board. Notwithstanding that the use or development is not provided for in terms of the Plan, the Town Planning Board may grant permission, with or without conditions, for a maximum period of three years, or refuse to grant permission.

(c) Temporary use or development of land or building exceeding three years requires permission from the Town Planning Board in accordance with the terms of the Plan.

(11) Unless otherwise specified, all building, engineering and other operations incidental to and all uses directly related and ancillary to the permitted uses and developments within the same zone are always permitted and no separate permission is required.

(12) In these Notes, unless the context otherwise requires or unless as expressly provided below, terms used in the Notes shall have the meanings as assigned under section 1A of the Town Planning Ordinance.

"Existing building" means a building, including a structure, which is physically existing and is in compliance with any relevant legislation and the conditions of the Government lease concerned.

"New Territories Exempted House" means a domestic building other than a guesthouse or a hotel; or a building primarily used for habitation, other than a guesthouse or a hotel, the ground floor of which may be used as 'Shop and Services' or 'Eating Place', the building works in respect of which are exempted by a certificate of exemption under Part III of the Buildings Ordinance (Application to the New Territories) Ordinance (Cap. 121).

~~APPROVED~~ *DRAFT* FU TEI AU AND SHA LING
OUTLINE ZONING PLAN NO. S/NE-FTA/16*A*

Schedule of Uses

	Page
RESIDENTIAL (GROUP A)	***1***
VILLAGE TYPE DEVELOPMENT	~~*1*~~*4*
OPEN STORAGE	~~*3*~~*6*
GOVERNMENT, INSTITUTION OR COMMUNITY	~~*4*~~*7*
OTHER SPECIFIED USES	~~*7*~~*9*
AGRICULTURE	~~*7*~~*10*
GREEN BELT	~~*9*~~*12*

RESIDENTIAL (GROUP A)

Column 1 ***Uses always permitted***	***Column 2*** ***Uses that may be permitted with or without conditions on application to the Town Planning Board***
Ambulance Depot	***Commercial Bathhouse/ Massage Establishment***
Flat	***Eating Place***
Government Use (not elsewhere specified)	***Educational Institution***
House	***Exhibition or Convention Hall***
Library	***Government Refuse Collection Point***
Market	***Hospital***
Place of Recreation, Sports or Culture	***Hotel***
Public Clinic	***Institutional Use (not elsewhere specified)***
Public Transport Terminus or Station (excluding open-air terminus or station)	***Office***
Public Vehicle Park (excluding container vehicle)	***Petrol Filling Station***
Residential Institution	***Place of Entertainment***
School (in free-standing purpose-designed building only)	***Private Club***
Social Welfare Facility	***Public Convenience***
Utility Installation for Private Project	***Public Transport Terminus or Station (not elsewhere specified)***
	Public Utility Installation
	Religious Institution
	School (not elsewhere specified)
	Shop and Services (not elsewhere specified)
	Training Centre

(Please see next page)

RESIDENTIAL (GROUP A) (Cont'd)

In addition, the following uses are always permitted (a) on the lowest three floors of a building, taken to include basements; or (b) in the purpose-designed non-residential portion of an existing building, both excluding floors containing wholly or mainly car parking, loading/unloading bays and/or plant room:

Eating Place
Educational Institution
Institutional Use (not elsewhere specified)
Off-course Betting Centre
Office
Place of Entertainment
Private Club
Public Convenience
Recyclable Collection Centre
School
Shop and Services
Training Centre

Planning Intention

This zone is intended primarily for high-density residential developments. Commercial uses are always permitted on the lowest three floors of a building or in the purpose-designed non-residential portion of an existing building.

Remarks

(a) ***No new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 6.7 and a maximum building height in terms of metres above Principal Datum as stipulated on the Plan, or the plot ratio and height of the existing building, whichever is the greater.***

(b) ***In determining the maximum plot ratio for the purposes of paragraph (a) above, any floor space that is constructed or intended for use solely as car park, loading/unloading bay, plant room and caretaker's office, or caretaker's quarters and recreational facilities for the use and benefit of all the owners or occupiers of the domestic building or domestic part of the building, provided such uses and facilities are ancillary and directly related to the development or redevelopment, may be disregarded.***

(c) ***In determining the maximum plot ratio for the purpose of paragraph (a) above, any floor space that is constructed or intended for use solely as Government, institution or community facilities and public transport facilities, as required by the Government, may be disregarded.***

(d) ***Based on the individual merits of a development or redevelopment proposal, minor relaxation of the plot ratio and/or building height restrictions stated in paragraph (a) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.***

VILLAGE TYPE DEVELOPMENT

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Agricultural Use Government Use (Police Reporting Centre, Post Office only) House (New Territories Exempted House only) On-Farm Domestic Structure Religious Institution (Ancestral Hall only) Rural Committee/Village Office	Burial Ground Eating Place Government Refuse Collection Point Government Use (not elsewhere specified)# House (not elsewhere specified) Institutional Use (not elsewhere specified)# Place of Recreation, Sports or Culture Public Clinic Public Convenience Public Transport Terminus or Station Public Utility Installation# Public Vehicle Park (excluding container vehicle) Religious Institution (not elsewhere specified)# Residential Institution# School# Shop and Services Social Welfare Facility# Utility Installation for Private Project
In addition, the following uses are always permitted on the ground floor of a New Territories Exempted House:	
Eating Place Library School Shop and Services	

Planning Intention

The planning intention of this zone is to designate both existing recognized villages and areas of land considered suitable for village expansion. Land within this zone is primarily intended for development of Small Houses by indigenous villagers. It is also intended to concentrate village type development within this zone for a more orderly development pattern, efficient use of land and provision of infrastructures and services. Selected commercial and community uses serving the needs of the villagers and in support of the village development are always permitted on the ground floor of a New Territories Exempted House. Other commercial, community and recreational uses may be permitted on application to the Town Planning Board.

(Please see next page)

VILLAGE TYPE DEVELOPMENT (Cont'd)

Remarks

(a) No new development, or addition, alteration and/or modification to or redevelopment of an existing building (except development or redevelopment to those annotated with #) shall result in a total development and/or redevelopment in excess of a maximum building height of 3 storeys (8.23m) or the height of the building which was in existence on the date of the first publication in the Gazette of the notice of the interim development permission area plan, whichever is the greater.

(b) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the building height restriction stated in paragraph (a) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

OPEN STORAGE

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Agricultural Use Eating Place (Canteen only) Government Refuse Collection Point Government Use (not elsewhere specified) On-Farm Domestic Structure Open Storage (not elsewhere specified) Public Convenience Public Utility Installation Public Vehicle Park (excluding container vehicle) Rural Workshop Shop and Services (Service Trades only) Utility Installation for Private Project Vehicle Repair Workshop Warehouse (excluding Dangerous Goods Godown)	Asphalt Plant/Concrete Batching Plant Cargo Handling and Forwarding Facility Cement Manufacturing Container Storage/Repair Yard Container Vehicle Park/Container Vehicle Repair Yard Dangerous Goods Godown Eating Place (not elsewhere specified) Industrial Use (not elsewhere specified) Open Storage of Cement/Sand Open Storage of Chemical Products/Dangerous Goods Petrol Filling Station Shop and Services (not elsewhere specified) Vehicle Stripping/Breaking Yard Wholesale Trade

Planning Intention

This zone is intended primarily for the provision of land for appropriate open storage uses and to regularize the already haphazard proliferation of open storage uses. It provides for the orderly development of land for open storage uses that cannot be accommodated in conventional godown premises.

GOVERNMENT, INSTITUTION OR COMMUNITY

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Ambulance Depot Animal Quarantine Centre (in Government building only) Broadcasting, Television and/or Film Studio Eating Place (Canteen, Cooked Food Centre only) Educational Institution Exhibition or Convention Hall Field Study/Education/Visitor Centre Firing Range (on land designated "Government, Institution or Community (1)" only) Government Refuse Collection Point Government Use (not elsewhere specified) Helicopter Landing Pad (on land designated "Government, Institution or Community (1)" only) Hospital Institutional Use (not elsewhere specified) Library Market Place of Recreation, Sports or Culture Public Clinic Public Convenience Public Transport Terminus or Station Public Utility Installation Public Vehicle Park (excluding container vehicle) Recyclable Collection Centre Religious Institution Research, Design and Development Centre Rural Committee/Village Office School Service Reservoir Social Welfare Facility Training Centre Wholesale Trade	Animal Boarding Establishment Animal Quarantine Centre (not elsewhere specified) Columbarium Correctional Institution Crematorium Driving School Eating Place (not elsewhere specified) Firing Range (not elsewhere specified) Flat Funeral Facility Helicopter Landing Pad (not elsewhere specified) Holiday Camp House (other than rebuilding of New Territories Exempted House or replacement of existing domestic building by New Territories Exempted House permitted under the covering Notes) Off-course Betting Centre Office Petrol Filling Station Place of Entertainment Private Club Radar, Telecommunications Electronic Microwave Repeater, Television and/or Radio Transmitter Installation Refuse Disposal Installation (Refuse Transfer Station only) Residential Institution Sewage Treatment/Screening Plant Shop and Services ***(not elsewhere specified)*** Utility Installation for Private Project Zoo

(Please see next page)

GOVERNMENT, INSTITUTION OR COMMUNITY (Cont'd)

Planning Intention

This zone is intended primarily for the provision of Government, institution or community facilities serving the needs of the local residents and/or a wider district, region or the territory. It is also intended to provide land for uses directly related to or in support of the work of the Government, organizations providing social services to meet community needs, and other institutional establishments.

OTHER SPECIFIED USES

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board

For "Port Back-up Uses" only

Government Refuse Collection Point Government Use (not elsewhere specified) Public Convenience Public Transport Terminus or Station Public Utility Installation	Ambulance Depot Cargo Handling and Forwarding Facility Container Storage/Repair Yard Container Vehicle Park/Container Vehicle Repair Yard Dangerous Goods Godown Eating Place (Canteen, Cooked Food Centre only) Petrol Filling Station Public Vehicle Park (excluding container vehicle) Refuse Disposal Installation Utility Installation for Private Project Vehicle Repair Workshop Warehouse (excluding Dangerous Goods Godown)

Planning Intention

This zone is intended primarily for accommodating the anticipated increasing cross-boundary freight traffic, especially the parking of container vehicles, including container trailers and tractors, and other port back-up uses.

For "Poultry Slaughtering Centre" only

Poultry Slaughtering Centre	Government Use (not elsewhere specified) Public Utility Installation

Planning Intention

This zone is intended primarily for the development of a poultry slaughtering centre to centralize the processing of poultry slaughtering so as to minimize the risk of human infection of avian influenza.

Remarks

The poultry slaughtering centre shall not exceed the maximum building height of 40 metres above Hong Kong Principal Datum.

AGRICULTURE

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Agricultural Use Government Use (Police Reporting Centre only) On-Farm Domestic Structure Public Convenience Religious Institution (Ancestral Hall only) Rural Committee/Village Office	Animal Boarding Establishment Barbecue Spot Burial Ground Field Study/Education/Visitor Centre Government Refuse Collection Point Government Use (not elsewhere specified) House (New Territories Exempted House only, other than rebuilding of New Territories Exempted House or replacement of existing domestic building by New Territories Exempted House permitted under the covering Notes) Picnic Area Place of Recreation, Sports or Culture (Horse Riding School, Hobby Farm, Fishing Ground only) Public Utility Installation Religious Institution (not elsewhere specified) School Utility Installation for Private Project

Planning Intention

This zone is intended primarily to retain and safeguard good quality agricultural land/farm/fish ponds for agricultural purposes. It is also intended to retain fallow arable land with good potential for rehabilitation for cultivation and other agricultural purposes.

(Please see next page)

AGRICULTURE (Cont'd)

Remarks

(a) Any filling of pond, including that to effect a change of use to any of those specified in Columns 1 and 2 above or the uses or developments always permitted under the covering Notes (except public works co-ordinated or implemented by Government, and maintenance, repair or rebuilding works), shall not be undertaken or continued on or after the date of the first publication in the Gazette of the notice of the interim development permission area plan without the permission from the Town Planning Board under section 16 of the Town Planning Ordinance

(b) Any filling of land, including that to effect a change of use to any of those specified in Columns 1 and 2 above or the uses or developments always permitted under the covering Notes (except public works co-ordinated or implemented by Government, and maintenance, repair or rebuilding works), shall not be undertaken or continued on or after the date of the first publication in the Gazette of the notice of the draft Fu Tei Au and Sha Ling Outline Zoning Plan No. S/NE-FTA/8 without the permission from the Town Planning Board under section 16 of the Town Planning Ordinance. This restriction does not apply to filling of land specifically required under prior written instructions of Government department(s) or for the purposes specified below:

(i) laying of soil not exceeding 1.2m in thickness for cultivation; or

(ii) construction of any agricultural structure with prior written approval issued by the Lands Department.

GREEN BELT

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Agricultural Use Barbecue Spot Government Use (Police Reporting Centre only) Nature Reserve Nature Trail On-Farm Domestic Structure Picnic Area Public Convenience Tent Camping Ground Wild Animals Protection Area	Animal Boarding Establishment Broadcasting, Television and/or Film Studio Burial Ground Columbarium (within a Religious Institution or extension of existing Columbarium only) Crematorium (within a Religious Institution or extension of existing Crematorium only) Field Study/Education/Visitor Centre Government Refuse Collection Point Government Use (not elsewhere specified) Helicopter Landing Pad Holiday Camp House (other than rebuilding of New Territories Exempted House or replacement of existing domestic building by New Territories Exempted House permitted under the covering Notes) Petrol Filling Station Place of Recreation, Sports or Culture Public Transport Terminus or Station Public Utility Installation Public Vehicle Park (excluding container vehicle) Radar, Telecommunications Electronic Microwave Repeater, Television and/or Radio Transmitter Installation Religious Institution Residential Institution Rural Committee/Village Office School Service Reservoir Social Welfare Facility Utility Installation for Private Project

Planning Intention

The planning intention of this zone is primarily for defining the limits of urban and sub-urban development areas by natural features and to contain urban sprawl as well as to provide passive recreational outlets. There is a general presumption against development within this zone.

(Please see next page)

GREEN BELT (Cont'd)

Remarks

Any filling or excavation of land, including that to effect a change of use to any of those specified in Columns 1 and 2 above or the uses or developments always permitted under the covering Notes (except public works co-ordinated or implemented by Government, and maintenance, repair or rebuilding works), shall not be undertaken or continued on or after the date of the first publication in the Gazette of the notice of the interim development permission area plan without the permission from the Town Planning Board under section 16 of the Town Planning Ordinance.

~~APPROVED~~ *DRAFT* FU TEI AU AND SHA LING OUTLINE ZONING PLAN NO. S/NE-FTA/16*A*

EXPLANATORY STATEMENT

~~APPROVED~~ *DRAFT* FU TEI AU AND SHA LING
OUTLINE ZONING PLAN NO. S/NE-FTA/16*A*

EXPLANATORY STATEMENT

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~~APPROVED~~ *DRAFT* FU TEI AU AND SHA LING
OUTLINE ZONING PLAN NO. S/NE-FTA/16*A*

(Being an ~~Approved~~ ***Draft*** Plan for the Purposes of the Town Planning Ordinance)

EXPLANATORY STATEMENT

Note : For the purposes of the Town Planning Ordinance, this statement shall not be deemed to constitute a part of the Plan.

1. INTRODUCTION

This Explanatory Statement is intended to assist an understanding of the ~~approved~~ ***draft*** Fu Tei Au and Sha Ling Outline Zoning Plan (OZP) No. S/NE-FTA/16***A***. It reflects the planning intention and objectives of the Town Planning Board (the Board) for various land use zonings of the Plan.

2. AUTHORITY FOR THE PLAN AND PROCEDURE

2.1 The land ~~within~~ ***covered by*** the Fu Tei Au and Sha Ling OZP was previously included in the Fu Tei Au ***and Sha Ling Interim Development Permission Area (IDPA) Plan*** ~~No. IDPA/NE-FTA/1~~ and Fu Tei Au Development Permission Area (DPA) Plan.

2.2 ***On 7 September 1990, the Fu Tei Au and Sha Ling IDPA Plan No. IDPA/NE-FTA/1 prepared by the Director of Planning was notified in the Gazette.*** ~~which was prepared by the Director of Planning and notified in the Gazette on 7 September 1990.~~

2.3 ***On 12 July 1991, the draft Fu Tei Au and Sha Ling DPA Plan No. DPA/NE-FTA/1 was exhibited for public inspection under section 5 of the Town Planning Ordinance (the Ordinance). On 7 June 1994, the draft Fu Tei Au and Sha Ling DPA Plan was approved by the then Governor in Council under section 9(1)(a) of the Ordinance and renumbered as DPA/NE-FTA/2.*** ~~The land within the IDPA Plan was subsequently included in the draft Fu Tei Au and Sha Ling Development Permission Area (DPA) Plan No. DPA/NE-FTA/1, which was prepared by the Board and exhibited for public inspection under section 5 of the Town Planning Ordinance (the Ordinance) on 12 July 1991.~~

2.4 On 17 May 1993, under the power delegated by the then Governor, the then Secretary for Planning, Environment and Lands directed the Board, under section 3(1)(a) of the Ordinance, to prepare an OZP for the ~~area of~~ Fu Tei Au and Sha Ling ***area***.

~~2.3 On 7 June 1994, the then Governor in Council, under section 9(1)(a) of the Ordinance, approved the draft Fu Tei Au and Sha Ling DPA Plan, which was subsequently renumbered as DPA/NE-FTA/2.~~

2.5 On 24 June 1994, the draft Fu Tei Au and Sha Ling OZP No. S/NE-FTA/1 was exhibited for public inspection under section 5 of the Ordinance. The OZP was subsequently amended and exhibited for public inspection under

section 7 of the Ordinance. ***On 23 March 1999, the Chief Executive in Council (CE in C), under section 9(1)(a) of the Ordinance, approved the draft Fu Tei Au and Sha Ling OZP, which was subsequently renumbered as S/NE-FTA/3***.

2.5***6*** ~~On 23 March 1999, the Chief Executive in Council (CE in C), under section 9(1)(a) of the Ordinance, approved the draft Fu Tei Au and Sha Ling OZP, which was subsequently renumbered as S/NE-FTA/3.~~ On 22 June 1999, the CE in C referred the approved OZP ***No. S/NE-FTA/3*** to the Board for amendment under section 12(1)(b)(ii) of the Ordinance. The OZP was subsequently amended and exhibited for public inspection under the Ordinance. ***On 25 January 2000, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Fu Tei Au and Sha Ling OZP, which was subsequently renumbered as S/NE-FTA/5.***

2.6***7*** ~~On 25 January 2000, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Fu Tei Au and Sha Ling OZP, which was subsequently renumbered as S/NE-FTA/5.~~ On 21 October 2003, the CE in C referred the approved ***Fu Tei Au and Sha Ling*** OZP ***No. S/NE-FTA/5*** to the Board for amendment under section 12(1)(b)(ii) of the Ordinance. The OZP was ~~subsequently~~ then amended and exhibited for public inspection under section 5 of the Ordinance on 19 December 2003. ***On 2 November 2004, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Fu Tei Au and Sha Ling OZP, which was subsequently renumbered as S/NE-FTA/7.***

~~2.7 On 2 November 2004, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Fu Tei Au and Sha Ling OZP, which was subsequently renumbered as S/NE-FTA/7. On 12 April 2005, the CE in C referred the approved Fu Tei Au and Sha Ling OZP to the Board for amendment under section 12(1)(b)(ii) of the Ordinance.~~

2.8 ***On 12 April 2005, the CE in C referred the approved Fu Tei Au and Sha Ling OZP No. S/NE-FTA/7 to the Board for amendment under section 12(1)(b)(ii) of the Ordinance. The OZP was then amended twice and exhibited for public inspection under section 5 or 7 of the Ordinance.*** ~~On 29 April 2005, the draft Fu Tei Au and Sha Ling OZP No. S/NE-FTA/8 was exhibited for public inspection under section 5 of the Ordinance. During the exhibition period, two objections were received. On 21 April 2006, the Board gave further consideration to the objections and decided to propose an amendment to partially meet the objections. On 19 May 2006, the proposed amendment to the OZP was notified in the Gazette under section 6(7) of the Ordinance. No valid further objection was received during the notification period. On 14 July 2006, the Board agreed that the proposed amendment was a decision under section 6(9) of the Ordinance and the amendment should form part of the OZP.~~

~~2.9 On 24 February 2006, the draft Fu Tei Au and Sha Ling OZP No. S/NE-FTA/9, was exhibited for public inspection under section 7 of the Ordinance. No objection was received during the plan exhibition period.~~

2.~~10~~***9*** On 17 October 2006, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Fu Tei Au and Sha Ling OZP, which was subsequently

renumbered as S/NE-FTA/10. On 27 October 2006, the approved Fu Tei Au and Sha Ling OZP No. S/NE-FTA/10 was exhibited for public inspection under section 9(5) of the Ordinance.

2.~~11~~***10*** On 3 June 2008, the CE in C referred the approved Fu Tei Au and Sha Ling OZP No. S/NE-FTA/10 to the Board for amendment under section 12(1)(b)(ii) of the Ordinance. ***On 16 October 2009, the draft Fu Tei Au and Sha Ling OZP No. S/NE-FTA/11 was exhibited for public inspection under section 5 of the Ordinance.***

~~2.12 On 16 October 2009, the draft Fu Tei Au and Sha Ling OZP No. S/NE-FTA/11, incorporating amendments mainly to rezone a site near Man Kam To Road from "Open Storage" and "Other Specified Uses" ("OU") annotated "Petrol Filling Station" to "OU" annotated "Poultry Slaughtering Centre" and a set of Notes for the "OU" annotated "Poultry Slaughtering Centre" zone, was exhibited for public inspection under section 5 of the Ordinance. No representation was received during the two-month plan exhibition period.~~

2.~~13~~***11*** On 5 October 2010, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Fu Tei Au and Sha Ling OZP, which was subsequently renumbered as S/NE-FTA/12. On 15 October 2010, the approved Fu Tei Au and Sha Ling OZP No. S/NE-FTA/12 was exhibited for public inspection under section 9(5) of the Ordinance.

2.~~14~~***12*** On 5 November 2013, the CE in C, under section 12(1)(b)(ii) of the Ordinance, referred the approved Fu Tei Au and Sha Ling OZP No. S/NE-FTA/12 to the Board for amendment. ***On 20 December 2013, the draft Fu Tei Au and Sha Ling OZP No. S/NE-FTA/13 was exhibited for public inspection under section 5 of the Ordinance***. ***On 16 June 2015, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Fu Tei Au and Sha Ling OZP, which was subsequently renumbered as S/NE-FTA/14.*** ~~The reference back of the approved OZP was notified in the Gazette on 15 November 2013 under section 12(2) of the Ordinance.~~

~~2.15 On 20 December 2013, the draft Fu Tei Au and Sha Ling OZP No. S/NE-FTA/13 was exhibited for public inspection under section 5 of the Ordinance. The amendment on the OZP was the excision of the southern part from the planning scheme area for incorporation into the draft Fanling North OZP No. S/FLN/1 to reflect the boundary of the Fanling North New Development Area (NDA). During the exhibition period, a total of two representations were received. On 15 April 2014, the Board published the representations for three weeks for public comment and no comment was received.~~

~~2.16 On 25 September 2014, the Chief Executive, under section 8(2) of the Ordinance, agreed to extend the statutory time limit for the Board to submit the draft OZP to the CE in C for approval for a period of six months until 20 May 2015.~~

~~2.17 On 9 January 2015, the Board considered the representations and agreed to defer the decisions on the representations to the OZP such that the decisions on~~

~~all representations in respect of OZPs relating to the North East New Territories NDAs, which include the Fanling North NDA could be made together. On 28 April 2015, the Board decided not to propose any amendment to the draft OZP to meet the representations under section 6B(8) of the Ordinance.~~

~~2.18 On 16 June 2015, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Fu Tei Au and Sha Ling OZP, which was subsequently renumbered as S/NE-FTA/14. On 19 June 2015, the approved Fu Tei Au and Sha Ling OZP No. S/NE-FTA/14 was exhibited for public inspection under section 9(5) of the Ordinance.~~

2.~~19~~***13*** On 7 February 2017, the CE in C, under section 12(1)(b)(ii) of the Ordinance, referred the approved Fu Tei Au and Sha Ling OZP No. S/NE-FTA/14 to the Board for amendment. ~~The reference back of the OZP was notified in the Gazette on 17 February 2017 under section 12(2) of the Ordinance.~~ ***The OZP was then amended and exhibited for public inspection under section 5 of the Ordinance on 7 April 2017. On 5 December 2017, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Fu Tei Au and Sha Ling OZP, which was subsequently renumbered as A/NE-FTA/16. On 15 December 2017, the approved OZP was exhibited for public inspection under section (9)(5) of the Ordinance.***

~~2.20 On 7 April 2017, the draft Fu Tei Au and Sha Ling OZP No. S/NE-FTA/15 was exhibited for public inspection under section 5 of the Ordinance. The amendments to the OZP include the incorporation of three pieces of land from the Man Kam To and Hung Lung Hang OZPs into the planning scheme area and rezoning of those areas, together with a piece of land in Kong Nga Po, from "Green Belt" ("GB"), "Agriculture" and "Undetermined" to "Government, Institution or Community (1)" to facilitate the co-location of various police facilities in the North District; and incorporation of a piece of land zoned "GB" from the Man Kam To OZP without changing its land use zoning to rationalize the planning scheme boundary. Upon the expiry of the two-month exhibition period, no representation was received.~~

~~2.21 On 5 December 2017, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Fu Tei Au and Sha Ling OZP, which was subsequently renumbered as S/NE-FTA/16. On 15 December 2017, the approved Fu Tei Au and Sha Ling OZP No. S/NE-FTA/16 (the Plan) was exhibited for public inspection under section 9(5) of the Ordinance.~~

2.14 On 8 November 2022, the CE in C referred the approved Fu Tei Au and Sha Ling OZP to the Board for amendment under section 12(1)(b)(ii) of the Ordinance. The reference back of the OZP was notified in the Gazette on 18 November 2022 under section (12)(2) of the Ordinance.

2.15 On XX.2023, the draft Fu Tei Au and Sha Ling OZP No. S/NE-FTA/16A (the Plan) was exhibited for public inspection under section 5 of the Ordinance. The Plan incorporates amendments mainly to rezone an area located to the north of Fanling/Sheung Shui New Town from "Agriculture" and "Green Belt" zones to "Residential (Group A)", and "Agriculture" to "Government, Community or Institution" to facilitate a public housing

development and reprovisioning of government facilities respectively.

3. OBJECT OF THE PLAN

3.1 The object of the Plan is to indicate the broad land use zonings for the area of Fu Tei Au and Sha Ling so that development and redevelopment within the area can be put under statutory planning control. It also provides the planning framework for preparing more detailed non-statutory plans which form the basis for public works planning and site reservation for various uses.

3.2 The Plan is to illustrate the broad principles of development and planning control only. It is a small-scale plan and the road alignments and boundaries between the land use zones may be subject to minor adjustments as detailed planning proceeds.

4. NOTES OF THE PLAN

4.1 Attached to the Plan is a set of Notes which shows the types of uses or developments which are always permitted within the Planning Scheme Area and in particular zones and which may be permitted by the Board, with or without conditions, on application. The provision for application for planning permission under section 16 of the Ordinance allows greater flexibility in land use planning and control of development to meet changing needs.

4.2 For the guidance of the general public, a set of definitions that explains some of the terms used in the Notes may be obtained from the Technical Services Division of the Planning Department and can be downloaded from the Board's website at http://www.info.gov.hk/tpb.

5. THE PLANNING SCHEME AREA

5.1 The Planning Scheme Area (the Area) covered by the Plan is about 318 hectares. The Area lies in the northern part of the North East New Territories (NENT) and is located immediately to the north of Fanling North NDA. It is bounded by Man Kam To boundary crossing in the north, Hung Lung Hang in the east, Ng Tung River in the southeast, Fu Tei Au Road in the southwest, and Mass Transit Railway (East Rail Line) in the west. The boundary of the Area is shown by a heavy broken line on the Plan.

5.2 Apart from the flat arable land concentrated in the south-eastern and western parts of the Area and along both sides of Man Kam To Road, the Area comprises mainly hilly terrain especially to the northwest (i.e. Sandy Ridge) and east (Cheung Po Tau and Kong Nga Po).

5.3 The main economic activities in the Area have undergone significant changes in recent years as a significant amount of agricultural land and fish ponds have been converted to open storage and informal industrial uses due to the lack of adequate land use controls before the gazettal of IDPA Plan. The agricultural activities in the Area comprise mainly livestock rearing, fish and cash crops cultivation. These were once predominant uses in the area but have recently

been affected by the proliferation of open storage and informal industrial uses. In general, agricultural activities in Sha Ling and areas distant from the main roads in Fu Tei Au are less adversely affected.

5.4 At present, the haphazard development of open storage, lorry park and informal industrial uses are largely related to the cross-boundary trades and such activities are usually concentrated along Man Kam To Road. Proliferation of incompatible uses indiscriminately has given rise to environmental, boundary control and traffic problems. In balancing the need of providing land to accommodate cross-boundary trades and port back-up facilities, without jeopardising conservation protection of existing agricultural land, woodland and landscape amenities, there is a need for planning guidance and development control in the Area.

6. POPULATION

Based on the ~~2011 Population Census~~ ***2016 Population By-census***, the population of the Area was estimated by the Planning Department as about ~~1,750~~ ***1,550*** persons. It is estimated that the ***total*** planned population ~~of the Area~~ would be about ~~2,200~~ ***13,500*** persons.

7. OPPORTUNITIES AND CONSTRAINTS

7.1 Opportunities

7.1.1 The extension of the Man Kam To Vehicle Holding Area (VHA) and the proposed VHA near Sheung Shui Water Treatment Works would alleviate congestion on main transport routes.

7.1.2 The improvement of the van track leading from Tin Ping Shan to Sheung Shui Wa Shan Village under the then Rural Planning and Improvement Strategy was completed in 1998. Another Rural Public Works project for resurfacing an existing van track at Sheung Shui Wa Shan was completed in early 2003.

7.2 Constraints

7.2.1 Traffic Aspects

The Area is traversed by Man Kam To Road in the north-south direction and the Man Kam To Boundary Crossing is at the northern boundary of the Area. Man Kam To Road is a major transport link in the New Territories. Despite the proposed road improvement works, heavy cross-boundary trade would have adverse impact on the capacity of Man Kam To Road and congestion on this main transport route and Jockey Club Road may become apparent. The congestion problem is further worsened by the proliferation of lorry parks, open storage and rural industrial developments along the road. Congestion on Man Kam To Road not only hinders the cross-boundary trades but also limits the development potential of the Area. New transport link and

further improvement works on Man Kam To Road would be required to relieve congestion and facilitate future development.

7.2.2 Sewerage Aspects

The Area is not yet served by sewerage infrastructure and installation of septic tank/soakaway system is not suitable for the flood-prone areas in the south. For new developments, on-site sewage treatment facilities (e.g. sewage treatment plant), acceptable to the Environmental Protection Department, are required.

7.2.3 Drainage Aspects

(a) The low-lying areas to the south of Lo Wu MTR Station are susceptible to flooding. Consideration should be given to restrict developments within the area liable to flood damages and uses which may cause adverse drainage impacts on other areas in the drainage basin. Developments must be accompanied by drainage impact assessments or effective drainage facilities proposal.

(b) The training works for Ng Tung River located along the southeastern edge of the Area were completed. The flooding situation in these previously flood prone areas has been greatly improved.

7.2.4 Geotechnical Aspects

(a) There are existing geotechnical features that could affect or be affected by development/redevelopment within the Area. Upon development/redevelopment, the stability of these geotechnical features should be assessed and, if necessary, upgraded to the current safety standards.

(b) The Area is overlooked by steep natural hillsides and may be affected by potential natural terrain landslide hazards. For future development at these areas, a natural terrain hazard study may be required to assess the scale of hazards and suitable hazard mitigation measures, if found necessary, should be provided as part of the development. The required natural terrain hazard study and necessary hazard mitigation measures may incur significant cost implications for further developments at these areas.

7.2.5 Other Constraints

Other built and environmental constraints are found in the Area, these include the Man Kam To VHA, Sheung Shui Water Treatment Works, waterworks reserves for pipelines and water tunnel, Police Firearm Training Ground, Sha Ling Livestock Waste Composting Plant, Border District Police Headquarters, Sheung Shui Wa Shan Site of Archaeological Interest and permitted burial grounds for indigenous

villagers.

8. GENERAL PLANNING INTENTION

8.1 The North East New Territories Development Strategy Review (NENT DSR) was commissioned by the Government to examine development opportunities and constraints in the NENT. The NENT DSR recognizes the potential recreational opportunities of the NENT in view of the high-quality natural environment and landscape amenity. A balance should therefore be maintained to facilitate development on selected areas and promote landscape protection in the NENT. Whilst the NENT will continue to accommodate a certain extent of conventional manufacturing and warehouse activities, it is the intention to discontinue those polluting and non-conforming uses.

8.2 The general planning intention for the Area is to promote and conserve the rural character through control on urban sprawl, minimisation of flood risk and preservation of agricultural land, and to achieve coherent planning and control of the open storage problem.

8.3 In the designation of various zones in the Area, considerations have been given to the natural environment, physical landform, existing settlements, availability of infrastructure, constraints and opportunities, land ownership, land status and local development pressure.

8.4 Other than the above, buildings and places of historical and archaeological interests should be preserved in the Area as far as possible.

9. LAND USE ZONINGS

9.1 Residential (Group A) ("R(A)") : Total Area 3.72 ha

9.1.1 This zone is intended primarily for high-density residential developments. Commercial uses are always permitted on the lowest three floors of a building or in the purpose-designed non-residential portions of an existing building.

9.1.2 A site located to the north of Fanling/Sheung Shui New Town is zoned "R(A)" intended for public housing development. Development/redevelopment within this zoning is subject to a maximum plot ratio of 6.7 and a maximum building height of 170mPD.

9.1.3 In order to facilitate provision of public transport facilities and GIC facilities, in determining the maximum plot ratio of the development and/or redevelopments, any floor space that is constructed or intended for use solely as public transport facilities and GIC facilities, as required by the Government, may be disregarded.

9.1.4 Minor relaxation of the plot ratio and/or building height restrictions for the "R(A)" zone may be considered by the Board on application

under section 16 of the Ordinance. Each application for minor relaxation of plot ratio and/or building height restrictions will be considered on its own merits.

9.1.5 A planning brief setting out the planning parameters and the design requirements of public housing development will be provided to guide its future development.

9.1.6 An Air Ventilation Assessment – Expert Evaluation (AVA-EE) has been carried out for the "R(A)" site. It is found out that design measures, including building separations and setbacks, would alleviate the potential air ventilation impacts to the surrounding wind environment. A quantitative AVA should be carried out at the detailed design stage. Requirements of the design measures and quantitative AVA will be incorporated in the planning brief for the implementation as appropriate.

9.1.7 The plot ratio control is regarded as being stipulated in a "new or amended statutory plan" according to the Joint Practice Note No. 4 "Development Control Parameters Plot Ratio/Gross Floor Area", and shall be subject to the streamlining arrangements stated therein.

~~9.1~~***9.2*** Village Type Development ("V") : Total Area 12.65 ha

9.~~1~~***2***.1 The planning intention of this zone is to designate both existing recognized villages and areas of land considered suitable for village expansion. Land within this zone is primarily intended for development of Small Houses by indigenous villagers. It is also intended to concentrate village type development within this zone for a more orderly development pattern, efficient use of land and provision of infrastructures and services. Selected commercial and community uses serving the needs of the villagers and in support of the village development are always permitted on the ground floor of a New Territories Exempted House. Other commercial, community and recreational uses may be permitted on application to the Board.

9.~~1~~***2***.2 The boundaries of the "V" zones are drawn up having regard to the village 'environs' of the recognized villages, the local topography, the existing land use pattern, the provision of infrastructural facilities, the approved applications for Small House development, the outstanding Small House applications, as well as the Small House demand forecast. Areas of difficult terrain, dense vegetation, burial grounds and streamcourses have been avoided. Village expansion areas and other infrastructural improvements will be guided by detailed layout plans whenever applicable.

9.~~1~~***2***.3 Two recognized villages in the Area, namely San Uk Ling Village and Sheung Shui Wa Shan Village are within this zone. The western part of San Uk Ling Village is subject to adverse traffic noise impact generated by the cross-boundary traffic along Man Kam To Road. In addition, since the western edge of the village would be required for the proposed extension of the Man Kam To VHA, future village

housing development near the road should be avoided. Suitable noise mitigation measures such as self-protective building design, noise barriers etc. would be required.

9.~~1~~***2***.4 To provide flexibility for innovative design adapted to the characteristics of particular sites, minor relaxation of the building height restriction stated in the Notes may be considered by the Board through the planning permission system. Each proposal will be considered on its individual planning merits.

9.~~2~~***3*** Open Storage ("OS") : Total Area 7.19 ha

9.~~2~~***3***.1 This zone is intended primarily for the provision of land for appropriate open storage uses and to regularize the already haphazard proliferation of open storage uses. It provides for the orderly development of land for open storage uses that cannot be accommodated in conventional godown premises. Moreover, uses serving the cross-boundary trade such as vehicle repair workshop and warehouse (excluding dangerous goods godown) are always permitted.

9. ~~2~~***3***.2 Specified open storage uses such as container storage, container vehicle park, open storage of cement/sand, vehicle stripping/breaking yard, etc. which may cause environmental nuisance, safety hazards or traffic problems require planning permission from the Board. Development proposals for such purposes have to clearly demonstrate that the proposed uses would have no adverse environmental, drainage, traffic and other impacts on the surrounding uses. Other open storage uses (not elsewhere specified), such as storage of processed agricultural products, construction materials (except storage of cement/sand) and equipment, which are unlikely to cause adverse environmental and traffic impacts are always permitted in this zone.

9.~~2~~***3***.3 The proliferation of unplanned open storage and industrial developments along the corridor of Man Kam To Road has created significant environmental and traffic problems, though these uses have contribution to the cross-boundary trade.

9.~~2~~***3***.4 The proposed VHA near the Sheung Shui Water Treatment Works and the proposed extension of Man Kam To VHA, after completion, can relieve the additional traffic generated by the increasing cross-boundary traffic and open storage activities in the Area.

9.~~3~~***4*** Government, Institution or Community ("G/IC") : Total Area ~~42.82~~ ***42.88*** ha

9.~~3~~***4***.1 The "G/IC" zone is intended primarily for the provision of Government, institution or community facilities serving the needs of the local residents and/or a wider district, region or the territory. It is also intended to provide land for uses directly related to or in support of the work of the Government, organizations providing social services to meet community needs, and other institutional establishments. As detailed planning proceeds, other land in the Area may be designated to this category to meet the envisaged demand of the growing population of the Area.

9.3***4***.2 The San Uk Ling Holding Centre, San Uk Ling Police Firearm Training Ground, Border District Police Headquarters, Sha Ling Livestock Waste Composting Plant, Sheung Shui Water Treatment Works, Mass Transit Railway Corporation Carpark and Staff Quarters, and the Police Dog Unit and Force Search Unit Training Centre are zoned "G/IC".

9.4.3 In order to facilitate the provision of toilet and catering facilities for cross-boundary drivers, a piece of Government land adjoining the extension of the Man Kam To VHA is zoned "G/IC". Two "G/IC" sites on Government land near the Border District Police Headquarters are reserved to meet the long-term needs. ***A "G/IC" site located to the west of a public housing development in Wa Shan, Sheung Shui is designated for reprovisioning of an existing refuse collection point and a public toilet affected by the public housing development.***

9.4.4 In addition, a site near Kong Nga Po is zoned "G/IC(1)" for co-locating various existing police facilities in the North District including the Lo Wu and Ma Tso Lung firing ranges, the police driving and traffic training facilities and weapons training facilities at Fanling, the helipad at Lo Wu Firing Range, and a proposed police training facility. According to the indicative layout plan under the "Engineering Study for Police Facilities in Kong Nga Po - Feasibility Study" undertaken by the Civil Engineering and Development Department, the police facilities to be accommodated at the Kong Nga Po site will have a total floor area of about 35,000m^2 and a maximum building height of 5 storeys which will be subject to change at the detailed design stage.

9.4***5*** Other Specified Uses ("OU") : Total Area 8.78 ha

9.4***5***.1 The planning intention of this zone is to allocate land for specified uses.

9.4***5***.2 An area located along Man Kam To Road at Sheung Shui Wa Shan is zoned "OU" annotated "Port Back-up Uses". This area is primarily intended to accommodate the anticipated increasing cross-boundary freight traffic, especially the parking of container vehicles, including container trailers and tractors, and other port back-up uses. It is an area consisting of mainly fallow agricultural land intermixed with scattered open storage yards. The close proximity of the site to the Man Kam To Boundary Control Point provides an unique opportunity to develop the area for port back-up uses which could accommodate a range of services to facilitate cross-boundary trades.

9.4***5***.3 Nevertheless, in order to maintain control and address potential impacts of port back-up uses on drainage, traffic, sewage and environment on adjoining areas, permission of the Board under section 16 of the Ordinance would be required.

9.4***5***.4 A piece of land abutting Man Kam To Road in Fu Tei Au is zoned "OU" annotated "Poultry Slaughtering Centre". This zone is intended primarily for the development of a poultry slaughtering centre to

centralize the processing of poultry slaughtering so as to minimize the risk of human infection of avian influenza. The poultry slaughtering centre shall not exceed the maximum building height of 40 metres above Hong Kong Principal Datum.

9.~~5~~***6*** Agriculture ("AGR") : Total Area ~~129.24~~ ***125.90*** ha

9.~~5~~***6***.1 This zone is intended primarily to retain and safeguard good quality agricultural land/farm/fish ponds for agricultural purposes. The zoned areas are usually well served by irrigation and servicing facilities as well as marketing facilities for intensive farming including livestock rearing, fish culture and horticulture. This zone is also intended to retain fallow arable land with good potential for rehabilitation for cultivation and other agricultural purposes.

9.~~5~~***6***.2 Since the northern part (e.g. Sha Ling) and eastern part of the Area (e.g. Sheung Shui Wa Shan) fall within the Environmental Protection Department's Livestock Waste Control Area (i.e. Upper Shenzhen River Area) with effect from 1 January 1989, livestock premises located in the statutory Control Area must comply with the requirements of the Waste Disposal (Livestock Waste) Regulations. Measures should be taken to prevent any environmental nuisance to the public and any pollution to watercourses and Water Gathering Grounds within the meaning of the Waterworks Ordinance. Adequate provision for the temporary storage of livestock waste in properly-designed and constructed containers should be made.

9.~~5~~***6***.3 Part of the Sheung Shui Wa Shan Site of Archaeological Interest falls within this zone and prior consultation with the Antiquities and Monuments Office (AMO) of ~~the Leisure and Cultural Services Department (LCSD)~~ ***Development Bureau (DEVB)*** is required on any development or redevelopment proposal which might affect the site. As filling of land/pond may cause adverse drainage and environmental impacts on the adjacent areas, permission from the Board is required for such activities. However, filling of land specifically required under prior written instructions of Government department(s) or for the purposes of genuine agricultural practice including laying of soil not exceeding 1.2m in thickness for cultivation, and construction of agricultural structure with prior written approval from the Lands Department is exempted from the control.

9.~~6~~***7*** Green Belt ("GB") : Total Area ~~105.92~~ ***105.49*** ha

9.~~6~~***7***.1 The planning intention of this zone is primarily for defining the limits of urban and sub-urban development areas by natural features and to contain urban sprawl as well as to provide passive recreational outlets. The zoned areas may include foothills, lower hill slopes, spurs, isolated knolls, woodland, vegetated land and areas of 'fung shui' significance. Part of the permitted burial grounds for indigenous villagers also falls within this zone.

9.~~6~~7.2 This zoning is intended to promote conservation of the natural environment, to safeguard it from encroachment by urban type development, and to provide additional outlets for passive recreational activities. There is a general presumption against development within this zone. Nevertheless, limited developments may be permitted if they are justified on strong planning grounds. Developments requiring planning permission from the Board will be assessed on their individual merits taking into account the relevant Town Planning Board Guidelines.

9.~~6~~7.3 A large portion of the Sheung Shui Wa Shan Site of Archaeological Interest falls within this zone and prior consultation with the AMO of the ~~LCSD~~ ***DEVB*** is required on any development or redevelopment proposal which might affect the site.

9.~~6~~7.4 As filling and excavation of land may cause adverse drainage impacts on the adjacent areas and adverse impacts on the natural environment, permission from the Board is required for such activities.

10. CULTURAL HERITAGE

The Sheung Shui Wa Shan Site of Archaeological Interest is located within the Fu Tei Au and Sha Ling area. The AMO of the ~~LCSD~~ ***DEVB*** should be consulted on any development or redevelopment proposal~~s~~ which might affect this site or jeopardise the integrity of this site and its immediate environ~~s~~. An assessment shall be conducted to evaluate the archaeological impact imposed by the proposed works if there is any development within this site of archaeological interest. If necessary, a professional archaeologist shall be engaged to apply for a licence from the Antiquities Authority under the Antiquities and Monuments Ordinance (Cap. 53) for an archaeological field investigation to evaluate whether the proposed works is acceptable from an archaeological preservation point of view and propose appropriate mitigation measures.

11. COMMUNICATIONS

Reconstruction of Man Kam To Road was completed in October 1999. A vehicular access road serving the area designated as "OU" annotated "Port Back-up Uses" at Sheung Shui Wa Shan is planned.

12. UTILITY SERVICES

12.1 Water Supply

Fresh water supply is generally available to low lying areas in the Area. Water supply to the Area is divided into two zones. For the northern part (north of Sheung Shui Water Treatment Works), supply of fresh water is provided directly by Sheung Shui Water Treatment Works with Table Hill Fresh Water Service Reservoir acting as a balancing tank. For the southern part (Sheung Shui Water Treatment Works and southwards), supply of fresh water is provided by Table Hill Fresh Water Service Reservoir. Currently,

temporary mains fresh water for flushing is provided to the area as supply of seawater for flushing is not available.

12.2 Sewerage and Drainage Systems

The Area is not provided with public sewers. It is anticipated that the Area will ultimately be provided with public sewers since it is located with proximity to the Fanling/Sheung Shui New Town. In the meantime, on-site sewage treatment facilities, acceptable to the Environmental Protection Department, are required.

12.3 Electricity Supply

The Area is supplied with electricity. 132kV overhead line and cables through Wa Shan and Kong Nga Po have been proposed for additional supply to the Muk Wu Pumping Station.

12.4 Gas Supply

There is neither existing nor planned gas installation proposal within the Area.

12.5 Telephone Services

Both existing and proposed telephone lines are provided or planned in the Area.

13. IMPLEMENTATION

13.1 The Plan provides a broad land use framework for development control and implementation of planning proposals for the Area. More detailed plans will be prepared as a basis for public works planning and private developments.

13.2 At present, there is no overall programme for the provision of infrastructure within the Area. The implementation process will be gradual and may stretch over a long period of time depending on the availability of resources. It will be undertaken through the participation of both the public and private sectors.

13.3 Notwithstanding the above, minor improvement works, e.g. road widening and laying of utility services will be implemented through the Public Works Programme and the Rural Public Works as and when resources are available. Private developments will be effected principally through private sector initiatives to develop or redevelop their properties in accordance with the zoned uses indicated on the Plan, provided that their proposals meet Government requirements.

14. PLANNING CONTROL

14.1 The types of permitted developments and uses within the Area are listed in the Notes to the Plan. Unless otherwise specified, all building, engineering and other operations incidental to and all uses directly related and ancillary to the

permitted developments and uses within the same zone are always permitted and no separate permission is required.

14.2 Uses of land or building which were in existence immediately before the first publication in the Gazette of the notice of the IDPA plan and which are not in compliance with the terms of the Plan may have adverse impact on the environment, drainage and traffic of the area. Although no action is required to make such use conform to this Plan, any material change of such use or any other development (except minor alteration and/or modification to the development of the land or building in respect of such use which is always permitted) must be always permitted in terms of the Plan or, if permission is required, in accordance with a permission granted by the Board. The Board will consider these applications on their individual merits. Those alteration and/or modification works which may lead to an environmental improvement or upgrading to the Area may be considered favourably by the Board.

14.3 Planning applications to the Board will be assessed on individual merits. In general, the Board, in considering the planning applications, will take into account all relevant planning considerations which may include the departmental outline development plans and layout plans, and guidelines published by the Board. The outline development plans and layout plans are available for public inspection at the Planning Department. Guidelines published by the Board are available from the Board's website, the Secretariat of the Board, and the Technical Services Division of the Planning Department. Application forms and Guidance Notes for planning applications can be downloaded from the Board's website and are available from the Secretariat of the Board; and the Technical Services Division and relevant District Planning Office of the Planning Department. Applications should be supported by such materials as the Board thinks appropriate to enable it to consider the applications.

14.4 Any development, other than those referred to in paragraph 14.1 above or in conformity with this Plan or with the permission of the Board, undertaken or continued on or after 7 September 1990 on land included in a plan of the Fu Tei Au and Sha Ling IDPA may be subject to enforcement proceedings under the Ordinance. Any filling of land/pond and excavation of land in the relevant zones on or after the exhibition of the specific plan referred to in the Notes of the relevant zones without the permission from the Board may also be subject to enforcement proceedings.

TOWN PLANNING BOARD
~~DECEMBER~~ ***MARCH*** **~~2017~~** ***2023***

[RESTRICTED]

CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

AGREEMENT NO. CE 47/2020 (CE) –
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

TASK ORDER NO. 1 – SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED PUBLIC HOUSING DEVELOPMENT AT WA SHAN, SHEUNG SHUI – FEASIBILITY STUDY

Planning Report (PR) for Amendments to OZP (Final – Issue 1)

NOVEMBER 11, 2022



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[RESTRICTED]

PROJECT NO.: 2512219A

DATE: NOVEMBER 2022

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ABBREVIATIONS

ADWF	Average Dry Weather Flow
AOI	Area of Influence
ASD	Architectural Services Department
AVA	Air Ventilation Assessment
B/Ds	Bureaux / Government Departments
BDTM	Base District Traffic Model
C&D	Construction and Demolition
CASET	Computer Aided Sustainability Evaluation Tool
CAR	Contamination Assessment Report
CEDD	Civil Engineering and Development Department
DAC	Day Activity Centre
DCU	Day Car Unit
DEVB	Development Bureau
DFC	Design Flow / Capacity
DG	Dangerous Goods
DI	Departmental Instruction
DIA	Drainage Impact Assessment
DP	Designated Project
DSD	Drainage Services Department
EFS	Engineering Feasibility Studies
EIAO	Environmental Impact Assessment Ordinance
EPD	Environmental Protection Department
FEHD	Food and Environmental Hygiene Department
FWSR	Fresh Water Service Reservoir
FLWSR	Flushing Water Service Reservoir
GESF	Guidelines for Estimating Sewage Flows
GIC	Government, institution or community
GLA	Government Land Allocations
GMB	Green Minibus
GMP	Greening Master Plan
GPS	Global Parking Standard
HD	Housing Department
HKPSG	Hong Kong Planning Standard and Guidelines
HMMH	Hostel for Moderately Mentally Handicapped Persons
HSMH	Hostel for Severely Mentally Handicapped Persons
HSPH	Hostel for severely Physically Handicapped Persons
HyD	Highways Department
IDF	Intensity Duration Frequency
IVRSC	Integrated Vocational Rehabilitation Services Centre
LandsD	Lands Department
LATM	Local Area Traffic Model

LCA	Landscape Character Areas
LCSD	Leisure and Cultural Services Department
LOS	Level of Service
LR	Landscape Resources
MDD	Mean Daily Demand
OZP	Outline Zoning Plan
PE	Public Engagement
PER	Preliminary Environmental Report
PFRFs	Public Fill Reception Facilities
PlanD	Planning Department
PS	Pumping Station
PT	Public Transport
PRH	Public Rental Housing
RAP	Remediation Action Plan
RC	Reserve Capacity
RCP	Refuse Collection Point
RCHD	Residential Care Home for the Elderly
RR	Remediation Report
SAI	Site of Archaeological Interest
SDM	Stormwater Drainage Manual
SHOS(MPH)	Supported Hostel for Mentally/Physically Handicapped Persons
SI	Site Investigation
SIA	Sewerage Impact Assessment
SIS	Slope Information System
SRTM	Sub-reginal Traffic Model
SSF	Subsidised Sale Flats
SWHSTW	Shek Wu Hui Sewerage Treatment Works
TCR	Total Core Recovery
THFWSR	Table Hill Fresh Water Service Reservoir
TMH	Terminal Manhole
TPDM	Transport Planning and Design Manual
TPI	Tree of Particular Interest
UFF	Unit Flow Factors
V/C	Volume to Capacity
VP	Viewing Point
WSD	Water Supplies Department
WSIA	Water Supply Impact Assessment
WSP	WSP (Asia) Ltd.

1 INTRODUCTION

1.1 BACKGROUND

1.1.1 The Government is committed to facilitating steady and continued land supply, not only for providing people with a place to live and work, but also for the developments of Hong Kong's commerce, industry, innovation and technology and various emerging sectors. In the short to medium term, the Government will continue to optimise the use of built-up land and its surrounding areas to meet the demand of the public for land for housing and other purposes.

1.1.2 Potential Sites are identified for housing developments. Boundaries of the instructed Site(s) would be subject to review and determination from the findings of study(ies) and assessment(s) under this Assignment. According to the Study on Existing Profile and Operations of Brownfield Study in New Territories - Feasibility Study" (the Brownfield Study) completed by Planning Department in 2019, 450 hectare (ha) brownfield sites are categorised to have high or medium possible development potential. The first-phase review covering 160 ha of those brownfield sites closer to the existing infrastructures was completed in 2019 and eight clusters suitable for public housing development were shortlisted. Adopting the same approach as under the first-phase review, Planning Department has completed the second-phase review on the remaining 290 ha of brownfield sites, and identified, amongst others, a site of about 3.75 ha in Wa Shan for public housing development

1.1.3 This EFS would determine the scope of infrastructure works required, assess various impacts and recommend relevant mitigation measures. It also aims to provide technical assessments to support the proposed Outline Zoning Plan (OZP) amendments to reflect the rezoning proposal for the public housing development. Subsequently, Civil Engineering and Development Department (CEDD) will carry out the corresponding investigation, detailed design and implementation of site formation and infrastructure works so as to handover the Site(s) for construction of housing flats.

1.1.4 WSP (Asia) Ltd. (WSP) was commissioned by the CEDD of the Hong Kong Special Administrative Region to undertake this Feasibility Study of Agreement No. CE 47/2020 (CE) Term Consultancy for Site Formation and Infrastructure Works for Proposed Housing Developments in Zone 2 (2021 – 2024) – Feasibility Study. The commencement date of the Study was 12 March 2021.

1.1.5 WSP was further instructed by the CEDD to undertake this Feasibility Study of Task Order No. 1 – Site Formation and Infrastructure Works for Proposed Public Housing Development at Wa Shan, Sheung Shui – Feasibility Study. The commencement date of the Task Order was 13 April 2021.

1.2 SCOPE OF THIS PROJECT

1.2.1 The Project comprises feasibility study of the site formation and infrastructure works for the potential housing site as shown on **FIGURE 1**. Main elements of works of this project include, but not limited to the following: -

(a) Recommendation of optimum development parameters for the Development(s) and the required supporting facilities for the Development(s);

(b) Site clearance of existing structures, trees and any other constraints at the Site(s) to the Development(s);

(c) Site formation works;

(d) Slope cutting and earth filling works as well as geotechnical works/structures (including slope/retaining wall upgrading works if necessary);

(e) Decontamination works;

(f) Transport infrastructure works (including site access, new road connecting to the Site(s), diversion/ upgrading of existing roads, flyovers, traffic improvement works, PTT/public transport laybys, pedestrian footpath, cycle track, footbridges/ subways and any other pedestrian and transport facilities etc. if necessary);

(g) Sewerage infrastructure works (including pumping station(s), treatment plants and reclaimed water (treated sewage effluent, grey water and harvested rainwater as applicable) treatment facilities if necessary);

(h) Drainage infrastructure works and necessary diversion works;

(i) Water supply infrastructure works and necessary diversion works;

(j) Environmental mitigation measures for the site formation and infrastructure works and the Development(s);

(k) Landscape works; and

(l) Other infrastructure works, such as utility works, electricity substation, etc. deemed to be necessary to support the Development(s).

1.3 SCOPE AND STRUCTURE OF THIS REPORT

1.3.1 The objectives of the Planning Report are to:

(a) Form a self-contained report to proposed amendments to the OZP(s) of the Site(s) including essential information of the Development(s) and Infrastructure Works relating to identifying possible problems, introducing the assessment methodologies, recommending development parameters, illustrating the analyses, addressing issues such as planning intention, land use compatibility, development intensity and building height (BH) compatibility, adequacy of the infrastructures required to support the proposed housing and related developments as well as ways to minimize any adverse impacts, if any;

(b) Include planning assessment and summary of relevant technical and environmental assessments, with mitigation measures / recommended works proposed, if any, supported by plans and illustrative materials so as to demonstrate the technical feasibility and environmental acceptance of the Development(s) and that there will be no insurmountable impacts arising from the proposed Development(s) (from aspects, amongst others, such as traffic and transport impact, drainage impact, sewerage impact, water supply impact, water pollution risk and impact, utilities impact, geotechnical conditions including natural terrain hazard, land contamination, environmental impact, ecology impact, landscape and visual impact, air ventilation impact, cultural heritage impact and sustainability) in undertaking the proposed amendments to the OZP(s).

1.3.2 The Structure of the Report is as follows. Following this introductory chapter, there are ten further chapters:

Section 2	Proposed Development
Section 3	Traffic and Transport Impact
Section 4	Landscape and Visual
Section 5	Air Ventilation
Section 6	Preliminary Environmental Review
Section 7	Preliminary Land Requirement Study
Section 8	Site Formation and Infrastructural Provision
Section 9	Implementation Programme
Section 10	Conclusion

2 PROPOSED DEVELOPMENT

2.1 THE SITE AND ITS SURROUNDING AREAS

Existing Land Use and OZP

2.1.1 The Site, with an area of about 3.75 ha, is largely zoned as "Agriculture" ("AGR") with a minor portion falling within an area zoned "Green Belt" ("GB") on the Fu Tei Au and Sha Ling Outline Zoning Plan (OZP) No. S/NE-FTA/16. It is located at the northern fringe of Fanling North New Development Area (FLN NDA)

2.1.2 The site location and existing land uses are shown on **FIGURE 2**.

Physical Context and Site Topography

2.1.3 The Site is bounded by Ng Tung River to the south, Shek Wu San Tsuen to the west and the permitted burial ground of North, New Territories Site No. N/S/1 to the east and north (**FIGURE 2)**[1].

2.1.4 The Site is relatively flat dipping gently from approximately +13mPD at the Site's eastern and northern ends of the Site to approximately +8mPD at its western and southern ends. A natural hillside with a maximum elevation of about +28.8mPD and +49.6mPD ("Wa Shan") are located in the north-western and eastern sides of the Site respectively.

2.1.5 The Site is currently occupied by brownfield operations including open storages, recycling businesses, warehouses and industrial/rural workshops, as well as some temporary residential dwellings. Some of the brownfield operations are covered by short-term tenancies granted by Lands Department.

2.1.6 Majority of the areas within the Site is occupied by brownfield operations and are fenced off. As such, access to these areas is restricted.

Surrounding Land Uses

2.1.7 The surrounding areas of the Site have the following characteristics **(FIGURE 3)**:

(a) to its immediate north, northwest and east are areas zoned "GB" which comprises hillslopes and graves/urns within the permitted burial ground No. S/N/1. San Wai/Tai Ling Firing Range is located about 455m apart;

(b) to its immediate southeast and west are areas zoned "AGR" which comprises some low-rise temporary domestic structures of Shek Wu San Tsuen, some brownfield operations and vegetated land; and

(c) to its further south across Ng Tung River are sites reserved for provision of government facilities, a planned Fanling North Central Park, some existing low-rise residential estates (i.e. On Kwok Villa and Woodland Crest). A planned cluster of high-density residential developments is located to its further southeast.

Site Accessibility

2.1.8 The Site is located at the periphery of Sheung Shui New Town and is served by Sheung Shui MTR, connected by access roads such as Jockey Club Road, So Kwun Po Road, Po Shek Wu Road, Lung Sum Avenue and Tin Ping Road.

[1] Ng Tung River is about 50m to the south of the Site. It is a channelized river running in a southeastern to northwestern direction.

2.1.9 The Site is accessible from two existing linked bridges across Ng Tung River. One is in the southwest of the Site (F1), allowing access for vehicles and pedestrian connecting to the extension of Lung Sum Avenue. The second one is in the southeast of the Site (F2), allowing access for pedestrian connecting to Ma Sik Road **(FIGURE 12**). Besides, as the Site will be bounded by Fanling Bypass[2] to its south, it is estimated that the Site will be accessible via road networks in FLN NDA to Fanling Bypass. The tentative completion of Fanling Bypass is not later than year of 2031.

2.2 PROPOSED DEVELOPMENT LAYOUT

2.2.1 The proposed public housing development (the housing site) covers an area of about 3.14ha, mainly excluding the internal roads and roadside planting/amenity area. According to the preliminary design, a total of 4 residential blocks (with a maximum building height of +167mPD) and 1 public transport terminus (PTT) cum ancillary carparking block are proposed to be provided within the housing site. Two residential blocks (i.e. Block 1 and Block 2) are proposed to be setting on a podium structure with podium level at +25mPD tentatively **(Figures 4 to 8)**. The podium will provide necessary retail and welfare/educational facilities as well as landscape space with adequate greenery coverage, as required under Hong Kong Planning Standard and Guidelines (HKPSG).

2.2.2 Welfare facilities will be provided in the public housing development targeted to meet the latest requirement of setting aside 5% of domestic GFA for "Additional Gross Floor Area for Welfare Purposes in Public Housing" mentioned in the 2020 Policy Address.

2.2.3 Other infrastructural facilities proposed outside the housing site include a new access road, a pedestrian-cum-cycle bridge and other supporting facilities such as drainage, sewerage and water mains, etc.

2.2.4 The above configuration of the development shall be subject to review in the detailed design stage.

2.2.5 A piece of land to the west of the housing site is proposed to be rezoned to "Government, Institution or Community" ("G/IC") in order to reprovision the existing refuse collection point (RCP) and public toilet (PT affected by the proposed development. The remaining area will be reserved for vehicular circulation. The provision details, including the exact development parameters, layout and design will be subject to further planning and assessment by relevant departments.

Information received for Assessment Purpose

2.2.6 This Planning Report is prepared based on the preliminary proposed layout scheme provided by HD as shown in **FIGURE 5**, which is only an indicative notional scheme for assessment purpose to support the rezoning exercise. The future layout would be subject to change at detailed design stage.

2.2.7 Development parameters are also received from relevant departments for the EFS technical assessment purpose and discussed below. These parameters are indicative only which shall be subject to change at detailed design stage.

2.2.8 Nonetheless, significant change to the development parameters and indicative layout as well as significant implications to the technical assessments covered in Sections 3 to 8 of this Planning Report are not anticipated in future development of the Site.

[2] Fanling Bypass (Western Section) is proposed to connect Man Kam To Road, Sha Tau Kok Road, and Po Shek Wu interchange improvement. Fanling Bypass (Eastern Section) is proposed to connect FLN NDA and Fanling Highway.

2.2.8 Proposed development parameters are shown in **Table 2.1**.

Table 2.1 Summary of Preliminary Development & Planning Parameters by HD

Assumed Development Intensity	Recommended Scheme
Formation Level (mPD)	Gradually sloping from +10mPD in the south-west portion to +15mPD in the north east portion.
Site Area (m^2) (approx.)	37,500
Net Site Area (the housing site) (m^2)	31,400
Non-domestic Site Coverage (approx.)	35%
Domestic Site Coverage (approx.)	18%
Domestic Plot Ratio	6.5
Domestic Gross Floor Area (GFA) (m^2) (approx.)	204,100
Average Flat Size (m^2) (About)	40
Flat Production (approx.) [5]	4,800
Average Household Size	2.7
Estimated Design Population [5]	12,981
Non-Domestic Plot Ratio [5]	0.5
Proposed Non-Domestic GFA (m^2) (approx.) [1]	15,700
No. of Housing Block	4
Maximum Height of Housing Block[6]	+170mPD
Proposed No. of Domestic Storeys (max.)	49
Planned Completion Year of the Development	2031/2032
Local Open Space[5]	Minimum 12,981m^2
Greenery Coverage Provision	Minimum 20% Target 30%:9,420 m^2
Parking Space Provision	Ancillary carparking spaces and loading/unloading bays will be provided in accordance with the high-end provision of HKPSG
Retail [2]	4,000 m^2
Proposed Area for GIC Facilities (approx.) (m^2)	10,200

Assumed Development Intensity	Recommended Scheme	
Proposed GIC Facilities	Education Facilities[3]	1 (One) 8-classroom Kindergarten
	Social Welfare Facilities[4]	GFA equivalent to about 5% of the domestic GFA of the public housing development will be reserved for the provision of social welfare facilities, including: (i) Day Activity Centre (DAC) (ii) Hostel for Severely Mentally Handicapped Persons (HSMH) (iii) Hostel for Moderately Mentally Handicapped Persons (HMMH) (iv) Hostel for Severely Physically Handicapped Persons (HSPH) (v) Supported Hostel for Mentally/Physically Handicapped Persons (SHOS(MPH)) (vi) Integrated Vocational Rehabilitation Services Centre (IVRSC) (vii) Residential Care Home for the Elderly (RCHE) cum Day Care Unit (DCU)

Remarks:

[1] Working assumption calculated from plot ratio and site area.

[2] The provision and details of retail facilities are to be determined by HD and subject to detailed design.

[3] The number of classroom for kindergarten are advised by Education Bureau (EDB) on 23 June 2021. The exact kindergarten classroom provision, scale of school, site area and land use of the kindergarten are subject to review at detailed design stage.

[4] Information on the above potential list of welfare facilities is provided by SWD on 21 June 2021, which is for technical assessment only and is subject to further review by SWD and HD. GFA equivalent to 5% of the domestic GFA of the proposed public housing development will be reserved for the provision of social welfare facilities. The type, location and actual provision of GIC facilities will be subject to the advice of Social Welfare Department (SWD) and HD at detailed design stage.

[5] The above parameters are adopted in the EFS for assessment purpose only. According to the latest design as advised by HD, the development parameters of the proposed public housing development are lower than the above figures:-

- Non-domestic GFA: about 6,280m^2 (retail and kindergarten)
- Non-Domestic Plot Ratio: max 0.2
- No. of Flats: approx. 4,200 units
- Anticipated Population (about): 12,000
- Open space: min.12,000m^2

[6] A maximum building height of +170mPD is proposed to cater for additional GFA concession for promotion of Modular Integrated Construction (MiC) under Joint Practice Note No. 8 promulgated in July 2022.

2.2.9 It is anticipated that site formation works will be completed in Q2 2027 for handling over to relevant departments. The housing site will be handed over to HD; the reprovisioned facilities (i.e. the RCP and PT) will be handed over to FEHD; and the proposed new internal road within the Site serving the proposed development will be handed over to other relevant B/Ds or parties.

2.3 CONCEPTUAL LAYOUT AND DESIGN CONSIDERATIONS

2.3.1 Having considered the site constraints including existing topography and limited space available to accommodate housing units, PTT and other ancillary facilities, the proposed layout has achieved the following design merits with an aim to enhancing the compatibility of the proposed development with the surroundings (**FIGURE 5**).

Visual Compatibility

2.3.2 Appropriate design measures including careful adjustment of building blocks and height, greening within development, sensitive streetscape design, compatible aesthetic design of buildings, preservation of existing vegetation and visual penetration are proposed to make the proposed public housing development more visually compatible with the surrounding setting **(FIGURE 19)**. Please refer to Section 4 for details.

Air Ventilation

2.3.3 Appropriate design measures such as building separations (minimum 15m wide), and building setback of about 20m wide to the south and about 30m wide to the west, etc. have been incorporated into the design to improve wind performance to the surroundings (**FIGURE 49**).

2.3.4 Mitigation measures of natural ventilation should be considered in the development design Please refer to Section 5 for details.

Greenery Coverage and Open Space Provision

2.3.5 To enhance the amenity of the proposed development and for the enjoyment of the future residents, a minimum 20% greenery coverage in accordance with HKPSG Chapter 4 will be provided within the propose development and a 30% greenery coverage in accordance with Joint Planning Department – Housing Department TC No. 1/2020 is targeted to be achieved as far as practicable.

2.3.6 The proposed pedestrian-cum-cycle bridge of about 10m wide to the south of the Site across Ng Tung River **(FIGURE 12)** with aesthetic landscape and architectural designs will enhance the accessibility of the proposed development and extension of Lung Sum Avenue. The proposed buffer planting along the proposed bridge would soften its hard structure. Please refer section 4 for details.

Provision of G/IC Facilities

2.3.7 The educational and social welfare facilities are proposed in consultation with relevant departments including EDB and SWD. GFA equivalent to 5% of the domestic GFA of the proposed public housing development will be reserved for the provision of social welfare facilities.

Enhance Accessibility

2.3.8 To enhance pedestrian and cycling accessibility, a footbridge-cum-cycle bridge across Ng Tung River with 10m wide is proposed to connect the Site and the existing and planned road/footpath/cycling networks in FLN NDA **(FIGURE 12**). For parking facilities, high-end ratio has been adopted in accordance with the HKPSG to provide ancillary carparking spaces for the development in the PTT block **(FIGURE 7**) . Please refer Section 3 for details.

MiC

2.3.9 MiC is a trend in the modern construction industries. It can facilitate the construction in terms of economical, ecological, safety aspects, etc. A maximum building height of +170mPD is proposed to allow adoption of MiC. This construction method would be explored at detailed design stage.

Technical Assessments

2.3.10 To ascertain the potential impact arising from rezoning the Site to "R(A)" and "G/IC" for public housing development and reprovisioning of government facilities respectively, an EFS covering various aspects including traffic, environment, air ventilation, landscape, visual perspectives, etc has been carried out. The EFS confirms that the proposed development is technically feasible and would not induce insurmountable impacts to the surrounding areas, subject to implementation of the mitigation measures as identified in the assessments. The findings of the technical assessments are detailed in Sections 3 to 8 below.

3 TRAFFIC AND TRANSPORT IMPACT

3.1 TRAFFIC AND TRANSPORT IMPACT ASSESSMENT METHODOLOGY

3.1.1 A sub-regional traffic model (SRTM) based on TD's 2015-based Base District Traffic Model (BDTM) NTE1 covering AOI will be developed for this Assignment. The road-based SRTM equipped with detailed junction simulation capability. The traffic behaviour at junctions including junction delays, traffic queues and platoon effects will be taken into account in a combined traffic simulation and assignment process. Design year with 3 years upon the population intake has been adopted for the traffic assessment. Traffic forecasts have been carried out for the Design Year.

3.1.2 To assess the operation traffic impact of the proposed developments, a reference scenario (without Development in place) together with a design scenario (with Development in place) for design year 2035 was conducted.

3.1.3 An area of influence (AOI) has been identified for the potential traffic assessment to the local road network due to the proposed housing developments. The proposed AOI is shown on **FIGURE 9**. A series of capacity analysis based on the Transport Planning and Design Manual (TPDM) have been conducted for 8 (existing condition) / 12 (future condition) key junctions within the AOI for the evaluation the existing and future traffic condition as well as improvement schemes proposed/undertaken by other projects.

3.1.4 A comprehensive traffic survey was conducted for key junctions within the AOI. Based on the observed traffic flow, a Local Area Traffic Model (LATM) was built to replicate the existing traffic condition by making use of the sub-regional model and taking into account the planning data of 2019-based TPEDM.

3.1.5 All the model road links and major junctions are validated by successful fulfilling the validation criteria. The validation is therefore completed satisfactorily.

3.1.6 Based on the information provided by the TPEDM, information on the relevant studies obtained from relevant government departments as well as the public available information gathered, the major planned / committed developments within / in the vicinity of AOI are reviewed and incorporated into the development of traffic forecast as appropriate.

3.1.7 Some of the key junctions in the area had also been reviewed by other traffic studies and junction improvement measures are proposed under other government projects. These junction improvement measures are also taken into account in this study.

3.2 EXISTING ROAD NETWORK

3.2.1 The proposed development is located at the northern side of Ng Tung River. Based on the existing road network, traffic to / from the Site is mainly rely on the extension of Lung Sum Avenue, Lung Sum Avenue, Jockey Club Road, So Kwun Po Road and Po Shek Wu Road connecting to Fanling Highway.

3.2.2 The road network in the vicinity of the Site is shown in **FIGURE 10.**

3.2.3 A public road named as "the extension of Lung Sum Avenue" is located to the north of Lung Sum Avenue (i.e. section beyond Tin Ping Road) that has no clear road hierarchy under Annual Traffic Census (ATC), and hence it is assumed as a rural road under this assessment.

3.2.4 Lung Sum Avenue is a district/ local distributor running in a north-south direction from Tin Ping Road to the north and San Wan Road to the south. Section of Lung Sum Avenue between San Fung Avenue to San Hong Street is regarded as “Local Distributor”, while another section between Tin Ping Road to San Hong Street is regarded as “District Distributor”.

3.2.5 Jockey Club Road is a dual-two lanes primary distributor running in an east-west direction, connecting Fanling Highway to the east at Wo Hop Shek Interchange and Po Wan Road to the west.

3.2.6 So Kwun Po Road is a primary distributor running in a north-south direction from Jockey Club Road to the north and Pak Wo Road to the south. The section between Jockey Club Road and San Wan Road is a dual-two lane carriageway, which connects with Fanling Highway at Kai Leng Roundabout.

3.2.7 Po Shek Wu Road is a dual-two lane primary distributor running in a north-south direction from Jockey Club Road to the north and connects to Fanling Highway to the south at Tai Tau Leng Interchange.

3.2.8 Fanling Highway is a dual-3 lane expressway linking Tolo Highway to the east and San Tin highway to the west. It connects with the Tai Tau Leng Roundabout to provide access for inter-district traffic to/from the North District.

3.3 EXISTING TRAFFIC CONDITIONS

3.3.1 In order to appreciate the existing traffic conditions, comprehensive classified traffic counts were conducted at the major junctions within the AOI.

3.3.2 Results of the junction capacity analysis indicate that most of the assessed key junctions are generally operating within capacity during AM and PM peak hours in year of 2021, except for Po Shek Wu Road / Choi Yuen Road Junction (J01) and San Wan Road/ Lung Wan Road Junction (J06). The results of road link capacity assessment also reveal that all the assessed key road links are operating with a V/C ratio below 1.0 during AM and PM peak hours in year of 2021.

3.4 EXISTING AND PLANNED PEDESTRIAN AND CYCLING NETWORKS

Pedestrian Network

3.4.1 Footpath is currently available on single side of the existing vehicular bridge across Ng Tung River (Western Footpath, F1) (**FIGURE 12**). There is another existing footbridge located in the south-eastern side of the Site (Eastern Footpath, F2). Currently, pedestrian in the Site mainly rely on the subject vehicular bridge (i.e. Western Footpath, F1) (**FIGURE 12**) and the signalised crossing located at the junction of Lung Sum Avenue/ Tin Ping Road to walk to the roadside bus lay-bys and Tin Ping Estate.

3.4.2 According to the latest road networks under FLN NDA as advised by NDO/CEDD, there is a planned footpath parallel to Fanling Bypass viaduct (**FIGURE 11**). Upon completion of the subject footpath, pedestrian from the northern bank of Ng Tung River could access FLN NDA through the planned pedestrian networks in FLN NDA. Furthermore, there is another planned footpath under FLN NDA which will connect with the Eastern Footpath (F2). With the implementation of the proposed footpaths under FLN NDA project, the pedestrian connectivity of the Site will be improved. **FIGURES 11** and **13** show the future pedestrian condition. The proposed footpath is comprehensive to the neighbourhood with provision of quality greening/amenity area, which can enhance pedestrian environment.

3.4.3 The distance between the proposed public housing development and Sheung Shui MTR station (the nearest MTR station) is more than 500m. It is anticipated that most of the pedestrian may take feeder services from the proposed PTT within the Site. Alternatively, pedestrian may walk to Road L4, which is approx. 250m away (within reasonable walking distance), to take long haul bus routing. Other walk trips are envisaged to be pure walk trips to the vicinity or for leisure purpose only.

Cycle Network

3.4.4 There is an existing cycle track along Jockey Club Road, Po Shek Wu Road and part of Lung Sum Avenue. According to the planned cycle network under FLN NDA and as advised by NDO/CEDD, there is a planned cycle track along the southern bank of Ng Tung River (**FIGURE 13**).

3.5 EXISTING PUBLIC TRANSPORT FACILITIES

3.5.1 Existing road-based public transport (PT) services within the area are mainly covered by franchised buses and green minibus (GMB). Currently GMB Route no. 504 is the only public transport available near the Site. The existing PT services for the area are mainly available along Jockey Club Road and Po Shek Wu Road. The locations of existing bus stops, GMB stops and MTR station in the vicinity of the proposed development are shown in **FIGURE 14**.The existing scheduled PT services servicing the area are summarized in **.**

Table 3.1 Existing Public Transport Services in the Vicinity

OPERATOR	TYPE	ROUTE NO.	TERMINAL	
The Kowloon Motor Bus Co. (1933) Limited (KMB)	Bus	70K	Wah Ming	Ching Ho (Circular)
		73B	Chuen On Road	Sheung Shui (Circular)
		73K	Sheung Shui	Man Kam To
		76K	Ching Ho Estate Bus Terminus	Long Ping Estate B/T
		77K	Yuen Long (Fung Cheung Road)	Sheung Shui
		78K	Sheung Shui	Sha Tau Kok
		79K	Ta Kwu Ling (Tsung Yuen Ha)	Sheung Shui
		261	Tuen Mun (Sam Shing Estate)	Fanling (Cheung Wah)
		261P	Siu Hong Court	Tin Ping Estate
		261S	Po Tin	Tin Ping Estate
		261X	Fanling (Cheung Wah	Tuen Mun Central
		270	Tsui Lai Garden	Tin Ping (Circular)
		270A	Sheung Shui	Tsim Sha Tsui (Mody Road)
		270B	Olympic Station	Sheung Shui B/T
		270D	Luen Wo Hui Bus Terminus	Sham Shui Po
		270P	Sheung Shui	Kowloon Station
		270R	Hong Kong Coliseum	Fanling (Luen Wo Hui)
		270S	Tsim Sha Tsui East (Mody Road)	Luen Wo Hui B/T

OPERATOR	TYPE	ROUTE NO.	TERMINAL	
		273A	Sheung Shui (Choi Yuen)	Wah Ming (Circular)
		273B	Ching Ho Estate	Sheung Shui Station (Circular)
		273D	Sheung Shui	Wah Ming (Circular) (Via Ching Ho Estate)
		276	Tin Tsz	Sheung Shui
		276A	Sheung Shui (Tai Ping)	Tin Hen Estate
		276B	Sheung Shui (Choi Yuen)	Tin Fu
		276C	Tin Shui Wai Station	Sheung Shui
		276P	Tin Shui Wai Station	Sheung Shui
		277E	Sheung Shui (Tin Ping)	Lam Tin Station
		277P	Tin Ping	Lam Tin Station
		278X	Sheung Shui	Tsuen Wan (Nina Tower)
		279A	Luen Wo Hui	Tsing Yi Station
		279B	Fanling (Luen Wo Hui)	Kwai Hing Station
		279X	Fanling (Luen Wo Hui)	Tsing Yi Station
		373	Sheung Shui	Central (Hong Kong Station)
		673	Central (Hong Kong Station)	Sheung Shui
		673P	Sheung Shui	Central (Rumsey St)
		978	Fanling (Wah Ming)	Exhibition Centre Station
		978A	Fanling (Luen Wo Hui)	Exhibition Centre Station
		978B	Fanling (Chi Fuk Circuit)	Exhibition Centre Station
		N73	Shatin Central	Lok Ma Chau
		N373	Fanling (Luen Wo Hui)	Central (Macau Ferry)
		N673	Central (Hong Kong Station)	Sheung Shui
		T270	Fanling (Cheung Wah)	Tsim Sha Tsui (Mody Road)
		T277	Lam Tin Station	Sheung Shui
		W3	Sheung Shui	Jordan (West Kowloon Station)
		X43	Asiaworld Expo Bus Terminus	Fanling (Luen Wo Hui)
KMB/Citybus Limited (CTB)		678	Sheung Shui	Causeway Bay
CTB		56	Sheung Shui (Tin Ping Estate)	Tuen Mun (Ching Tin and Wo Tin)
		56A	Tuen Mun	Queen's Hill Fanling

OPERATOR	TYPE	ROUTE NO.	TERMINAL	
Long Win Bus Company Limited (LWB)		A43	Fanling (Luen Wo Hui)	Airport (Ground Transportation Centre)
		A43P	Fanling (Luen Wo Hui)	Airport (Ground Transportation Centre)
		N42A	Luen Wo Hui Bus Terminus	Tung Chung Station
		N42P	Sheung Shui Station	Airport (Ground Transportation Centre)
		NA43	Luen Wo Hui	HZMB Hong Kong Port
		E43	Fanling (Wah Ming)	Tung Ching Development Pier
Express Top Industries Limited	GMB	44	Tuen Mun Ferry Pier	Sheung Shui Station
		44A	Tuen Mun Station Public Transport Interchange	Sheung Shui Station
		44A1	Tuen Mun Po Tin Estate	Sheung Shui Station
Sheung Shui P.L.B. (Scheduled) Service Company Limited		50A	Kwu Tung (South)	Sheung Shui Station
		50K	Hang Tau	Sheung Shui Station
		51B	Ma Tso Lung (Shun Yee San Tsuen)	Sheung Shui Station
		51K	Ho Sheung Heung	Sheung Shui Station
		57K	Tong Kung Leng	Sheung Shui Station
		58K	Ping Kong	Sheung Shui Station
		58S	Mong Kok Station	Sheung Shui Station
		55K	Sha Tau Kok	Sheung Shui Station
Big Union Limited		59K	Lin Ma Hang	Sheung Shui Station
Fully Mint Limited		501S	Yue Man Square	Sheung Shui Station
Shine Bright Services Limited		605	Ki Lun Tsuen	Sheung Shui Station
Marvel Wealth Holdings Limited		503	Queen's Hill	North District Hospital
		503K	Queen's Hill	Sheung Shui Station
		504	Wa Shan Tsuen	Sheung Shui Centre

3.6 PROPOSED ROAD SCHEME AND IMPROVEMENTS

3.6.1 The main access of the proposed development is proposed based on the existing road networks in the vicinity of the AOI and the need to maintain the accessibility of the proposed development. The proposed preliminary access arrangement for the proposed development is shown in **FIGURE 11 and 12**.

3.6.2 Based on the available information from Agreement no. CE18/2019 (CE) – "Development of Fanling North New Development Area, Remaining Phase – Design and Construction", the planned Fanling Bypass will be sandwiched between the Site and Ng Tung River. No direct connection from Fanling Bypass via Lung Sum Avenue is anticipated.

3.6.3 Several key junctions in the area had also been reviewed under other traffic studies, and junction improvement schemes were proposed under different government projects in the vicinity. These junction improvement schemes are also considered in this assessment. Details of the junction improvement schemes proposed under other projects are in **Appendix A**. With

implementation of these improvement schemes, capacity of these key junctions would be enhanced and able to cope with traffic growth in the vicinity.

3.6.4 It is envisaged that traffic generated and attracted by the proposed development would use the extension of Lung Sum Avenue, Road L3, Road L4 and Fanling Bypass (Western Section) to access the northern part of the North District (e.g. Man Kam To). Whereas traffic to/from the southern part of the North District (e.g. Sheung Shui) is expected to use Lung Sum Avenue.

3.6.5 To improve the accessibility of the proposed development, it is proposed to widen the extension of Lung Sum Avenue to not less than 7.3m wide carriageway which is up to Highways Standard (**FIGURE 15**). A preliminary assessment has been carried out and the results revealed that there is sufficient spacing for carrying out such widening works as per TPDM requirements. The extension of Lung Sum Avenue will then connect to the internal road within the Site.

3.6.6 This widening proposal is, however, likely to involve land resumption for Land Lots FSSTL 36 S.A. RP and 5189RP. Nevertheless, no insurmountable technical issue is envisaged. The exact road alignment and road geometry of the widening scheme will be further developed at subsequent investigation and detailed design stage.

3.6.7 The vehicular ingress/egress of the proposed development will be located at the southern boundary of the Site, connecting with the extension of Lung Sum Avenue (**FIGURE 11**). A mini-roundabout is proposed to connect the existing single track access road leading to Former Wa Shan School in the northwest (**FIGURE 11**). Provided that there is no other obvious destination at the other side of proposed site, mini-roundabout would also facilitate the turnaround traffic. Footpath will be provided on both sides of proposed internal road within the Site, and hence, public will be allowed to access the permitted burial ground in the northeast through the footpath (**FIGURE 13**).

3.6.8 Regarding the public transport services in the area, a total of four franchised bus (2 routes are for long-haul franchised bus; and the remaining 2 routes are for short-shuttle trips providing intra-district services) and one GMB routes are proposed to cater for the additional public transport demand from the proposed public housing development. The final operation plan of the proposed public transport services will be subject to future demand and will be reviewed by relevant operators and departments. Furthermore, a PTT of approx. 4,600m^2 with lay-by facilities for franchised bus and GMB will be provided within the proposed housing site. A total of 4 pick-up bays, 1 drop-off bay and 8 stacking bays designated for franchised bus; and 1 pick-up/drop-off bay and 3 stacking bays designated for GMB will be provided within the PTT (**FIGURE 11**). Considering that bus may need to across Ng Tung River to facilitate public transit demand and there may not have sufficient road width, upgrading of the carriageway and footpath at the northern side of Ng Tung River may be required.

3.6.9 A proposed footbridge-cum-cycle track of about 10m wide (contains 4m clear width of footpath and 6m clear width of cycle track) is proposed next to existing vehicular bridge (F1). The location of the proposed footbridge-cum-cycle track is labelled as F3 in **FIGURE 10**. The engineering feasibility and detailed design of the proposed footbridge would be subject to review at detailed stage.

3.7 PROPOSED PARKING PROVISIONS

Development Parameter

3.7.1 The type of public housing (i.e. Subsidized Sale Flats (SSF) or Public Rental Housing (PRH)) would be subject to the latest housing policy of the Government. Worst scenario (i.e. greater trip generation) and a 10% allowance would be adopted in the technical assessment with a view to allowing design flexibility of the proposed development. Two scenarios with different housing types are studied. Scenario 1 comprises SSF and Scenario 2 comprises PRH.

3.7.2 In view of the remoteness and lack of public car parking provision within the 500m catchment area, it is proposed to adopt **upper range** of the HKPSG parking standard.

3.7.3 The proposed provision of parking and loading / unloading facilities for the proposed public housing development are preliminarily recommended below for reference, in accordance with the relevant design standards such as the unified parking standards in subsidised housing and HKPSG. The parking and loading / unloading facilities provision requirements for the proposed public housing development under Scenario 1(SSF) and 2(PRH) are summarized in **Table 3.2**.

Table 3.2 Parking and L/UL Facilities Provision for Scenario 1 (SSF)

Development	Type	Standard	S1 (SSF)	S2 (PRH)
SSF (4,290 nos. of flats) (4 nos. of Residential Blocks) or PRH (5,363 nos. of flats) (4 nos. of Residential Blocks)	Private Car Parking Spaces	GPS x R1 x R2[1]	558	523
	Private Car Parking Spaces for Persons with Disabilities (Disabled)	6 for total above 450 car parking spaces in lot	6	6
	Private Car Parking Spaces (Visitor Parking)	Up to 5 spaces per block	20	20
	Motorcycle Parking Spaces	1 per 110 – 250 flats	39	37
	Non-van type Light Goods Vehicle and Private Light Bus Parking Spaces	1 space per 260 flats	17	16
	Medium / Heavy Goods Vehicle and Coach Parking Spaces	2 loading / unloading bays per block	8	8
	Cycle Parking Spaces	Within 0.5-2km radius of a Rail Station (1 bicycle parking space per 15 flats)	286	358
Kindergarten	Private Car Parking Spaces	0 to 1 car parking space per 4 to 6 classrooms	2	2
	Taxis and Private Cars Lay-by	1 lay-by for taxis and private cars for every 5 to 8 classrooms	2	2
	School Bus/ Mini-Bus Lay-by	A minimum of 2 lay-bys for school buses/ 5 lay-bys of size 3m x 7m for mini-bus / nanny van	2	2
Retail (S1: 3,366 m^2) (S2: 4,208 m^2)	Private Car Parking Spaces	1 car space per 150 - 300m^2 GFA	23	29
	Private Car Parking Spaces for Persons with Disabilities (Disabled)	1 for 1-50 car parking spaces in lot	1	1
	Goods Vehicles Parking Spaces	1 loading/ unloading bay for goods vehicles for every 800 to 1 200m^2, or part thereof, GFA (Goods vehicle provision is divided into 65% LGV and 35% HGV)	5	6

Notes:
[1] Unified parking standards for private car parking spaces in subsidised housing: Global Parking Standard (GPS) = 1 space per 4 – 7 flats; R1 = 0.52; R2 = 1 (outside 500m of a rail station).
[2] 1/2P flats (assumed to be 25%) shall be excluded from the calculation of the overall parking provision of private car, motorcycle parking spaces and shared-use spaces for LGV and light bus for TTIA's parking provision, as confirmed by HD's email dated July 6, there is no 1/2p under SSF scenario.

[3] The provision of car parking spaces, lay-bys and loading/unloading facilities for the proposed GIC and social welfare facilities should be subject to requirement and confirmation of such facilities by concerned departments including Social Welfare Department.
[4] There is no requirement to provide motorcycle parking spaces for retail provision within the public housing development in HKPSG.

3.8 PROPOSED CYCLING FACILITIES

3.8.1 According to the latest road network under FLN NDA and as advised by NDO/CEDD, there is no cycle track proposed along the northern bank of Ng Tung River. As such, the Site is isolated from the existing/ proposed cycling network.

3.8.2 To improve the cycling connectivity of the Site, this EFS also investigated the possibility of providing a pedestrian-cum-cycle track bridge across Ng Tung River to the closest available cycle track, i.e. the cycle track located to the southern bank of Ng Tung River within FLN NDA. Details of the cycling connectivity and the pedestrian-cum-cycle track bridge are shown in **FIGURE 13**.

3.9 TRAFFIC AND TRANSPORT IMPACT ASSESSMENT

Trip Generation / Attraction

3.9.1 Based on the development parameters, the trip generation and attraction by the proposed housing developments are estimated by trip rates in accordance with the trip rates information as stipulated in Vol. 1 of TPDM and Approved TTIA under Agreement no. 65/2014 (CE). The adopted trip rates are shown in the **Table 3.3**.

Table 3.3 Adopted Development Trip Rates

Developments / Facilities	Unit	Ref	Adopted Trip Rates			
			AM		PM	
			Gen.	Att.	Gen.	Att.
Public Housing – PRH[1] (Flat size = 40m^2)	pcu/hr/flats	TPDM	0.043	0.032	0.023	0.030
Public Housing – SSF[1] (Flat size = 50m^2)	pcu/hr/flats	TPDM	0.062	0.042	0.029	0.040
GIC[2]	pcu/hr/100m^2	Approved TIA	0.235	0.235	0.230	0.115
Retail[3]	pcu/hr/100m^2	TPDM	0.229	0.243	0.310	0.356

Notes:
[1] Trip rates is referring to TPDM vol.1 ch.3 Annex C Table 1 - mean value
[2] Trip rates is referring to Approved TTIA under Agreement no. 65/2014 (CE), Infrastructural Works for Proposed Developments at Queen's Hill, Fanling – I, D & C
[3] Trip rates is referring to TPDM vol.1 ch.3 Annex C Table 2 - mean value

3.9.2 Based on the development schedule in

3.9.3 Table 2.1 and the adopted trip rates in **Table 3.3**, peak hour traffic generation/ attraction trips of the Development at proposed site are calculated in **Table 3.4**.

Table 3.4 Trip Generation and Attraction for Wa Shan Site

Developments / Facilities	Parameter	Scenario 1 – SSF (with 10% allowance)				Scenario 2 – PRH (with 10% allowance)			
		AM		PM		AM		PM	
		Gen.	Att.	Gen.	Att.	Gen.	Att.	Gen.	Att.

Public Housing – SSF/ PRH	4,290 / 5,363 flats	267	183	127	172	232	175	127	161
GIC	10,725 m^2	25	25	25	12	25	25	25	12
Retail	3,366 / 4,208 m^2	8	8	10	12	10	10	13	15
Kindergarten[1]	8/ 10 classrooms	10	10	10	10	10	10	10	10
	Total	**310**	**226**	**172**	**206**	**277**	**220**	**175**	**198**

Note: [1] Nominal traffic of 10 pcu/hr each way is assumed for kindergarten, referring to Approved TTIA under Agreement no. 65/2014 (CE), Infrastructural Works for Proposed Developments at Queen's Hill, Fanling – I, D & C

3.9.4 Based on the calculation, the trip generation for Scenario 1 (SSF) is generally higher than Scenario 2 (PRH). Hence, for conservative purpose, Scenario 1 (SSF) with 10% allowance will be adopted in proposed trip generation.

Performance of Key Junctions and Road Links

3.9.5 The junction and link capacity performance were assessed to examine the performance of the concerned junctions and link sections within AOI in Design Year 2035 Reference and Design cases. The assessment results are presented in **Table 3.5** and **Table 3.6**..

Table 3.5 Key Junction Capacity Assessment Results for Design Year 2035

Index	Junction	Junction Type	Performance[1]			
			2035 Reference		2035 Design	
			AM	PM	AM	PM
J01	Po Shek Wu Road / Choi Yuen Road	Signalised	22%	33%	22%	33%
J02	Po Shek Wu Road / Po Wan Road	Signalised	28%	28%	24%	23%
J03	Jockey Club Road / Po Shek Wu Road	Roundabout	0.65	0.47	0.67	0.51
J04	Tin Ping Road / Lung Sum Avenue	Signalised	22%	47%	**-3%**	17%
J05	Jockey Club Road / Lung Sum Avenue	Signalised	**14%**	44%	**3%**	16%
J06	San Wan Road / Lung Wan Street	Signalised	67%	69%	61%	60%
J07	Ma Sik Road / Tin Ping Road	Signalised	29%	39%	29%	39%
J08	Po Shek Wu Interchange	Roundabout	0.80	0.75	0.80	0.75
J09	Road L4 / Lung Sum Avenue	Priority	0.52	0.54	0.65	0.63
J10	Ma Sik Road / Road L3	Signalised	23%	40%	23%	40%
J11	Road L3 / Road L4	Signalised	**8%**	37%	**-5%**	21%
J12	Fanling Bypass / Road L3	Roundabout	0.46	0.39	0.50	0.41

Notes:

[1] Figures shown represent "Reserve Capacity" (RC) for the signal-controlled junctions and "Design Flow / Capacity" (DFC) ratio for the roundabout / priority junction. A signal-controlled junction with a reserve capacity (RC) of 0% implies that it is operating at capacity while a negative RC% suggests that it is overloaded. DFC of 1.00 indicates that capacity has been reached; DFC over 1.00 indicates the overloaded condition.

Table 3.6 Key Road Link Capacity Assessment Results for Design Year 2035

Index	Road Link	Direction	Capacity	V/C Ratio[1]			
				2035 Reference		2035 Design	
				AM	PM	AM	PM
L1	Po Shek Wu Road	N/B	2,800	0.41	0.45	0.45	0.48
		S/B	2,800	0.60	0.53	0.64	0.55
L2	Jockey Club Road	E/B	2,800	0.29	0.17	0.32	0.20
		W/B	2,800	0.28	0.22	0.31	0.24
L3	Lung Sum Avenue	N/B	2,350	0.19	0.19	0.25	0.25
		S/B	1,250	0.48	0.39	0.60	0.49
L4	Fanling Bypass (Eastern Section)	E/B	3,000	0.46	0.36	0.52	0.38
		W/B	3,000	0.37	0.42	0.39	0.44

Notes:

[1] For road links, the performance indicator is V/C (Volume to Capacity) ratio. A V/C ratio equal to or less than 1.0 means that the road has sufficient capacity to cope with the volume of vehicular traffic under consideration. A V/C ratio above 1.0 indicates the onset of mild congestion and a V/C ratio between 1.0 and 1.2 would indicate a manageable degree of congestion. A V/C ratio above 1.2 indicate more serious congestion with traffic speeds progressively deteriorating with further increasing in traffic.

[2] The design capacity of road links is made reference to TTIA of CE18/2019 (CE).

3.9.6 The results of junction capacity assessment indicate that, with the planned road and junction improvement schemes proposed by other projects / studies, most of the assessed key junctions within the AOI would be operating with spare capacity in Design Year 2035 after the completion of the proposed public housing development, except for J4, J5 and J11. The potential traffic impacts induced by the proposed public housing development would be confined within the road networks in the vicinity of the proposed public housing development:

a) J4 – J/O Tin Ping Road / Lung Sum Avenue;

b) J5 – J/O Jockey Club Road / Lung Sum Avenue; and

c) J11 – J/O Road L3 / Road L4

3.9.7 With the implementation of the planned road and junction improvement schemes proposed by other projects / studies, Tai Tau Leng Roundabout would operate with spare capacity in Design Year 2035, after the implementation of the proposed public housing development.

3.9.8 The results of road link capacity assessment also reveals that the potential traffic impacts to the road links induced by the proposed public housing development in the vicinity would be limited.

<u>Proposed Junction Improvement at Junction J4 – J/O Tin Ping Road / Lung Sum Avenue</u>

3.9.9 The results of junction capacity assessment reveals that the signalised junction J4 – J/O Tin Ping Road / Lung Sum Avenue would operate over capacity, after the implementation of the proposed public housing development.

3.9.10 To enhance the junction performance of Junction J4 – J/O Tin Ping Road / Lung Sum Avenue, it is proposed to widen a section of the extension of Lung Sum Avenue (West Bound) (outside Woodland Crest) to 2 traffic lanes with a minimum 7.3m wide (according to Highway standard) (**FIGURE 15**).

3.9.11 The upgrading/widening works of the extension of Lung Sum Avenue outside Woodland Crest may require land resumption including DD51 5189 RP, GLA-TDN 4522 and GLA-TDN 4444. Liaison with relevant parties will be conducted to investigate the feasibility of the improvement scheme.

Proposed Junction Improvement at Junction J5 – J/O Jockey Club Road / Lung Sum Avenue

3.9.12 The junction capacity assessment results revealed that the signalised junction J5 – J/O Jockey Club Road/ Lung Sum Avenue would operate over capacity, with the implementation of the proposed public housing development. Possible junction improvement scheme at – J/O Tin Ping Road/ Lung Sum Avenue had been formulated and shown in **FIGURE 16**.

3.9.13 To enhance the junction performance of Junction J5 – J/O Jockey Club Road/ Lung Sum Avenue, it is proposed to demolish part of the nearside planter at Lung Sum Avenue WB approaching arm, the additional traffic lane will be introduced to improve junction performance, road marking and pedestrian crossing may need to be revised accordingly.

Proposed Junction Improvement at Junction J11 – J/O Road L3 / Road L4

3.9.14 The junction capacity assessment results revealed that the signalised junction J11 – J/O Road L3/ Road L4 would operate over capacity, with the implementation of the proposed public housing development. Possible junction improvement scheme at – J/O Road L3/ Road L4 had been formulated and shown in **FIGURE 17**.

3.9.15 To enhance the junction performance of Junction J11 – J/O Road L3/ Road L4, it is proposed to demolish part of the nearside planter at Road L4 WB approaching arm, the additional traffic lane will be introduced to improve junction performance, road marking and pedestrian crossing may need to be revised accordingly.

3.9.16 The junction performance assessment results of Junctions J4, J5 and J11 in Design Year 2035 with the implementation of the proposed improvement schemes are tabulated in **Table 3.7**.

Table 3.7 Critical Junctions Performance with and without Improvement scheme

Index	Junction	Junction Type	Performance[1]			
			2035 Design Case (Without Junction Improvement)		2035 Design Case (With Junction Improvement)	
			AM	PM	AM	PM
J4	Tin Ping Road/ Lung Sum Avenue	Signalised	**-3%**	17%	18%	25%
J5	Jockey Club Road / Lung Sum Avenue	Signalised	**3%**	16%	17%	30%
J11	Road L3 / Road L4	Signalised	**-5%**	21%	16%	41%

Notes:

[1] Figures shown represent "Reserve Capacity" (RC) for the signal-controlled junctions and "Design Flow / Capacity" (DFC) ratio for the roundabout / priority junction. A signal-controlled junction with a reserve capacity (RC) of 0% implies that it is operating at capacity while a negative RC% suggests that it is overloaded. DFC of 1.00 indicates that capacity has been reached; DFC over 1.00 indicates the overloaded condition.

3.9.17 The junction capacity assessment results revealed that the identified critical junctions would operate with ample capacity in Design Year 2035 with the proposed junction improvement schemes, after the implementation of proposed public housing development.

3.9.18 CEDD will study the feasibility of upgrading Lung Sum Avenue into a three-lane carriageway during the IDC Stage. Upon confirmation of technical feasibility of the proposed works, the relevant proposals will be incorporated into the detailed engineering design as appropriate.

Pedestrian Trip Generation

3.9.19 The pedestrian trip generations for proposed public housing development are estimated with in-house survey during typical commuting peak hours. Cheung Lung Wai Estate, which is a public housing estate in Sheung Shui. Due to the similarity and its proximity to the proposed site, it is expected Cheung Lung Wai Estate would be a good reference point for proposed site. For proposed public housing development, the surveyed pedestrian trip generation / attraction

rates were applied to the proposed number of flats to derive the trips. The pedestrian trip generation / attraction rates are summarized in **Table 3.8** below.

Table 3.8 Pedestrian Trip Generation Rates

Development Type[1]	Unit	AM		PM	
		Gen.	Att.	Gen.	Att.
Public Housing	ped/hr/flat	0.537	0.125	0.173	0.450

Notes:

[1] For potential local GIC facilities within proposed public housing development, since they are expected to serve mainly the site residents, it is envisaged that they would induce minimal pedestrian trips on the external pedestrian network during commuter peak hours.

3.9.20 The number of pedestrian trips generated and attracted by the proposed public housing development during typical commuting peak hours are summarized in **Table 3.9** below.

Table 3.9 Summary on Pedestrian Trip Generations in AM/PM Peak Hour

Development Type	Unit	AM[1]		PM[1]	
		Gen.	Att.	Gen.	Att.
PRH[2] (Planned: 5,363 Flats)	ped/hr	2,880	670	928	2,143
Total	**ped/hr**	**2,880**	**670**	**928**	**2,143**

Notes:

[1] Rounded to nearest 5 for clarity.

[2] No. of flats under PRH scenario would be more than SSF scenario, critical case is tested for conservative purpose.

3.9.21 It is anticipated that the housing developments would generate and attract some 3,550 pedestrians and 3,071 pedestrians two-way during the AM and PM peak hour periods respectively.

3.9.22 Under design case, FLN NDA road network and proposed public transport facilities will be completed. Since a PTT is proposed within the proposed site, it is anticipated that the proposed public housing development would induce minimal pedestrian trips on the external pedestrian network during commuter peak hours.

3.9.23 For conservation purpose, it is assumed that some of the proposed pedestrian trip may walk to nearby bus lay-by to take feeder services to MTR station or long haul bus transit.

3.9.24 The Eastern Footpath across Ng Tung River (F2) will be maintained and connected to the new footpath parallel to Fanling Bypass viaduct along Northern bank of Ng Tung River under FLN NDA project. For design purpose it is assumed pedestrian desire line would utilise Western footpath (F1) only. The assessment for pedestrian facilities along the major pedestrian desire line under future condition are shown in **Table 3.10**.

Table 3.10 Assessment on Footpaths in Design Years

Location[1]		Clear Width (m)[2]	Pedestrian Flow (ped/hr)		Pedestrian Flow Rate (ped/min/m)[3]		LOS[4]	
			AM	PM	AM	PM	AM	PM
F1	Western Footpath across Ng Tung River	2.0	2,310	2,120	38.50	35.33	D	D

Notes:

[1] Please refer to **FIGURE 12** for the location of the assessed pedestrian facilities;

[2] Clear width in metres;

[3] Pedestrian flow rates are computed based on effective width, effective width = clear width – dead width. Dead widths 0.5m as clearance for building side, curbs or fixed objects, trees and plants, building face and other clearance is adopted in calculating the effective width. For conservative purpose, total of 1m dead widths would be reduced for both sides of pedestrian footpath

[4] Referring to TPDM Volume 6 Section 10.4.2, the Level of Service (LOS) of a footpath is classified into 6 levels (i.e. A to F). In general, LOS A and B provide a very good walking environment; LOS C and D are typical acceptable values; LOS E and F reflect a congested walkway environment.

3.9.25 The results indicate that F1 under Design Year 2035 are predicted to operate with Level of Service (LOS) D during AM peak. Improvement measures should be adopted to restore the LOS to C or above. An additional pedestrian bridge (F3) with 4m clear width is proposed next to existing F1 to provide additional capacity to facilitate the pedestrian connection. By constructing a new pedestrian bridge across Ng Tung River, it is assumed that 60% of pedestrian demand may utilise the new bridge, the assessment for pedestrian facilities along the major pedestrian desire line under future condition with improvement are shown in **Table 3.11**.

3.9.26 The pedestrian may utilise the existing single-sided footpath or new proposed footbridge to get across Ng Tung River. A short section of crossing is proposed in front of DSD maintenance road at the northern bank of Ng Tung River (**FIGURE 13**). As minimal traffic is expected for the maintenance road, it is estimated that at-grade traffic conflict is minimal.

Table 3.11 Assessment on Footpaths in Design Years with Improvement

Location[1]		Clear Width (m)[2]	Pedestrian Flow (ped/hr)		Pedestrian Flow Rate (ped/min/m)[3]		LOS[4]	
			AM	PM	AM	PM	AM	PM
F1	Western Footpath across Ng Tung River	2.0	925	850	15.42	14.17	A	A
F3	New pedestrian Footbridge	4.0	1,385	1,275	23.08	21.25	A	A

Notes:

[1] Please refer to **FIGURE 12** for the location of the assessed pedestrian facilities;

[2] Clear width in metres;

[3] Pedestrian flow rates are computed based on effective width, effective width = clear width – dead width. Dead widths 0.5m as clearance for building side, curbs or fixed objects, trees and plants, building face and other clearance is adopted in calculating the effective width. For conservative purpose, total of 1m dead widths would be reduced for both sides of pedestrian footpath

[4] Referring to TPDM Volume 6 Section 10.4.2, the LOS of a footpath is classified into 6 levels (i.e. A to F). In general, LOS A and B provide a very good walking environment; LOS C and D are typical acceptable values; LOS E and F reflect a congested walkway environment.

3.9.27 The results indicate that F1 and F3 under Design Year 2035 with improvement measures are predicted to operate with LOS A during AM and PM peaks.

3.10 PRELIMINARY INVERSTIGATION OF CONSTRUCTION TRAFFIC IMPACT

3.10.1 The estimated construction traffic for construction and demolition materials to/ from the proposed public housing development is less than 50 pcu/hour. The details of the construction traffic volume will be determined with more detailed construction-related information (e.g. required cut and fill arising from the site formation works) at the next stage of the study (e.g. investigation stage).

3.10.2 It is assumed that construction traffic routes would be formulated between the proposed public housing development and South East New Territories (SENT) Landfill / West New Territories (WENT) Landfill. The details will be determined in the detailed design stage.

3.10.3 It is proposed to restrict the construction traffic to non-peak hours (e.g. 10:00 to 16:00) during weekdays in order to minimize the construction traffic through the Fanling / Sheung Shui Town area.

3.10.4 The proposed public housing development is close to the existing and planned strategic highway network (refer to **FIGURE 9**). The traffic routing for construction vehicles is relatively

flexible and manageable by the Contractor. The hours for construction traffic generation can also be determined in the construction stage with more detailed information available.

4 LANDSCAPE AND VISUAL

4.1 ASSESSMENT METHODOLOGY

4.1.1 The assessment area for the landscape impact assessment includes all areas within a 500m distance from the site boundary as shown on **Figure 18**. The assessment area for the visual impact assessment is defined by the visual envelope as shown on **Figure 20**.

4.1.2 Landscape impacts have been assessed according to the following methodology:

- Identification of the existing Landscape Resources (LR) and Landscape Character Areas (LCA) found within the assessment boundary
- Assessment of the degree of sensitivity of the LR and LCA
- Identification of potential sources of landscape impacts
- Assessment to the potential magnitude of change in LR or LCA
- Assessment of the impact significance for landscape without mitigation measures
- Identification of potential landscape mitigation measures
- Assessment and Comparison of the impact significance for landscape impact before and after the implementation of the mitigation measures
- Assessment of Acceptability of Impacts

4.1.3 The assessment of visual impact is carried out in accordance with the Town Planning Board Guidelines No. 41 – Guidelines on Submissions of Visual Impact Assessment for Planning Applications to the Town Planning Board. It analyses the potential visual impacts of the Project with respect to the existing views and the visual amenity of the representative key public Viewing Points (VP) and their sensitive receivers identified within the visual envelope. It involves the following procedures:

- Identification and plotting of the Visual Envelope
- Identification of VP
- Identification of visual elements
- Assessment of sensitivity of VP
- Identification of potential sources of visual impacts
- Appraisal of the visual changes
- Evaluation of Overall Visual Impact

4.1.4 Potential impacts would result from the temporary and permanent above ground structure elements during the construction and operation phase. The sources of impacts are listed as follows:

- Removal of vegetation due to site clearance
- Site formation works & excavation works
- Construction of roads and associated facilities
- Construction of underground utilities
- Construction traffic
- Temporary site office, machinery and works area

- After dark lighting & welding
- Operation of residential development, other GIC facilities and associated infrastructure
- Permanent removal of existing trees and other vegetation

4.2 BASELINE CONDITION

The Site

4.2.1 The Site, with an area of about 3.75ha, is mainly zoned "AGR" with a minor portion zoned "GB" on the approved Fu Tei Au and Sha Ling Outline Zoning Plan No. S/NE-FTA/16. It is located in the north-eastern part of Sheung Shui District and eastern side of Tin Ping Shan Tsuen.

4.2.2 The Site comprises mainly Government Land, and is currently occupied by brownfield operations such as rural workshops and open storage yards, as well as temporary residential dwellings. The southern portion of the Site is privately owned agricultural land. Extensive land resumption and clearance are required for the proposed public housing development. It is proposed to rezone the Site to "Residential (Group A)" ("R(A)") for public housing development.

Tree Survey

4.2.3 Within the tree survey boundary, 413 individual trees and approx. 229 trees in 14 tree groups were identified.

4.2.4 No Registered Old and Valuable Trees under DEVB TCW No. 05/2020 - Registration and Preservation of Old and Valuable Trees was identified.

4.2.5 The dominant tree species affected by the proposed development are *Livistona chinensis* (蒲葵) and *Macaranga tanarius* var. *tomentosa* (血桐) and *Leucaena leucocephala* (銀合歡). *Leucaena leucocephala* is an undesirable species. The form, health and structural condition of the surveyed trees range from average to poor.

4.2.6 According to the criteria set out in Section 2.6 of "Guidelines for Tree Risk Assessment and Management Arrangement (9th edition)", 2 surveyed trees are classified as Tree of Particular Interest (TPI) (See Tree Treatment Plans in Appendix B): (i) WS-T251 is a *Ficus microcarpa* (細葉榕) with DBH over 1m; (ii) WS-A01 is an *Aquilaria sinensis* (土沉香), which is a protected species scheduled under Cap 586 Protection of Endangered Species of Animals and Plants Ordinance and is a Rare and Precious Plants of Hong Kong. *A. sinensis* has a Vulnerable status in China Plant Red Data Book. Both of these two TPIs are observed outside the Site.

Tree(s) with DBH over 1m

- WS-T251 is a *Ficus microcarpa* with DBH around 1200mm. The tree has a poor form with imbalance canopy. Structural condition was assessed as poor as the scaffold branches were trimmed, decayed wounds were observed. Included bark was also found between the tree's codominant branches.

Tree(s) of rare/protected species

- WS-A01 is an *Aquilaria sinensis* with DBH 40mm, which is considered as an undersized tree. The tree was thriving well with average form, health and structural condition during the time of inspection. The amenity value is graded as high.
- WS-T115 is a *Michelia x alba*, belonging to *Magnolias* Family – species under this family is protected as stated in Cap 96A. However, considering *Michelia x alba* is widely cultivated in Hong Kong and is believed to grow outside Hong Kong, thus Cap. 96A might not be applicable under Regulation 3 for this species. As such, the tree is not qualified to be a Tree of Particular Interest (TPI).

4.2.7 No TPI is proposed to be transplanted or felled under the proposed public housing development.

4.2.8 In total, 7 mature trees (DBH over 750mm, tree ID including WS-T109, WS-T234, WS-T235, WS-T251, WS-T349, WS-T406 and WS-T420) locating outside the housing site were identified in the tree survey and detailed information is extracted in the **Table 4.1** below. Among these trees, 1 tree (i.e. WS – T349) is located in inaccessible area such that assessment on this tree is limited. The remaining 6 trees could be avoided from the proposed works and proposed to be retained. Tree WS-T349 would be affected by the works and is proposed to be removed due to its infeasibility on tree transplanting.

Table 4.1 - Summary of Mature Tree (DBH over 750mm)

	Scientific name	Chinese Name	Height (m)	DBH (mm)	Crown Spread (m)	Amenity Value (High/ Medium /Low)	Recommendation	Remarks
WS-T109	*Ficus elastica*	印度榕	12	960	15	M	Retain	Balance form, extensive aerial roots, liginified and landed, spreading ~10m, crossing branches, wounds at branches, close to T110
WS-T234	*Ficus virens*	黃葛樹	16	750	8	L	Retain	Imbalance, in roadside planter, close to drainage
WS-T235	*Ficus virens*	黃葛樹	18	800	10	L	Retain	Imbalance, broken scaffold, in roadside planter, close to drainage
WS-T251	*Ficus microcarpa*	細葉榕	13	1200	10	M	Retain	Tree of Particular Interest (TPI), close to channel, trimmed scaffold with decayed wound, imbalance, co-dominant branches with included bark
WS-T349	*Delonix regia*	鳳凰木	16	800	18	M	Remove	In accessible area (TG-14), on slope crest, assessment is limited
WS - T406	*Ficus microcarpa*	細葉榕	8	800	10	L	Retain	Imbalance, bending trunk, codominant trunks, at crest of slope
WS - T420	*Ficus benjamina*	垂葉榕	16	760	10	M	Retain	Pest issue, sparse crown, close to edge of planter

4.2.9 Based on the proposed layout, **234** individually surveyed trees (all outside housing site) and approx. **46** trees in tree group survey are considered feasible to be retained in-situ. None of the individually surveyed trees or trees surveyed in tree groups affected by the proposed works is suitable to be transplanted upon the re-assessment.

4.2.10 326 surveyed trees, including 168 individually surveyed trees and approx. 158 trees in tree groups are proposed to be removed, amongst which 65 nos. are *Leucaena leucocephala* (i.e. undesirable species).

4.2.11 Prior to the construction stage, a total of 36 trees (**11** individually surveyed trees and approx. **25** trees in tree group) which overlaps with the Remaining Phase Development of FLN NDA will be felled and compensated under the FLN NDA project.

4.2.12 Approximately **180** new trees will be planted by HD within the housing site in order to enhance the overall greenery in the proposed development. Exact location of the trees is subject to detail design by HD.

4.2.13 To maximise the no. of compensatory trees with adequate spacing for tree growth outside the housing site but within the works limit, **74** nos. of compensatory trees are proposed and will be planted by CEDD. Indicative locations and proposed species for the compensatory trees shall be included in the subsequent Tree and Vegetation Survey Report.

4.2.14 Tree treatment plan, schedule and Compensatory planting plans are shown in **Appendix C.** Other tree information detail shall be provided in Tree and Vegetation Survey Report under separate submission.

4.2.15 The general tree information as well as the treatment is tabulated in the **2** below.

Table 4.2 Summary of Tree Treatment

Tree Treatment	Within Housing Site	Outside Housing Site	Total
Retain	0	234#+46*	234#+46*
Transplant	0	0	0
Remove (exclude undesirable species)	62#+102*	69#+28*	131#+130* = 261
Remove (undesirable species)	3#+25*	34#+3*	37#+28* = 65
Remove by Other Parties^	0	11#+25*	11#+25*
Sub total	**65#+127***	**348#+102***	**413#+229***
Total Trees to be Planted		**74 Compensatory Trees by CEDD + approx. 180 New Trees by HD**	

Remark:

Represent tree quantity found in individual tree survey.

* Denote tree quantity observed in tree group survey.

^ **11** nos. of individually surveyed trees and approx. **25** nos. found in tree group survey along Lung Sum Avenue are to be removed by other parties under Remaining Phase Development of Fanling North New Development Area before the commencement of the proposed Project.

For rezoning submission purpose, the following tree information is listed below:

(i) 290 surveyed trees (including 58 undesirable species) within the Site are proposed to be removed; 72 surveyed trees (including 36 trees to be felled by other FL NDA project and 7 undesirable species) outside the Site will be felled due to the proposed associated infrastructural works, e.g. road widening works along the extension of Lung Sum Avenue;

(ii) No trees will be retained within the Site. A total of 280 surveyed trees will be retained in-situ outside the Site;

(iii) 239 trees will be planted within rezoning site and 15 trees will be planted along the roads outside the Site.

4.2.16 Reference is made to DEVB TC(W) No. 4/2020, the proposed tree compensatory arrangement has duly considered the "Right tree for the right place" principle as suggested in the "Street Tree Selection Guide", so that trees are selected to match the site, environmental conditions, surrounding landscape character and design intent. Suitable tree species and sufficient growing space shall be selected and reserved respectively to create a desirable and quality condition for healthy tree growth. Having taken into account the spatial constraint, 254 trees (74 + 180) are proposed to be planted within the development. The final location and number of trees are subject to review at detailed design stage in consultation with relevant department.

Vegetation Survey

4.2.17 Based on the vegetation survey, 73 plant species, including trees, shrubs, herbs and climbers, were identified within the vegetation survey area. 36 species and 37 species are known to be native and exotic to Hong Kong respectively. Species ranged from common to very common in Hong Kong. An array of the found species are common at this Site, including *Mikania micrantha* (薇甘菊), *Panicum maximum* (大黍), and *Alocasia macrorrhizos* (海芋).

4.2.18 1 Aquilaria sinensis was found within the plantation area of the Site. A. sinensis is a Rare and Precious Plants of Hong Kong, which is scheduled under Cap 586 Protection of Endangered Species of Animals and Plants Ordinance and. It has a Vulnerable status in China Plant Red Data Book. It is also on the Threatened Species List of China's Higher Plants (Vulnerable, endemic species), IUCN Red List (Vulnerable) and CITES Appendix II. The A. sinensis surveyed was of tree-form however DBH under 95mm.

Preliminary Visual Baseline Study

4.2.19 Overall, the surrounding visual context is mainly squatters, brownfield operations, farms, car parks and natural mixed woodland, all located on a comparatively flat land. The proposed development has the potentials to improve the existing visual characteristics, it can be a continuum of urban characters echoing the Fanling North NDA located to the immediate south of the Site.

4.2.20 The Site is visible from the hiking trails along the Wa Shan ridgeline leading to Shek Wu San Tsuen at the foot of the mountain. Due to a higher viewing height on the existing hiking trails and a lack of high-rise developments in the foreground viewing from the trails, the proposed public housing development is likely to impact views of hikers. At the peak of the Wa Shan, good and panoramic view of Sheung Shui and Fanling town center and the mountain ridgeline stretching from Pak Tai To Yan to Kai Kung Leng can also be seen. The plan showing the visual envelope, and the locations of key visual attractors and detractors is in **Figure 20**. A total of 9 viewing points were identified and their sensitivity are summarized in **Table 4.6.**

Key Visual Attractors

- Ridgelines (Tai Shek Mo, Cheung Po Tau, Cham Shan, Wa Shan, High Hill, Lung Shan, Kei Lak Tsai, Pak Tai To Yan, Ki Lun Shan)
- Natural Watercourse (Ng Tung River, Shek Sheung River);
- North District Park; and

- Natural Woodland, Vegetations, Agriculture land, Wetland, Shrubland & Grassland.

Key Visual Detractors

- Fanling Highway;
- Shek Wu Hui Sewage Treatment Plant ; and
- On Lok Tsuen (village and industrial area).

4.3 IDENTIFICATION OF POTENTIAL IMPACTS

4.3.1 It is anticipated that construction and operation of the proposed public housing development would bring potential impact to the surrounding temporary and permanent above ground structure elements. The potential sources of impacts are listed in the following table:

Table 4.3 Sources of Potential Landscape & Visual Impact

Code	Description
Construction Phase	
C1	Removal of exsiting trees and vegetation due to site clearance
C2	Site formation works & excavation works
C3	Construction of roads and associated facilities
C4	Construction of underground utilities
C5	Construction traffic
C6	Temporary site office, machinery and works area
C7	After dark lighting & welding
Operation Phase	
O1	Operation of new residential development, GIC facilities, associated infrastructure and site formation / structural platform

4.4 LANDSCAPE IMPACT ASSESSMENT

Landscape Impact

4.4.1 A total of 4 landscape resources (LRs) and 2 landscape character areas (LCAs) will be affected. The baseline landscape study is provided in **Table 4.4** and Significance Threshold for LR & LCA are summarized in **Table 4.5**. The Landscape Resources Plan and Landscape Character Area Plan are in **Figure 18** and **Figure 19**.

Table 4.4 Baseline Landscape Resources (LRs), Landscape Character Area (LCA) and Sensitivity

LR/ LCA	Description	Sensitivity
LR1.2 Scrubland & Grassland (45.2ha)	• This LR mainly comprises grass and shrub plantings on hillside of Wa Shan at the north-eastern part of the project. Some patches are found along the edges of Ng Tung River as well as other waterbodies while the plantings are all natural. • Numerous graves and cemeteries are found scattered on the hillside. Wildfire happened from time to time along the graves groups and affected its appearance and vegetation value. • Within the tree survey boundary of this LR, approx.80 trees were be found in the area by Ng Tung River. Most of them are self-seeded. • Dominate plant species including *Ficus hispida* (對葉榕), *Leucaena leucocephala* (銀合歡) and various grasses such as *Bidens alba* (白花鬼針草), *Kyllinga polyphylla* (水蜈蚣), *Nephrolepis hirsutula* (毛葉腎蕨), *Panicum maximum* (大黍), and *Phyllostachys aurea* (羅漢竹) etc. were identified. • 1 *Aquilaria sinensis* (WS-A01) with DBH 40mm is found within this LR. It is a Rare and Precious Plants of Hong Kong and classified as a Tree of Particular Interest (TPI). It was also scheduled under Cap 586 Protection of Endangered Species of Animals and Plants Ordinance. *Quality:* Medium *Importance / Rarity:* Medium Importance / Uncommon *Ability to Accommodate Change:* Medium *Local / Regional Significance:* Medium / Low *Maturity:* Semi-mature	Medium
LR2.1 Ng Tung River (6.8ha)	• This LR refers to Ng Tung River which comprises several tributaries, including Kwan Tei River, Tan Shan River, Shek Sheung River, Sheung Yue River and Ma Wat River. • In the 1990s, Ng Tung River was straightened and channelized for flood control projects to assist Sheung Shui and Fanling development. Part of the River is found across the foothill of Wa Shan within the assessment area. The riverbank is vegetated with groundcovers and grass. It is a scenic element in the local landscape context. Dominant plant species including *Bidens alba* (白花鬼針草), *Panicum maximum* (大黍) and *Panicum repens* (鋪地黍) etc. were found. *Quality:* Medium *Importance / Rarity:* Medium Importance / Uncommon *Ability to Accommodate Change:* Medium	Medium

LR/ LCA	Description	Sensitivity
	Local / Regional Significance: Medium / Medium *Maturity:* Young – Semi-mature	
LR3.1 Informal Settlement and Squatter (17.6ha)	• This LR indicates the areas located at the foothill of Wa Shan and dominated by small and medium sized informal settlement and squatters, interspersed with agricultural plots. • Tree planting, largely for fruit production, are located at the periphery of villages (e.g. *Dimocarpus longan* (龍眼), *Clausena lansium* (黃皮) *Litchi chinensis* (荔枝) and *Mangifera indica* (杧果).) • Other common wild species observed include, *Macaranga tanarius var. tomentosa* (血桐), *Ficus hispida* (對葉榕) and *Leucaena leucocephala* (銀合歡) etc. • Within tree survey boundary of this LR, approx. 333 trees were found. *Quality:* Low *Importance / Rarity:* Medium Importance / Common *Ability to Accommodate Change:* High *Local / Regional Significance:* Low / Low *Maturity:* Semi-mature	Low
LR6.1 Transportation & Associated Facilities (3.7ha)	• This LR encompasses main roads (i.e., Ma Sik Road, Jockey Club Road,) and its associated facilities. Roadside trees are found along major road corridors. Cultivated trees that required low maintenance mixed with some self-seeded grass or weed species are found within this LR. • Species including *Archontophoenix alexandrae* (假檳榔), *Melaleuca cajuputi subsp. cumingiana* (白千層), *Spathodea campanulata* (*火焰木*), *Chloris barbata* (孟仁草), *Panicum maximum* (大黍) etc. were found *Quality:* Low *Importance / Rarity:* Low Importance / Common *Ability to Accommodate Change:* High *Local / Regional Significance:* Low / Low *Maturity:* Semi-mature - Mature	Low
LCA2 Miscellaneous Urban Fringe Landscape	• This LCA is the transition landscapes from urban to rural that is characterised by low-density and diverse range of features, with mixture of various landscape elements, such as low-rise structures, open storage, agricultural	Medium

LR/ LCA	Description	Sensitivity
(23.3ha)	lands, powerlines, river, ponds. Vegetation is common in urban including roadside and central median amenity planting, slope planting, aquatic planting, with various forms of flora. *Quality: Medium* *Importance / Rarity: Medium Importance / Common* *Ability to Accommodate Change: Medium* *Local / Regional Significance: Low / Low* *Maturity: Young to Mature*	
LCA3 Transportation Corridor Landscape (3.7ha)	• This LCA is the transportation landscapes, encompassing main roads (i.e. Jockey Club Road, Ma Sik Road), and its associated facilities. Roadsides trees and trees in central median planters are found along most major road corridors. *Quality: Low* *Importance / Rarity: Low Importance / Common* *Ability to Accommodate Change: High* *Local / Regional Significance: Low / Low* *Maturity: Young - Semi-mature*	Low

4.4.2 The magnitude of change for the affected LRs was found to be within the range of **intermediate** and **small** while the significant threshold of unmitigated landscape impacts associated with the construction and operation phases of the proposed development was found to be within the range of **substantially adverse** to **slightly adverse** impact. Design considerations and mitigation measures have been proposed to mitigate residual impacts.

4.5 DESIGN CONSIDERATION AND MITIGATION MEASURES

4.5.1 Design considerations that would avoid or reduce the identified impacts on landscape, or that would make the proposed public housing development visually more compatible with the setting shall be thoroughly examined before adopting other mitigation measures to alleviate the impacts. These considerations are intended as design and planning guidelines. The design considerations for the Project are summarized below:

- Careful Adjustment of Building Blocks and Height – Number of building blocks and building height shall be carefully considered to enhance visual permeability and minimize wall effect to the surroundings. Variation in building height profiles shall be adopted to alleviate building mass effect and enhance visual interest.
- Greening within Development – For public housing development, a minimum of 20% green coverage shall be provided unless constrained by special circumstances with reference to HKPSG Ch.4 and an overall target of 30% green coverage shall be provided as far as possible in accordance with Joint Planning Department – Housing Department TC No. 1/2020. This will enhance the overall greenery and amenity planting within the

proposed housing site. At-grade plantings should be considered as far as practical. The final landscape design is subject to further review in the detail design stage.

- Streetscape Design – The streetscape shall be sensitively designed in a manner that responds to the existing landscape and visual contexts as well as to minimize potentially adverse landscape impacts. Street lighting standards and design should reference the existing lighting and the "Public Lighting Design Manual" promulgated by HyD to minimize light spillage.
- Aesthetic Design of Buildings - Colour blocking, decorative architectural elements, and appropriate form should be applied so that the building will be compatible with the surrounding and planned developments.
- Preservation of Existing Vegetation – The site formation works and building layout should be optimized to preserve existing vegetation as much as possible. Unnecessary tree and shrub felling should be avoided.
- Visual Penetration – The configuration and building layout should be carefully planned to allow visual penetration. Appropriate building gaps should be provided to avoid wall effect.

4.5.2 Based on findings of the potential landscape and visual impacts arising from the proposed development (See **Table 4.2**), design considerations and landscape and visual mitigation measures during the construction and operation phases are proposed and listed below. Their locations are shown in **Figure 20.** A conceptual landscape plan based on the recommended mitigation measures is shown in **Figure 21**.

- Preservation of Existing Vegetation (CM1) – Any existing vegetation and trees not affected by the proposed development and within 5m offset from the site boundary shall be carefully preserved and protected in accordance with DEVB TCW No. 4/2020 and the latest Guidelines on Tree Preservation by GLTMS of DEVB.
- Control of Night-time Lighting Glare (CM2) - All night-time lighting shall be avoided as far as possible. All lights should be directed light and no light glare shall illuminate directly outside the site boundary. Potential glare impacts arising from the proposed development will be evaluated with reference to the "Charter on External Lighting" and "Guidelines on Industry Best Practices for External Lighting Installations" promulgated by Environmental Bureau.
- Optimisation of Construction Areas and Providing Temporary Landscape Treatment on Temporary Construction Works (CM3) – Construction areas' control, such as reducing the extent of working areas, temporary working areas, storage area and shortening construction period, shall be enforced to minimise potential landscape and visual impact arising from construction activities. Temporary landscape treatment such as hydroseeding temporary stockpiles is recommended.
- Erection of Decorative Screen Hoarding (CM4) - Site hoardings shall be painted in a colour that is compatible with the surrounding. Where possible, non-reflective, recessive colours should be used. Hoarding should be taken down at the end of the construction period.
- Compensatory and New Tree Planting where Practical (OM1) – The compensatory trees shall be proposed outside the site as far as practicable and provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed upon separately with the Government during the Tree Removal Application process under DevB TCW 4/2020.

  Approximately 180 nos. of new trees are proposed within the future housing site boundary. The location of compensatory trees and new trees should be considered in the landscape design as part of the amenity planting within the Development.

- Buffer Planting (OM2) – Buffer trees, shrubs or climbers are proposed to be planted as a visual barrier and/or noise barrier to nearby unsightly views, noise emitters or to reduce wall effect. Edge planters should be considered to alleviate likely visual impact. Evergreen plant species with dense foliage is recommended to be planted close to noise and dust emitters for better noise and dust reduction efficiency. The selection of planting species should make reference to Street Tree Selection Guide of GLTMS, DEVB and GMP for North District. The proposed plant species are subject to further review at detail design stage.
- Aesthetic Design of Proposed Public Housing Development (OM3) – A compatible design, construction materials and façade for the proposed public housing development will assist in achieving visual uniformity with the surrounding environment. Finishing materials on the form, micro and macro texture, reflectivity/light absorbance and compatibility to the nearby environment shall be considered.
- Landscape Treatment within the Proposed Housing Development (OM4) – at-grade plantings should be provided within the Site where practicable. Landscape treatment for the slope such as shrubs and groundcover shall be considered. Screening planting should be considered to soften the built structures. Sustainable landscape design, such as zero-irrigation, should be taken into consideration. Native plant species which are compatible with the surrounding environment should be chosen. Overall target of 30% greenery coverage (9,420sqm) in accordance with the Joint Planning Department – Housing Department TC No. 1/2020 shall be provided as far as possible within the housing development. A minimum of 20% green coverage (6,280 sqm) and 12,981 sqm open space with min. 1sqm local open space per person in accordance with Chapter 4 of HKPSG should be provided, unless constrained by special circumstances and subject to the actual design population..
- Variation in Building Height Profile of Proposed Public Housing Development (OM5) – Variation of building height profile shall be considered for the proposed public housing development to alleviate building mass effect and enhance visual interest.
- Building Separation of Proposed Public Housing Development (OM6) – Building separation between residential blocks shall be considered to enhance visual permeability and minimize wall effect of the proposed housing development. Three major building separations (i) min.15m wide building separation between Block 4 & Block 3 and Block 1 & Block 2, (ii) min.15m wide building separation between Block 2 & Block 3 and Block 1 & Block 4 and (iii) min.15m wide building separation between Block 2 & Block 3 and Block 1 & Block 2 shall be applied to enhance visual openness between building blocks.
- Building Setback (OM7) – To enhance visual permeability and openness towards Ng Tung River, building setback to the south of the proposed public housing development shall be considered. Approximate 20m building setback to the south of the proposed public housing development from the Fanling Bypass can alleviate the visual blockage of building mass towards the riverside view of Ng Tung River.

4.5.3 With reference to HKPSG Ch.4, a minimum of 20% green coverage shall be provided unless constrained by special circumstance and minimum 1sqm of local open space per person shall be provided for the public housing development. According to the Joint Planning Department – Housing Department TC No. 1/2020, an overall target of 30% green coverage shall be provided as far as possible. Greenery coverage plan and open space calculation plan are shown **Figures 29, 30** and **Figures 31, 32** respectively.

4.5.4 The proposed planting species specified for landscape treatment are shown in **Figure 33**. The detailed design is subject to design development stage by HD. Typical landscape sections showing the proposed landscape treatments are in **Figures 34 to 38**.

4.6 RESIDUAL LANDSCAPE AND VISUAL IMPACT

Residual Landscape Impact

4.6.1 Appraisal of each residual landscape impact on the affected LR and LCA is described below:

4.6.2 **LR1.2 Shrubland & Grassland** – The loss of vegetation is evitable due to site formation and associated works and approximately 54 individual trees and 8 trees in tree group (TG-11) (most of them are *Leucaena leucocephala*) will be affected and are proposed to be felled. The significant threshold of potential landscape impact during construction phase before mitigation will be moderately adverse.

4.6.3 To reduce the landscape impact, proposed mitigation measures during construction phase, such as Preservation of Existing Vegetation (CM1), Control of Night-time Lighting Glare (CM2), Optimisation of Construction Areas and Providing Temporary Landscape Treatment on Temporary Construction Works (CM3) and Erection of Decorative Screen Hoarding (CM4), would slightly miminise the potential landscape impacts arising from the construction site. However, the residual impact is considered to remain moderately adverse at construction phase. During operation phase, mitigation measures, such as Compensatory/ New Tree Planting where Practical (OM1), Buffer Planting (OM2), Aesthetic Design of Proposed Public Housing Development (OM3) and Landscape Treatment within the Proposed Housing Development (OM4) will be applied. With mitigation measures in place, the residual impact can be reduced to slightly adverse in operation phase at Day 1 and Year 10.

4.6.4 **LR2.1 Ng Tung River** - The LR will be affected by the new cycling-cum-pedestrian footbridge partially. No existing trees and vegetation will be felled within this LR. With Mitigation measures such as Control of Night-time Lighting Glare (CM2), Optimisation of Construction Areas and Providing Temporary Landscape Treatment on Temporary Construction Works (CM3), residual impact during construction phase will remain slightly adverse. However, Buffer Planting (OM2) is recommended for visual screening and enhancement. Species choice should take reference to GMP for North District by CEDD and Street Tree Selection Guide by DEVB to increase compatibility with the surroundings and ecological value. Residual impact with mitigation measures in operation phase Day 1 and Year 10 will be reduced to insubstantial.

4.6.5 **LR3.1 Informal Settlement and Squatter** – This area contains hard pavers and temporary structures. The loss of vegetation, including approximately 91 individual trees and 135 trees in tree groups will inevitably be affected during the construction stage. Due to site constraints, no existing trees will be retained in-situ within the Site. Buffer planting (OM2) along the site boundary and within the proposed development's landscaped area are recommended for visual and noise screening, dust amelioration and visual enhancement. To enhance compatibility with the surroundings and ecological value, species choice may make reference to the vegetation species nearby the Site. Residual impact during the construction and operation phase will be substantially adverse.

4.6.6 Although the proposed housing development would lead to the loss of existing vegetation in this LR, impacts would be alleviated by the full implementation of mitigation measures such as Compensatory/ New Tree Planting where Practical (OM1), Buffer Planting (OM2), Aesthetic Design of Proposed Public Housing Development (OM3) and Landscape Treatment within the Proposed Housing Development (OM4). Collectively, all these proposed mitigation measures will bring forth new amenity with high quality greening environment to balance the loss of existing resources. Residual impact during the operation phase is reduced to moderately adverse in Day 1 and Year 10 respectively.

4.6.7 **LR6.1 Transportation & Associated Facilities** - The loss of vegetation is inevitable during the construction stage due to the road works. Approximately 28 trees from individual tree survey and 40 trees in tree groups will be affected. With mitigation measures, such as Preservation of Existing Vegetation (CM1), Control of Night-time Lighting Glare (CM2), Optimisation of Construction Areas and Providing Temporary Landscape Treatment on Temporary Construction Works (CM3) and Erection of Decorative Screen Hoarding (CM4), the residual

impact during construction phase remains slightly adverse**.** In the operation phase, no trees shall be proposed within this LR due to site limitation and constraints, therefore the residual impact will remain slightly adverse in operation phase Day 1 and Year 10.

4.6.8 **LCA2 Miscellaneous Urban Fringe Landscape** – LCA2 will be replaced by LCA4 Residential Urban Landscape. The residual impact during construction and operation phases before the implementation of mitigation measures will be moderately adverse. With all mitigation measures (CM1-4, OM1-4) in place, the residual impact can be reduced to slightly adverse at construction and operation phases at Day 1 and Year 10 respectively.

4.6.9 **LCA3 Transportation Corridor Landscape** – Before the implementation of mitigation measures, residual impact during construction and operation phases will be slightly adverse. Due to site limitation, no landscape enhancement shall be proposed within this area (LCA3). The residual impact during construction and operation phases will remain slightly adverse in operation phase Day 1 and Year 10.

4.6.10 In general, with the implementation of appropriate mitigation measures, the residual impact arising from the proposed public housing development will be reduced effectively. Minimum 20% greenery coverage in accordance with HKPSG Chapter 4 will be provided within the propose development and a 30% greenery coverage in accordance with Joint Planning Department – Housing Department TC No. 1/2020, with approx. 180 new trees will be provided for greenery/amenity planting within the housing development. In this regard, the landscape impact from the proposed development to the affected LR and LCA will reduce from moderately adverse to insubstantial by Year 10. The mitigation measure plan is shown in **Figure 21**.

Residual Visual Impact

4.6.11 The photomontages of the viewpoints (VPs) are shown in **Figure 24 – Figure 28**. A summary of visual impacts is shown in Table 4.7. Appraisal for each VP is described below:

4.6.12 Regarding **VP1,** most of the proposed public housing development would be screened by the existing vegetation and residential development (i.e. Woodland Crest) to the west of this viewpoint, only a minor portion of the proposed development would be seen.

- Visual Composition: In view of visual composition, the existing urban townscape, such as Tin Ping Road, Lung Sum Ave, Noble Hill, On Kwok Vila, Woodland Crest, roadside vegetation as well as the mountain backdrop of Wa Shan, would not be affected, except that a small portion of sky view will be replaced by the proposed public housing development in the background.
- Visual Obstruction: In view of visual obstruction, only a small portion of open sky view will be obstructed, leading to insubstantial loss of visual openness.
- Effect on Public Viewers: For the effect on public viewers, the proposed public housing development will only cause an insubstantial visual change to this viewpoint. Only a small portion of sky view and visual openness will be loss and replaced by the proposed public housing development.
- Effect on Visual Resources: With the proposed mitigation measures (OM3) in place during operation phase, building edge of the proposed public housing development would be soften and blend in with the surrounding urban context. In view of the above, with proposed mitigation measure in place, the visual impact during operation phase is expected to be *insubstantial*.

4.6.13 Regarding **VP2**, this VP is located in a relatively short distance to the proposed public housing development and will inevitably be seen from this viewpoint.

Visual Composition: In view of the visual composition, the existing visual elements, such as low-rise residential settlements of Shek Wu San Tsuen, medium to high-rise residential buildings of Noble Hill, Ka Shing Court, mountain backdrops of Wu Tip Shan and Kei Lak Tsai, will be replaced by the proposed public housing development. Other visual elements such as

Tin Ping Estate, Woodland Crest, Wing Fok Centre, Fan Garden Government Quarters and the existing greenery in the foreground and midground view will remain unaffected by the proposed housing blocks.

Visual Obstruction: The proposed public housing development will be located in the mid of this viewpoint, leading to the substantial loss of view towards the existing open sky view, mountain backdrop (Wu Tip Shan and Kei Lak Tsai) and visual openness.

Effect on Public Viewers: Regarding the effect on public viewers, additional building mass will be located in the midground of this VP, visual resources currently enjoyed by the public viewers will be affected, leading to a substantial visual change to public viewers. The planned FLN NDA and Fanling Bypass (Western Section) are located to the west and east of this VP respectively, which creates additional concrete structures to the public viewers.

Effect on Visual Resources: During operational phase, mitigation measures such as compensatory and new tree planting, aesthetic design of building façade, provision of landscape treatment and variation in building height profile (OM1, OM3, OM4, OM5) will be applied to alleviate visual impacts. Provision of landscape treatment and tree planting can soften the building structure and enhance visual amenities of the proposed public housing development. Aesthetic building design and variation in building height profile can alleviate the wall effect of building mass and enhance visual interest of the building blocks. Although with the implementation of mitigation measures, the proposed housing development would impose substantial loss of visual resources such as mountain backdrop and open sky view on this VP. In view of this, the visual impact is expected to be *substantially adverse* in operation phase.

4.6.14 Regarding **VP3,** this VP is at the relatively short distance to the proposed public housing development.

- Visual Composition: In view of the visual composition, the existing visual elements such as mountain backdrop of High Hill and the vegetation in the front as well as the open sky view in the background will be replaced by the proposed public housing development. Existing footbridge and driveway and riverside scenery of Ng Tung River will be unaffected.
- Visual Obstruction: Visual obstruction to the existing mountain backdrop of High Hill will be imposed, leading to the substantial loss of greenery, visual amenities, open sky view and visual openness to this viewpoint.
- Effect on Public Viewers: Regarding the effect on public viewers, additional building mass will be located in the background of this viewpoint, natural landscape currently enjoyed by the public viewers will be affected, leading to a substantial visual change to public viewers. The planned FLN NDA and Fanling Bypass (Western Section) are located to the east and west of this VP respectively, which create additional building mass to the public viewers.
- Effect on Visual Resources: During operational phase, proposed mitigation measures such as compensatory and new tree planting, buffer planting, aesthetic design of building façade, provision of landscape treatment, variation in building height profile and building separation (OM1, OM2, OM3, OM4, OM5 and OM6) can be applied to alleviate visual impacts. Provision of landscape treatment and tree planting can soften the building structure and enhance visual amenities of the proposed public housing development. Buffer planting along the proposed footbridge would soften its hard structure. Aesthetic building design and variation in building height profile can alleviate the wall effect of building mass and enhance visual interest of the building blocks. Materials, textures and landscape treatment applied to the proposed PTT and ancillary car parking block would also enhance its overall permeability. Building separation can enhance visual openness and permeability. Although the above proposed mitigation measures would alleviate part of the visual impact, the proposed housing development would impose substantial loss of visual resources such as mountain backdrop and open sky view on this viewpoint. In view of the above, the visual impact is expected to be substantially adverse in operation phase.

4.6.15 Regarding **VP4** - the proposed public housing development can be partially seen in this VP. The planned Central Park and GIC buildings in FLN NDA are located to the south of the proposed public housing development in this VP.

- Visual Composition: In view of the visual composition, existing visual elements of open sky view, natural greenery and concrete paved car parking area in the background and midground view will be partially replaced by the proposed public housing development.
- Visual Obstruction: Visual obstruction to the existing open sky view and visual amenities will be imposed, leading to the substantial loss of visual openness to this viewpoint.
- Effect on Public Viewers: Regarding the effect on public viewers, additional building mass will be located to the east of this viewpoint, natural amenity such as vegetation and open sky view currently enjoyed by public viewers will be affected, leading to a substantial visual change of this viewpoint. The planned GIC buildings within FLN NDA will be located to the west of this viewpoint and create additional building mass to the public viewers. However, the planned Central Park will be constructed in the foreground view, which would improve the overall visual quality to the public viewers as compare with the existing concrete paved car parking area.
- Effect on Visual Resources: During operational phase, proposed mitigation measures such as aesthetic design of building façade, landscape treatment and building separation (OM3, OM4, OM5 and OM6) can be applied to alleviate visual impacts. Aesthetic building design and building height variation can alleviate the dominating effect of building blocks and enhance visual interest. Building separation can enhance visual openness and permeability. Although the above proposed mitigation measures would alleviate part of the visual impact, the proposed housing development would impose substantial loss of visual resources such as natural greenery and open sky view on this viewpoint. In view of the above, the visual impact is expected to be substantially adverse in operation phase.

4.6.16 Regarding **VP 5** - the proposed public housing development is mostly blocked by the existing vegetation in this VP**.**

- Visual Composition: Regarding the visual composition, the existing visual elements of open sky view will be partially replaced by the proposed public housing development. Other visual elements such as the existing sitting-out area along Ng Tung River and the high-rise residential building blocks of Wing Fai Centre, Noble Hill and Belair Monte will be unaffected by the proposed housing blocks.
- Visual Obstruction: Visual obstruction to the existing open sky view will be imposed, leading to the slight loss of visual openness to this viewpoint.
- Effect on Public Viewers: Regarding the effect on public viewers, additional building mass will be located at the back of this viewpoint, visual resources of open sky view currently enjoyed by public viewers will be affected, leading to a slight visual change of this VP. The planned developments in FLN NDA and Fanling Bypass (Western Section) are located to the west of this VP, which create additional building structures to the public viewers.
- Effect on Visual Resources: During operational phase, with the implementation of mitigation measures such as application of compatible building colour with the surroundings, variation in building height profile and building separation (OM3, OM5 and OM6), the dominating effect of building blocks can be alleviated. Although the above proposed mitigation measures would alleviate part of the visual impact, the proposed housing development would impose slight loss of visual resources such as open sky view on this viewpoint. In view of the above, visual impact is expected to be reduced to slightly adverse in operation phases.

4.6.17 Regarding **VP6** - the proposed public housing development will be partially screened by the existing mountain of Wa Shan in the front in this VP.

- Visual Composition: Regarding the visual composition, part of the existing FSS urban context and greenery of Ngau Tam Shan will be replaced by the proposed public housing development. Other visual resources such as Wa Shan, existing mountain backdrops of Ngau Tam Shan, Wu Tip Shan and Kei Lak Tsai will be unaffected by the proposed public housing development.
- Visual Obstruction: Visual obstruction to the existing natural vegetations of Ngau Tam Shan will be imposed, leading to the slight reduction of visual permeability.
- Effect on Public Viewers: Regarding the effect on public viewers, additional building mass is located to the east of this VP, and hence visual resources of natural greenery currently enjoyed by public viewers will be affected. This will lead to a slight visual change of this VP. The planned FLN NDA is located to the west of this VP and create additional building mass to the public viewers.
- Effect on Visual Resources: During operational phase, with the implementation of mitigation measures such as the application of compatible building colour, façade and materials with the surroundings (OM3 and OM5), the proposed public housing development can be visually screened and blended in with the existing visual context. Besides, the scale of building mass can also be broken down. In view of the above, the visual impact is expected to be slightly adverse in operation phase.

4.6.18 Regarding **VP7,** the proposed public housing development will be partially seen from this viewpoint.

- Visual Composition: Existing visual elements, including natural vegetations along Ng Tung River and part of the open sky view, will be replaced by the lower portion of PTT and residential building of the proposed public housing development. The proposed pedestrian-cum cycling bridge across Ng Tung River will **block** the existing vehicular-cum-pedestrian bridge, and form another visual change to this VP. Other existing visual elements such as mountain backdrop of Cheung Po Tau, high-rise buildings in Shenzhen will be blocked by the FLN NDA development and the remaining portion of open sky view will be unaffected.
- Visual Obstruction: The proposed public housing development and the proposed pedestrian-cum-cycling bridge will impose moderate loss of open sky view and visual permeability to this viewpoint.
- Effect on Public Viewers: Regarding the effect on public viewers, since only the PTT and the lower floors of the residential blocks would be seen in this VP, a moderate loss of visual openness to the public viewers will be imposed. The planned Fanling Bypass (Western Section) and the planned developments in FLN NDA are located to the east and west of this VP respectively, which impose additional concrete structures to the public viewers.
- Effect on Visual Resources: During operational phase, with the implementation of mitigation measures such as buffer planting, compatible design of building façade and landscape treatment within the proposed public housing development (OM2, OM3, OM4), the hard architectural lines will be soften and the visual uniformity and connectivity with the surroundings will be enhanced. In view of this, the visual impact during operation phase is expected to be *moderately adverse*.

4.6.19 Regarding **VP8 –** this VP is located in a relatively far distance from the proposed public housing development. Part of the proposed public housing development will be screened by the existing buildings of FSS urban area.

- Visual Composition: Regarding the visual composition, only a small portion of vegetation from High Hill and Wah Shan will be replaced by the proposed public housing development. Other visual elements such as mountain backdrops of Cham Shan, Cheung Po Tau as well as urban context of Fanling / Sheung, open sky view and existing vegetation in the front of this viewpoint will be unaffected.
- Visual Obstruction: The proposed public housing development will impose slightly loss of visual openness to the public viewers.
- Effect on Public Viewers: Regarding the effect on public viewers, additional building mass will be located in the mid of this VP, a small portion of natural greenery currently enjoyed by public viewers will be affected, leading to a slight visual change in this VP. The planned developments in FLN NDA are located to the east and west of this VP, which create additional building mass to the public viewers.
- Effect on Visual Resources: During operation phase, with the adoption of compatible design of building façade (OM3), the hard architectural lines of the proposed public housing development will be soften and the visual uniformity and connectivity with the surrounding urban landscape will be enhanced. In view of this, the visual impact during operation phase is expected to be slightly adverse in operation phase.

4.6.20 Regarding **VP9,** this VP is located in relatively short distance to the proposed public housing development.

- Visual Composition: In view of the visual composition, the existing visual elements including mountain backdrop of High Hill and the associated vegetation as well as the open sky view in the background will be replaced by the proposed public housing development. Existing vegetation along Ng Tung River and the river itself as well as existing vehicular-cum-pedestrian bridge will be mostly and partially replaced by the proposed footbridge respectively.
- Visual Obstruction: Visual obstruction to the existing mountain backdrop of High Hill and Ng Tung River will be imposed, leading to the substantial loss of greenery, visual amenities, open sky view and visual openness to this viewpoint.
- Effect on Public Viewers: Regarding the effect on public viewers, additional building mass and the proposed pedestrian-cum-cycling bridge are located in the background and foreground of this VP respectively. Natural landscape currently enjoyed by the public viewers will be affected and leading to a substantial visual change to public viewers. The planned developments in FLN NDA are located to the east of the VP, which create additional building mass to the public viewers.
- Effect on Visual Resources: During operational phase, proposed mitigation measures such as buffer planting, aesthetic design of building façade, provision of landscape treatment, variation in building height profile and building separation (OM2, OM3, OM4, OM5 and OM6) can be applied to alleviate visual impacts. Provision of landscape treatment for the PTT block can soften the building structure and enhance visual amenities. Buffer planting along the proposed pedestrian-cum-cycling bridge across Ng Tung River would soften its hard structure. Aesthetic building design and variation in building height profile can alleviate the wall effect of building mass and enhance visual interest of the building blocks. Building separation can enhance visual openness and permeability. Although the above proposed mitigation measures would alleviate part of the visual impact, the proposed housing development would impose substantial loss of visual resources such as mountain backdrop, natural greenery and open sky view in this VP. In view of the above, the visual impact is expected to be substantially adverse in operation phase.

4.6.21 In addition, the existing refuse collection point and public toilet (which are low-rise and small scale in nature) to be affected by the proposed public housing development will be

reprovisioned based on a 'like-to-like' principle, and would not induce significant adverse visual impacts.

4.6.22 With mitigation measures such as compensatory and new tree planting (OM1), buffer planting (OM2), aesthetic design of building façade (OM3), provision of landscape treatment (OM4), variation in building height profile (OM5) and building separation (OM6) in place, the visual impact in respect to the proposed public housing development will range from insubstantial to substantially adverse in the operation phase.

4.7 CUMULATIVE IMPACTS

4.7.1 Cumulative visual impacts during operation phase for the proposed public housing developments in the vicinity is assessed below:

4.7.2 FLN NDA is one of the planned new development areas in Hong Kong. It is located to the south of the proposed public housing development and bounded by Ng Tung River to the north. This new development area will form as the extension of FSS New Town. Under the urban design and landscape frameworks, FLN NDA will be divided as 'Government Facilities Zone', 'Residential Area, South of the River' 'Civic and Recreation Area' and 'District Centre', several residential, commercial, government institutions and open space facilities will be provided within this new development area.

4.7.3 A recent planning application (No. A/FLN/30 - Proposed Minor Relaxation of Plot Ratio and Building Height Restrictions for Permitted Public and Private Housing Developments; and Proposed Social Welfare Facilities, Shop and Services and Eating Place within Public Housing Developments) has been approved by Town Planning Board on 23 September 2022. Building height of the planned public and private housing development within "District Center" and" Residential Area, South of the River" have been increased. Max building height are increased to 140mPD and 130mPD at "District Center" and "Residential Area, South of the River" respectively.

4.7.4 The proposed amendments to the approved FLN OZP No. S/FLN/2, which was considered by the Rural and New Town Planning Committee on 23 September 2022, including expansion of a planned public housing development in Area 6 with a maximum building height of 145mPD, and revision of the building height restriction of a "G/IC" site in Area 11 from 5 storeys to 8 storeys is under the schedule of proposed amendment by Town Planning Board.

4.7.5 Based on the approved planning application (No. A/FLN/30) and indicative schemes complying with the draft Fanling North OZP No. S/FLN/3, which are demonstrated in **Figures 24-28**, the proposed public housing development would add on to those planned building blocks in FLN NDA and cause further visual obstruction to open sky views, mountain backdrop and reduce visual openness in the vicinity.

4.8 CONCLUSION

4.8.1 The proposed development will alter the existing visual context and character of its rural locality and riverside setting, as well as inevitably result in some landscape impact. A majority of the works will be conducted within Miscellaneous Urban Fringe Landscape (LCA2). Informal Settlement and Squatter (LR3.1) is expected to receive the most impact due to the loss of trees during the construction phase. Scrubland & Grassland (LR1.2), Ng Tung River (LR2.1) and Transportation & Associated Facilities (LR6.1) will also be affected. Due to the large total area size, the magnitude of change is expected to be small. It is not possible to fully mitigate all landscape impacts in relation to the loss of trees and other vegetation during construction and operation phases. However, the impacts have been reduced through minimization of

construction and temporary works area with construction control, incorporation of aesthetic landscape and architectural design and providing more greening around the proposed development and associated infrastructure works. Residual impacts to LRs and LCAs are insubstantial by Year 10 when the proposed mitigation measures are in full effect.

4.8.2 A total of 413 individual trees and approximately 229 trees in 14 tree groups were recorded in the tree survey. 326 surveyed trees, including 168 individually surveyed trees and approximately 158 trees in tree groups are proposed to be removed, amongst which 65 are undesirable species (i.e. *Leucaena leucocephala*). 2 trees identified outside the Site are classified as Tree of Particular Interest (TPI). WS-T251 is a *Ficus microcarpa* (細葉榕) with DBH over 1m, while WS-A01 is an *Aquilaria sinensis* (土沉香), a protected species. *A. sinensis* was scheduled under Cap 586 Protection of Endangered Species of Animals and Plants Ordinance and is a Rare and Precious Plants of Hong Kong. It has a Vulnerable status in China Plant Red Data Book. The two TPIs are proposed to be retained. No registered "Old and Valuable Trees" (OVTs) was recorded under DEVB TCW No. 05/2020 – Registration of Old and Valuable Trees within the tree survey boundary. Approximately 180 new trees are proposed within proposed housing site to enhance the overall greenery and planting within the site. Exact location and plant species shall be subject to detail design by HD. 74 compensatory trees will be planted by CEDD outside the housing site but within the development boundary.

4.8.3 Reference is made to DEVB TC(W) No. 4/2020, the proposed tree compensatory arrangement has duly considered the "Right tree for the right place" principle as suggested in the "Street Tree Selection Guide", so that trees are selected to match the site, environmental conditions, surrounding landscape character and design intent. Suitable tree species and sufficient growing space shall be selected and reserved respectively to create a desirable and quality condition for healthy tree growth. Having taken into account the spatial constraint, 254 trees (74 + 180) are proposed to be planted within the development. The final location and number of trees are subject to review at detailed design stage in consultation with relevant departments.

4.8.4 Given a net site area of 3.14ha, the proposed public housing development has already been occupied by residential blocks and associated facilities. Although it will inevitably limit the additional spaces for greenery and landscape measures including soft landscaping of engineering slope, buffer plantings, children's play area are proposed to create a quality living environment (see **Figure 22**). Minimum 12,981sqm [1] of open space for 1m^2 per person in accordance with HKPSG requirements will be provided subject to the actual design population.. Every opportunity has been explored to improve the overall landscape quality in the housing development.

4.8.5 In considering the minimization of visual impacts, alternative layouts of proposed development have been reviewed. The number of building blocks has been reduced to 4 and extent of podium has also been reduced. As such, more at-grade planting area would be provided and building separation between the proposed residential blocks have been improved. In view of preserving the scenery of riverside, the current building layout has been adjusted and 20m setback to the south of the proposed public housing development along Ng Tung River has been provided. There are approx. 7.5m wide hard paved EVA within planting strip provided under current scheme, which would allow the provision of compensatory tree planting as a green buffer along the existing river.

Remark: [1] The open space area in the Study is for assessment purpose only. According to the latest design as advised by Housing Department, the area of open space is min. 1200 sqm.

4.8.6 The overall visual character will be altered by the proposed development. However, design considerations that would avoid the impacts on landscape, or that would make the proposed public housing development visually more compatible with the setting have been examined before mitigation measures. The below list summarizes the design considerations that have been considered:

- Variation in building height profile shall be considered for the proposed public housing development to alleviate building mass effect and enhance visual interest.
- Building separation between residential blocks shall be considered and provided to enhance visual permeability and minimize wall effect of the proposed development. Three major building separations (i) min.15m wide building separation between Block 4 & Block 3 and Block 1 & Block 2, (ii) min.15m wide building separation between Block 2 & Block 3 and Block 1 & Block 4 and (iii) min.15m wide building separation between Block 2 & Block 3 and Block 1 & Block 2 shall be applied to enhance visual openness between building blocks. Landscape treatment such as amenity greening provision between residential blocks shall be provided to enhance overall visual quality within the housing site (see **Figure 22**);
- To enhance visual permeability and openness towards Ng Tung River, building setback to the south of the proposed public housing development shall be considered. Approximate 20m building setback can alleviate the visual blockage of building mass towards the riverside view of Ng Tung River.
- Building layout and housing site boundary have been adjusted. Additional space for tree plantings on the edge of site boundary will be acted as the green buffer for the loss of affected trees;
- More at grade planting areas shall be considered as far as practical to enhance the visual contacts from the street level;
- Aesthetic design of the buildings, such as colour blocking, decorative architectural elements, and appropriate form such that the building will be compatible with the surrounding developments.

4.8.7 The proposed mitigation measures such as compensatory and new tree planting (OM1), buffer planting (OM2), aesthetic design of building façade (OM3), provision of landscape treatment (OM4), variation in building height profile (OM5), building separation (OM6) as well as building setback (OM7) can be applied to alleviate the visual impacts to the overall visual character. OM5 and OM6 are the main mitigation measures for visual impact. Variation in building height profile is adopted with the overall development intensity to enhance variety in height and to ensure a better integration with the adjacent rural setting. Building separation between residential blocks shall be provided to enhance visual permeability and minimize wall effect of the proposed development. With the implementation of the above said mitigation measures, visual impacts on the overall visual context and character would be alleviated.

4.8.8 The proposed public housing developments are in line with the housing policy which optimizes the land use and increases the housing land supply for public housing development. In view of the residual impacts and the possibility to alleviate most of the landscape impact after mitigation, the resultant landscape impacts are expected to be reduced to moderate adverse to insubstantial in operation phase with proposed mitigation measures implemented the overall landscape impact would be acceptable

4.8.9 Resultant visual impact of VP1 is insubstantial, VP5-VP6, VP8 are slightly adverse, VP7 is moderately adverse and VP2-VP4, VP9 are substantially adverse. Although the overall visual impact of the proposed development to some VPs are considered substantially adverse and the proposed development would inevitably alter the existing visual context and character of its rural locality and not be fully in line with the planned visual context and character of the Fanling North NDA as a Riverside Community at certain VPs; while it would form part of the existing

urban context of the FSS New Town in a wider area at some other VPs. With the implementation of the above visual mitigation measures and additional design measures to be considered at the detailed design stage, such as permeable podium design and compliance with the Sustainable Building Design Guidelines, visual impact on the overall visual context and character would be alleviated.

4.8.10 In view of the above, the overall landscape and visual impacts are considered acceptable with proposed mitigation measures during construction and operation phase.

Table 4.5 Significance Threshold for LR & LCA

LR/LCA ID^	LR/LCA Name^	Sensitivity of LR/LCA (High / Medium / Low)	Magnitude of Change (Large / Intermediate / Small / Negligible)		Significance Threshold of Potential Landscape Impact (before mitigation) (Substantial, Moderate, Slight, Insubstantial)		Proposed Mitigation Measures	Significance Threshold of Potential Landscape Impact (after mitigation) (Substantial, Moderate, Slight, Insubstantial)		
			Construction	Operation	Construction	Operation		Construction	Operation (Day 1)	Operation (Year 10)
LR1.2	Scrubland & Grassland	Medium	Intermediate	Intermediate	Moderate	Moderate	CM1-4, OM1-OM4	Moderate	Slight	Slight
LR2.1	Ng Tung River	Medium	Small	Small	Slight	Slight	CM2, CM3, OM2	Slight	Insubstantial	Insubstantial
LR3.1	Informal Settlement and Squatter	Low	Intermediate	Intermediate	Substantial	Substantial	CM2-4, OM1-OM4	Substantial	Moderate	Moderate
LR6.1	Transportation & Associated Facilities	Low	Small	Small	Slight	Slight	CM1-4	Slight	Slight	Slight
LCA2	Miscellaneous Urban Fringe Landscape	Medium	Intermediate	Intermediate	Moderate	Moderate	CM1-4, OM1-OM4	Moderate	Slight	Slight
LCA3	Transportation Corridor Landscape	Low	Small	Small	Slight	Slight	CM1-4	Slight	Slight	Slight

Notes: ^ All other LRs / LCAs will not be affected by the Development hence will not require assessment.

** Unless otherwise indicated, all impacts are adverse.*

Table 4.6 Description of VP

Viewing Point	Description	Sensitivity
VP1	• *Location:* Lung Sum Avenue Sports Centre • *Type of Sensitive Receiver Represented:* Recreational Users & Workers • *Approximate Viewing Distance to Site:* 530m • *Value & Quality of Existing Views:* Fair • *Description of Existing View:* This view point represents viewers participating in outdoor and indoor activities of the sports centers, with fair view of existing urban context of Sheung Shui town center and roadside plantation in the front. Residential building blocks of Woodland Crest and On Kwok Villa forms the mid-ground view and the ridgeline of Wa Shan provide the background view for this view point. *Estimated number of Viewers:* Some • *Duration of view:* Short • *Degree of Visibility:* Partial • *Perception of Value to View:* Medium	Low
VP2	• *Location:* Tin Pang Shan Mountain Bike Trail • *Type of Sensitive Receiver Represented:* Travellers and Recreational Users • *Approximate Viewing Distance to Site:* 840m • *Value & Quality of Existing Views:* Good • *Description of Existing View:* This view point representing viewers participating in outdoor activities, with good and panoramic view of Sheung Shui and Fanling town center and the mountain ridgeline stretching from Wu Tip Shan and Kei Lak Tsai. • *Estimated number of Viewers:* Few • *Duration of view:* Short • *Degree of Visibility: Partial to* Partial to Full • *Perception of Value to View:* High	Medium
VP3	• *Location: Existing* Footbridge and Driveway across Ng Tung River • *Type of Sensitive Receiver Represented:* Travellers • *Approximate Viewing Distance to Site:* 74m • *Value & Quality of Existing Views:* Fair	Medium

Viewing Point	Description	Sensitivity
	• *Description of Existing View:* The dominated views of this view point are the riverside promenade with scrubland and grassland along riverside in the front. Ridgeline of High Hill can also be seen in the background. Views of this view point will be transient and less valuable than static views and would have a very short duration to perceive the view. • *Estimated number of Viewers:* Some • *Duration of view:* Short • *Degree of Visibility:* Full • *Perception of Value to View:* Medium	
VP4	• *Location:* Planned Central Park in Fanling North New Development Area • *Type of Sensitive Receiver Represented:* Recreational Users • *Approximate Viewing Distance to Site:* 210m • *Value & Quality of Existing Views:* Fair • *Description of Existing View:* The existing views are partially blocked by dense foliage. • *Estimated number of Viewers:* Many • *Duration of view: Medium* • *Degree of Visibility:* Partial • *Perception of Value to View:* Medium	Medium
VP5	• *Location:* Pavilion Along Ng Tung River • *Type of Sensitive Receiver Represented:* Recreational Users • *Approximate Viewing Distance to Site:* 870m • *Value & Quality of Existing Views:* Good • *Description of Existing View:* The existing view is occupied by hard paved open ground in the front and the shrubs and tree planting along the Ng Tung River in the background. Lung Yeuk Tau Heritage Trail – linkage with heritages sites of Tang clan including Shin Shut Study Hall, Tin Hau Temple, Tang Chung Ling Ancestral Hall Tsung Kyam Church, Stone Tablets to Ward off Evil Spirits, Shrines of the Earth God etc., is located to the southeast of this viewpoint. • *Estimated number of Viewers:* Few	Medium

Viewing Point	Description	Sensitivity
	• *Duration of view:* *Medium* • *Degree of Visibility:* Partial • *Perception of Value to View:* Low	
VP6	• *Location:* Hiking Trail along Wa Shan/ High Hill • *Type of Sensitive Receiver Represented:* Travellers and Recreational Users • *Approximate Viewing Distance to Site:* 1,240m • *Value & Quality of Existing Views:* Good • *Description of Existing View:* This view point representing viewers participating in outdoor activities, with good and panoramic view of Wa Shan and the firing range at the foothills of Tsung Shan in the foreground. In the middle distance the Sheung Shui/ Fan-ling urban area is distinct with its high rise buildings and in the far distance, facing south west, the peaks of Ngau Tam Shan, Kei Lak Tsai and Wu Tip Shan are visible. • *Estimated number of Viewers:* *Some* • Duration of view: Short • *Degree of Visibility:* Full • *Perception of Value to View:* Fair	Medium
VP7	• *Location:* Footpath along Ng Tung River • *Type of Sensitive Receiver Represented:* Travellers • *Approximate Viewing Distance to Site:* 150m • *Value & Quality of Existing Views:* Good • *Description of Existing View:* The existing view is occupied by riverside plantation, Ng Tung River, footbridge in the foreground and middle view. Background view consists of open sky and mountain backdrop of Cheung Po Tau. • *Estimated number of Viewers:* Some • *Duration of view:* Short • *Degree of Visibility:* Partial • *Perception of Value to View:* Fair	Low

Viewing Point	Description	Sensitivity
VP8	• *Location:* Wu Tip Shan Lookout • *Type of Sensitive Receiver Represented:* Recreational Users • *Approximate Viewing Distance to Site:* 2800m • *Value & Quality of Existing Views:* Good • *Description of Existing View:* Existing view has an open and panoramic view to north with Sheung Shui/ Fan-ling urban area in the middle distance and in the far distance, the hills of Cheung Po Tau, Wa Shan and High Hill are visible behind the urban area, and the view extends to Shenzhen. • *Estimated number of Viewers:* Many • *Duration of view:* Short • *Degree of Visibility:* Full • *Perception of Value to View:* Fair	Medium
VP9	• *Location:* Proposed Footbridge across Ng Tung River • *Type of Sensitive Receiver Represented:* Travellers and Recreational Users • *Approximate Viewing Distance to Site:* 120m • *Value & Quality of Existing Views:* Good • *Description of Existing View:* This viewpoint representing viewers, who are travelling/ participating outdoor activities along Ng Tung River and the future travellers/ recreational users using the proposed footbridge. The public viewers enjoy good and panoramic view towards the mountain backdrops of High Hill, Wa Shan and open sky view in the background. For the midground view, exiting riverside scenery of Ng Tung River and the associated plantations are visible by the public viewers. To the west of this viewpoint, existing bridge and driveway across Ng Tung River is also visible. • *Estimated number of Viewers:* Many • *Duration of view:* Short • *Degree of Visibility:* Full • *Perception of Value to View:* Fair	Medium

Table 4.7 Summary of Visual Impacts for VP

VP	VP Name	Sensitivity of VP	*Proposed Mitigation Measures	Visual Impacts at Operation Phase (After mitigation) (Substantial, Moderate, Slight, Insubstantial)
VP1	Lung Sum Avenue Sports Centre	Low	OM3	Insubstantial
VP2	Tin Pang Shan Mountain Bike Trail	Medium	OM1, OM3-OM5	Substantial
VP3	Existing Footbridge and Driveway across Ng Tung River	Medium	OM1-OM6	Substantial
VP4	Planned Central Park in Fanling North New Development Area	Medium	OM3, OM4, OM5, OM6	Substantial
VP5	Pavilion Along Ng Tung River	Medium	OM3, OM5-OM6	Slight
VP6	Hiking Trail along Wa Shan/ High Hill	Medium	OM3, OM5	Slight
VP7	Footpath along Ng Tung River	Low	OM2-OM4	Moderate
VP8	Wu Tip Shan Lookout	Medium	OM3	Slight
VP9	Proposed Footbridge across Ng Tung River	Medium	OM2 -OM6	Substantial

Remarks:

Proposed Mitigation Measures: OM1 – Compensatory and New Tree Planting where Practical; OM2 – Buffer Planting; OM3 – Aesthetic Design of Proposed Public Housing Development; OM4 – Landscape Treatment within the Proposed Public Housing Development; OM5 – Variation in Building Height Profile of Proposed Public Housing Development; OM6 – Building Separation of Proposed Public Housing Development; OM7 – Building Setback

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5 AIR VENTILATION

5.1 SUMMARY OF EXPERT EVALUATION

5.1.1 The Expert Evaluation based on the site wind characteristics and wind environment under the proposed development situation regarding qualitative air ventilation assessment (AVA) was conducted. The methodology and requirements as outlined in the Technical Guide for Air Ventilation Assessment for Development in Hong Kong (Technical Circular No. 1/06 and Annex A) issued by Housing, Planning and Lands Bureau and Environment, Transport and Work Bureau will be followed. The Feasibility Study for the Establishment of Air Ventilation Assessment System by Planning Department (PlanD) and the Chinese University of Hong Kong has indicated the qualitative Guiding Principles for the AVA assessment to provide useful design reference for better air ventilation. The evaluation result provides an overview of likely impacts associated with the proposed development under both the annual and summer prevailing winds as well as the surrounding topography.

The Surrounding Environment

5.1.2 The Site is situated at the southwest of Wa Shan and beside Ng Tung River as Government land. Based on the site inspection and preliminary desktop analysis, the Site is currently occupied by brownfield operations (such as rural workshops and open storage yards) and some temporary residential dwellings. The land at the southern portion of the Site is privately owned agricultural land. The ground nearby the Site is relatively flat land in the range of +0mPD to +20mPD level.

5.1.3 The Site is bounded by hillslopes with graves/urns within permitted burial ground to the immediate north, northeast and northwest; temporary structures, low-rise residential dwellings and vegetated area to the immediate southeast and southwest. To the further south across Ng Tung River are undeveloped “G/IC” sites reserved for GIC uses, a planned FLN Central Park, and some existing low to medium-rise residential developments (namely Woodland Crest and On Kwok Villa). To the southeast and further south are a planned residential cluster of high-density developments in FLN NDA and a high-rise residential development namely Noble Hill in FSS New Town.

5.1.4 There are several major road networks, e.g. Lung Sum Avenue, Tin Pin Road and Ma Sik Road, etc. with bridges to connect the Site and the developments across the Ng Tung River in further west to south sides.

Site Wind Availability

5.1.5 In the present study, a mesoscale model Regional Atmospheric Modelling System (RAMS) is used to simulate the Site wind data including wind rose and wind profile. As a result, the latest wind data and simulation method can be obtained. Based on the Site Wind Availability Data available on PlanD's website, the Site is located within the grid (X:072, Y:084). The detailed site wind availability data of the Site could be found from the website below.

https://www.pland.gov.hk/pland_en/info_serv/site_wind/site_wind/072084.html

5.1.6 The annual prevailing winds are considered under NNE, E and ESE directions; while the summer prevailing wind directions are E, SE, SSE and SSW. These prevailing wind directions as shown in **Figure 39** are typical in Hong Kong and the building form of proposed public housing developments should make **full reference** of these wind conditions.

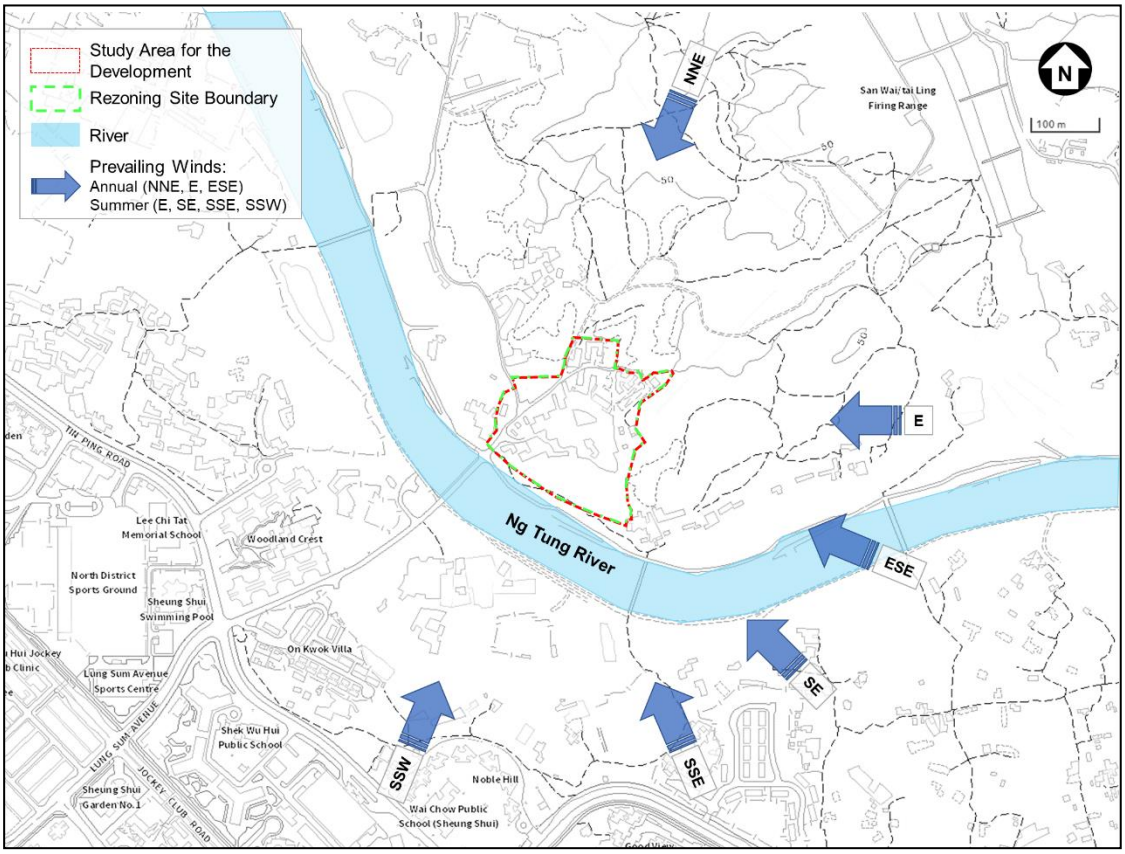


Figure 39 – Summary of Prevailing Winds of the Development Site

Existing Wind Environment

5.1.7 To identify the existing wind environment over the Site and its surroundings, the prevailing wind discussed above and the adjacent air paths passing through the major road networks and developments are analysed. The annual prevailing winds are from NNE, E and ESE directions, while the summer prevailing winds are from E, SE, SSE and SSW directions.

5.1.8 As shown in **Figure 40**, there are mainly undeveloped hilly (of 0.28% gradient) temporary domestic structures, vegetated area in the north and east of the Site. Most of the upstream prevailing winds from NNE directions could reach the Site without any critical blockage. The hilly open areas in the north to east sides (i.e. Wa Shan) are linked by Ng Tung River, downstream medium-rise G/IC developments and open spaces. These inter-linked open spaces, the river and medium-rise buildings are aligned to allow a smooth passage of the

prevailing NNE wind. In addition, referring to “Urban Design and Landscape Framework” in the draft FLN OZP No. S/FLN/3, the major open space spines in the residential area south of the river, the medium-rise G/IC zones and the proposed Central Park in the Civic and Recreation Area at the southwest of the Site could also facilitate ventilation of NNE wind to the downstream area. The extension of Lung Sum Avenue linked the Site and the residential area of Sheung Shui (i.e. On Kwok Villa and Woodland Crest) is treated as a breezeway to let NNE wind ventilate towards its further downstream area. Hence, the prevailing wind from NNE direction could pass the Site smoothly and ventilate the Site and its surrounding environment at pedestrian level. No significant possible existing problematic area at pedestrian level could be observed within the Site and its immediate vicinity. However, at further south side, a possible existing problematic area may be observed at its immediate downstream, i.e. Wai Chow Public School (Sheung Shui) area, due to the existing wind blockage effect by the high-rise Noble Hill Tower.

5.1.9 As the proposed medium-rise G/IC buildings and the proposed Central Park in FLN NDA are located at the downstream area of the proposed development, it is expected that ventilation of these areas will be more or less affected by the proposed developments. Having considered that these G/IC buildings are mainly in medium rise height, they would bring minimal adverse impact to the incoming NNE wind flowing to the further downstream areas.

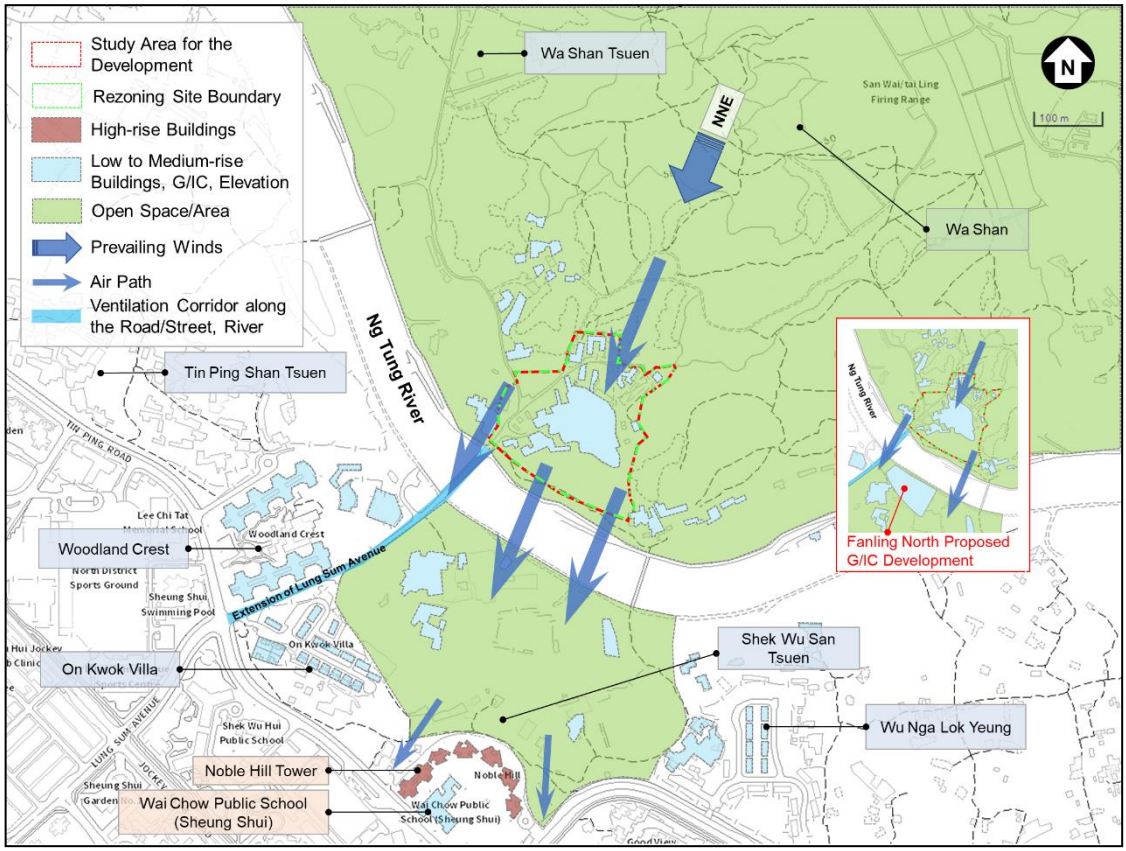


Figure 40 – Existing Wind Environment under Prevailing NNE Wind

5.1.10 As shown in **Figure 41**, the broad open **areas** and scattered low-rise developments in in E and ESE directions respectively are linked by Ng Tung River and downstream G/IC medium-rise developments. Ng Tung River serves as an air path for the prevailing wind when it is parallel to the ESE wind direction at the south side of the Site. These inter-linked open spaces, the river and low-rise buildings are aligned to allow a smooth passage of the prevailing E and ESE winds. Hence, the prevailing wind from E and ESE directions could pass the Site without any critical blockage and ventilate the Site and its surrounding environment at pedestrian level. No significant possible existing problematic area at pedestrian level could be observed within the Site area and its immediate vicinity. At the further west side of the Site, a small wake zone with insufficient ventilation environment may be observed at immediate downstream area of medium-rise Woodland Crest. On the other hand, there are many housing developments including the planned public and private housing development with a maximum of +140mPD are located in the south-eastern side of the Site. It is envisaged that these high-rise building blocks would hinder the incoming ESE winds flowing to the Site and its downstream area, and the amount of the prevailing ESE winds passing through the Site and reaching its downstream area will decrease. There is a small wake zone at immediate downstream area of Woodland Crest which also affect the prevailing ESE winds ventilate its further downstream areas.

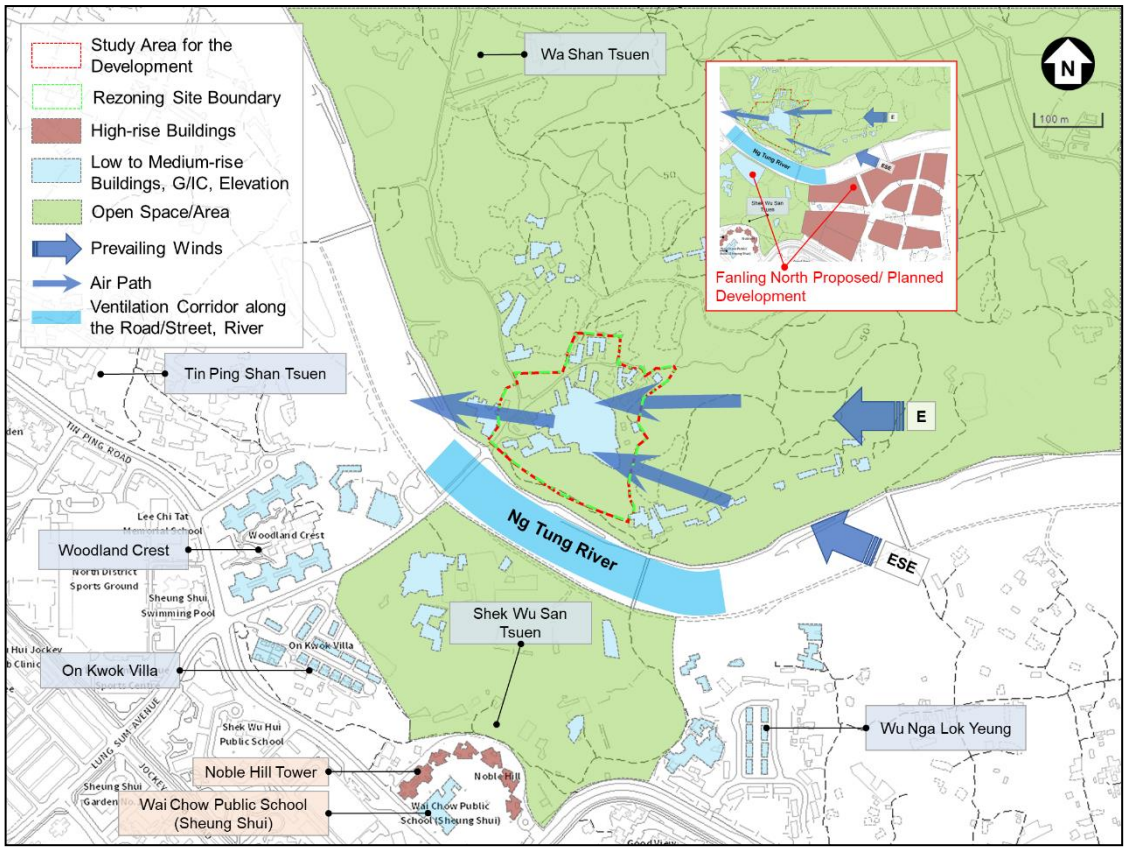


Figure 41 – Existing Wind Environment under Prevailing E and ESE Winds

5.1.11 As shown in **Figure 42,** the open ~~spaces~~ areas and scattered low-rise developments in SE and SSE directions are linked by Ng Tung River and downstream green belt spaces. At the western side of the Site, Ng Tung River is parallel to SSE wind direction and serves as an air path. These inter-linked open spaces, the river and low-rise buildings are aligned to allow a smooth passage of the prevailing SE and SSE winds. Hence, the prevailing wind from SE and SSE directions could pass the Site smoothly and ventilate the Site and its surrounding environment at pedestrian level. Same as the wind environment under prevailing E and ESE winds, no significant possible existing problematic area at pedestrian level could be observed within the Site area and its immediate vicinity. Similar to the wind environment under E and ESE winds, the planned high-rise public and private housing development in the south-eastern side of the site would hinder the incoming SE and SSW winds flowing to the Site and its downstream area, and the amount of the incoming winds passing through the Site and reaching its downstream area decreases.

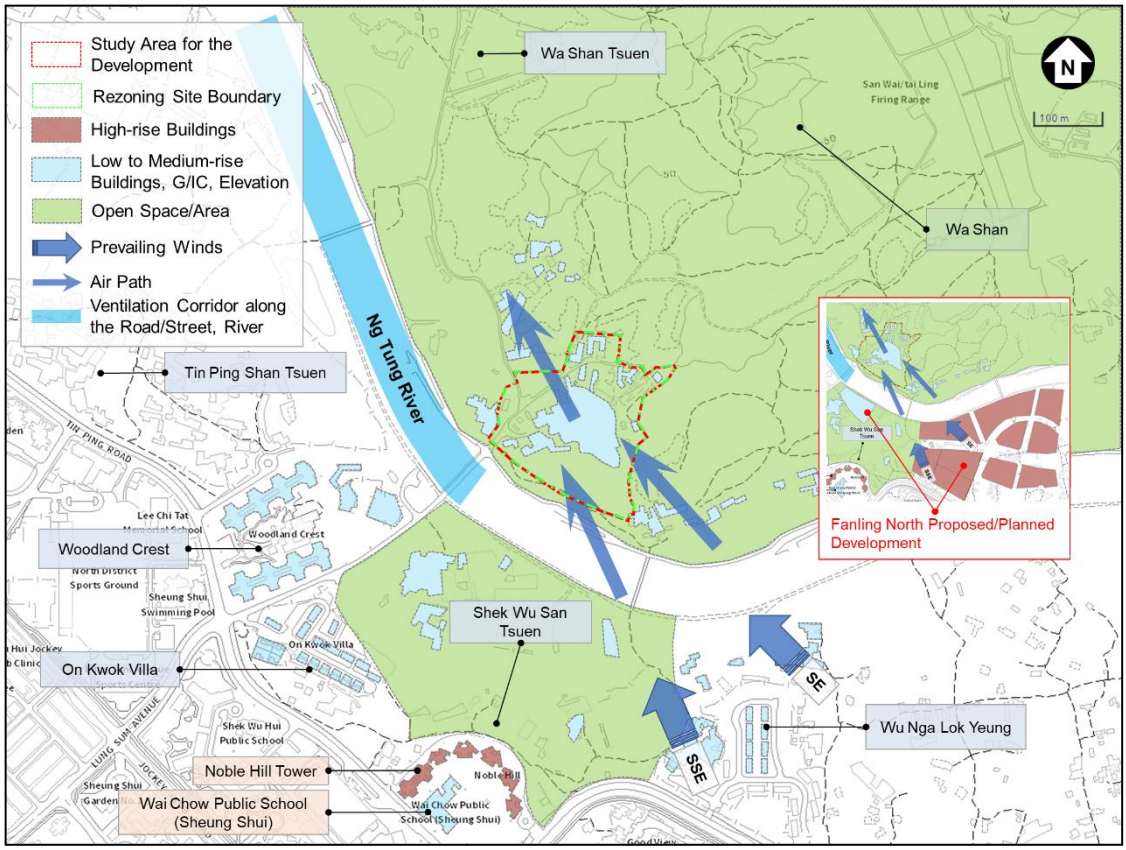


Figure 42 – Existing Wind Environment under Prevailing SE and SSE Winds

5.1.12 As shown in **Figure 43**, due to the wind blockage by high-rise development in the further south of the Site (i.e. Noble Hill Tower), the incoming prevailing SSW wind at low to medium level would be weakened. A possible existing problematic area may be observed at immediate downstream area of Noble Hill Tower (i.e. green belt area in north side). In the east of Noble Hill Tower, most SSW could bypass it to the downstream area smoothly. On the other hand, part of the SSW wind would sweep through the extension of Lung Sum Avenue located to the northwestern side of Noble Hill. At pedestrian level, only a portion of incoming SSW wind could pass through the west side of Noble Hill Tower towards the Site with the consideration of the wind blockage effect by the low-rise building groups, e.g., Shek Wu Hui Public School, On Kwok Villa, etc. On the other hand, Ng Tung River, scattered low-rise buildings and open spaces locate in the immediate south side of the Site. Referring to "Urban Design and Landscape Framework" in the draft FLN OZP No. S/FLN/3, these large open areas could also facilitate ventilation of SSW wind to the downstream. In the downstream area, there are mainly undeveloped hillslopes and open areas (i.e. Wa Shan). These board open spaces are linked allow a smooth passage of the prevailing SSW wind. Hence, the prevailing wind from SSW direction could pass the Site smoothly and ventilate the Site and its surrounding environment at pedestrian level once passing over the high-rise Noble Hill Tower and no significant possible existing problematic area at pedestrian level could be observed within the Site area and its immediate vicinity. As the Fanling North New Development Area development will include a proposed G/IC building in medium-rise levels in the upcoming years, a portion of upstream winds will be hindered by these planned building blocks. The incoming winds will skim over or bypass these planned building blocks to reach the downstream, i.e. the site area. It is envisaged that these medium-rise building blocks would bring a minimal adverse impact to the incoming SSW winds, and the amount of the prevailing winds passing through the Site and reaching its downstream area decreases.

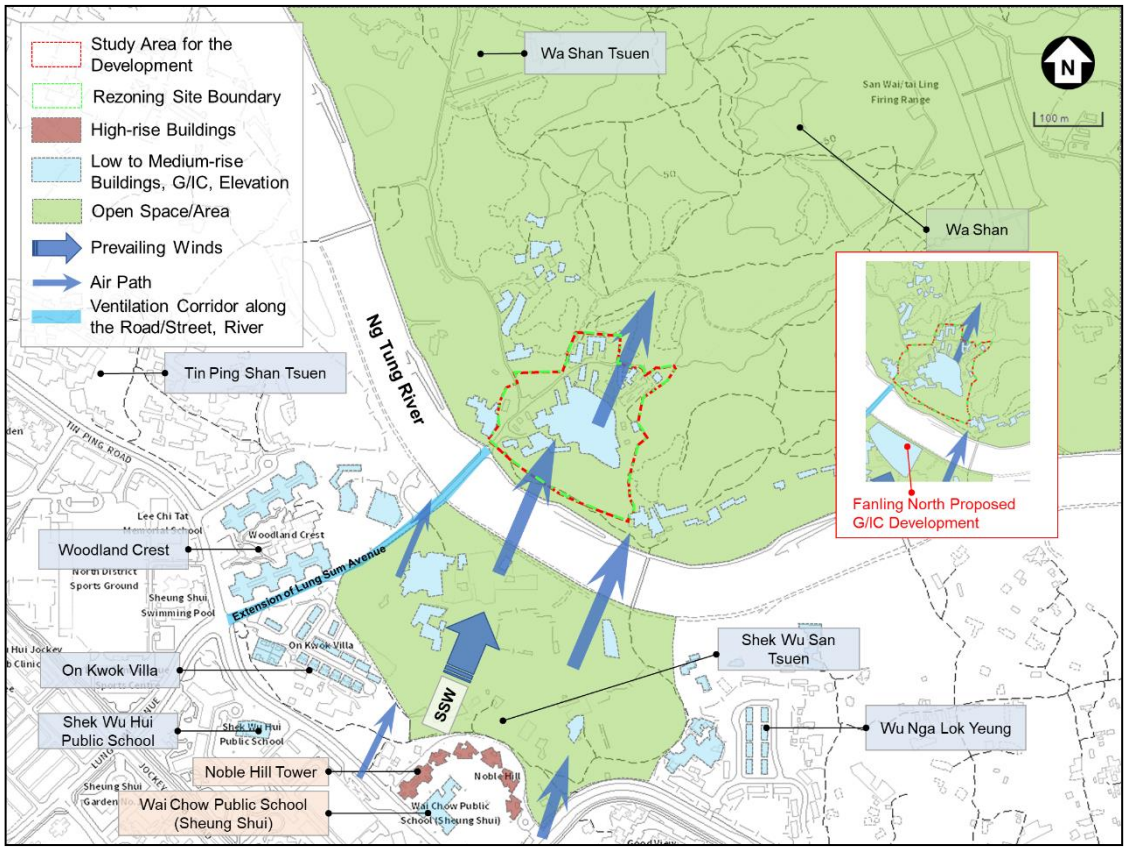


Figure 43 – Existing Wind Environment under Prevailing SSW Winds

Air Ventilation Performance of the Proposed Development

5.1.13 The Site is about 3.75ha and falls mostly within "Agriculture" zone according to the Fu Tei Au and Sha Ling OZP No. S/NE-FTA/16. This zone is intended primarily to retain and safeguard good quality agriculture land/farm/fish ponds for agricultural purposes, and to retain favourable land with good potential for rehabilitation for cultivation and other agricultural purposes. The Site will be rezoned to "Residential (Group A)" for public housing development. **Figure 44** shows the indicative layout of the proposed development. The proposed preliminary housing building heights range from +142 to +167mPD. A total of four irregular housing blocks, one podium and one PTT block are proposed with the proposed housing site.

5.1.14 The existing refuse collection point and public toilet (which are low-rise and small scale in nature) to be affected by the proposed public housing development will be reprovisioned to the western part of the Site based on a 'liked-to-liked' principle **(Figure 44)**, incoming prevailing winds could skim atop and would not induce significant adverse air ventilation impacts on the wind availability of the Site and its downstream areas.

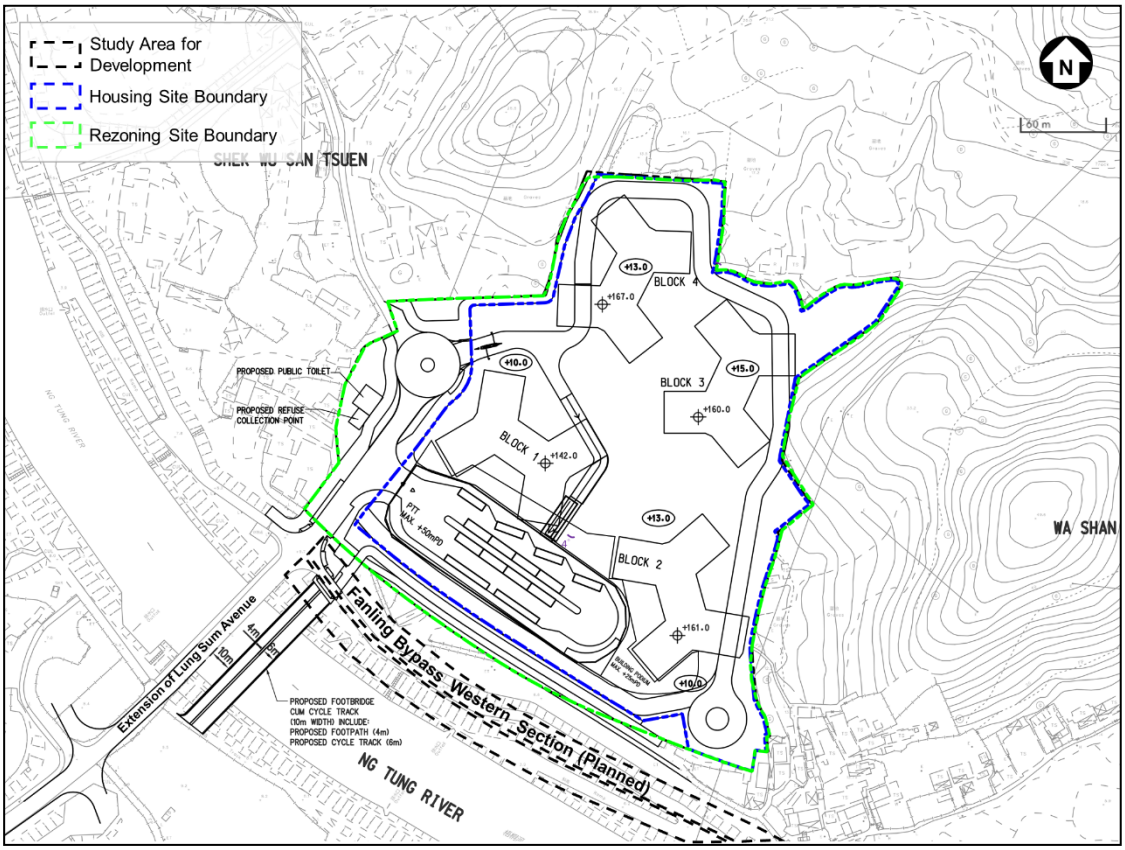


Figure 44 – Layout Plan of the Proposed Housing Development

UNDER PREVAILING NNE WIND

5.1.15 As the proposed housing blocks are generally aligned in the NNE direction, there is a building separation penetrating the site areas from the upstream undeveloped hilly rural areas and open spaces, as shown in **Figure 45.** The upstream prevailing NNE wind would flow through the building separation with minimum 15m width between Blocks 3 & 4 and turn about 4 degrees towards west. Once the NNE wind arrives Blocks 1 & 2, it would turn 4 degrees towards the south. After that, the NNE wind skim over atop the low-rise podium of about +25mPD height and the PTT block of maximum +50mPD height to its downstream area. The NNE wind through

this building separation within the proposed housing site would further flow towards the downstream medium-rise G/IC developments and open spaces along Ng Tung River.

5.1.16 One air path is located respectively on the southwest side of the Site which may improve the exit of the NNE wind from the southern portion of the Site. The extension of Lung Sum Avenue in the southwest side, which linked up the Site and the downstream residential areas of NNE with about 30m wide building setback from the PTT block to the western boundary of the Site is an effective air path for NNE wind to bypass the site and ventilate to its further downstream area subjected to detail design.

5.1.17 From the southwestern side of the Site, as the developments in FLN NDA will include proposed medium-rise building in the upcoming years. These building blocks are located at the downstream area of the Site. It is expected that these building blocks would bring a minimal adverse impact to the incoming NNE wind flowing to the further downstream areas.

5.1.18 In general, some NNE winds could be directed to ventilate the Site and its downstream areas smoothly and no significant adverse impacts on the wind availability of the Site and its downstream areas under NNE winds.

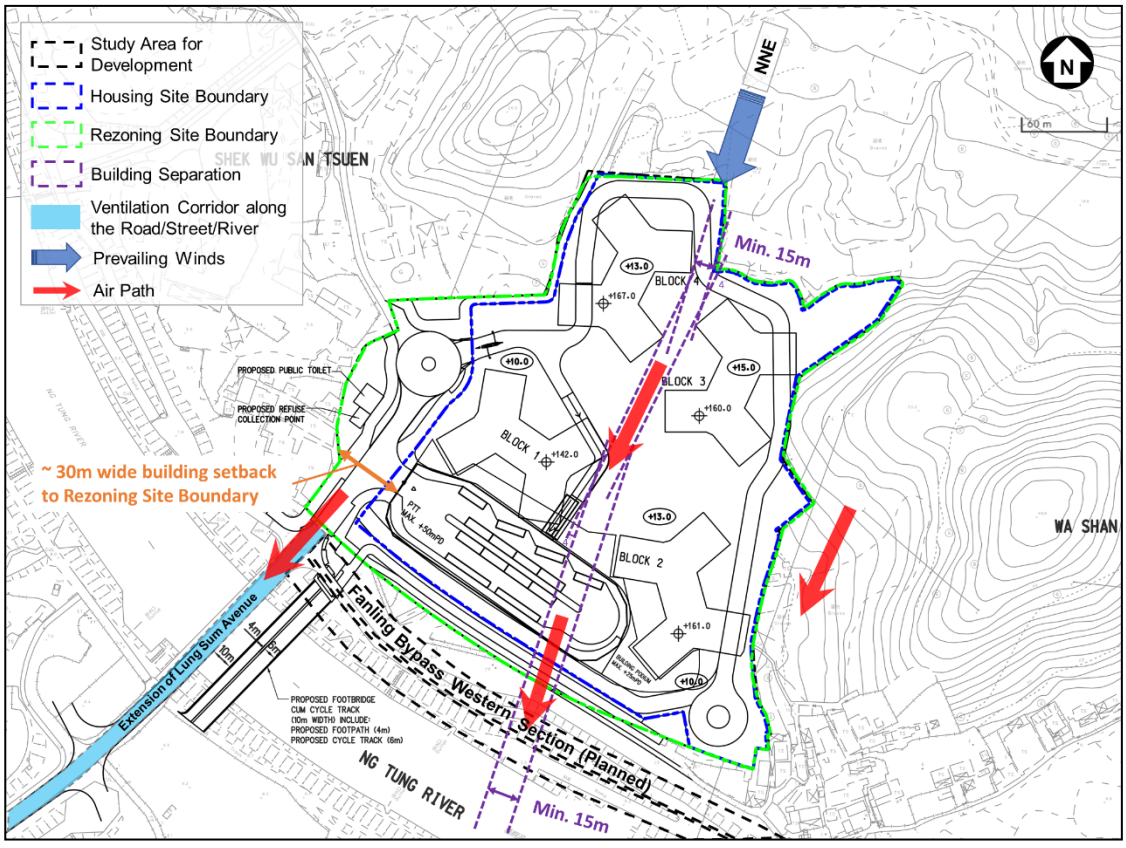


Figure 45 – Proposed Wind Environment under Prevailing NNE Wind

UNDER PREVAILING E AND ESE WINDS

5.1.19 **Figure 46** shows that ESE wind from the upstream open space would flow along the proposed housing site to ventilate the downstream areas through a major building separation. The upstream ESE wind would enter the Site from the north of the Block 2 via the building separation with a minimum 15m width between Blocks 2 & 3 and Blocks 1 & 4, and then smoothly ventilate to downstream regions, i.e. a portion of Ng Tung River and open areas. At the southern boundary of the Site, Ng Tung River also serves as a wind channel to facilitate the continuity of

ventilation of prevailing ESE wind to the downstream areas since its orientation is parallel to the ESE wind direction from the upstream open areas. While, a building setback about 20m wide from the PTT's block to the southern boundary of the Site may serve as an air path to alleviate the ventilation of prevailing ESE wind to the downstream open areas subjected to detail design.

5.1.20 From the eastern direction, most of the upstream E winds would pass through the minimum 15m wide building separation between Blocks 2 & 3 and turn 15° to the southwest towards to the downstream area of the Site. The rest of the E wind could bypass the proposed buildings to the downstream area from both north and south sides of the site.

5.1.21 A cluster of planned public and private housing developments with a maximum building height of +140mPD is situated in the south-eastern side of the Site as the Fanling North New Development Area development proposed. It is envisaged that these high-rise building blocks would hinder the incoming ESE winds flowing to the Site and its downstream area, and the amount of the prevailing ESE winds passing through the Site and reaching its downstream area decreases.

5.1.22 In general, some of the incoming E and ESE winds could be directed to ventilate the Site and its downstream areas smoothly, and no significant adverse impacts on the wind availability of the Site and its downstream areas under these wind directions.

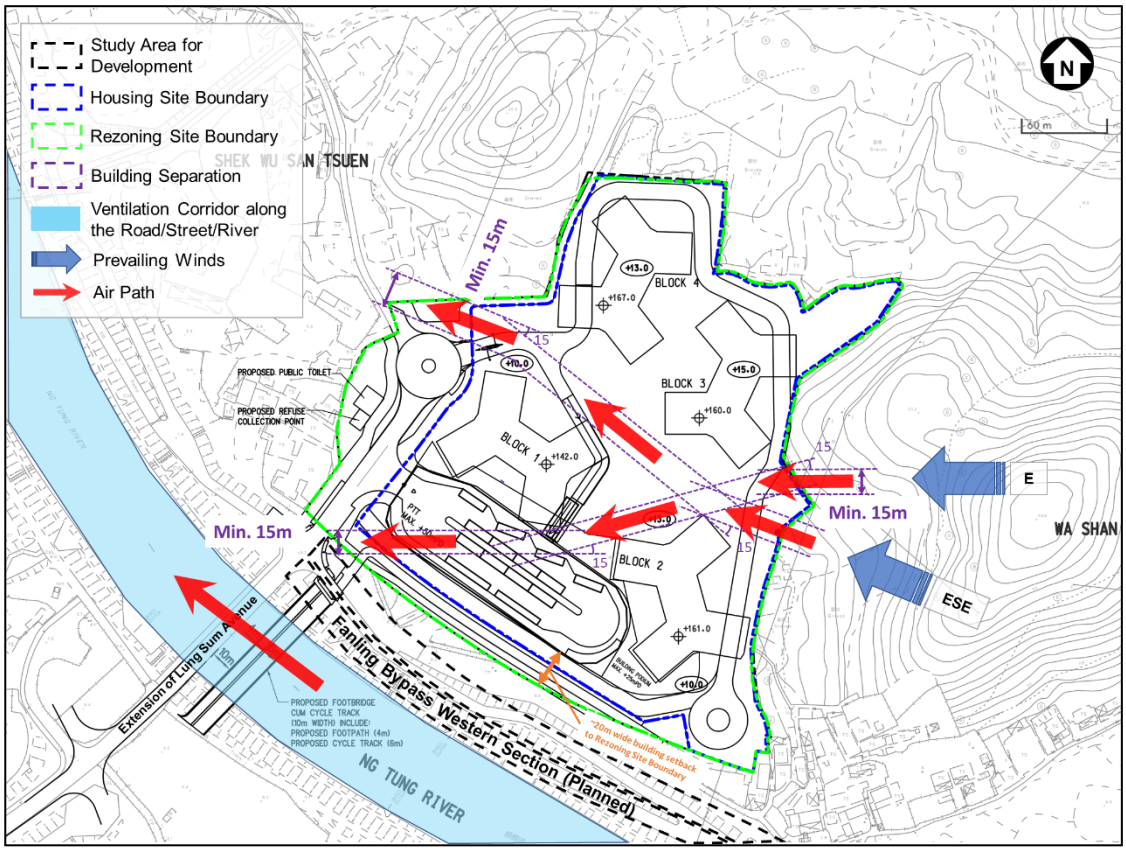


Figure 46 – Proposed Wind Environment under Prevailing E and ESE Winds

UNDER PREVAILING SE AND SSE WINDS

5.1.23 **Figure 47** shows that there is a major air path penetrating the Site areas from the upstream open spaces since the proposed housing blocks are generally aligned in the SE-NW direction. The upstream SE wind would turn 15° first to the west towards the major air path and then flow

through between Blocks 2 & 3. The stream would then bypass the minimum 15m building separations of Blocks 1 & 4 and turn 15° towards northwest side. The SE wind through this air path within the Site would further flow towards the downstream areas. At the southern boundary of the Site, Ng Tung River also serve as a breezeway to facilitate the continuity of ventilation of prevailing SE wind to the downstream areas.

5.1.24 From the south-southeast direction, however, most of the upstream SSE wind would be blocked by proposed housing blocks. Only small amount of the SSE wind could bypass the proposed building blocks from the eastern and western site boundaries. While, Ng Tung River located at the west side of the Site and a building setback about 20m wide from the PTT's block to the southern boundary of the Site may serve as an air path to alleviate the ventilation of prevailing SSE wind to the downstream open areas, i.e. north-western portion of Ng Tung River, green belt spaces and open area subjected to detail design.

5.1.25 Due to the developments in FLN NDA, the planned high-rise public and private housing developments in the south-eastern side of the Site would hinder the incoming SE and SSE winds flowing to the Site and its downstream area, and the amount of the incoming winds passing through the Site and reaching its downstream area decreases.

5.1.26 Overall, it is expected that the wind availability at the north-western side of the Site and its further downstream areas (e.g. Ng Tung River, green belt spaces and open areas) will be reduced under SSE wind direction due to the wind blockage effect. However, some of SE winds could be directed to ventilate the Site and its downstream areas smoothly and no significant adverse impacts on the wind availability of the Site and its downstream areas under SE winds could be observed.

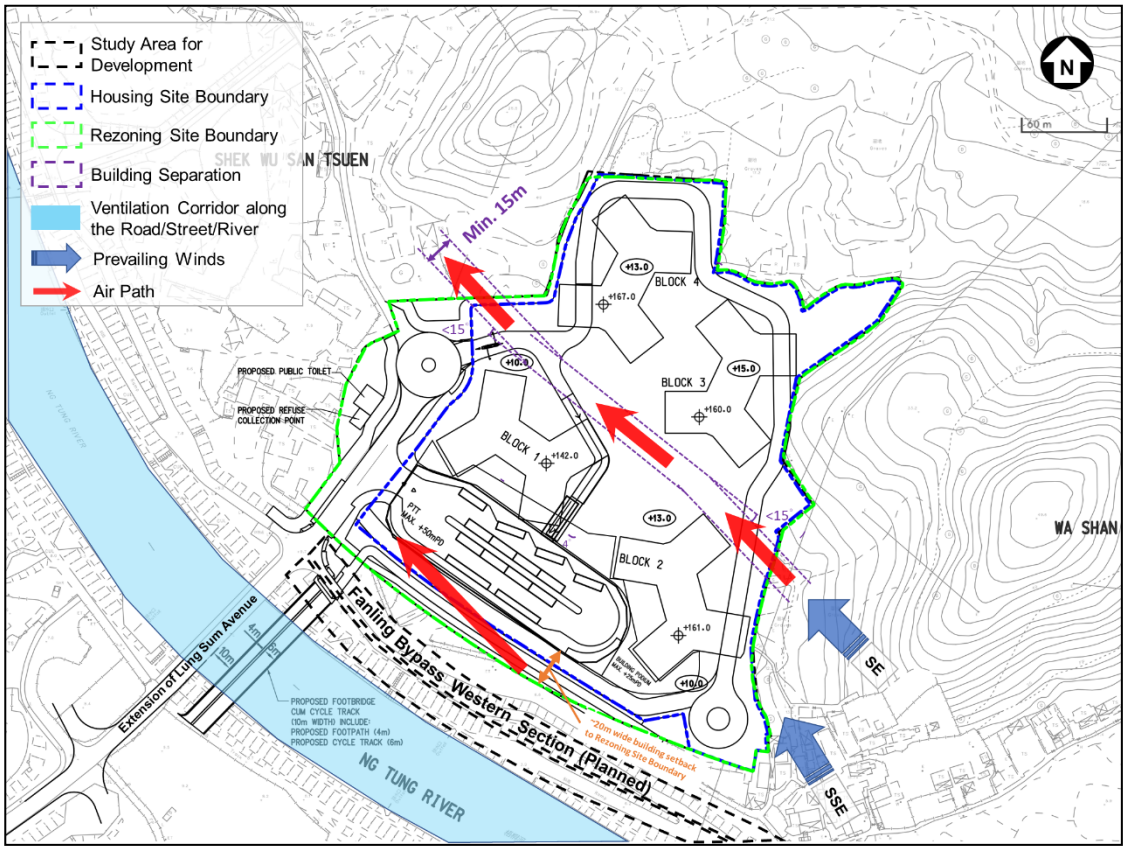


Figure 47 – Proposed Wind Environment under Prevailing SE and SSE Winds

UNDER PREVAILING SSW WIND

5.1.27 **Figure 48** shows that there is an air path penetrating the Site areas from the upstream open spaces since the proposed housing blocks are generally aligned to the SSW wind direction. The upstream SSW wind would enter the Site by skimming over atop the PTT block of maximum +50mPD height and the podium of around+25mPD height, sweep through air path with minimum 15m wide building separation between Blocks 1 & 2 and Blocks 3 & 4 towards the north side of the Site. Eventually, the SSW wind would further flow towards the downstream open area.

5.1.28 From the immediate southwestern side of the Site, about 30m wide building setback from the PTT block to the western boundary of the Site may be served as an air path to guide the upstream prevailing SSW wind to flow through the site and then ventilate to the downstream open area subjected to detail design.

5.1.29 As the developments in FLN NDA include propose low to medium-rise building in the upcoming years, only a portion of upstream winds will bypass the planned building blocks to the downstream, i.e. the site area. It is envisaged that these building blocks would bring a minimal adverse impact to the incoming SSW winds, and the amount of the prevailing winds passing through the Site and reaching its downstream area decreases.

5.1.30 Some of SSW winds could be directed to ventilate the Site and its downstream areas smoothly. It is expected that no significant adverse impacts on the wind availability of the Site and its downstream areas under SSW winds.

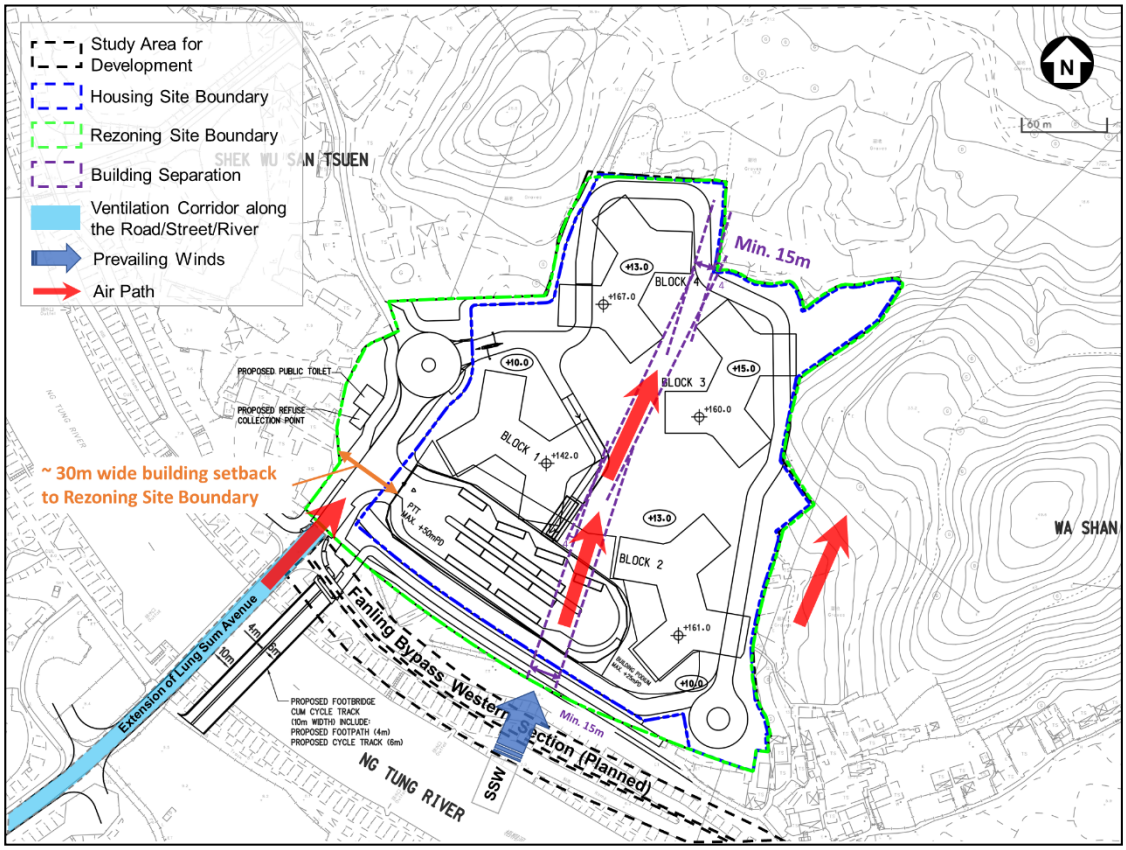


Figure 48 Proposed Wind Environment under Prevailing SSW Winds

5.2 CONCLUSION AND RECOMMENDATIONS

5.2.1 An Expert Evaluation based on the site wind characteristics and wind environment under the proposed public housing development situation regarding qualitative air ventilation assessment (AVA) was conducted. The results of the evaluation provide an overview of potential impacts associated with the proposed public housing development under both the annual prevailing NNE, E, ESE winds and summer prevailing E, SE, SSE and SSW winds as well as the surrounding topography.

5.2.2 As discussed above, the concerns mainly entail the prevailing winds and the potential air ventilation impacts that the proposed public housing development might bring up upon to neighbouring built-up areas. Mitigation measures of natural ventilation should be considered in the development design.

(a) under prevailing NNE and SSW winds, one major air path with minimum 15m wide building separation and building setback of about 30m wide from the PTT block to the western boundary of the Site have been considered to ventilate the Site and its downstream open areas (i.e. proposed medium-rise G/IC developments and open spaces along Ng Tung River under NNE wind and open areas under SSW wind);

(b) for the prevailing E wind, one major air path with minimum 15m wide building separation between high-rise buildings is considered to ventilate the Site and its downstream open areas;

(c) for the prevailing ESE and SE winds, one major air path with a minimum 15m wide building separation between high-rise buildings has been considered to ventilate the Site and its downstream open areas;

(d) the proposed building setback of about 30m wide from the PTT block to western boundary of the Site and about 20m wide from the PTT block to the southern boundary of the Site along the Ng Tung River are also proposed to ventilate the ESE and SSE winds. The adverse impacts on the farther western downstream open areas could be alleviated.

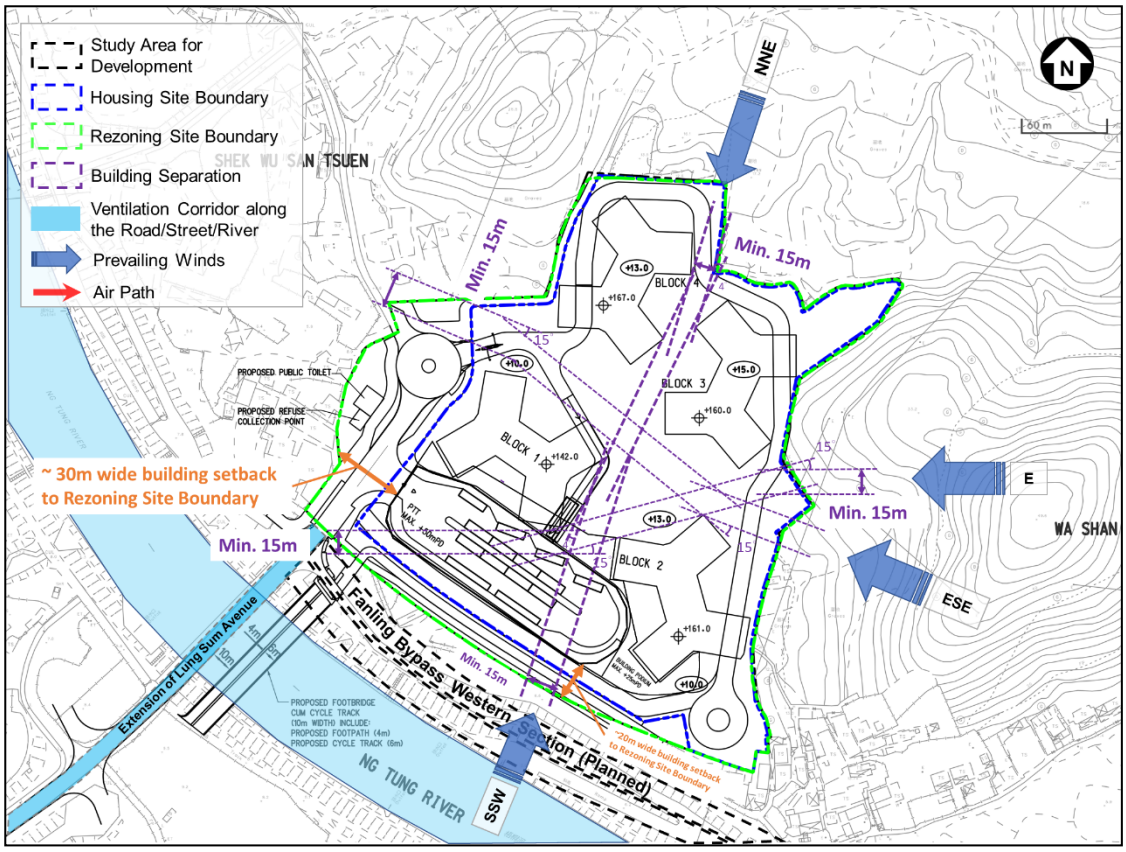


Figure 49 – Summary of the proposed mitigation measures

5.2.3 In the directional analysis, it is found that the proposed mitigation measures as mentioned above could help alleviate the potential air ventilation impact induced by the proposed development under various prevailing winds. The major building separations (minimum 15m wide), building setbacks (20m wide to the south and 30m wide to the west) and the surrounding topography of the Site can relieve the adverse impact brought by the proposed development. It is expected that the proposed public housing development would not induce significant adverse effect on the general air ventilation performance in its surrounding areas.

Recommendation

5.2.4 To further reduce the impacts and improve the wind environment, good design features could be considered in detailed design of the development. Further enhancement may be considered to facilitate wind penetration, such as enhancing building and podium permeability, etc., as far as practicable (see **Figure 49**).

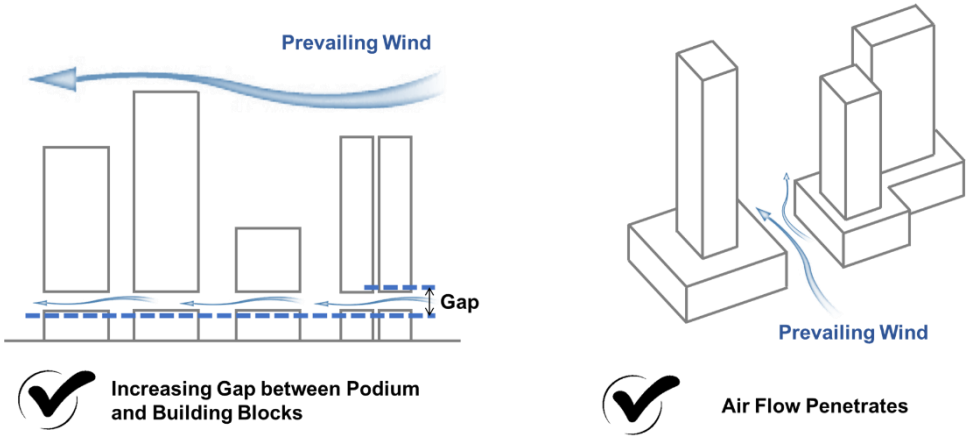


Figure 50 – Further Recommendation of Mitigation Measures

5.2.5 Following the Technical Guide for Air Ventilation Assessment (AVA) for Development in Hong Kong (Technical Circular No.1/06 and Annex A), the AVA Expert Evaluation provides a qualitative assessment of the design and/or design options and facilitates the identification of problems and issues. It is particularly useful for large sites and/or sites with specific and unique wind features, issues, concerns, and problems. While, an AVA Initial Study will refine and substantiate the Expert Evaluation. It is to allow for scheme design optimization during the detailed design stage and/or to prove that the future scheme would perform no worse than the current scheme in ventilation performance. To minimize any negative impacts and improve the existing wind environment, the designers shall consider the recommended good design features in the detailed design of the development. The present AVA Expert Evaluation is sufficient for rezoning exercise, and an AVA Initial Study is recommended to be conducted at detailed design stage.

6 PRELIMINARY ENVIRONMENTAL REVIEW

6.1 PRELIMINIARY ENVIRONMENTAL REVIEW

6.1.1 A Preliminary Environmental Review (PER) has been conducted to identify the key environmental issues associated with the site formation, recommended scheme of the Development and associated infrastructure works during the construction and operation phases. The major environmental concerns are identified to be noise impacts from the surrounding road traffic and premises.

6.1.2 The overall site area of the proposed development is less than 20 ha and involve less than 100,000 total population. Furthermore, all existing roads to be improved / widened are all local distributors. In accordance with the Environmental Impact Assessment Ordinance (EIAO), the proposed Development and its relevant roadworks shall not be classified as a Designated Project (DP). Impacts of different environmental aspects are presented in the following sections.

6.2 AIR QUALITY IMAPCT ASSESSMENT

6.2.1 The major sources of fugitive dust impacts during the construction phase of the Project will be arising from the following construction activities:

- Excavation
- Stockpiling
- Earth moving
- Transferring or handling of dusty materials
- Wind erosion

6.2.2 With the implementation of mitigation measures as specified in Air Pollution Control (Construction Dust) Regulation and good site practices during the construction phase, fugitive dust generation could be properly controlled and adverse fugitive dust impact is therefore not anticipated.

6.2.3 No active industrial chimney was identified within the 500m assessment area. Potential adverse impacts from industrial emissions to the proposed sensitive uses is considered not anticipated during operation phase. During operation phase, the major pollutant source within the assessment area would be mainly vehicular emissions arising from tailpipe emissions from nearby open roads networks. Fanling Bypass is a planned road and will be located in close vicinity to the south of the Site. The road type of Fanling Bypass is District Distributor, and it requires a buffer distance requirement of 10m according to HKPSG. As the distance between Fanling Bypass (Western Section) and the proposed air-sensitive uses is greater than 10m, the buffer distance requirement is fulfilled. The extension of Lung Sum Avenue (i.e. section from Tin Ping and extend toward north) will be widened slightly. As advised by the traffic engineer, this road section could be assumed as District Distributor (DD) as a conservative approach. In this connection, a buffer distance requirement of 10m between the proposed sensitive uses and the road kerb of this road will be taken into consideration for future layout development.

6.2.4 If the layout of the proposed public housing development could follow the above buffer zone requirements according to HKSPG, no adverse impacts arising from the vehicular emissions is anticipated during operation phase.

As the extension of Lung Sum Avenue (i.e. section from Tin Ping and extend toward north) will be widened slightly, the proposed modification of road kerb is close to ASR A5 and A6 at On Kwok Villa. However, considering the buffer distance requirement of 10m between the ASRs and proposed road kerb will still be met after the proposed road widening works, adverse air

quality impact from off-site Traffic to ASRs due to proposed road improvement works is not anticipated

6.3 NOISE IMAPCT ASSESSMENT

Technical Assessment

6.3.1 This project will provide essential infrastructures and formed lands for supporting the proposed public housing. The potential source of noise impact for construction of the Project would be the use of PME for various activities, including site clearance, earth works, excavation, construction of retaining structure and road works within the project Sites.

6.3.2 Road traffic from nearby planned road network (i.e. Fanling Bypass) are the dominant noise source within the 300m assessment area. Potential road traffic noise impact on the Site is anticipated. Representative NSRs, building structures with noise screening effect, topographical contours, road segments with traffic flow data and existing/committed noise barriers are input into the traffic noise model in evaluating the potential traffic noise impacts.

6.3.3 The road traffic noise impacts potentially affecting the NSRs are evaluated. Noise levels of units at Block 3 and 4 are expected to comply with the 70 dB(A) L10 (1-hr) noise criterion. However, the maximum predicted noise level at the units of Block 1 and 2 is 74 dB(A) would exceed its respective 70 dB(A) L10 (1-hr) noise criterion. As such, full compliance of road traffic noise could not be achieved without the adoption of proper mitigation measures.

6.3.4 A desktop review is conducted to identify the existing fixed noise source near the project area, it is noted that the surrounding the Site are mainly village houses. Some medium rise residential developments, such as Woodland Crest, Noble Hill are located at the south/southwest with >250m apart. A planned sewage pumping station (FLN C2-3) is located at the southwest of the project, with approx. 135m away from nearest residential units. With consideration of long distance separation, adverse impact from these fixed noise sources are not anticipated. San Wai/Tai Ling Firing Range is located at the northeast of the Site with >455m apart. On-site noise measurement was conducted during the operation of the firing range. The corrected Leq 30min is 64.8dB(A), which is below the ANL for fixed noise sources, 65dB(A). Therefore, no adverse fixed noise impact is anticipated from the San Wai/Tai Ling Firing Range.

6.3.5 Mitigation measures to minimize the construction noise impact should be implemented during construction phase. Typical noise mitigation measures include:

- good site practice to limit noise emission at source;
- use of silenced equipment;
- use of movable noise barrier;
- use of noise enclosure/ acoustic shed;
- reduction in the number of items of PME operation at any given time; and
- avoidance of works in restricted hours etc.

6.3.6 A noise control plan 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.

6.3.7 Road traffic noise impact on residential blocks is assessed and the planned Fanling Bypass will be the major traffic noise source. With the provision of noise mitigation measures, such as acoustic window, noise barrier, full height acoustic fin, change of openable window to fixed glazing and enhanced acoustic balcony no adverse traffic noise impact is anticipated.

6.3.8 Fixed noise source impacts, including existing and planned sources, are assessed and no adverse fixed noise impacts is anticipated.

6.4 WATER QUALITY IMAPCT ASSESSMENT

6.4.1 Water sensitive receivers (WSRs) within the 500m assessment area from the site boundary and the assessment of potential water quality impacts during construction and operation stages have been carried out. Potential sources of water quality impact associated with construction activities for the proposed development include:

- Construction site runoff;
- General construction activities;
- Accidental spillage; and
- Sewage effluent from the construction workforce.

6.4.2 Potential sources of water quality impact associated with operation of the proposed development include:

- Sewage generated from the Development; and
- Runoff from road surfaces and paved areas.

6.4.3 River Indus (Ng Tung River) is located in close vicinity to the south of the Site. Mitigation measures are required to protect WSRs from site run-off and drainage, and the best management practices in ProPECC PN 1/94 “Construction Site Drainage” should be followed for managing construction site run-off and various construction activities. With implementation of the recommended mitigation measures (including good site practices outlined in ProPECC PN1/94 and measures described in ETWB TC (Works) No.5/2005) along with compliance of the effluent standards set under TM-DSS, construction site runoff can be effectively controlled, and adverse impacts to storm drains or the marine environment is not anticipated.

6.4.4 During operation phase, sewage discharge will be the major water pollution source of the proposed development. The sewage generated from the proposed development should be collected and conveyed to the nearest public sewerage system via proper connections to minimise water quality impact from the operation of the proposed development. All sewage discharged shall comply with the TM-DSS controlled under the WPCO. Stormwater runoff from paved surfaces within the Site will be directed to a managed stormwater drainage system. Runoff from the roofs of buildings and road surfaces within the site may carry suspended solids. Mitigation measures including installation of silt traps in the stormwater drainage system can effectively reduce the potential impacts.

6.4.5 During the construction and operation phases, with full implementation of the mitigation measures, no significant impact is anticipated.

6.5 WASTE MANAGEMENT ASSESSMENT

Technical Assessment

6.5.1 During construction phase, various types of wastes will be generated from site clearance and site formation activities, construction of new buildings and other superstructures. Each waste stream will require a different approach for management according to their chemical and physical nature characteristics, in accordance with legislations and guidelines applicable to waste management and the disposal.

6.5.2 Construction & demolition (C&D) materials, chemical waste and general refuse are anticipated during the construction phase. Waste reduction measures and good site practice are recommended to minimise waste generation and maximise reuse opportunities. Recommendation of mitigation measures have followed the avoidance-minimization-recycling-refuse-treatment-disposal hierarchy.

6.5.3 Inert C&D materials will be reused onsite as backfilling as much as possible before transporting to public fill reception facilities (PFRFs). Non-inert C&D materials will be sorted onsite and taken to the appropriate recycling facilities. Excess non-recyclable non-inert wastes will be disposed of at designated landfills.

6.5.4 During operation phase, the amount of waste generated are expected from residential units. The quantity of general refuse is expected to be reasonable with implementation of appropriate mitigation measures.

6.5.5 General refuse shall be collected by a reputable waste collector on a daily basis and delivered to the refuse collection point accordingly. It is expected that such arrangements would minimise potential environmental impacts such as odour nuisance or pest/vermin problem. An effectual waste recycling program is recommended by placing recycling bins in prominent places with clear indications to promote waste separation at source for aluminium cans, plastics and waste paper.

6.5.6 For those activities which generate chemical waste, it may be possible to find alternatives to eliminate the use of chemicals, reduce the generation quantities or replace with a chemical type that is less harmful on the environment and less invasive on the health and safety of workers.

6.5.7 When chemical waste is produced at the site, the operator shall register with EPD as a Chemical Waste Producer, and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. The operator shall engage a licensed collector to transport and dispose the chemical wastes at the Chemical Waste Treatment Centre in Tsing Yi, or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. A trip-ticket system shall be implemented by the operator in order to monitor the chemical wate disposal process.

6.5.8 With proper implementation of the recommended measures, no unacceptable adverse environmental impacts is expected from the handling, storage, transportation or disposal of the waste generated by Project development.

Mitigation Measures

6.5.9 Some recommendations of good site practices, waste reduction measures, alongside with the waste transportation, storage and collection are provided in the following:

- Training of site personnel in proper waste management and chemical handling procedures;
- Provision of sufficient waste disposal points and regular collection of wastes;
- All waste should be handled and stored properly to prevent leakage or overflow. An enclosed and covered area is preferred to reduce the occurrence of windblown light material, and during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;
- Provision of wheel washing facilities before the trucks leaving the works area so as to minimise dust introduction to public roads;
- Plan the use of construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste;
- Designation of different locations to stockpile each material to enhance reuse. Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away;
- Obtain relevant waste disposal permits from the appropriate regulatory authorities; and
- Keep records of the amount of waste generated, recycled and disposed.

6.6 LAND CONTAMINATION ASSESSMENT

Technical Assessment

Historical and Desktop Review

6.6.1 Detailed desktop reviews have been conducted to review past and present land uses, activities and installations in the vicinity of the Rezoning Boundary that may pose potential for contamination to the land.

6.6.2 The development history of the Site was reviewed with the aid of aerial photographs and historical land uses to identify known or potential environmental concerns. Key findings are summarised in **Table 6.1** below:

Table 6.1 Key Findings of Aerial Photographs

Year	Height (Feet)	Photo Reference Number	Site Description
1954	29,200	V81A_550-0015R	The Site partially located on vacant and agricultural land in Wa Shan, Sheung Shui.
1964	12,500	1964-2724R	No changes in land uses within the Site between 1955 and 1964. Developments are observed south of the study area for the development along Sheung Yue River.
1973	6,000	04775	Temporary structures are observed within the Site. Southern portion of the Site remains to be agricultural land. An access road is observed being extended within the Site. Developments are observed along the old Ng Tung River and are more predominant.
1981	4,000	37288	More village squatters are observed within the Site. Lower portion of the study area for the development remains to be agricultural land.
1988	4,000	A15526	More village squatters settled within the Site.
1991	2,000	A25983	Agricultural land located in the southern portion of the study area for the development has been converted into squatters' settlement.
2001	4,000	CW33905	An open storage area was observed in the southern portion of the Site. Site clearance/formation activities are observed at area just outside the Site for the modification of present-day Ng Tung River.
2007	3,000	CW77779	Area near the northern portion was cleared into a car park. Modification of Ng Tung River was completed between 2002 and 2007.
2014	3,000	CS48191	No changes within the Site except where an area located on the south side within the Site which has been cleared.

Year	Height (Feet)	Photo Reference Number	Site Description
2015	3,000	CS61659C	Area in the southern portion of Site is cleared.
2016	2,500	E006313	Cleared area has been extended in the southern portion.
2017	2,000	E0016111C	Temporary structures of unknown use are constructed in the lower portion of the Site.
2018	9,000	E046412C	The two temporary structures with white roof are removed from the Site with the area in yellow are observed being paved.
2020	6,900	E093917	No changes to the Site and it resemble to present day.

6.6.3 Based on the 1964 aerial photograph, the Site is located on vacant land, partially leaning against the slope, surrounded by agricultural land. There has been no change on land uses from 19464 until an access road has been extended on the north side within the Rezoning Boundary, observed in 1973.

6.6.4 Minor development and construction of buildings are observed in the Site from 1981 to 1988, and until 1991, the agricultural land located on the south side of the Rezoning Boundary is observed being converted and paved.

6.6.5 No major changes until 2000, site clearance/formation activities are observed outside and south of the Rezoning Boundary, and the present-day Ng Tung River being modified. By 2002, the agricultural-converted land on the southern portion is paved and modification on both sides of the Ng Tung River are near completion.

6.6.6 Buildings with roof are observed in the 2007 aerial photograph, and Ng Tung River resembles that of current day. No changes in the Site except where the agricultural-converted land is cleared in 2014 and two buildings with white roof are observed in 2017; and cleared again in 2018 with vegetation observed in present day (2020).

6.6.7 In retrospect, there are no major changes in land use within the Site except where the area located on the southern portion has seen converted from agricultural land to a paved land.

Site Inspection

6.6.8 Site inspection was conducted on 14 May 2021, to identify possible land contamination within the Site. The locality of the site is a rural area situated on the slope of a mountain, surrounded by village-typed development. The Site is a brownfield site, consisting of dwellings and warehouses. Major land uses in the vicinity of the Site include existing residential dwellings, graveyards, shrub land and vegetation, open and close warehouses. The site inspection checklist and photographic logs are presented in **Appendix C**.

6.6.9 Upon site inspection, paved roads accessible by vehicles were observed leading to north of the Site and the surfaces appeared to be well-maintained and not deteriorating (**Photos 4 & 5**). Warehouses and residential dwellings were observed located on both sides of the road. Graveyards were also observed within the Site (**Photo 9**).

6.6.10 No oil stains or major cracks on the surface of the vehicular access road was identified. There is an absence of potential sources of contamination such as abandoned pipes, underground and/or aboveground storage tanks, pipe works and improper management of drum storages indicating potential sources of contamination anywhere along said road.

6.6.11 Residential dwellings, open storages and warehouses (**Photos 10 to 20**) were observed during site inspection. Land use activities identified include dwellings, vehicle maintenance and repair activities, putty manufacturing and storage of electric goods, and containers labelled “rapeseed oil” are also observed (**Photos 21 to 29**).

6.6.12 The agricultural-converted land located in the southern portion of the Site is vacant and slightly covered with grass and vegetation, however, the area is fenced and inaccessible (**Photos 33 to 36**).

6.6.13 Based on the site inspection, the contamination at vehicle maintenance and repairs would include oils, fuels and lubricants. Other current land use of areas being village-type houses, open storages and vacant areas covered by vegetation, no major potential sources of land contamination were identified. No substations nor underground storage tanks (USTs) were identified during site inspection

6.6.14 During site inspection, there were inaccessible areas and majority of areas were the interior of warehouses and dwellings that were occupied. Other inaccessible areas were private dwellings and were fenced off. A site re-appraisal and supplementary CAP is required to identify any potential contamination at these inaccessible areas upon land resumption.

Government Records

6.6.15 Desktop review and historical information have been obtained and reviewed. According to the records obtained from various Government departments, there are no record of chemical spillage / leakage, dangerous goods (DG) licence and DG accident / spillage in connection to the Site.

6.6.16 There are, however, two fire incidents outside the Project Site and one fire incident inside the Site. The concern fire incident is rubbish-related, which occurred on 25 August 2019, near the lamp post numbered “AD7655”. Although this incident occurred within the Site, the nature of the incident, being a rubbish fire, is not anticipated to have any land contamination issues, i.e., there is no identified leakage / spillage of chemicals. Below is a summary of the fire incidents in **Table 6.2**:

Table 6.2 Summary of the fire incidents

No.	Date	Type of Incident	Address	Inside Rezoning Boundary?
1	15.9.2018	Vehicle Fire	Near LP BD1273, Shek Wu San Tsuen	No
2	8.10.2018	Tree Cutting	Near LP AD7655, Shek Wu San Tsuen	No
3	25.8.2019	Rubbish Fire	Near LP BD1271, Shek Wu San Tsuen	**Yes**

6.6.17 Based on the above information provided by various Government Departments, land contamination is not anticipated from historical land use as there are no records of chemical spillage / leakage, nor registration of any Dangerous Goods. No land contamination is anticipated with regards to the vehicle and rubbish fire, and tree cutting.

Evaluation of Technical Assessment

6.6.18 As there are inaccessible areas for visual inspection during the site survey, and these sites would still be in operation until land resumption, re-appraisal of these inaccessible areas shall be conducted when the site becomes accessible, prior to development of the Site. A site re-appraisal and supplementary CAP will be prepared for the inaccessible areas and the entire Project Site when the land has been resumed.

Mitigation Measures

6.6.19 Site Investigation (SI) shall commence soon after EPD's agreement on the supplementary CAP and site clearance. Upon availability of the SI results, assessment on contaminated land shall be conducted and presented in a Contamination Assessment Report (CAR). The CAR shall present the findings of the SI and evaluate the potential environmental impact based on the extent of potential contamination identified.

6.6.20 If remediation is required, a Remediation Action Plan (RAP) shall be prepared in purpose to set remediation goals and specify remediation monitoring and measurements to monitor remediation progress and to confirm completion of the remediation.

6.6.21 A Remediation Report (RR) shall be prepared to demonstrate adequate clean-up upon completion of the remediation and submitted to EPD. No construction works or development of the Site should be carried out prior to the endorsement of the RR. The content of the RR shall include the description of remediation programme carried out and the remediation monitoring results for verification.

6.6.22 Given all remediation works would be completed if potential contamination is found associated to the Site, no unacceptable adverse environmental impacts is expected from land contamination.

6.7 ECOLOGY

Technical Assessment

6.7.1 Ecological characters and ecological habitats were assessed within the assessment area for ecological impact (areas within the 500m from the boundary of the Site and associated infrastructure works) by desktop study and taking reference to literature reviews.

6.7.2 No recognized site of conservation importance was identified within the Rezoning Boundary or the Study Area (**FIGURE 18**). There are few important habitats identified within the Study Area, they include:

(a) Ng Tung River

(b) Mitigation Wetland and Conservation Area

(c) Man Kam To Road Egretry

While none of the above important habitats are within the Site.

6.7.3 The land use and habitats were studied by review of aerial photos and field ground-truthing. Habitat maps covering the assessment area for ecological impact was studied.

6.7.4 The proposed development boundary was partially covered in the Study Area Boundary of Agreement No. CE61/2007(CE) North East New Territories New Development Areas Planning and Engineering Study – Investigation, Final Environmental Impact Assessment Report (ARUP 2013). Habitats within the Study Area included:

(a) Urban/residential area

(b) Grassland

(c) Plantation

(d) Orchard

(e) Secondary woodland

6.7.5 Direct Impact under Construction Phase – Direct impact of the Site would be the loss of habitats including developed area, plantation, shrubland/grassland and a small area of woodland. The direct impact is anticipated to be minor and no mitigation is needed for the loss of these habitats.

6.7.6 Indirect Impact under Construction Phase – Noise and dust generated from construction activities within the Site might temporarily reduce the utilization of adjacent habitats by wildlife during construction phase. Especially for birds and mammals, as they are sensitive to noise and light. Noise and light generated at night from construction site would interfere birds and mammals nearby.

6.7.7 As some of the nearby areas are already developed, it is unlikely these areas are inhabited by light-sensitive nocturnal animals. Hence, the light glare impact is considered insignificant for the habitats inside and outside the Site.

6.7.8 The habitats immediate surroundings of the Site are developed area, plantation, channel, woodland. Developed area and plantation are considered of very low or low ecological values. The potential impact to these habitats and associated wildlife due to construction disturbance is considered insignificant. The ecological value of channel and woodland are ranked as low to moderate. The potential impact to these habitat and associated wildlife due to construction disturbance, especially to the egrets utilizing Ng Tung River channel as foraging ground, is considered as **Minor to Moderate**. The indirect impact due to noise, dust and other human activities can be minimized by implementation of good site practice and other mitigation measures.

6.7.9 The distance between the mitigation wetland under management for reprovision of egretry is about 350m to the northwest from the Site. As it is far away from the Proposed Development Boundary, noise, light, dust and other human activities raised during construction phase are not anticipated to affect it.

6.7.10 Regarding to the surface Runoff, during the construction phase, channels near the works areas would potentially be impacted by surface runoff, especially during rainstorm. The surface runoff might be polluted by sedimentation from site surfaces; earth working areas and stockpiles, wash water from dust suppression sprays and wheel washing facilities; and chemicals spillage such as lubrication oils, solvents and petroleum products from maintenance of construction machinery and equipment, and sewage from the construction workforce. Elevated suspended solids levels caused by site runoff could increase the suspended solids load in the water bodies, and could reduce dissolved oxygen levels. A lower oxygen level would affect stationary species, whilst mobile species would tend to temporarily avoid the area. The result could be a temporary reduction in aquatic life abundance and/or change in distribution. This may also indicate that less aquatic life, such as fish, could be provided as food for egrets, the foraging activity for egrets may also be affected.

6.7.11 The Ng Tung River channel and other channels will be prone to disturbance by surface runoff during construction phase as they are adjacent to the Site and have a lower elevation than the Site. The ecological value of Ng Tung River channel is ranked as Low to Moderate because it is a foraging ground for egrets. It is expected the impact from surface runoff would be transient and hence the potential impact due to surface runoff to the Ng Tung River channel is considered as **Minor to Moderate**. To avoid contamination of water in Ng Tung River, the construction runoff should be controlled by implementation of mitigation measures such as good site practice.

6.7.12 Other channels present in within the Study Area may also be potentially affected by surface runoff. Although they are not considered as foraging area for egrets and ranked as Low ecological value, they may join the Ng Tung River. Thus, the potential impact due to surface runoff to channel other than Ng Tung River is considered as **Minor to Moderate.** The potential impact of surface runoff should also be avoid controlled by implementation of mitigation measures such as good site practice.

6.7.13 During construction phase, the works of the construction of a new footbridge-cum-cycle track crossing Ng Tung River next to the existing bridge may produce disturbance and surface runoff to the nearby habitats and, thus, generating potential ecological impacts. The potential disturbance and surface runoff generated would be similar to that generated by the development within the Site and the impact assessment would be similar to that discussed in the previous sections.

6.7.14 While the proposed junction / road improvement works at the junction of Lung Sum Avenue and Jockey Club Road is located in urbanized area where existing disturbance, in addition to limited ecological resources existed nearby, there will be no significant ecological impact is anticipated.

6.7.15 One floral species of conservation importance, i.e. *Flemingia prostrata* was recorded in the Study Area. It is located outside the Site and the locations will not be affected by the Project, so the significance of ecological impact of this species is considered **Negligible**.

6.7.16 Eleven fauna species of conservation importance were recorded, including Japanese Pipistrelle, Black-crowned Night Heron, Chinese Pond Heron, Great Egret, Intermediate Egret, Little Egret, Greater Coucal, Lesser Coucal, Pied Kingfisher, White-throated Kingfisher and Chinese Bullfrog. However, all of them were recorded outside the Site and very mobile except Chinese Bullfrog, thus, they are not likely to be affected by the Project. No roosting site was also recorded within the Site, too. The potential direct impact to the mobile species of conservation importance is anticipated to be **Insignificant.**

6.7.17 While the Chinese Bullfrog may potentially be impacted by surface runoff, especially during rainstorm. Without proper control of surface runoff, the potential impact due to runoff to Chinese Bullfrog is considered to be **Minor to Moderate**, and the potential impact can be minimized by implementation of good site practice.

6.7.18 Indirect Impact under Operational Phase – indirect impact to Breeding Egrets from Man Kam To Road Egretry, typical flight-lines involve routes followed between feeding and roosting areas or between feeding and breeding areas. The Site located on a flight-line may result in a decrease in the suitability of a foraging, breeding or roosting site by preventing movement between sites. In an extreme case, this may lead to the total abandonment of one or both sites. There may also be an increased risk of mortality by collision with structures constructed on or close to a flight-line.

6.7.19 Only 13.5% of the egrets fly to the direction towards the Site of the current Project, and they are mostly flying along the Ng Tung River for foraging. In addition, there is no potential habitat used by egrets, such as wetland, behind the Site. Egrets are not likely to pass through the Site. Thus, it is considered that there is no flight-line within the Site, and the potential fragmentation impacts to breeding ardeids at Man Kam To Road Egretry is considered Insignificant.

6.7.20 During the operational phase, the drainage and sewage discharge from future development may pose a potential impact to the nearby ecological resources. However, there will be drainage and sewage systems that connect the discharge to the government sewerage and drainage systems. Additional sewage will be conveyed to the pumping station and final disposed/treated at government Sewage Treatment Works. Hence, no adverse operation water quality issue is anticipated.

6.7.21 Lighting and human disturbance would affect the foraging behaviour of adjacent bird and mammal, especially the foraging activity of egret at the Ng Tung River. Primarily as a residential area, most of human activities is anticipated to be indoor as no visitor attracting scenic spots or outdoor area in the proposed area. Thus, the disturbance generated from the developed is anticipated to be limited. Furthermore, the proposed development would be similar to other established buildings in the nearby area (e.g., Woodland Crest and On Kwok Villa), and the habitats surrounding the Site are mostly urbanized habitats, lighting and human disturbance are currently present. Fauna sensitive to artificial lightings and human disturbance might have

already avoided these habitats; while the existing fauna might have already accommodated certain levels of artificial lighting and human disturbance. Thus, the potential indirect impact brought by increased lighting and human disturbance during operation phase is considered to be **Minor**.

6.7.22 During operational phase, the newly constructed footbridge may block the passage of ardeids of Man Kam To Road Egretry as the is located in one of the flight-line of the egretry. However, the newly constructed footbridge is located around the ground level which is much lower than the recorded flight height of the ardeids of Man Kam To Road, 5 - 7m (AECOM 2020). Besides, there is an existing bridge adjacent to the newly constructed footbridge. The height of the two bridges will be the same, and the bridge piers of the newly constructed footbridge will also be parallel with that of the existing adjacent bridge, so that there will be no additional space above and under the bridge will be blocked. Thus, potential impact due to blockage of the flight of ardeid is anticipated to be insignificant.

6.7.23 There will also be insignificant operation potential impact due to the proposed junction / road improvement works at the junction of Lung Sum Avenue and Jockey Club Road, as it is in urbanized area that disturbance is already existed.

Mitigation Measures

6.7.24 The key impact of the Project includes disturbance (e.g. noise, dust, surface runoff) to the sensitive habitats and fauna near the Site that requiring proper mitigation measures to minimize these potential impacts.

6.7.25 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.

Avoidance

6.7.26 Recognised sites of conservation importance within the Study Area include Long Valley, Ng Tung River, Man Kam To Road Egretry, mitigation wetland and Conservation Area are all located away from the Site and will not be directly affected by this Project.

6.7.27 Some recognized sites of conservation importance are close to the Site, including Ng Tung River, mitigation wetland and Conservation Area. In the subsequent stages of the Project, any adjustment in the Site shall take into consideration of the locations of these recognized sites of conservation importance and avoid encroaching them.

Hoardings

6.7.28 During the construction stage, site hoarding / chain-link fence or similar solid barriers shall be installed to clearly delineate the construction within the Proposed Development Boundary. This ensures the works and the associated impacts will be confined within the Site and avoids inadvertent infringement to nearby habitats.

Minimization

Minimizing indirect disturbance impacts

Construction Site Runoff and Soil Erosion Prevention

6.7.29 Guidelines on developing measures for protecting natural streams/rivers during the construction stage have been issued by ETWB Technical Circular (Works) No. 5/2005 and Practice Note for Professional Persons (ProPECC) PN 1/94. During construction phase, these guidelines should be followed in order to prevent construction site runoff.

6.7.30 During operation phase, all sewage effluent from the Site would be discharged into the public sewer and no discharge to the nearby channels would be allowed. The surface runoff from the housing developments will be collected to the drainage system with pollution control facilities,

such as gullies, silt traps and oil interceptors, shall be provided as appropriate to handle the potentially pollution from urban runoff.

Other Site Practices

6.7.31 Standard site practices listed as follows would be implemented to minimize potential impacts, including dust, noise and site runoff, on the surrounding environment.

- Regular checking should be undertaken to ensure that the work site boundary is 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 during construction;
- Implementation of noise control measures to reduce impacts of construction noise to wildlife habitats adjacent works area;
- Implementation of dust control measures at all construction sites to minimize 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;
- Good site practice and site precautionary measures will also be implemented to avoid the potential impact due to site runoff. Construction effluent, site runoff and sewage should be properly collected and/or treated. Wastewater from a construction site should be managed with the following approach in descending order;
- Proper locations for discharge outlets of wastewater treatment facilities well away from the natural streams/rivers should be identified;
- Effluent monitoring should be incorporated to make sure that the discharged effluent from construction site meets the effluent discharge guidelines; and
- Supervisory staff should be assigned to station on site to closely supervise and monitor the works.

Cumulative Impacts

6.7.32 The Site is close to the boundary of the FLN NDA. Cumulative impact may be raised and it is evaluated in this section.

6.7.33 The FLN NDA project may pose potential cumulative disturbance to the habitat near the Sites of the current study during both construction and operational phases. During construction phase, cumulative disturbance impacts are expected. However, the project is surrounded urbanized area where disturbance is already existed, significant cumulative impacts to ecology are not expected. During operational phase, cumulative disturbance impacts are also expected. However, it is expected that there would be no high disturbance to the environment due to the nature of the concurrent project, thus, significant cumulative impacts to ecology are also not expected

6.8 CULTURAL HERITAGE

6.8.1 Referring to **FIGURE 51**, the Site slightly encroaches onto Wa Shan Site of Archaeological Interest (SAI) at the southern periphery. The main archaeological findings of the SAI, however, are on the (south-)west slopes of Sheung Shui Wa Shan around Former Wa Shan Public School. Previous testing and the approved NENT report indicate that the lower part of the Site has low archaeological potential and can be excluded from the current assessment (Arup 2013) (**FIGURE 52).** The landform and Pleistocene geological deposits of the upper part of the valley

within the Site, however, may have some potential for archaeological deposits. As this area is untested, archaeological deposits, features or materials cannot be excluded. The field visit indicates that the area is currently in use and occupied by concrete surfaces and light industrial activities. A detailed archaeological impact assessment including archaeological field survey is expected to be undertaken after land resumption and prior to the construction phase within an identified area of archaeological potential as marked on **FIGURE 53** within the Site.

6.8.2 Based on the heritage impact study conducted under the Assignment, no significant built heritage resources are identified within the Site and Study Area. The desk-based review and field visit indicates that there are mainly temporary or buildings of which some buildings may date back to the late 1960s or early 1970s. The buildings have since largely disappeared or have been modified. The noted houses are plain with functional architecture style. No association with notable figures and such was established.

6.8.3 The project proponent shall alert AMO immediately if any built heritage and archaeological remains are identified in the construction stage.

6.9 SUSTAINABILITY

6.9.1 A Preliminary Sustainability Assessment has been conducted by adopting the Computer Aided Sustainability Evaluation Tool (CASET) Version 5.0 in accordance with the 8 Guiding Principles, 27 Sustainability Parameters and 23 Checklist Questions outlined by the Sustainable Development Division of the Environmental Bureau.

6.9.2 The proposed development could cause potential impacts on environmental quality like most of other construction projects. However, due to the limited scale of the development, the environmental impacts are considered insignificant.

6.9.3 The proposed development would create job opportunities during construction stage and operation stage. It would also generate income from rental and would contribute to compensating the construction and operation costs in the long term. Therefore, the economic impact of the proposed development is considered insignificant.

6.9.4 The proposed development has minor shortcomings in the environmental aspects but significant benefits in social aspects. The proposed development will contribute to resolving housing shortage, improve society and social infrastructures as well as providing leisure and cultural vibrancy to the community etc. Hence, the proposed development is considered to be sustainable.

7 PRELIMINARY LAND REQUIREMENT

7.1 INTRODUCTION

7.1.1 The Preliminary Land Requirement Report presented below is to:

- Identify all existing, planned, possible or proposed land uses, facilities, installations and development rights which maybe affected by the implementation of the Site;
- Identify the need for land resumption, site clearance and re-provision/improvement works; and
- Prepare a plan which includes and clearly delineates the works areas required for the implementation of the Site.

7.2 METHODOLOGIES

7.2.1 A desk study on iB1000 Digital Topographic Map and iC1000 Digital Land Boundary Map, aerial photographs taken in 2021, and landowner information from Land Registry has been carried out to establish the current land status within and in the vicinity of the Site. Several site visits were also conducted from May to November 2022 for further verification of the land status of the concerned areas.

7.3 LAND REQUIREMENT

7.3.1 The estimated total area within the proposed works boundary is approximately 5.75 hectare (ha). The affected private and government lands (either permanently or temporarily for the proposed development) are summarized in **Table 7.1** below. Details of land requirements are presented in the *Preliminary Land Required Report and Land Requirement Plans.*

Table 7.1 Land Requirement within the Proposed Works Area

Type of Land	Total Area (m^2)
Private land	10,246.9
Government land	46,707.2
Total Required Land	**56,954.1**

Private Land Lots

7.3.2 Based on the updated base map and available land status plan,11 private lots are identified within the proposed works area while 9 of them are identified within the Site, summary of the affected private lots is shown in **Table 7.2** below.

Table 7.2 Summary of Affected Private Lots within Proposed Works Area

No. of Affected Private Lot	Total Area (m^2)
11	10,246.90 **(510)***

Remark:

(*) : Values in parenthesis are land areas which are earmarked to be resumed under PWP Item No. 7828CL Remaining Phase of Site Formation and Engineering Infrastructure Works at Kwu Tung North New Development Area and Fanling North New Development Area Fanling North New Development Area (Road Works)

7.3.3 The proposed road widening works along the extension of Lung Sum Avenue will encroach onto the private lot No. FSSTL 36 S.A. RP. FSSTL 36 S.A. RP, which fall within hatched black, purple hatched black, yellow hatched black areas ("the Free Surrender Area") under Special Conditions No. (7) of New Grant No. 12580 dated 1.10.1992 which FSSTL 36 (the original lot of Woodland Crest) is held. According to the said Special Conditions No. (7), the grantee shall when required surrender at his own expense to the Government free of cost and free of any encumbrance the whole of the Free Surrender Area.

7.3.4 Compensation to the owners of the affected private lots will be assessed by the Lands Department based on the latest Ex-gratia Compensation Rates for Resumed Land.

Short Term Tenancies and Temporary Structures

7.3.5 Based on the updated base map and available land status plan, 8 sites covered by short term tenancies and 19 registered temporary structures are identified within the proposed works area. Summary of the affected private lots is shown in **Table 7.3 and Table 7.4** below.

Table 7.3 Summary of Affected Short Term Tenancies within Proposed Works Area

No. of Affected Short Term Tenancy	Total Area (m^2)
8	5,502.9

Table 7.4 Summary of Affected Registered Temporary Structure within Proposed Works Area

No. of Affected Registered Temporary Structure	Total Area (m^2)
19	3,184.2

Burial Grounds, Cultural Heritage, existing structures, Graves, Urns, Kam Taps and Shrines

7.3.6 The permitted burial ground No. S/N/1 is located to the immediate north, northwest and east of the Site. The proposed works area will not encroach onto these burial ground areas.

7.3.7 12 graves were identified within the Site and shall require clearance. A comprehensive grave survey (including site walkover and aerial photograph interpretation) was conducted in late October 2021 after Chung Yeung Festival, and the details are shown in **FIGURE 54.**

7.3.8 The existing access roads leading to the graves would not be maintained and reprovisioning of access roads was not anticipated.

7.3.9 No feature of heritage and conservation value including those with archaeological resources is identified within the Site. Hence, no direct impact from construction works of the Project on built heritage would be anticipated.

Registered Old and Valuable Trees (OVT) or Tree of Particular Interest

7.3.10 According to LCSD's Old and Valuable Tree (OVT) database, there is currently no registered OVTs within the Site and the 500m study area.

7.3.11 A tree survey was conducted in December 2021, no OVT is observed. The findings of the tree survey are presented in *Preliminary Landscape and Visual Impact Assessment.*

Government Land Allocations

7.3.12 There are 8 government land allocations (GLA) within the proposed works area. The affected GLAs (i.e. public toilet and Refuse Collection Point) shall be reprovisioned to a site to the western part of the Site. The initial spatial requirement of the concerned facilities are confirmed by relevant B/Ds and the details are to be further reviewed in later investigation and design stage. Summary of the affected GLAs is shown in **Table 7.5** below.

Table 7.5 Summary of affected GLAs within Proposed Works Area

GLA No.	Current Usage	Allocated to	Total Area (m^2)
GLA-DN 475	Public Toilet	FEHD	136.7
GLA-TDN 225 (Site 20)	Refuse Collection Point	FEHD	80.5
GLA-TDN 4469	Temporary works area by other project	-	256.4
GLA-TDN 4870	Temporary works area by other project	-	41.2
GLA-TDN 4444	Temporary works area by other project	-	96.6
GLA-TDN 4664	Temporary works area by other project	-	16.04
GLA-TDN 4760	Temporary works area by other project	-	129.4
GLA-TDN 4522	Temporary works area by other project	-	50.7
GLA-TDN 4262	Temporary works area by other project	-	2092.1
			Total: **2899.6**

Unregistered Temporary Structures

7.3.13 According to site observations and aerial photographs, there are more temporary structures located within the Site but with no records from LandsD. The extent of these unregistered temporary structures covering approx. 7,200m^2 on the government land from the Aerial photograph interpretation. Aerial photograph of the Site and extent of these unregistered temporary structures are shown in **FIGURE 55** and **56 respectively**.

Registered Geotechnical Features

7.3.14 There are 5 registered geotechnical features identified within the vicinity of the Proposed Works Limit. Summary of the registered geotechnical features is shown in **Table 7.6** below.

Table 7.6 Summary of affected Registered Geotechnical Features within Proposed Works Area

Feature No.	Maintenance Party	Potential Works
3SW-A/C60	LandsD	Remove
3SW-A/C247	LandsD	Remove
3SW-A/F215	LandsD	Remove
3SW-A/F210	DSD	Modify
3SW-A/F212	DSD	Modify

7.3.15 The above-mentioned existing geotechnical features will be affected by the proposed site formation works. New geotechnical features are also envisaged to be formed.

Roads, Footpaths and Accesses

7.3.16 The access to the north of the Site will be partially affected during the site formation works at the Site. A new footpath and access road along the western of the Site is proposed to access to these areas **(FIGURE 13)**.

Businesses and Services

7.3.17 There are brownfield operations within the Site, including open storage areas, recycling workshop, warehouse and industrial/rural workshops. Based on the available information, approx. 8 businesses covering a total area of approx. 5,500m^2 of the Site (all on government land) will be affected by the proposed development. It is anticipated that the clearance of brownfield will be addressed by proper compensation or relocation policy (e.g. brownfield relocation), which is now under separate studies by the Government.

7.4 CONCLUSION

7.4.1 The number and extent of the land uses, facilities and properties affected by the proposed development are shown in **FIGURE 57 to 60** and summarised in **Table 7.7** below.

Table 7.7 Summary of Land affected by the Proposed Development

Feature	Affected Number	Affected Area (m^2)
Private Lots	11	10,246.90 (510)*
Government Land Allocations	9	2,899.5
Short Term Tenancies	8	5,502.9
Registered Temporary Structure	19	3,184.2
Registered Geotechnical Features	5	-
Graves/Urns/Kam Taps/Shrines	12	-
Unregistered Temporary Structures	-	7,327.5
Business	Min 8	12993.5

Remark:

(*) : Area of existing private land to be resumed under PWP Item No. 7828CL Remaining Phase of Site Formation and Engineering Infrastructure Works at Kwu Tung North New Development Area and Fanling North New Development Area Fanling North New Development Area (Road Works)

Affected Area of Business / Services is the sum of the Business / Services included in Short Term Tenancies, Temporary Structures (registered and not registered with LandsD)

7.4.2 The impact on cultural heritage, trees, graves, urns, registered geotechnical features and other land lots have been identified with no insurmountable land issue expected. Sufficient lead time should be allowed for the land acquisition and site clearance process when planning the implementation programme.

8 SITE FORMATION AND INFRASTRUCTURAL PROVISION

8.1 GEOTECHNICAL

Ground Profiles

8.1.1 Based on the existing ground investigation records and the geological maps, the Site is generally underlain by fill, alluvium / residual soils and then saprolitic volcanic rocks and meta-tuffs. Bedrock is below the saprolite layer. The geology encountered are described as follows.

Fill

8.1.2 Fill comprised sandy clayey silt with occasional angular fine to medium gravel.

Alluvium

8.1.3 Alluvium mainly consists of firm to stiff, yellowish brown, sandy silt.

Residual Soil

8.1.4 Residual soil contains light greenish brown to orangish brown silt.

Completely / Highly Decomposed Volcanic Rock

8.1.5 Completely / Highly Decomposed Volcanic is encountered across the site. The soils comprise dense, light grey, brownish grey, very silty fine to coarse sand.

Completely / Highly Decomposed Meta-Tuff

8.1.6 Completely / Highly Decomposed Meta-Tuff comprises extremely weak to very weak, light yellowish brown, completely to highly decomposed rick. Silt with some to much gravel and occasional cobbles.

Bedrock

8.1.7 To be classified as a Bedrock, it contains moderately to slightly decomposed strong meta-tuff or volcanic rock of material weathering Grade III or better, and with not less than 85% total core recovery (TCR) of the designated grade. The bedrock within the Site is envisaged to have a rockhead level approximately from 16.9m to 24.5m below ground level. Further information of each underlain stratum is outlined in the following below.

Table 8.1 Summary of Site Stratigraphy Record

Stratum	General Elevation Soil Top Level (mPD)	General Thickness (m)
Fill	7.12mPD to 9.35mPD	1.0m – 5.1m
Alluvium / Residual Soil	3.97mPD to 8.31mPD	1.9m – 9.95m
Saprolitic Soil (i.e. CDV, C/HDV, HDV, H/MDV, CDMT, C/HDMT, HDMT, H/MDMT)	-4.33mPD to 2.07mPD	7.85m – 13.2m
Bedrock (Grade III or better)	-7.83mPD to -21.19mPD	-

Groundwater Level

8.1.8 Based on the previous groundwater monitoring records, the highest groundwater table is 1.6m below ground level.

Geotechnical Parameters

8.1.9 Based on the previous Stage 3 Study Report and the value suggested in Table 8 of Geoguide 1, the shear strength parameters adopted for the different geological materials in site formation design are summarized in the below.

Table 8.2 Summary of Soil Shear Strength Parameters

Soil Stratum	Unit Weight, γ (kN/m^3)	Effective Cohesion, c' (kPa)	Effective Friction Angle, ϕ' (deg.)
Fill	19	0	30
Alluvium / Residual Soil	19	2	32
Completely Decomposed Volcanic Rock	19	5	35

8.1.10 The soil parameter adopted for CDV is the same as those adopted in Stage 3 Study of Feature No. 3SW-A/C60 which is within the site area. No previous study is found regarding the Fill and Alluvium within the site area, the related soil parameters are adopted as the value suggested in Table 8 of Geoguide 1 which is on the conservative side.

8.1.11 The geotechnical parameters have been reviewed with available information from existing GI records and adjacent stage 3 study report for the design at this preliminary stage. Furthermore, site specific GI will be arranged at subsequent stages of the Project to confirm the adopted geotechnical parameters.

Founding Conditions at the Site

8.1.12 No geological faults or complex ground conditions are anticipated at the Site. Given that bedrock level is anticipated at about 15m to 25m below ground level, rock socket and/or rock bearing piles are considered geotechnically feasible.

Ground Settlement

8.1.13 Settlement and ground movements induced during construction, particularly for temporary retaining walls and foundation systems, will occur and should be monitored closely. Nevertheless, with adequate design and construction workmanship, these ground movements are not likely to cause significant problems.

According to the existing ground investigation, no compressible materials (e.g. clayey soils) are noted within the footprint of the development area. Hence no significant consolidation settlements are expected. Settlement due to the proposed site formation works and future foundation works are expected to be controllable (with adequate design, construction control and ground treatment works as necessary) and will not affect the feasibility of the proposed development.

Existing Geotechnical Features

8.1.14 According to GEO's Slope Information System (SIS) records, 5 registered features within or in the vicinity of the Site have been identified. Location plan of the features is in **FIGURE 61**.

8.1.15 3 of them are located within the Site and will be affected by the proposed housing development and are thus proposed to be removed at the stage during site formation works.

8.1.16 The remaining 2 features, namely Feature no. 3SW-A/F210 and 3SW-A/F212, are the embankment slope next to the riverbank of Ng Tung River, which will be modified due to the ground profile influenced by the construction of the proposed footbridge and utilities. Thus, these modified features are required for stability assessment for and will be further reviewed at subsequent stages of the Project prior to the commencement of construction.

Unregistered Geotechnical Features

8.1.17 An unregistered man-made feature at the south of the project boundary with approximate 2m height has been identified on the plan as shown in drawing No. PR 1.2. No formation works will be proposed on the concerning feature, thus, it is not required for stability assessment at this preliminary stage.

8.1.18 An unregistered man-made feature (approx. 2.5m height) next to license no. T12717, at the south of Feature No. 38W-A/C60 is located within the development boundary which will be affected by the proposed housing development and removed by site formation works.

Natural Terrain Hazards

8.1.19 As discussed previously, the eastern portion of the Site abuts a natural slope. It is envisaged that there are four hillside catchments associated with this natural slope. An initial screening has been carried out for the hillside catchments SA1, SA2, SA3 and SA4 as shown in **FIGURE 62** and **63**, based on the guidelines given in GEO Report 138 (2nd Edition). It is deduced that only hillside catchment SA1 meets the alert criteria for natural terrain hazard study. Based on desk study, aerial photo interpretation and field mapping, the preliminary results show that the potential natural terrain hazards from the hillside catchment SA1 posing on the proposed development is considered to be very low. Therefore, measures to mitigate the potential natural terrain hazards are preliminary not envisaged. The results shall be reviewed at the subsequent stage of the project.

Construction Monitoring

8.1.20 Sensitive receivers in the vicinity of the development include, but not limited to, existing slopes, natural terrain, existing structures and utilities. Construction works such as ELS may cause ground movements which can damage existing structures and services and piling induced vibrations which will need to be controlled to avoid excessive vibration induced to the surrounding slopes. In order to evaluate the construction impact to the surrounding sensitive receivers, a geotechnical instrumentation monitoring plan, based on the appropriate arrangement of ground settlement markers, building movement monitoring sensors, utility monitoring points, piezometers, seismographs etc. shall be implemented to monitor the effect of the proposed construction works and to validate design assumptions.

8.2 SITE FORMATION ASSESSMENT

8.2.1 This Preliminary Site Formation Assessment aims to assess the site formation requirements for the proposed development and presents recommendations in relation to site formation for the proposed development.

8.2.2 The proposed site formation level has been reviewed taken into account the existing topography and access allowed to the adjacent area. The level of the proposed access road and the housing site platform should match with the adjacent natural hillside and existing ground as far as practicable to minimise the extent of the slopes works and retaining structures and maximize of land use.

8.2.3 A balanced cut and fill approach is adopted as far as practicable in designing the proposed site formation level. It is proposed to form one single platform with a gentle gradient for the proposed housing development to provide adequate fall for draining the stormwater runoff within the Site. Temporary peripheral drains will be provided around the development site to collect the surface runoff and divert the collected surface runoff to nearby drainage facilities during construction.

8.2.4 The water elevation of the watercourse (i.e. Ng Tung River) in close proximately of the Site under extreme folding scenarios has also taken into account in designing the proposed site formation level.

8.2.5 The existing geological conditions have also been taken into account for the design of site formation works for the proposed developments. Details of the site formation assessments and associated recommendations are discussed below.

Site Formation Works

8.2.6 As discussed in, a balanced cut and fill approach is adopted as far as practicable in designing the proposed site formation levels. The proposed site formation level ranges from +15mPD in the northern portion to +10mPD in the southern portion.

8.2.7 Tt is estimated approximately 6,100 m^3 of material will be excavated and approximately 48,000 m^3 of fill materials are required to achieve the proposed formation levels.

Site Formation Assessment

8.2.8 Formation of New Slopes and Retaining Walls

8.2.9 Both cutting and filling works will be required throughout the proposed development area to achieve the required development levels and this may necessitate the formation of new slopes and retaining walls. Some of the geotechnical constraints specific to these works are summarised below:

(a) Excavation and slope formation work may be required in materials that have persistent weakness planes such as bedding, shear planes, foliation, cleavage etc. This can have implications for rock and soil slope stability, particularly if the weakness planes are adversely oriented with respect to the slope face.

(b) Whilst the majority of excavated soils are likely to be suitable for re-use of fill within the proposed development area. Any unsuitable materials will need to be identified and either treated prior to re-use or removed from the Site.

8.2.10 Although, landscape treatment for new man-made slope and retaining wall is not required in the current feasibility stage. According to GEO publication No. 1/2011, soft landscape for slope angle between 15°to 35°may include grass, groundcover, climbers, ferns, shrubs and small trees with biodegradable erosion mat.

8.2.11 As mentioned in, 3 existing man-made structure are proposed to be removed by the proposed development including slopes and retaining wall.

Ground Settlement

8.2.12 Compressible soils may form a significant contribution to the long-term post construction settlement in response to additional surcharge. Such additional surcharge may consist of the platform filling, site formation load, on-grade structure, or groundwater drawdown in the future.

8.2.13 Detailed ground investigation and laboratory testing will be required in the later stages of this development project to investigate the extents and properties of these compressible soils. If the data obtained reveal that the compressibility of the soil is unacceptable for the Development, in order to overcome the long-term settlement issue, ground improvement measures may have to be considered if large scale removal of these compressible soils is not practical.

Groundwater Control

8.2.14 Available data for the development site indicates that the groundwater level is 1.6m below ground level, it is likely that groundwater control will be required for the excavation works. The hydrogeological conditions at development site should be further investigated in the investigation stage to ensure that groundwater control measures are adequate and do not have adverse impacts on nearby structures, facilities etc.

Superficial Deposits within the Development Site

8.2.15 The geological maps indicate the superficial deposits consists of terrace alluvium (Qpa) and debris flow deposits (Qpd) are located at the Site area, and 1.9m thick pond deposits was recorded in borehole (Ref. No. 50173/FLN-BH03). However, from aerial photograph interpretation, no pond(s) was observed in the location of the aforementioned borehole or within the Site. Further GI works in the investigation and design stage is required to assess the extent of these materials.

Handling of Unsuitable Materials

8.2.16 Unsuitable material such as un-engineered fill and alluvium may be encountered during excavation works within the development site. Further ground investigation is required to determine the extent, thickness and nature of the fill and alluvium within the Site where excavation is proposed.

8.2.17 Non-inert materials from demolition and construction activities will be reused and recycled within the site as much as possible before disposal. Disposal should be considered as last resort and is proposed to be disposed of at one of the three strategic landfills, according to current practices.

Importation of fill materials

8.2.18 As the volume of C&D material generated from the Site or the fill imported to the Site are currently estimated to be less than 50,000m^3, Construction and Demolition Material Management Plan (C&DMMP) is not required for this Project in accordance with the Project Administration Handbook (Chapter 4 and ETWB TCW No. 19/2005. Based on the preliminary design, it is noted that Tuen Mun Area 38 Fill Bank is the nearest public fill reception facility to the Study Area, the available supply of fill material and location of fill source are subject to further agreement with Public Fill Committee of CEDD in later investigation and design stage.

Conclusion

8.2.19 The estimated cut and fill volume for the proposed site formation works is summarised in below.

Table 8.3 Estimated Cut and Fill Volume in Terms of Site Formation

Cut (m3)		Fill (m3)	Surplus (+) / Deficit (-) (m3)
Unsuitable Soil Materials	Suitable Material		
410	6,060	49,995	-44,035

8.2.20 There is no insurmountable technical problem in terms of site formation works at this stage. As only limited geological information can be obtained at the current stage, site specific GI works should be carried out in the investigation and design stage to further verify the geological conditions of the Site.

8.3 DRAINAGE

8.3.1 The Preliminary Drainage Impact Assessment (DIA) has been carried out to identify, assess the drainage impact after the implementation of the Development; and proposed appropriate mitigation measures, if necessary, to mitigate any potential adverse drainage impacts.

8.3.2 The existing & proposed drainage systems located in the vicinity of the Site as shown on **FIGURE 64 to 68**.

8.3.3 Rational Method is adopted for estimating the peak flows based on the size, runoff coefficient of the sub-catchment and the intensity of the storm event. The design rainfall intensity is determined in accordance with the Intensity-Duration-Frequency (IDF) relationship as specified in Section 4.3.3 in the Stormwater Drainage Manual (SDM) – Fifth Edition, January 2018 published by the Drainage Services Department (DSD).

8.3.4 The Site is located in urban area. In accordance with Section 6.6.2 and Table 10 of SDM, the flood protection standard of the drainage system can be referred to 'Urban Drainage Branch System' and 'Urban Drainage Trunk System'. Pipe size or the equivalent diameter in case of a box culvert less than 1.8m is considered as branch drain, while pipe or box culvert with an equivalent diameter equal of larger than 1.8m is considered as trunk drain. The impact of a 50-year event and 200-year event is assessed for branch drains and trunk drains respectively.

8.3.5 To consider the effect of climate change in the drainage design, the projection of rainfall increase percentage and sea level rise given in Table 28 and Table 29 of SDM is added to the respective design rainfall intensities/synthetic rainstorm profiles and design extreme sea levels. Climate Change Effect up to end-21st century is adopted in the assessment and summarized in below .

Table 8.4 Rainfall and Sea Level Projection due to Climate Change

	Rainfall Projection	Sea Level Projection (m)
End of 21st Century (2081-2100)	16.0%	0.47

8.3.6 The hydraulic capacity of the proposed drain pipe is controlled by its size, shape, gradient and friction resistance. In the hydraulic analysis, Colebrook-White Equation is used for the drain pipes and box culvert while Manning's Equation is used for channel.

8.3.7 Precast concrete pipes and concrete-lined channel with poor condition is assumed for both existing and proposed drainage system. With reference to Table 13 & 14 of SDM, the roughness coefficients for Colebrook-White equation (ks) for pipeline system and Manning equation (n) for open channel are 0.6mm and 0.018 respectively.

8.3.8 Ng Tung River has a width of approximately 68m and runs from the western end of the Site, to the south-eastern end. The existing drainage network within the Site generally discharges to Ng Tung River.

8.3.9 Three stormwater discharge points are proposed as shown in **FIGURE 64**. Runoff from eastern part of the Development (catchment NC1) will be discharged to the terminal manhole TSMH01 and connected to the existing manhole SCH1021350 by 600 dia. pipe, which then discharge to Ng Tung River via the existing outfall inlet pipe (DN600).

8.3.10 Runoff from western part of the Development (catchment NC2) will be discharged to the terminal manhole TSMH02 and TSMH03 connected to the existing inlet SCH1004260 by 1050 dia. & 1200 dia. pipe, which then discharge to Ng Tung River via the existing outfall inlet pipe (DN1350).

8.3.11 In order to collect the surface runoff from adjacent hilly terrain, the crest of retaining wall/slope is proposed to intercept by 525mm peripheral u-channel with 600mm maintenance access and discharge to the existing drainage system directly.

8.3.12 Proposed connection from FEHD facilities and PTT will be discharging into nearby existing manhole as shown in **FIGURE 64**.

8.3.13 Additional surface runoff can be anticipated due to the increased paved area in the site. As a result, the existing drainage system at the downstream of the connection point shall bear the increased burden.

8.3.14 The existing drainage system have sufficient capacity to cater the additional runoff after development. As a result, it is considered that the Development would not cause any adverse drainage impact nor worsen the existing drainage condition.

8.3.15 To facilitate the stormwater drainage discharge from the Development, three stormwater discharge points (TSMH01, TSMH02, and TSMH03) are proposed for further connection of the internal drainage system of the Development.

8.3.16 It is concluded that there is no insurmountable impact to the drainage infrastructure due to the Development. The proposed drainage discharge work is considered technically feasible and construction viable. It will be carried out during the site formation works for the Site.

8.4 SEWERAGE

8.4.1 The Preliminary Sewerage Impact Assessment (SIA) has been carried out to identify, assess the sewerage impact after the implementation of the Development; and proposed appropriate mitigation measures, if necessary, to mitigate any potential adverse sewerage impacts.

8.4.2 The following approach and methodology have been adopted in this sewerage impact assessment: -

• Carry out the desktop study and site visit to collect the relevant information for the assessment; • Investigate and review the existing and planned sewerage networks and determine the sewage flow generated from the existing development;

• Determine the potential sewage arising from the proposed Development; and;

• Formulate options to mitigate the sewerage impacts identified and recommend the sewage disposal system.

8.4.3 For the existing sewers and proposed sewers design, Colebrook-White equation has been used to assess the hydraulic performance.

8.4.4 Desktop study has been undertaken to collect the relevant information for the assessment. The relevant information collected is summarised below: -

• Sewerage Record Plan in the vicinity of the Development;

• Topographic data at the Development;

• Sewage flow generation from the existing buildings (if any) and current/planned interface projects; and

• Treatment capacity of the existing/planned Sewage Treatment Works.

8.4.5 The sewage flow generated from the Development is based on the following standards, guidelines and reference for the sewerage and sewage treatment design: -

• Sewerage Manual Part 1 – Key Planning Issues and Gravity Collection System, Third Edition, May 2013 published by DSD;

• Sewerage Manual Part 2 – Pumping Stations and Rising Mains, Second Edition, May 2013 published by DSD; and

• Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning (GESF) published by Environmental Protection Department (EPD).

8.4.6 The hydraulic analysis of the proposed sewerage system is based on the conditions of free flow under the design sewage flow from the Development. The capacity for gravity sewers is assessed using the Colebrook–White equation.

8.4.7 The Unit Flow Factors (UFF) for Domestic Flow and Commercial and Institutional Flow have been adopted in accordance with Table T-1 and Table T-2 of the GESF. The category of the components and the Unit Flow Factors adopted in the assessment are indicated in below.

Table 8.5 Unit Flow Factors for Domestic and Commercial Flow

Component	Category/ Use	UFF (m^3/person/day)
Domestic Flow	Public Rental / Subsidised Sale Flats	0.19 / 0.27
	Private housing (R2)	0.27
	Private housing (R3)	0.37
	Modern village	0.27
	Temporary and non-domestic	0.15
Commercial Flow (Note)	J1 Manufacturing (Sha Tin)	0.53
	J3 Transport, Storage & Communication	0.18
	J4 Wholesale & Retail	0.28
	J6 Finance, Insurance, Real Estate & Business Services	0.08
	J10 Restaurants & Hotels	1.58
	J11 Community, Social & Personal Services	0.28

Note: The unit flow factor of commercial employee 0.08 m^3/h/d is added into the Commercial Flow Factor.

8.4.8 The Catchment Inflow Factors (P_{cif}) cater for the net overall ingress of water or waste water to the sewerage system. They are catchment-dependent and applicable to major sewerage facilities of a catchment. They are not applicable to new catchments which are deemed to be free from misconnections and pipe defects. Therefore, the Pcif are not applicable in estimating the total flows from the new development areas.

8.4.9 For the existing sewerage system in North District, P_{cif} of 1.00 will be adopted in accordance with Table T-4 of the GESF.

8.4.10 The average sewage flow, $Q_{average}$, is as follows: -

$$Q_{average} = (Q_{domestic} + Q_{commercial} + Q_{other}) \, x \, P_{cif}$$

8.4.11 Peaking factors cater for seasonal / diurnal fluctuation and normal amount of infiltration and inflow. The peaking factors shall be in accordance with Table T-5 of GESF and are shown in below .

Table 8.6 Peaking Factors for Various Population Ranges

Population Range	Peaking Factor (including Stormwater allowance) for facility with existing upstream sewerage	Peaking Factor (excluding Stormwater allowance) for facility with existing upstream sewerage
(a) For sewers		
<1,000	8	6
1,000 – 5,000	6	5
5,000 – 10,000	5	4
10,000 – 50,000	4	3
>50,000	Max (7.3/ $N^{0.15}$, 2.4)	Max (6/ $N^{0.175}$, 1.6)
(b) Sewage Treatment Works, Preliminary Treatment Works and Pumping Stations		
<10,000	4	3
10,000 – 25,000	3.5	2.5
25,000 – 50,000	3	2
>50,000	Max (3.9/ $N^{0.065}$, 2.4)	Max (2.6/ $N^{0.065}$, 1.6)

N is the contributing population in thousands

8.4.12 Peaking factors (including stormwater allowance) are usually applied to assess and design sewers, as a measure to take into account the deterioration of pipe conditions with time despite that new sewerage systems are provided.

8.4.13 The following facilities are assumed for assessment purpose.

a. Housing blocks with 4,875 / 3900 flats;

b. Retail/commercial facilities;

c. Educational institutions, including: -

   i. Kindergarten/Nursery Class

d. Welfare facilities, including: -

   i. 50-place Day Activity Centre (DAC)

   ii. 50-place Hostel for Severely Mentally Handicapped Persons (HSMH)

   iii. 50-place Hostel for Moderately Mentally Handicapped Persons (HMMH)

   iv. 50-place Hostel for Severely Physically Handicapped Persons (HSPH)

   v. 30-place Supported Hostel for Mentally/Physically Handicapped Persons (SHOS(MPH))

   vi. 120-place Integrated Vocational Rehabilitation Services Centre (IVRSC)

   vii. 150-place Residential Care Home for the Elderly (RCHE) cum 30-place Day Care Unit (DCU)

8.4.14 The reprovision of Public Toilet (PT) and Refuse Collection Point (RCP) at the western part of the Site Boundary will be designed as per standard in detailed design stage later. Due to the flow generated is negligible, the flow estimation from PT and RCP can be inclusive with the domestic flow from housing blocks with 10% buffer.

8.4.15 Based on the DSD's Sewerage Record Plan, there is no existing sewer in the vicinity of the Development. The nearest sewer is across Ng Tung River at the intersection of Tin Ping Road and Lung Sum Avenue. The size of the aforementioned gravity sewer is only 225mm dia., which envisaged would not have sufficient capacity to handle the additional sewage flow from the Development.

8.4.16 The Site falls into the catchment of Shek Wu Hui Sewerage Treatment Works (SWHSTW). The existing sewage treatment design capacity of the SWHSTW is 105,000m^3/day. It provides secondary treatment to sewage collected from Sheung Shui, Fanling and adjacent areas. **(FIGURE 69 and 70)**

8.4.17 There will be a new sewerage system including gravity sewers, rising mains and sewage pumping stations to accommodate the sewage generated from the NDAs and planned development in North District. This new sewerage system will discharge directly the collected sewage to SWHSTW **(FIGURE 71 and 72)**.

8.4.18 As advised by CEDD/NDO in the coordination meeting on 12 August 2021, the sewerage including the pumping station under the FLN NDA project should be designed to cater for the Development. A new gravity sewer is proposed from the Development connecting to the planned Sewage Pumping Station (PS2) of the FLN NDA project. The collected sewage will then convey to planned Sewage Pumping Station (PS3) of FLN NDA project via their planned rising main (2xDN150) and gravity sewers (DN525 & DN1500), and subsequently discharge to SWHSTW via rising main (2xDN900). Further liaison will be required in the detailed design stage for ascertaining any interfacing issues.

8.4.19 To cope with the latest population growth and new developments in the catchment, further expansion of the SWHSTW is planned to be carried out in three phases, namely Main Works Stage 1, Stage 2 and Stage 3. The expansion involves upgrading works in treatment capacity from existing 105,000m^3/day to 190,000m^3/day with tertiary treatment level as shown on below.

Table 8.7 Upgrading Programme of SWHSTW

Expansion Phases	Treatment Capacity (m^3/day)	Tentative Year of Commissioning
Existing + Advance Works	105,000	2019
Main Works Stage 1	140,000	2025
Main Works Stage 2	160,000	2029
Main Works Stage 3	190,000	2034

8.4.20 For assessment purpose, an additional 10% increase in number of flats and design population is applied as design buffer according to the Study Brief. Based on the design population of the Development, the Average Dry Weather Flow (ADWF) of the Site is estimated and shown on below.

Table 8.8 Estimated Average Dry Weather Flow Sewage from the Development

Type		Scenario A			Scenario B		
		Population / No. of Staff	UFF (m^3/h/d)	ADWF (m^3/d)	Population / No. of Staff	UFF (m^3/h/d)	ADWF (m^3/d)
Proposed Public Residential		14,480	0.19	2751.2	11583	0.27	3127.41
		Subtotal (A)		*2751.2*	*Subtotal (A)*		*3127.41*
Welfare Facilities							
Day Activity Centre (DAC)		18	0.28	5.04	18	0.28	5.04
HSMH	Employee	34	0.28	34	0.28	34	34
	Resident	50	0.19	50	0.19	50	50
HMMH	Employee	20	0.28	20	0.28	20	20
	Resident	50	0.19	50	0.19	50	50
HSPH	Employee	38	0.28	38	0.28	38	38
	Resident	50	0.19	50	0.19	50	50
SHOS(MPH)	Employee	9	0.28	9	0.28	9	9
	Resident	30	0.19	30	0.19	30	30
IVRSC		19	0.28	5.32	19	0.28	5.32
RCHE cum DCU	Employee	71	0.28	71	0.28	71	71
	Resident	150	0.19	150	0.19	150	150
		Subtotal (B)		*121.22*	*Subtotal (B)*		*121.22*
Other Facilities							
Retail/ Commercial Facilities	Retail	133	0.28	37.24	107	0.28	29.96
	Restaurant	22	1.58	34.76	18	1.58	28.44
Kindergarten	Employee	22	0.28	6.16	18	0.28	5.04
	Student	335	0.04	13.4	268	0.04	10.72
		Subtotal (C)		*91.56*	*Subtotal (C)*		*74.16*
Total ADWF (A)+(B)+(C)				**2963.98**			**3322.79**

8.4.21 The additional sewage flow from PT and RCP will have own terminal manhole to be discharge into the TMH01 before conveyed via the proposed DN450 gravity sewer laid along the riverside road next to Ng Tung River (currently maintained by DSD) to the planned Sewage Pumping Station (PS2) of the FLN NDA project as shown on **FIGURE 69 to 71** . The proposed gravity sewer with a total length of approximately 396 m is designed to cater for the above identified worst case scenario of the Development.

8.4.22 The planned infrastructure works under FLN NDA project will comprise of a new sewerage system including gravity sewers, rising mains and sewage pumping stations. As advised by CEDD/NDO, the sewerage including the pumping station under the FLN NDA project should be designed to cater for the Development.

8.4.23 Sewage generated from the Development will be collected and discharged to a proposed terminal manhole (TMH) within the Site. The total sewage generated from the Development is estimated to be 3,323 m^3/day.

8.4.24 The collected sewage would then be conveyed to the planned Sewage Pumping Station (PS2) of the FLN NDA project via the proposed DN450 gravity sewer along the riverside road next to Ng Tung River (currently maintained by DSD) and eventually to SWHSTW via planned rising mains, gravity sewers and Sewage Pumping Station (PS3) of FLN NDA project.

8.4.25 The capacity of the planned PS2 would be designed to cater for the proposed development at Wa Shan. Details of PS2 and associated sewer mains from PS2 to SWHSTW will be under separate submission under Agreement no. CE18/2019(CE). The necessary upgrading works of planned PS2 and its downstream associated rising mains/sewers has been agreed-in-principle with the relevant project office (i.e. CEDD/NDO).

8.4.26 After the completion of upgrading works in 2029, the treatment capacity of SWHSTW will be increased to 160,000 m^3/day. The additional ADWF generated from the Development is estimated at 3,323 m^3/day. The additional flow only utilizes approximately 2.08% of the treatment capacity. EPD advised that this Development is within the catchment of SWHSTW, which is being upgraded, and that sufficient capacity will be timely provided in phases with the TPEDM forecasted population to be accommodated by all existing and planned development within its catchment. Therefore, it is concluded that there is no adverse impact on the sewerage due to the Development.

8.5 WATERWORKS

8.5.1 The Preliminary Water Supply Impact Assessment (WSIA) has been carried out to identify and assess the water supply impact after the implementation of the Development; and proposed appropriate mitigation measures, if necessary, to mitigate any potential adverse water supply impacts.

8.5.2 The water demand for the Development was estimated in accordance with Water Supplies Department's (WSD) Departmental Instruction (DI) No. 1309. The assessment of watermain under fire-fighting scenario was also performed based on the requirement stipulated in WSD's DI No. 1309.

8.5.3 The unit demands used in estimating the potable water and flushing water consumption for the proposed Development are presented in the . The unit demands are based on unit water demand in WSD's DI 1309. The following design parameters are adopted for the design of the proposed water supply system: -

Table 8.9 Potable and Flushing Water Unit Demand

Type	Unit	Potable Water Demand	Flushing Water Demand
Residential - R1	m^3/h/d	0.23	0.104[2]
Service Trade – Yuen Long, Fanling/ Sheung Shui	m^3/h/d	0.04	-
GIC Employee [1]	m^3/h/d	0.21	0.07
Irrigation use	m^3/ha/d	100	-

Note: [1] Total water demand for employee (0.28m^3/h/d) refers to EPD Report No.: EPD/TP 1/05 for sewage flow from employee of community, social & personal services. With the assumption of flushing water demand same as residential consumers (0.07m^3/h/d), potable water demand of 0.21m^3/h/d is assumed.

[2] Flushing water unit demands is adopted as per advised from WSD.

8.5.4 In accordance with the WSD's DI 1309, the following design parameter and peak demand factors are adopted for the design of proposed water supply system.

8.5.5 The minimum capacity of the distribution system should be sufficient for the following peak demands.

- Fresh Water – 3 times Mean Daily Demand (MDD)
- Flushing Water – 2 times MDD

8.5.6 Under the fire-fighting scenario, hydraulic analysis has taken account of additional withdrawal at the extremity of the system with adjustment on the demand as below:

- Fresh Water – 1 times MDD

8.5.7 For the water demand for fire-fighting, it is assumed that two 65mm outlets of a system delivering at the same time, i.e. total output of not less than 4,000 litres per minute (66.7 litre/second). The more precise water demand for fire-fighting should be further coordinated in the investigation stage. The analysis assumes concurrent fires would not occur within the same supply zone.

8.5.8 The system should meet the criteria as shown in below.

Table 8.10 Design Criteria for Fresh Water Main and Salt Water Main

Scenario ID	Description	Min. Residual Head (m)			Max. Velocity of Distribution Pipeline under Peak Flow Condition (m/s)
		Fresh Water	Fire	Salt Water	
Fresh	Daily Operation (Without Fire-Fighting)	20	N/A	N/A	3
Fire	With Fire-Fighting	20	17	N/A	N/A
Salt	Daily Operation	N/A	N/A	15	3

8.5.9 For the purpose of the assessment, the following flow velocity for existing water main is assumed as shown in . This is used to calculate the head loss and residual head available at the connection points at the site boundary.

Table 8.11 Flow Velocity for Fresh Water Main and Salt Water Main

Water Main	Pipe Diameter (mm)	Flow Velocity (m/s)
Fresh	> DN700	3
	DN700 – DN525	2.5
	DN450 – DN375	2
	< DN300	1.5
Salt	≥ DN1000	3
	DN900 – DN800	2.5
	DN700 – DN525	2
	< DN450	1.5

8.5.10 Existing fresh water mains and salt water mains record plans are obtained from WSD as shown in **FIGURE 73**. Existing 80mm dia. fresh water mains are identified at southern of the Site and across Ng Tung River. Existing 40mm dia. fresh water main is tee-off from the abovementioned 80mm fresh water main to supply for area within the Site. Notably, there is a section of an existing 80mm dia. fresh water pipe along the access road to Shek Wu San Tsuen falls within the Site, which supplies fresh water to residential area outside the site boundary.

8.5.11 Existing fresh water supply to the area is supplied by Table Hill Fresh Water Service Reservoir (THFWSR). The capacity of THFWSR is currently 27,450m^3. The invert level is +100mPD and top water level is +106mPD.

8.5.12 There is no existing salt water supply system exists in the vicinity of the Site.

8.5.13 The project by CEDD/NDO under Agreement no. CE 18/2019 (WS) – "Development of Fanling North New Development Area, Remaining Phase – Design and Construction" would construct the proposed water supply system including fresh water and flushing water distribution mains within the FLN NDA boundary as shown in **FIGURE 74 to 75**.

8.5.14 For assessment purpose, an additional 10% increase in number of flats and design population is applied as design buffer according to the Study Brief. Thus, the number of flats and design population of the proposed public housing development at Wa Shan is projected assumed to about 5,363 and 14,480 respectively.

8.5.15 With reference to DI No. 1309, the estimated fresh water demand and flushing water demand for the Development is about 4,022 m^3/day and 1,506 m^3/day respectively, as shown in and below.

Table 8.12 Estimated Mean Daily Fresh Water Demand from the Development

Type	Population/ No. of Staff	Unit Demand (m^3/h/d)	Mean Daily Demand (MDD) (m^3/d)
Proposed Public Residential	14,480	0.27 [1]	3,909.6
Landscape Area	1.125 ha [2]	100 [2]	112.5
		Total	**4,022.1**

Note: [1] Unit demand is included service trade, which has taken into account the general demand from social welfare facilities and retails & commercial activities such as restaurant, canteen, stores, clubhouse etc. associated with the residential developement.

[2] Assume 30% of gross site area to be landscape; unit demand adopted in m^3/ha/d.

Table 8.13 Estimated Mean Daily Flushing Water Demand from the Development

Type	Population/ No. of Staff	Unit Demand (m^3/h/d)	Mean Daily Demand (MDD) (m^3/d)
Proposed Public Residential	14,480	0.104[1]	1,505.92
		Total	**1,505.92**

Note: [1] Unit demand is adopted as per WSD's advice, which has taken into account the general demand from social welfare facilities and retails & commercial activities such as restaurant, canteen, stores, clubhouse etc. associated with the residential developement.

8.5.16 It is noted that the existing THFWSR has been committed to demands of other potential developments and supplying to the Development by THFWSF would not be an option. Hence, it is proposed to source the fresh water and flushing water supply from planned new fresh water service reservoir (i.e. FLN FWSR) and flushing water service reservoir (i.e. FLN FLWSR) under FLN NDA project.

8.5.17 A fresh water main and a flushing water main are proposed to tee-off from the planned DN600 fresh water main and DN400 flushing water main under FLN NDA project adjacent to the Site at the junction of the access road across Ng Tung River. The water supply might be inclusive to the RCP/PT facilities at the western part of Site. The pipe sizes are proposed to be 400mm, 150mm, 200mm for fresh, flushing, fire service water main, respectively.

8.5.18 The proposed connection point to planned DN600 fresh water main and DN400 flushing water main can be referred to **FIGURE 76** and **FIGURE 77** respectively. All water main lead-in connections or locations should be subject to the architectural planning for the Development in later stage.

8.5.19 The residual head and invert level of the proposed potable and flushing water inlet during daily operation at the site boundary is listed on the below.

Table 8.14 Residual head and invert level of water mains

Location	Residual Head (m)			Invert Level (mPD)		
	Fresh Water	Fire	Flushing Water	Fresh Water	Fire	Flushing Water
Wa Shan	57.677	56.203	25.106	8.600	8.800	8.850

It is understood that water tank and pumps as inside service will be designed by project proponent for internal supply if necessary.

8.5.20 An assessment of the adequacy of the planned new FLN Fresh Water Service Reservoir (FWSR) is provided below.

Planned New FLN FWSR (Capacity [1] = 55,754 m^3)	
Supply Zone	**Mean Daily Demand (m^3/day)**
Supply zone fresh water demand	51,374 m^3/day [2]
Proposed development site	4,022 m^3/day
Total	55,396 m^3/day

Note: [1] Data source from WSIA of FLN NDA (Rev. 2 dated Feb 2022).
[2] With reference to WSIA of FLN NDA obtained from CEDD, total of planned fresh water demand which comprises of (i) daily average fresh water demand of 18,863 m^3/day within the FLN NDA full development; (ii) daily average fresh water demand of

1,243 m^3/day generated from the population under Land Use Review 2.0; and (iii) fresh water demand of 31,268m^3/day generated from other adjacent supply zones.

8.5.21 According to WSD's planning standard review conducted in 2006, the required storage capacity of the fresh water service reservoir is 75% of the mean daily demand (MDD) for isolated supply zone. Hence, the required storage capacity of the aforementioned FWSR is 75% of the MDD in this assessment.

8.5.22 It can be seen from the above table that with the Development, FLN FWSR with storage capacity 55,754 m^3, is larger than 41,547 m^3, i.e. 0.75 MDD or 0.75 x 55,396 = 41,547 m^3. Thus, the planned new FLN FWSR is adequate to supply the Development and no adverse impact is anticipated. No mitigation measure would be necessary.

8.5.23 An assessment of the adequacy of the planned new FLN Flushing Water Service Reservoir (FLWSR) is provided below.

Planned New FLN FLWSR (Capacity [1] = 9,990 m^3)	
Supply Zone	**Mean Daily Demand (m^3/day)**
Supply zone flushing water demand	12,488 m^3/day [1]
Proposed development site	1,506 m^3/day
Total	13,994 m^3/day

Note: [1] Information provided by CEDD/NDO via email dated 23 February 2023.

8.5.24 As advised by WSD, the required storage capacity of the reclaimed water service reservoir is 64% of the mean daily demand (MDD). Hence, the planned new FLN FLWSR with storage capacity 9,990 m^3, is larger than 8,956 m^3, i.e. 0.64 MDD or 0.64 x 13,994 = 8,956 m^3.

8.5.25 With reference to DI No. 1309, the estimated fresh water demand and flushing water demand for the Development is 4,022 m^3/day and 1,506 m^3/day respectively.

8.5.26 Minimum of 20 m residual head for fresh water supply can be provided from the planned fresh water and flushing water mains respectively. No mitigation measure would be necessary. It can be seen that with the Development, planned new FLN FWSR with future storage capacity 55,754 m^3, is larger than 41,547 m^3 (0.75 Mean Daily Demand). Whereas the planned new FLN FLWSR with storage capacity 9,990 m^3, is larger than 8,956 m^3 (0.64 Mean Daily Demand). Thus, both the planned new FLN FWSR and FLN FLWSR are adequate to supply the Development and no adverse impact is anticipated. No mitigation measure would be necessary.

8.6 UTILITIES

8.6.1 Relevant government departments and utility undertakings were contacted for collection of existing and planned utilities record within or in the vicinity of the study area.

8.6.2 The major existing services & utilities include:

(a) CLP Power Cable

(b) Town Gas Main

(c) Public Lighting Cable

(d) Telecommunication Cable

(e) Fresh Water & Flush Water Supply (incl. Fire Service)

(f) Sewerage System

(g) Stormwater Drainage System

8.6.3 Several 11kV cables will be affected by the Development. The 11kV cables is proposed to tee off from existing cables for power supply to the Site.

8.6.4 There are also 132kV overhead cables running along the east and west peripheries of the Site which could pose constraints to the Site. It was agreed that the 132kV overhead cables will be diverted prior to the construction of the proposed site formation and infrastructure works of this Project.

8.6.5 The nearest existing gas main is located at the footpath of Tin Ping Road. As discussed with Towngas, the gas supply for the Site will be extended from the existing medium pressure gas min at the junction of Lung Sum Avenue and Chi Cheong Street to the Site. Governor kiosk for regulating gas pressure from medium pressure to low pressure is required to be installed at the periphery of the Site.

8.6.6 The preliminary routing of the gas main is agreed to go under the Ng Tung River by using Horizontal Directional Drilling method, details of the routing will be discussed in detailed design stage.

8.6.7 Part of the HyD lightings cable were located in the Site and are proposed to be demission and removed. Distribution network of the lighting supply is proposed to be extended from the existing public lighting and its cable which is located of Lung Sum Avenue.

8.6.8 For the Site, the schematic design approach will aim to provide connections from the existing utilities or planned utilities from the NDA development. A list of new connection of utilities are proposed as follows:

(a) CLP electricity cables;

(b) Public lighting system;

(c) Telecom;

(d) Town gas;

(e) Sewerage system;

(f) Fresh Water Main (incl. Fire Service); and

(g) Flushing Water Main.

8.6.9 The programme for connection of the new utilities will be prepared for agreement with the utility undertakings in the design stage.

8.6.10 For those utilities encroached in the Site, suspension will be required. The list of utilities required to be abandoned are proposed as follows:

(a) CLP electricity cables;

(b) Public lighting system;

(c) Telecom; and

(d) Fresh Water Main (incl. Fire Service and Temporary Mains Flushing).

8.6.11 No utility reserve is required for the Site. Liaison works for any necessary upgrading works and detailed connection works shall also be arranged in detailed design stage.

8.6.12 As per the available information of the site and received existing utilities records from utilities undertakings, the site was assessed to be with no major constraints with sufficient spaces for the new utilities provision and diversion of existing utilities. Hence, it is considered that the proposed utilities works are technically feasible. It is concluded that there is no insurmountable impact to the existing utilities within and near the Site due to the development.

8.6.13 The extent of proposed works is shown on **FIGURE 78 to 81**.

9 IMPLEMENTATION PROGRAMME

9.1 KEY MILESTONE AND ACTIVITIES

9.1.1 The milestone dates of the key activities for this Project are summarised in **Table 9.1** below.

Table 9.1 Milestone Dates of the Key Activities

Key Activities	Milestone Dates
Completion of Rezoning Exercise	2023-2024 tentatively
Completion of Road Gazettal and Exco Authorization	2025
Commencement of Construction Phase	2025
Completion of Site Formation Works for Site Handover to HD	2027
Completion of Public Housing Construction	2031/32
Completion of Infrastructure Construction	2031
Building Completion	2031/32

9.1.2 The proposed implementation programme as shown in **Table 9.1** above would be further reviewed in later investigation and design stage of the Project.

10 CONCLUSION

10.1 CONCLUSION

10.1.1 The proposed development at Wa Shan, Sheung Shui, is demonstrated to be technically feasible in terms of traffic and transport, drainage, sewerage, water supply, geotechnical, environmental, landscape and visual and air ventilation aspects. Subject to the implementation of appropriate mitigation measures and improvement works, the proposed housing development will not induce any insurmountable impact on the community, environment and existing infrastructures.

SHEK WU SAN TSUEN

TIN PING SHAN TSUEN

WA SHAN

NG TUNG RIVER

WU NGA LOK YEUNG

831900 E

832100 E

832300 E

841000 N

840800 N

LEGEND :

DEVELOPMENT BOUNDARY

REZONING BOUNDARY

0 10 20 30 40 50
METRES
1 : 1000

Rev	Description	By	Date
-	FIRST ISSUE	HL	MAY 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)

TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
LAYOUT PLAN

Drawing no.
Figure 1

Rev.
-

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

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SHEK WU SAN TSUEN

WA SHAN

NG TUNG RIVER

OU(A)

G/IC

GB

AGR

O

OU

R(C)

R(B)

WU NGA LOK YEUNG

32

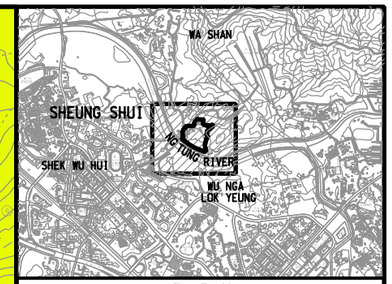
31

12

11

13

4



KEY PLAN

LEGEND :

- DEVELOPMENT BOUNDARY
- BOUNDARY OF OZP S/NE-FTA/16
- REZONING BOUNDARY
- O — OPEN SPACE
- AGR — AGRICULTURE
- GB — GREEN BELT
- OU — OTHER SPECIFIED USES
- OU (A) — OTHER SPECIFIED USES (AMENITY AREA)
- R (B) — RESIDENTIAL (GROUP B)
- R (C) — RESIDENTIAL (GROUP C)
- G / IC — GOVERNMENT, INSTITUTION OR COMMUNITY
- 4 — PLANNING AREA NUMBER

Rev	Description	By	Date
-	FIRST ISSUE	SC	JUL 21

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Project title

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TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
STATUTORY LAND USE ZONING PLAN

Drawing no. Figure 2 | Rev. -

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CAD	APR 2021	VS	YWY

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LEGEND :

DEVELOPMENT BOUNDARY

REZONING BOUNDARY



C. Aerial View of Ng Tung River from Existing Bridge



B. Aerial View from Northeastern of the Site

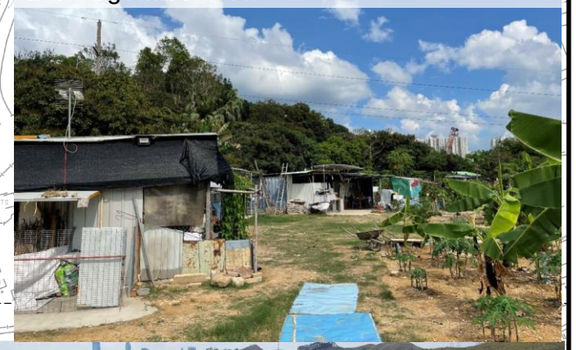
D. Temporary structure at southern portion of the Site used for heavy duty vehicle parking.



E. Area for Brownfield Operation

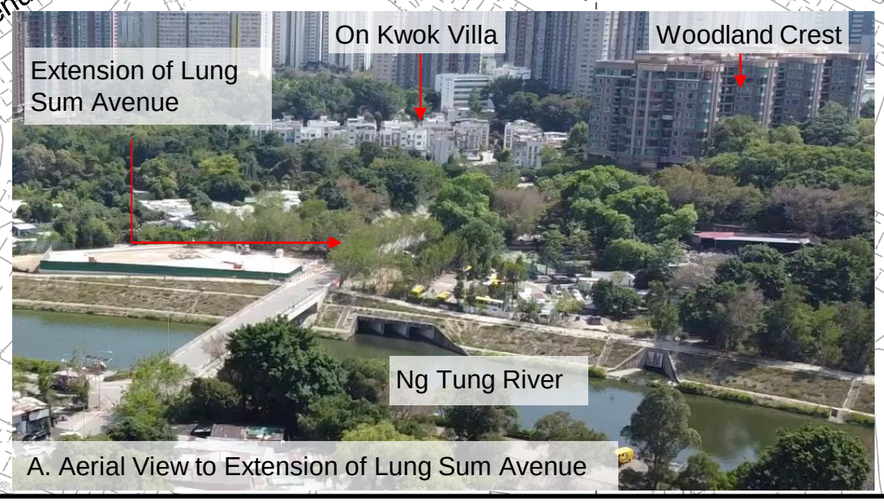


F. Area Occupied by Temporary Structures and Vegetated Area





H. Aerial View from Southeastern of the Site



A. Aerial View to Extension of Lung Sum Avenue

SHEK WU SAN TSUEN

WA SHAN

WU NGA LOK YEUNG

NG TUNG RIVER

Extension of Lung Sum Avenue

Woodland Crest

On Kwok Villa

A

B

C

D

E

F

H

831900 E

832100 E

840800 N

0 10 20 30 40 50
METRES
1 : 1000

Rev	Description	By	Date
–	FIRST ISSUE	HL	MAY 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

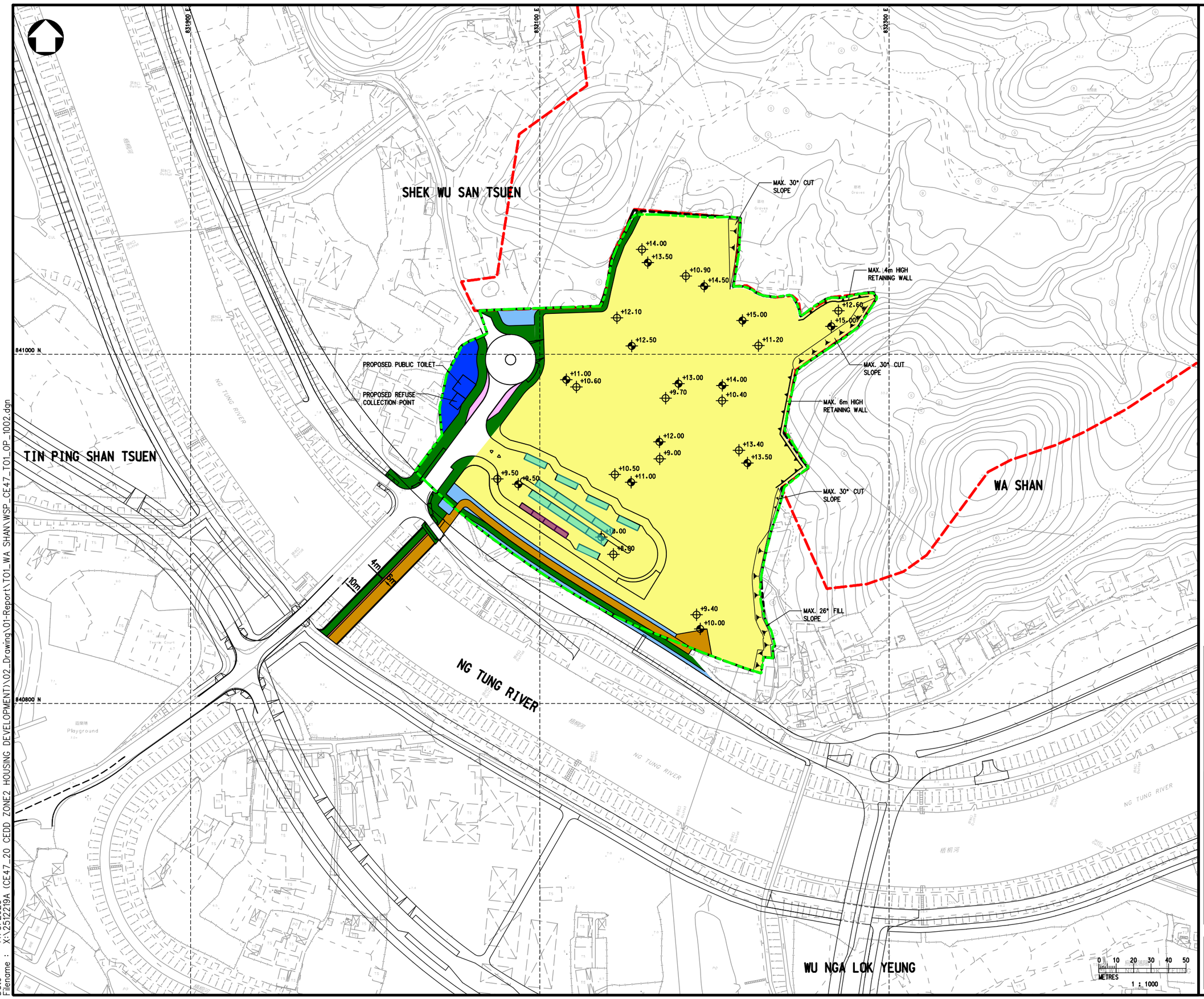
TASK ORDER NO. 1
WA SHAN
SURROUNDING LAND USE

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Figure 3			–
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LEGEND :

- DEVELOPMENT BOUNDARY
- NET SITE AREA (31400m²)
- REZONING BOUNDARY
- PROPOSED ACCESS ROAD
- PERMITTED BURIAL GROUND
- PLANNED ROAD UNDER FLN NDA
- PROPOSED FOOTBRIDGE
- PROPOSED FOOTPATH
- PROPOSED CYCLE TRACK
- LANDSCAPING / AMENITY AREA
- PROPOSED LOADING/UNLOADING AREA
- AREA ALLOCATED FOR REPROVISIONING OF THE FEHD REFUSE COLLECTION POINT AND PUBLIC TOILET (753m²)
- +10.00 EXISTING GORUND LEVEL
- +10.00 PROPOSED SITE FORMATION LEVEL
- PROPOSED SLOPE
- BUS BAY
- GMB BAY

Rev	Description	By	Date
–	FIRST ISSUE	VS	NOV 21

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wsp

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TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
INITIAL DEVELOPMENT LAYOUT PLAN OPTION 2

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Figure 4		–
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SHEK WU SAN TSUEN

TIN PING SHAN TSUEN

WA SHAN

NG TUNG RIVER

WU NGA LOK YEUNG

831900 E

832100 E

832300 E

841000 N

840800 N

BLOCK 4

BLOCK 3

BLOCK 2

BLOCK 1

+167

+160

+142

+161

+25

MAX. 4m HIGH RETAINING WALL

MAX. 6m HIGH RETAINING WALL

PROPOSED PUBLIC TOILET

PROPOSED REFUSE COLLECTION POINT

7.3m WIDE HARDPAVED A/A

PROPOSED FOOTBRIDGE CUM CYCLE TRACK (10m WIDTH) INCLUDE:
PROPOSED FOOTPATH (4m)
PROPOSED CYCLE TRACK (6m)

LEGEND :

- STUDY AREA FOR DEVELOPMENT
- HOUSING SITE BOUNDARY
- REZONING BOUNDARY
- PROPOSED ACCESS ROAD
- PERMITTED BURIAL GROUND
- PLANNED ROAD UNDER FLN NDA
- PROPOSED FOOTBRIDGE
- PROPOSED FOOTPATH
- PROPOSED CYCLE TRACK
- LANDSCAPING / AMENITY AREA
- PROPOSED LOADING/UNLOADING AREA
- AREA ALLOCATED FOR REPROVISIONING OF THE FEHD REFUSE COLLECTION POINT AND PUBLIC TOILET (753m²)
- +15.0 PROPOSED SITE FORMATION LEVEL
- PROPOSED SLOPE
- +10.00 PROPOSED BUILDING HEIGHT
- BUS BAY
- GMB BAY

0 10 20 30 40 50
METRES
1 : 1000

Rev	Description	By	Date
–	FIRST ISSUE	VS	NOV 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
SCHEMATIC BLOCK LAYOUT PLAN

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Figure 5			–
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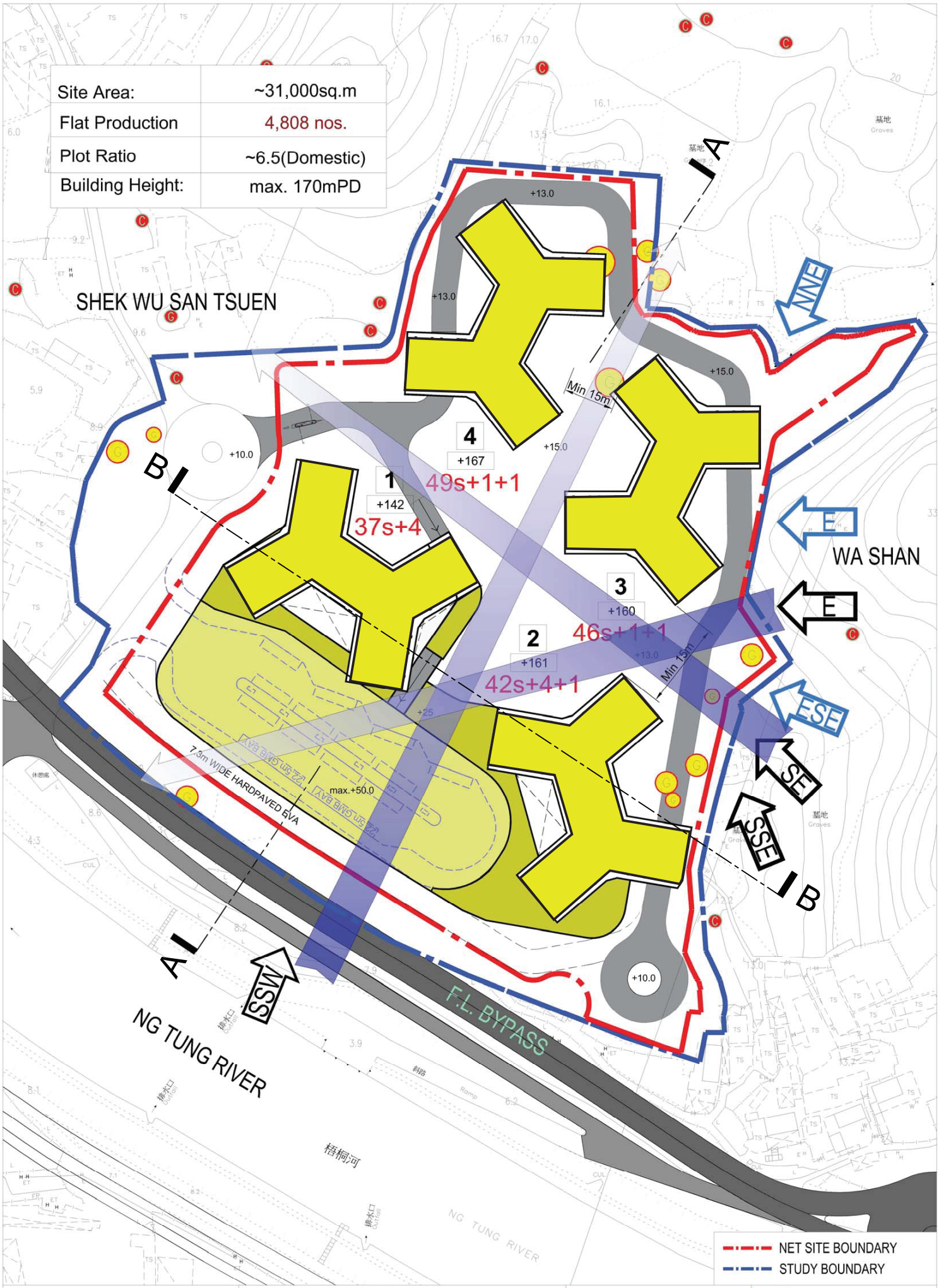
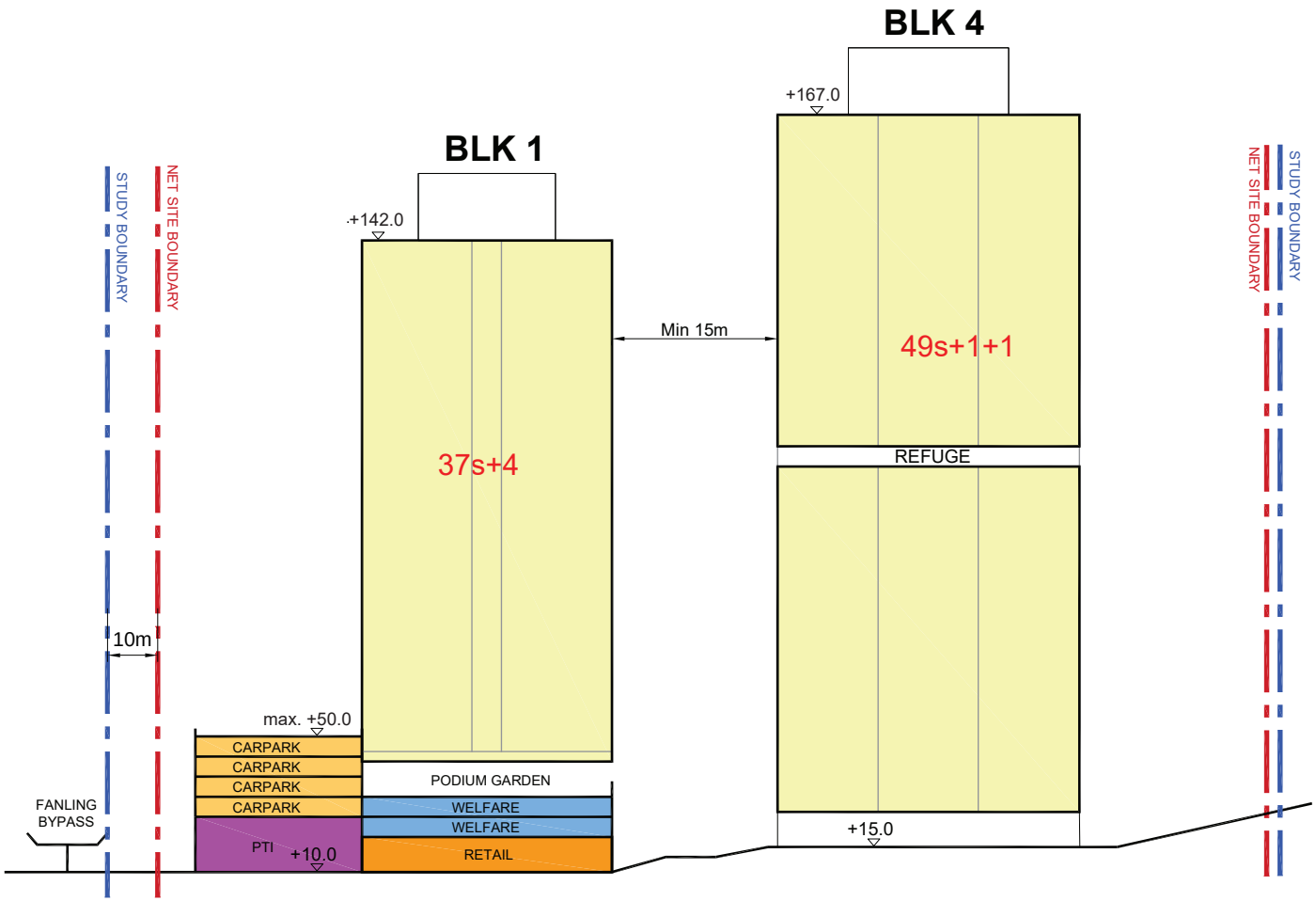

Site Area: ~31,000sq.m
Flat Production 4,808 nos.
Plot Ratio ~6.5(Domestic)
Building Height: max. 170mPD
SHEK WU SAN TSUEN
A
B
NNE
E
WA SHAN
ESE
SE
SSE
SSW
4
+167
49s+1+1
1
+142
37s+4
3
+160
46s+1+1
2
+161
42s+4+1
+13.0
+15.0
+10.0
+25
Min 15m
max.+50.0
7.3m WIDE HARDPAVED 5VA
22.5m CLWB BAY
NG TUNG RIVER
F.L. BYPASS
梧桐河
NET SITE BOUNDARY
STUDY BOUNDARY
POTENTIAL SITE
WA SHAN, SHEUNG SHUI
DRAWING TITLE
NOTIONAL LAYOUT PLAN
(Scheme 28)
THE NOTIONAL LAYOUT IS SUBJECT TO DETAIL DESIGN.
房 屋 署
HOUSING DEPARTMENT
比 例 SCALE
1:1000(A3)
日 期 DATE
26/07/2022

Figure 6



POTENTIAL SITE

WA SHAN, SHEUNG SHUI

DRAWING TITLE

SCHEMATIC SECTION A-A - SCHEME 28

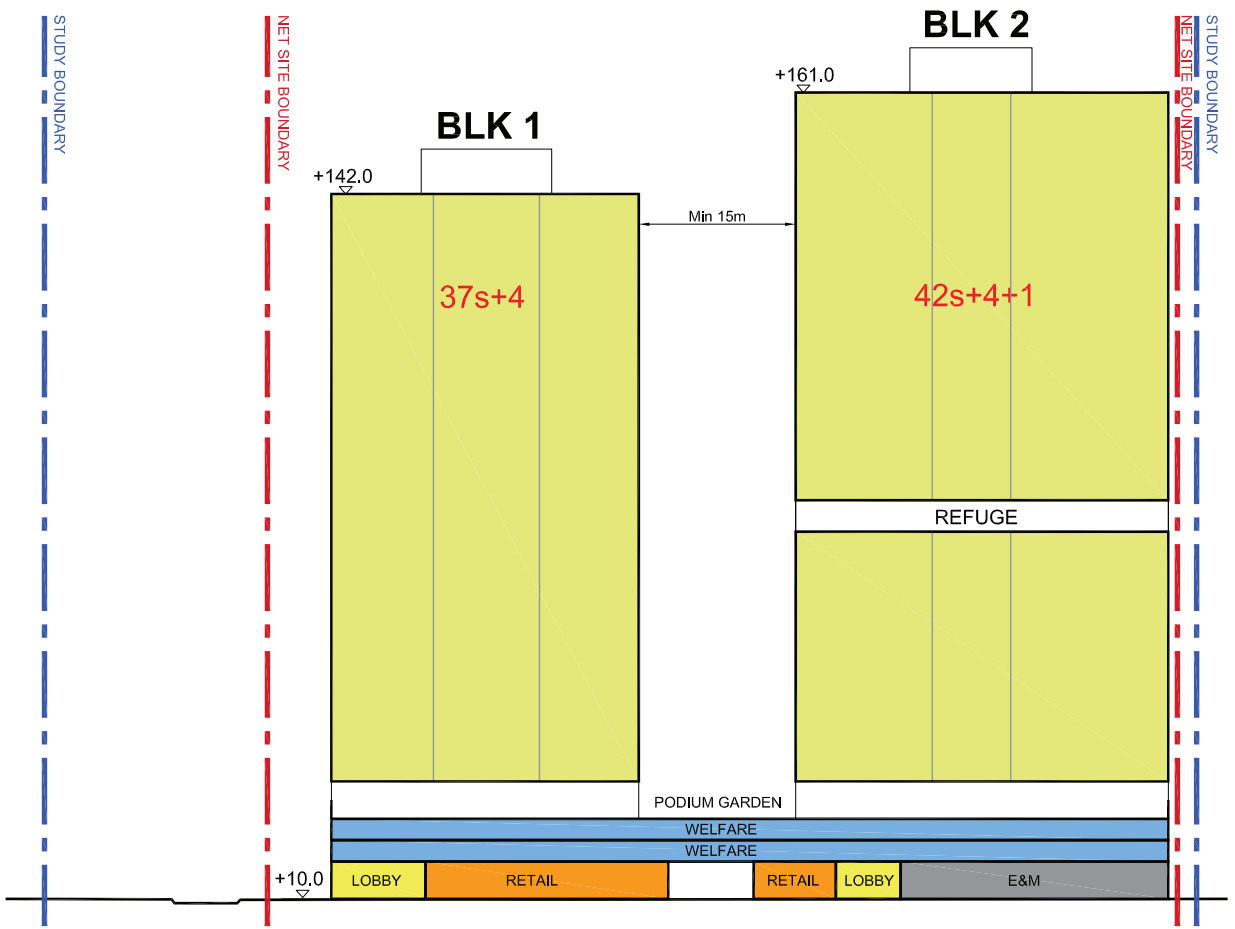
THE SCHEMATIC SECTION IS SUBJECT TO DETAIL DESIGN.

房 屋 署
HOUSING DEPARTMENT

比 例 SCALE

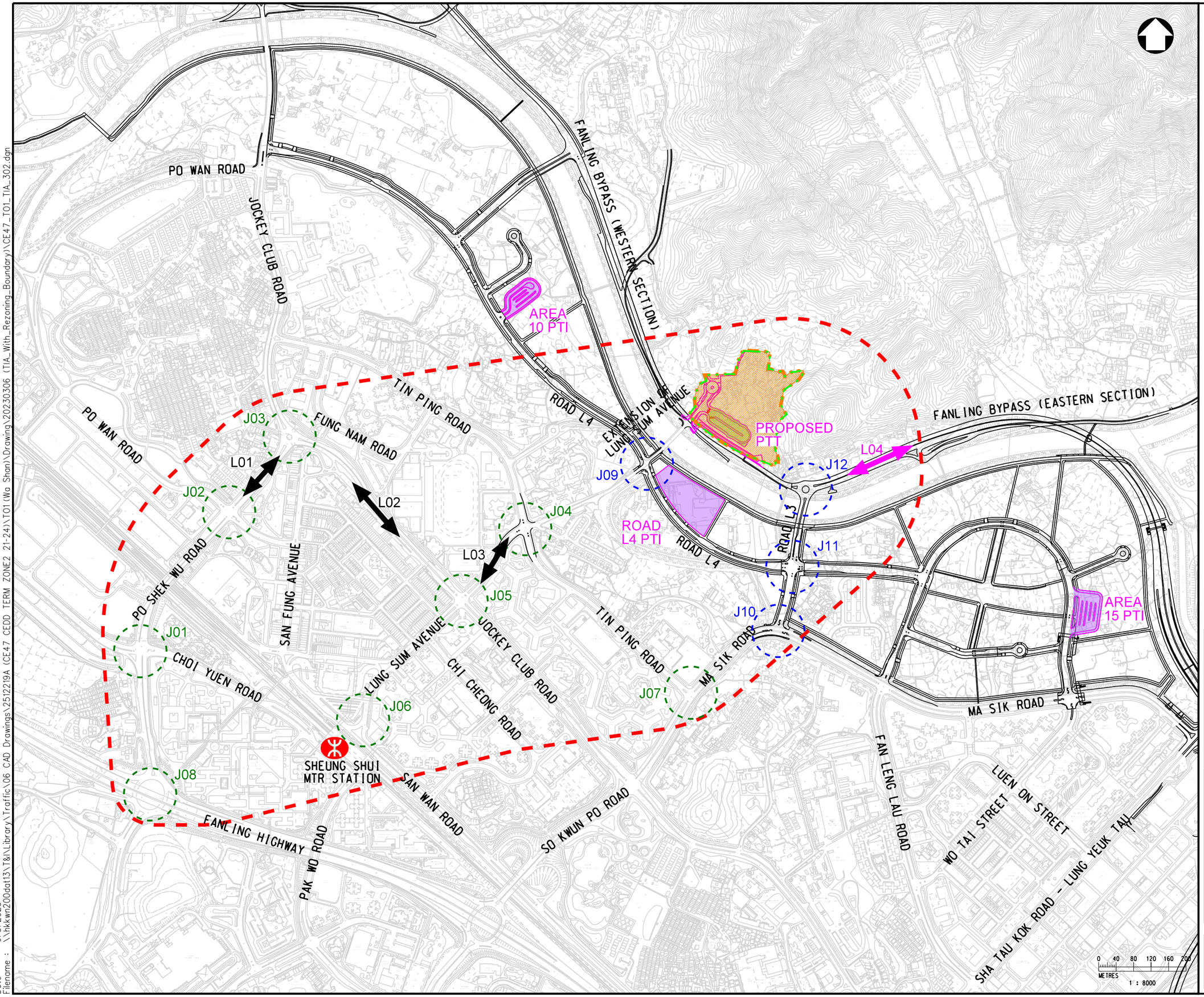
日 期 DATE

Figure 7



POTENTIAL SITE	DRAWING TITLE		
WA SHAN, SHEUNG SHUI	SCHEMATIC SECTION B-B - SCHEME 28	THE SCHEMATIC SECTION IS SUBJECT TO DETAIL DESIGN.	房 屋 署 HOUSING DEPARTMENT
			比 例 SCALE / 日 期 DATE

Figure 8



LEGEND :

- AREA OF INFLUENCE
- STUDY AREA FOR THE DEVELOPMENT
- REZONING BOUNDARY
- MTR STATION
- PROPOSED FUTURE ROAD/COMMITTED JUNCTION IMPROVEMENT UNDER FLN NDA
- J04 ASSESSED KEY JUNCTION WITHIN AOI
- J09 ASSESSED KEY JUNCTION UNDER FLN NDA
- L01 ASSESSED KEY ROAD LINK WITHIN AOI
- L04 ASSESSED KEY ROAD LINK UNDER FLN NDA
- PROPOSED PTI UNDER FLN NDA
- PROPOSED PTT

Rev	Description	By	Date
B	GENERAL AMENDMENT	WTL	03/23
A	GENERAL AMENDMENT	WTL	02/23

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)

TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

PROPOSED ROAD NETWORK UNDER FLN NDA

Drawing no.	Rev.
Figure 9	B

Drawn	Date	Checked	Approved
CAD	NOV 2022	-	EW

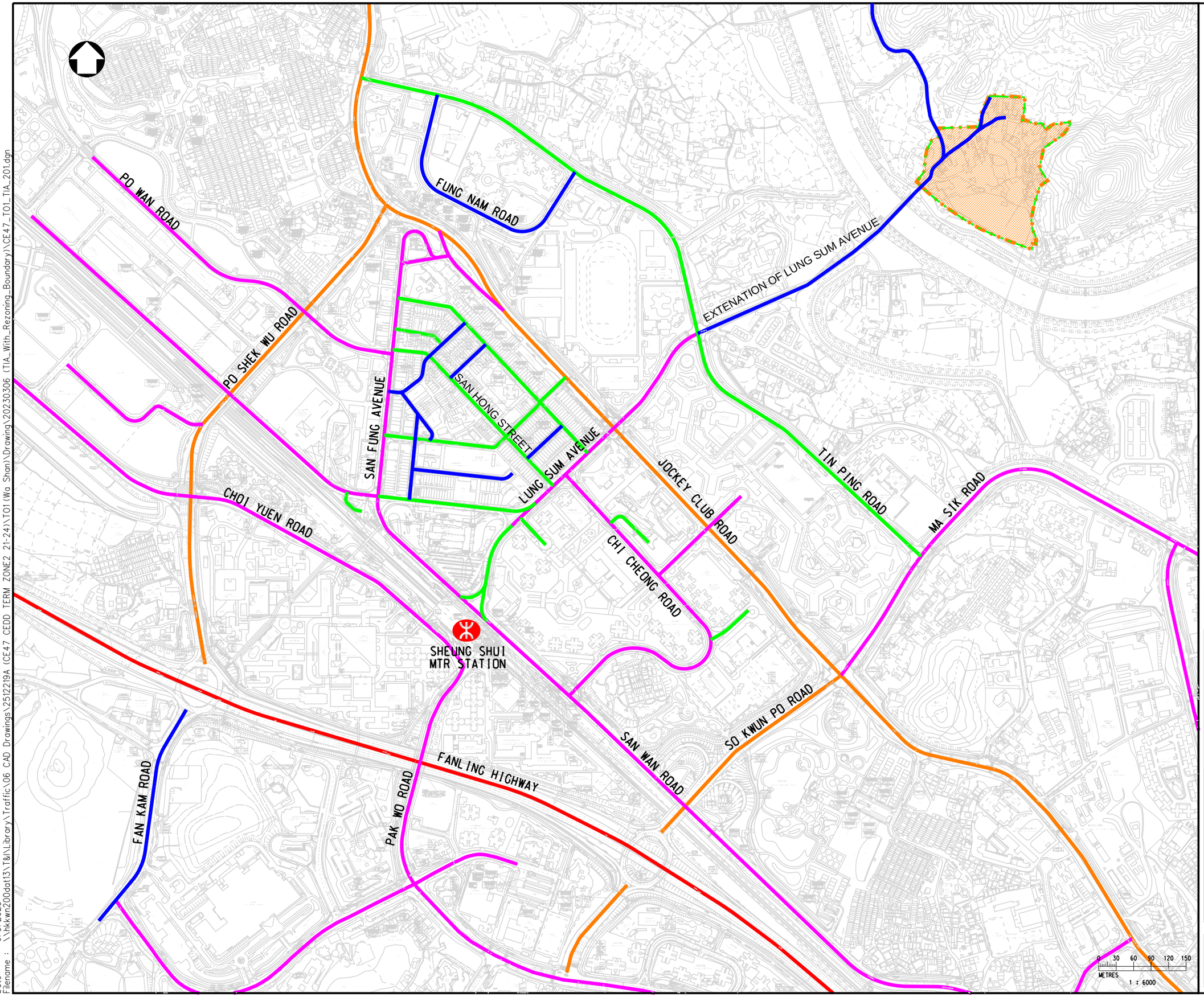
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Status:

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LEGEND :

- STUDY AREA FOR THE DEVELOPMENT
- REZONING BOUNDARY
- MTR STATION
- EXPRESSWAY AND UBRAN / RURAL TRUCK ROAD
- PRIMARY DISTRIBUTOR
- DISTRICT DISTRIBUTOR
- LOCAL DISTRIBUTOR
- RURAL ROAD

Rev	Description	By	Date
A	GENERAL AMENDMENT	WTL	03/23

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)

TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

EXISTING ROAD NETWORK IN THE VICINITY OF PROPOSED SITE

Drawing no.	Rev.
Figure 10	A

Drawn	Date	Checked	Approved
CAD	NOV 2022	-	EW

Scale 1:6000 (A3)

Status

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PROPOSED VEHICULAR ACCESS

EXISTING SINGLE TRACK ACCESS ROAD

PROPOSED RCP EGRESS

PROPOSED GENERAL LAYBY

PROPOSED PUBLIC TOILET

PROPOSED REFUSE COLLECTION POINT

PROPOSED RCP INGRESS

DSD'S MAINTENANCE ROAD

PROPOSED PTT ACCESS

PROPOSED FOOTBRIDGE CUM CYCLE TRACK (10m WIDTH) INCLUDE:
PROPOSED FOOTPATH (4m)
PROPOSED CYCLE TRACK (6m)

PROPOSED PROVISIONS ASSOCIATED WITH PTT (E.G. TRANSFORMER ROOM FOR EV CHARGERS, REST OFFICES, WELFARE FACILITIES FOR BUS SERVICE OPERATORS, IF NECESSARY

NG TUNG RIVER (RIVER INDUS)

NG TUNG RIVER

EXTENSION OF LUNG SUM AVENUE

FANLING BYPASS (WESTERN SECTION)

FANLING NORTH NEW DEVELOPMENT AREA (FLN NDA)

天平山
TIN PING SHAN
(SACRED HILL)

梧桐河

BUS DROP-OFF

BUS PICKUP

BUS STACKING

GMB

GMB STACKING

R15

0 7.5 15 22.5 30 37.5
METRES
1 : 1500

LEGEND :

- STUDY AREA FOR THE DEVELOPMENT
- REZONING BOUNDARY
- PROPOSED ROAD LAYOUT
- PUBLIC ROAD - CARRIAGEWAY
- PUBLIC ROAD - FOOTPATH
- PUBLIC ROAD - CYCLE TRACK
- INTERNAL ROAD OF PROPOSED DEVELOPMENT
- PROPOSED ANCILLARY FACILITIES (AREA:104M²)
- PROPOSED QUICK CHARGER (2,500MM * 1,500MM)
- BUS DROP-OFF BAY
- BUS PICK-UP BAY
- BUS STACKING BAY
- GMB BAY
- GMB STACKING

Rev	Description	By	Date
E	PLAND'S COMMENT	WTL	03/23
D	GENERAL AMENDMENT	WTL	03/23
C	GENERAL AMENDMENT	WTL	02/23
B	TD'S COMMENT	WTL	02/23
A	TD'S COMMENT	WTL	02/23

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

PROPOSED VEHICULAR ACCESS AND ROAD NETWORK

Drawing no. Figure 11 | Rev. E

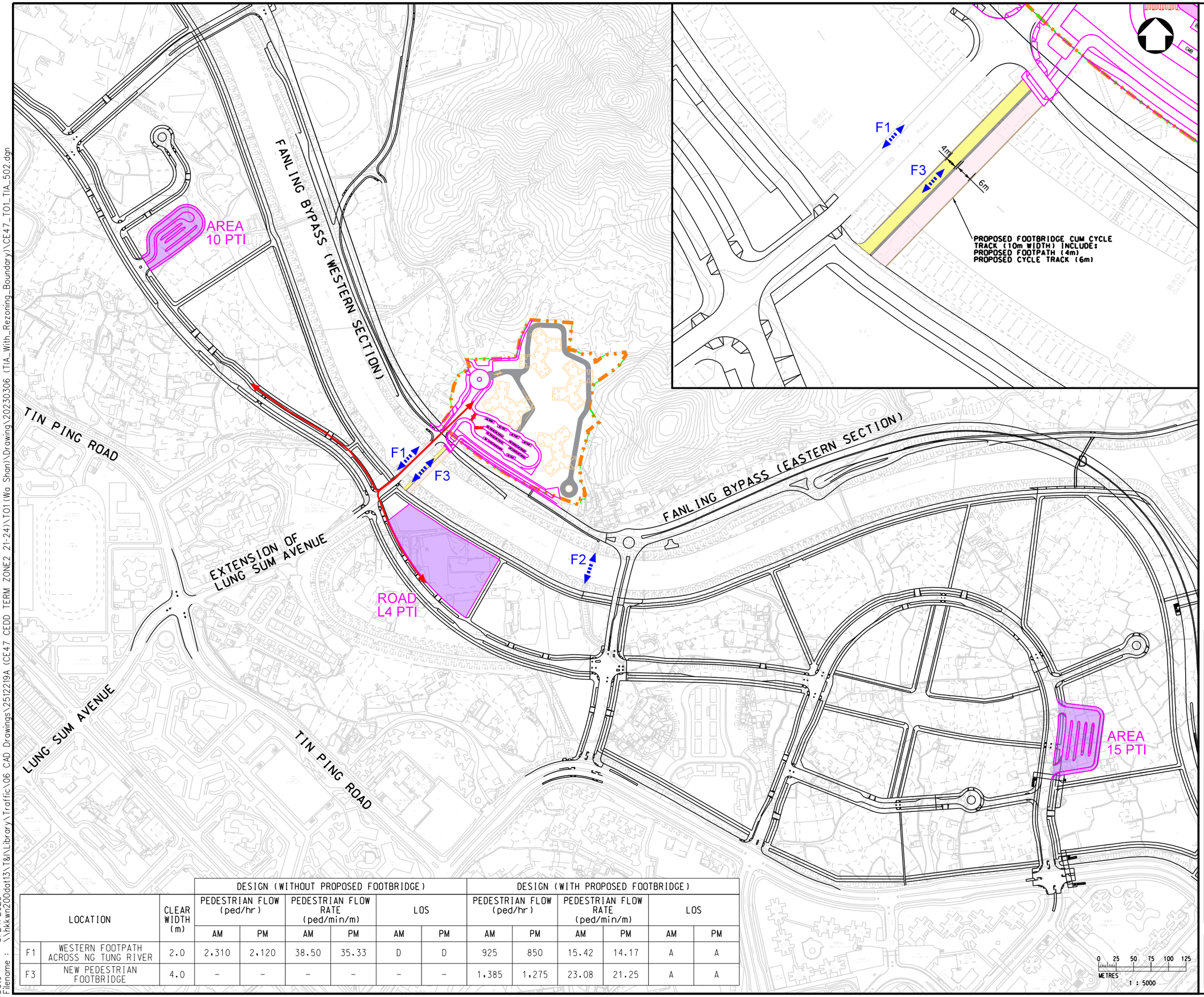
Drawn	Date	Checked	Approved
CAD	NOV 2022	-	EW

Scale 1:1500 (A3) | Status

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LEGEND :

- PROPOSED WORKS LIMIT
- STUDY AREA FOR THE DEVELOPMENT
- REZONING BOUNDARY
- PROPOSED FUTURE ROAD/COMMITTED JUNCTION IMPROVEMENT UNDER FLN NDA
- PROPOSED PTI UNDER FLN NDA
- PEDESTRIAN DESIRE LINE
- KEY FOOTPATH
- ELEVATED WALKWAY / FOOTBRIDGE (4m)
- CYCLE TRACK (6m)

LOCATION		CLEAR WIDTH (m)	DESIGN (WITHOUT PROPOSED FOOTBRIDGE)						DESIGN (WITH PROPOSED FOOTBRIDGE)					
			PEDESTRIAN FLOW (ped/hr)		PEDESTRIAN FLOW RATE (ped/min/m)		LOS		PEDESTRIAN FLOW (ped/hr)		PEDESTRIAN FLOW RATE (ped/min/m)		LOS	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
F1	WESTERN FOOTPATH ACROSS NG TUNG RIVER	2.0	2,310	2,120	38.50	35.33	D	D	925	850	15.42	14.17	A	A
F3	NEW PEDESTRIAN FOOTBRIDGE	4.0	-	-	-	-	-	-	1,385	1,275	23.08	21.25	A	A

Rev	Description	By	Date
c	GENERAL AMENDMENT	WTL	03/23
B	GENERAL AMENDMENT	WTL	02/23
A	GENERAL AMENDMENT	WTL	02/23

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)

TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

FUTURE PEDESTRIAN CONNECTIVITY

Drawing no. Figure 12 | Rev. C

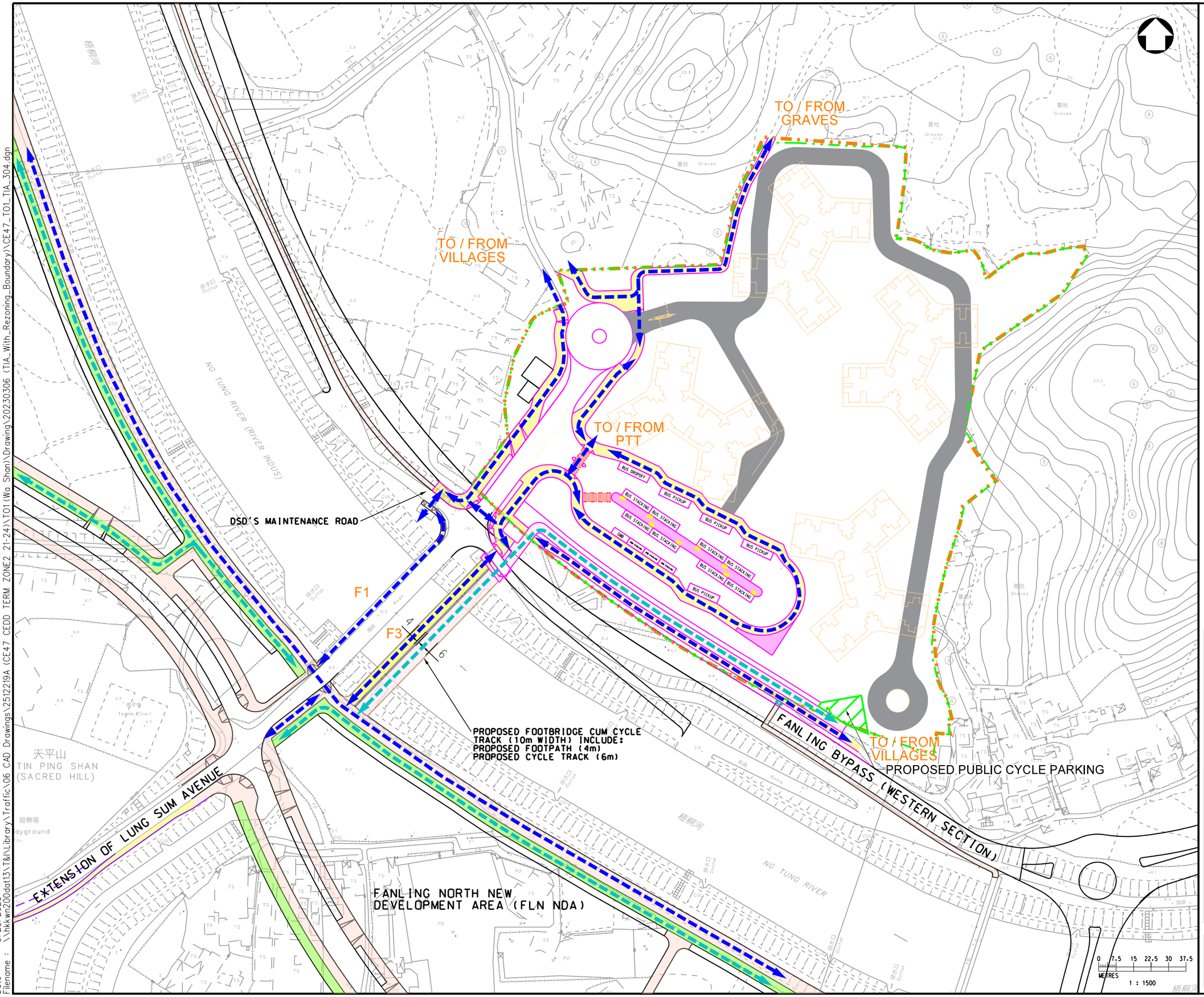
Drawn	Date	Checked	Approved
CAD	NOV 2022	-	EW

Scale 1:5000 (A3) | Status

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Filename : \\hkwn200dat13\T&N_Library\Traffic\06 CAD Drawings\2512219A (CE47 CEDD TERM ZONE2 21-24)\T01 (Wa Shan)\Drawing\20230306 (TIA_With_Rezoning_Boundary)\CE47_T01_TIA_502.dgn



LEGEND :

- STUDY AREA FOR THE DEVELOPMENT
- REZONING BOUNDARY
- PROPOSED LAYOUT
- PROPOSED JUNCTION IMPROVEMENT SCHEME
- PEDESTRIAN CONNECTIVITY
- CYCLE TRACK CONNECTIVITY
- PROPOSED FOOTPATH (BY PROJECT)
- PROPOSED CYCLE TRACK (BY PROJECT)
- PLANNED FOOTPATH (BY OTHERS)
- PLANNED CYCLE TRACK (BY OTHERS)

Rev	Description	By	Date
D	PLAND'S COMMENT	WTL	03/23
C	GENERAL AMENDMENT	WTL	03/23
B	GENERAL AMENDMENT	WTL	02/23
A	TD'S COMMENT	WTL	02/23

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

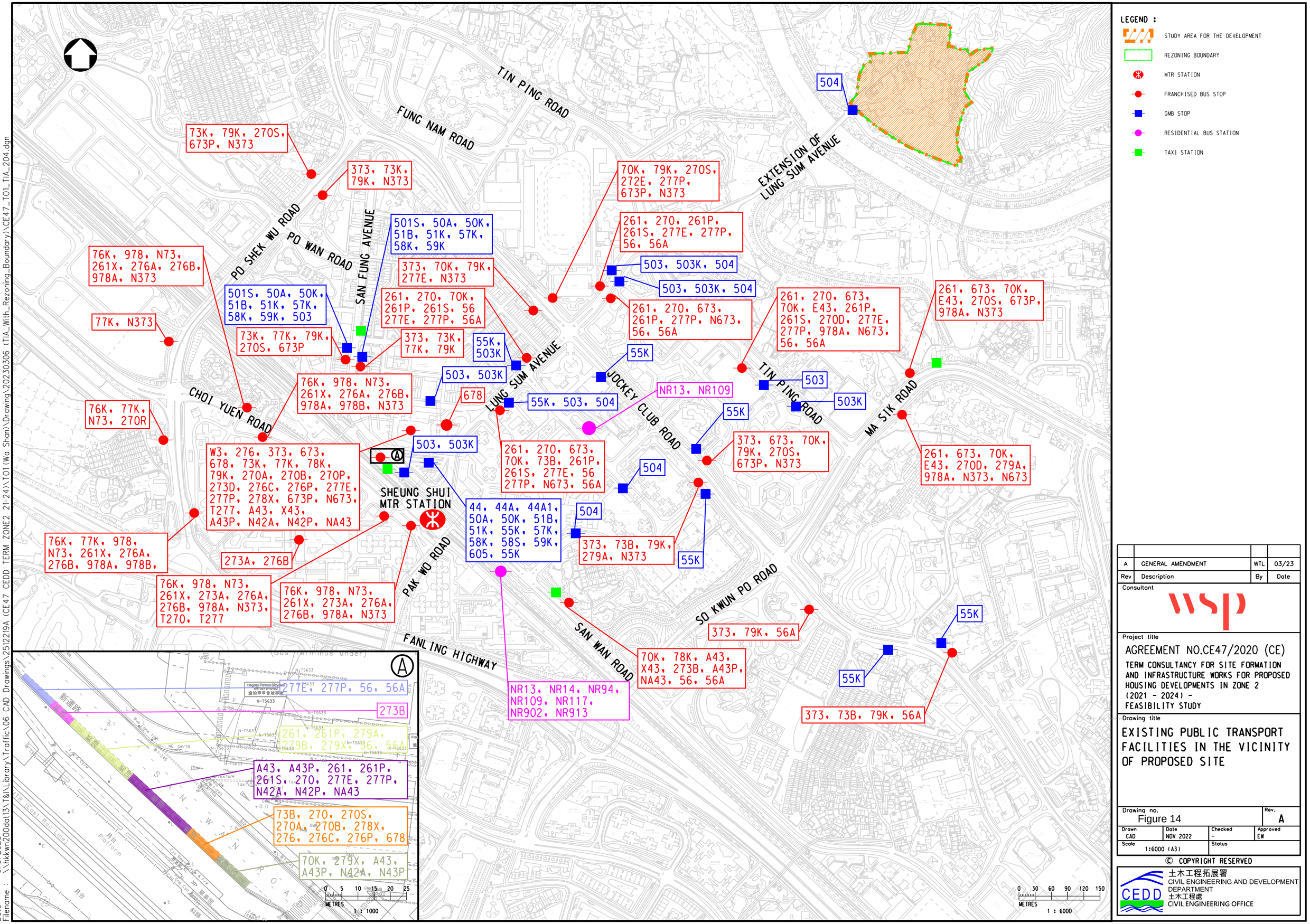
PROPOSED PEDESTRIAN AND CYCLE TRACK CONNECTIVITY

Drawing no.			Rev.
Figure 13			D
Drawn: CAD	Date: NOV 2022	Checked: -	Approved: EW
Scale: 1:1500 (A3)		Status:	

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Date : 3/23/2023
Filename : \\hkkwn200dat13\T&I\Library\Traffic\06 CAD Drawings\2512219A (CE47 CEDD TERM ZONE2 21-24)\T01 (Wa Shan)\Drawing\20230306 (TIA_With_Rezoning_Boundary)\CE47_T01_TIA_304.dgn



LEGEND :

- STUDY AREA FOR THE DEVELOPMENT
- REZONING BOUNDARY
- MTR STATION
- FRANCHISED BUS STOP
- GMB STOP
- RESIDENTIAL BUS STATION
- TAXI STATION

A	GENERAL AMENDMENT	WTL	03/23
Rev	Description	By	Date

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)

TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

EXISTING PUBLIC TRANSPORT FACILITIES IN THE VICINITY OF PROPOSED SITE

Drawing no.	Rev.
Figure 14	A

Drawn	Date	Checked	Approved
CAD	NOV 2022	-	EW

Scale: 1:6000 (A3)

Status:

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Filename : \\hkkwn200dat13\T&N\Library\Traffic\06 CAD Drawings\2512219A (CE47 CEDD TERM ZONE2 21-24)\T01 (Wa Shan)\Drawing\20230306 (TIA_With_Rezoning_Boundary)\CE47_T01_TIA_204.dgn

NOTES :

1. ONLY COLORED WORKS ARE CARRIED OUT UNDER THIS PROJECT

LEGEND :

- PROPOSED KERBLINE
- PROPOSED ROAD MARKING
- PROPOSED FOOTPATH

TIN PING ROAD

LUNG SUM AVENUE

EXTENSION OF LUNG SUM AVENUE

ROAD L4

ROAD L4

3.67m

4.16m

3.65m

3.65m

2m

R 3m

R 10m

MINIMUM 2M FOOTPATH
TO BE PROVIDED

天平山
TIN PING SHAN
(SACRED HILL)

Open Storage

Woodland Crest

Playground

Sheung Shui Swimming Pool

Basketball Court

Tennis Court

Skating Rink

Tin Yee House

Rev	Description	By	Date
A	GENERAL AMENDMENT	WTL	03/23

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

PROPOSED JUNCTION IMPROVEMENT SCHEME FOR TIN PING ROAD/ LUNG SUM AVENUE (J04)

Drawing no.	Rev.
Figure 15	A

Drawn	Date	Checked	Approved
CAD	NOV 2022	-	EW

Scale: 1:1500 (A3)

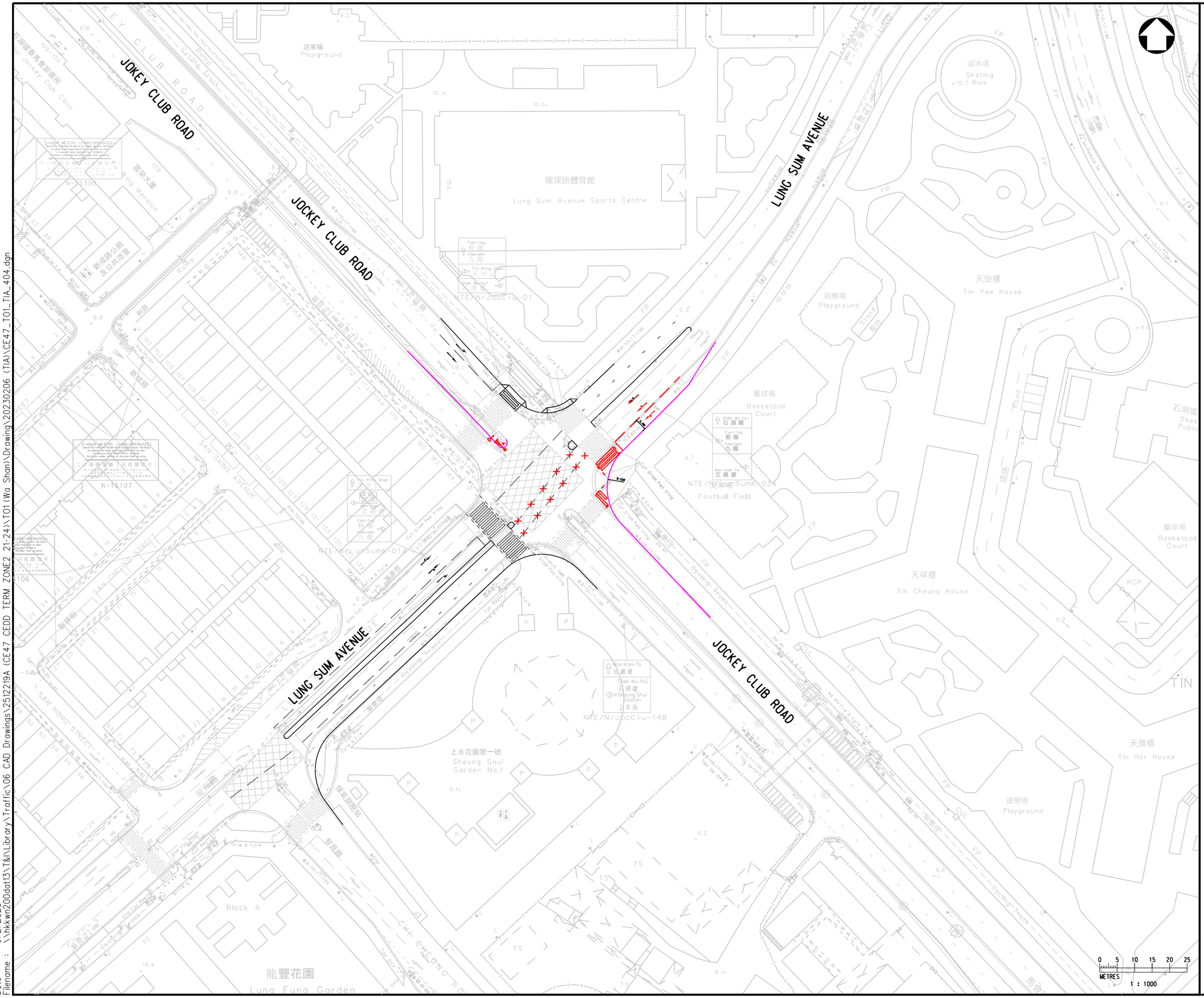
Status

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METRES
1 : 1500

Date : 3/3/2023
Filename : \\hkkwn200dat13\T&I\Library\Traffic\06 CAD Drawings\2512219A (CE47 CEDD TERM ZONE2 21-24)\T01 (Wa Shan)\Drawing\20230302 (TIA_403)\CE47_T01_TIA_403.dgn



NOTES :

1. ONLY COLORED WORKS ARE CARRIED OUT UNDER THIS PROJECT

LEGEND :

- PROPOSED KERBLINE
- PROPOSED ROAD MARKING
- PROPOSED FOOTPATH

Rev	Description	By	Date

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

PROPOSED JUNCTION IMPROVEMENT SCHEME FOR JOCKEY CLUB ROAD / LUNG SUM AVENUE (JO5)

Drawing no.	Rev.
Figure 16	-

Drawn	Date	Checked	Approved
CAD	NOV 2022	-	EW

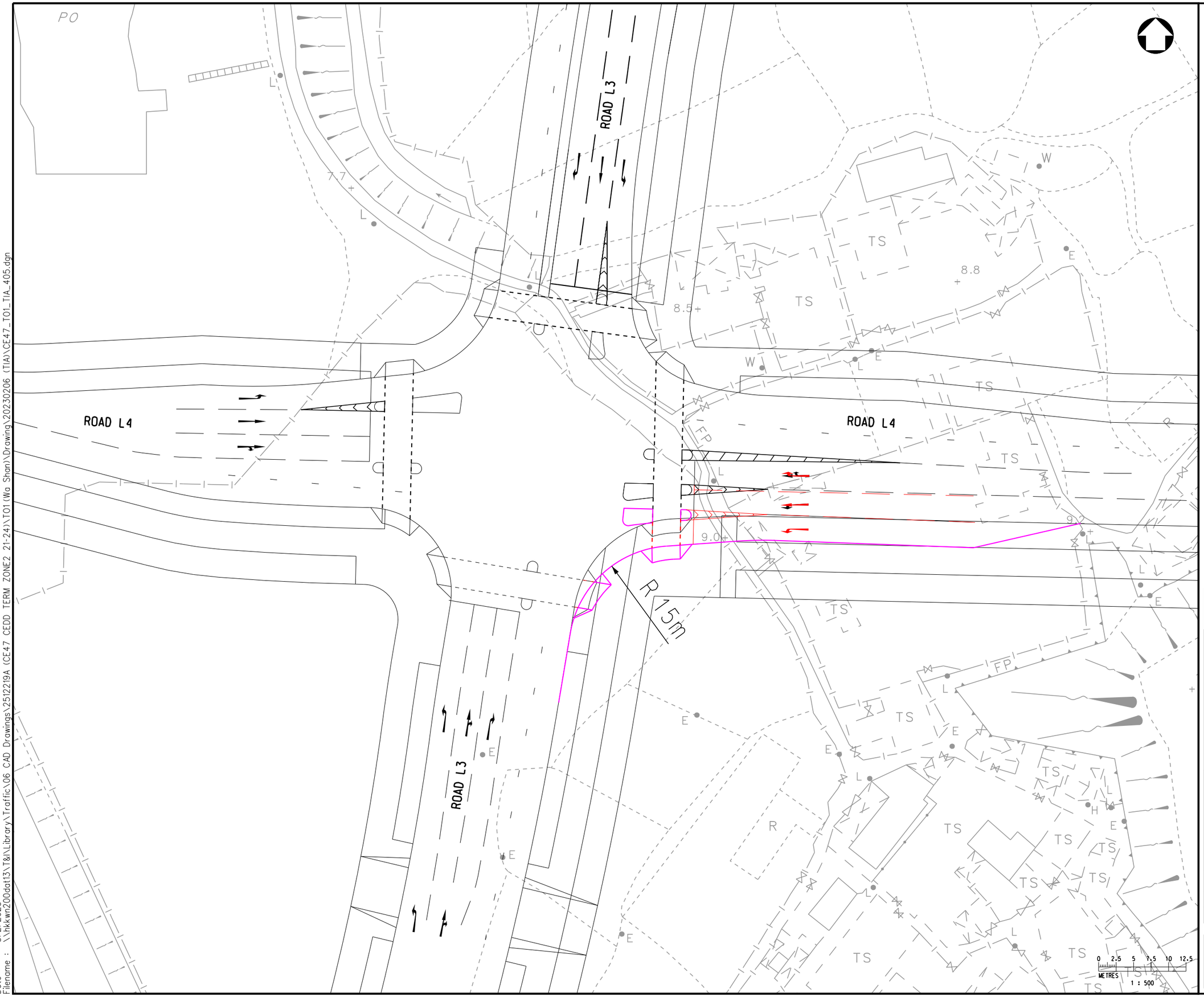
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Date : 9/2/2023
Filename : \\hkkwn200data13\T&I\Library\Traffic\06 CAD Drawings\251219A (CE47 CEDD TERM ZONE2 21-24)\T01(Wa Shan)\Drawing\20230206 (TIA)\CE47_T01_TIA_404.dgn



NOTES :

1. ONLY COLORED WORKS ARE CARRIED OUT UNDER THIS PROJECT

LEGEND :

- PLANNED IMPROVEMENT (CE18)
- PROPOSED KERBLINE
- PROPOSED ROAD MARKING
- PROPOSED FOOTPATH

Rev	Description	By	Date

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)

TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

PROPOSED JUNCTION IMPROVEMENT SCHEME ROAD L3/ ROAD L4 (J11)

Drawing no.	Rev.
Figure 17	-

Drawn	Date	Checked	Approved
CAD	NOV 2022	-	EW

Scale: 1:500 (A3)

Status:

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LEGEND :

- NET SITE BOUNDARY
- WORKS LIMIT
- ASSESSMENT BOUNDARY
- REZONING BOUNDARY
- LR1.1 NATURAL WOODLAND
- LR1.2 SCRUBLAND & GRASSLAND
- LR1.3 AGRICULTURE LAND
- LR2.1 NG TUNG RIVER
- LR2.2 WATERCOURSE
- LR2.3 WETLAND
- LR3.1 INFORMAL SETTLEMENT AND SQUATTER
- LR3.2 INDUSTRIAL, BUSINESS & STORAGE MIX
- LR3.3 LOW RISE RESIDENTIAL AREA
- LR3.4 MEDIUM RISE RESIDENTIAL AREA
- LR3.5 HIGH RISE RESIDENTIAL AREA
- LR4.1 SCHOOLS
- LR4.2 COMMUNITY FACILITIES
- LR5.1 SHEUNG SHUI SWIMMING POOL
- LR5.2 NORTH DISTRICT SPORTS GROUND
- LR5.3 SAN WAI/TAI LING FIRING RANGE
- LR5.4 SHEUNG SHUI WA SHAN SITTING-OUT AREA
- LR5.5 SHEUNG SHUI GARDEN NO.1
- LR6.1 TRANSPORTATION & ASSOCIATED FACILITIES
- LR6.2 CAR PARK
- LR7.1 CONSTRUCTION SITE
- LR8.1 MIXED USE AREA
- TREE OF PARTICULAR INTEREST(TPI)

Rev	Description	By	Date
–	FIRST ISSUE	EW	MAY 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
LANDSCAPE RESOURCE PLAN

Drawing no. Figure 18 Rev. –

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

Scale 1:3000 (A1) Status –

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METRES
1 : 3000

Date : 6/3/2023
Filename : x:\2512219a (ce47_20 cedd zone2 housing development)\02_drawing\01-report\to1_wa shan\WSP_CE47_TO1_LR_1003.dgn

LEGEND :

- NET SITE BOUNDARY
- WORKS LIMIT
- ASSESSMENT BOUNDARY
- REZONING BOUNDARY
- LCA1 UPLAND & HILLSIDE LANDSCAPE
- LCA2 MISCELLANEOUS URBAN FRINGE LANDSCAPE
- LCA3 TRANSPORTATION CORRIDOR LANDSCAPE
- LCA4 RESIDENTIAL URBAN LANDSCAPE

Rev	Description	By	Date
-	FIRST ISSUE	EW	MAY 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
LANDSCAPE CHARACTER AREA PLAN

Drawing no. Figure 19 | Rev. -

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

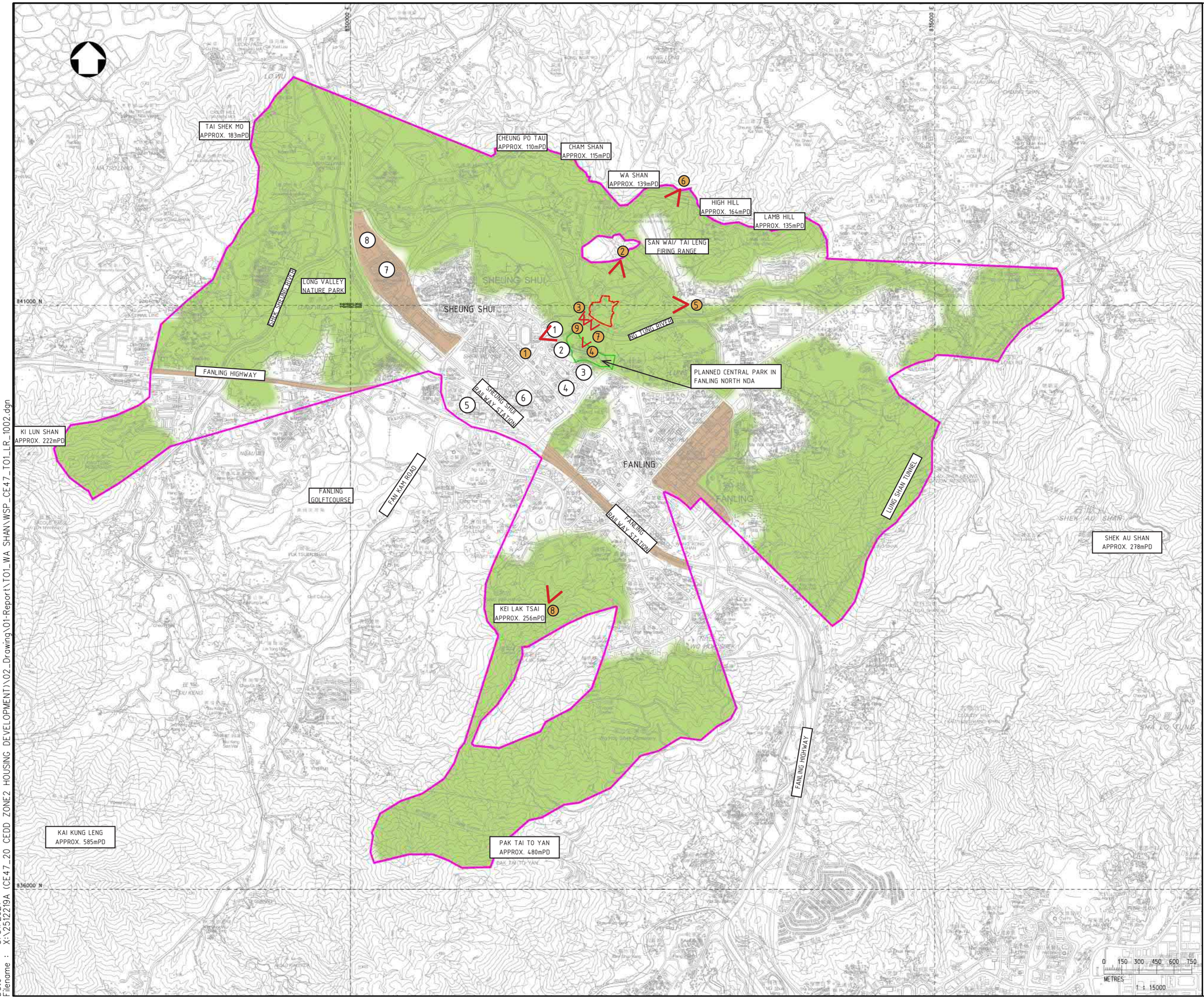
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0 30 60 90 120 150
METRES 1 : 3000

Date : 6/3/2023
Filename : x:\2512219a (ce47_20 cedd zone2 housing development)\02_drawing\01-report\to1_wa shan\WSP_CE47_T01_LR_1002.dgn



LEGEND

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED
2. ALL LEVELS ARE IN METRES (M) AND RELATIVE TO HONG KONG DATUM (mPD)

- WORKS BOUNDARY
- 500m RADIUS STUDY AREA
- VISUAL ENVELOPE
- KEY VISUAL RESOURCES
- KEY VISUAL DETRACTORS
- (1) VP1 LUNG SUM AVENUE SPORT CENTRE
- (2) VP2 TIN PANG SHAN MOUNTAIN BIKE TRAIL
- (3) VP3 EXISTING FOOTBRIDGE AND DRIVEWAY ACROSS NG TUNG RIVER
- (4) VP4 PLANNED CENTRAL PARK IN FANLING NORTH NEW DEVELOPMENT AREA
- (5) VP5 PAVILION ALONG NG TUNG RIVER
- (6) VP6 HIKING TRAIL ALONG WA SHAN/ HIGH HILL
- (7) VP7 FOOTPATH ALONG NG TUNG RIVER
- (8) VP8 WU TIP SHAN LOOKOUT
- (9) VP9 PROPOSED FOOTBRIDGE ACROSS NG TUNG RIVER

(1) WOODLAND CREST
(2) ON KWOK VILLA
(3) NOBEL HILL (APPROX. 118mPD)
(4) TIN PING ESTATE (APPROX. 108mPD)
(5) CHOI YUEN ESTATE (APPROX. 114mPD)
(6) SHEUNG SHUI CENTRE
(7) SHEK WU HUI SEWAGE TREATMENT PLANT WORKS
(8) SHEUNG SHUI SLAUGHTER HOUSE

Rev	Description	By	Date
–	FIRST ISSUE	EW	MAY 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
VIEWING POINT PLAN

Drawing no.		Rev.
FIGURE 20		–
Drawn: CAD	Date: APR 2021	Checked: HL	Approved: EW
Scale: 1:15000 (A1)	Status: –		

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- WORKS LIMIT
- REZONING BOUNDARY
- HOUSING SITE BOUNDARY
- NEW TREES BY HD
- COMPENSATORY TREES BY CEDD
- RETAINED TREE
- MATURE TREE
- ROAD
- PAVING AT GRADE
- PAVING AT PODIUM
- PLANTING AREA
- SPORT GROUND
- PLAYGROUND/ FITNESS AREA
- RETAINED GRAVE

CM1	PRESERVATION OF EXISTING VEGETATION
CM2	CONTROL OF NIGHT-TIME LIGHTING GLARE
CM3	OPTIMISATION OF CONSTRUCTION AREAS AND PROVIDING TEMPORARY LANDSCAPE TREATMENT ON TEMPORARY CONSTRUCTION WORKS
CM4	ERECTION OF DECORATIVE SCREEN HOARDING
OM1	COMPENSATORY/ NEW TREE PLANTING WHERE PRACTICAL
OM2	BUFFER PLANTING
OM3	AESTHETIC DESIGN OF PROPOSED PUBLIC HOUSING DEVELOPMENT
OM4	LANDSCAPE TREATMENT WITHIN THE PROPOSED HOUSING DEVELOPMENT
OM5	VARIATION IN BUILDING HEIGHT PROFILE OF PROPOSED PUBLIC HOUSING DEVELOPMENT
OM6	BUILDING SEPARATION OF PROPOSED PUBLIC HOUSING DEVELOPMENT
OM7	BUILDING SETBACK

NOTES:
THE BUILDING BLOCK LAYOUT AND LANDSCAPE DESIGN FOR THE PROPOSED HOUSING DEVELOPMENT ARE INDICATIVE ONLY. THE EXACT NUMBER, LOCATION OF THE NEW TREE PLANTING, GREEN COVERAGE, OPEN SPACE, PLAY/ FITNESS AREA, ZERO-IRRIGATION PLANTING AREA, PAVING DESIGN, PODIUM GARDEN WITHIN THE PROPOSED HOUSING DEVELOPMENT ARE SUBJECT TO FURTHER REVIEWED AT DETAILED DESIGN STAGE. THE PROPOSED PLANTINGS AT SLOPE AND BUFFER AREAS ARE SUBJECT TO FUTURE SLOPE GRADIENT SUITABLE FOR TREE PLANTING. THE PROPOSED PLANTING PRINCIPLE SHOULD NOT BE REGARDED AS ANY COMMITMENT FOR THE PUBLIC HOUSING DEVELOPMENT AND DESIGN FLEXIBILITY SHOULD BE ALLOWED AT THE LATER DETAILED DESIGN STAGE.

Rev	Description	By	Date
–	FIRST ISSUE	EW	MAY 21

Consultant

Project title
AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title
TASK ORDER NO. 1
WA SHAN
MITIGATION MEASURES PLAN

Drawing no.	Rev.
FIGURE 21	–

Drawn	Date	Checked	Approved
CAD	APR 2021	HL	EW
Scale		Status	–

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KEY

A	ROOF GARDEN
B	SITTING OUT AREA
C	TREE BUFFER
D	ROUNDABOUT PLANTINGS
E	SITTING OUT AREA
F	CHILDREN PLAYGROUND
G	FITNESS AREA
H	BASKETBALL COURT
I	BADMINTON COURT
J	ZERO-IRRIGATION PLANTING AREA
+160	PROPOSED LEVEL

- REZONING BOUNDARY
- WORKS LIMIT
- HOUSING SITE BOUNDARY
- NEW TREES BY HD (APPROX. 180 NOS.)
- COMPENSATORY TREES BY CEDD (64 NOS.)
- RETAINED TREE
- MATURE TREE
- ROAD
- PAVING AT GRADE
- PAVING AT PODIUM
- PLANTING AREA
- SPORT GROUND
- PLAYGROUND/ FITNESS AREA
- BENCH
- G RETAINED GRAVE
- VEHICULAR INGRESS/ EGRESS
- MAIN ENTRANCE TO DEVELOPMENT (PEDESTRAINS)

NOTES:
THE BUILDING BLOCK LAYOUT AND LANDSCAPE DESIGN FOR THE PROPOSED HOUSING DEVELOPMENT ARE INDICATIVE ONLY. THE EXACT NUMBER, LOCATION OF THE NEW TREE PLANTING, GREEN COVERAGE, OPEN SPACE, PLAY/ FITNESS AREA, ZERO-IRRIGATION PLANTING AREA, PAVING DESIGN, PODIUM GARDEN WITHIN THE PROPOSED HOUSING DEVELOPMENT ARE SUBJECT TO FURTHER REVIEWED AT DETAILED DESIGN STAGE. THE PROPOSED PLANTINGS AT SLOPE AND BUFFER AREAS ARE SUBJECT TO FUTURE SLOPE GRADIENT SUITABLE FOR TREE PLANTING. THE PROPOSED PLANTING PRINCIPLE SHOULD NOT BE REGARDED AS ANY COMMITMENT FOR THE PUBLIC HOUSING DEVELOPMENT AND DESIGN FLEXIBILITY SHOULD BE ALLOWED AT THE LATER DETAILED DESIGN STAGE.

Rev	Description	By	Date
–	FIRST ISSUE	EW	MAY 21

Consultant

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Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
CONCEPTUAL LANDSCAPE PLAN

Drawing no.			Rev.
FIGURE 22			–
Drawn	Date	Checked	Approved
CAD	APR 2021	HL	EW
Scale		Status	
		–	

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KEY

A	PLANTING AREA
B	SITTING AREA
C	CHILDREN PLAYGROUND
D	FITNESS ARTEA
E	SITTING BENCH
F	TABLE TENNIS AREA
G	MULTI PURPOSE PLAZA
H	FEATURE PLANTER POT
+160	PROPOSED LEVEL

SHRUBS
PAVING
PLANTING AREA
PLAYGROUND/ FITNESS AREA
TABLE TENNIS TABLE
MULTI PURPOSE PLAZA
BENCH

NOTES:
THE BUILDING BLOCK LAYOUT AND LANDSCAPE DESIGN FOR THE PROPOSED HOUSING DEVELOPMENT ARE CONCEPTUAL ONLY. THE EXACT NUMBER, LOCATION OF THE NEW TREE PLANTING, GREEN COVERAGE, OPEN SPACE, PLAY/ FITNESS AREA, ZERO-IRRIGATION PLANTING AREA, PAVING DESIGN, PODIUM GARDEN WITHIN THE PROPOSED HOUSING DEVELOPMENT ARE SUBJECT TO FURTHER REVIEWED AT DETAILED DESIGN STAGE. THE PROPOSED PLANTINGS AT SLOPE AND BUFFER AREAS ARE SUBJECT TO FUTURE SLOPE GRADIENT SUITABLE FOR TREE PLANTING. THE PROPOSED PLANTING PRINCIPLE SHOULD NOT BE REGARDED AS ANY COMMITMENT FOR THE PUBLIC HOUSING DEVELOPMENT AND DESIGN FLEXIBILITY SHOULD BE ALLOWED AT THE LATER DETAILED DESIGN STAGE.

Rev	Description	By	Date
–	FIRST ISSUE	EW	MAY 21

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Project title
AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title
TASK ORDER NO. 1
WA SHAN
CONCEPTUAL LANDSCAPE PLAN (BLK 1 - PODIUM GARDEN)

Drawing no.	Rev.
FIGURE 23	–

Drawn	Date	Checked	Approved
CAD	APR 2021	HL	EW

Scale
Status –

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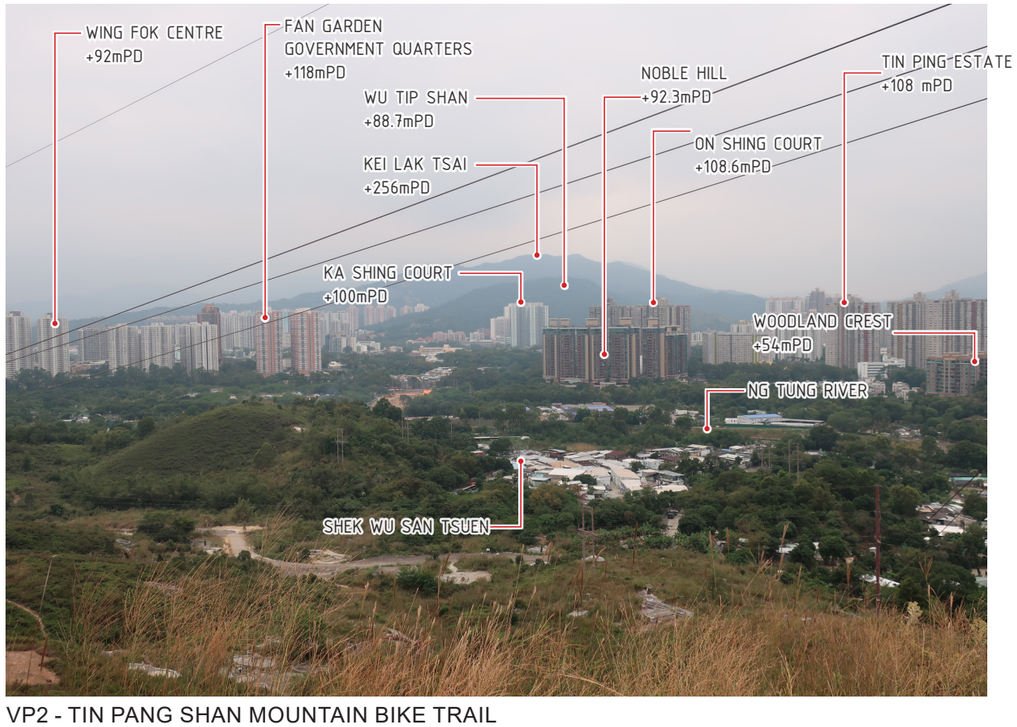
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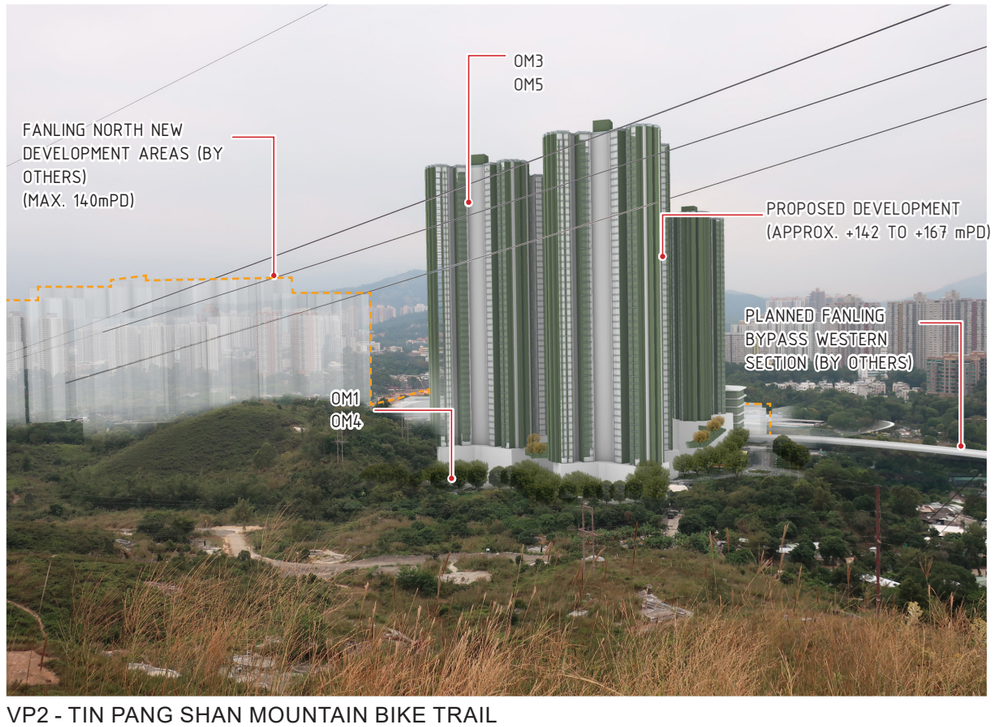
VP1 - LUNG SUM AVENUE SPORT CENTRE
EXISTING CONDITION



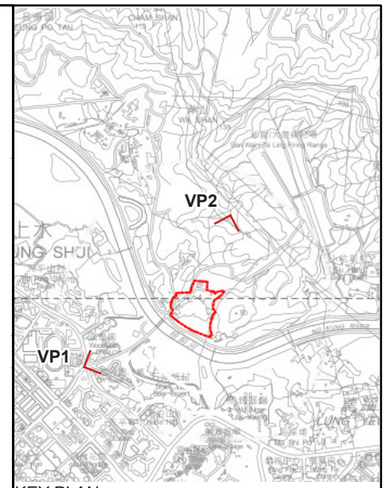
VP1 - LUNG SUM AVENUE SPORT CENTRE
OPERATION WITH MITIGATION MEASURES



VP2 - TIN PANG SHAN MOUNTAIN BIKE TRAIL
EXISTING CONDITION



VP2 - TIN PANG SHAN MOUNTAIN BIKE TRAIL
OPERATION WITH MITIGATION MEASURES



KEY PLAN

MITIGATION MEASURES (OPERATION PHASE)	
OM1	COMPENSATORY/ NEW TREE PLANTING WHERE PRACTICAL
OM2	BUFFER PLANTING
OM3	AESTHETIC DESIGN OF PROPOSED PUBLIC HOUSING DEVELOPMENT
OM4	LANDSCAPE TREATMENT WITHIN THE PROPOSED HOUSING DEVELOPMENT
OM5	VARIATION OF BUILDING HEIGHT PROFILE OF PROPOSED PUBLIC HOUSING DEVELOPMENT
OM6	BUILDING SEPARATION OF PROPOSED PUBLIC HOUSING DEVELOPMENT
OM7	BUILDING SETBACK

Rev	Description	By	Date
–	FIRST ISSUE	EW	MAY 21

Consultant

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Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
PHOTOMONTAGE OF VIEWPOINT
VP1 & VP2

Drawing no.		Rev.
FIGURE 24		–
Drawn: CAD	Date: APR 2021	Checked: HL	Approved: EW
Scale:		Status: –	

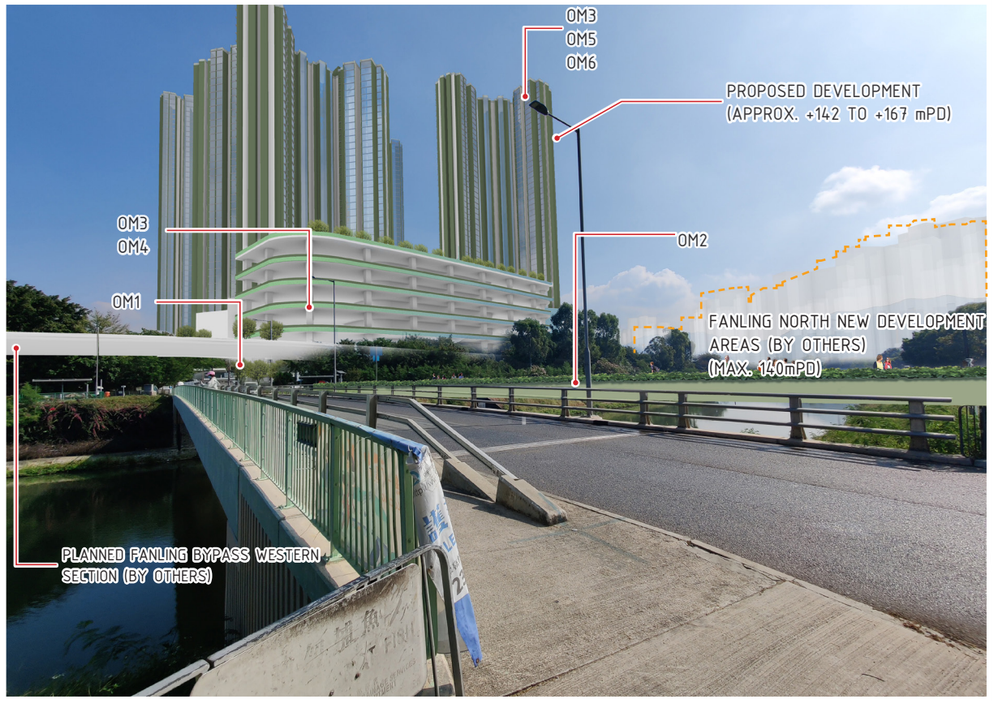
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Date : 5/31/2021
Filename : X:\2512219A (CE47_20 CEDD ZONE2 HOUSING DEVELOPMENT)\02_Drawing\01-Report\T01_WA SHAN\WSP_CE47_T01_LR_1002.dgn



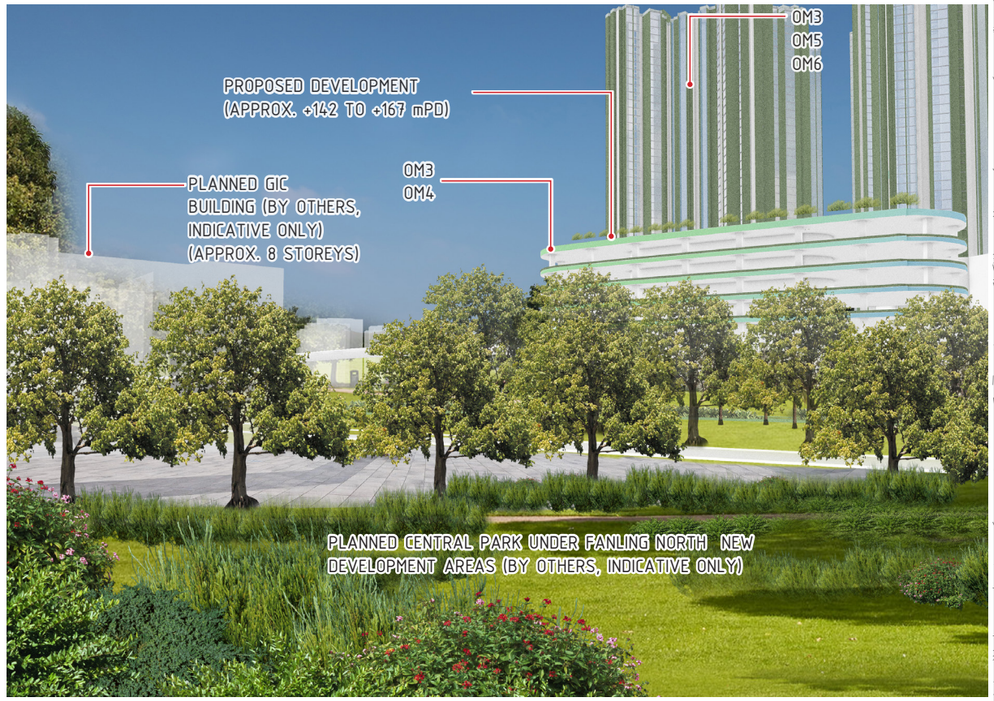
VP3 - FOOTBRIDGE AND DRIVEWAY ACROSS NG TUNG RIVER
EXISTING CONDITION



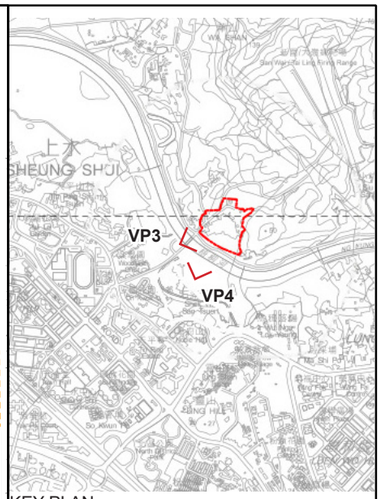
VP3 - EXISTING FOOTBRIDGE AND DRIVEWAY ACROSS NG TUNG RIVER
OPERATION WITH MITIGATION MEASURES



VP4 - PLANNED CENTRAL PARK IN FANLING NORTH NEW DEVELOPMENT AREA
EXISTING CONDITION



VP4 - PLANNED CENTRAL PARK IN FANLING NORTH NEW DEVELOPMENT AREA
OPERATION WITH MITIGATION MEASURES



KEY PLAN

MITIGATION MEASURES (OPERATION PHASE)	
OM1	COMPENSATORY/ NEW TREE PLANTING WHERE PRACTICAL
OM2	BUFFER PLANTING
OM3	AESTHETIC DESIGN OF PROPOSED PUBLIC HOUSING DEVELOPMENT
OM4	LANDSCAPE TREATMENT WITHIN THE PROPOSED HOUSING DEVELOPMENT
OM5	VARIATION OF BUILDING HEIGHT PROFILE OF PROPOSED PUBLIC HOUSING DEVELOPMENT
OM6	BUILDING SEPARATION OF PROPOSED PUBLIC HOUSING DEVELOPMENT
OM7	BUILDING SETBACK

Rev	Description	By	Date
–	FIRST ISSUE	EW	MAY 21

Consultant

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Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
PHOTOMONTAGE OF VIEWPOINT VP3 & VP4

Drawing no.			Rev.
FIGURE 25			–
Drawn: CAD	Date: APR 2021	Checked: HL	Approved: EW
Scale		Status: –	

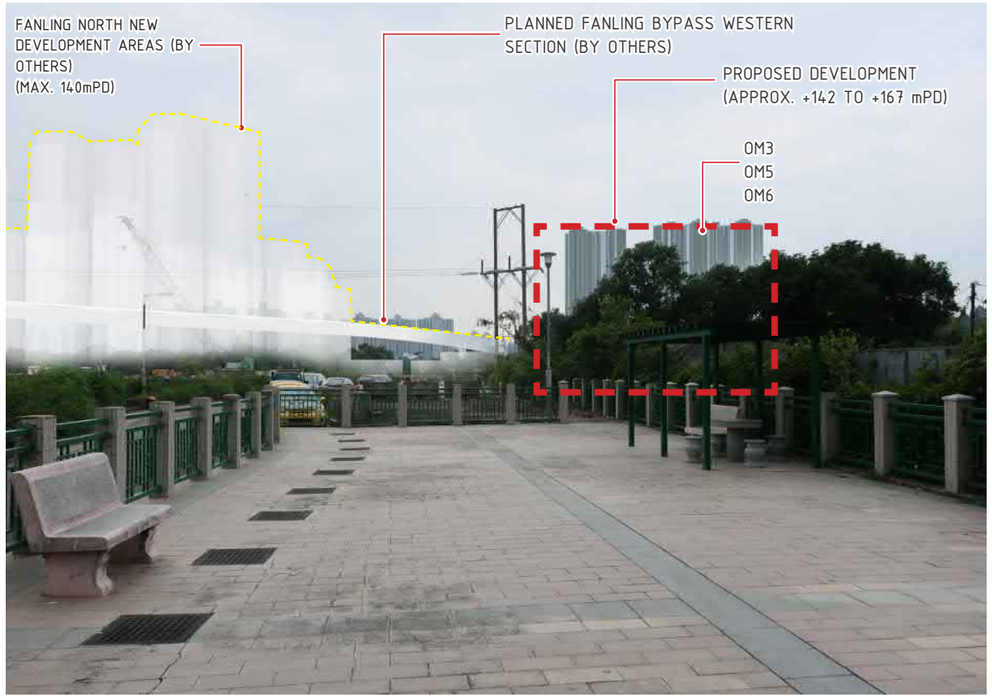
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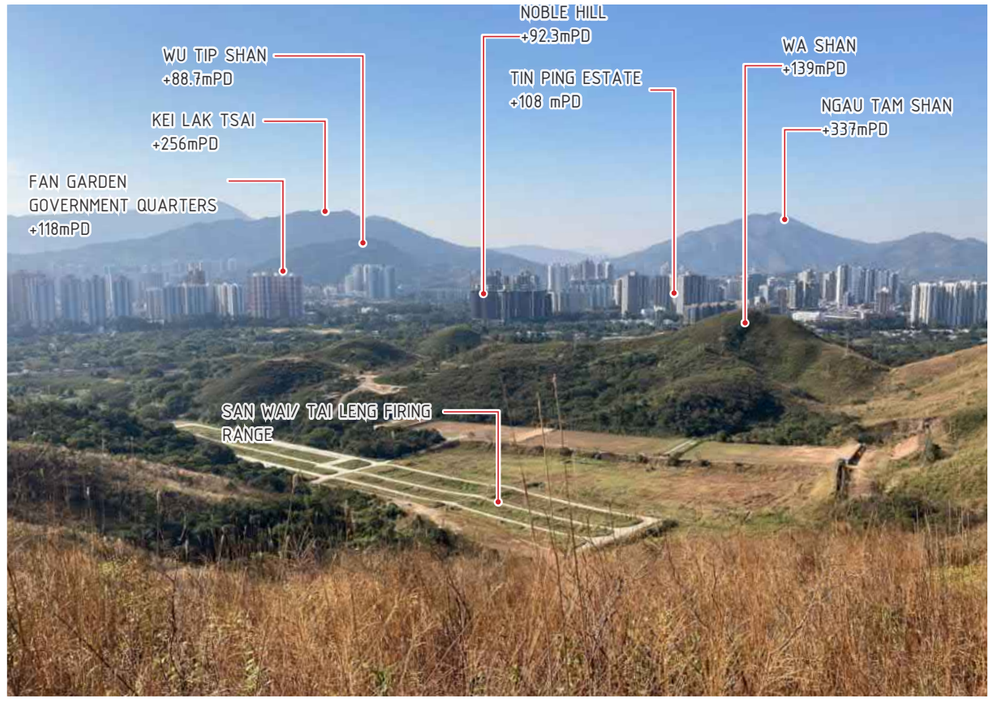
Date : 5/31/2021
Filename : X:\2512219A (CE47_20 CEDD ZONE2 HOUSING DEVELOPMENT)\02_Drawing\01-Report\T01_WA SHAN\WSP_CE47_T01_LR_1002.dgn



VP5 - PAVILION ALONG NG TUNG RIVER
EXISTING CONDITION



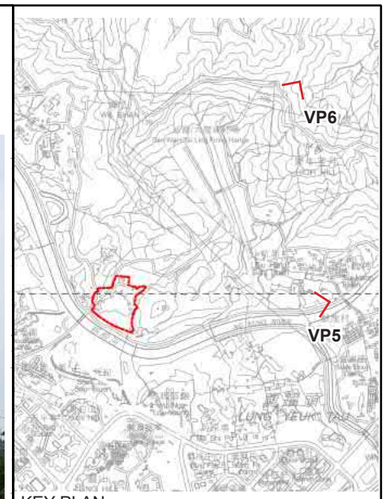
VP5 - PAVILION ALONG NG TUNG RIVER
OPERATION WITH MITIGATION MEASURES



VP6 - HIKING TRAIL ALONG WA SHAN/ HIGH HILL
EXISTING CONDITION



VP6 - HIKING TRAIL ALONG WA SHAN/ HIGH HILL
OPERATION WITH MITIGATION MEASURES



KEY PLAN

MITIGATION MEASURES (OPERATION PHASE)	
OM1	COMPENSATORY/ NEW TREE PLANTING WHERE PRACTICAL
OM2	BUFFER PLANTING
OM3	AESTHETIC DESIGN OF PROPOSED PUBLIC HOUSING DEVELOPMENT
OM4	LANDSCAPE TREATMENT WITHIN THE PROPOSED HOUSING DEVELOPMENT
OM5	VARIATION OF BUILDING HEIGHT PROFILE OF PROPOSED PUBLIC HOUSING DEVELOPMENT
OM6	BUILDING SEPARATION OF PROPOSED PUBLIC HOUSING DEVELOPMENT
OM7	BUILDING SETBACK

Rev	Description	By	Date
–	FIRST ISSUE	EW	MAY 21

Consultant

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Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

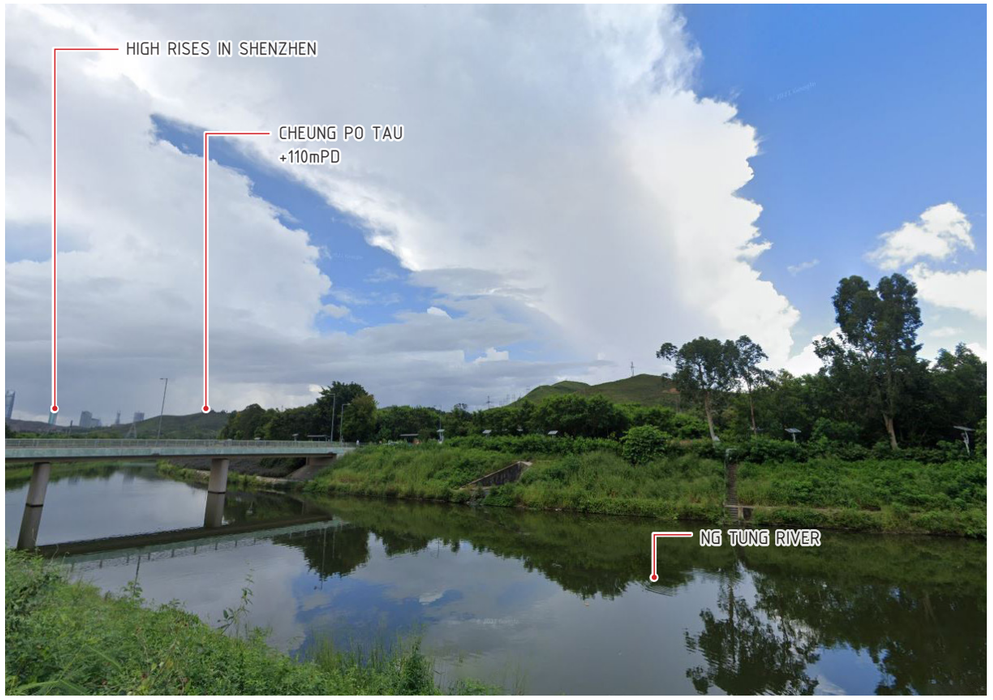
TASK ORDER NO. 1
WA SHAN
PHOTOMONTAGE OF VIEWPOINT VP5 & VP6

Drawing no.		Rev.
FIGURE 26		–
Drawn: CAD	Date: APR 2021	Checked: HL	Approved: EW
Scale:		Status: –	

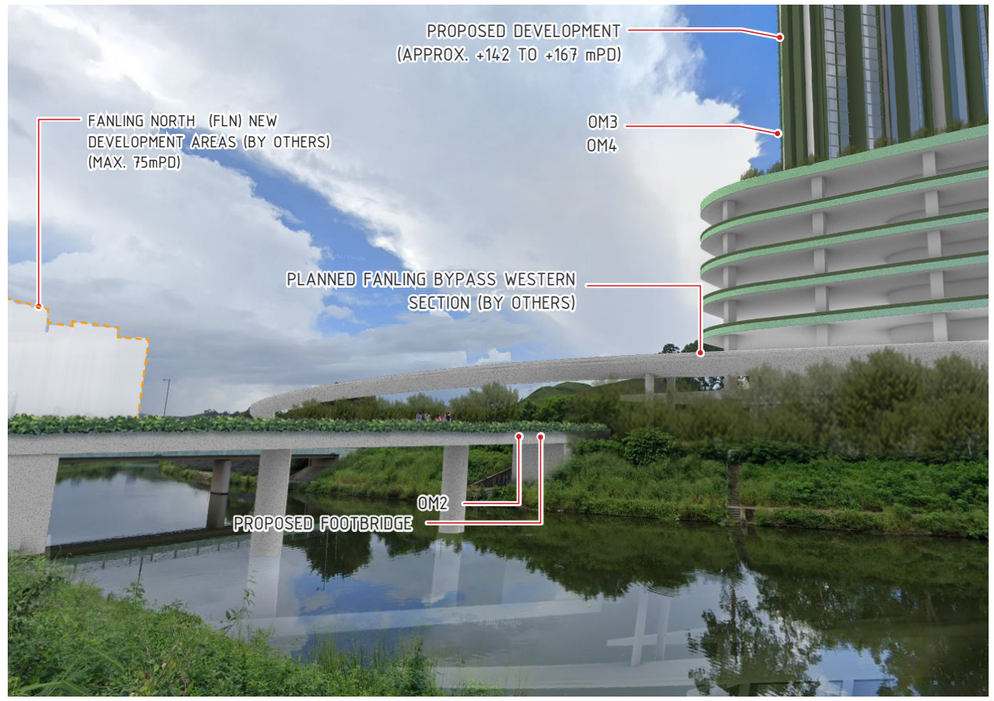
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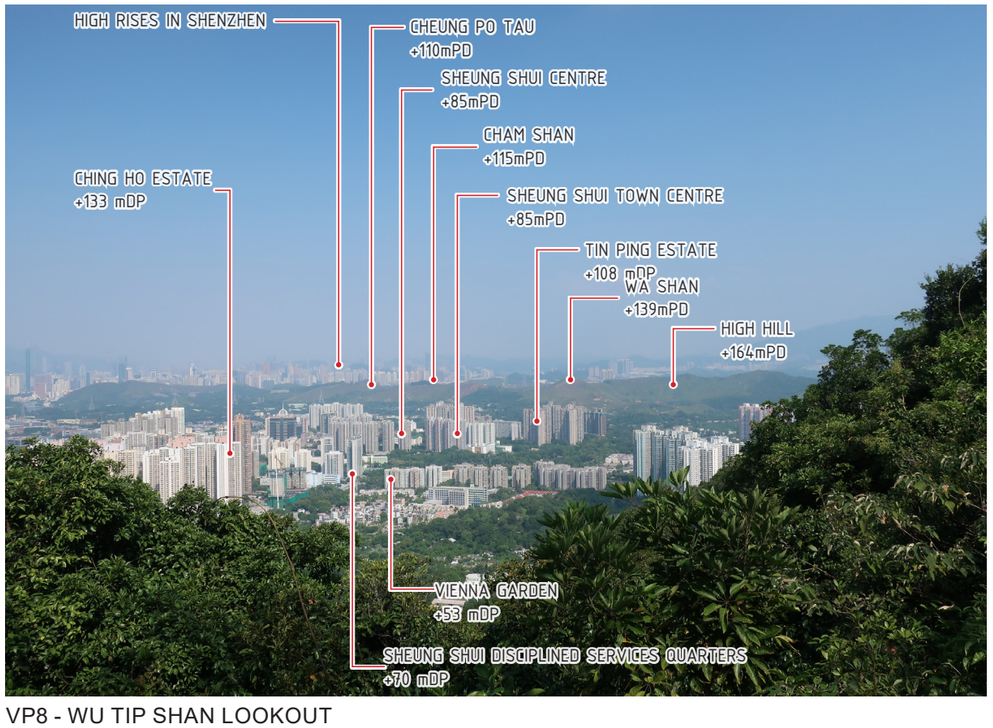
Date : 5/31/2021
Filename : X:\2512219A (CE47_20 CEDD ZONE2 HOUSING DEVELOPMENT)\02_Drawing\01-Report\T01_WA SHAN\WSP_CE47_T01_LR_1002.dgn



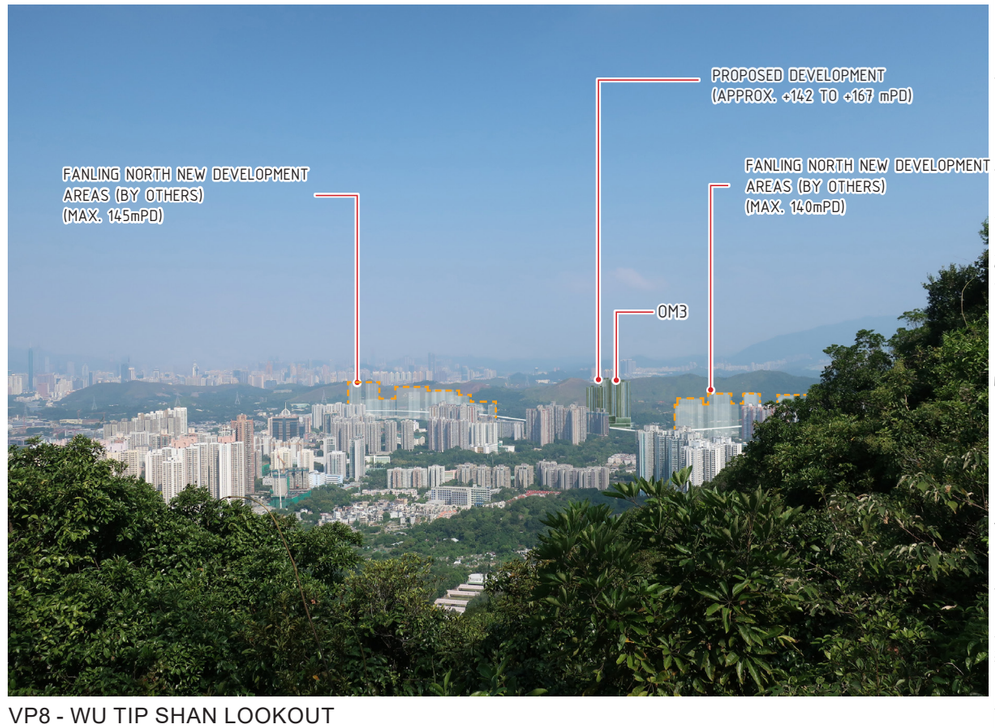
VP7 - FOOTPATH ALONG NG TUNG RIVER
EXISTING CONDITION



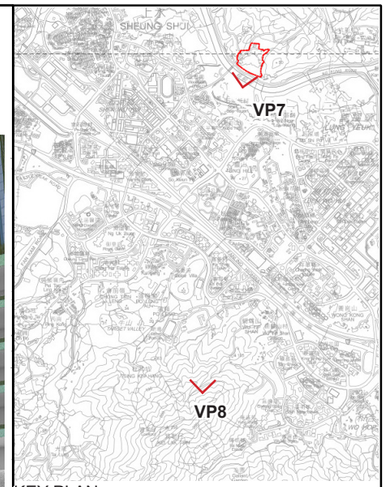
VP7 - FOOTPATH ALONG NG TUNG RIVER
OPERATION WITH MITIGATION MEASURES



VP8 - WU TIP SHAN LOOKOUT
EXISTING CONDITION



VP8 - WU TIP SHAN LOOKOUT
OPERATION WITH MITIGATION MEASURES



KEY PLAN

MITIGATION MEASURES (OPERATION PHASE)	
OM1	COMPENSATORY/ NEW TREE PLANTING WHERE PRACTICAL
OM2	BUFFER PLANTING
OM3	AESTHETIC DESIGN OF PROPOSED PUBLIC HOUSING DEVELOPMENT
OM4	LANDSCAPE TREATMENT WITHIN THE PROPOSED HOUSING DEVELOPMENT
OM5	VARIATION OF BUILDING HEIGHT PROFILE OF PROPOSED PUBLIC HOUSING DEVELOPMENT
OM6	BUILDING SEPARATION OF PROPOSED PUBLIC HOUSING DEVELOPMENT
OM7	BUILDING SETBACK

Rev	Description	By	Date
-	FIRST ISSUE	EW	MAY 21

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Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
PHOTOMONTAGE OF VIEWPOINT VP7 & VP8

Drawing no.			Rev.
FIGURE 27			-
Drawn: CAD	Date: APR 2021	Checked: HL	Approved: EW
Scale:		Status: -	

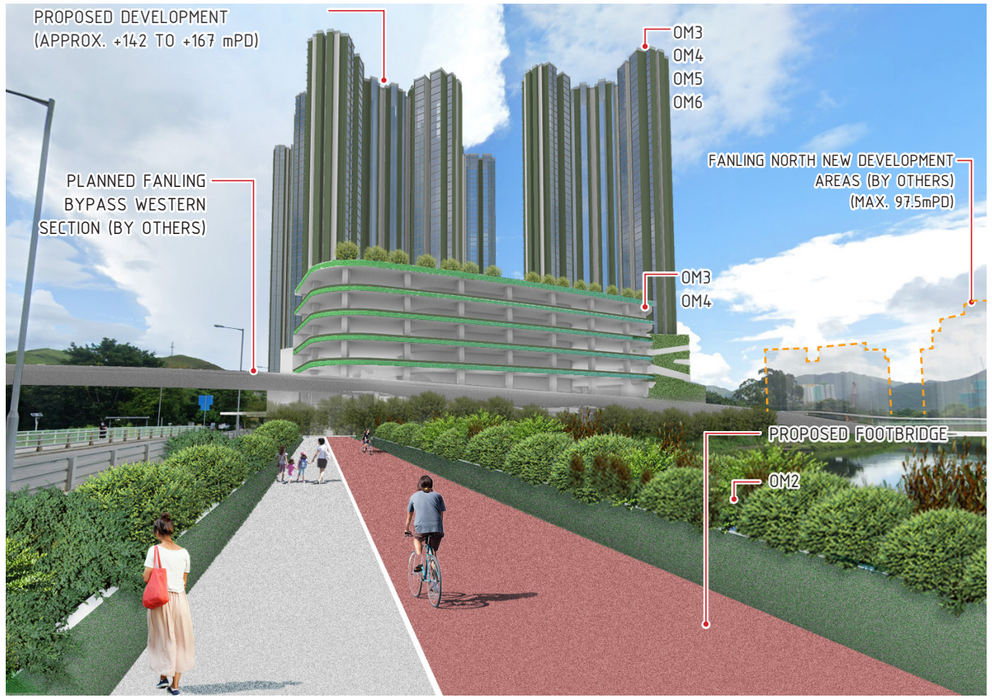
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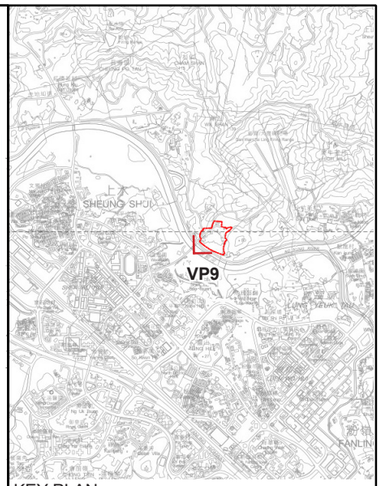
Date : 5/31/2021
Filename : X:\2512219A (CE47_20 CEDD ZONE2 HOUSING DEVELOPMENT)\02_Drawing\01-Report\T01_WA SHAN\WSP_CE47_T01_LR_1002.dgn



VP9 - PROPOSED FOOTBRIDGE ACROSS NG TUNG RIVER
EXISTING CONDITION



VP9 - PROPOSED FOOTBRIDGE ACROSS NG TUNG RIVER
OPERATION WITH MITIGATION MEASURES



KEY PLAN

MITIGATION MEASURES (OPERATION PHASE)	
OM1	COMPENSATORY/ NEW TREE PLANTING WHERE PRACTICAL
OM2	BUFFER PLANTING
OM3	AESTHETIC DESIGN OF PROPOSED PUBLIC HOUSING DEVELOPMENT
OM4	LANDSCAPE TREATMENT WITHIN THE PROPOSED HOUSING DEVELOPMENT
OM5	VARIATION OF BUILDING HEIGHT PROFILE OF PROPOSED PUBLIC HOUSING DEVELOPMENT
OM6	BUILDING SEPARATION OF PROPOSED PUBLIC HOUSING DEVELOPMENT
OM7	BUILDING SETBACK

Rev	Description	By	Date
–	FIRST ISSUE	EW	MAY 21

Consultant

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Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
PHOTOMONTAGE OF VIEWPOINT VP9

Drawing no.	Rev.
FIGURE 28	–

Drawn	Date	Checked	Approved
CAD	APR 2021	HL	EW

Scale

Status
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Filename : X:\2512219A (CE47_20 CEDD ZONE2 HOUSING DEVELOPMENT)\02_Drawing\01-Report\T01_WA SHAN\WSP_CE47_T01_LR_1002.dgn

GREEN AREA CALCULATION		
	REQUIREMENT	PROVISION
GREENERY COVERAGE (TARGET)	30% OF SITE AREA (31,400 sqm)	TARGET: 9,420 sqm
GREENERY COVERAGE (MINIMUM)	20% OF SITE AREA (31,400 sqm)	MIN 6,280 sqm

AT GRADE PLANTING AREA + PLANTING AREA ON TOP OF RETAINING WALL:
APPROX. 6,720 SQM
PLANTING AREA ON PODIUM GARDEN: APPROX. 560 SQM
PLANTING AREA ON ROOF GARDEN: APPROX. 2145 SQM

Graves
墓地
TG-3
MAX. 30 DEGREES CUT SLOPE
BLOCK 4
+167
+13.0
+15.0
MAX. 4M HIGH RETAINING WALL
TG-4
TG-5
TOP LEVEL OF SLOPE: +20
MAX. 30 DEGREES CUT SLOPE
+12.5
+13.0
BLOCK 3
+160
+10.0
BLOCK 1
+142
MAX. 6M HIGH RETAINING WALL
TOP OF RETAINING WALL: +20
+13.5
MAX. +50.0
BLOCK 2
+161
MAX. 30 DEGREES CUT SLOPE
7.5m WIDE HARDPAVED EVA
PROPOSED FANLING BYPASS (BY OTHERS)
+10.0
5.9
9.7
49

LEGEND:

- AT GRADE GREENERY AREA
- ROOF GREENERY AREA
- PLANTING AREA ON TOP OF RETAINING WALL
- REZONING BOUNDARY
- HOUSING SITE BOUNDARY

NOTES:
LAYOUT AND DETAILS OF HOSUING DEVELOPMENT ARE SUBJECT TO CHANGES IN DESIGN DEVELOPMENT STAGE.

Rev	Description	By	Date
–	FIRST ISSUE	EW	MAY 21

Consultant: wsp

Project title:
AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title:
TASK ORDER NO. 1
WA SHAN
GREENERY COVERAGE PLAN

Drawing no.			Rev.
FIGURE 29			–
Drawn: CAD	Date: APR 2021	Checked: HL	Approved: EW
Scale:		Status: –	

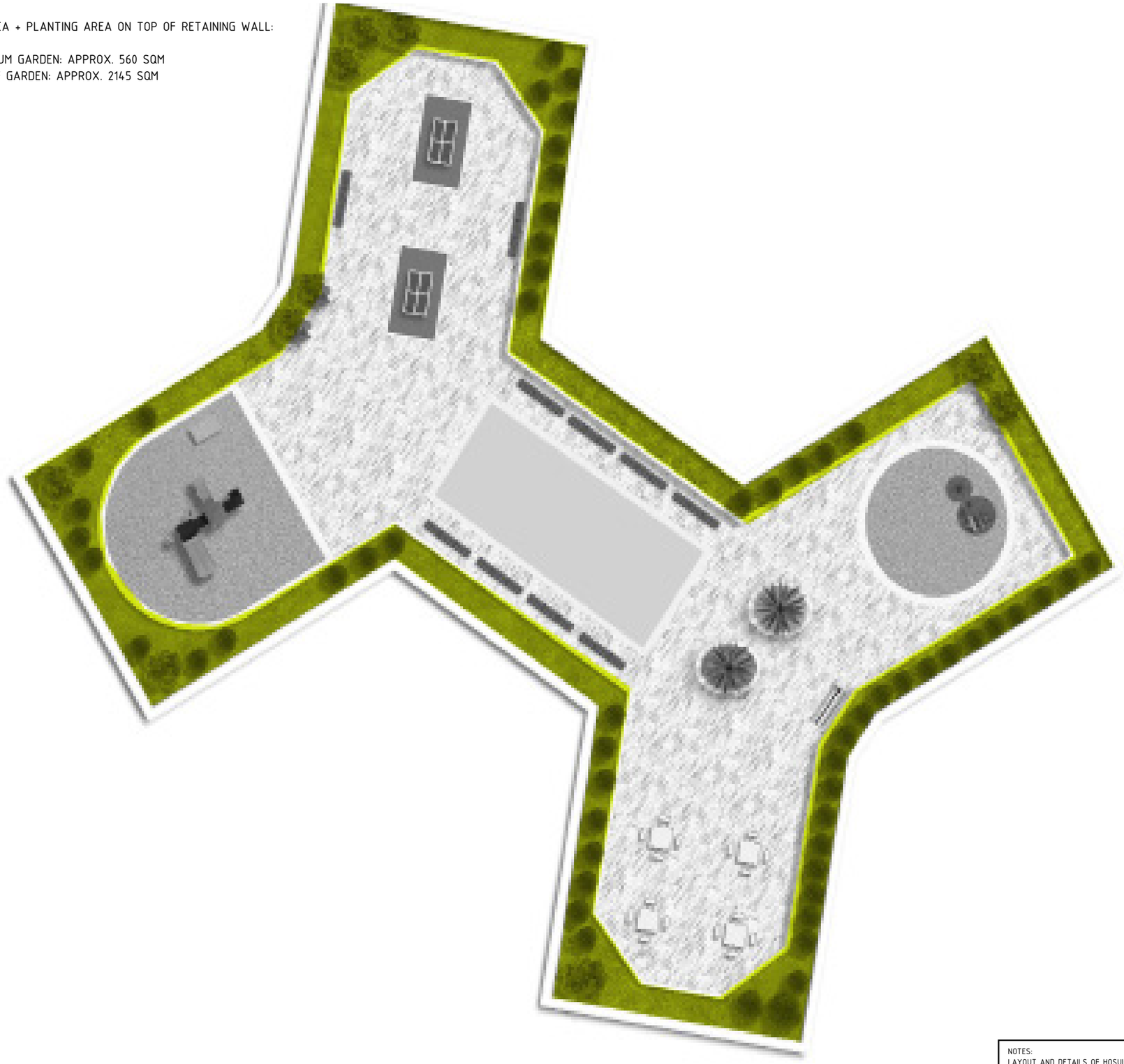
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GREEN AREA CALCULATION		
	REQUIREMENT	PROVISION
GREENERY COVERAGE (TARGET)	30% OF SITE AREA (31,400 sqm)	TARGET: 9,420 sqm
GREENERY COVERAGE (MINIMUM)	20% OF SITE AREA (31,400 sqm)	MIN 6,280 sqm

AT GRADE PLANTING AREA + PLANTING AREA ON TOP OF RETAINING WALL:
APPROX. 6,720 SQM
PLANTING AREA ON PODIUM GARDEN: APPROX. 560 SQM
PLANTING AREA ON ROOF GARDEN: APPROX. 2145 SQM



LEGEND:

PODIUM GREENERY AREA

NOTES:
LAYOUT AND DETAILS OF HOSUING DEVELOPMENT ARE SUBJECT TO CHANGES IN DESIGN DEVELOPMENT STAGE.

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–	FIRST ISSUE	EW	MAY 21

Consultant

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Project title

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TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
GREENERY COVERAGE PLAN
(BLK 1 – PODIUM GARDEN)

Drawing no.	Rev.
FIGURE 30	–

Drawn	Date	Checked	Approved
CAD	APR 2021	HL	EW

Scale

Status
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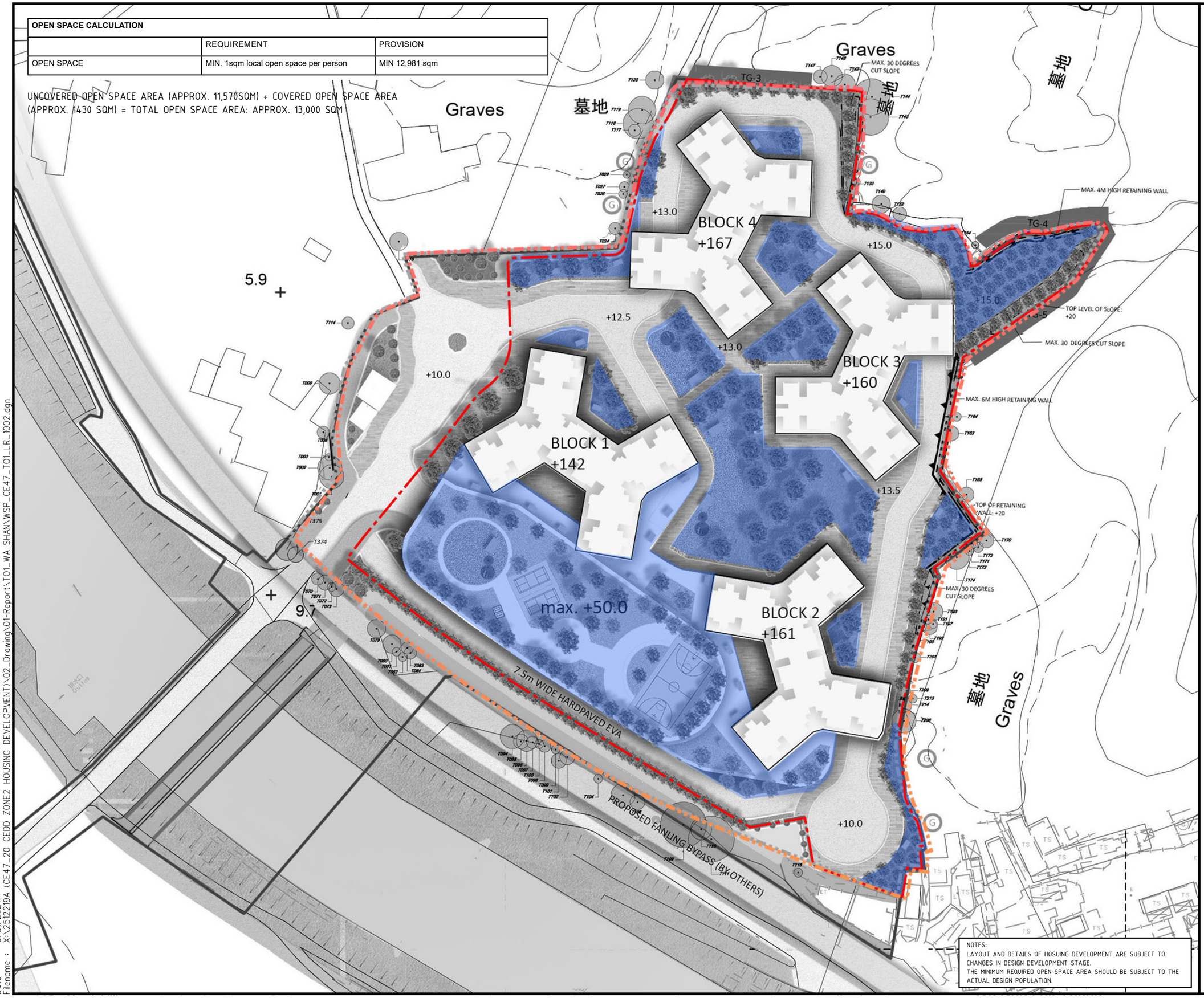
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OPEN SPACE CALCULATION		
	REQUIREMENT	PROVISION
OPEN SPACE	MIN. 1sqm local open space per person	MIN 12,981 sqm

UNCOVERED OPEN SPACE AREA (APPROX. 11,570SQM) + COVERED OPEN SPACE AREA (APPROX. 1430 SQM) = TOTAL OPEN SPACE AREA: APPROX. 13,000 SQM



LEGEND:

- OPEN SPACE (UNCOVERED)
- REZONING BOUNDARY
- HOUSING SITE BOUNDARY

NOTES:
LAYOUT AND DETAILS OF HOSUING DEVELOPMENT ARE SUBJECT TO CHANGES IN DESIGN DEVELOPMENT STAGE.
THE MINIMUM REQUIRED OPEN SPACE AREA SHOULD BE SUBJECT TO THE ACTUAL DESIGN POPULATION.

Rev	Description	By	Date
–	FIRST ISSUE	EW	MAY 21

Consultant

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Project title

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TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
OPEN SPACE CALCULATION PLAN

Drawing no.			Rev.
FIGURE 31			–
Drawn: CAD	Date: APR 2021	Checked: HL	Approved: EW
Scale:		Status: –	

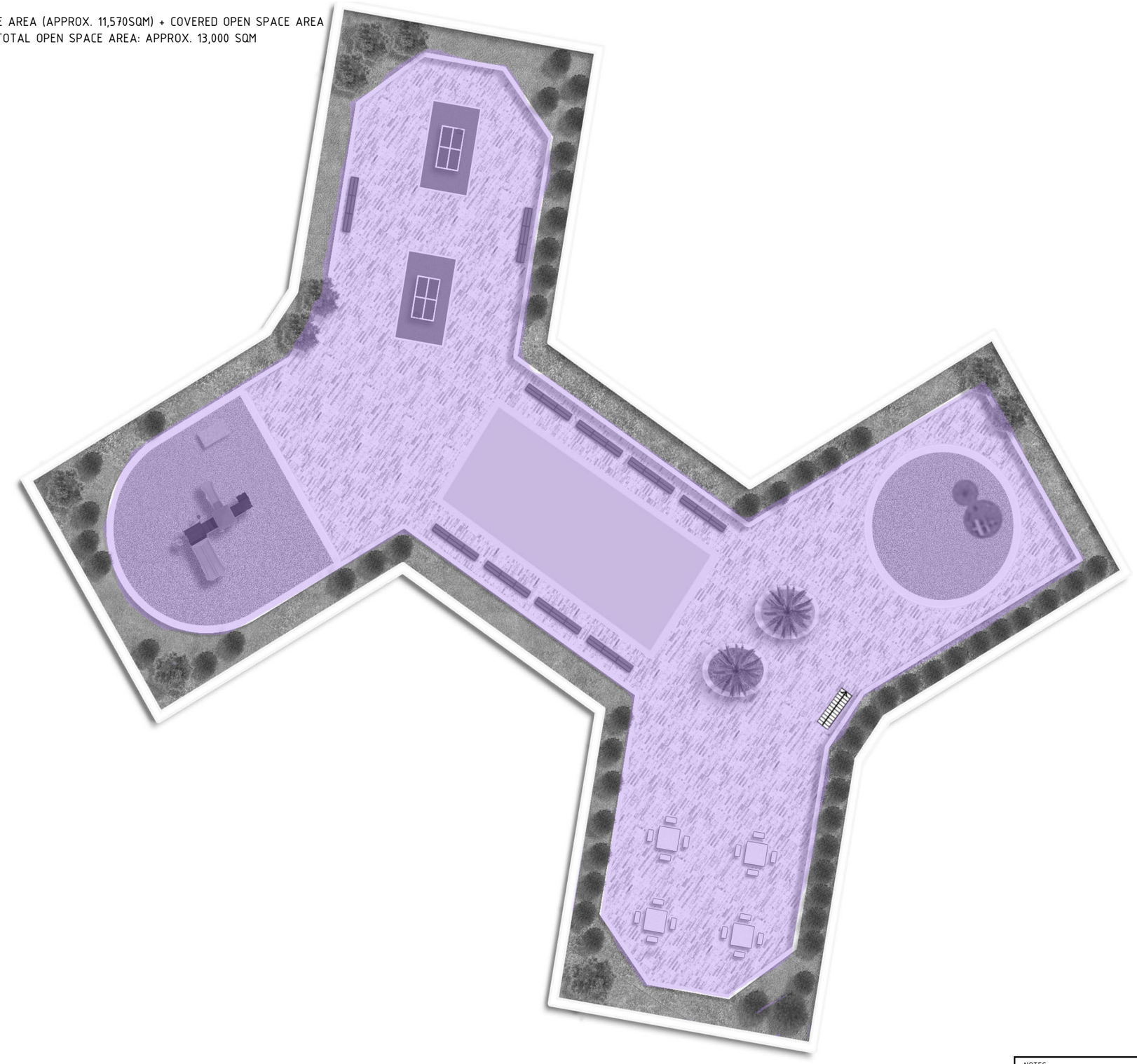
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OPEN SPACE CALCULATION		
	REQUIREMENT	PROVISION
OPEN SPACE	MIN. 1sqm local open space per person	MIN 12,981 sqm

UNCOVERED OPEN SPACE AREA (APPROX. 11,570SQM) + COVERED OPEN SPACE AREA (APPROX. 1430 SQM) = TOTAL OPEN SPACE AREA: APPROX. 13,000 SQM



LEGEND:

OPEN SPACE (COVERED)

NOTES:
LAYOUT AND DETAILS OF HOSUING DEVELOPMENT ARE SUBJECT TO CHANGES IN DESIGN DEVELOPMENT STAGE.
THE MINIMUM REQUIRED OPEN SPACE AREA SHOULD BE SUBJECT TO THE ACTUAL DESIGN POPULATION.

Rev	Description	By	Date
–	FIRST ISSUE	EW	MAY 21

Consultant

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Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
OPEN SPACE CALCULATION PLAN
(BLK 1 – PODIUM GARDEN)

Drawing no.	Rev.
FIGURE 32	–

Drawn	Date	Checked	Approved
CAD	APR 2021	HL	EW

Scale

Status
–

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NEW TREES



Elaeocarpus chinensis
中華杜英



Koelreuteria bipinnata
復羽葉欒樹



Cinnamomum camphora
樟樹



Terminalia mantaly
小葉欖仁

NEW TREE PLANTING SCHEDULE				
CODE	**SCIENTIFIC NAME**	**CHINESE NAME**	**ORIGIN**	**SPACING (mm)**
CC	*Cinnamomum camphora*	樟樹	Native	5000
EC	*Elaeocarpus chinensis*	中華杜英	Native	5000
KB	*Koelreuteria bipinnata*	復羽葉欒樹	Exotic	5000
TM	*Terminalia mantaly*	小葉欖仁	Exotic	5000



Allamanda schottii
硬枝黃蟬



Rhaphiolepis indica
車輪梅

SHRUBS AND GROUNDCOVERS

SHRUBS AND GROUNDCOVERS PLANTING SCHEDULE				
Roadside Planting				
CODE	**SCIENTIFIC NAME**	**CHINESE NAME**	**ORIGIN**	**SPACING (mm)**
Asc	*Allamanda schottii*	硬枝黃蟬	Exotic	450
Rin	*Rhaphiolepis indica*	車輪梅	Native	400
Rsi	*Rhododendron simsii*	紅杜鵑	Native	300
Retaining Wall				
Fpu	*Ficus pumila*	薜荔	Native	300
Pda	*Parthenocissus dalzielii*	爬牆虎	Exotic	300
Slope Planting				
Acr	*Ardisia crenata*	朱砂根	Native	300
Fmi	*Ficus microcarpa 'Golden Leaves'*	黃金榕	Exotic	600
Gja	*Gardenia jasminoides*	梔子	Native	450
Nhi	*Nephrolepis hirsutula*	毛葉腎蕨	Native	300
Oja	*Ophiopogon japonicus*	沿階草	Exotic	300
Buffer Planting				
Ich	*Ixora chinensis*	龍船花	Native	300
Lch	*Loropetalum chinense*	紅花繼木	Exotic	400
Msa	*Melastoma sanguineum*	毛稔	Native	400



Rhododendron simsii
紅杜鵑



Ficus pumila
薜荔



Parthenocissus dalzielii
爬牆虎



Ardisia crenata
朱砂根



Ficus microcarpa 'Golden Leaves'
黃金榕



Gardenia jasminoides
梔子



Nephrolepis hirsutula
毛葉腎蕨



Ophiopogon japonicus
沿階草



Ixora chinensis
龍船花



Loropetalum chinense
紅花繼木



Melastoma sanguineum
毛稔

NOTES:
PROPOSED PLANTING SPECIES IS CONCEPTUAL AND PLANTING DETAILS WITHIN HOUSING DEVELOPMENT ARE SUBJECT TO CHNAGES IN DESIGN DEVELOPMENT STAGE.

Rev	Description	By	Date
–	FIRST ISSUE	EW	MAY 21

Consultant

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Project title
AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title
TASK ORDER NO. 1
WA SHAN
- PLANTING PALETTE

Drawing no.	Rev.
FIGURE 33	–

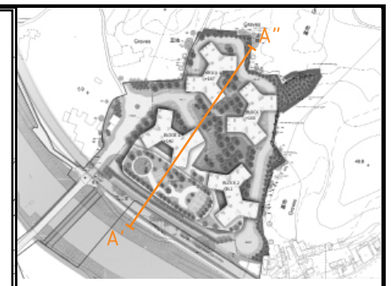
Drawn	Date	Checked	Approved
CAD	APR 2021	HL	EW

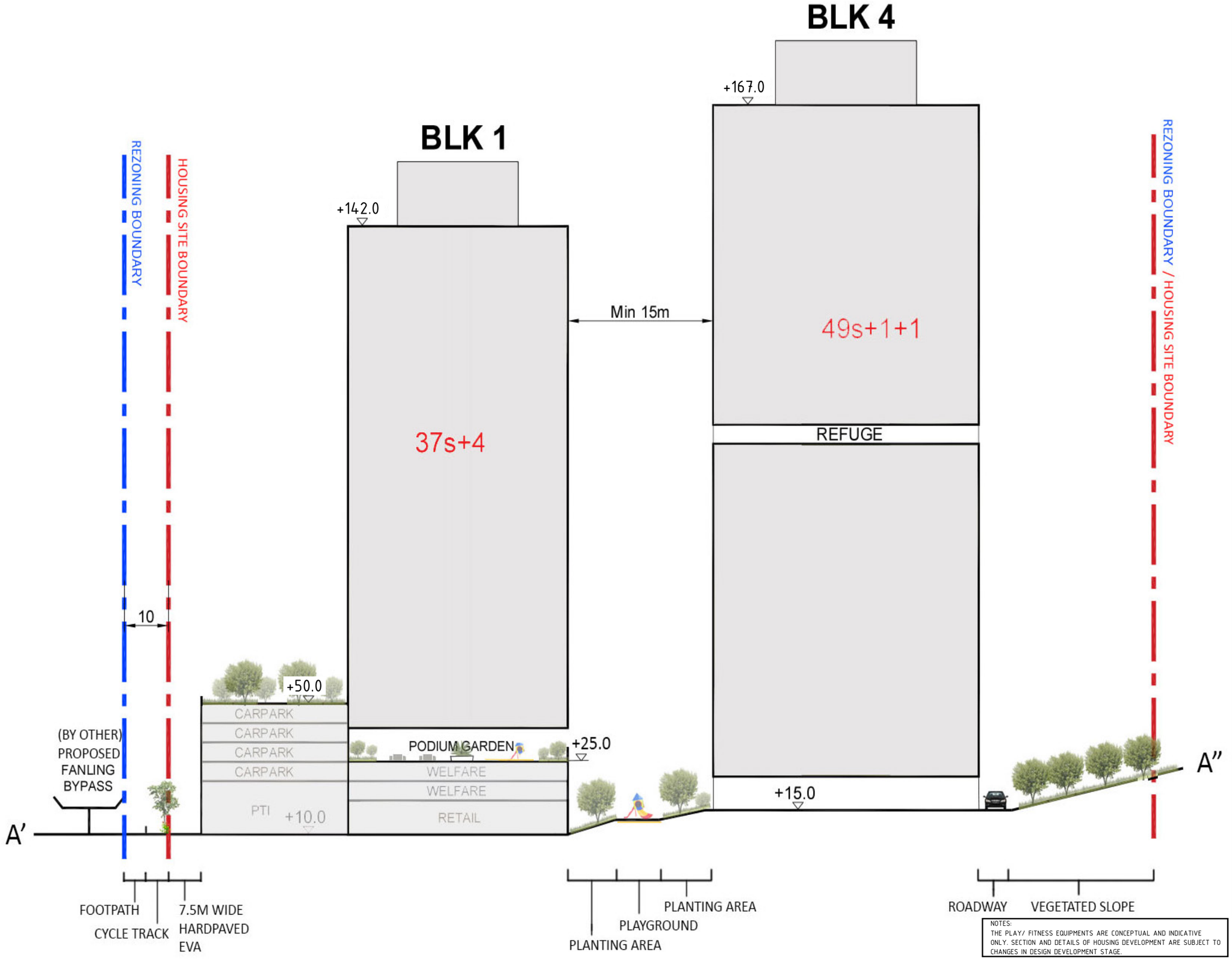
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Status: –

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NOTES:
THE PLAY/ FITNESS EQUIPMENTS ARE CONCEPTUAL AND INDICATIVE ONLY. SECTION AND DETAILS OF HOUSING DEVELOPMENT ARE SUBJECT TO CHANGES IN DESIGN DEVELOPMENT STAGE.

Rev	Description	By	Date
–	FIRST ISSUE	EW	MAY 21

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Project title

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TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
LANDSCAPE SECTION A'A"

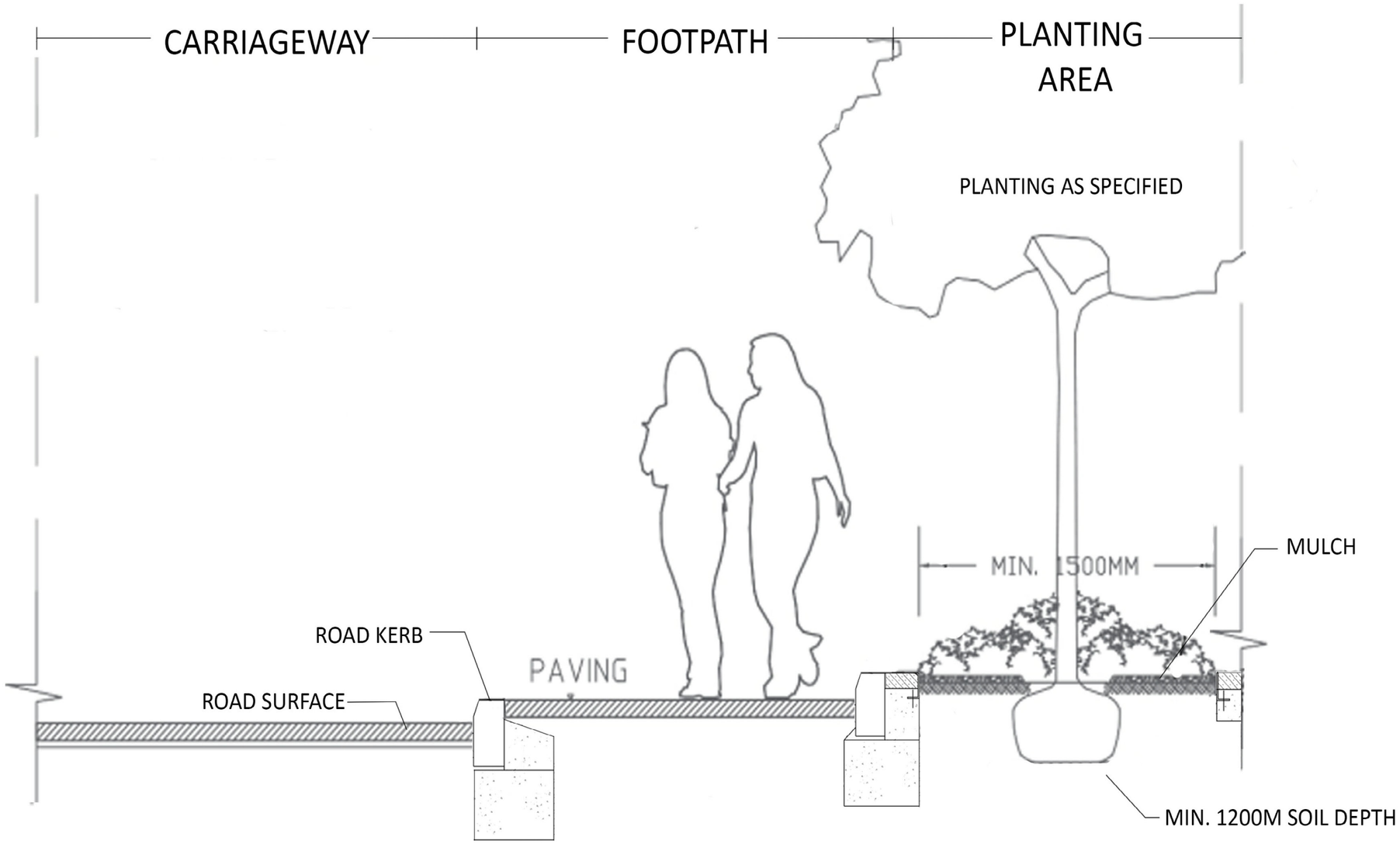
Drawing no.			Rev.
FIGURE 34			–
Drawn: CAD	Date: APR 2021	Checked: HL	Approved: EW
Scale		Status: –	

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NOTES:

SECTION AND DETAILS SHALL BE REFERENCED TO HIGHWAYS STANDARD DRAWINGS FOR HARD LANDSCAPE FEATURES TO BE HANDED OVER TO HIGHWAYS DEPARTMENT.

Rev	Description	By	Date
–	FIRST ISSUE	EW	MAY 21

Consultant

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Project title

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TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

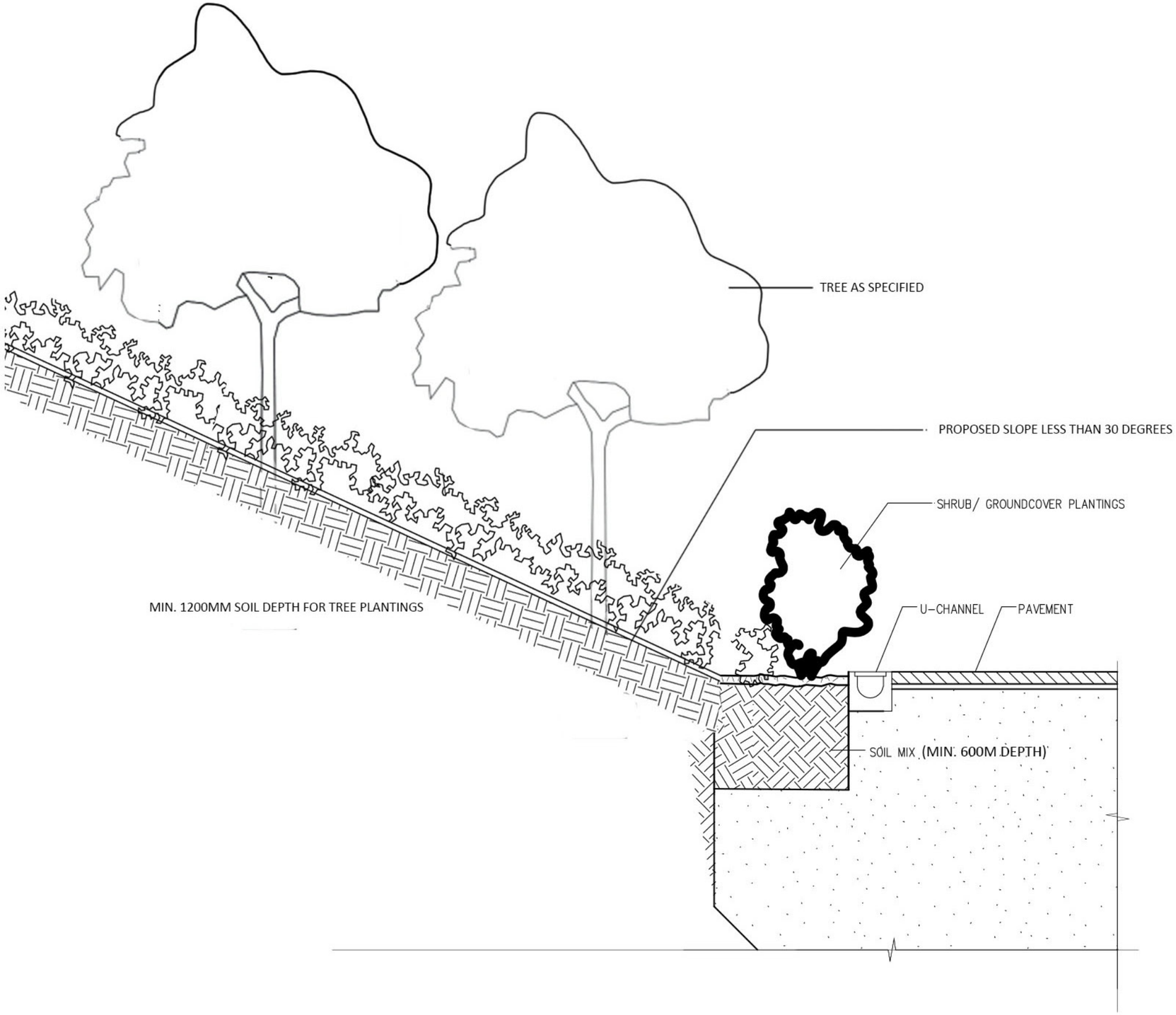
TASK ORDER NO. 1
WA SHAN
TYPICAL SECTION –
ROADSIDE PLANTING

Drawing no.			Rev.
FIGURE 35			–
Drawn: CAD	Date: APR 2021	Checked: HL	Approved: EW
Scale		Status: –	

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Date : 5/31/2021
Filename : X:\2512219A (CE47_20 CEDD ZONE2 HOUSING DEVELOPMENT)\02_Drawing\01-Report\T01_WA SHAN\WSP_CE47_T01_LR_1002.dgn





NOTES:
SECTION AND DETAILS OF HOUSING DEVELOPMENT ARE SUBJECT TO FUTURE SLOPE GRADIENT AND CHANGES IN DESIGN DEVELOPMENT STAGE.

Rev	Description	By	Date
–	FIRST ISSUE	EW	MAY 21

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Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
TYPICAL SECTION – SLOPE PLANTING

Drawing no.	Rev.
FIGURE 36	–

Drawn	Date	Checked	Approved
CAD	APR 2021	HL	EW

Scale

Status
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REZONING SITE

HOUSING SITE

FOOTPATH | CYCLE TRACK | BUFFER PLANTING | 7.5M WIDE EVA

PLANTING AS SPECIFIED

RAILING

MULCH

MIN. 1500MM

PAVING

PAVING

MIN. 1200M SOIL DEPTH

NOTES:
SECTION AND DETAILS OF HOUSING DEVELOPMENT ARE SUBJECT TO CHANGES IN DESIGN DEVELOPMENT STAGE.
PAVEMENT AND PLANTER DETAILS SHALL BE REFERENCED TO HIGHWAYS STANDARD DRAWINGS FOR HARD LANDSCAPE FEATURES TO BE HANDED OVER TO HIGHWAYS DEPARTMENT.

Rev	Description	By	Date
–	FIRST ISSUE	EW	MAY 21

Consultant

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Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
TYPICAL SECTION –
BUFFER PLANTING

Drawing no.	Rev.
FIGURE 37	–

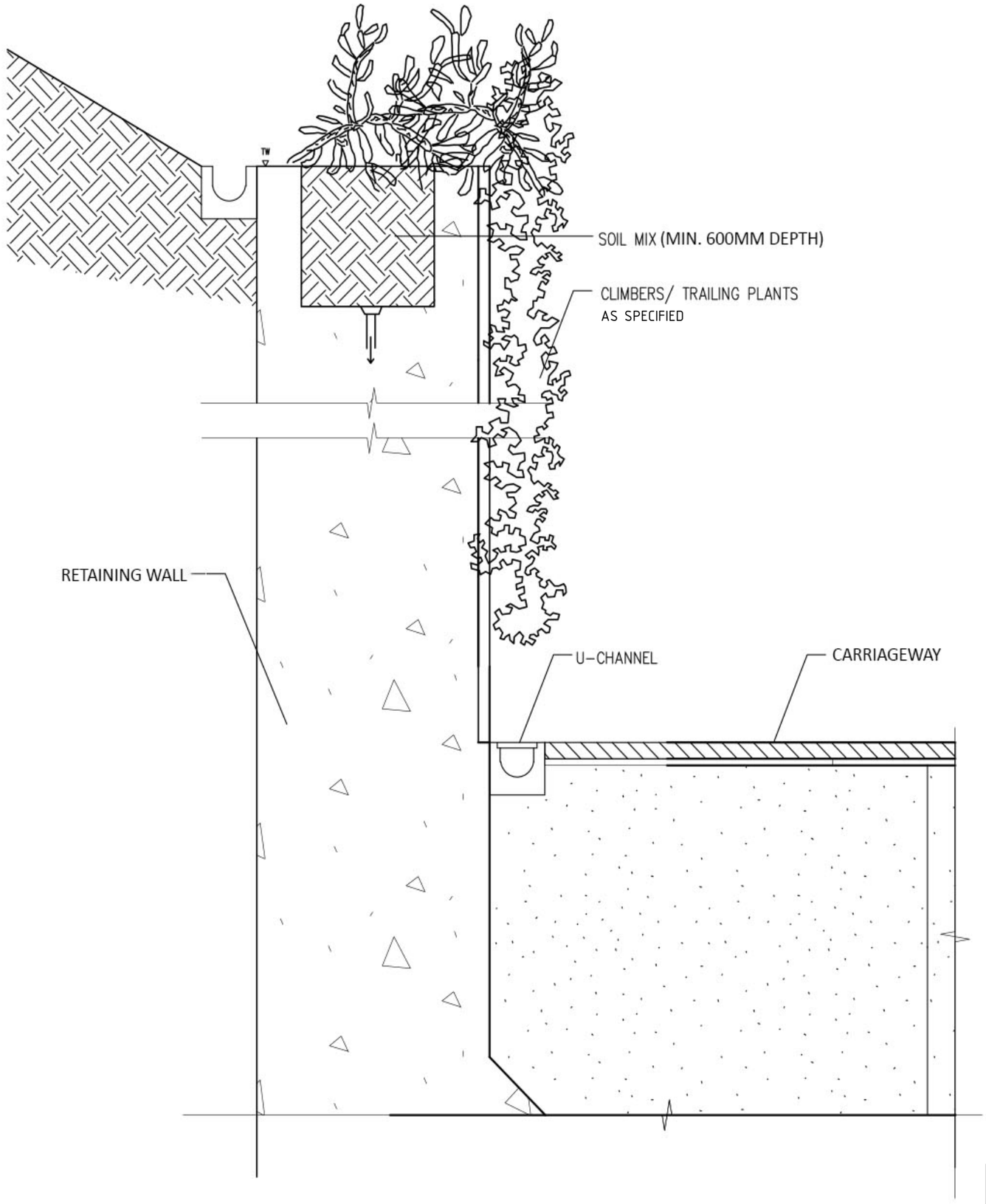
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NOTES:
SECTION AND DETAILS OF HOUSING DEVELOPMENT ARE SUBJECT TO CHANGES IN DESIGN DEVELOPMENT STAGE.

Rev	Description	By	Date
–	FIRST ISSUE	EW	MAY 21

Consultant

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Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
TYPICAL SECTION –
RETAINING WALL

Drawing no.	Rev.
FIGURE 38	–

Drawn	Date	Checked	Approved
CAD	APR 2021	HL	EW

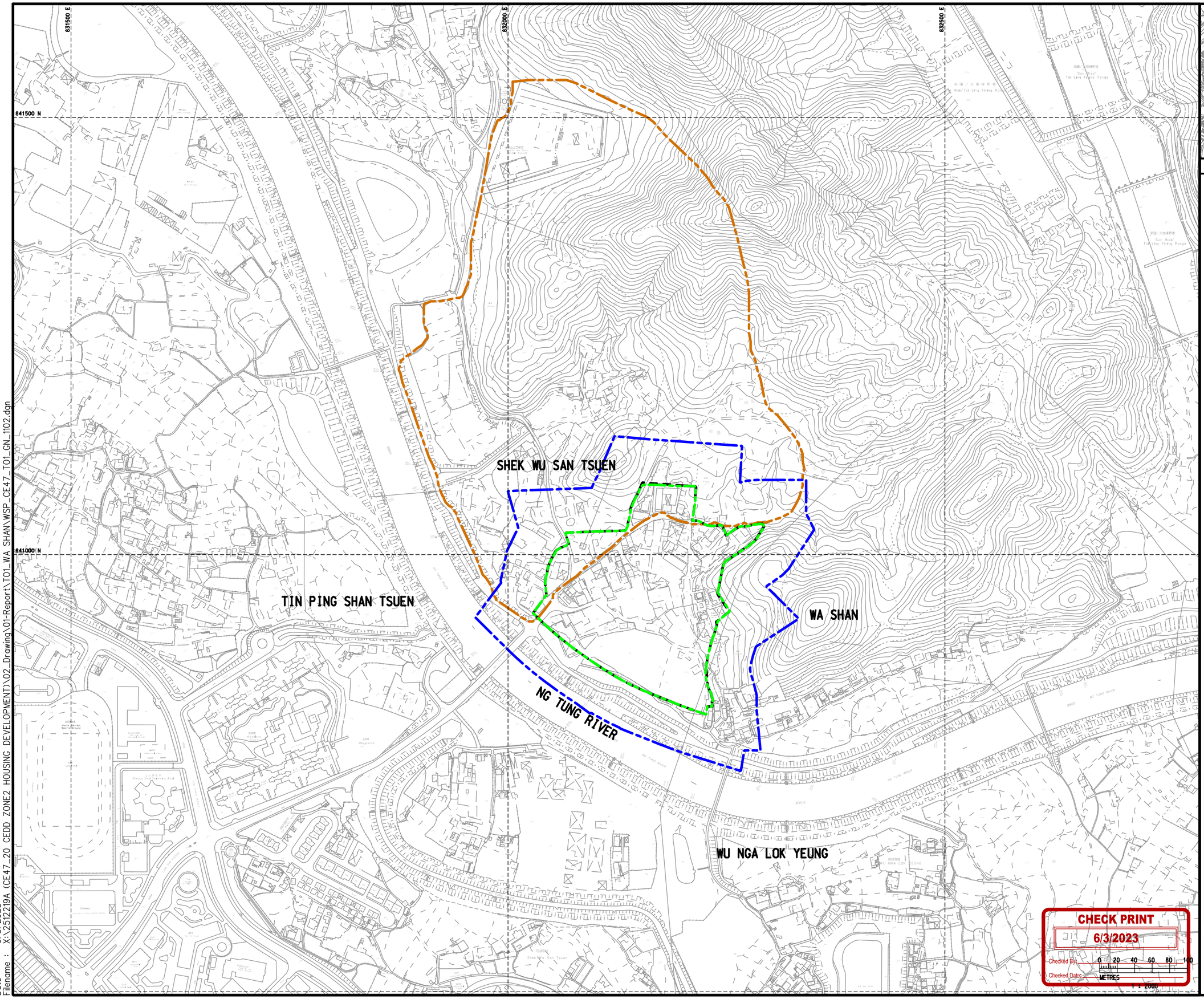
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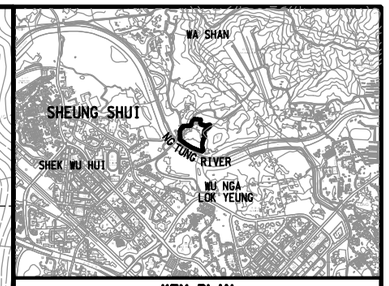
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KEY PLAN

LEGEND :

- DEVELOPMENT AREA (BASE SCHEME NO.2)
- 50m ZONE FROM THE PROPOSED DEVELOPMENT AREA
- SHEUNG SHUI WA SHAN SITE OF ARCHAEOLOGICAL INTEREST (SSWS SAI)
- REZONING BOUNDARY

Rev	Description	By	Date
–	FIRST ISSUE	VS	JAN 22

Consultant

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Project title

AGREEMENT NO.CE47/2020 (CE)

TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
HERITAGE IMPACT STUDY (HIS)
LAYOUT PLAN

Drawing no.			Rev.
Figure 51			–
Drawn: CAD	Date: APR 2021	Checked: VS	Approved: YWY
Scale: 1:2000 (A1)		Status: –	

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Checked Date:
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Date : 6/3/2023
Filename : X:\2512219A (CE47_20 CEDD ZONE2 HOUSING DEVELOPMENT)\02_Drawing\01-Report\T01_WA SHAN\WSP_CE47_T01_GN_1102.dgn

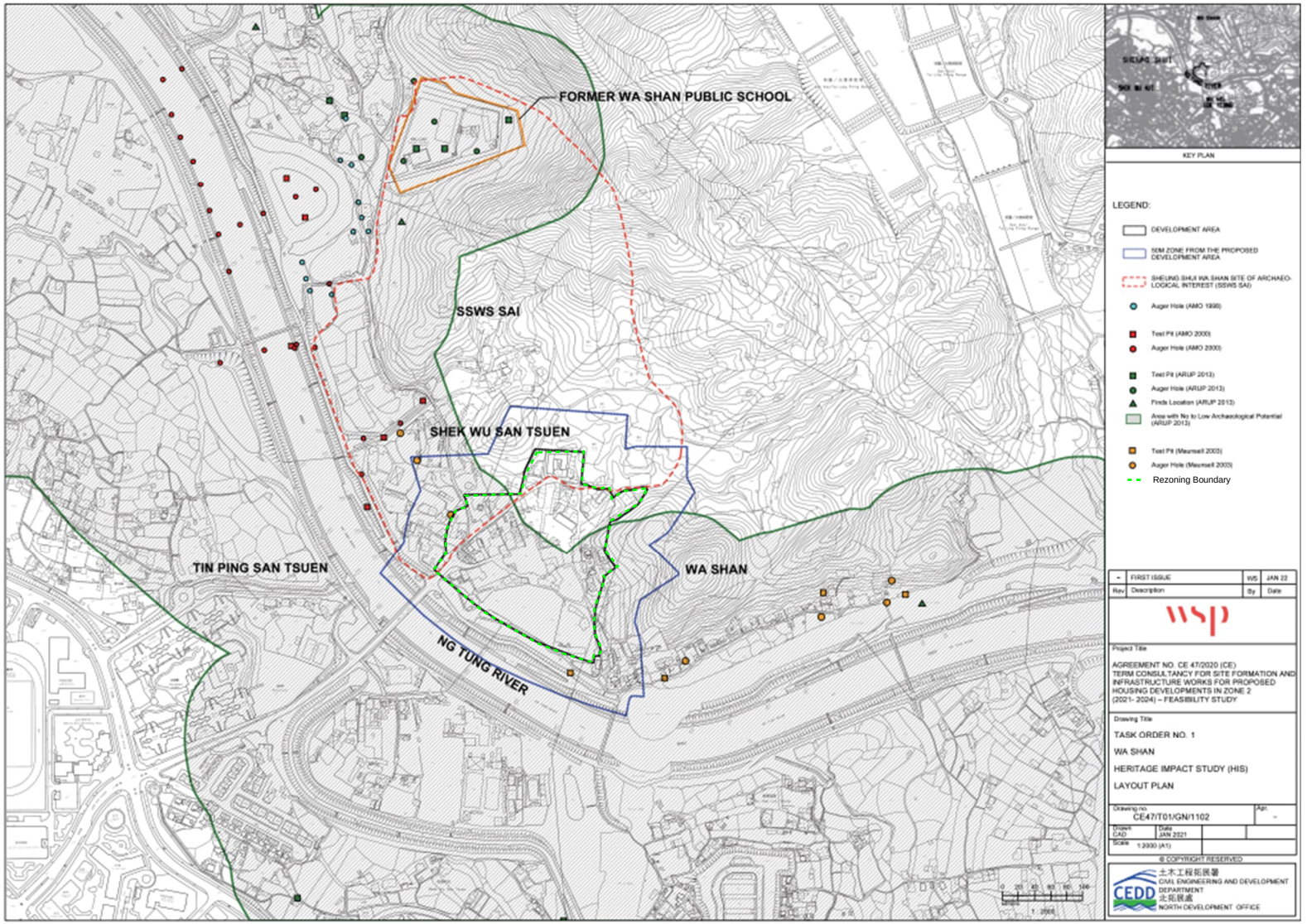
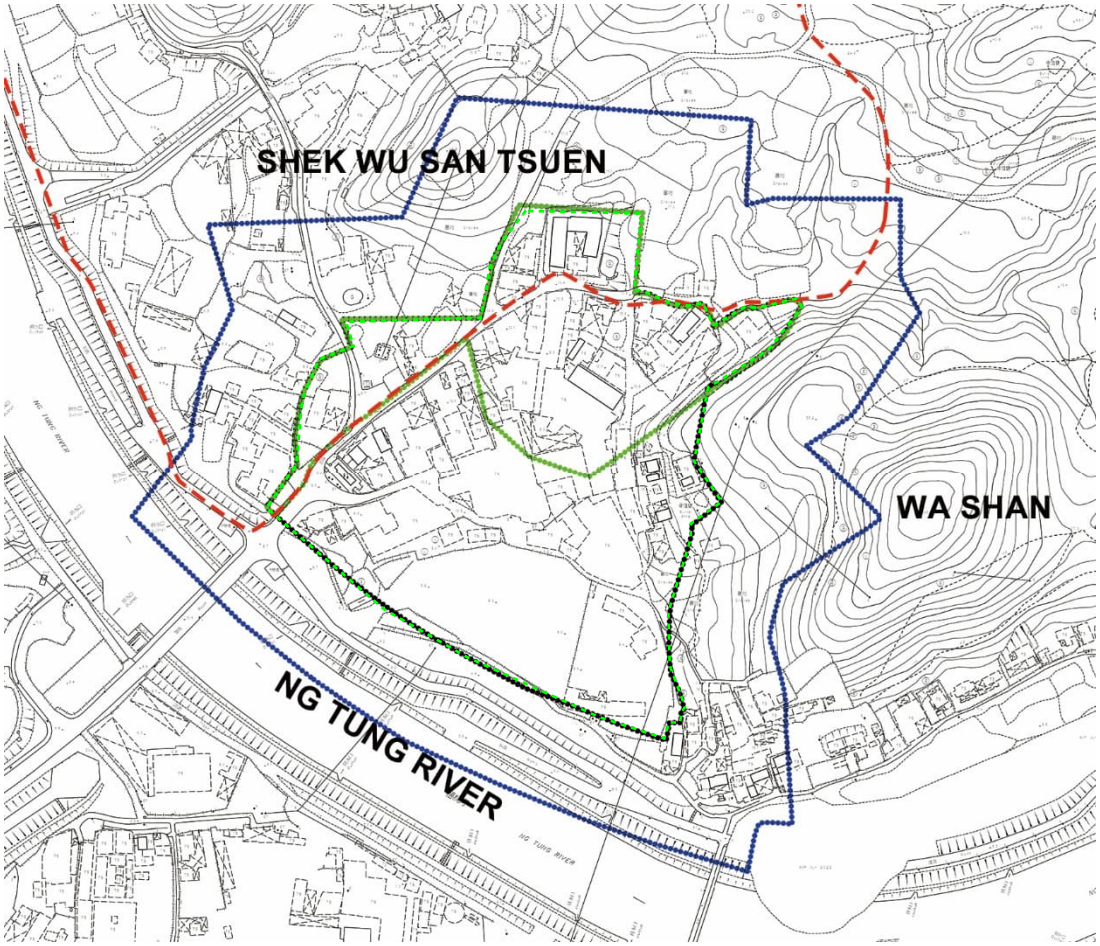


Figure 52 . – Previous archaeological testing locations in and near the HIS Study Area, finds location near Former Wa Shan Public School and area of low archaeological potential (based on AMO 2000, ARUP 2013 and Maunsell 2003)



KEY

Archaeological impact assessment area

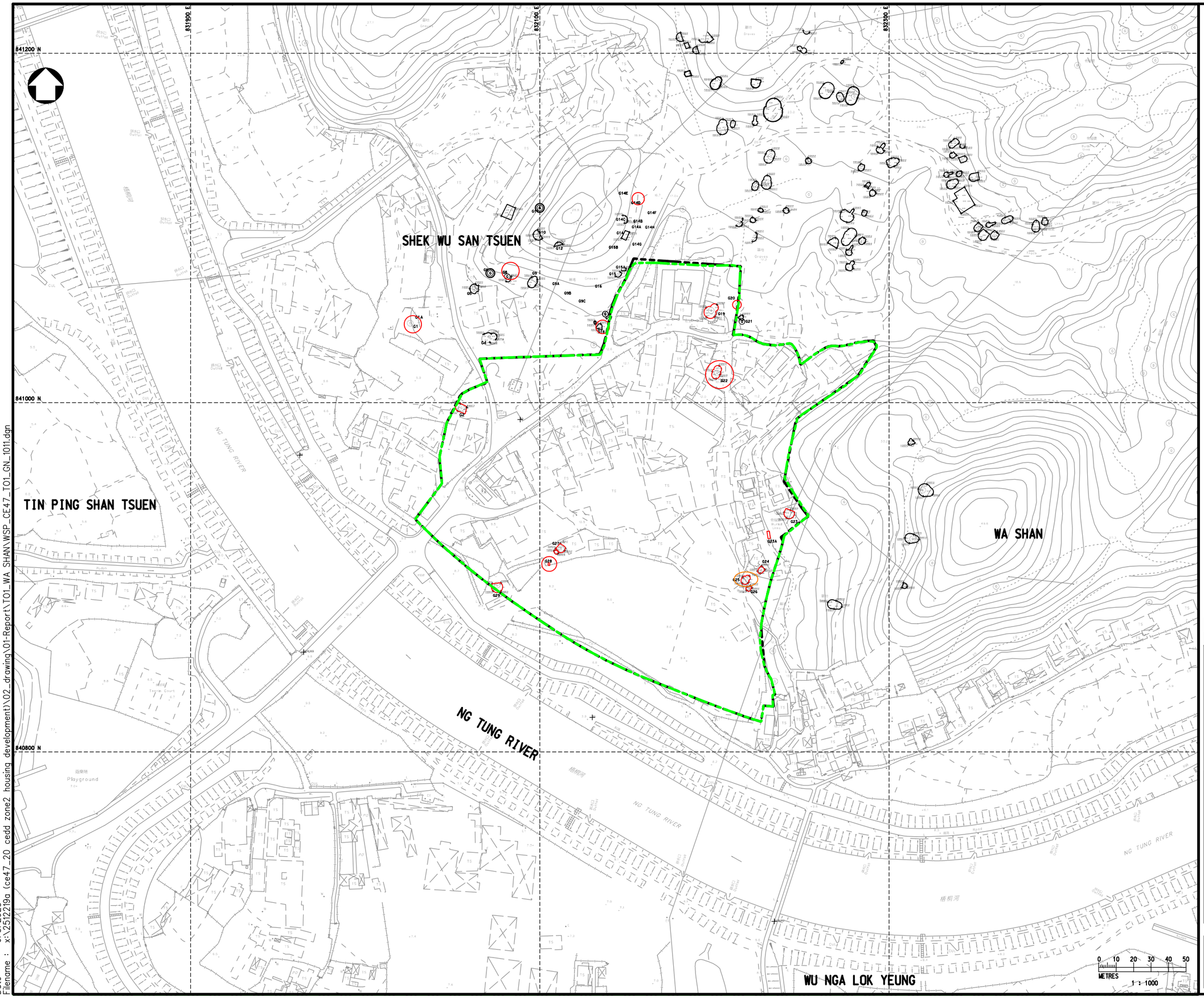
HIA Study Area

Sheung Shui Wan Shan Site of Archaeological Interest

Development Area

Rezoning Boundary

Figure 53 Area within development site and Sheung Shui Wa Shan SAI identified for archaeological impact assessment.



LEGEND :

- DEVELOPMENT BOUNDARY
- REZONING BOUNDARY
- MORE THAN 60 YEARS
- MORE THAN 55 YEARS
- SURVEY GRAVE

Rev	Description	By	Date
–	FIRST ISSUE	HL	SEP 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
GRAVE SURVEY LAYOUT PLAN

Drawing no.	Rev.
Figure 54	–

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

Scale: 1:1000 (A1)
Status: PRELIMINARY

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土木工程處
CIVIL ENGINEERING OFFICE

Date : 6/3/2023
Filename : x:\25122219a (ce47_20 cedd zone2 housing development)\02_drawing\01-Report\T01_WA SHAN\WSP_CE47_T01_GN_1011.dgn



Rev	Description	By	Date
-	FIRST ISSUE	EW	MAY 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)

TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
AERIAL PHOTOGRAPH

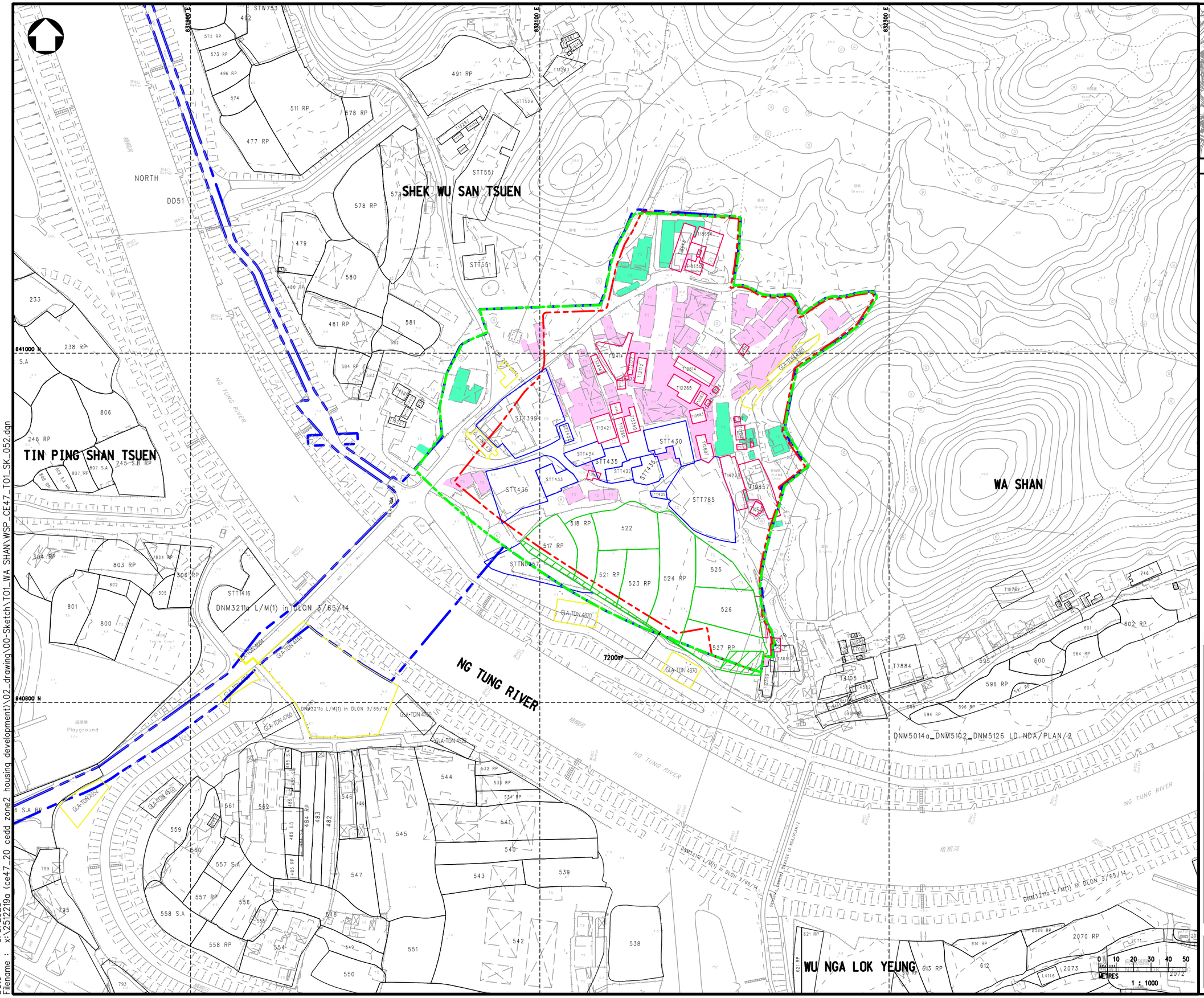
Drawing no.	Rev.
Figure 55	-

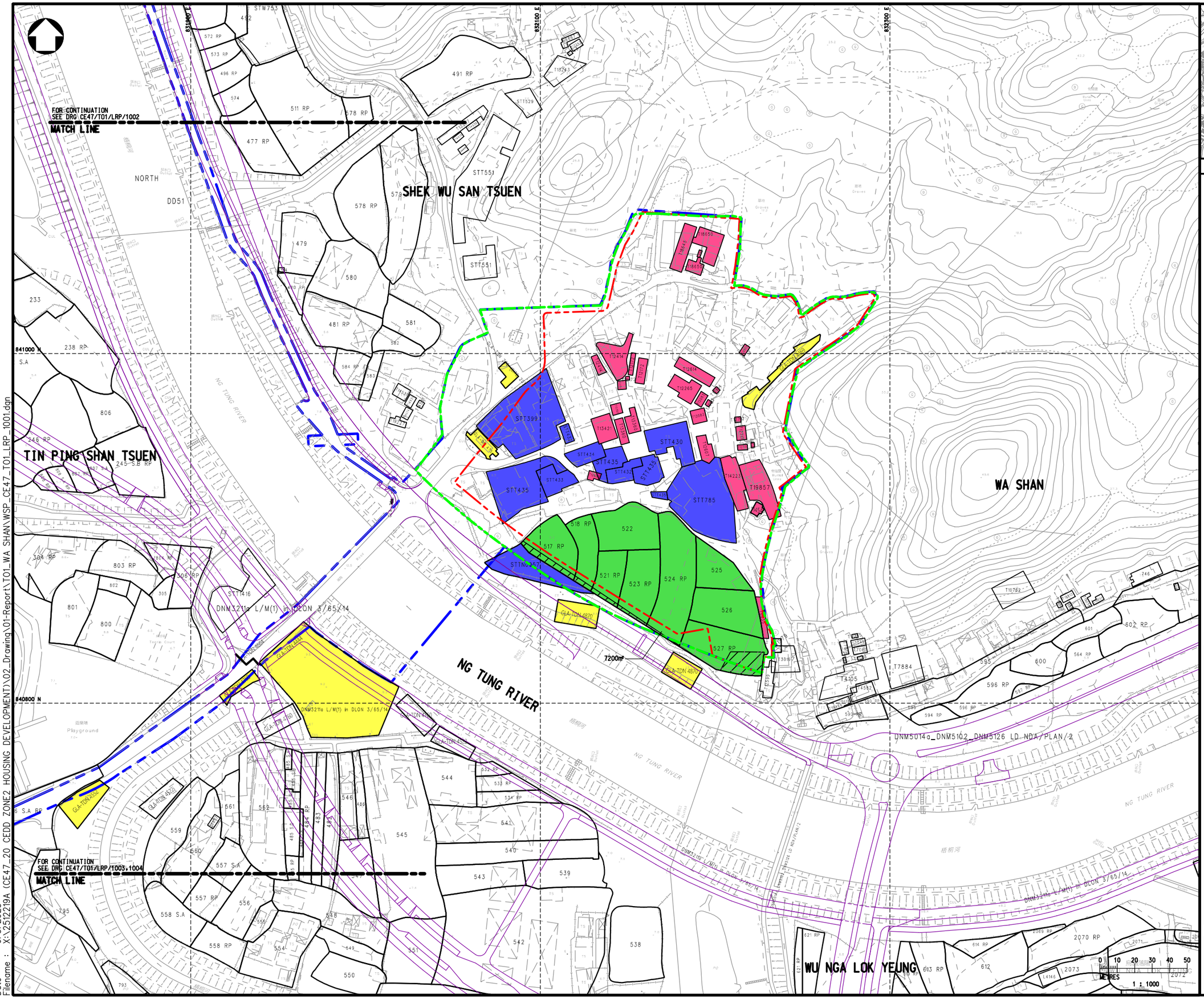
Drawn	Date	Checked	Approved
CAD	APR 2021	HL	EW

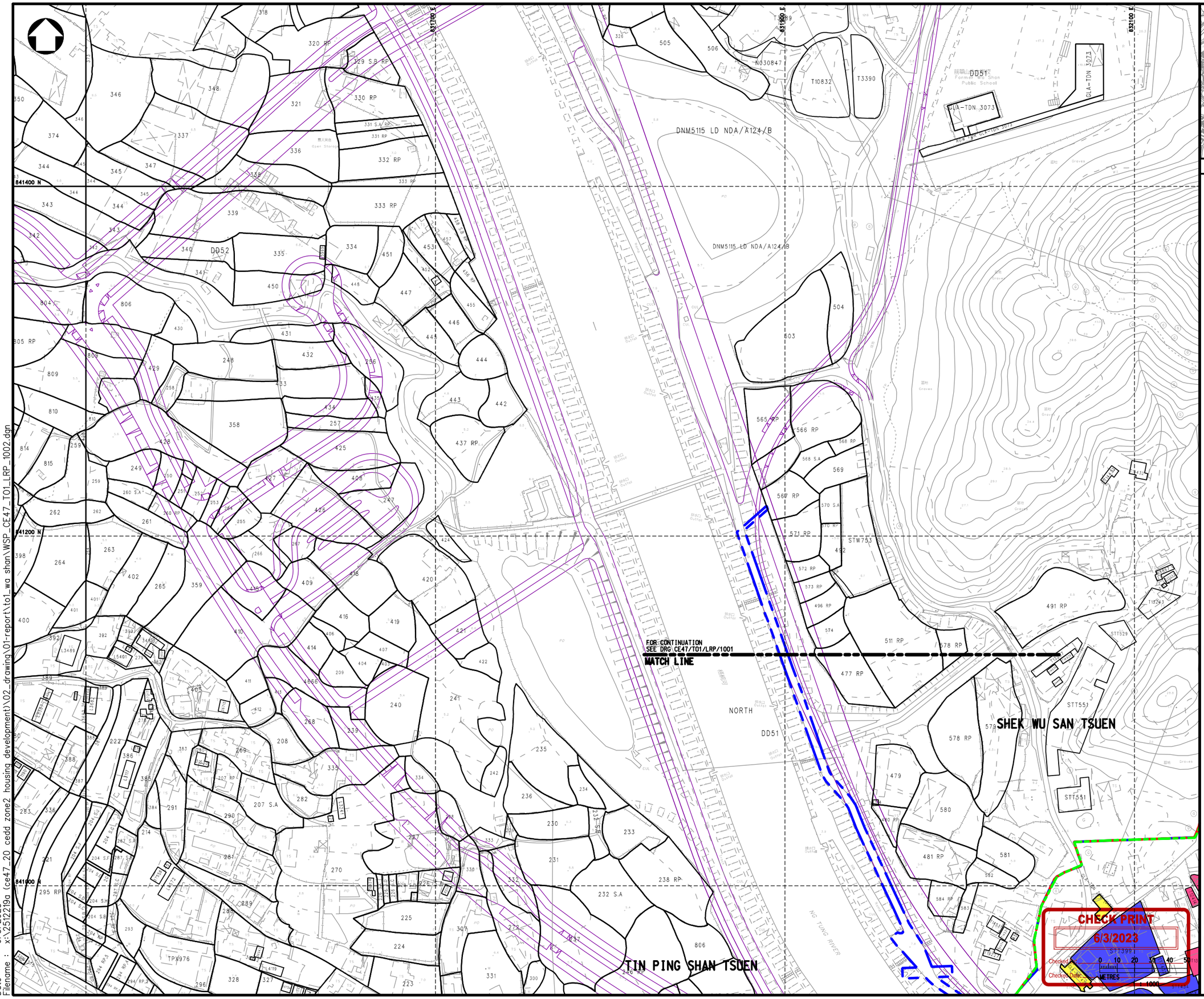
Scale	Status
1:1000 (A1)	PRELIMINARY

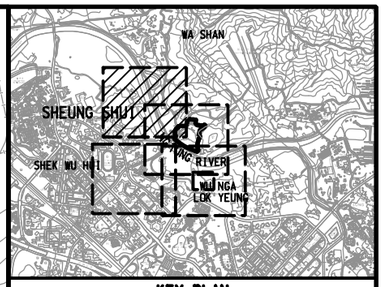
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北拓展處
NORTH DEVELOPMENT OFFICE


SHEK WU SAN TSUEN
TIN PING SHAN TSUEN
WA SHAN
NG TUNG RIVER
WU NGA LOK YEUNG
NORTH
DD51
831900 E
832100 E
832300 E
841000 N
840800 N
STW753
STT551
STT399
STT430
STT436
STT433
STT434
STT435
STT432
STT785
STT1416
DNM3211a L/M(1) in DLON 3/65/14
DNM5014a_DNM5102_DNM5126 LD NDA PLAN/2
GLA-TDN 4870
GLA-TDN 4444
GLA-TDN 4760
GLA-TDN 4520
GLA-TDN 4632
7200m²
492
572 RP
573 RP
496 RP
574
511 RP
578 RP
477 RP
491 RP
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584 RP
480 RP
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481 RP
233
238 RP
S.A
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246 RP
245 S.B RP
807 S.A
807 RP
808 RP
808 S.A RP
304 RP
803 RP
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306 RP
802
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800
795
799
793
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557 RP
558 S.A
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T13041


SHEK WU SAN TSUEN
TIN PING SHAN TSUEN
NG TUNG RIVER
WA SHAN
WU NGA LOK YEUNG
NORTH
DD51
FOR CONTINUATION
SEE DRG CE47/T01/LRP/1002
MATCH LINE
FOR CONTINUATION
SEE DRG CE47/T01/LRP/1003,1004
MATCH LINE
832100 E
832300 E
841000 N
840800 N
STT399
STT430
STT435
STT433
STT434
STT432
STT436
STT785
STT551
STT529
STT1416
STT1435
STW753
DNM3216 L/M(1) in DLON 3/65/14
DNM3216 L/M(1) in DLON 3/65/14
DNM5014a_DNM5102_DNM5126 LD NDA PLAN/2
DNM3214a L/M(1) in DLON 3/65/14
GLA-TDN 4870
GLA-TDN 4870
GLA-TDN 4870
GLA-TDN 4870
GLA-TDN 4870
7200m²
491 RP
492
572 RP
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496 RP
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T13085
T13086
T13087





KEY PLAN

LEGEND :

- PROPOSED WORKS LIMIT
- HOUSING SITE BOUNDARY
- REZONING BOUNDARY
- PRIVATE LAND TO BE RESUMED UNDER CAP. 124
- PRIVATE LAND TO BE RESUMED UNDER CAP. 370
- PRIVATE LAND WITH EXISTING PUBLIC RIGHT OF WAY TO HAND OVER BACK TO GOVERNMENT
- LOT BOUNDARY OF SHORT TERM TENANCY STRUCTURE
- LOT BOUNDARY OF REGISTERED TEMPORARY STRUCTURE
- LOT BOUNDARY OF GOVERNMENT LAND ALLOCATION
- PLANNED ROAD UNDER FLN NDA (FOR INDICATIVE PURPOSE ONLY)
- LOT TO BE RESUMED UNDER PWP ITEM NO. 7828CL REMAINING PHASE OF SITE FORMATION AND ENGINEERING INFRASTRUCTURE WORKS AT KWU TUNG NORTH NEW DEVELOPMENT AREA AND FANLING NORTH NEW DEVELOPMENT AREA FANLING NORTH NEW DEVELOPMENT AREA (ROAD WORKS)

Rev	Description	By	Date
–	FIRST ISSUE	HL	SEP 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

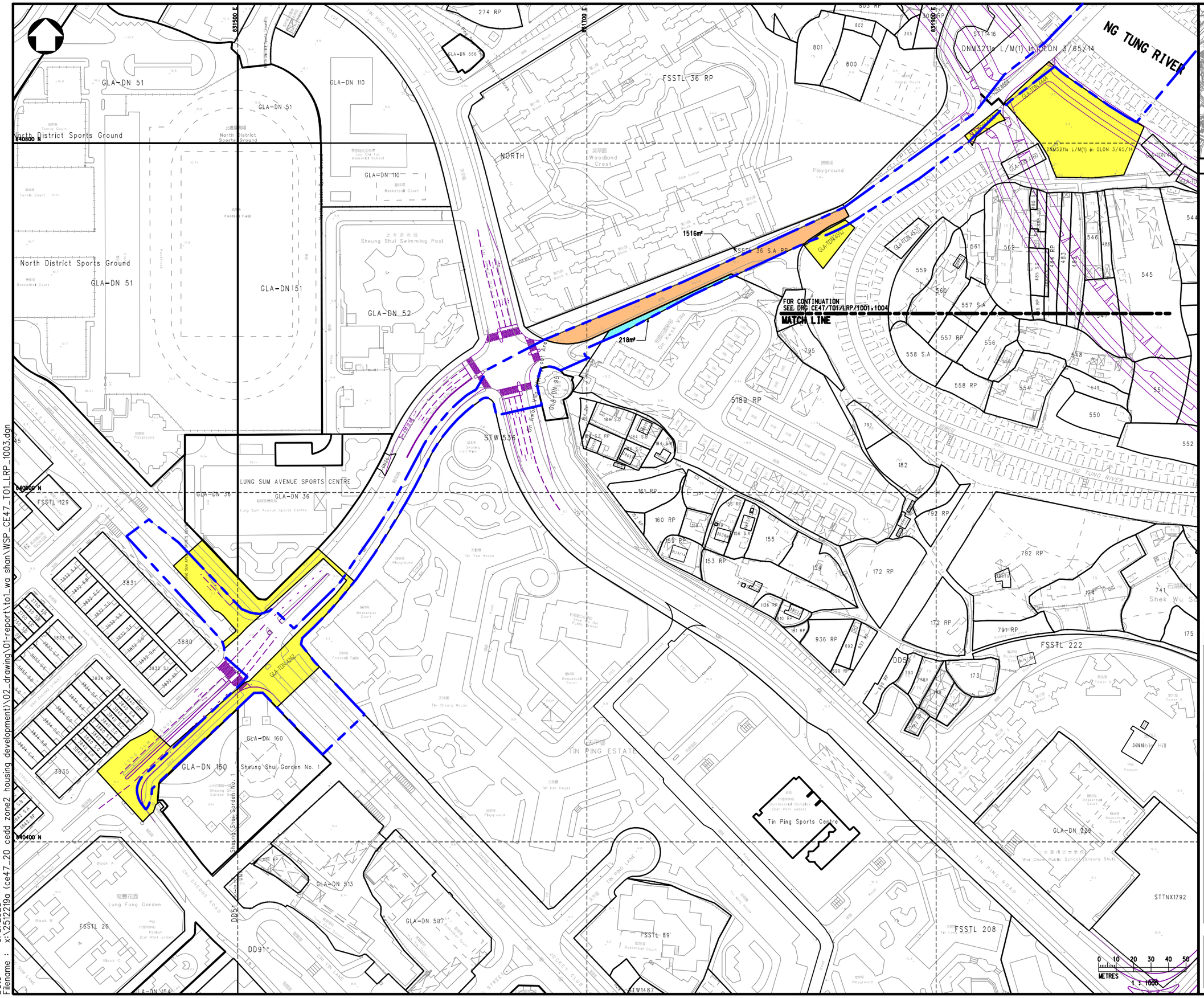
TASK ORDER NO. 1
WA SHAN
LAND REQUIREMENT PLAN
(SHEET 2 OF 4)

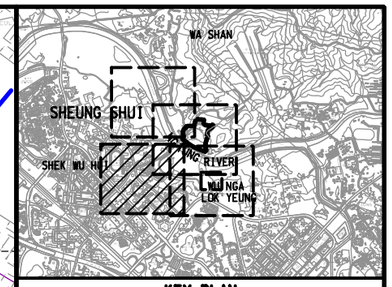
Drawing no.		Rev.
Figure 58		–
Drawn: CAD	Date: APR 2021	Checked: VS / Approved: YWY
Scale: 1:1000 (A1)	Status: –	

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Date : 6/3/2023
Filename : x:\25122l9a (ce47_20 cedd zone2 housing development)\02_drawing\01-report\to1_wa shan\WSP_CE47_T01_LRP_1002.dgn





KEY PLAN

LEGEND :

- PROPOSED WORKS LIMIT
- HOUSING SITE BOUNDARY
- REZONING BOUNDARY
- PRIVATE LAND TO BE RESUMED UNDER CAP. 124
- PRIVATE LAND TO BE RESUMED UNDER CAP. 370
- PRIVATE LAND WITH EXISTING PUBLIC RIGHT OF WAY TO HAND OVER BACK TO GOVERNMENT
- LOT BOUNDARY OF SHORT TERM TENANCY STRUCTURE
- LOT BOUNDARY OF REGISTERED TEMPORARY STRUCTURE
- LOT BOUNDARY OF GOVERNMENT LAND ALLOCATION
- PLANNED ROAD UNDER FLN NDA (FOR INDICATIVE PURPOSE ONLY)
- LOT TO BE RESUMED UNDER PWP ITEM NO. 7828CL REMAINING PHASE OF SITE FORMATION AND ENGINEERING INFRASTRUCTURE WORKS AT KWU TUNG NORTH NEW DEVELOPMENT AREA AND FANLING NORTH NEW DEVELOPMENT AREA FANLING NORTH NEW DEVELOPMENT AREA (ROAD WORKS)

Rev	Description	By	Date
–	FIRST ISSUE	VS	FEB 22

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
LAND REQUIREMENT PLAN
(SHEET 3 OF 4)

Drawing no.	Rev.
Figure 59	–

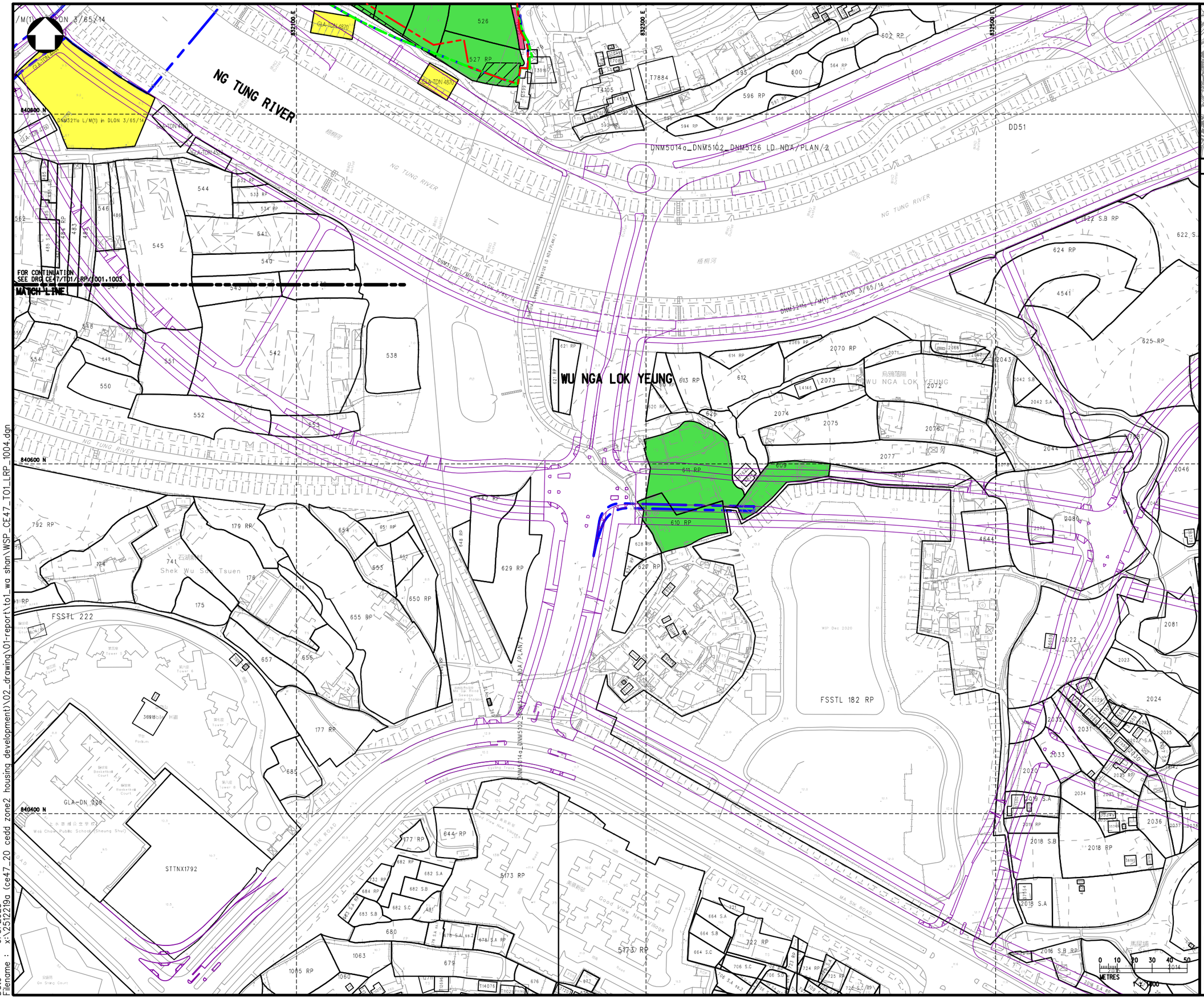
Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

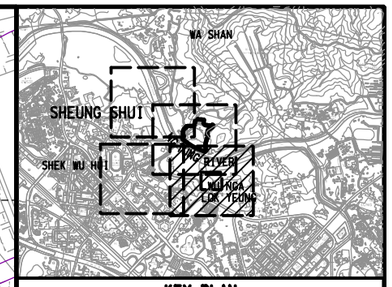
Scale: 1:1000 (A1) | Status: –

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土木工程處
CIVIL ENGINEERING OFFICE

Date : 6/3/2023
Filename : x:\2512219a (ce47_20 cedd zone2 housing development)\02_drawing\01-report\to1_wa shan\WSP_CE47_T01_LRP_1003.dgn





KEY PLAN

LEGEND :

- PROPOSED WORKS LIMIT
- HOUSING SITE BOUNDARY
- REZONING BOUNDARY
- PRIVATE LAND TO BE RESUMED UNDER CAP. 124
- PRIVATE LAND TO BE RESUMED UNDER CAP. 370
- PRIVATE LAND WITH EXISTING PUBLIC RIGHT OF WAY TO HAND OVER BACK TO GOVERNMENT
- LOT BOUNDARY OF SHORT TERM TENANCY STRUCTURE
- LOT BOUNDARY OF REGISTERED TEMPORARY STRUCTURE
- LOT BOUNDARY OF GOVERNMENT LAND ALLOCATION
- PLANNED ROAD UNDER FLN NDA (FOR INDICATIVE PURPOSE ONLY)
- LOT TO BE RESUMED UNDER PWP ITEM NO. 7828CL REMAINING PHASE OF SITE FORMATION AND ENGINEERING INFRASTRUCTURE WORKS AT KWU TUNG NORTH NEW DEVELOPMENT AREA AND FANLING NORTH NEW DEVELOPMENT AREA FANLING NORTH NEW DEVELOPMENT AREA (ROAD WORKS)

Rev	Description	By	Date
-	FIRST ISSUE	VS	FEB 22

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
LAND REQUIREMENT PLAN
(SHEET 4 OF 4)

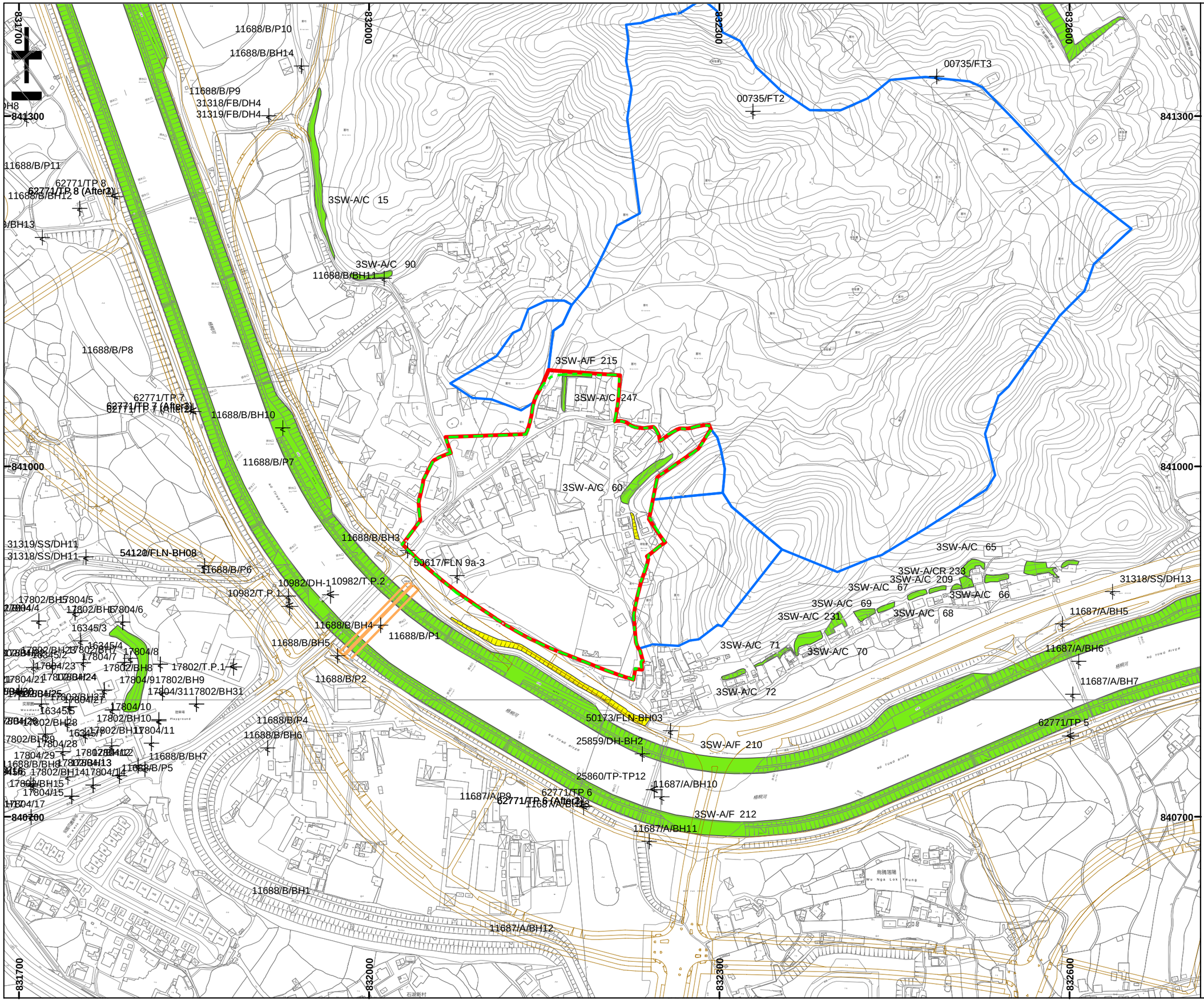
Drawing no.			Rev.
Figure 60			-
Drawn: CAD	Date: APR 2021	Checked: VS	Approved: YWY
Scale: 1:1000 (A1)		Status: -	

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METRES
1 : 1000

Date : 6/3/2023
Filename : x:\2512219a (ce47_20 cedd zone2 housing development)\02_drawing\01-report\to1_wa shan\WSP_CE47_T01_LRP_1004.dgn



Legend

- Study Area for the Development
- Natural Terrain Hillside Catchment
- Rezoning Area
- Proposed Footbridge
- Planned Road Under FLN NDA
- Registered Man-made Features
- Unregistered Man-made Features

Existing Gound Investigation

- Existing Borehole (Report No./ Hole No.)
- Existing Trial Pit (Report No./ Hole No.)

Rev	Description	By	Date

Consultant

wsp

Project Title

AGREEMENT NO. CE 47/2020 (CE) –
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024)
– FEASIBILITY STUDY

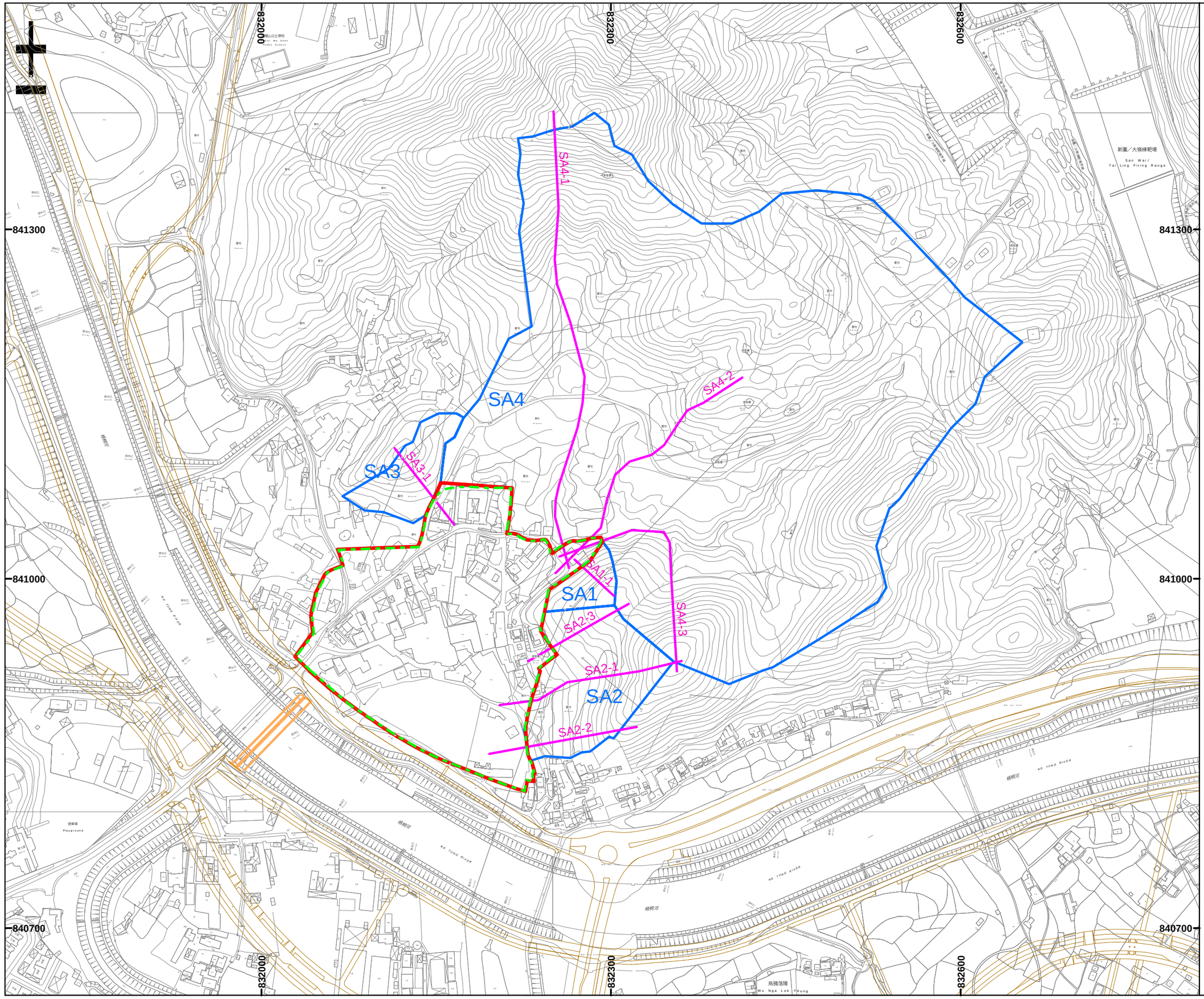
Figure Title

PLAN OF GROUND INVESTIGATION, REGISTERED MAN-MADE FEATURES AND NATURAL TERRAIN HILLSIDE CATCHMENT

Figure No.			Rev
Figure 61			1
Drawn: JS	Date: 31/10/2022	Checked: -	Approved: -
Scale: 1:3,000 @ A3		Status: -	

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土木工程處 專責事務(工程)部
SPECIAL DUTIES (WORKS) DIVISION
CIVIL ENGINEERING OFFICE



Legend

- Study Area for the Development
- Study Area
- Rezoning Area
- Proposed Footbridge
- Planned Road Under FLN NDA
- Section Mark

Rev	Description	By	Date

Consultant

wsp

Project Title

AGREEMENT NO. CE 47/2020 (CE) –
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024)
– FEASIBILITY STUDY

Figure Title

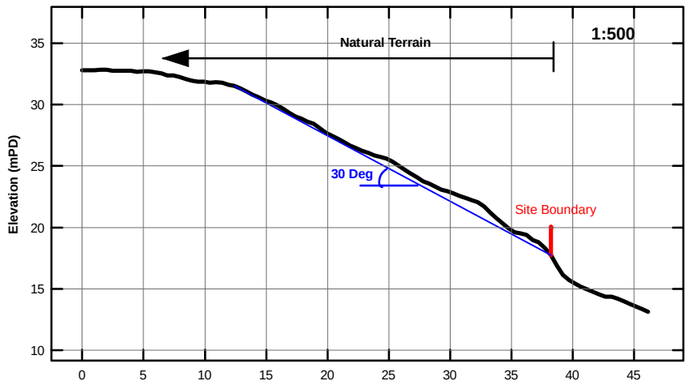
PROXIMITY OF NATURAL TERRAIN STUDY AREA
(SHEET 1 OF 2)

Figure No.			Rev
Figure 62			1
Drawn JS	Date 31/10/2022	Checked -	Approved -
Scale 1:3,000 @ A3		Status -	

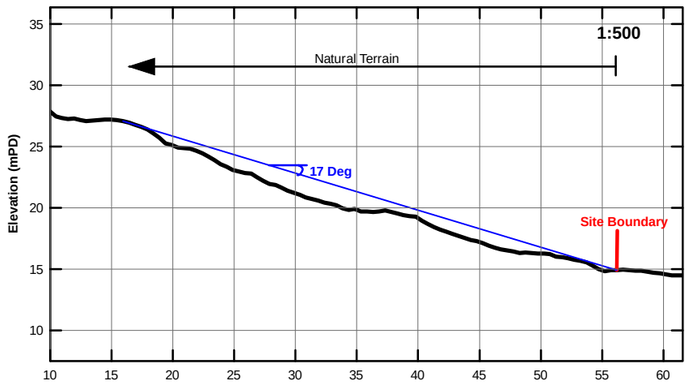
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土木工程處　專責事務(工程)部
SPECIAL DUTIES (WORKS) DIVISION
CIVIL ENGINEERING OFFICE

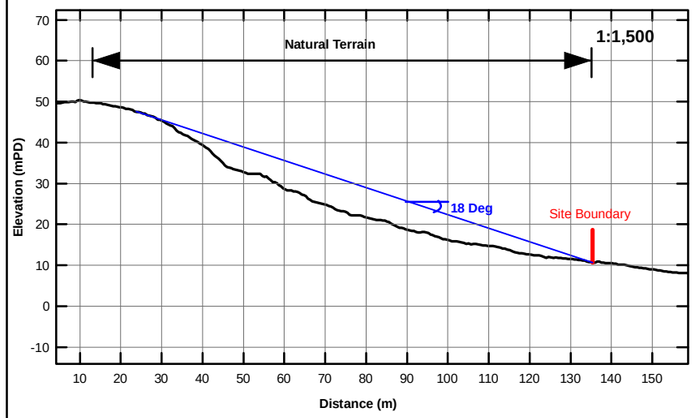
Section SA1-1



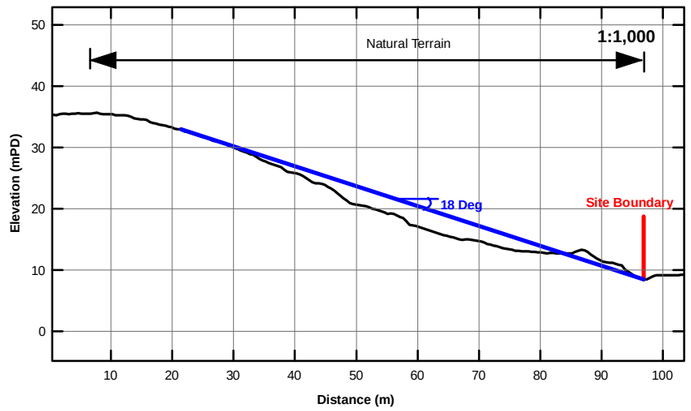
Section SA3-1



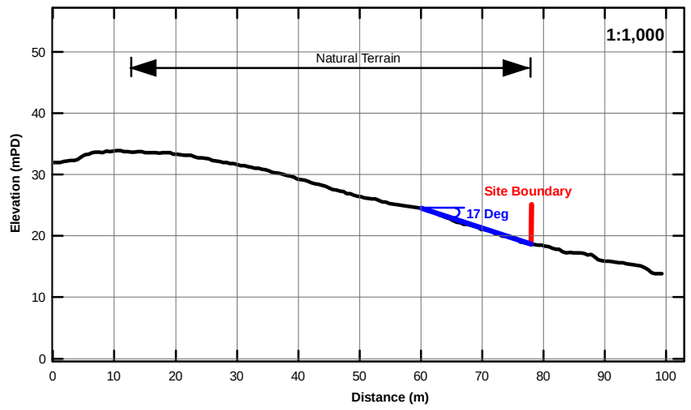
Section SA2-1



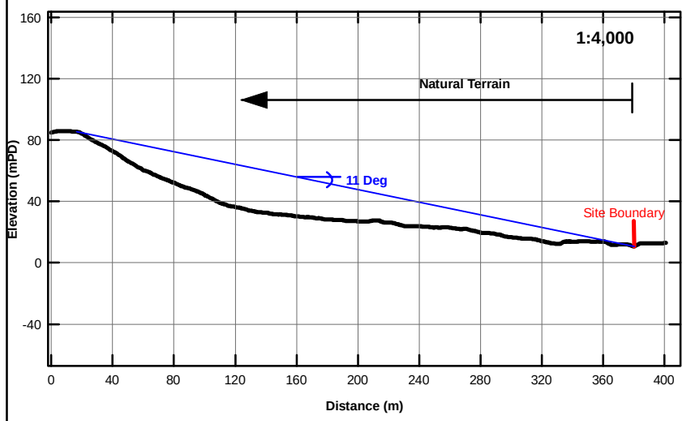
Section SA2-2



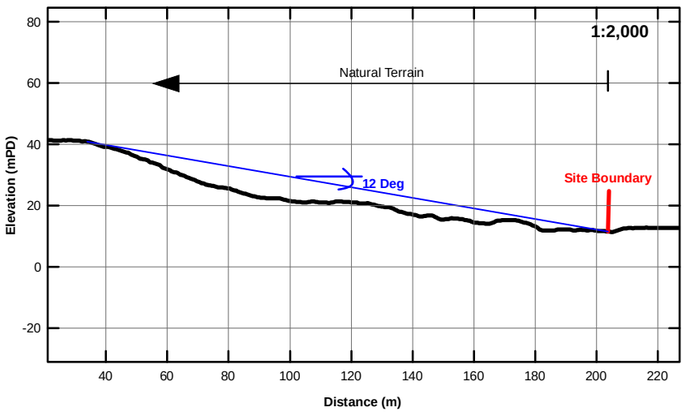
Section SA2-3



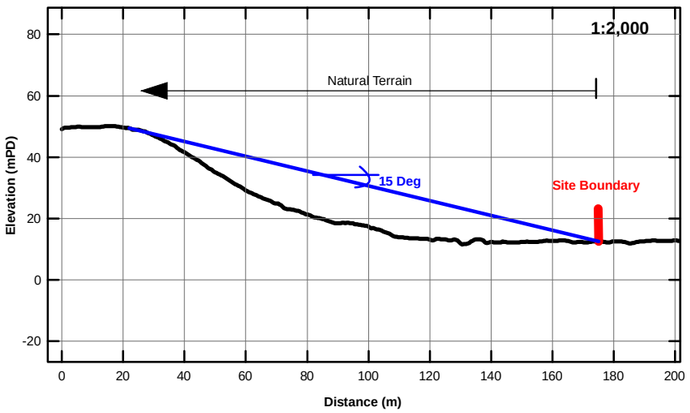
Section SA4-1



Section SA4-2



Section SA4-3



Legend

Rev	Description	By	Date

Consultant

wsp

Project Title

AGREEMENT NO. CE 47/2020 (CE) –
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024)
– FEASIBILITY STUDY

Figure Title

PROXIMITY OF NATURAL TERRAIN STUDY AREA
(SHEET 2 OF 2)

Figure No.			Rev
Figure 63			1
Drawn: JS	Date: 29/08/2022	Checked: -	Approved: -
Scale: @ A3		Status: -	

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土木工程處　專責事務(工程)部
SPECIAL DUTIES (WORKS) DIVISION
CIVIL ENGINEERING OFFICE

841200 N
831900 E
832100 E
832300 E
841000 N
840800 N

SHEK WU SAN TSUEN
TIN PING SHAN TSUEN
WA SHAN
WU NGA LOK YEUNG
NG TUNG RIVER

CP1
CP2
CP3
CP4

MH1 +13.0
CL: +13.00mPD
A1: +9.50-900
X1: +9.50-900

MH2
CL: +11.50mPD
A1: +8.80-900
X1: +8.80-900

MH3
CL: +10.00mPD
A1: +8.20-900
X1: +8.20-900

MH4
CL: +10.00mPD
A1: +7.40-900
X1: +7.40-900

MH5
CL: +10.00mPD
A1: +6.50-900
X1: +6.50-900

MH6
CL: +10.00mPD
A1: +5.80-900
X1: +5.80-900

PROPOSED CONNECTION TO FEHD FACILITIES
PROPOSED CONNECTION TO PTI

TSMH02
C.L. +10.00
X1 +8.50 - 1050

TSMH01
CL +10.00
X1 +8.80 - 600

SIH1004260
A1: +5.50-900
A2: +8.20-1050
A3: +6.85-375
X1: +5.30-1350

SCH1021350
A1 300UC x 375
A2 +7.90 - 600
A3 300UC x 450
X1 +5.08 - 600

MAX. 4m HIGH RETAINING WALL
MAX. 6m HIGH RETAINING WALL

DISCHARGE TO EXISTING SUP1012663

+10.0
+13.0
+15.0

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES (M) AND RELATIVE TO HONG KONG PRINCIPAL DATUM (mPD).
3. THE INCOMING PIPES ARE MARKED A1,A2,A3..... COUNTING CLOCKWISE FROM THE FIRST OUTGOING PIPE X1. OUTGOING PIPES ARE MARKED X1,X2,X3....COUNTING CLOCKWISE FROM NORTH.

e.g. MANHOLE NUMBER / COVER LEVEL OR GROUND LEVEL / 225mm DIA. INCOMING PIPE INVERT LEVEL / 375mm DIA. INCOMING PIPE INVERT LEVEL / 525mm DIA. OUTGOING PIPE INVERT LEVEL

LEGEND :

- HOUSEING BOUNDARY
- DEVELOPMENT BOUNDARY
- REZONING BOUNDARY
- STORM WATER MANHOLE
- CATCHPIT
- EXISTING STORM PIPE
- INLET
- OUTLET
- TUNNEL / BOX CULVERT
- PROPOSED TERMINAL MANHOLE
- PROPOSED STORM DRAIN / PIPE
- PROPOSED CATCHPIT
- PROPOSED PERIPHERAL U-CHANNEL WITH 600mm MAINTENANCE ACCESS
- EXISTING PIPE TO BE ABANDONED
- PROPOSED MANHOLE

Rev	Description	By	Date
–	FIRST ISSUE	SC	SEP 21

Consultant: wsp

Project title:
AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title:
TASK ORDER NO. 1
WA SHAN
PROPOSED DRAINAGE LAYOUT PLAN

Drawing no.: Figure 64
Rev.: –

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

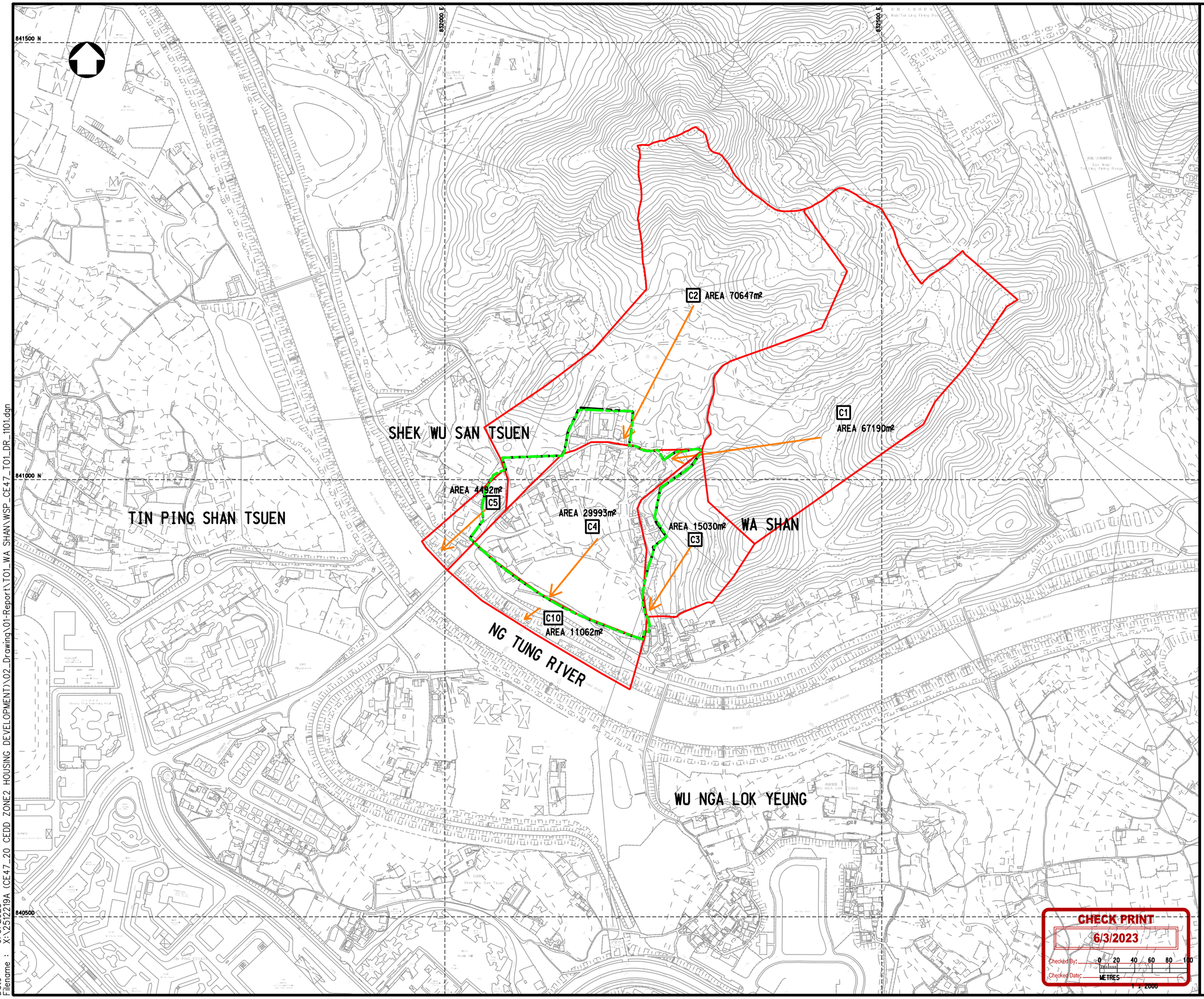
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Status: –

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Checked Date:
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METRES
1 : 1000

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Date : 6/3/2023
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NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES (M) AND RELATIVE TO HONG KONG PRINCIPAL DATUM (mPD).

LEGEND :

- SITE BOUNDARY
- REZONING BOUNDARY
- C1 CATCHMENT I.D.
- FLOW DIRECTION

Rev	Description	By	Date
–	FIRST ISSUE	SC	SEP 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)

TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
EXISTING CATCHMENT PLAN

Drawing no.	Rev.
Figure 65	–

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

Scale: 1:2000 (A1)

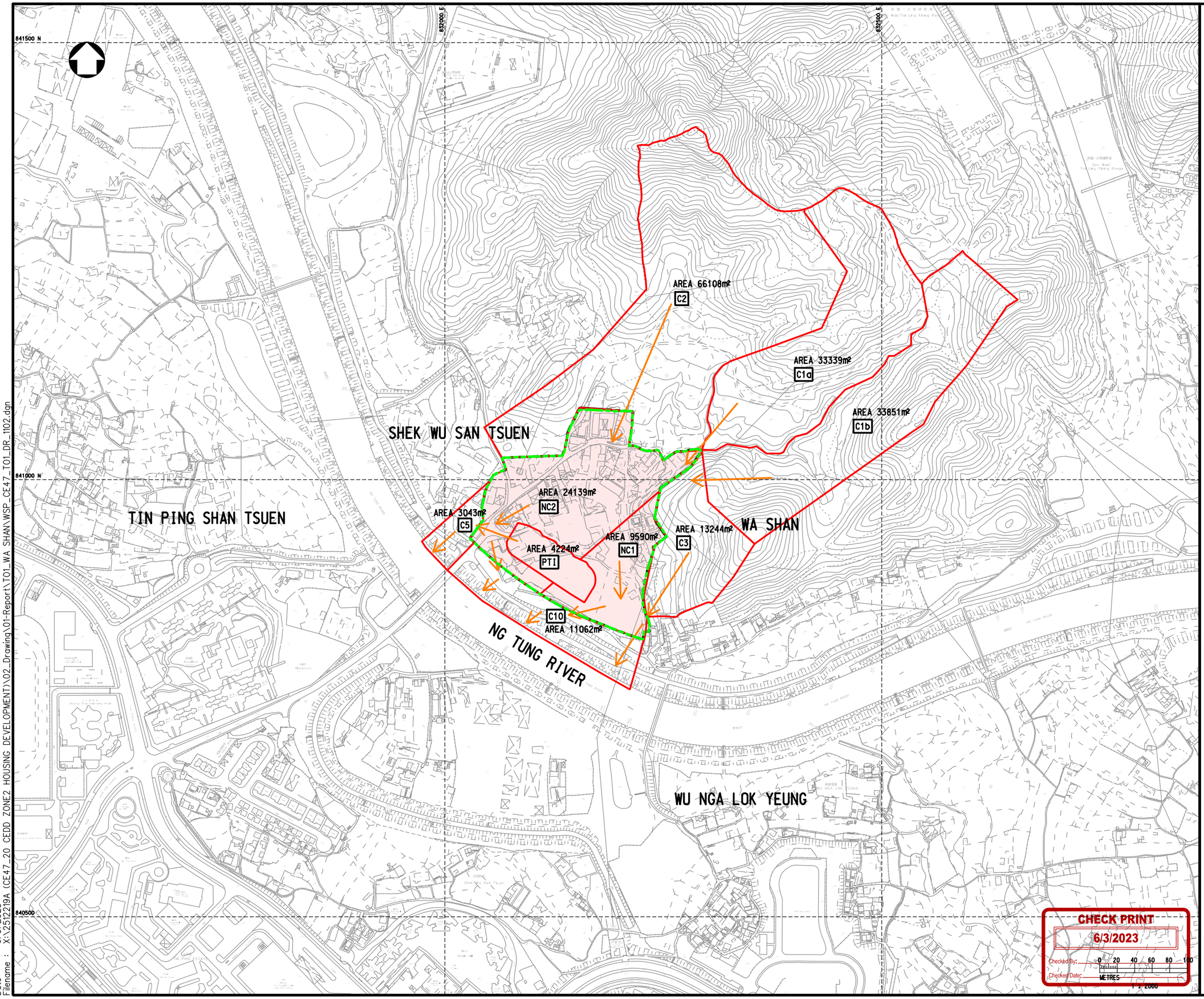
Status: –

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Checked By:
Checked Date:
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METRES
1 : 2000

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CIVIL ENGINEERING OFFICE

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Filename : X:\2512219A (CE47_20 CEDD ZONE2 HOUSING DEVELOPMENT)\02_Drawing\01-Report\T01_WA SHAN\WSP_CE47_T01_DR_1101.dgn



NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES (M) AND RELATIVE TO HONG KONG PRINCIPAL DATUM (mPD).

LEGEND :

- SITE BOUNDARY
- REZONING BOUNDARY
- C1 CATCHMENT I.D.
- FLOW DIRECTION

Rev	Description	By	Date
–	FIRST ISSUE	SC	SEP 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
PLANNED CATCHMENT PLAN

Drawing no. Figure 66

Rev. –

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

Scale 1:2000 (A1)

Status –

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0 20 40 60 80 100
METRES
1 : 2000

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NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES (M) AND RELATIVE TO HONG KONG PRINCIPAL DATUM (mPD).

LEGEND :

SITE BOUNDARY

REZONING BOUNDARY

Rev	Description	By	Date
-	FIRST ISSUE	SC	SEP 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
EXISTING CATCHMENT CHARACTERISTICS PLAN

Drawing no.	Rev.
Figure 67	-

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

Scale	Status
1:2000 (A1)	-

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Checked Date

0 20 40 60 80 100
METRES
1 : 2000

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841200 N
831900 E
832100 E
832300 E
841000 N
840800 N

SHEK WU SAN TSUEN

TIN PING SHAN TSUEN

WA SHAN

WU NGA LOK YEUNG

NG TUNG RIVER

+13.0
+10.0
+15.0

MAX. 4m HIGH RETAINING WALL

MAX. 6m HIGH RETAINING WALL

SHM1004260
A1 5.50-1350
SNF1004260
A1 5.50-1350

SNF1004980
A1 5.10-1350

SNF1004980
A1 5.10-1350
A2 4.90-375
X1 5.08-600

SNF1006841
A1 2.50-600

1350
600

Playground

CHECK PRINT
6/3/2023
Checked By:
Checked Date:
0 10 20 30 40 50
METRES
1 : 1000

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES (M) AND RELATIVE TO HONG KONG PRINCIPAL DATUM (mPD).
3. THE INCOMING PIPES ARE MARKED A1,A2,A3..... COUNTING CLOCKWISE FROM THE FIRST OUTGOING PIPE X1. OUTGOING PIPES ARE MARKED X1,X2,X3....COUNTING CLOCKWISE FROM NORTH.

e.g.
225
SHM7000023
A1 4.50-225
A2 4.25-375
X1 3.75-525
MANHOLE NUMBER
COVER LEVEL OR GROUND LEVEL
225mm DIA. INCOMING PIPE INVERT LEVEL
375mm DIA. INCOMING PIPE INVERT LEVEL
525mm DIA. OUTGOING PIPE INVERT LEVEL

LEGEND :

- DEVELOPMENT BOUNDARY
- REZONING BOUNDARY
- STORM WATER MANHOLE
- CATCHPIT
- EXISTING STORM PIPE
- INLET
- OUTLET
- TUNNEL / BOX CULVERT

Rev	Description	By	Date
–	FIRST ISSUE	SC	JUL 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
EXISTING DRAINAGE LAYOUT PLAN

Drawing no. Figure 68 | Rev. –

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

Scale 1:1000 (A1) | Status –

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MH8
CL : +7.900
A1 : +4.271-450
X1 : +4.057-450

MH7
CL : +7.950
A1 : +4.860-450
X1 : +4.271-450

MH6
CL : +7.850
A1 : +5.462-450
X1 : +4.860-450

MH5
CL : +7.900
A1 : +5.705-450
X1 : +5.462-450

MH4
CL : +7.800
A1 : +6.119-450
X1 : +5.705-450

MH3
CL : +8.200
A1 : +6.717-450
X1 : +6.119-450

MH2
CL : +8.000
A1 : +7.307-450
X1 : +6.717-450

MH1
CL : +9.700
A1 : +8.550-350
X1 : +7.307-450

TMH01
CL : +10.000
X1 : +8.550-350

PROPOSED CONNECTION TO FEHD FACILITIES

FMH_FL128
FMH_FL127
FMH_FL126
FMH_FL125
FMH_FL124
FMH_FL123

2XDN900
PS4

PROPOSED FOOTBRIDGE

SHEK WU SAN TSUEN
TIN PING SHAN TSUEN
WA SHAN
NG TUNG RIVER
WU NGA LOK YEUNG

MATCH LINE FOR CONTINUATION SEE DRG. CE47_T01_DR_1204

831900 E
832100 E
832300 E
841000 N
840800 N

LEGEND :

- DEVELOPMENT BOUNDARY
- REZONING BOUNDARY
- PLANNED SEWERAGE MANHOLE UNDER FLN NDA
- 1350 PLANNED SEWERAGE PIPE UNDER FLN NDA
- PROPOSED SEWERAGE MANHOLE
- 500 PROPOSED SEWERAGE PIPE
- PROPOSED FOOTBRIDGE
- PROPOSED TERMINAL SEWERAGE MANHOLE

Rev	Description	By	Date
-	FIRST ISSUE	HL	SEP 21

Consultant: wsp

Project title:
AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title:
TASK ORDER NO. 1
WA SHAN
PROPOSED SEWERAGE LAYOUT PLAN
(SHEET 1)

Drawing no.: Figure 69
Rev.: -

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

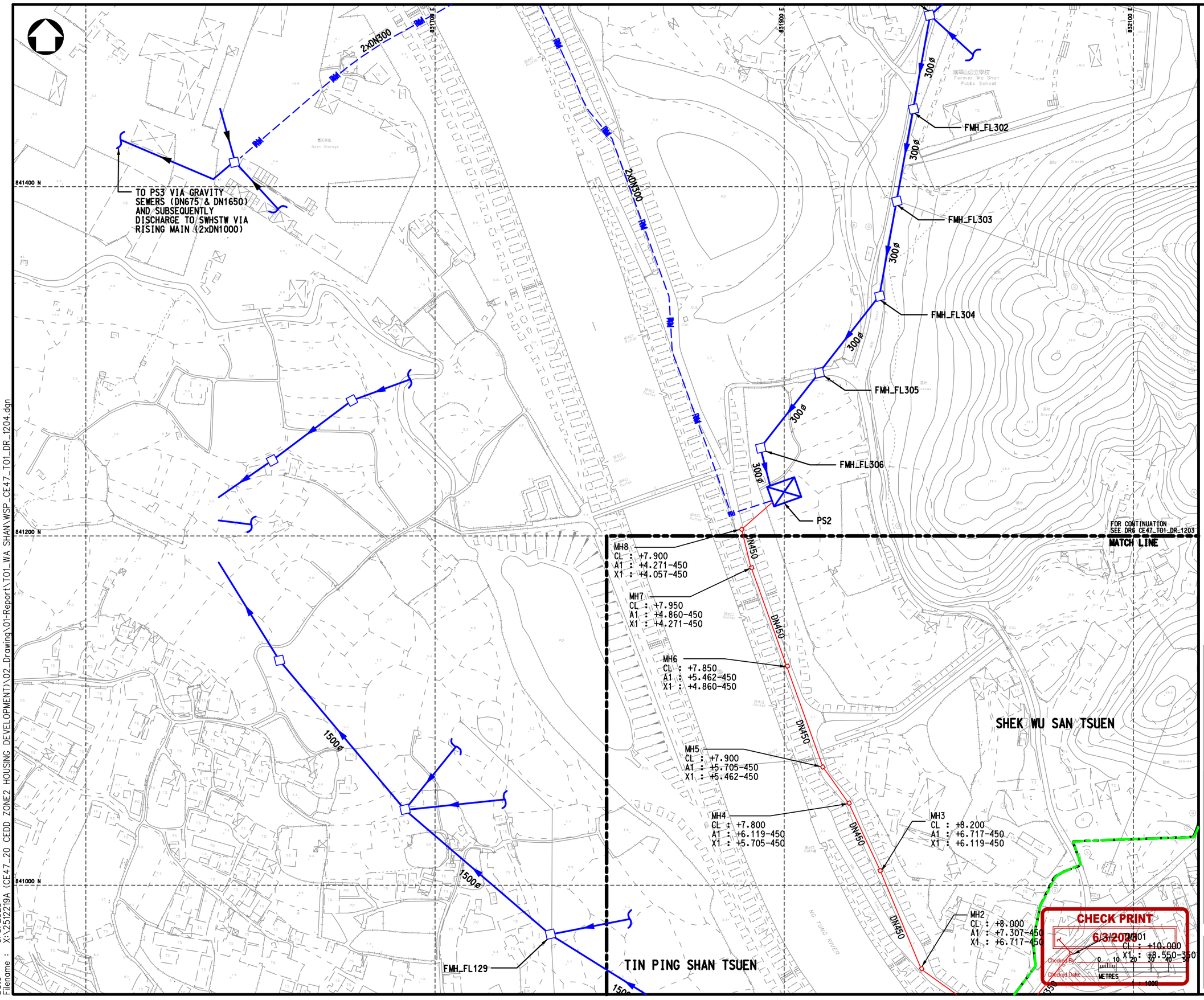
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Status: PRELIMINARY

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METRES
1 : 1000

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LEGEND :

- DEVELOPMENT BOUNDARY
- REZONING BOUNDARY
- PLANNED SEWERAGE MANHOLE UNDER FLN NDA
- 1350 PLANNED SEWERAGE PIPE UNDER FLN NDA
- PLANNED SEWERAGE PUMPING STATION UNDER FLN NDA
- RM PLANNED SEWERAGE RISING MAIN UNDER FLN NDA
- PROPOSED SEWERAGE MANHOLE
- 500 PROPOSED SEWERAGE PIPE
- PROPOSED TERMINAL SEWERAGE MANHOLE

Rev	Description	By	Date
-	FIRST ISSUE	HL	SEP 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
PROPOSED SEWERAGE LAYOUT PLAN
(SHEET 2)

Drawing no.			Rev.
Figure 70			-
Drawn: CAD	Date: APR 2021	Checked: VS	Approved: YWY
Scale: 1:1000 (A1)		Status: PRELIMINARY	

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Date : 6/3/2023
Filename : X:\2512219A (CE47_20 CEDD ZONE2 HOUSING DEVELOPMENT)\02_Drawing\01-Report\TO1_WA SHAN\WSP_CE47_TO1_DR_1201.dgn

831900 E
832100 E
832300 E
841000 N
840800 N

MATCH LINE
FOR CONTINUATION SEE DRG. CE47_TO1_DR_1202

SHEK WU SAN TSUEN
TIN PING SHAN TSUEN
WA SHAN
WU NGA LOK YEUNG
NG TUNG RIVER
NG TUNG RIVER
NG TUNG RIVER

1500ø
FMH_FL128
FMH_FL127
1500ø
2XDN900
PS4
1500ø
FMH_FL126
FMH_FL125
1500ø
FMH_FL124
1500ø
FMH_FL123

Playground

LEGEND :

- DEVELOPMENT BOUNDARY
- REZONING BOUNDARY
- PLANNED SEWERAGE MANHOLE UNDER FLN NDA
- 1500 PLANNED SEWERAGE PIPE UNDER FLN NDA

Rev	Description	By	Date
–	FIRST ISSUE	HL	SEP 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
PLANNED SEWERAGE SYSTEM UNDER FLN NDA
(SHEET 1)

Drawing no. Figure 71
Rev. –

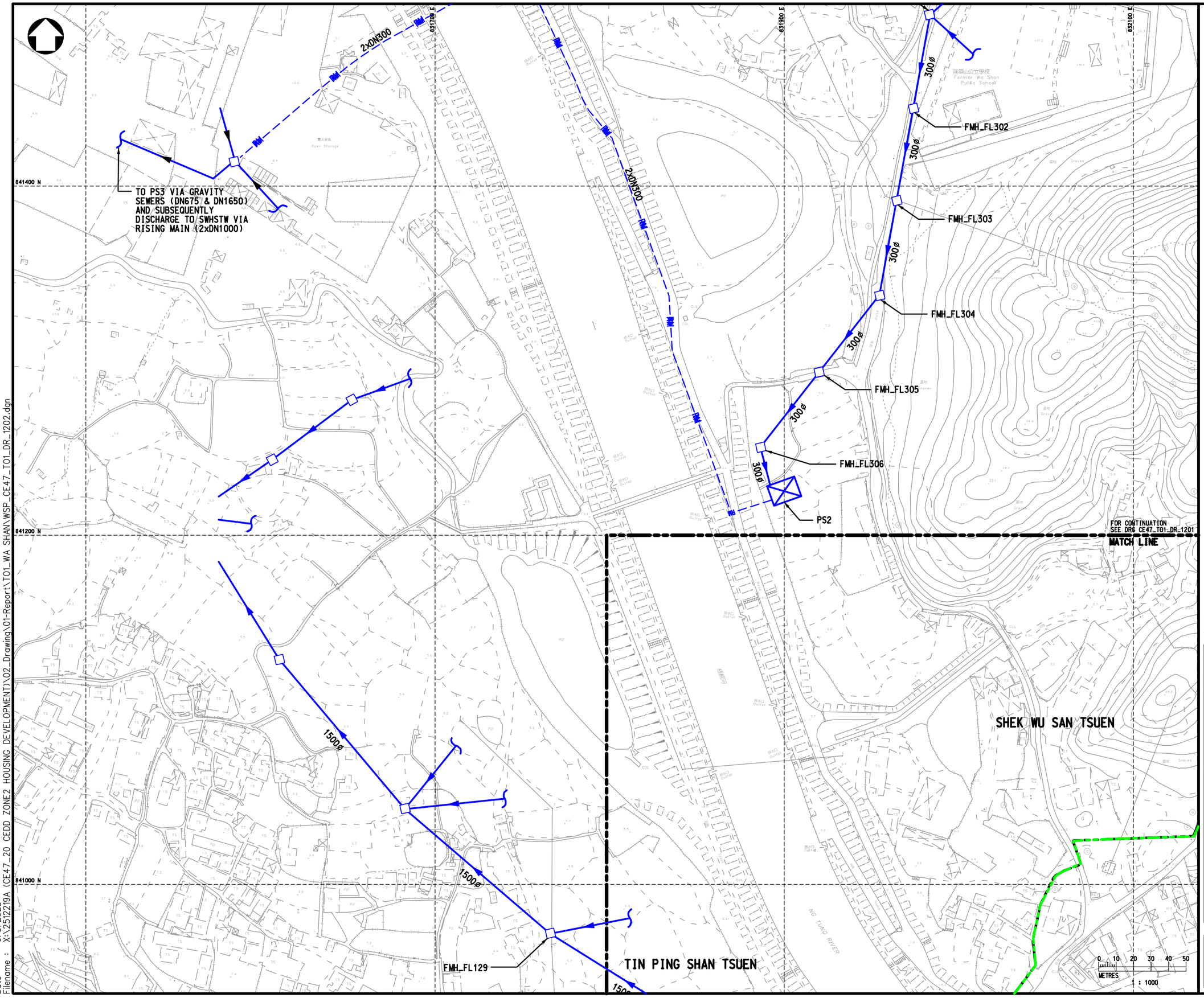
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LEGEND :

- DEVELOPMENT BOUNDARY
- REZONING BOUNDARY
- PLANNED SEWERAGE MANHOLE UNDER FLN NDA
- 1350 PLANNED SEWERAGE PIPE UNDER FLN NDA
- PLANNED SEWERAGE PUMPING STATION UNDER FLN NDA
- RM PLANNED SEWERAGE RISING MAIN UNDER FLN NDA

Rev	Description	By	Date
-	FIRST ISSUE	HL	SEP 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
PLANNED SEWERAGE SYSTEM UNDER FLN NDA
(SHEET 2)

Drawing no. Figure 72 | Rev. -

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

Scale 1:1000 (A1) | Status PRELIMINARY

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841200 N

831900 E

832100 E

832300 E

841000 N

840800 N

SHEK WU SAN TSUEN

TIN PING SHAN TSUEN

NG TUNG RIVER

WA SHAN

WU NGA LOK YEUNG

Playground

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES(m) AND RELATIVE TO HONG KONG PRINCIPAL DATUM(mPD).

LEGEND :

- STUDY AREA
- REZONING BOUNDARY
- EXISTING FRESH WATER MAIN

Rev	Description	By	Date
–	FIRST ISSUE	HL	MAY 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)

TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
EXISTING WATERMAIN LAYOUT PLAN

Drawing no.

Figure 73

Rev. –

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

Scale 1:1000 (A1)

Status –

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Checked Date:

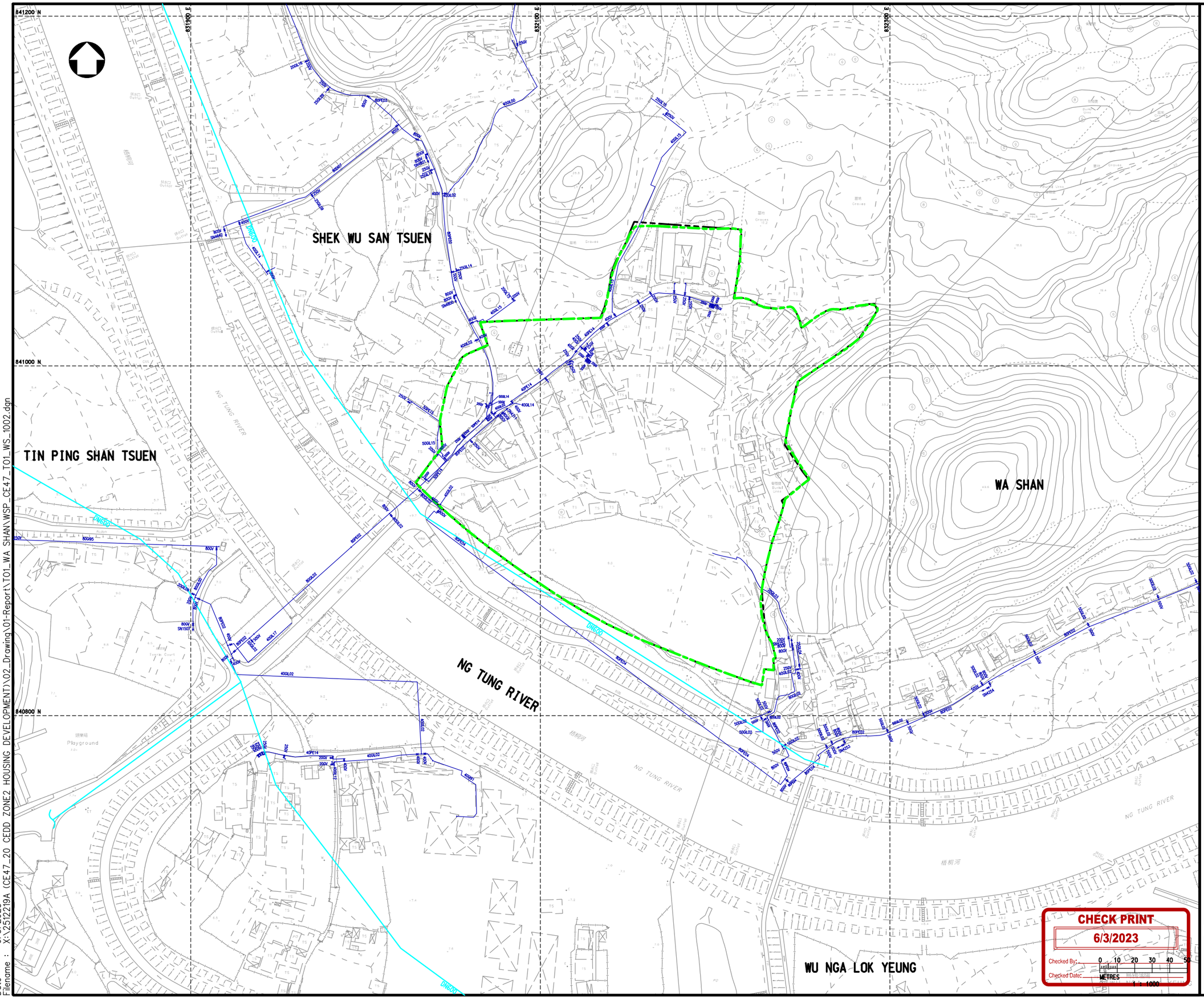
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METRES

1 : 1000

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Date : 6/3/2023
Filename : X:\2512219A (CE47_20 CEDD ZONE2 HOUSING DEVELOPMENT)\02_Drawing\01-Report\T01_WA SHAN\WSP_CE47_T01_WS_1002.dgn

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES(m) AND RELATIVE TO HONG KONG PRINCIPAL DATUM(mPD).

LEGEND :

- STUDY AREA
- REZONING BOUNDARY
- EXISTING FRESH WATER MAIN
- PLANNED FRESH WATER MAIN UNDER FLN NDA

Rev	Description	By	Date
–	FIRST ISSUE	HL	SEP 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)

TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
PLANNED FRESH WATER MAIN UNDER FLN NDA

Drawing no. Figure 74

Rev. –

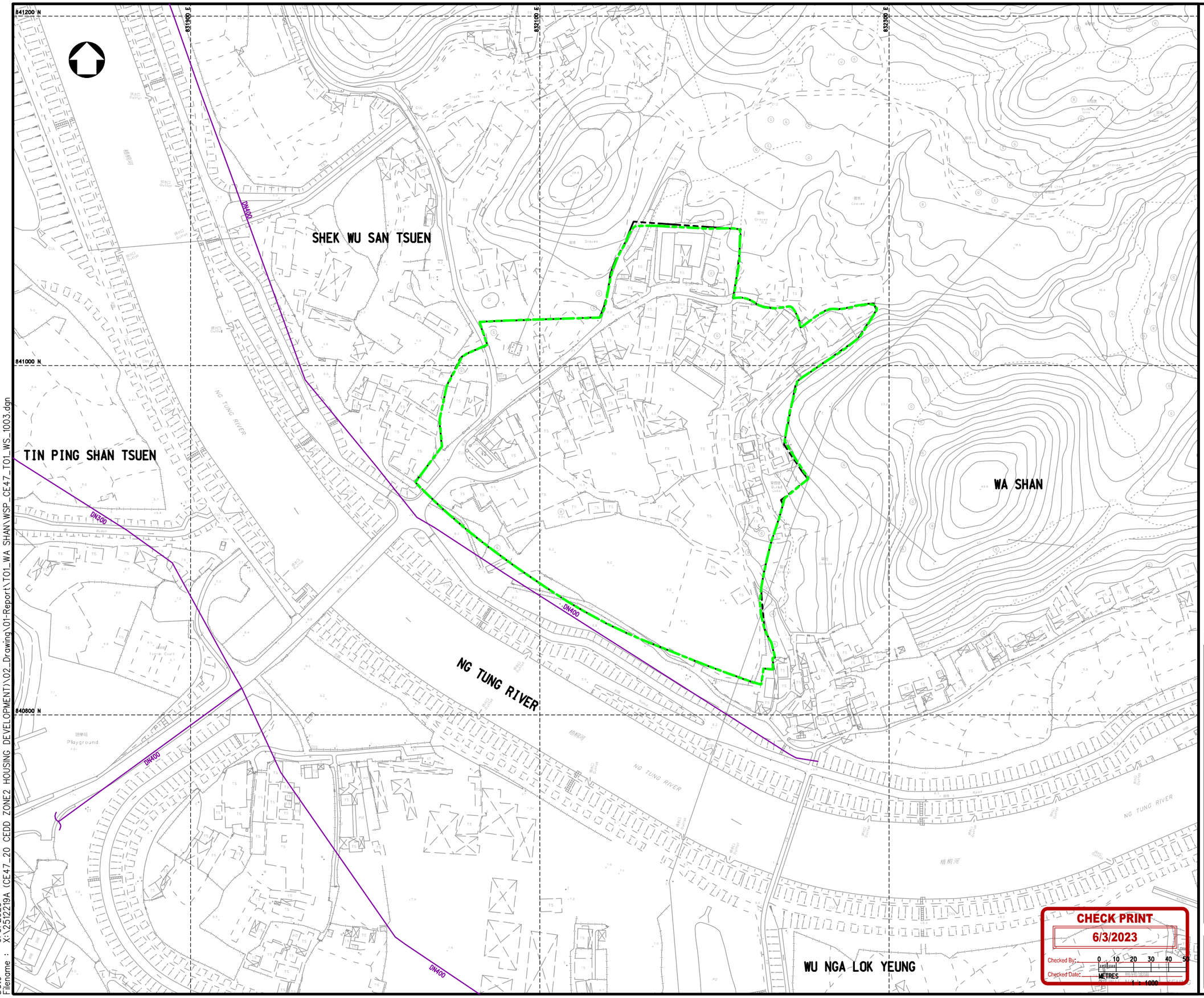
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CAD	APR 2021	VS	YWY

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NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES(m) AND RELATIVE TO HONG KONG PRINCIPAL DATUM(mPD).

LEGEND :

- STUDY AREA
- REZONING BOUNDARY
- PLANNED FLUSHING WATER MAIN UNDER FLN NDA

Rev	Description	By	Date
–	FIRST ISSUE	HL	SEP 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
PLANNED FLUSHING WATER MAIN UNDER FLN NDA

Drawing no. Figure 75 | Rev. –

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

Scale 1:1000 (A1) | Status –

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Checked Date:
0 10 20 30 40 50
METRES
1 : 1000

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Date : 6/3/2023
Filename : X:\2512219A (CE47_20 CEDD ZONE2 HOUSING DEVELOPMENT)\02_Drawing\01-Report\T01_WA SHAN\WSP_CE47_T01_WS_1003.dgn

841200 N

831900 E

832100 E

832300 E

841000 N

840800 N

SHEK WU SAN TSUEN

TIN PING SHAN TSUEN

WA SHAN

WU NGA LOK YEUNG

NG TUNG RIVER

PROPOSED CONNECTION TO FEHD FACILITIES

PROPOSED FOOTBRIDGE

10m

4m

6m

DN1200

DN600

DN300

Playground

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES(m) AND RELATIVE TO HONG KONG PRINCIPAL DATUM(mPD).

LEGEND :

- STUDY AREA
- REZONING BOUNDARY
- EXISTING FRESH WATER MAIN
- PLANNED FRESH WATER MAIN UNDER FLN NDA
- PROPOSED FRESH WATER MAIN
- PROPOSED FIRE SERVICE WATER MAIN
- EXISTING UTILITY SERVICE TO BE DEMOLISHED / REPROVIDED AS NECESSARY
- PROPOSED FOOTBRIDGE

Rev	Description	By	Date
–	FIRST ISSUE	HL	SEP 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
PROPOSED FRESH WATER MAIN LAYOUT PLAN

Drawing no. Figure 76

Rev. –

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

Scale 1:1000 (A1)

Status –

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6/3/2023
Checked By:
Checked Date:
0 10 20 30 40 50
METRES
1 : 1000

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CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT
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CIVIL ENGINEERING OFFICE

Date : 6/3/2023
Filename : x:\2512219a (ce47_20 cedd zone2 housing development)\02_drawing\01-report\to1_wa shan\WSP_CE47_TO1_WS_1004.dgn

841200 N
831900 E
832100 E
832300 E
841000 N
840800 N

SHEK WU SAN TSUEN
TIN PING SHAN TSUEN
WA SHAN
WU NGA LOK YEUNG
NG TUNG RIVER

DN400
DN300
DN150

PROPOSED CONNECTION TO FEHD FACILITIES

PROPOSED FOOTBRIDGE
10m
4m
6m

Playground
Tennis Court

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES(m) AND RELATIVE TO HONG KONG PRINCIPAL DATUM(mPD).

LEGEND :

- STUDY AREA
- REZONING BOUNDARY
- PLANNED FLUSHING WATER MAIN UNDER FLN NDA
- PROPOSED FLUSHING WATER MAIN
- PROPOSED FOOTBRIDGE

Rev	Description	By	Date
–	FIRST ISSUE	HL	SEP 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
PROPOSED FLUSHING WATER MAIN LAYOUT PLAN

Drawing no. Figure 77 | Rev. –

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

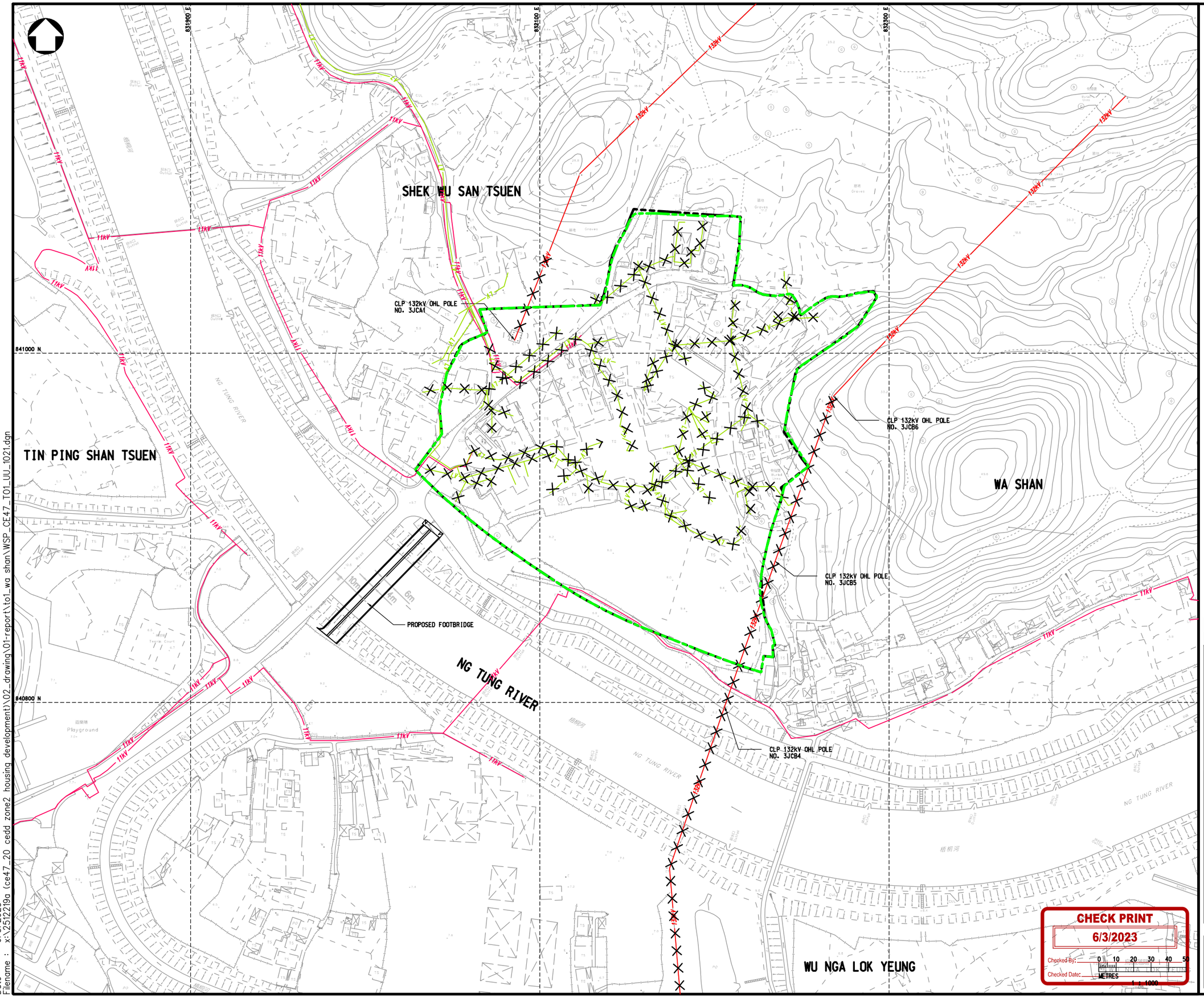
Scale 1:1000 (A1) | Status –

CHECK PRINT
6/3/2023
Checked By:
Checked Date:
0 10 20 30 40 50
METRES
1 : 1000

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Filename : X:\251219A (CE47_20 CEDD ZONE2 HOUSING DEVELOPMENT)\02_Drawing\01-Report\T01_WA SHAN\WSP_CE47_T01_WS_1005.dgn



LEGEND :

- DEVELOPMENT BOUNDARY
- REZONING BOUNDARY
- 11kV — EXISTING 11kV CABLE
- 132kV — EXISTING CLP 132kV OHL
- LV — EXISTING CLP LV OHL
- PROPOSED CABLE TO BE REMOVED
- PROPOSED FOOTBRIDGE

Rev	Description	By	Date
–	FIRST ISSUE	HL	NOV 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
PROPOSED POWER CABLE LAYOUT PLAN

Drawing no. Figure 78 | Rev. –

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

Scale: 1:1000 (A1) | Status: –

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6/3/2023
Checked By:
Checked Date:
0 10 20 30 40 50
METRES
1 : 1000

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Filename : x:\25122l9a (ce47_20 cedd zone2 housing development)\02_drawing\01-report\to1_wa shan\WSP_CE47_TO1_UU_1021.dgn

SHEK WU SAN TSUEN

TIN PING SHAN TSUEN

WA SHAN

NG TUNG RIVER

WU NGA LOK YEUNG

PROPOSED FOOTBRIDGE

831900 E

832100 E

832300 E

841000 N

840800 N

LEGEND :

- DEVELOPMENT BOUNDARY
- REZONING BOUNDARY
- HYD — EXISTING HyD PUBLIC LIGHTING CABLE
- PROPOSED CABLE TO BE REMOVED DUE TO PROPOSED PUBLIC HOUSING DEVELOPMENT
- PROPOSED FOOTBRIDGE

CHECK PRINT
6/3/2023
Checked By:
Checked Date:
0 10 20 30 40 50
METRES
1 : 1000

Rev	Description	By	Date
–	FIRST ISSUE	HL	NOV 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)

TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
PROPOSED Hyd PUBLIC LIGHTING CABLE LAYOUT PLAN

Drawing no.	Rev.
Figure 79	–

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

Scale: 1:1000 (A1)

Status: –

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831900 E

832100 E

832300 E

841000 N

840800 N

SHEK WU SAN TSUEN

TIN PING SHAN TSUEN

WA SHAN

WU NGA LOK YEUNG

NG TUNG RIVER

PROPOSED FOOTBRIDGE

10m

4m

6m

HKT

LEGEND :

DEVELOPMENT BOUNDARY

HKT - PCCW CABLES

PROPOSED CONNECTIONS

PROPOSED CABLE TO BE REMOVED DUE TO PROPOSED PUBLIC HOUSING DEVELOPMENT

PROPOSED FOOTBRIDGE

Rev	Description	By	Date
–	FIRST ISSUE	HL	NOV 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)

TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
PROPOSED TELECOMMUNICATION LAYOUT PLAN

Drawing no.

Figure 80

Rev. –

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

Scale 1:1000 (A1)

Status –

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Checked Date:

0 10 20 30 40 50

METRES

1 : 1000

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SHEK WU SAN TSUEN

TIN PING SHAN TSUEN

WA SHAN

WU NGA LOK YEUNG

NG TUNG RIVER

GAS

PROPOSED FOOTBRIDGE

10m

4m

6m

831900 E

832100 E

832300 E

841000 N

840800 N

LEGEND :

DEVELOPMENT BOUNDARY

REZONING BOUNDARY

GAS PROPOSED GAS PIPE (INDICATIVE)

PROPOSED FOOTBRIDGE

CHECK PRINT

6/3/2023

Checked By:

Checked Date:

0 10 20 30 40 50

METRES

1 : 1000

Rev	Description	By	Date
-	FIRST ISSUE	VS	NOV 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)

TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1

WA SHAN

PROPOSED GAS SUPPLY PLAN

Drawing no.

Figure 81

Rev. -

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

Scale 1:1000 (A1)

Status -

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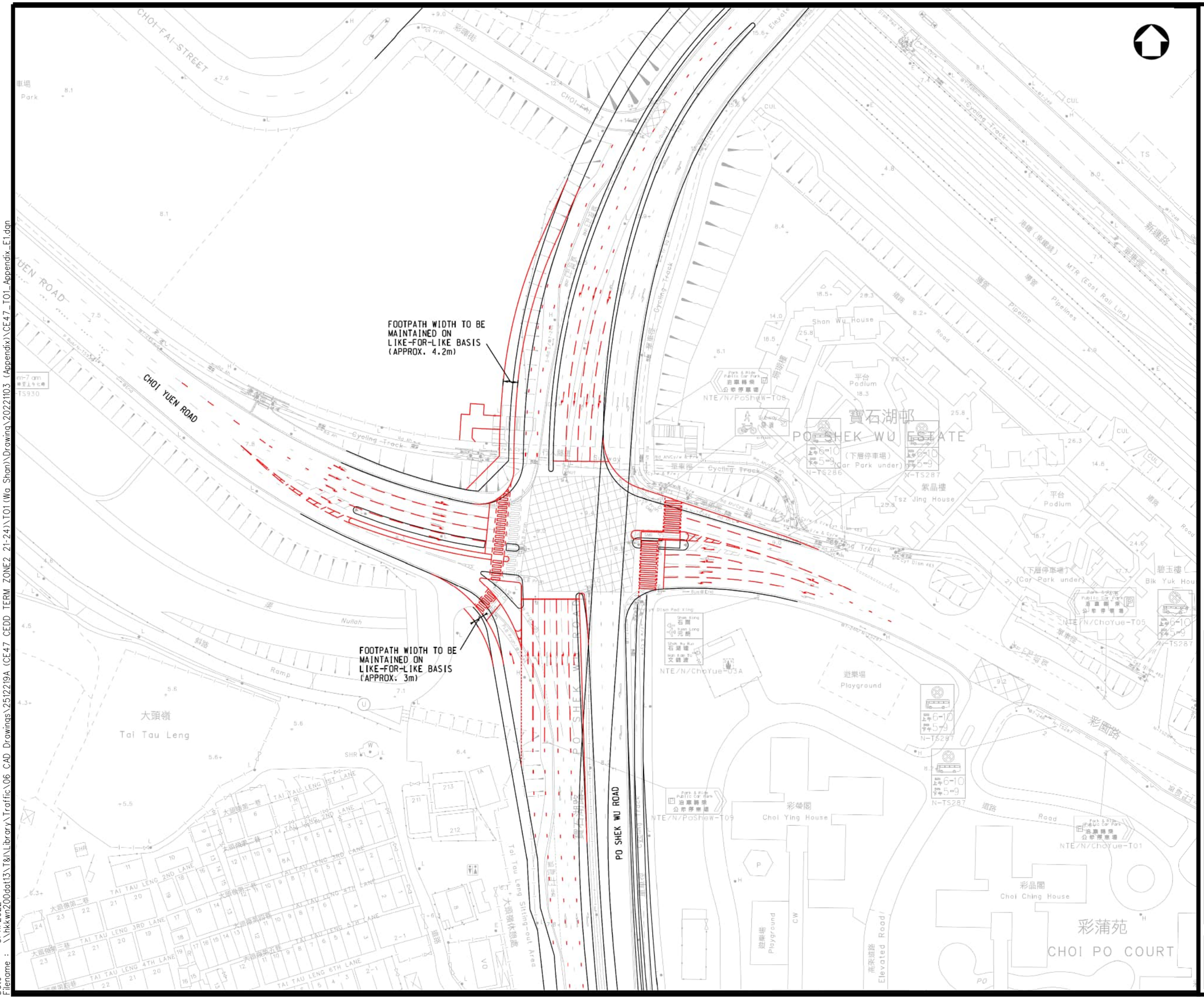
CEDD 土木工程拓展署 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT 土木工程處 CIVIL ENGINEERING OFFICE

Date : 6/3/2023

Filename : x:\25122l9a (ce47_20 cedd zone2 housing development)\02_drawing\01-report\to1_wa shan\WSP_CE47_T01_UU_1024.dgn

APPENDIX A

PLANNED IMPROVEMENT



Rev	Description	By	Date

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)

TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

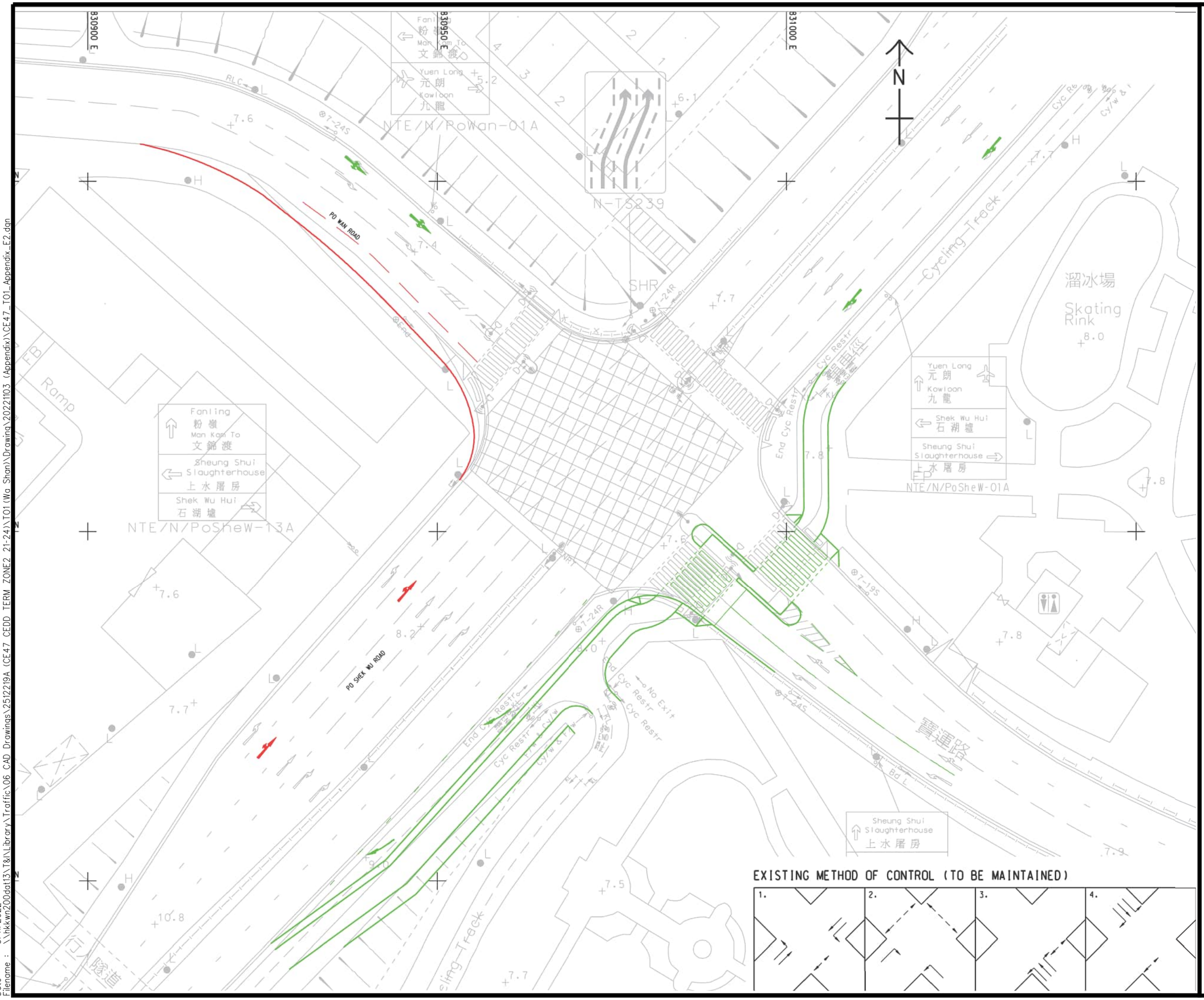
PLANNED JUNCTION IMPROVEMENT SCHEME FOR PO SHEK WU ROAD / CHOI YUEN ROAD (J01)

Drawing no.		Rev.
APPENDIX A1		-
Drawn: CAD	Date: NOV 2022	Checked: -	Approved: DC
Scale: 1 : 500 (A1)		Status: -	

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Date : 3/11/2022
Filename : \\hkkwn200dat13\T&I\Library\Trafic\06 CAD Drawings\2512219A (CE47 CEDD TERM ZONE2 21-24)\T01 (Wa Shan)\Drawing\20221103 (Appendix)\CE47_T01_Appendix_E1.dgn


E830600
E830950
E831000
N
RLC
7.6
@7-24S
PO WAN ROAD
NTE/N/PoWan-01A
Fanling 粉嶺 Man Kam To 文錦渡
Yuen Long 元朗 Kowloon 九龍
5.2
6.1
N-TS239
SHR
@7-24R
7.4
7.7
Cycling Track
Cyc Restr
End Cyc Restr
No Exit
Cyc Rest
Cyc Restr
Cyc Restr
End Cyc Restr
Cyc Restr
End Cyc Restr
Cyc Restr
End

上水游泳池
Sheung Shui Swimming Pool

第七座
Block 7

第六座
Block 6

TIN PING ROAD

LUNG SUM AVENUE

EXISTING FOOTPATH WIDTH
TO BE MAINTAINED
(APPROX. 4.1m)

EXISTING FOOTPATH WIDTH
TO BE MAINTAINED
(APPROX. 3.4m)

EXISTING FOOTPATH WIDTH
TO BE MAINTAINED
(APPROX. 3.5m)

EXISTING FOOTPATH WIDTH
TO BE MAINTAINED
(APPROX. 2.8m)

安國花園新邨
On Kwok Villa

安國邨
休憩處
On Kwok Villa
Sitting-out Area

溜冰場
Skating
Rink

龍琛路

道路

1座 2座 3座 4座

14座

TS

PH

BUS STOP

Rev	Description	By	Date

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

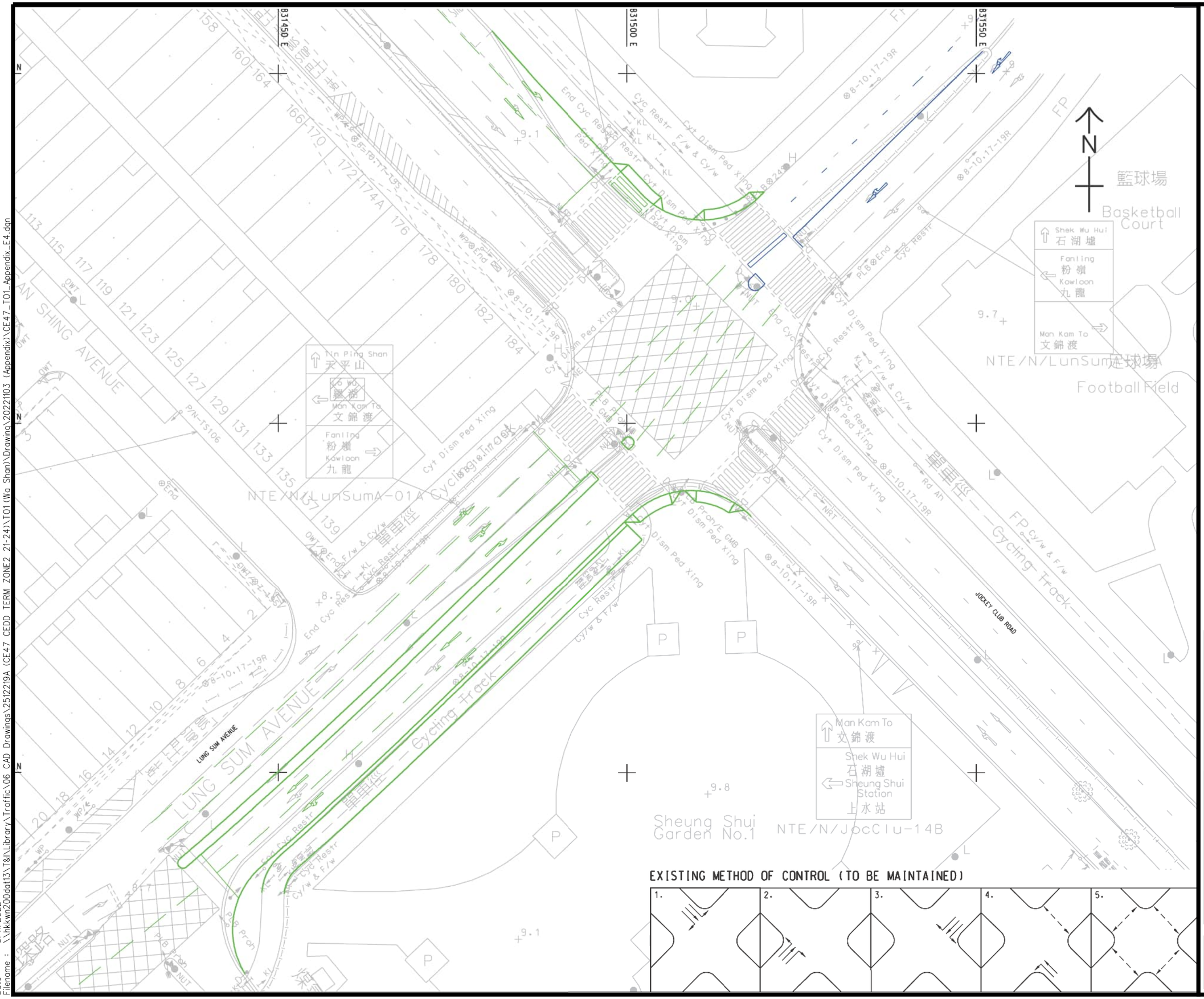
PLANNED JUNCTION IMPROVEMENT SCHEME FOR LUNG SUM AVENUE / TING PING ROAD (J04)

Drawing no.		Rev.
APPENDIX A3		-
Drawn: CAD	Date: NOV 2022	Checked: -	Approved: DC
Scale: 1 : 300 (A1)		Status: -	

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Filename : \\hkkwn200dat13\T&N\Library\Traffic\06 CAD Drawings\2512219A (CE47 CEDD TERM ZONE2 21-24)\T01 (Wa Shan)\Drawing\20221103 (Appendix)\CE47_T01_Appendix_E3.dgn



Rev	Description	By	Date

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)

TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

PLANNED JUNCTION IMPROVEMENT SCHEME FOR LUNG SUM AVENUE / JOCKEY CLUB ROAD (J05)

Drawing no.	Rev.
APPENDIX A4	–

Drawn	Date	Checked	Approved
CAD	NOV 2022	–	DC

Scale	Status
N.T.S. (A3)	–

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Filename : \\hkkwn200dat13\T&I\Library\Traffic\06 CAD Drawings\2512219A (CE47 CEDD TERM ZONE2 21-24)\T01(Wa Shan)\Drawing\20221103 (Appendix)\CE47_T01_Appendix_E4.dgn

SAN WAN ROAD

LUNG WAN STREET

SHEUNG SHUI STATION

PROPOSED METHOD OF CONTROL

1.

2.

3.

Rev	Description	By	Date

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

PLANNED JUNCTION IMPROVEMENT SCHEME FOR SAN WAN ROAD / LUNG WAN STREET (J06)

Drawing no.	Rev.
APPENDIX A5	–

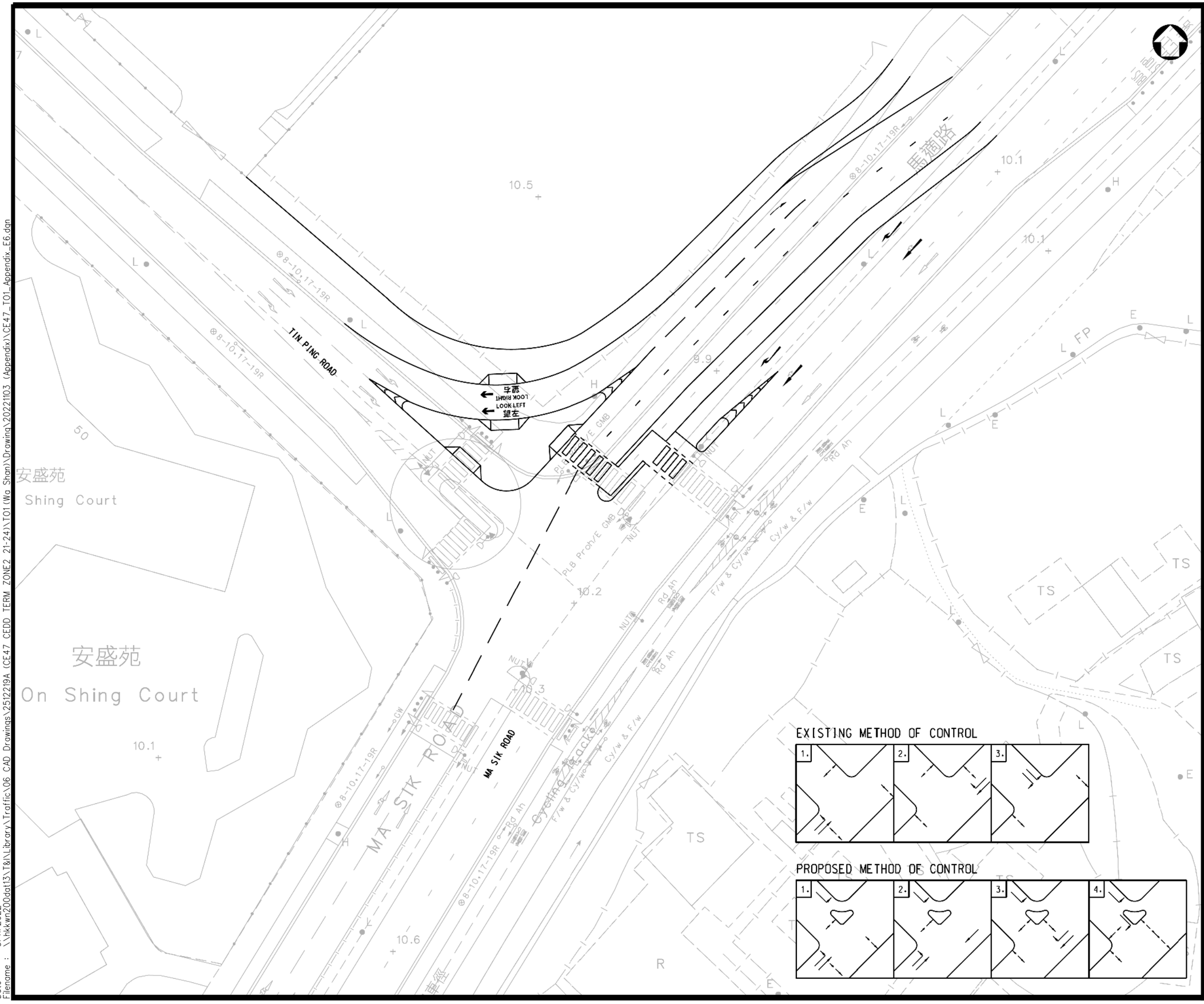
Drawn	Date	Checked	Approved
CAD	NOV 2022	–	DC

Scale	Status
N.T.S. (A3)	–

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Date : 3/11/2022
Filename : \\hkkwn200dat13\T&I\Library\Traffic\06 CAD Drawings\2512219A (CE47 CEDD TERM ZONE2 21-24)\T01 (Wa Shan)\Drawing\20221103 (Appendix)\CE47_T01_Appendix_E5.dgn



EXISTING METHOD OF CONTROL

PROPOSED METHOD OF CONTROL

Rev	Description	By	Date

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)

TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

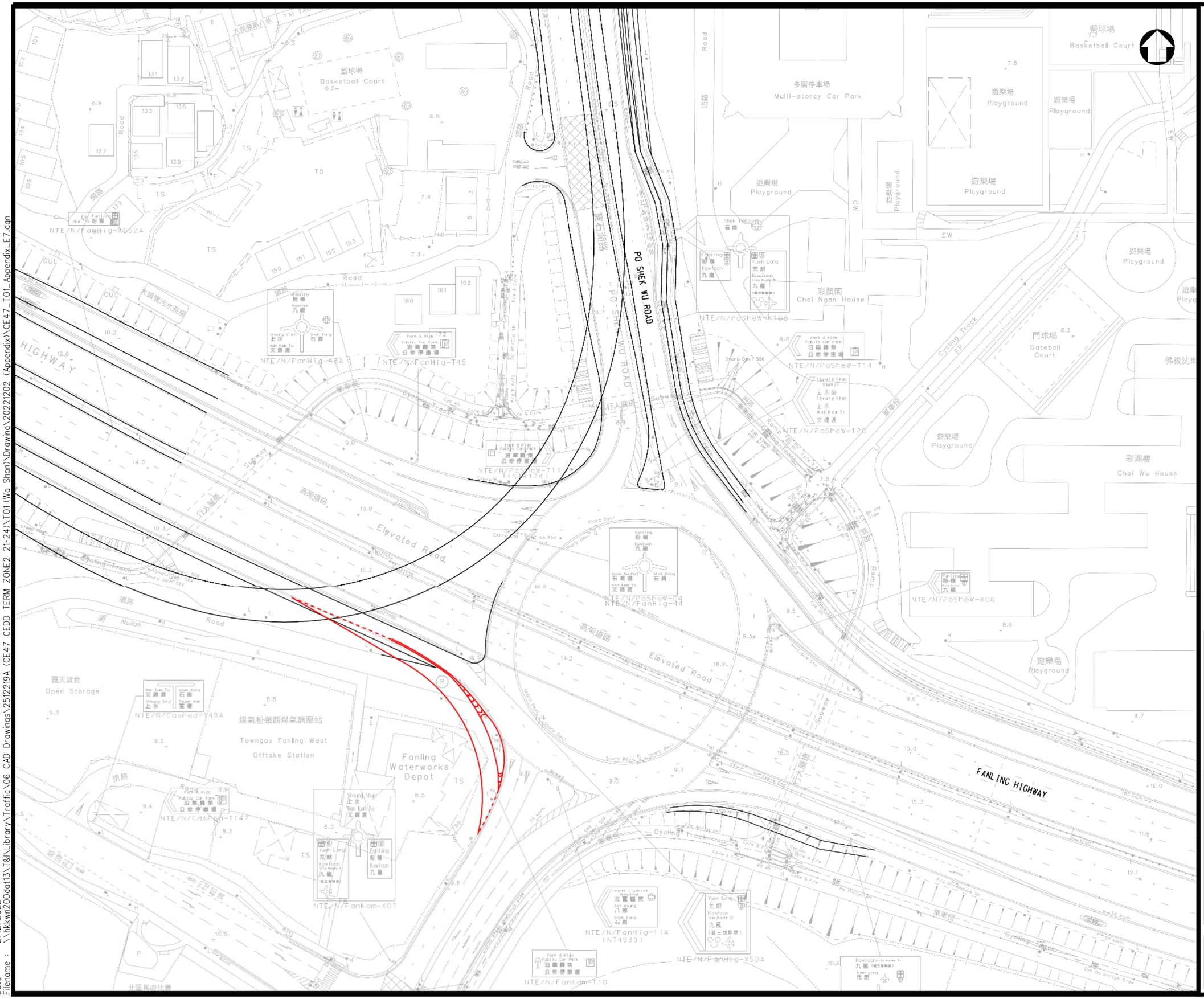
PLANNED JUNCTION IMPROVEMENT SCHEME FOR MA SIK ROAD / TIN PING ROAD (J07)

Drawing no.		Rev.
APPENDIX A6		-
Drawn: CAD	Date: NOV 2022	Checked: - / Approved: DC
Scale: N.T.S (A3)	Status: -	

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Filename : \\hkkwn200dat13\T&N_Library\Traffic\06 CAD Drawings\2512219A (CE47 CEDD TERM ZONE2 21-24)\T01 (Wa Shan)\Drawing\20221103 (Appendix)\CE47_T01_Appendix_E6.dgn



Date : 2/12/2022
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Rev	Description	By	Date

Consultant

wsp

Project title

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TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

PLANNED JUNCTION IMPROVEMENT SCHEME FOR PO SKEK WU INTERCHANGE (J08)

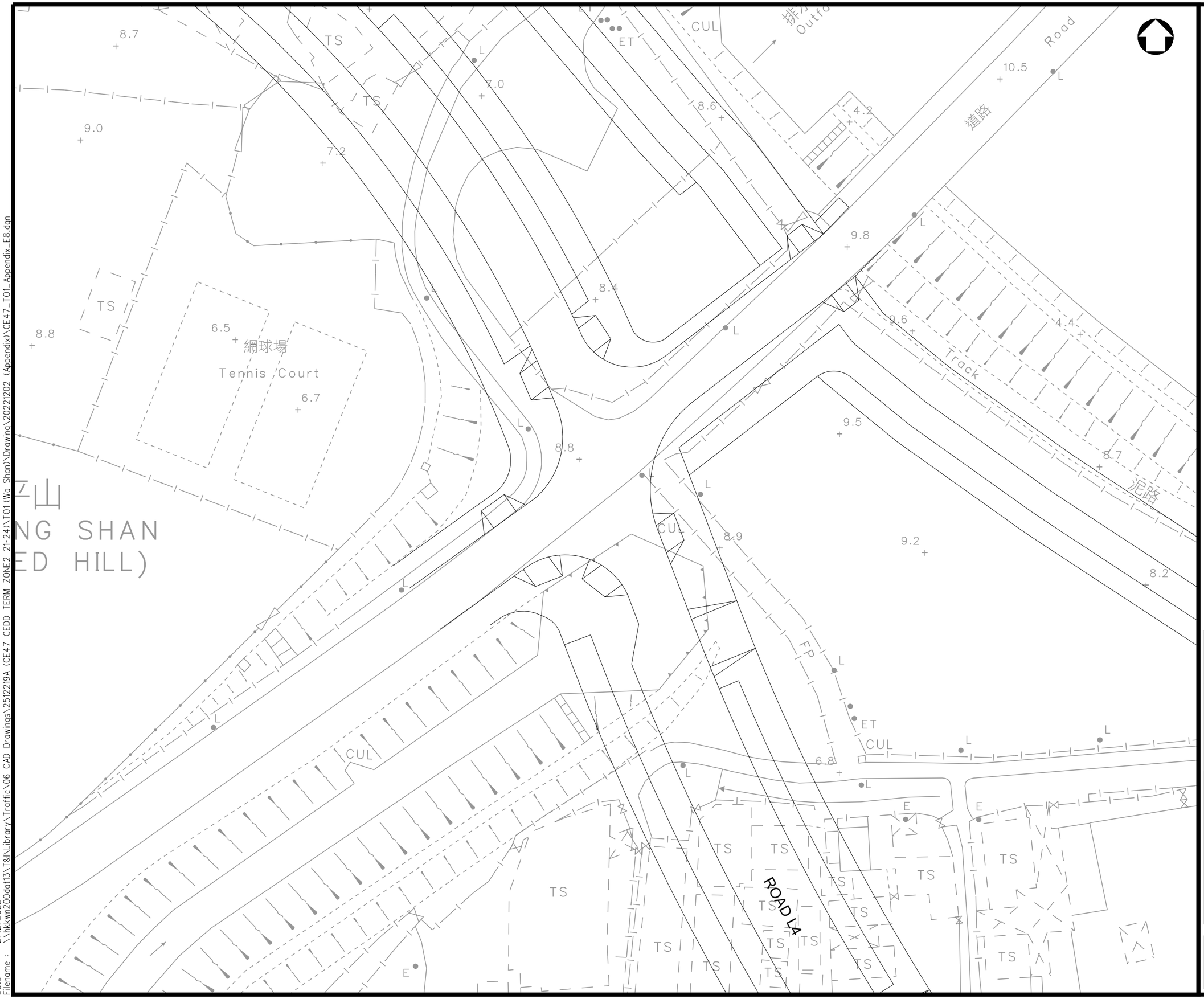
Drawing no.	Rev.
APPENDIX A7	-

Drawn	Date	Checked	Approved
CAD	NOV 2022	-	DC

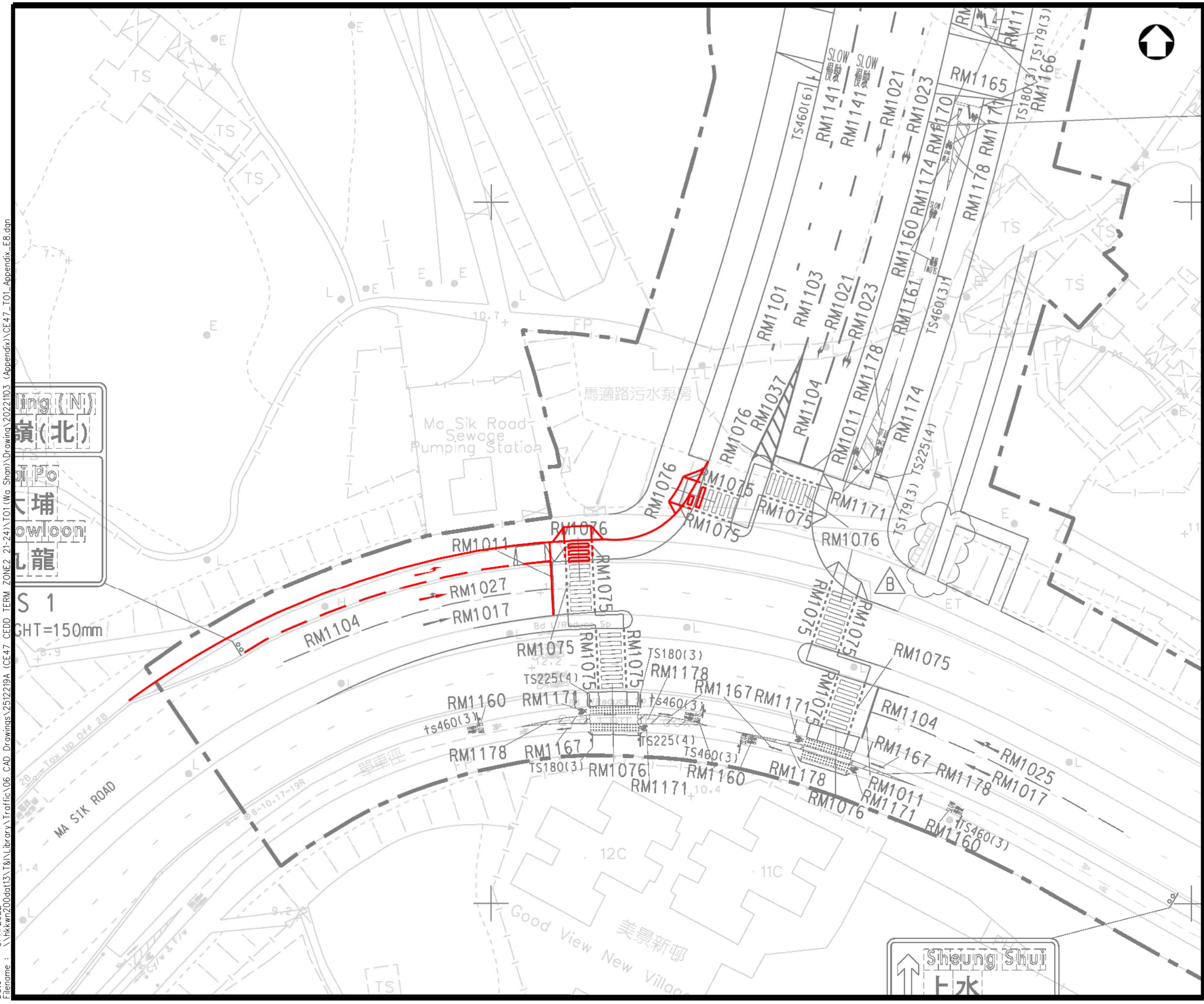
Scale 1 : 500 (A1) Status -

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8.7
TS
9.0
7.2
7.0
L
ET
CUL
8.6
4.2
10.5
Road
道路
9.8
8.4
TS
8.8
6.5
網球場
Tennis Court
6.7
6.6
4.4
Track
9.5
8.7
泥路
8.8
CUL
8.9
9.2
8.2
FP
ET
CUL
6.8
E
TS
ROAD L4
TS
TS
TS

Date : 3/11/2022
Filename : \\hkkwn200dat13\T&I\Library\Traffic\06 CAD Drawings\2512219A (CE47 CEDD TERM ZONE2 21-24)\T01(Wa Shan)\Drawing\20221103 (Appendix)\CE47_T01_Appendix_E8.dgn



Rev	Description	By	Date

Consultant

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Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

PLANNED JUNCTION IMPROVEMENT SCHEME FOR FLN ROAD L3 / MA SIK ROAD (J10)

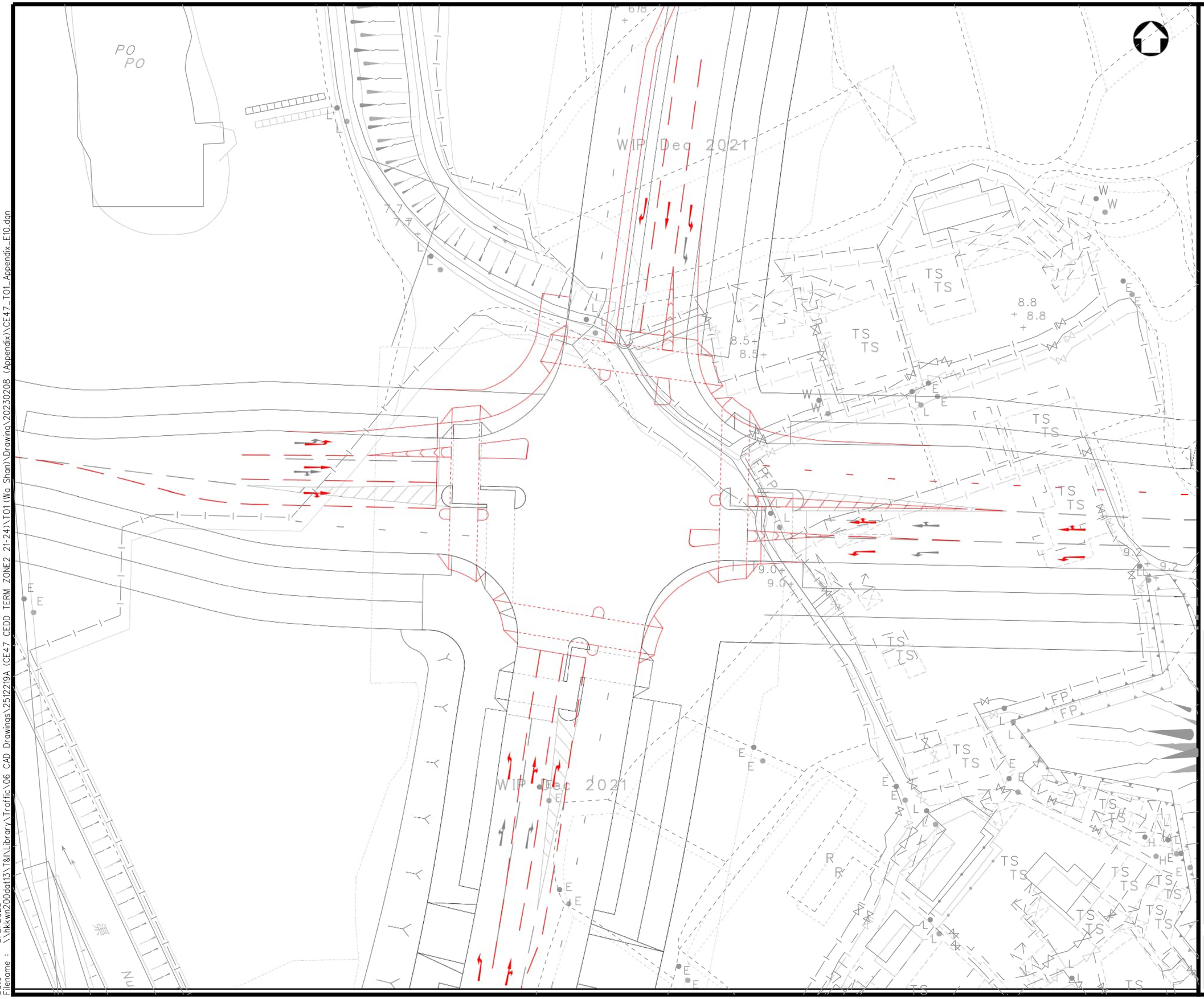
Drawing no.	Rev.
APPENDIX A9	–

Drawn	Date	Checked	Approved
CAD	NOV 2022	–	DC

Scale	Status
N.T.S. (A3)	–

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Project title

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TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

PLANNED JUNCTION IMPROVEMENT SCHEME FOR FLN ROAD L3 / FLN ROAD L4 (J11)

Drawing no.	Rev.
APPENDIX A10	–

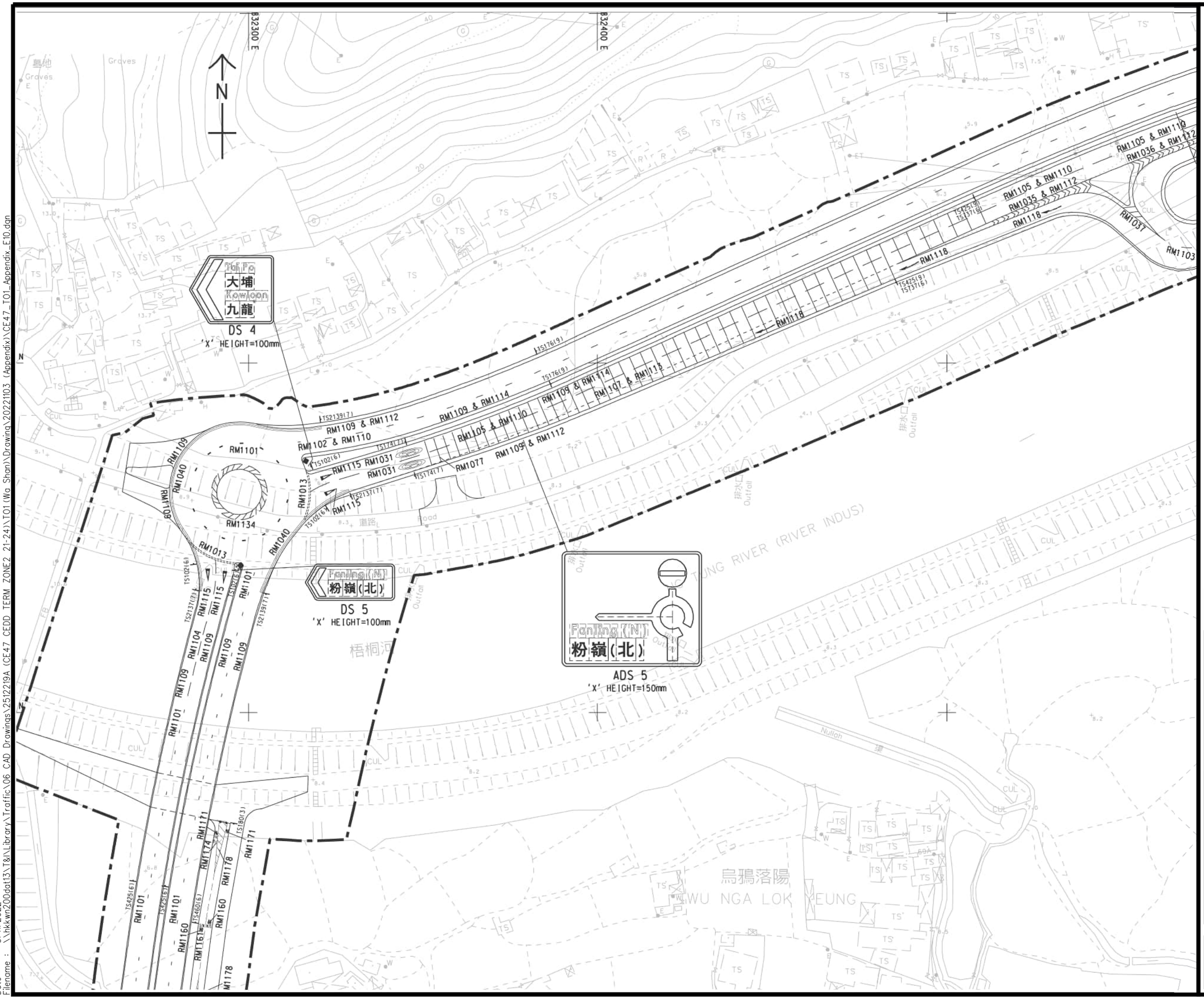
Drawn	Date	Checked	Approved
CAD	NOV 2022	–	DC

Scale	Status
1 : 250 (A1)	–

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Date : 8/2/2023
Filename : \\hkkwn200dat13\T&I\Library\Traffic\06 CAD Drawings\2512219A (CE47 CEDD TERM ZONE2 21-24)\T01 (Wo Shan)\Drawing\20230208 (Appendix)\CE47_T01_Appendix_E10.dgn



Rev	Description	By	Date

Consultant

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Project title

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TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

PLANNED JUNCTION IMPROVEMENT SCHEME FOR FANLING BYPASS / FLN ROAD L3 (J12)

Drawing no.		Rev.
APPENDIX A11		–
Drawn: CAD	Date: NOV 2022	Checked: – / Approved: DC
Scale: N.T.S (A3)	Status: –	

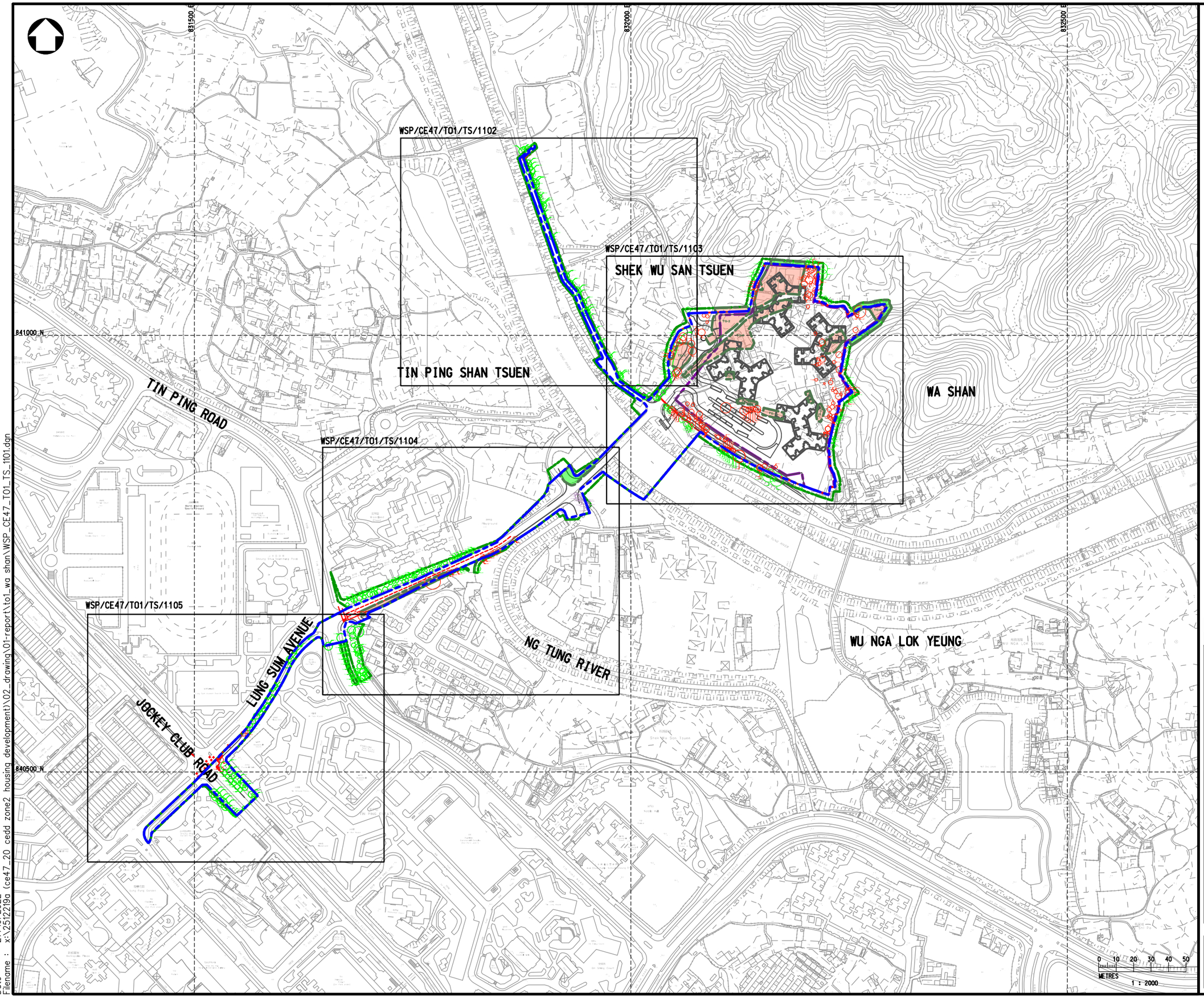
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Date : 3/11/2022
Filename : \\hkkwn200dat13\T&N\Library\Traffic\06 CAD Drawings\2512219A (CE47 CEDD TERM ZONE2 21-24)\TO1 (Wa Shan)\Drawing\20221103 (Appendix)\CE47_TO1_Appendix_E10.dgn

APPENDIX B

TREE SURVEY PLAN AND SCHEDULE



NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES (M) AND RELATIVE TO HONG KONG PRINCIPAL DATUM (mPD).

LEGEND :

- WORKS LIMIT
- TREE SURVEY BOUNDARY
- PROPOSED SITE FORMATION WORKS BOUNDARY
- HOUSING SITE BOUNDARY
- TG-1 TREE GROUP TO BE REMOVED
- TG-1 TREES IN TREE GROUPS TO BE RETAINED
- T266 EXISTING TREE TO BE RETAINED
- T266 EXISTING TREE TO BE REMOVED
- T266 EXISTING TREE TO BE TRANSPLANTED
- PROPOSED KERBLINE
- PROPOSED ROAD MARKING
- PROPOSED FOOTPATH

Rev	Description	By	Date
-	FIRST ISSUE	HL	OCT 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
TREE TREAMENT PLAN

Drawing no.	Rev.
CE47/T01/TS/1101	-

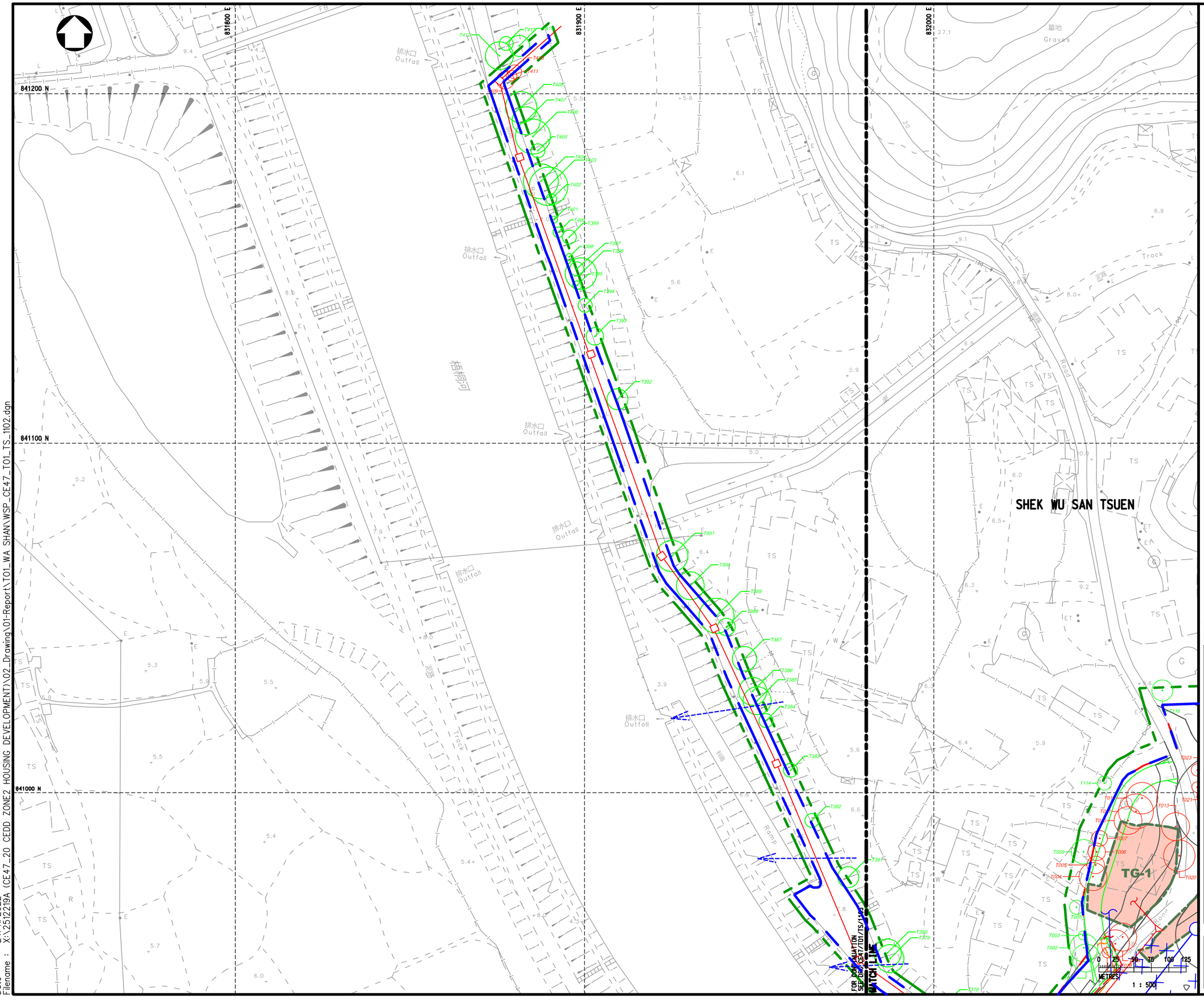
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CAD	APR 2021	VS	YWY

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Date : 27/10/2022
Filename : x:\25122219a (ce47_20 cedd zone2 housing development)\02_drawing\01-report\to1_wa shan\WSP_CE47_T01_TS_1101.dgn



NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES (M) AND RELATIVE TO HONG KONG PRINCIPAL DATUM (mPD).

LEGEND :

- WORKS LIMIT
- TREE SURVEY BOUNDARY
- STUDY AREA FOR THE DEVELOPMENT
- TG-1 — TREE GROUP TO BE REMOVED
- TG-1 — TREES IN TREE GROUPS TO BE RETAINED
- T206 — EXISTING TREE TO BE RETAINED
- T208 — EXISTING TREE TO BE REMOVED
- T208 — EXISTING TREE TO BE TRANSPLANTED
- PROPOSED KERBLINE
- PROPOSED ROAD MARKING

Rev	Description	By	Date
–	FIRST ISSUE		

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
TREE TRETMENT PLAN

(SHEET 1 OF 4)

Drawing no.	Rev.
CE47/T01/TS/1102	

Drawn	Date	Checked	Approved
CAD		VS	YWY

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Date : 24/11/2022
Filename : X:\2512219A (CE47_20 CEDD ZONE2 HOUSING DEVELOPMENT)\02_Drawing\01-Report\T01_WA SHAN\WSP_CE47_T01_TS_1102.dgn

SHEK WU SAN TSUEN

WA SHAN

832000 E
832100 E
832200 E
841000 N
840900 N

TG-1
TG-2
TG-3
TG-4
TG-5
TG-6
TG-7
TG-8
TG-9
TG-10
TG-11
TG-12

TPI

PROPOSED SITE FORMATION WORKS BOUNDARY

FOR CONTINUATION SEE DRG CE47/T01/TS/1102 & 1104
MATCH LINE

0 25 50 75 100 125
METRES
1 : 500

Date : 3/24/2023
Filename : X:\2512219A (CE47_20 CEDD ZONE2 HOUSING DEVELOPMENT)\02_Drawing\01-Report\T01_WA SHAN\WSP_CE47_T01_TS_1103.dgn

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES (M) AND RELATIVE TO HONG KONG PRINCIPAL DATUM (mPD).

LEGEND :

- WORKS LIMIT
- TREE SURVEY BOUNDARY
- HOUSING SITE BOUNDARY
- REZONING BOUNDARY
- TG-1 — TREE GROUP TO BE REMOVED
- TG-1 — TREES IN TREE GROUPS TO BE RETAINED
- T266 — EXISTING TREE TO BE RETAINED
- T266 — EXISTING TREE TO BE REMOVED
- T266 — EXISTING TREE TO BE TRANSPLANTED
- PROPOSED KERBLINE
- PROPOSED ROAD MARKING

Rev	Description	By	Date
-	FIRST ISSUE	HL	OCT 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
TREE TRETMENT PLAN

(SHEET 2 OF 4)

Drawing no.	Rev.
CE47/T01/TS/1103	-

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YMY

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ROADS CONNECTING TO PROJECTS UNDER REMAINING PHASE DEVELOPMENT OF FANLING NORTH NEW DEVELOPMENT AREA

ROADS CONNECTING TO PROJECTS UNDER REMAINING PHASE DEVELOPMENT OF FANLING NORTH NEW DEVELOPMENT AREA

TG-13

TG-14

LUNG SUM AVE

TIN PING ROAD

TPI

WOODLAND CREST

ON KWOK VILLA

831700 E

831800 E

831900 E

840800 N

840700 N

840600 N

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES (M) AND RELATIVE TO HONG KONG PRINCIPAL DATUM (mPD).

LEGEND :

- WORKS LIMIT
- TREE SURVEY BOUNDARY
- TG-1 — TREE GROUP TO BE REMOVED
- TG-1 — TREE GROUP TO BE REMOVED BY OTHER PARTIES
- EXISTING TREE TO BE RETAINED
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE TRANSPLANTED
- EXISTING TREE TO BE REMOVED BY OTHER PARTIES
- PROPOSED KERBLINE
- PROPOSED ROAD MARKING
- PROPOSED FOOTPATH

Rev	Description	By	Date
-	FIRST ISSUE	HL	OCT 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
TREE TREATMENT PLAN

(SHEET 3 OF 4)

Drawing no.	Rev.
CE47/TO1/TS/1104	-

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

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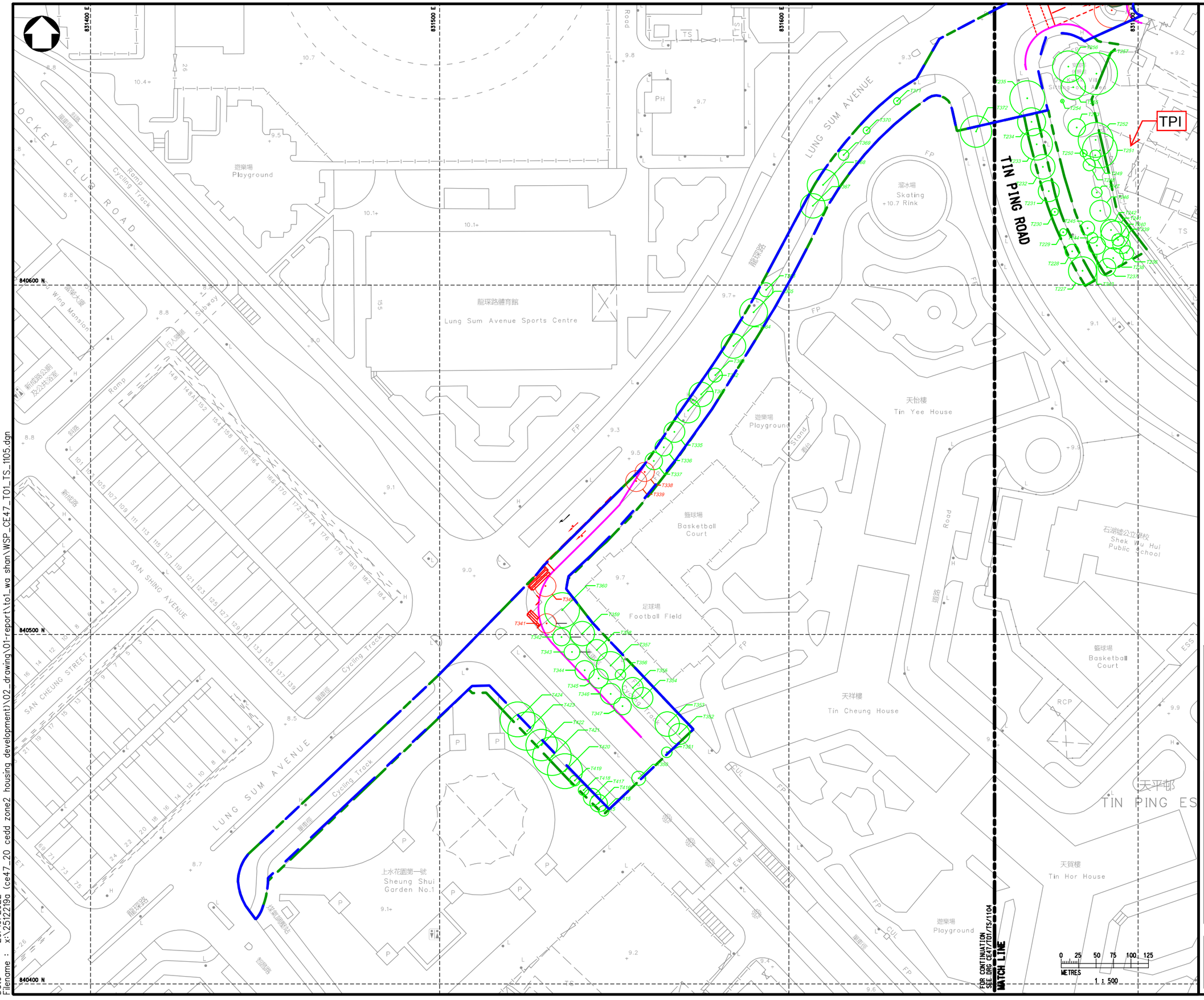
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CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT
土木工程處
CIVIL ENGINEERING OFFICE

0 5 10 15 20 25 METRES
1 : 500

FOR CONTINUATION SEE DRG CE47/TO1/TS/1105 MATCH LINE

FOR CONTINUATION SEE DRG CE47/TO1/TS/1103 MATCH LINE

Date : $DATE$
Filename : $FILE$



NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES (M) AND RELATIVE TO HONG KONG PRINCIPAL DATUM (mPD).

LEGEND :

- WORKS LIMIT
- TREE SURVEY BOUNDARY
- TG-1 — TREE GROUP TO BE REMOVED
- TG-1 — TREES IN TREE GROUPS TO BE RETAINED
- EXISTING TREE TO BE RETAINED
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE TRANSPLANTED

Rev	Description	By	Date
–	FIRST ISSUE	HL	OCT 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
TREE TREATMENT PLAN

(SHEET 4 OF 4)

Drawing no.	Rev.
CE47/T01/TS/1105	–

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

Scale: 1:500 (A1)
Status: PRELIMINARY

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土木工程處
CIVIL ENGINEERING OFFICE

Date : 26/10/2022
Filename : x:\25122l9a (ce47_20 cedd zone2 housing development)\02_drawing\01-report\to1_wa shan\WSP_CE47_T01_TS_1105.dgn

SHEK WU SAN TSUEN

PLANTING SCHEDULE (TS/1401)

Code	Scientific Name	Chinese Name	Size	Height x Spread (mm)	Planting Spacin	Quantity (Nos.)	Origin	Remarks
BIS. JAV.	*Bishofia javanica*	秋楓	Heavy Standard	4000 x 2500	5m	12	Native	GMP
POD. MAC.	*Podocarpus macrophyllus*	羅漢松	Standard	2000 x 1000	4m	11	Native	GMP
REE. THY.	*Reevesia thyrsoidea*	梭羅樹	Standard	3500 x 2000	5m	10	Native	GMP
SYZ. HAN.	*Syzygium hancei*	韓氏蒲桃	Standard	3500 x 2000	5m	10	Native	STSG
LIQ. FOR.	*Liquidambar formosana*	楓香	Heavy Standard	4000 x 2500	5m	3	Native	GMP, STSG
PLU. RUB.	*Plumeria rubra*	鷄蛋花	Standard	3000 x 1500	4m	13	Exotic	GMP, STSG

* GMP: Greening Master Plan for Yuen Long District; STSG: Street Tree Selection Guide;

832000 E
832100 E
832200 E
841000 N
840900 N

BIS. JAV. (2 nos.)
PLU. RUB. (9 nos.)
PLU. RUB. (4 nos.)
LIQ. FOR. (1 no.)
Toilet
Refuse Collection Point
POD. MAC. (2 nos.)
POD. MAC. (2 nos.)
BIS. JAV. (5 nos.)
LIQ. FOR. (2 nos.)
REE. THY. (5 nos.)
SYZ. HAN. (5 nos.)
REE. THY. (5 nos.)
SYZ. HAN. (5 nos.)
BIS. JAV. (5 nos.)
POD. MAC. (7 nos.)

APPROX. 180 NOS. OF NEW TREE PLANTING BY HD WITHIN HOUSING SITE BOUNDARY

WA SHAN

FOR CONTINUATION SEE DRG CE47/T01/TS/1402
MATCH LINE

Date : 3/24/2023
Filename : X:\2512219A (CE47_20 CEDD ZONE2 HOUSING DEVELOPMENT)\02_Drawing\01-Report\T01_WA SHAN\WSP_CE47_T01_TS_1401.dgn

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES (M) AND RELATIVE TO HONG KONG PRINCIPAL DATUM (mPD).

LEGEND :

- WORKS LIMIT
- HOUSING SITE
- REZONING BOUNDARY
- COMPENSATORY TREE(BY CEDD)

Rev	Description	By	Date
-	FIRST ISSUE	HL	OCT 21

Consultant: wsp

Project title:
AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title:
TASK ORDER NO. 1
WA SHAN
ONSITE COMPENSATORY PLANTING PLAN
(SHEET 1)

Drawing no.	Rev.
CE47/T01/TS/1401	-

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

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0 25 50 75 100 125
METRES
1 : 500

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PLANTING SCHEDULE (TS/1402)

Code	Scientific Name	Chinese Name	Size	Height x Spread (mm)	Planting Spacing	Quantity (Nos.)	Origin	Remarks
PLU. RUB.	*Plumeria rubra*	雞蛋花	Standard	3000 x 1500	4m	3	Exotic	GMP, STSG
CIN. BUR.	*Cinnamomum burmannii*	陰香	Standard	3500 x 2000	5m	3	Native	GMP, GEO
STE. LAN.	*Sterculia lanceolata*	假蘋婆	Standard	3500 x 2000	5m	3	Native	GMP, STSG
POL. AXI.	*Polyspora axillaris*	大頭茶	Standard	3500 x 2000	4m	6	Native	GEO

* GMP: Greening Master Plan for Yuen Long District; STSG: Street Tree Selection Guide; GEO: GEO Publication No. 1/2011

831700 E
831800 E
831900 E
840800 N
840100 N
840600 N

POL. AXI. (2 nos.)
CIN. BUR. (3 nos.)
STE. LAN. (3 nos.)
PLU. RUB. (3 nos.)
POL. AXI. (4 nos.)

奕翠園
Woodland Crest
WOODLAND CREST
Club House
遊樂場
Playground
Tennis Court
LUNG SUM AVE
TIN PING ROAD
安國花園新邨
On Kwok Villa
ON KWOK VILLA
On Kwok Villa Sitting-out Area
梧桐河
排水口 Outfall
道路 Road
第六座 Block 6
第七座 Block 7
第八座 Block 8
第九座 Block 9

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES (M) AND RELATIVE TO HONG KONG PRINCIPAL DATUM (mPD).

LEGEND :

- WORKS LIMIT
- TREE SURVEY BOUNDARY
- COMPENSATORY TREE(BY CEDD)
- PLANNED ROAD UNDER FLN NDA

FOR CONTINUATION SEE DRG CE47/101/TS/1401

MATCH LINE

0 5 10 15 20 25
METRES
1 : 500

Date : $DATE$
Filename : $FILE$

Rev	Description	By	Date
-	FIRST ISSUE	HL	OCT 21

Consultant

wsp

Project title

AGREEMENT NO.CE47/2020 (CE)
TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 - 2024) - FEASIBILITY STUDY

Drawing title

TASK ORDER NO. 1
WA SHAN
ONSITE COMPWNSATORY PLANTING PLAN
(SHEET 2)

Drawing no.	Rev.
CE47/TO1/TS/1402	-

Drawn	Date	Checked	Approved
CAD	APR 2021	VS	YWY

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土木工程處
CIVIL ENGINEERING OFFICE

Agreement No.: 47/2020 (CE) Term Consultancy for Site Formation and Infrastructure Works for Proposed Housing Developments in Zone 2 (2021-2024) - Feasibility Study
Task Order No. 1 Wa Shan, Sheung Shui
Date of Tree Survey and Assessment: 9 Sept, 24 Sept, 6 Oct 2021, 6 May, 11 October 2022
Prepared by: Anny LI (ISA Certified Arborist #: HK-0993A) and Kelly HE (#ISA Certified Arborist: HK-1030A)

Tree Assessment Schedule (TAS) - Individual trees

Tree No.	Species		Measurements			Amenity Value	Form	Health condition	Structural condition	Suitability for transplanting		Conservation Status (Yes/No)	Within Main Housing Site Boundary or Not	Recommendation	Justifications	Location (i.e. SIMAR Slope, Land Lot)	Maintenance department to provide comments on TPRP		Remarks
	Scientific name	Chinese Name	Height (m)	DBH (mm)	Crown Spread (m)	(High/ Medium /Low)	(Good/Average/Poor)			(High/ Medium/ Low)	Remarks			(Retain/ Transplant/ Remove)			Before	After	
WS - T001	*Dimocarpus longan*	龍眼	7	460	8	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	DBH measured at 0.95m, co-dominant scaffold branches at low fork, restricted by concrete, close to concrete
WS - T002	*Mangifera indica*	杧果	10	484	8	M	A	A	A	L	3, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Various epicormics, restricted by concrete, close to concrete and fence
WS - T003	*Araucaria columnaris*	柱狀南洋杉	9	150	2.5	L	P	A	A	L	1, 2, 3, 4, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Bending top, restricted by concrete and bricks, close to fence
WS - T004	*Clausena lansium*	黃皮	9	313	8	M	A	A	A	L	3	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	DBH measured at 0.45m, crossed branches, co-dominant trunks at low fork
WS - T005	*Clausena lansium*	黃皮	7	180	5	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	DBH measured at 0.8m
WS - T006	*Dimocarpus longan*	龍眼	4.5	145	4	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	DBH measured at 0.9m, imbalance, bending trunk
WS - T007	*Litchi chinensis*	荔枝	5	420	4.5	L	P	P	P	L	1, 2	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	DBH measured at 0.4m, various broken branches, cavity at trunk, dying back on one side
WS - T008	*Clausena lansium*	黃皮	6	190	4	M	A	A	A	L	3	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	DBH measured at 0.4m, Multiple-trunks at low fork,
WS - T009	*Dimocarpus longan*	龍眼	9	320	7	M	A	A	A	L	3, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Trunk embedded in hoarding, close to concrete
WS - T010	*Macaranga tanarius* var. *tomentosa*	血桐	5	298	8	L	P	A	P	L	1, 2	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	DBH measured at 0.1m, various broken branches, crooked leader and branches
WS - T011	*Macaranga tanarius* var. *tomentosa*	血桐	15	445	10	M	A	A	A	L	3, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Crooked trunk andself-correction, girdling root cracked on surface, close to grave
WS - T012	*Macaranga tanarius* var. *tomentosa*	血桐	10	413	9	M	A	A	A	L	3	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	DBH measured at 0.2m, co-dominant scaffold branches at low fork
WS - T013	*Dimocarpus longan*	龍眼	9	400	8	M	A	A	A	L	3, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Lower trunk embedded in metal, close to hoarding
WS - T014	*Ligustrum sinense*	山指甲	3.5	150	4	M	A	A	A	L	7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Close to grave
WS - T015	*Ficus virens*	黃葛樹	5	170	4	L	P	A	A	L	2, 8	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Co-dominant scaffold branches at low fork, various epicormics along trunk
WS - T016	*Ficus virens*	黃葛樹	4.5	110	3	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Between containers
WS - T017	*Clausena lansium*	黃皮	3.5	111	3	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Imbalance, crooked scaffold branches, close to drain and concrete paving
WS - T018	*Dimocarpus longan*	龍眼	9	368	8	M	A	A	A	L	3, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	DBH measured at 0.5m, scaffold branches at low fork, close to drain
WS - T019	*Dimocarpus longan*	龍眼	8	382	8	M	A	A	A	L	3, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	2 trunks, close to drain
WS - T020	*Dimocarpus longan*	龍眼	8	467	9	M	A	A	A	L	3	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Co-dominant scaffold branches at low fork
WS - T021	*Ligustrum sinense*	山指甲	3.5	120	3	M	A	A	A	M	8	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	-
WS - T022	*Macaranga tanarius* var. *tomentosa*	血桐	4	330	8	L	P	A	P	L	1, 2	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Multiple-trunks, some trunks broken and some dead
WS - T023	*Macaranga tanarius* var. *tomentosa*	血桐	4	214	3.5	L	P	A	P	L	1, 2	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Multiple-trunks, various wounds at trunks
WS - T024	*Litchi chinensis*	荔枝	4.5	212	4	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Multiple-trunks
WS - T025	*Dimocarpus longan*	龍眼	3.5	223	3	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	DBH measured at 0.8m, leaning, low branching, close to paved path
WS - T026	*Dimocarpus longan*	龍眼	5	154	3	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Multiple trunks at low fork, base girdled by others
WS - T027	*Macaranga tanarius* var. *tomentosa*	血桐	5.5	281	3.5	L	P	A	P	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Various broken branches, co-dominant trunks, large pruning wound at trunk
WS - T028	*Dimocarpus longan*	龍眼	4.5	160	3	M	A	A	A	L	7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Close to concrete path

Agreement No.: 47/2020 (CE) Term Consultancy for Site Formation and Infrastructure Works for Proposed Housing Developments in Zone 2 (2021-2024) - Feasibility Study
Task Order No. 1 Wa Shan, Sheung Shui
Date of Tree Survey and Assessment: 9 Sept, 24 Sept, 6 Oct 2021, 6 May, 11 October 2022
Prepared by: Anny LI (ISA Certified Arborist #: HK-0993A) and Kelly HE (#ISA Certified Arborist: HK-1030A)

Tree Assessment Schedule (TAS) - Individual trees

Tree No.	Species		Measurements			Amenity Value	Form	Health condition	Structural condition	Suitability for transplanting		Conservation Status (Yes/No)	Within Main Housing Site Boundary or Not	Recommendation	Justifications	Location (i.e. SIMAR Slope, Land Lot)	Maintenance department to provide comments on TPRP		Remarks
	Scientific name	Chinese Name	Height (m)	DBH (mm)	Crown Spread (m)	(High/ Medium /Low)	(Good/Average/Poor)			(High/ Medium/ Low)	Remarks			(Retain/ Transplant/ Remove)			Before	After	
WS - T029	*Litchi chinensis*	荔枝	3	100	2.5	M	A	A	A	L	7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	DBH measured at 0.1m, from concrete, close to grave
WS - T030	*Litchi chinensis*	荔枝	4	170	4	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Co-dominant scaffold branches, one scaffold branch resting on temporary structure, crooked trunk, at edge of paved path
WS - T031	*Macaranga tanarius* var. *tomentosa*	血桐	4.5	140	5	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Various broken branches, close to grave
WS - T032	*Albizia lebbeck*	大葉合歡	7	186	5	M	A	A	A	L	7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Close to concrete steps
WS - T033	*Cratoxylum cochinchinense*	黃牛木	6.5	156	5	M	A	A	A	L	7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Close to concrete steps
WS - T034	*Dimocarpus longan*	龍眼	7	290	6	M	A	A	P	L	2, 3	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Co-dominant scaffold branches with included bark
WS - T035	*Artocarpus heterophyllus*	菠蘿蜜	8	235	3.5	M	A	A	A	L	7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Close to railing
WS - T036	*Leucaena leucocephala*	銀合歡	10	134	3.5	L	P	A	A	L	1, 2, 3, 5, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Close to fence and paved path
WS - T037	*Leucaena leucocephala*	銀合歡	12	156	6	L	P	A	A	L	1, 2, 3, 5, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Crooked trunk, close to fence and paved path
WS - T038	*Clausena lansium*	黃皮	5	173	3	M	A	A	A	L	7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Co-dominant branches at low fork, close to paved ground
WS - T039	*Clausena lansium*	黃皮	6	253	4	M	A	A	P	L	3	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Co-dominant trunk with included bark
WS - T040	*Artocarpus heterophyllus*	菠蘿蜜	8	168	3.5	L	P	A	P	L	1, 2, 3	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Co-dominant trunks at low fork, large wound at trunk with exposed dead wood
WS - T041	*Artocarpus heterophyllus*	菠蘿蜜	5	162	2	L	P	P	P	L	1, 2	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Dying back, dehydrating from top, only epicormics left
WS - T042	*Leucaena leucocephala*	銀合歡	4	96	1.5	L	P	A	P	L	1, 2, 5, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Topped, close to fence and paved path
WS - T043	*Leucaena leucocephala*	銀合歡	10	105	2.5	L	P	A	A	L	1, 2, 3, 5	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	-
WS - T044	*Leucaena leucocephala*	銀合歡	10	220	7	L	P	A	P	L	1, 2, 3, 5	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Various broken branches, co-dominant scaffold branches at low fork, resting against fence
WS - T045	*Leucaena leucocephala*	銀合歡	11	110	2.5	L	P	A	A	L	1, 2, 3, 5, 7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	At edge of platform
WS - T046	*Leucaena leucocephala*	銀合歡	8	195	7	L	P	A	A	L	1, 2, 5	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	DBH measured at 0.65m, co-dominant scaffold branches at low fork
WS - T047	*Leucaena leucocephala*	銀合歡	7	95	2.5	L	P	A	A	L	1, 2, 5	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Bending trunk, severe leaning, resting on fence
WS - T048	*Leucaena leucocephala*	銀合歡	6	110	2.5	L	P	A	A	L	1, 2, 5, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Close to fence, trunk embedded in fence
WS - T049	*Leucaena leucocephala*	銀合歡	6	110	2.5	L	P	A	A	L	1, 2, 5, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Close to fence
WS - T050	*Macaranga tanarius* var. *tomentosa*	血桐	6	175	7	M	A	A	A	L	7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	On concrete
WS - T051	*Leucaena leucocephala*	銀合歡	7	110	4	L	P	A	P	L	1, 2, 5, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	2 trunks, close to railing
WS - T052	*Leucaena leucocephala*	銀合歡	8	95	3	L	P	A	A	L	1, 2, 5	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	-
WS - T053	*Leucaena leucocephala*	銀合歡	3.5	114	4	L	P	A	A	L	1, 2, 5	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	DBH measured at 0.3m, severely crooked trunk
WS - T054	*Leucaena leucocephala*	銀合歡	5	99	2.5	L	P	A	A	L	1, 2, 5, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Crooked trunk, close to railing and culvert
WS - T055	*Leucaena leucocephala*	銀合歡	5.5	121	3	L	P	A	A	L	1, 2, 5, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Close to railing and culvert
WS - T056	*Leucaena leucocephala*	銀合歡	8	130	5	L	P	A	A	L	1, 2, 5	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Crossed with other trees

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Tree Assessment Schedule (TAS) - Individual trees

Tree No.	Species		Measurements			Amenity Value	Form	Health condition	Structural condition	Suitability for transplanting		Conservation Status (Yes/No)	Within Main Housing Site Boundary or Not	Recommendation	Justifications	Location (i.e. SIMAR Slope, Land Lot)	Maintenance department to provide comments on TPRP		Remarks
	Scientific name	Chinese Name	Height (m)	DBH (mm)	Crown Spread (m)	(High/ Medium /Low)	(Good/Average/Poor)			(High/ Medium/ Low)	Remarks			(Retain/ Transplant/ Remove)			Before	After	
WS - T057	*Leucaena leucocephala*	銀合歡	7	96	2	L	P	A	A	L	1, 2, 5, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Close to fence
WS - T058	*Leucaena leucocephala*	銀合歡	7	100	2	L	P	A	A	L	1, 2, 5, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Leaning, close to fence
WS - T059	*Leucaena leucocephala*	銀合歡	9	194	5	L	P	A	A	L	1, 2, 3, 5	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	2 trunks
WS - T060	*Leucaena leucocephala*	銀合歡	6	114	4	L	P	A	A	L	1, 2, 5	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Severely leaning
WS - T061	*Leucaena leucocephala*	銀合歡	6.5	160	4	L	P	A	A	L	1, 2, 5	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Multiple-trunks
WS - T062	*Dimocarpus longan*	龍眼	8	325	10	M	A	A	A	L	3	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	2 trunks, on sloping ground
WS - T063	*Macaranga tanarius* var. *tomentosa*	血桐	6	233	8	L	P	A	P	L	1, 2	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Multiple-trunks, some wounded and exposed deadwood
WS - T064	*Leucaena leucocephala*	銀合歡	7	243	7	L	P	A	P	L	1, 2, 5	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Multiple trunks, uprooted
WS - T065	*Macaranga tanarius* var. *tomentosa*	血桐	6	210	6	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Bending top, low branching, on sloping ground
WS - T066	*Macaranga tanarius* var. *tomentosa*	血桐	7	154	6	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Imbalance, low branching, on sloping ground, base embedded in metal
WS - T067	*Macaranga tanarius* var. *tomentosa*	血桐	7	110	5	L	P	A	P	L	1, 2	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Bending trunk and top, root on wall
WS - T068	*Macaranga tanarius* var. *tomentosa*	血桐	7	230	8	L	P	A	P	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Multiple attachments, close to wall and temporary structure
WS - T069	*Leucaena leucocephala*	銀合歡	6	130	4	L	P	A	P	L	1, 2, 5, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Co-dominant trunks at low fork, on sloping ground, uprooted, close to drain
WS - T070	*Leucaena leucocephala*	銀合歡	9	200	4	L	P	A	A	L	1, 2, 3, 5	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Crooked trunk, embedded in fence
WS - T071	*Leucaena leucocephala*	銀合歡	8	263	5	L	P	A	A	L	1, 2, 5, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Two trunks, close to fence
WS - T072	*Leucaena leucocephala*	銀合歡	7	98	3	L	P	A	P	L	1, 2, 5	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Broken top
WS - T073	*Leucaena leucocephala*	銀合歡	9	136	5	L	P	A	A	L	1, 2, 3, 5	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Codomiant trunks at low fork
WS - T074	*Leucaena leucocephala*	銀合歡	9	141	7	L	P	A	A	L	1, 2, 3, 5	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Codomiant trunks at low fork, *Ganoderma* fruiting body on trunk
WS - T075	*Ligustrum sinense*	山指甲	4.5	130	4	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Close to fence
WS - T076	*Leucaena leucocephala*	銀合歡	6	95	3	L	P	A	A	L	1, 2, 5	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	-
WS - T077	*Leucaena leucocephala*	銀合歡	9	100	3	L	P	A	A	L	1, 2, 3, 5	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	-
WS - T078	*Leucaena leucocephala*	銀合歡	9	150	4	L	P	A	P	L	1, 2, 3, 5	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Broken top at minor trunk
WS - T079	*Leucaena leucocephala*	銀合歡	10	150	6	L	P	A	P	L	1, 2, 3, 5	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Trunk embedded in fence
WS - T080	*Leucaena leucocephala*	銀合歡	12	135	6	L	P	A	A	L	1, 2, 3, 5	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	-
WS - T081	*Artocarpus heterophyllus*	菠蘿蜜	4	125	3	L	P	A	P	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	DBH measured at 0.7m, leaning trunk, one broken scaffold branch
WS - T082	*Artocarpus heterophyllus*	菠蘿蜜	2.5	120	3	L	P	A	P	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Severe leaning, trunk length ~ 3.5m
WS - T083	*Leucaena leucocephala*	銀合歡	10	100	4	L	P	A	A	L	1, 2, 3, 5	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	-
WS - T084	*Leucaena leucocephala*	銀合歡	12	115	4	L	P	A	A	L	1, 2, 3, 5	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	-

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Tree Assessment Schedule (TAS) - Individual trees

Tree No.	Species		Measurements			Amenity Value	Form	Health condition	Structural condition	Suitability for transplanting		Conservation Status (Yes/No)	Within Main Housing Site Boundary or Not	Recommendation	Justifications	Location (i.e. SIMAR Slope, Land Lot)	Maintenance department to provide comments on TPRP		Remarks
	Scientific name	Chinese Name	Height (m)	DBH (mm)	Crown Spread (m)	(High/ Medium /Low)	(Good/Average/Poor)			(High/ Medium/ Low)	Remarks			(Retain/ Transplant/ Remove)			Before	After	
WS - T085	*Leucaena leucocephala*	銀合歡	10	110	4	L	P	A	A	L	1, 2, 3, 5	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	-
WS - T086	*Clausena lansium*	黃皮	6	202	4	L	P	A	A	L	1, 2, 7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Two trunks, close to fence, tree tagged on fence
WS - T087	*Clausena lansium*	黃皮	7	210	4.5	L	P	A	A	L	1, 2, 7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Imbalance, between fence and squatter, close to concrete (tag on fence)
WS - T088	*Leucaena leucocephala*	銀合歡	8	154	5	L	P	A	P	L	1, 2, 5, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Crooked trunk, trunk embedded in fence, close to footpath
WS - T089	*Leucaena leucocephala*	銀合歡	6.5	114	4	L	P	A	P	L	1, 2, 5, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Large wound at trunk, close to footpath, between hoarding and fence
WS - T090	*Ficus hispida*	對葉榕	6	200	6	L	P	A	S	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	DBH measured at 0.6m, low branching, close to footpath, between hoarding and fence
WS - T091	*Macaranga tanarius* var. *tomentosa*	血桐	6	116	5	L	P	A	P	L	1, 2	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Bending trunk, low trunk embedded in metal bar, between hoarding and footpath
WS - T092	*Ficus hispida*	對葉榕	5.5	102	5	L	P	A	P	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Large wound at trunk, between hoarding and fence, close to footpath
WS - T093	*Ficus hispida*	對葉榕	5	131	6	L	P	A	P	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Two trunks, crooked trunk, between hoarding and fence, close to footpath
WS - T094	*Leucaena leucocephala*	銀合歡	10	230	8	L	P	A	A	L	1, 2, 3, 5	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Crooked trunk, root plate movement
WS - T095	*Leucaena leucocephala*	銀合歡	10	185	5	L	P	A	A	L	1, 2, 3, 5	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	-
WS - T096	*Leucaena leucocephala*	銀合歡	12	220	7	L	P	A	A	L	1, 2, 3, 5, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Close to fence and footpath
WS - T097	*Leucaena leucocephala*	銀合歡	5	200	4	L	P	A	A	L	1, 2, 5	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Lying on ground, uprooted, trunk length ~7m
WS - T098	*Leucaena leucocephala*	銀合歡	7	120	4	L	P	A	P	L	1, 2, 5	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Topped and tipped, crown formed from epicormics
WS - T099	*Leucaena leucocephala*	銀合歡	3	102	3	L	P	A	P	L	1, 2, 5, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Bending trunk, close to fence and footpath
WS - T100	*Litsea glutinosa*	潺槁樹	4	97	3	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	DBH measured at 0.5m,cross branches, close to fence
WS - T101	*Ficus hispida*	對葉榕	6	165	5	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, two trunk included, crossed branches, exposed root
WS - T102	*Ficus hispida*	對葉榕	4.5	153	5	M	A	A	A	L	-	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	-
WS - T103	*Ficus elastica*	印度榕	9	600	14	M	A	A	A	L	3	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	No main leader, heavy lateral, various broken branches, minor bark cracks at branches, extensive aerial roots liginifiedand landed and extending ~7m on ground
WS - T104	*Ficus variegata*	青果榕	6.5	112	3	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Slightly crooked trunk
WS - T105	*Leucaena leucocephala*	銀合歡	12	260	8	L	P	A	A	L	1, 2, 3, 5	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Low braching
WS - T106	*Ficus hispida*	對葉榕	6.5	125	5	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance
WS - T107	*Macaranga tanarius* var. *tomentosa*	血桐	6	190	7	M	A	A	A	L	7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Low braching, base crossing with T108
WS - T108	*Leucaena leucocephala*	銀合歡	10	125	5	L	P	A	A	L	1, 2, 3, 5	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Crooked trunk, base crossing with T107
WS - T109	*Ficus elastica*	印度榕	12	960	15	M	A	A	A	L	3, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Balance form, extensive aerial roots, liginified and landed, spreading ~10m, crossing branches, wounds at branches, close to T110
WS - T110	*Ficus elastica*	印度榕	9	400	7	L	P	A	P	L	1, 2, 3, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Broken top at one trunk, close to T109 and T111
WS - T111	*Ficus elastica*	印度榕	9	700	12	M	A	A	A	L	3	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Two trunks, extensive aerial roots liginified, landed and spreading ~8m on ground
WS - T112	*Leucaena leucocephala*	銀合歡	8	135	6	L	P	A	P	L	1, 2, 5, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Embedded in fence, between hoarding and fence, close to footpath

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	Scientific name	Chinese Name	Height (m)	DBH (mm)	Crown Spread (m)	(High/ Medium /Low)	(Good/Average/Poor)			(High/ Medium/ Low)	Remarks			(Retain/ Transplant/ Remove)			Before	After	
WS - T113	*Leucaena leucocephala*	銀合歡	7	170	6	L	P	A	P	L	1, 2, 5	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Bending trunk, between hoarding and fence, resting on hoarding, tree tagged on fence
WS - T114	*Clausena lansium*	黃皮	8	170	4	L	A	P	A	L	2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Yellowish foliage, low branching, close to concrete, tree tagged on fence
WS - T115	*Michelia × alba*	白蘭	5.5	170	3	M	A	A	A	L	1, 7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Not a Tree of Particular Interest (TPI), slightly bending lower trunk, close to fence, cultivated specimen
WS - T116	*Ficus variegata*	青果榕	8	316	6	M	A	A	A	L	7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Resting on metal roof, close to metal structure
WS - T117	*Litsea glutinosa*	潺槁樹	6	190	4	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Bending trunk
WS - T118	*Celtis sinensis*	朴樹	9	550	10	L	A	A	P	L	1, 2, 3	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Large tearing wound at branches, cracked at crotch
WS - T119	*Cinnamomum camphora*	樟	9	650	9	M	P	A	A	L	2, 3	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, codominant scaffold branches at low fork
WS - T120	*Delonix regia*	鳳凰木	7.5	290	6	M	A	A	A	L	7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Close to kerb
WS - T121	*Albizia lebbeck*	大葉合歡	7	260	7	M	A	A	A	L	7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	On slope
WS - T122	Dead tree	死樹	4	180	5	L	P	P	P	L	1, 2, 6, 7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Dehydrated trunk, dead tree, close to T123, on slope
WS - T123	Dead tree	死樹	5	170	5	L	P	P	P	L	1, 2, 6, 7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Severely dehydrated, dead tree, close to T122, on slope
WS - T124	*Albizia lebbeck*	大葉合歡	4.5	150	3	L	P	A	P	L	1, 2, 4	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Crooked trunk, various broken branches
WS - T125	*Macaranga tanarius* var. *tomentosa*	血桐	7	270	9	M	A	A	P	L	2, 3, 7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Girdling root, close to concrete
WS - T126	*Albizia lebbeck*	大葉合歡	6	140	3	L	P	A	A	L	1, 2, 4	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Sparse crown, heavy climbers
WS - T127	*Albizia lebbeck*	大葉合歡	8.5	120	3	L	P	A	P	L	1, 2, 4	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Crooked trunk, poor taper
WS - T128	*Celtis sinensis*	朴樹	7	245	6	M	A	A	A	L	7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	On slope
WS - T129	*Macaranga tanarius* var. *tomentosa*	血桐	6	135	7	L	P	A	A	L	1, 2, 7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Leaning, on slope
WS - T130	*Ficus hispida*	對葉榕	7	240	7	M	A	A	A	L	7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	On slope
WS - T131	*Macaranga tanarius* var. *tomentosa*	血桐	6	130	5	L	P	A	A	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Leaning
WS - T132	*Ligustrum sinense*	山指甲	6	200	6	L	P	A	P	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Various broken branches
WS - T133	*Bridelia tomentosa*	土蜜樹	4	163	4	L	P	A	P	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, two trunks with included bark
WS - T134	*Macaranga tanarius* var. *tomentosa*	血桐	6.5	270	7	L	P	A	P	L	1, 2	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Low branching, broken branches
WS - T135	*Celtis sinensis*	朴樹	9	315	7	L	P	A	P	L	1, 2, 3	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Imbalance, codominant scaffold branches with included bark
WS - T136	*Ligustrum sinense*	山指甲	4.5	150	4.5	L	P	A	P	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Large broken branch
WS - T137	*Albizia lebbeck*	大葉合歡	6	104	2	L	P	A	P	L	1, 2, 4	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Various broken branches, crooked trunk
WS - T138	*Celtis sinensis*	朴樹	8	216	7	M	A	A	A	M	8	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	-
WS - T139	*Macaranga tanarius* var. *tomentosa*	血桐	8	172	7	M	A	A	A	L	3	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	-
WS - T140	*Macaranga tanarius* var. *tomentosa*	血桐	7	215	8	L	P	A	A	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Low branching, root fusing with T141

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Prepared by: Anny LI (ISA Certified Arborist #: HK-0993A) and Kelly HE (#ISA Certified Arborist: HK-1030A)

Tree Assessment Schedule (TAS) - Individual trees

Tree No.	Species		Measurements			Amenity Value	Form	Health condition	Structural condition	Suitability for transplanting		Conservation Status (Yes/No)	Within Main Housing Site Boundary or Not	Recommendation	Justifications	Location (i.e. SIMAR Slope, Land Lot)	Maintenance department to provide comments on TPRP		Remarks
	Scientific name	Chinese Name	Height (m)	DBH (mm)	Crown Spread (m)	(High/ Medium /Low)	(Good/Average/Poor)			(High/ Medium/ Low)	Remarks			(Retain/ Transplant/ Remove)			Before	After	
WS - T141	*Macaranga tanarius* var. *tomentosa*	血桐	8	162	6	M	A	A	A	L	7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Root fusing with T140
WS - T142	*Celtis sinensis*	朴樹	8	330	7	M	A	A	A	L	7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Heavy climbers
WS - T143	*Albizia lebbeck*	大葉合歡	7	104	3.5	M	A	A	A	L	4, 8	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	-
WS - T144	*Celtis sinensis*	朴樹	8	434	12	L	P	P	P	L	1, 2, 3	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Multipleple trunks split, sparse crown, rotting from base
WS - T145	*Macaranga tanarius* var. *tomentosa*	血桐	8	265	12	L	P	A	A	L	1, 2, 3	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Low branching
WS - T146	*Macaranga tanarius* var. *tomentosa*	血桐	5	140	6	L	P	A	P	L	1, 2, 7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	severe leaning, on slope
WS - T147	*Macaranga tanarius* var. *tomentosa*	血桐	6	150	4.5	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, low branching, on slope
WS - T148	*Macaranga tanarius* var. *tomentosa*	血桐	7	280	7	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	DBH measured at 0.3m, low branching, on slope
WS - T149	*Macaranga tanarius* var. *tomentosa*	血桐	6	270	6	M	A	A	A	L	-	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Low branching
WS - T150	*Dimocarpus longan*	龍眼	4.5	220	4	L	A	A	P	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	DBH measured at 0.8m, cavity at crotch
WS - T151	*Litsea cubeba*	木薑子	5	225	4	M	A	A	A	L	7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Codominant trunks at low fork, close to hoarding
WS - T152	*Eriobotrya japonica*	枇杷	6	169	4.5	M	A	A	A	L	7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Codominant trunks at low fork, close to fence and road
WS - T153	*Dimocarpus longan*	龍眼	5.5	255	4	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Bending trunk, close to fence
WS - T154	*Carica papaya*	番木瓜	3.5	143	2.5	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Bending trunk
WS - T155	*Dimocarpus longan*	龍眼	12	500	14	M	A	A	A	L	3	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	-
WS - T156	*Clausena lansium*	黃皮	6	150	4	L	A	A	A	L	8	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	-
WS - T157	*Clausena lansium*	黃皮	4.5	136	4	L	P	A	A	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Two trunks
WS - T158	*Clausena lansium*	黃皮	4.5	130	6	L	P	A	P	L	2, 8	N	Within Main Housing Site	Remove	a,b	3SW-A/C60(1)	LandsD	N.A.	Multiple-trunks wrapped in wire mesh, assessment is limited
WS - T159	*Dimocarpus longan*	龍眼	3	120	3	L	A	A	A	L	1, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	On slope
WS - T160	*Averrhoa carambola*	陽桃	7	380	7	M	A	A	A	L	7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	DBH measured at 0.8m, low branching, on slope
WS - T161	*Dimocarpus longan*	龍眼	5	170	4	L	A	A	A	L	1, 7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Slightly bending top, on slope
WS - T162	*Dimocarpus longan*	龍眼	8	294	8	L	P	A	A	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Bending top, low branching
WS - T163	*Averrhoa carambola*	陽桃	4	169	5	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Multiple-trunks, on slope
WS - T164	*Averrhoa carambola*	陽桃	4	110	3	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Severe leaning, on slope
WS - T165	*Mangifera indica*	杧果	7	250	5	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, on sloping ground
WS - T166	*Mangifera indica*	杧果	8	250	6	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Imbalance
WS - T167	*Clausena lansium*	黃皮	4	140	3	L	P	A	P	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Leaning, low branching, girdled root, root plate moved
WS - T168	*Dimocarpus longan*	龍眼	7	445	9	M	A	A	A	L	3	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	DBH measured at 0.7m, low branching

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Tree Assessment Schedule (TAS) - Individual trees

Tree No.	Species		Measurements			Amenity Value	Form	Health condition	Structural condition	Suitability for transplanting		Conservation Status (Yes/No)	Within Main Housing Site Boundary or Not	Recommendation	Justifications	Location (i.e. SIMAR Slope, Land Lot)	Maintenance department to provide comments on TPRP		Remarks
	Scientific name	Chinese Name	Height (m)	DBH (mm)	Crown Spread (m)	(High/ Medium /Low)	(Good/Average/Poor)			(High/ Medium/ Low)	Remarks			(Retain/ Transplant/ Remove)			Before	After	
WS - T169	*Dimocarpus longan*	龍眼	7	320	7	M	A	A	A	L	3	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	DBH measured at 0.75m, codominant scaffold branches at low fork
WS - T170	*Dimocarpus longan*	龍眼	6	282	5	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	DBH measured at 0.95m, imbalance, low branching, close to concrete paving
WS - T171	*Dimocarpus longan*	龍眼	4	142	4	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, low branching, closed to concrete paving
WS - T172	*Clausena lansium*	黃皮	4.5	156	3.5	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Codominant scaffold branches at low fork
WS - T173	*Clausena lansium*	黃皮	3.5	185	3	L	A	A	P	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Codominant trunks with included bark
WS - T174	*Dimocarpus longan*	龍眼	10	495	8	M	A	A	A	L	3	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Dense crown, drooping branches
WS - T175	*Clausena lansium*	黃皮	3.5	135	3	L	P	A	P	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Bending trunk, large cavity on lower trunk, cavity on branch
WS - T176	*Clausena lansium*	黃皮	6	309	7	L	P	A	A	L	2, 8	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Multiple-trunks
WS - T177	*Dimocarpus longan*	龍眼	4.5	235	4	L	P	A	A	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	DBH measured at 0.5m, bending trunk, low branching
WS - T178	*Clausena lansium*	黃皮	3.5	147	3	L	A	A	A	L	1, 7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	DBH measured at 0.5m, codominant scaffold branches at low fork, on slope crest
WS - T179	*Clausena lansium*	黃皮	5	227	5	L	P	A	A	L	2, 8	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Codominant trunks at low fork, on uneven ground
WS - T180	*Litchi chinensis*	荔枝	3	280	2	L	P	A	P	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Topped, only epicormics loeft, large cavities on base
WS - T181	*Clausena lansium*	黃皮	8	240	4	L	P	A	A	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Tipped branches
WS - T182	*Clausena lansium*	黃皮	8	385	5	L	P	A	P	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Multiple-trunks with included bark, large broken limb, root plate moved.
WS - T183	*Clausena lansium*	黃皮	2	110	1	L	P	P	P	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Topped, uprooted
WS - T184	*Macaranga tanarius* var. *tomentosa*	血桐	6.5	160	5	L	P	A	P	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Topped, tipped branches, crown formed from epicormics
WS - T185	*Litchi chinensis*	荔枝	7	470	7	L	P	P	P	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Various dead branches, wound on lower trunk
WS - T186	*Litchi chinensis*	荔枝	5.5	320	5	L	P	A	A	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Imbalance, bending trunk, low branching
WS - T187	*Livistona chinensis*	蒲葵	9	270	4	L	P	A	A	L	7, 8	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Heavy climbers, on slope crest
WS - T188	*Livistona chinensis*	蒲葵	9	280	4	M	A	A	A	M	8	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	-
WS - T189	*Ficus hispida*	對葉榕	4.5	110	3	L	P	P	A	L	1, 2, 7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Sparse crown, bending trunk, on edge of slope
WS - T190	*Clausena lansium*	黃皮	6	230	4	L	P	A	P	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Multiple-scaffold branches with included bark
WS - T191	*Clausena lansium*	黃皮	6.5	156	5	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Codominant scaffold branches with included bark, root plate moved.
WS - T192	*Clausena lansium*	黃皮	4.5	153	3	L	P	A	P	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, codominant scaffold branches at low fork
WS - T193	*Clausena lansium*	黃皮	6	256	6	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Multiple-trunks at low fork, leaning
WS - T194	*Clausena lansium*	黃皮	7	275	4.2	L	A	A	P	L	2, 8	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Multiple-trunks with included bark
WS - T195	*Dimocarpus longan*	龍眼	2.5	120	2	L	P	A	P	L	1, 2	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Topped, crooked trunk
WS - T196	*Dimocarpus longan*	龍眼	4.5	147	2.5	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	DBH measured at 0.4m, crooked trunk

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WS - T197	*Dimocarpus longan*	龍眼	3	100	3	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Leaning trunk
WS - T198	*Clausena lansium*	黃皮	3	150	3	L	P	P	P	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Multiple-trunks dehydrating, planted in make-shift planter
WS - T199	*Litchi chinensis*	荔枝	5	300	4	L	P	A	P	L	1, 2, 7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Various broken branches, on slope
WS - T200	*Dimocarpus longan*	龍眼	6	260	3.5	L	P	A	A	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Crooked trunk
WS - T201	*Dimocarpus longan*	龍眼	7	439	7	L	P	A	P	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Codominant trunks with one trunk topped
WS - T202	*Carica papaya*	番木瓜	4	112	1.5	L	A	A	A	L	1, 7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Close to concrete platform
WS - T203	*Carica papaya*	番木瓜	4.5	135	2	M	A	A	A	L	8	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	-
WS - T204	*Clausena lansium*	黃皮	6	200	4	L	P	A	A	L	1, 2, 7	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Multiple-trunks, low branching, on slope
WS - T205	*Morus alba*	桑	2	120	1.5	L	P	A	P	L	1, 2	N	Within Main Housing Site	Remove	a,b	3SW-A/C60(1)	LandsD	N.A.	Topped, crown formed from epicormics
WS - T206	*Litchi chinensis*	荔枝	8	451	7	L	P	A	P	L	1, 2, 7	N	Within Main Housing Site	Remove	a,b	3SW-A/C60(1)	LandsD	N.A.	Multiple-trunks with one trunk topped, bending trunks, pressed by hoarding materials, on slope
WS - T207	*Toona sinensis*	香椿	6.5	130	3.5	M	A	A	A	L		N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Two trunks
WS - T208	*Dimocarpus longan*	龍眼	9	460	8	M	A	A	A	L	3, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Two trunks, heavily covered in climbers, on slope
WS - T209	*Dimocarpus longan*	龍眼	6	250	3	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Heavily covered in climbers
WS - T210	*Dimocarpus longan*	龍眼	4.5	150	2	L	P	P	A	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Heavily covered in climbers, few foliage
WS - T211	*Ligustrum sinense*	山指甲	3	120	2	L	P	A	P	L	1, 2	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Broken top
WS - T212	*Claoxylon indicum*	白桐樹	7	130	4	M	P	A	A	L	2, 8	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Heavily covered in climbers
WS - T213	*Toona sinensis*	香椿	13	250	6	L	P	A	A	L	1, 2, 3	N	Within Main Housing Site	Remove	a,b	-	LandsD	N.A.	Heavily covered in climbers
WS - T214	*Clausena lansium*	黃皮	7	150	5	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Heavily covered in climbers
WS - T215	*Ficus variegata*	青果榕	7	130	3	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Bending upper trunk
WS - T216	*Syzygium jambos*	蒲桃	10	716	12	L	P	A	P	L	1, 2, 3, 7	N	Outside Main Housing Site	Remove	a,b	-	LandsD	N.A.	Imbalance, codominant trunks at low fork, included bark on branches, sign of temites and boeres on branches, large wound on branch, close to temporary structure and fence
WS - T217	NUMBER NOT USED	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WS - T218	NUMBER NOT USED	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WS - T219	NUMBER NOT USED	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WS - T220	NUMBER NOT USED	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WS - T221	NUMBER NOT USED	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WS - T222	NUMBER NOT USED	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WS - T223	NUMBER NOT USED	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WS - T224	NUMBER NOT USED	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Tree Assessment Schedule (TAS) - Individual trees

Tree No.	Species		Measurements			Amenity Value	Form	Health condition	Structural condition	Suitability for transplanting		Conservation Status (Yes/No)	Within Main Housing Site Boundary or Not	Recommendation	Justifications	Location (i.e. SIMAR Slope, Land Lot)	Maintenance department to provide comments on TPRP		Remarks
	Scientific name	Chinese Name	Height (m)	DBH (mm)	Crown Spread (m)	(High/ Medium /Low)	(Good/Average/Poor)			(High/ Medium/ Low)	Remarks			(Retain/ Transplant/ Remove)			Before	After	
WS - T225	NUMBER NOT USED	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WS - T226	NUMBER NOT USED	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WS - T227	*Ficus virens*	黃葛樹	13	560	8	L	P	A	A	L	1, 2, 3, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Imbalance, in roadside planter, close to drainage
WS - T228	*Ficus virens*	黃葛樹	9	400	4	L	P	A	P	L	1, 2, 3, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Imbalance, trimmed scaffold, trunk wound, wounds at root flare, in roadside planter, close to drainage
WS - T229	*Ficus virens*	黃葛樹	4.5	123	2	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	New planting tree, in roadside planter, close to drainage
WS - T230	*Ficus virens*	黃葛樹	4.5	105	2	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	New planting tree, in roadside planter, close to drainage
WS - T231	*Ficus virens*	黃葛樹	15	520	6	L	P	A	P	L	1, 2, 3, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Imbalance, decayed wound at trunk, over pruned, root restricted by drainage , in roadside planter, close to drainage
WS - T232	*Ficus virens*	黃葛樹	14	680	7	L	P	A	P	L	1, 2, 3, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Imbalance, various trimmed branches with wounds, in roadside planter, close to drainage
WS - T233	*Ficus virens*	黃葛樹	15	530	9	L	P	A	A	L	1, 2, 3, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Imbalance, in roadside planter, close to drainage
WS - T234	*Ficus virens*	黃葛樹	16	750	8	L	P	A	A	L	1, 2, 3, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Imbalance, in roadside planter, close to drainage
WS - T235	*Ficus virens*	黃葛樹	18	800	10	L	P	A	A	L	1, 2, 3, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Imbalance, broken scaffold, in roadside planter, close to drainage
WS - T236	*Acacia mangium*	馬占相思	9	240	4	L	A	A	P	L	1, 2, 3, 4	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Various branch wounds at inner crown
WS - T237	*Ficus microcarpa*	細葉榕	10	285	5	L	P	A	A	L	1, 2, 3	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Crooked trunk
WS - T238	*Acacia mangium*	馬占相思	13	322	6	L	P	A	A	L	1, 2, 3, 4	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Trunk wound, poor taper, thin canopy, over pruned
WS - T239	*Acacia mangium*	馬占相思	12	242	5	L	A	A	P	L	1, 2, 3, 4	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Broken top
WS - T240	*Ficus microcarpa*	細葉榕	6.5	160	3.5	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Branch wound, close to T239, T241
WS - T241	*Acacia mangium*	馬占相思	13	510	8	L	P	A	A	L	1, 2, 3, 4	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, co-dominant branches
WS - T242	*Ficus microcarpa*	細葉榕	6	190	6	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	-
WS - T243	*Acacia mangium*	馬占相思	12	286	5	L	P	A	P	L	1, 2, 3, 4	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Various branch wounds, leaning trunk, the, various trimmed branches
WS - T244	*Ficus microcarpa*	細葉榕	6	135	3	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance
WS - T245	*Acacia mangium*	馬占相思	13	355	4	L	P	P	A	L	1, 2, 3, 4	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Crooked trunk, imbalance, bending trunk, dieback twigs on crown
WS - T246	*Ficus microcarpa*	細葉榕	7	515	6	L	P	A	P	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, various trimmed branches
WS - T247	*Ficus microcarpa*	細葉榕	3	240	3	L	A	A	P	L	1	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Topped, crown formed by epicormic shoots
WS - T248	*Ficus microcarpa*	細葉榕	9	330	3.5	L	P	A	A	L	1, 2, 3	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance
WS - T249	*Liquidambar formosana*	楓香	6	128	3	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Close to T251, crooked trunk, suppressed by T251
WS - T250	*Ficus microcarpa*	細葉榕	6	169	2	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, suppressed by T251, thin canopy
WS - T251	*Ficus microcarpa*	細葉榕	13	1200	10	M	P	A	P	L	1, 2, 3, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Tree of Particular Interest (TPI), close to channel, trimmed scaffold with decayed wound, imbalance, co-dominant branches with included bark
WS - T252	*Ficus microcarpa*	細葉榕	8	590	10	L	P	A	A	L	1, 2, 3, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, close to channel

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Tree Assessment Schedule (TAS) - Individual trees

Tree No.	Species		Measurements			Amenity Value	Form	Health condition	Structural condition	Suitability for transplanting		Conservation Status (Yes/No)	Within Main Housing Site Boundary or Not	Recommendation	Justifications	Location (i.e. SIMAR Slope, Land Lot)	Maintenance department to provide comments on TPRP		Remarks
	Scientific name	Chinese Name	Height (m)	DBH (mm)	Crown Spread (m)	(High/ Medium /Low)	(Good/Average/Poor)			(High/ Medium/ Low)	Remarks			(Retain/ Transplant/ Remove)			Before	After	
WS - T253	*Senna siamea*	鐵刀木	14	376	5	L	P	A	A	L	1, 2, 3, 4	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, crooked trunk, decayed wound at crotch
WS - T254	*Livistona chinensis*	蒲葵	2	240	1	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	-
WS - T255	*Delonix regia*	凤凰木	14	373	7	L	P	A	A	L	1, 2, 3, 4	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Crown cannot fully extends, imbalance
WS - T256	*Delonix regia*	凤凰木	14	590	9	L	P	P	P	L	1, 2, 3, 4	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Crooked branch
WS - T257	*Delonix regia*	凤凰木	14	630	12	L	P	A	P	L	1, 2, 3, 4	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Cavity opening, imbalance, various trimmed branches
WS - T258	*Liquidambar formosana*	楓香	10	600	10	L	P	A	P	L	1, 2, 3, 7	N	Outside Main Housing Site	Remove	-	-	LandsD	N.A.	Cavity opening, imbalance, leaning trunk, many epicormic shoots at inner crown, cavity on trunk, root restricted by concrete
WS - T259	*Ligustrum sinense*	山指甲	3	147	4	L	A	A	P	L	1, 7	N	Outside Main Housing Site	Remove	a,c	-	LandsD	N.A.	Low branching, multi-trunks, root restricted by concrete
WS - T260	*Microcos nervosa*	布渣葉	3.5	231	4.5	L	P	A	P	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,c	-	LandsD	N.A.	Imbalance, various branch wounds, multi-trunks, on slope,root restricted by concrete
WS - T261	*Macaranga tanarius* var. *tomentosa*	血桐	5	175	5	L	P	A	P	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,c	-	LandsD	N.A.	Leaning trunk, imbalance, various branch wounds, included bark at lower trunk , on slope,root restricted by concrete
WS - T262	*Macaranga tanarius* var. *tomentosa*	血桐	4	228	3.5	L	P	A	P	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Root restricted by concrete,various branch wounds, imbalance, parasitic plant, on slope
WS - T263	*Macaranga tanarius* var. *tomentosa*	血桐	2	160	1	L	A	A	P	L	1, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Topped, crown formed by epicormic shoots, on slope,root restricted by concrete
WS - T264	*Hibiscus tiliaceus*	黃槿	7	230	7	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Collapsed, epicormic shoots on trunk, imbalance
WS - T265	*Hibiscus tiliaceus*	黃槿	7	260	7	L	P	P	P	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,c	-	LandsD	N.A.	Collapsed, close to T266, trunk wound lower trunk
WS - T266	*Bridelia tomentosa*	土蜜樹	2	95	2	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,c	-	LandsD	N.A.	Close to T265, heavily leaning trunk, basal wound, imbalance
WS - T267	*Cinnamomum burmannii*	陰香	4	121	3	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Remove	a,c	-	LandsD	N.A.	Leaning trunk, imbalance
WS - T268	*Leucaena leucocephala*	銀合歡	7	100	3	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,c	-	LandsD	N.A.	Leaning trunk, on slope, weed species
WS - T269	*Celtis sinensis*	朴樹	5	145	4	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,c	-	LandsD	N.A.	Close to fence, cross branches with wounds, imbalance
WS - T270	*Leucaena leucocephala*	銀合歡	7	130	4	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,c	-	LandsD	N.A.	Close to fence, weed species
WS - T271	*Leucaena leucocephala*	銀合歡	5	148	4	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,c	-	LandsD	N.A.	Close to fence, crooked trunk, weed species
WS - T272	*Acacia auriculiformis*	耳果相思	10	478	6	L	P	A	P	L	1, 2, 3, 4, 7	N	Outside Main Housing Site	Remove	a,c	-	LandsD	N.A.	Root restricted by drainage,low branching, trimmed branches with wounds, root restricted by concrete
WS - T273	*Macaranga tanarius* var. *tomentosa*	血桐	3.5	181	3	L	P	A	P	L	1, 2, 7	N	Outside Main Housing Site	Remove by Other Parties	a,c	-	LandsD	N.A.	Imbalance, suppressed by T274, root restricted by concrete
WS - T274	*Ficus virens*	黃葛樹	10	280	5	L	P	A	P	L	1, 2, 3, 7	N	Outside Main Housing Site	Remove by Other Parties	a,c	-	LandsD	N.A.	Close to T275, imbalance, cross branches with T275, root restricted by concrete
WS - T275	*Ficus microcarpa*	細葉榕	7	728	7	L	P	A	P	L	1, 2, 7	N	Outside Main Housing Site	Remove by Other Parties	a,c	-	LandsD	N.A.	Co-dominant trunks, imbalance, Heavy limb , root restricted by concrete
WS - T276	*Macaranga tanarius* var. *tomentosa*	血桐	8	100	3	L	P	A	P	L	1, 2, 7	N	Outside Main Housing Site	Remove by Other Parties	a,c	-	LandsD	N.A.	Imbalance, suppressed by T275, bending trunk, close to T275, root restricted by concrete
WS - T277	*Leucaena leucocephala*	銀合歡	7	100	3	L	A	A	P	L	1, 7	N	Outside Main Housing Site	Remove by Other Parties	a,c	-	LandsD	N.A.	Trunk embedded with fence, root restricted by concrete, weed species
WS - T278	*Macaranga tanarius* var. *tomentosa*	血桐	4	167	5	L	A	A	P	L	1, 7	N	Outside Main Housing Site	Remove by Other Parties	a,c	-	LandsD	N.A.	Low branching,co-dominant branches, on slope,root restricted by concrete
WS - T279	*Leucaena leucocephala*	銀合歡	8	100	3	L	A	A	P	L	1, 7	N	Outside Main Housing Site	Remove by Other Parties	a,c	-	LandsD	N.A.	On slope,root restricted by concrete, weed species
WS - T280	*Leucaena leucocephala*	銀合歡	8	98	3	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Remove by Other Parties	a,c	-	LandsD	N.A.	Leaning trunk, weed species

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	Scientific name	Chinese Name	Height (m)	DBH (mm)	Crown Spread (m)	(High/ Medium /Low)	(Good/Average/Poor)			(High/ Medium/ Low)	Remarks			(Retain/ Transplant/ Remove)			Before	After	
WS - T281	*Leucaena leucocephala*	銀合歡	8	100	3	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Remove by Other Parties	a,c	-	LandsD	N.A.	Leaning trunk, weed species
WS - T282	*Leucaena leucocephala*	銀合歡	8	168	3	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Remove by Other Parties	a,c	-	LandsD	N.A.	Leaning trunk, weed species
WS - T283	*Leucaena leucocephala*	銀合歡	8	100	3	L	P	A	A	L	1, 2, 5	N	Outside Main Housing Site	Remove by Other Parties	a,c	-	LandsD	N.A.	
WS - T284	*Cinnamomum burmannii*	陰香	5	262	6	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Leaning trunk, imbalance, epicormic shoots along trunk, girdling roots
WS - T285	*Cinnamomum burmannii*	陰香	5	215	6	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Leaning trunk, imbalance, epicormic shoots along trunk,
WS - T286	*Cinnamomum burmannii*	陰香	5	275	6	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Suckers, epicormic shoots along trunk, imbalance, leaning trunk
WS - T287	*Cinnamomum burmannii*	陰香	5	238	4	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Suckers, imbalance, leaning trunk, fig strangler , close to concrete
WS - T288	*Livistona chinensis*	蒲葵	7	232	3	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond
WS - T289	*Livistona chinensis*	蒲葵	7	206	3	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond, close to concrete
WS - T290	*Livistona chinensis*	蒲葵	7	195	3	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish front, touch the temporary structure, abrupt bend on trunk
WS - T291	*Livistona chinensis*	蒲葵	7	208	3	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond, close to concrete
WS - T292	*Livistona chinensis*	蒲葵	7	196	3	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond
WS - T293	*Cinnamomum burmannii*	陰香	6	233	4	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Imbalance, dead branch, leaning trunk
WS - T294	*Cinnamomum burmannii*	陰香	7	290	5	L	A	A	P	L	1	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Two trunk wound upper crown, co-dominant branches, topped branch with bark cracks
WS - T295	*Livistona chinensis*	蒲葵	7	200	3	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Abrupt bend on trunk
WS - T296	*Livistona chinensis*	蒲葵	7	214	3	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Leaning trunk, yellowish frond
WS - T297	*Livistona chinensis*	蒲葵	8	200	3	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Trunk wound, yellowish frond
WS - T298	*Cinnamomum burmannii*	陰香	9	298	4	L	P	P	A	L	1, 2, 3	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Thin canopy, dieback twigs on crown, imbalance
WS - T299	*Cinnamomum burmannii*	陰香	7	160	3	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Abrupt bend on trunk, trunk wound, broken trunk, epicormic shoots on trunk
WS - T300	*Livistona chinensis*	蒲葵	7	191	3	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond
WS - T301	*Livistona chinensis*	蒲葵	7	182	3	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish front, leaning trunk
WS - T302	*Livistona chinensis*	蒲葵	7	193	3	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond
WS - T303	*Cinnamomum burmannii*	陰香	8	360	5	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Imbalance, bending trunk, broken branch with decayed wound, suckers, epicormic shoots at inner crown
WS - T304	*Cinnamomum burmannii*	陰香	8	215	4	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Leaning trunk, imbalance, broken branch with decay, parasitic plant,epicormic shoots at inner crown
WS - T305	*Cinnamomum burmannii*	陰香	8	228	4	L	P	P	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Leaning trunk, imbalance, dieback twigs on crown, epicormic shoots along trunk
WS - T306	*Cinnamomum burmannii*	陰香	8	270	5	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Epicormic shoots at inner crown, imbalance, parasitic plant, various broken branches
WS - T307	*Livistona chinensis*	蒲葵	8	193	4	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond
WS - T308	*Livistona chinensis*	蒲葵	8	212	4	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish front, bending trunk

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Tree No.	Species		Measurements			Amenity Value	Form	Health condition	Structural condition	Suitability for transplanting		Conservation Status (Yes/No)	Within Main Housing Site Boundary or Not	Recommendation	Justifications	Location (i.e. SIMAR Slope, Land Lot)	Maintenance department to provide comments on TPRP		Remarks
	Scientific name	Chinese Name	Height (m)	DBH (mm)	Crown Spread (m)	(High/ Medium /Low)	(Good/Average/Poor)			(High/ Medium/ Low)	Remarks			(Retain/ Transplant/ Remove)			Before	After	
WS - T309	*Livistona chinensis*	蒲葵	8	208	4	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond
WS - T310	*Livistona chinensis*	蒲葵	8	204	4	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish front, bending trunk
WS - T311	*Livistona chinensis*	蒲葵	9	189	4	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond
WS - T312	*Livistona chinensis*	蒲葵	8	206	4	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond
WS - T313	*Livistona chinensis*	蒲葵	6	235	3	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond
WS - T314	*Livistona chinensis*	蒲葵	8	242	4	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish front, abrupt bend on trunk
WS - T315	*Livistona chinensis*	蒲葵	6	176	3	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond
WS - T316	*Livistona chinensis*	蒲葵	9	198	4	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond
WS - T317	*Cinnamomum burmannii*	陰香	8	269	6	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Epicormic shoots at inner crown, imbalance, parasitic plant, various broken branches
WS - T318	*Cinnamomum burmannii*	陰香	8	318	6	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Epicormic shoots at inner crown, imbalance, parasitic plant, various broken branches
WS - T319	*Cinnamomum burmannii*	陰香	8	290	6	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Epicormic shoots at inner crown, imbalance, parasitic plant, various broken branches
WS - T320	*Livistona chinensis*	蒲葵	8	210	4	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond, abrupt bend on trunk, close to concrete
WS - T321	*Livistona chinensis*	蒲葵	7	230	4	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond
WS - T322	*Livistona chinensis*	蒲葵	9	210	3	L	P	A	A	L	1, 2, 3	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond, abrupt bend on trunk
WS - T323	*Aporosa dioica*	銀柴	8	350	6	L	P	P	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Thin canopy with many dieback twigs, strangler fig
WS - T324	*Dimocarpus longan*	龍眼	9	360	6	L	P	A	A	L	1, 2, 3	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Leaning trunk, imbalance, various broken branches at inner crown
WS - T325	*Livistona chinensis*	蒲葵	8	230	4	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond
WS - T326	*Livistona chinensis*	蒲葵	8	230	4	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond
WS - T327	*Livistona chinensis*	蒲葵	8	280	4	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond
WS - T328	*Cinnamomum burmannii*	陰香	8	318	6	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Root plate movement, exposed surface roots, heavily leaning trunk, thin canopy
WS - T329	*Cinnamomum burmannii*	陰香	9	280	5	L	P	A	P	L	1, 2, 3	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Various trimmed branches, thin canopy, imbalance
WS - T330	*Livistona chinensis*	蒲葵	8	230	4	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond
WS - T331	*Livistona chinensis*	蒲葵	8	250	4	M	A	A	A	M	-	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond
WS - T332	*Livistona chinensis*	蒲葵	9	220	4	L	P	A	A	L	1, 2, 3	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond, crooked trunk
WS - T333	*Livistona chinensis*	蒲葵	8	230	4	L	P	A	A	L	1, 2	N	Outside Main Housing Site	Retain	-	-	Private Owner	Private Owner	Yellowish frond, leaning trunk with crooked trunk
WS - T334	*NUMBER NOT USED*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WS - T335	*Senna siamea*	鐵刀木	11	350	6	L	P	A	A	L	1, 2, 3, 4, 7	N	Outside Main Housing Site	Retain	b,c	-	LCSD	LCSD	Imbalance, crooked trunk, poor taper , in roadside planter, close to drain
WS - T336	*Senna siamea*	鐵刀木	10	270	5	L	P	A	A	L	1, 2, 3, 4, 7	N	Outside Main Housing Site	Retain	b,c	-	LCSD	LCSD	Crooked trunk, imbalance, over pruned, in roadside planter, close to drain

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Tree No.	Species		Measurements			Amenity Value	Form	Health condition	Structural condition	Suitability for transplanting		Conservation Status (Yes/No)	Within Main Housing Site Boundary or Not	Recommendation	Justifications	Location (i.e. SIMAR Slope, Land Lot)	Maintenance department to provide comments on TPRP		Remarks
	Scientific name	Chinese Name	Height (m)	DBH (mm)	Crown Spread (m)	(High/ Medium /Low)	(Good/Average/Poor)			(High/ Medium/ Low)	Remarks			(Retain/ Transplant/ Remove)			Before	After	
WS - T337	*Senna siamea*	鐵刀木	11.5	300	5	L	P	A	A	L	1, 2, 3, 4, 7	N	Outside Main Housing Site	Retain	b,c	-	LCSD	LCSD	Imbalance, over pruned, poor taper, in roadside planter, close to drain
WS - T338	*Senna siamea*	鐵刀木	12	410	5.5	L	P	A	A	L	1, 2, 3, 4, 7	N	Outside Main Housing Site	Remove	a,c	-	LCSD	N.A.	Imbalance, over pruned with various pruning wounds,, in roadside planter, close to drain
WS - T339	*Senna siamea*	鐵刀木	11.5	325	6	L	P	A	A	L	1, 2, 3, 4, 7	N	Outside Main Housing Site	Remove	a,c	-	LCSD	N.A.	Imbalance, crooked trunk, leaning trunk upper trunk, in roadside planter, close to drain
WS - T340	*Delonix regia*	凤凰木	10.5	375	6	L	P	A	P	L	1, 2, 3, 4, 7	N	Outside Main Housing Site	Remove	a,c	-	LCSD	N.A.	Imbalance, thin canopy, poor taper, in tree pit, root restricted by concrete pavement
WS - T341	*Melaleuca cajuputi* subsp. *cumingiana*	白千層	9.5	460	5.5	L	P	A	P	L	1, 2, 3, 7	N	Outside Main Housing Site	Remove	a,c	-	LCSD	N.A.	Imbalance, root restricted by planter curb, in roadside raised planter,
WS - T342	*Melaleuca cajuputi* subsp. *cumingiana*	白千層	10	310	5	L	P	A	A	L	1, 2, 3	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Imbalance, ficus parasites on trunk , in roadside raised planter,
WS - T343	*Melaleuca cajuputi* subsp. *cumingiana*	白千層	9.5	470	4.5	L	P	A	A	L	1, 2, 3	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Thin canopy, co-dominant branches, imbalance, in roadside raised planter,
WS - T344	*Melaleuca cajuputi* subsp. *cumingiana*	白千層	11	310	5.5	L	P	A	A	L	1, 2, 3	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Imbalance, co-dominant branches, in roadside raised planter,
WS - T345	*Melaleuca cajuputi* subsp. *cumingiana*	白千層	12	430	5.5	L	P	A	A	L	1, 2, 3	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Imbalance, in roadside raised planter,
WS - T346	*Aleurites moluccana*	石栗	12	360	6	L	P	A	A	L	1, 2, 3, 4	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Imbalance, crooked trunk, in roadside raised planter,
WS - T347	*Melaleuca cajuputi* subsp. *cumingiana*	白千層	8	390	5	L	A	A	P	L	1, 2	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Several galls on trunk, in roadside raised planter,
WS - T348	*NUMBER NOT USED*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WS - T349	*Delonix regia*	鳳凰木	16	800	18	M	A	A	A	L	3, 7	N	Outside Main Housing Site	Remove	a,c	-	LandsD	N.A.	In inaccessible area (TG-14), on slope crest, assessment is limited.
WS - T350	*Melaleuca cajuputi* subsp. *cumingiana*	白千層	9	435	4	M	A	A	A	L	7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	In roadside planter
WS - T351	*Sapium sebiferum*	烏桕	8	180	3	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Crooked trunk, in roadside planter
WS - T352	*Delonix regia*	鳳凰木	7	240	6	L	P	A	P	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Bending trunk, crooked trunk, girdling root, in tree pit
WS - T353	*Delonix regia*	鳳凰木	11	560	7	L	P	A	P	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Imbalance, leaning trunk, included bark, girdling root, in tree pit
WS - T354	*Delonix regia*	鳳凰木	10	450	6	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Imbalance, bending trunk, crooked branches, in tree pit
WS - T355	*Delonix regia*	鳳凰木	11	310	6	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Bending trunk, codominant trunks, in tree pit
WS - T356	*Delonix regia*	鳳凰木	9	200	3	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Slender form, in tree pit
WS - T357	*Delonix regia*	鳳凰木	14	380	8	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Imbalance, codominant trunks, in tree pit
WS - T358	*Delonix regia*	鳳凰木	10	220	6	L	P	A	P	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Crooked trunk, trunk wound, girdling root, in tree pit
WS - T359	*Delonix regia*	鳳凰木	10	360	7	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Leaning trunk, in tree pit
WS - T360	*Peltophorum pterocarpum*	盾柱木	15	500	10	M	A	A	A	L	7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	In tree pit
WS - T361	*Senna siamea*	鐵刀木	14	380	7	M	A	A	A	L	7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Trunk wound, root fused with kerb, in roadside planter
WS - T362	*Senna siamea*	鐵刀木	14	420	7	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Crooked trunk, trunk wound, in roadside planter
WS - T363	*Cinnamomum burmannii*	陰香	6	170	4	M	A	A	A	L	7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Leaning trunk, in roadside planter
WS - T364	*Senna siamea*	鐵刀木	15	450	7	M	A	A	A	L	7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Imbalance, in roadside planter

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	Scientific name	Chinese Name	Height (m)	DBH (mm)	Crown Spread (m)	(High/ Medium /Low)	(Good/Average/Poor)			(High/ Medium/ Low)	Remarks			(Retain/ Transplant/ Remove)			Before	After	
WS - T365	*Acacia confusa*	台灣相思	8	290	8	L	P	A	P	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Codominant trunk, cavity at lower trunk, in roadside planter
WS - T366	*Lagerstroemia speciosa*	大花紫薇	5	110	4	M	A	A	A	L	7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Slightly leaning, in roadside planter
WS - T367	*Senna siamea*	鐵刀木	13	300	7	M	A	A	A	L	7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Trunk wounds, in roadside planter
WS - T368	*Senna siamea*	鐵刀木	13	330	9	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Crooked trunk, in roadside planter
WS - T369	*Lagerstroemia speciosa*	大花紫薇	4	95	3	M	A	A	A	L	7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	In roadside planter
WS - T370	*Lagerstroemia speciosa*	大花紫薇	3	95	2	M	A	A	A	L	7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	In roadside planter
WS - T371	*Spathodea campanulata*	火焰木	6	140	2	L	P	P	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Sparse crown, various diebacks, epicormics along trunk, in roadside planter
WS - T372	*Ficus virens*	黃葛樹	13	720	9	M	A	A	A	L	7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Trunk wounds, abnormal bark cracks along branches, in roadside planter
WS - T373	*Leucaena leucocephala*	銀合歡	8	285	5	L	P	A	A	L	1, 2, 5	N	Outside Main Housing Site	Remove	-	-	LandsD	LandsD	Leaning trunk
WS - T374	*Leucaena leucocephala*	銀合歡	7	280	5	L	P	A	A	L	1, 2, 5, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Close to fence
WS - T375	*Leucaena leucocephala*	銀合歡	9	297	7	L	P	A	A	L	1, 2, 5, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Codominant trunks, close to fence
WS - T376	*Ficus microcarpa*	細葉榕	8	270	6	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, bending trunk, trimmed branches, at crest of slope
WS - T377	*Acacia confusa*	台灣相思	8	320	4	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, at crest of slope
WS - T378	*Ficus virens*	黃葛樹	10	280	8	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, shoots, epicormics, at crest of slope
WS - T379	*Acacia auriculiformis*	耳果相思	11	380	8	L	P	A	P	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Leaning trunk, various branch wounds, crooked trunk, girdling trunk by root of T380, uprooted, at crest of slope
WS - T380	*Ficus virens*	黃葛樹	9	430	8	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	2 trunks, epicormics, shoots, at crest of slope
WS - T381	*Eucalyptus urophylla*	尾葉桉	10	320	6	M	A	A	A	L	7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Close to kerb, at crest of slope
WS - T382	*Lagerstroemia speciosa*	大花紫薇	5	120	4	L	P	A	A	L	1, 2, 7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, at crest of slope
WS - T383	*Lagerstroemia speciosa*	大花紫薇	7	140	4	L	P	A	A	L	1, 2, 7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, at crest of slope
WS - T384	*Lagerstroemia speciosa*	大花紫薇	6	140	4	M	A	A	A	L	7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	At crest of slope
WS - T385	*Ficus virens*	黃葛樹	12	650	8	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Dead branch, epicormics along trunk, shoots, at crest of slope
WS - T386	*Ficus virens*	黃葛樹	11	710	8	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Abnormal bark crack, epicormics along trunk, shoots, at crest of slope
WS - T387	*Ficus microcarpa*	細葉榕	13	570	7	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Bending trunk, decayed wound at trunk, on slope
WS - T388	*Bischofia javanica*	秋楓	7	320	5	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, trimmed branches, at crest of slope
WS - T389	*Ficus microcarpa*	細葉榕	12	594	10	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Codominant trunks, at crest of slope
WS - T390	*Eucalyptus urophylla*	尾葉桉	13	370	8	L	P	A	P	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Trimmed leader, imbalance, large wound at union, at crest of slope
WS - T391	*Cinnamomum camphora*	樟	10	390	9	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, on slope
WS - T392	*Ficus microcarpa*	細葉榕	9	550	6	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, codominant trunks, at crest of slope

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WS - T393	*Lagerstroemia speciosa*	大花紫薇	7	220	5	M	A	A	A	L	7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	At crest of slope
WS - T394	*Lagerstroemia speciosa*	大花紫薇	6	170	4	L	P	A	A	L	1, 2, 7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Leaning trunk, at crest of slope
WS - T395	*Lagerstroemia speciosa*	大花紫薇	4	100	2.5	L	A	A	A	L	1, 7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	At crest of slope
WS - T396	*Ficus virens*	黃葛樹	15	680	9	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, included bark, at crest of slope
WS - T397	*Ficus virens*	黃葛樹	6	250	4	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Trimmed branches, abnormal bark cracks, epicormics, shoots, at crest of slope
WS - T398	*Lagerstroemia speciosa*	大花紫薇	4	100	2	L	P	P	A	L	1, 2, 7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, galls and wounds at trunk, at crest of slope
WS - T399	*Acacia confusa*	台灣相思	8	260	4	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, leaning trunk, crooked trunk, at crest of slope
WS - T400	*Lagerstroemia speciosa*	大花紫薇	5	120	3	M	A	A	A	L	7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	At crest of slope
WS - T401	*Lagerstroemia speciosa*	大花紫薇	4	95	2	M	A	A	A	L	7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	At crest of slope
WS - T402	*Lagerstroemia speciosa*	大花紫薇	6	130	3	L	P	A	A	L	1, 2, 7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Bending turnk, at crest of slope
WS - T403	*Ficus virens*	黃葛樹	13	720	11	M	A	A	A	L	7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Shoots, on slope
WS - T404	*Ficus virens*	黃葛樹	14	560	10	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, on slope
WS - T405	*Lagerstroemia speciosa*	大花紫薇	4.5	95	4	L	P	A	A	L	1, 2, 7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, at crest of slope
WS - T406	*Ficus microcarpa*	細葉榕	8	800	10	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Imbalance, bending trunk, codominant trunks, at crest of slope
WS - T407	*Eucalyptus urophylla*	尾葉桉	12	470	8	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Trimmed branches, girdling root, at crest of slope
WS - T408	*Ficus virens*	黃葛樹	13	510	9	M	A	A	A	L	7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Branch wound, shoots, on slope
WS - T409	*Acacia confusa*	台灣相思	9	280	5	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,d	-	LandsD	N.A.	2 trunks at low fork, included bark, on slope
WS - T410	*Acacia confusa*	台灣相思	7	240	4	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,d	-	LandsD	N.A.	Codominant trunks, crossed branches with T411, on slope
WS - T411	*Acacia confusa*	台灣相思	9	250	3	L	A	A	A	L	1, 2, 7	N	Outside Main Housing Site	Remove	a,d	-	LandsD	N.A.	Heavily declined, crossed branch with T410, on slope
WS - T412	*Ficus microcarpa*	細葉榕	10	580	8	M	A	A	A	L	7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	On slope
WS - T413	*Macaranga tanarius* var. *tomentosa*	血桐	6	175	4	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Codominant trunks at low fork, crooked trunk, on slope
WS - T414	*Cinnamomum camphora*	樟	9	156	6	L	P	A	A	L	1, 2, 7	N	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Codominant trunks, on slope
WS - T415	*Lagerstroemia speciosa*	大花紫薇	6	130	3	L	P	A	A	L	1, 2, 7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Imbalance, bending trunk, close to edge of planter
WS - T416	*Lagerstroemia speciosa*	大花紫薇	5	244	5	L	P	A	A	L	1, 2, 7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Imbalance, crooked trunk, close to edge of planter
WS - T417	*Lagerstroemia speciosa*	大花紫薇	7	200	5	L	A	A	A	L	1, 7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Close to edge of planter
WS - T418	*Lagerstroemia speciosa*	大花紫薇	5	95	3	L	A	A	A	L	1, 7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Close to edge of planter
WS - T419	*Lagerstroemia speciosa*	大花紫薇	5	120	3	L	A	A	A	L	1, 7	Y - (Cap 96), Cultivated	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Imbalance, close to edge of planter
WS - T420	*Ficus benjamina*	垂葉榕	16	760	10	M	A	P	A	L	2, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Pest issue, sparse crown, close to edge of planter

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Task Order No. 1 Wa Shan, Sheung Shui
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Prepared by: Anny LI (ISA Certified Arborist #: HK-0993A) and Kelly HE (#ISA Certified Arborist: HK-1030A)

Tree Assessment Schedule (TAS) - Individual trees

Tree No.	Species		Measurements			Amenity Value	Form	Health condition	Structural condition	Suitability for transplanting		Conservation Status (Yes/No)	Within Main Housing Site Boundary or Not	Recommendation	Justifications	Location (i.e. SIMAR Slope, Land Lot)	Maintenance department to provide comments on TPRP		Remarks
	Scientific name	Chinese Name	Height (m)	DBH (mm)	Crown Spread (m)	(High/ Medium /Low)	(Good/Average/Poor)			(High/ Medium/ Low)	Remarks			(Retain/ Transplant/ Remove)			Before	After	
WS - T421	*Ficus benjamina*	垂葉榕	17	600	11	M	A	P	A	L	2, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Pest issue, sparse crown, trunk wounds, close to edge of planter
WS - T422	*Ficus benjamina*	垂葉榕	15	530	9	M	A	P	A	L	2, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Pest issue, sparse crown, close to edge of planter
WS - T423	*Ficus benjamina*	垂葉榕	17	560	11	M	A	P	A	L	2, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Pest issue, sparse crown, bending trunk, close to edge of planter
WS - T424	*Ficus benjamina*	垂葉榕	17	570	10	M	A	P	A	L	2, 7	N	Outside Main Housing Site	Retain	-	-	LCSD	LCSD	Pest issue, sparse crown, close to edge of planter
WS - A01	*Aquilaria sinensis*	土沉香	3	40	1	H	A	A	A	H		Y - Cap. 586, RPPHK (Near Threatened), CPRDB (Vulnerable)	Outside Main Housing Site	Retain	-	-	LandsD	LandsD	Tree of Particular Interest(TPI), Undersized Tree

Remarks:
Key to Unsuitability for Transplanting
1. Trees of low amenity value
2. Trees with poor form/health/structural condition.
3. Irrecoverable form after transplanting (e.g. transplanting requires substantial crown and root pruning);
4. Low chance of survival upon transplanting (species with low ability to tolerate transplant; senescent tree with low post-transplantation survival rate)
5. Undesirable species (e.g. *Leucaena leucocephala* which is an invasive, exotic and self-seeding tree);
6. Dead tree
7. Trees grown under poor conditions which have limited the formation of proper root ball necessary for transplanting (e.g. steep slope, close to utilities, close to other trees).
8. not cost-effective

Key to Justifications
a. Tree with low suitability for transplanting
b. Tree is in direct conflict with the site formation works
c. Tree is in direct conflict with road improvement works
d. Tree is in direct conflict with the sewage pipe laying works

Conservation Status
(A) The Protection of Endangered Species of Animals and Plants Ordinance (Cap.586)
(B) Forests and Countryside Ordinance (Cap. 96)
(C) RPPHK - Rare and Precious Plants of Hong Kong
(D) CPRDB - China Plant Red Data Book

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Prepared by: Anny LI (ISA Certified Arborist #: HK-0993A) and Kelly HE (#ISA Certified Arborist: HK-1030A)

Tree Assessment Schedule (TAS) - Tree groups

Tree Group No.	Total Number of Trees in Individual Tree Group	Estimated No. of Trees	Main Tree Species			Size of Tree			General Form Condition (Good/ Average/ Poor)	General Health Condition (Good/ Average/ Poor)	General Structural Condition (Good/ Average/ Poor)	Location	Presence of Mature Trees with DBH>= 1000mm (Y/N)	Presence of Protected / Rare Tree Species (Y/N)	Recommendation
			Scientific Name	Common Chinese Name	Species Origin	Range of Height (m)	Range of DBH (mm)	Range of Crown Spread (m)							(Retain/ Transplant/ ReMove)
TG-1	16	1	*Araucaria columnaris*	柱狀南洋杉	Exotic	8	140	2.5	A	A	A	Outside Main Housing Site	N	N	Retain: 0% (0 no.); Remove: 100% (16 nos.)
		2	*Artocarpus heterophyllus*	菠蘿蜜	Exotic	8-9	250-300	7	A	A	A		N	N	
		2	*Clausena lansium*	黃皮	Exotic	4	110-150	3	A	A	A		N	N	
		9	*Dimocarpus longan*	龍眼	Exotic	7-9	150-450	3-9	P-A	A	P-A		N	N	
		1	*Mangifera indica*	杧果	Exotic	7	350	5	A	A	A		N	N	
		1	*Litchi chinensis*	荔枝	Exotic	3	120	3	A	A	A		N	N	
TG-2	7	5	*Mangifera indica*	杧果	Exotic	5-7	200-400	4-6	P-A	A	A	Within Main Housing Site (60%), Outside Main Housing Site	N	N	Retain: 0% (0 no.); Remove: 100% (7 nos.)
		2	*Macaranga tanarius* var. *tomentosa*	血桐	Native	6-7	150-200	6-8	P-A	A	A		N	N	
TG-3	69	2	*Albizia lebbeck*	大葉合歡	Exotic	7-8	250-300	7-8	A	A	A	Within Main Housing Site (85%), Outside Main Housing Site (15%)	N	N	Retain: 15% (11 nos.); Remove: 85% (58 nos.)
		1	*Artocarpus heterophyllus*	菠蘿蜜	Exotic	7	250	6	A	A	A		N	N	
		5	*Citrux maxima*	柚	Exotic	6-8	200-220	4-5	A	A	A		N	N	
		10	*Dimocarpus longan*	龍眼	Exotic	6-9	150-250	3-6	A	A	A		N	N	
		1	*Ficus hispida*	對葉榕	Native	5	110	3	A	A	A		N	N	
		10	*Litchi chinensis*	荔枝	Exotic	6-8	200-250	4-6	A	A	A		N	N	
		20	*Leucaena leucocephala*	銀合歡	Exotic	5-9	110-200	4-6	P	A	P-A		N	N	
		20	*Macaranga tanarius* var. *tomentosa*	血桐	Native	4-7	150-220	4	P-A	A	P-A		N	N	
TG-4	18	2	*Celtis sinensis*	朴樹	Native	6-7	180-250	5-7	A	A	A	Within Main Housing Site (50%), Outside Main Housing Site (50%)	N	N	Retain: 50% (9 nos.); Remove: 50% (9 nos.)
		5	*Dimocarpus longan*	龍眼	Exotic	8-9	200-300	5-7	P-A	A	A		N	N	
		1	*Eriobotrya japonica*	枇杷	Exotic	6	150	4	A	A	A		N	N	
		5	*Liquidambar formosana*	楓香	Native	6-9	180-250	5-7	A	A	A		N	N	
		5	*Macaranga tanarius* var. *tomentosa*	血桐	Native	4-6	100-150	4-7	P-A	A	A		N	N	
TG-5	26	1	*Celtis sinensis*	朴樹	Native	13	380	12	A	A	A	Outside Main Housing Site	N	N	Retain: 100% (26 nos.); Remove: 0% (0 no.)
		8	*Dimocarpus longan*	龍眼	Exotic	7-9	140-350	6-8	P-A	A	A		N	N	
		3	*Ficus hispida*	對葉榕	Native	5-6	120-160	4-5	P-A	A	A		N	N	
		4	*Litchi chinensis*	荔枝	Exotic	6-8	160-250	5-8	P-A	A	A		N	N	
		4	*Ligustrum chinense*	山指甲	Exotic	6-7	150-200	5-7	P-A	A	A		N	N	
		5	*Macaranga tanarius* var. *tomentosa*	血桐	Native	6-8	180-250	6-8	P-A	A	A		N	N	
		1	*Mangifera indica*	杧果	Exotic	7	250	7	A	A	A		N	N	
TG-6	10	1	*Artocarpus heterophyllus*	菠蘿蜜	Exotic	7	220	6	A	A	A	Within Main Housing Site	N	N	Retain: 0% (0 no.); Remove: 100% (10 nos.)
		2	*Aporosa dioica*	銀柴	Native	6-7	220-250	4-6	A	A	A		N	N	
		5	*Dimocarpus longan*	龍眼	Exotic	8-9	200-250	4-6	P-A	A	A		N	N	
		1	*Litsea glutinosa*	潺槁	Native	5	150	4	A	A	A		N	N	
		1	*Mangifera indica*	杧果	Exotic	8	250	5	A	A	A		N	N	
TG-7	2	1	*Aleurites moluccana*	石栗	Exotic	10	300	7	A	P	A	Within Main Housing Site	N	N	Retain: 0% (0 no.); Remove: 100% (2 nos.)
		1	*Mangifera indica*	杧果	Exotic	9	300	8	A	A	A		N	N	
TG-8	24	3	*Artocarpus heterophyllus*	菠蘿蜜	Native	6-7	200	4	P-A	A	A	Within Main Housing Site (75%), Outside Main Housing Site (25%)	N	N	Retain: 0% (0 no.); Remove: 100% (24 no.)
		1	*Celtis sinensis*	朴樹	Native	10	250	7	A	A	A		N	N	
		6	*Clausena lansium*	黃皮	Exotic	4-6	160-200	3-4	P-A	A	A		N	N	
		10	*Dimocarpus longan*	龍眼	Exotic	6-8	150-240	5-7	P-A	A	A		N	N	
		2	*Litchi chinensis*	荔枝	Exotic	4-6	150-200	4-5	A	A	A		N	N	
		1	*Mangifera indica*	杧果	Exotic	7	200	5	A	A	A		N	N	
		1	*Sterculia monosperma*	蘋婆	Exotic	5	180	4	A	A	A		N	N	
TG-9	1	1	*Ficus variegata*	青果榕	Native	8	250	5	A	A	A	Within Main Housing Site	N	N	Retain: 0% (0 no.); Remove: 100% (1 no.)
TG-10	4	1	*Bridelia tomentosa*	土蜜樹	Native	3	100	2	A	A	A	Within Main Housing Site	N	N	Retain: 0% (0 no.); Remove: 100% (4 nos.)
		3	*Macaranga tanarius* var. *tomentosa*	血桐	Native	3-5	150-200	4-6	P-A	A	A		N	N	
TG-11	8	5	*Leucaena leucocephala*	銀合歡	Exotic	6-8	120-160	4-7	P	A	P-A	Within Main Housing Site	N	N	Retain: 0% (0 no.); Remove: 100% (8 nos.)
		3	*Trema tomentosa*	山黃麻	Native	4-5	120-150	4	A	A	A		N	N	
TG-12	4	3	*Mangifera indica*	杧果	Exotic	6-9	250-350	6-8	A	A	A	Within Main Housing Site	N	N	Retain: 0% (0 no.); Remove: 100% (4 nos.)
		1	*Persea americana*	鱷梨	Exotic	3	120	2	A	A	A		N	N	

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Tree Assessment Schedule (TAS) - Tree groups

Tree Group No.	Total Number of Trees in Individual Tree Group	Estimated No. of Trees	Main Tree Species			Size of Tree			General Form Condition (Good/ Average/ Poor)	General Health Condition (Good/ Average/ Poor)	General Structural Condition (Good/ Average/ Poor)	Location	Presence of Mature Trees with DBH>= 1000mm (Y/N)	Presence of Protected / Rare Tree Species (Y/N)	Recommendation
			Scientific Name	Common Chinese Name	Species Origin	Range of Height (m)	Range of DBH (mm)	Range of Crown Spread (m)							(Retain/ Transplant/ ReMove)
TG-13	25	25	*Leucaena leucocephala*	銀合歡	Exotic	6-10	100-350	3-5	P-A	A	A	Outside Main Housing Site	N	N	Retain: 0% (0 no.); Remove by Other Parties: 100% (25 nos.)
TG-14	15	3	*Leucaena leucocephala*	銀合歡	Exotic	7-8	100-320	4-6	P-A	A	A	Outside Main Housing Site	N	N	Retain: 0% (0 no.); Remove: 100% (15 nos.)
		3	*Mangifera indica*	杧果	Exotic	6-8	320	4-6	P-A	A	P-A		N	N	
		1	*Bombax ceiba*	木棉	Exotic	8	340	3	P	A	A		N	N	
		1	*Pachira aquatica*	瓜栗	Exotic	4	95	2	A	A	A		N	N	
		2	*Dimocarpus longan*	龍眼	Exotic	4-6	320	5	P-A	A	A		N	N	
		2	*Macaranga tanarius* var. *tomentosa*	血桐	Native	4-6	150-240	4-5	P-A	A	P-A		N	N	
		2	*Albizia lebbeck*	大葉合歡	Exotic	4-8	95-320	6-7	P-A	A	A		N	N	
		1	*Syzygium hancei*	韓氏蒲桃	Exotic	6	95	4	P	A	A		N	N	
Estimated total no. of trees		**229**											**Estimated no. of trees**		**Retain: 46 nos.; Remove: 158 nos. Remove by Others:25 nos.**

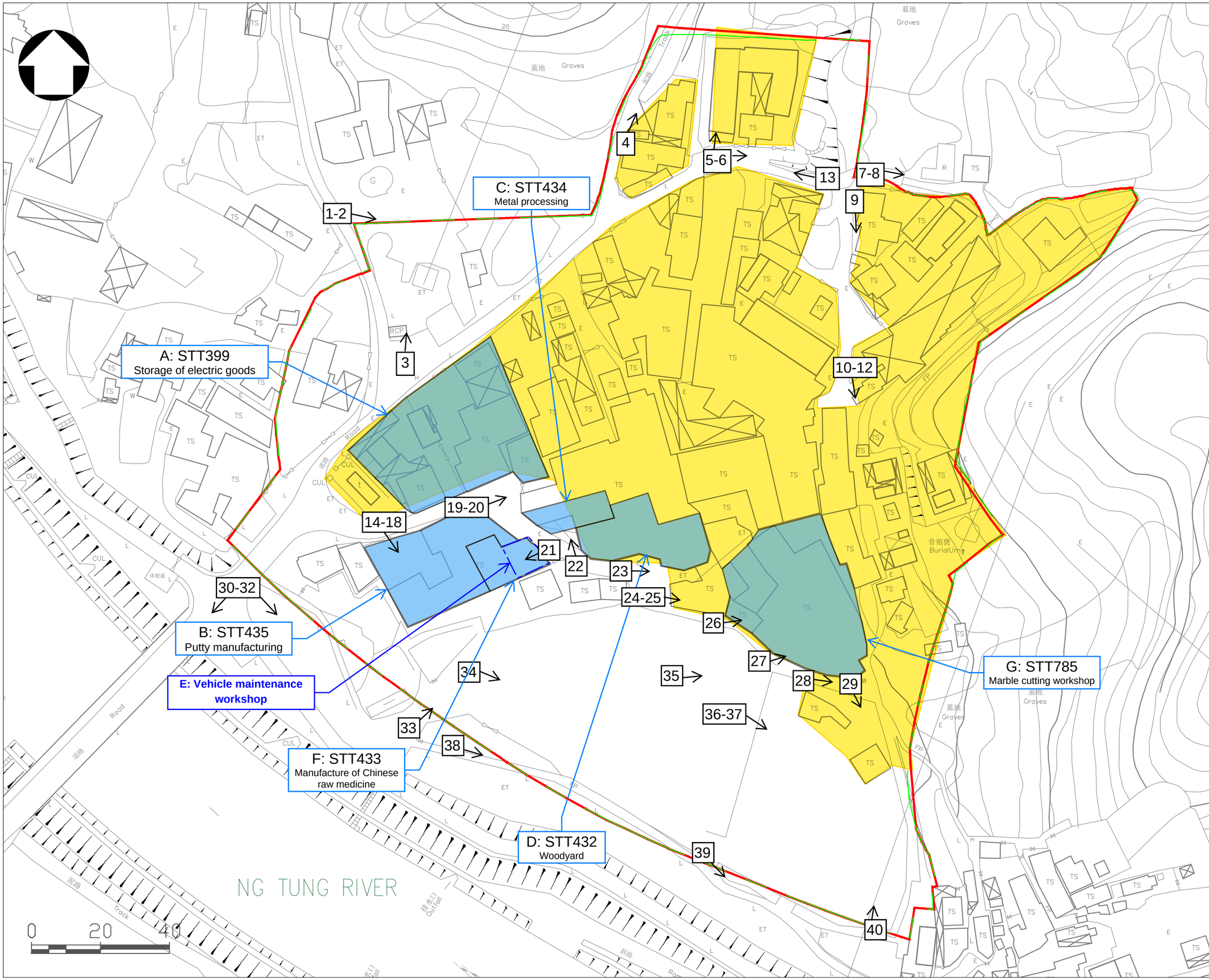
APPENDIX C

SITE INSPECTION CHECKLIST

Site Inspection Checklist – Wa Shan (Task Order 1)

1 General Site Details	
Date of Site Inspection:	14 May 2021
Site Client:	Private and public
Property Address:	Shek Wu San Tsuen (石湖新村), Wa Shan, Sheung Shui
Person conducting the questionnaire:	Steffi To (Assistant Consultant), Cassie Chow (Principal Consultant)
Authorized owner/client representative (if applicable):	N/A
2 Site Activities	
Number of employees: Full Time: Part Time: Temporary/Seasonal:	N/A
Maximum no. of people on-site at any time:	N/A
Typical hours of operation:	N/A
Number of shifts:	N/A
Days per week:	N/A
Weeks per year:	N/A
Scheduled plant shut down:	N/A
The main sources of energy at the site:	Electricity
3 Site Description	
Total site area:	37,507m^2
What area of the site is covered by buildings (%):	75%
List of current and previous owners:	Private and public
Is site plan available:	No
Are there any other parties on-site as tenants or sub-tenants?	Unknown
Surrounding land use, facilities or types of industry:	
North:	Vacant mountainous land
South:	Ng Tung River. Recreation and high-rise residential buildings located on the other side of the river
East:	Vacant mountainous land, scattered village houses
West:	Village-type houses in rural area
Topography of the area:	Relatively low and flat landform which ranges from 7 m to 18 m elevation, and is surrounded by two natural slopes (45 m and 88 m elevation)
Size and location of the nearest residential communities:	Woodland Crest located approximately 190 m west of Project Site. Total of 8 blocks providing 548 residential units.
Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands, or Sites of Scientific Interest?	No
4 Investigation	
What are the main activities/operations at the Site?	Residential (dwellings), open storages and warehouses
How long have the occupants been occupying the site?	As early as 1940s (according to historical resources)
Were the current occupants the first occupant on site?	N/A
Prior to the current occupancy, who occupied the site?	Residential
What were the main activities/operations during their occupancy?	Residential
Have there been any major changes in operations carried out at the site in the last 10 years?	No
Have any polluting activities been carried out in the vicinity of the site in past?	No

Has the site ever been used as a petrol filling station/car service garage?	No
Are there any boreholes/wells or natural springs either on the site or in the surrounding area?	No
Do the occupants have any registered hazardous installations as defined under relevant ordinances?	No
Are any chemicals used in the occupants' daily operations? Where do they store these chemicals?	No
Material inventory lists, including quantities and locations available?	No
Has the site produced a separate hazardous substance inventory?	No
Has there ever been any incidents or accidents involving any of these materials?	No
How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?	N/A
Do the occupants have any underground storage tanks?	No
Are there any disused underground storage tanks?	No
Do the occupants have regular check for any spillage and monitoring of chemicals handled?	No
How are the wastes disposed of?	Refuse Collection Point
Have the occupants ever received any notices of violation of environmental regulations or received public complaints?	Unknown
Have any spills occurred on site?	No
Do the occupants have any records of major renovation of the site or re-arrangement of underground utilities, pipe work/underground tanks?	No
Are there any known contaminations on site?	No
Has the site ever been remediated?	No
5 Observations	
Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	Some are provided with pallets. Others stored on the ground.
What are the conditions of the bund walls and floors?	N/A
Are any surface water drains located near to drum storage and unloading areas?	No
Are any solid or liquid waste (other than wastewater) generated at the site?	No
Is there a storage site for the wastes?	At Refuse Collection Points (RCPs)
Is there an on-site landfill?	No
Was any stressed vegetation noted on site during the site reconnaissance?	No
Were any stained surfaces noted on-site during the site reconnaissance?	Yes, in particular lots with use of oil drums.
Are there any potential off-site sources of contamination?	No
Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	No
Are there any sumps, effluent pits, interceptors or lagoons on site?	No
Any noticeable odours during site walkover?	No
Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ash, oily tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	Possible; from vehicle repair and maintenance shop observed during site inspection, and oil drums stored onsite but unknown as to what is contained inside the drums.



NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES (M) AND RELATIVE TO HONG KONG PRINCIPAL DATUM (mPD).

LEGEND :

- STUDY AREA OF THE DEVELOPMENT
- REZONING BOUNDARY
- CONCERNED AREA WITH DIFFERENT LAND USES
- INACCESSIBLE AREA

Rev	Description	By	Date

Consultant

wsp

Project title

AGREEMENT NO. CE47/2020 (CE)

TERM CONSULTANCY FOR SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED HOUSING DEVELOPMENTS IN ZONE 2 (2021 – 2024) – FEASIBILITY STUDY
WA SHAN – SHEUNG SHUI

Drawing title

PHOTO ANNOTATION; CONCERNED AREA WITH DIFFERENT LAND USES AND THE IDENTIFIED POTENTIAL LAND CONTAMINATION HOTSPOTS

Drawing no.			Rev.
			1
Drawn: MC	Date: MARCH 2023	Checked: CC	Approved: AC
Scale: N.T.S.		Status: –	

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CEDD 土木工程拓展署 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

	PHOTOGRAPHIC LOG – Site Inspection	
Client Name CEDD	**Site Location** Wa Shan	**Project No.** 2512219B

Photo No.	Date	Photo and Description
1.	14 May 2021	 Car park located behind the refuse collection point.
2.	14 May 2021	 Broken cars are observed within the car park. No signs of oil stains nor vehicle maintenance activities are identified within the area.

	PHOTOGRAPHIC LOG – Site Inspection	
Client Name CEDD	**Site Location** Wa Shan	**Project No.** 2512219B

Photo No.	Date	Photo and Description
3.	14 May 2021	 Refuse Collection Point (RCP) located on Project Site.
4.	14 May 2021	 Road leading northwards on northern tip of Project Site. Buildings on eastern side of the road used for residential purposes.

wsp	**PHOTOGRAPHIC LOG – Site Inspection**

Client Name	**Site Location**	**Project No.**
CEDD	Wa Shan	2512219B

Photo No.	**Date**	**Photo and Description**
5.	14 May 2021	 Overview of building located at the northern tip of the Project Site. Building is inaccessible and walled off with corrugated metal sheets.  Road on northern portion of the Project Site well kept, with storm drainage running across.

	PHOTOGRAPHIC LOG – Site Inspection	
Client Name CEDD	**Site Location** Wa Shan	**Project No.** 2512219B

Photo No.	Date	Photo and Description
6.	14 May 2021	 Overview of inaccessible building on the northern portion of the Project Site.
7.	14 May 2021	 Inaccessible road on the north-eastern border of the Project Site.

wsp	**PHOTOGRAPHIC LOG – Site Inspection**

Client Name	**Site Location**	**Project No.**
CEDD	Wa Shan	2512219B

Photo No.	**Date**	**Photo and Description**
8.	14 May 2021	 Inaccessible road on the north-eastern border of the Project Site used for vehicle parking and storage of miscellaneous items.
9.	14 May 2021	 Overview of the road on the eastern portion of the Project Site. Cracks on the concrete paved road identified. No signs of oil leakage or seepage into the cracks were found. Graveyard observed within Project Site.

	PHOTOGRAPHIC LOG – Site Inspection	
Client Name CEDD	**Site Location** Wa Shan	**Project No.** 2512219B

Photo No.	Date	Photo and Description
10.	14 May 2021	 Buildings on the eastern side of the Project Site are inaccessible and used for residential purposes.
11.	14 May 2021	 Various miscellaneous items stored on the ground at the fork junction of the eastern road on the Project Site. Vehicles are also parked in the area. No signs of oil stains were identified.

	PHOTOGRAPHIC LOG – Site Inspection	
Client Name CEDD	**Site Location** Wa Shan	**Project No.** 2512219B

Photo No.	Date	Photo and Description
12.	14 May 2021	 Road leading further into the south-eastern portion of the Project Site accesses private residential lots.
13.	14 May 2021	 Overview of northern-most road of the Project Site. Concrete paved road leading to the north of Project Site. Road condition is good and well-maintained, no cracks observed.

	PHOTOGRAPHIC LOG – Site Inspection	
Client Name CEDD	**Site Location** Wa Shan	**Project No.** 2512219B

Photo No.	Date	Photo and Description
14.	14 May 2021	 Lot on the southwestern portion of the Project Site used for open storage of empty metal cans. Oil stains identified on the concrete paved ground.
15.	14 May 2021	 Plastic pallets stored on the western side of the lot.

	PHOTOGRAPHIC LOG – Site Inspection	
Client Name CEDD	**Site Location** Wa Shan	**Project No.** 2512219B

Photo No.	Date	Photo and Description
16.	14 May 2021	 Forklift parked on the lot. Other metal cans on the lot were observed. Unknown content in sacks (in red) stored on plastic pallets inside the warehouse, located in Land Lot No. STT435. Possible raw materials used for putty manufacturing according to land use status provided by LandsD. Proposed borehole location HS2 for site investigation.
17.	14 May 2021	 Storage of metal cans on the eastern side of the lot. Visible oil stains (in yellow) identified on the unpaved ground.

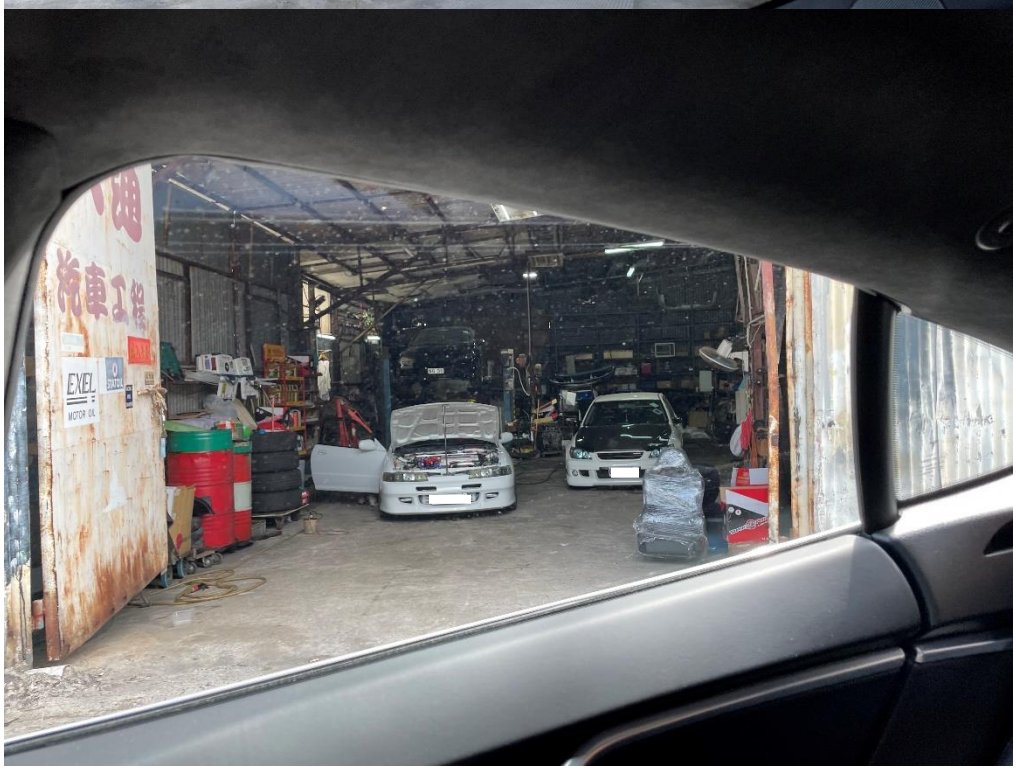
	PHOTOGRAPHIC LOG – Site Inspection	
Client Name CEDD	**Site Location** Wa Shan	**Project No.** 2512219B

Photo No.	Date	Photo and Description
18.	14 May 2021	 Overview of the ground leading into the lot. Ground is partially unpaved with visible oil stains (in yellow).
19.	14 May 2021	 Road on the southwestern portion of the site has various cracked surfaces (in green) on the ground. Water stains on the ground identified. No oil stains identified. Structures along the road are inaccessible but are general used for industrial/non-residential purposes.

	PHOTOGRAPHIC LOG – Site Inspection	
Client Name CEDD	**Site Location** Wa Shan	**Project No.** 2512219B

Photo No.	Date	Photo and Description
20.	14 May 2021	 Overview of south westerly road on the Project Site with cracked surfaces (in green). No oil stains identified, only water stains.

	PHOTOGRAPHIC LOG – Site Inspection	
Client Name CEDD	**Site Location** Wa Shan	**Project No.** 2512219B

Photo No.	Date	Photo and Description
21.	14 May 2021	  Vehicle maintenance workshop identified on the southwestern portion of the Project Site. Metal cans stored on plastic pallets on the ground. No stains on the ground identified.

	PHOTOGRAPHIC LOG – Site Inspection	
Client Name CEDD	**Site Location** Wa Shan	**Project No.** 2512219B

Photo No.	Date	Photo and Description
22.	14 May 2021	  Various disused (aquarium) equipment stored on the side of the south westerly road on the Project Site.

	PHOTOGRAPHIC LOG – Site Inspection	
Client Name CEDD	**Site Location** Wa Shan	**Project No.** 2512219B

Photo No.	Date	Photo and Description
23.	14 May 2021	 Overview of road along the southern portion of the Project Site. Middle of road has been repaved with concrete. Storage of metal cans directly on the concrete ground identified.
24.	14 May 2021	 Oil stains (in red) observed on concrete ground under the storage of metal drums.

wsp	**PHOTOGRAPHIC LOG – Site Inspection**	
Client Name CEDD	**Site Location** Wa Shan	**Project No.** 2512219B

Photo No.	Date	Photo and Description
24.	14 May 2021	  Temporary structure used for washing purposes (in red arrow). Drums of unknown content observed located on Project Site, without secondary containment. Close up of oil stains (in yellow) observed on the ground.

	PHOTOGRAPHIC LOG – Site Inspection

Client Name	**Site Location**	**Project No.**
CEDD	Wa Shan	2512219B

Photo No.	**Date**	**Photo and Description**
25.	14 May 2021	  Containers labelled “rapeseed oil” observed stacked inside temporary structure, without secondary containment. Containers are stored directly on the ground however no stains are identified underneath.

	PHOTOGRAPHIC LOG – Site Inspection

Client Name	**Site Location**	**Project No.**
CEDD	Wa Shan	2512219B

Photo No.	**Date**	**Photo and Description**
26.	14 May 2021	 Other structures along the southern road used for industrial purposes. Pictured structure used for storage of unknown substance in sacks (in blue).
27.	14 May 2021	 Overview of dead end along the road where structures are inaccessible during site inspection. This area is located on Land Lot No. STT434 for the purpose of woodyard only, according to land status provided by LandsD. Proposed borehole location HS4 for site investigation.

	PHOTOGRAPHIC LOG – Site Inspection	
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Photo No.	Date	Photo and Description
28.	14 May 2021	  One of the identified occupants along the southern road being Team Work Production Ltd.

	PHOTOGRAPHIC LOG – Site Inspection	
Client Name CEDD	**Site Location** Wa Shan	**Project No.** 2512219B

Photo No.	Date	Photo and Description
29.	14 May 2021	 Temporary structure at southern portion of the site used for heavy duty vehicle parking.
30.	14 May 2021	 Paved driveway above Ng Tung River leading to the entrance of Project Site.

	PHOTOGRAPHIC LOG – Site Inspection	
Client Name CEDD	**Site Location** Wa Shan	**Project No.** 2512219B

Photo No.	Date	Photo and Description
31.	14 May 2021	 Overview of open area located outside the southern border of the Project Site. Open area used as parking lot.
32.	14 May 2021	 Portion of the parking lot (outside Project Site boundary) recently re-paved with concrete.

	PHOTOGRAPHIC LOG – Site Inspection	
Client Name CEDD	**Site Location** Wa Shan	**Project No.** 2512219B

Photo No.	Date	Photo and Description
33.	14 May 2021	 Entrance to the agricultural-converted land on the south side of Project Site. This area is covered with low lying vegetation and scattered trees along the boundary.
34.	14 May 2021	 Overview of the vacant land, looking north.

	PHOTOGRAPHIC LOG – Site Inspection	
Client Name CEDD	**Site Location** Wa Shan	**Project No.** 2512219B

Photo No.	Date	Photo and Description
35.	14 May 2021	 Grass growth observed in the agricultural-converted land.
36.	14 May 2021	 Vegetation observed in the agricultural-converted land. Road leading to fenced off area where the area is inaccessible.

	PHOTOGRAPHIC LOG – Site Inspection	
Client Name CEDD	**Site Location** Wa Shan	**Project No.** 2512219B

Photo No.	Date	Photo and Description
37.	14 May 2021	 Overview of the fenced-off, inaccessible area in the agricultural-converted land. Area partially used for agricultural purposes and residential areas.
38.	14 May 2021	 Overview of footpath along the southern border of the Project Site boundary.

	PHOTOGRAPHIC LOG – Site Inspection	
Client Name CEDD	**Site Location** Wa Shan	**Project No.** 2512219B

Photo No.	Date	Photo and Description
39.	14 May 2021	 Storm drain across the footpath.
40.	14 May 2021	 The south-eastern corner of the Project Site covered with thick vegetation and shrubs.

Provision of Major Community Facilities and Open Space in Fu Tei Au and Sha Ling Area

Type of Facilities	Hong Kong Planning Standards and Guidelines (HKPSG)	HKPSG Requirement (based on planned population)	Provision		Surplus/ Shortfall (against planned provision)
			Existing Provision	Planned Provision (including existing provision)	
District Open Space	10 ha per 100,000 persons[1]	1.31 ha	0 ha	0 ha	- 1.31 ha
Local Open Space	10 ha per 100,000 persons[1]	1.31 ha	0.21 ha	1.41 ha	+0.1 ha
Secondary School	1 whole-day classroom for 40 persons aged 12-17	14 classrooms	0 classroom	0 classroom	- 14 classrooms
Primary School	1 whole-day classroom for 25.5 persons aged 6-11	18 classrooms	0 classroom	0 classroom	- 18 classrooms
Kindergarten/ Nursery	34 classrooms for 1,000 children aged 3 to under 6	8 classrooms	0 classroom	8 classrooms	0 classroom
District Police Station	1 per 200,000 to 500,000 persons	0	1	1	+ 1
Divisional Police Station	1 per 100,000 to 200,000 persons	0	0	0	0
Magistracy (with 8 courtrooms)	1 per 660,000 persons	0	0	0	0
Hospital	5.5 beds per 1,000 persons	74 beds	0 bed	0 bed	- 74 beds[2]
Clinic/Health Centre	1 per 100,000 persons	0	0	0	0
Child Care Centre	100 aided places per 25,000 persons[1]	52 places	0	0	- 52 places[3]
Integrated Children and Youth Services Centre	1 for 12,000 persons aged 6-24[1]	0	0	0	0
Integrated Family Services Centre	1 per 100,000 to 150,000 persons[1]	0	0	0	0
District Elderly Community Centre (DEC)	One in each new development area with a population of around 170,000 or above[1]	N.A.	0	0	N.A

Type of Facilities	Hong Kong Planning Standards and Guidelines (HKPSG)	HKPSG Requirement (based on planned population)	Provision		Surplus/ Shortfall (against planned provision)
			Existing Provision	Planned Provision (including existing provision)	
Neighbourhood Elderly Centre (NEC)	One in a cluster of new and redeveloped housing areas with a population of 15,000 to 20,000 persons, including both public and private housing[1]	N.A.	0	0	N.A
Community Care Services (CCS) Facilities	17.2 subsidised places per 1,000 elderly persons aged 65 or above [1&4]	54 places	2 places	36 Places	-18 places [3]
Residential Care Homes for the Elderly	21.3 subsidised beds per 1,000 elderly persons aged 65 or above[1]	67 beds	0	150 beds	+ 83 beds [3]
Pre-school Rehabilitation Services (PSRS)	23 subvented places per 1000 children aged 0-6	15 places	0	0	- 15 places
Day Rehabilitation Services (DRS)	23 subvented places per 10000 persons aged 15 or above	25 places	0	120 places	+ 95 places
Residential Care Services (RCS)	36 subvented places per 10000 persons aged 15 or above	39 places	0	180 places	+ 141 places
Community Rehabilitation Day Centre (CRDC)	1 centre per 420000 persons	0	0	0	0
District Support Centre for Persons with Disabilities (DSC)	1 centre per 280000 persons	0	0	0	0
Integrated Community Centre for Mental Wellness (ICCMW)	1 standard scale centre per 310000 persons	0	0	0	0
Library	1 district library for every 200,000 persons	0	0	0	0
Sports Centre	1 per 50,000 to 65,000 persons[1]	0	0	0	0
Sports Ground/ Sport Complex	1 per 200,000 to 250,000 persons[1]	0	0	0	0

Type of Facilities	Hong Kong Planning Standards and Guidelines (HKPSG)	HKPSG Requirement (based on planned population)	Provision		Surplus/ Shortfall (against planned provision)
			Existing Provision	Planned Provision (including existing provision)	
Swimming Pool Complex – standard	1 complex per 287,000 persons[1]	0	0	0	0

Notes:

The planned residential population in Fu Tei Au Area would be about 13,500. If excluding transients, the overall planned population is about 13,100 for Fu Tei Au Area. All population figures have been adjusted to the nearest hundred.

1 The requirements excluded planned population of transients.

2 The provision of hospital beds would be monitored and addressed by the Hospital Authority on a regional basis.

3 This is a long-term goal and the actual provision would be subject to the consideration of the Social Welfare Department in the planning and development process as appropriate.

4 The planning standard of the Community Care Services (CCS) Facilities (including both centre-based and home-based) is population-based. There is no rigid distribution between centre-based CCS and home-based CCS stated in the Elderly Services Programme Plan. Nonetheless, in general, 60% of CCS demand will be provided by home-based CCS and the remaining 40% will be provided by centre-based CCS.