

**Construction of Cycle Tracks and the
Associated Supporting Facilities
From Sha Po Tsuen to Shek Sheung River**

Stage 1

Environmental Review Report

May 2013

ATKINS

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1. INTRODUCTION

1.1 Project Background

1.1.1 The Environmental Impact Assessment (EIA) Report together with the associated Environmental Monitoring and Audit (EM&A) Manual for the designated project (DP), namely “Construction of Cycle Tracks and the Associated Supporting Facilities from Sha Po Tsuen to Shek Sheung River” (Registered No. AEIAR 133/2009) was approved without conditions under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO) on 12 March 2009.

1.1.2 Civil Engineering and Development Department (CEDD) will implement this designated project in different stages. CEDD intend to implement first stage (namely “Stage 1”) of this designated project in year 2013. Environmental Permit (EP) is required for the construction and operation of the Stage 1 cycle tracks and the associated supporting facilities. The programme for the remaining works is under review until the environmental mitigation measures required to address environmental concern groups’ concerns on the ecological impact of the cycle track at Hop Shing Wai is agreed upon.

1.2 Scope of this Environmental Review Report (ERR)

1.2.1 This Environmental Review Report (ERR) is prepared to support the Environmental Permit (EP) application for the Stage 1 the “Construction of Cycle Tracks and the Associated Supporting Facilities from Sha Po Tsuen to Shek Sheung River”.

1.2.2 The purpose of this Environmental Review Report is to review the findings and recommendations of the approved EIA Report, assess the nature and extent of environmental impacts arising from both construction and operation of the proposed design changes and recommend mitigation measures if necessary, and the issues arising due to change in circumstances since approval of the EIA Report (No. AEIAR-133/2009). This ERR includes:

- (i) Description of the Stage 1 works, and any changes to the DP since the approval of the EIA Report with respect to the Stage 1 works;
- (ii) Review of the findings and conclusions in the approved EIA Report with respect to Stage 1 works; and
- (iii) Recommendation of mitigation measures, if necessary.

1.3 Original Project Scope

1.3.1 The original scope of the Project covered under the approved EIA Report includes:

- (i) Construction of a new cycle track (with footpath) linking up local cycle track networks in Yuen Long and Sheung Shui.
- (ii) Construction of the associated support facilities which includes five Resting Stations (formerly named “places of rest” in the EIA Study Brief) - R5, R6, R7, R8, and R9, and one Information Kiosk (formerly named “Education Centre” in the EIA Study Brief) integrated into R9. Also, one small seating area near Mai Po Village.
- (iii) The associated streetscape, landscape, utilities diversions, traffic aids

installation, street lighting, water, sewerage and drainage works;

- (iv) Provision of environmental mitigation measures.

1.4 Scope of Stage 1 of the Designated Project

1.4.1 Stage 1 of the cycle track alignment and the associated supporting facilities are described as below:

- (i) Construction of a new cycle track (with footpath) section from near Yuen Long Sha Po Tsuen connecting to the end of the existing cycle track, along Castle Peak Road – Tam Mi Section and along Pok Wai South Road (namely “Section 1”).
- (ii) Construction of a new cycle track (with footpath) section from near Ho Sheung Heung along Sheung Yue River and Shek Sheung River connecting to the existing cycle track in Sheung Shui (“namely “Section 1b”).
- (v) Construction of the associated support facilities including two Resting Stations - R5 and R9 integrated with Information Kiosk.
- (vi) The associated streetscape, landscape, utilities diversions, traffic aids installation, street lighting, water, sewerage and drainage works;
- (vii) Provision of environmental mitigation measures.

1.4.2 In general, the two sections (Section 1 and Section 1b) (annotation of “Section 1a” is not used) of the Stage 1 cycle track alignment follows the original cycle track alignment as assessed in the approved EIA Report. The location of Resting Stations R5 and R9 integrated with Information Kiosk are also the same as the original locations as assessed in the approved EIA Report. The overall cycle tracks alignment and supporting facilities covered under the approved EIA Report and those to be covered under Stage 1 works (for application of Environmental Permit) are shown in **Figure 1-1**.

1.4.3 Since the approval of the EIA, there have been two changes to the cycle track project Stage 1 works:

- (i) Minor design refinements of the cycle tracks at local spots (at Section 1 and Section 1b). The differences compared with that provided in the approved EIA Report are illustrated in **Figure 1-2** and **Figure 1-3**, respectively.
- (ii) Revised project boundary next to Shek Sheung River and Sheung Yue River in Section 1b. The differences compared with that provided in the approved EIA Report are illustrated in **Figure 1-4**.

1.4.4 Summary of the Stage 1 works are provided in **Table 1-1**.

Table 1-1 Stage 1 Works Summary

Stage 1 Works Item	Location	Change to the DP since approval of the EIA Report?
Cycle track: Section 1	From near Sha Po Tsuen, along Castle Peak Road – Tam Mi Section and along Po Wai South Road. Chainage: CH-MP0+000m to CH-MP1-100m Length: approximately 970 m	(1) design refinements at local spots (Figure 1-2)
Cycle track: Section 1b	From near Ho Sheung Heung along Sheung Yue River and Shek Sheung River. Chainage: CH-KW2+235m to CH-KW3-700m Length: approximately 1400 m	(1) design refinements at local spots (Figure 1-3) (2) Revised project boundary (Figures 1-3 and 1-4)
Resting Station R5	Near the junction of Castle Peak Road and Pok Wai South Road. Chainage: CH-MP0-350m Total Area: 280 m ²	No change in location and size.
Resting Station R9 integrated with Information Kiosk	Near Ho Sheung Heung at the river bank of Sheung Yue River. Chainage: CH-KW2-235m Total Area: 1140 m ²	No change in location and size.

1.4.5 Details of the facilities to be provided at the Resting Stations are summarised in **Table 1-2**.

Table 1-2 Proposed Facilities in Resting Stations

Location	Zoning / Location	Cycle parking spaces	Information Board	Mobile First Aid Station	Shelter Pavilion	Food Kiosk	Open Space / Sitting-out Area / Landscaping Area	Total Area
R5	"O" zone along Kam Tin River / Nam Sang Wai Road	70 m ² for 20 parking units	10 m ²	N/A	N/A	N/A	200 m ²	280 m ²
R9 integrated with Information Kiosk	"AGR" zone opposite to Shek Wu Hui Sewage Treatment Works, at the river bank of Sheung Yue River	380 m ² for 80 parking units	100 m ²	30 m ²	130 m ²	140 m ²	360 m ²	1,140 m ²

Note: No public toilets or practicing area / gathering ground will be provided at the Resting Stations / Information Kiosk.

1.5 Implementation Programme

1.5.1 The construction of the Stage 1 of the DP is scheduled to commence in September 2013 and will be completed by mid 2016.

1.6 Concurrent Projects

1.6.1 Relevant concurrent projects in the vicinity of the revised cycle track alignment that could have some form of cumulative environmental impacts with the Project have been identified by the Investigation, Design and Construction (IDC) Consultant through confirmation from various government departments. They are:

- (i) PWP Item 112CD Proposed Upgrading of Box Culvert underneath Castle Peak Road at She Wu Wai, Sha Tin (PUBCCPR) – construction period from 2011 to 2014;
- (ii) CE 30/2006 Yuen Long and Kam Tin Sewerage and Sewage Disposal (YLKSSD) – construction period from 2011 to 2016; and
- (iii) Construction of Cycle Tracks and the associated Supporting Facilities at Nam Sang Wai, Yuen Long (NSWCT) – tentative construction period from 2014 to 2018.

2. AIR QUALITY IMPACT (CONSTRUCTION PHASE)

2.1 Introduction

2.1.1 Construction activities for the Stage 1 cycle track alignment and Resting Stations may cause potential construction dust impacts on nearby Air Sensitive Receivers (ASRs). Chapter 3 of the approved EIA Report has been reviewed and the construction dust impacts generated from the Stage 1 cycle track alignment and Resting Stations have been evaluated and details are presented below.

2.2 Air Sensitive Receivers

2.2.1 Since there is no significant change in the Stage 1 cycle track alignment and no change in the Resting Stations, the Air Sensitive Receivers (ASRs) that would potentially be affected by the Project remain to be the same as those identified in Table 3-2 of the approved EIA Report. One new ASR has been included for assessment of the Stage 1 works. This ASR (A/NSR02a) is located at the Section 1 end which is a village house near Kam Tin River closer to where Section 1 of the cycle track terminates thus is included for review of the worst case.

2.2.2 Representative ASRs located in the vicinity of the Stage 1 works are summarised in **Table 2-1** and their locations are shown in **Figure 2-1** and **Figure 2-4**.

Table 2-1 Locations of Representative Air Sensitive Receivers

ASRs	Description	Shortest Horizontal Distance from Works Site	Nature of Use	Figure No.
A/NSR01	Village House near Kam Tin River	55 m from cycle track (Section 1) 156 m from R5	Residential	Figure 2-1
A/NSR_P01a	AFCD Pond-fish Research Sub-station ("CDA" site as in Kam Tin North OZP No. S/YL-KTN/7)	260 m from cycle track (Section 1)	Office	Figure 2-1
A/NSR02	Village House near Kam Tin River	190 m from cycle track (Section 1)	Residential	Figure 2-2
A/NSR22	No. D2A Ho Sheung Heung	170 m from cycle track (Section 1b) 163m from R9	Residential	Figure 2-3
A/NSR23	No. C110 Tsung Pak Long Village	129 m from cycle track (Section 1b)	Residential	Figure 2-4
A/NSR02a	Village House near Kam Tin River	130 m from cycle track (Section 1)	Residential	Figure 2-2

Note:

A/NSR02a, not included in the approved EIA Report, is located closer to the end point of Section 1 compared to the A/NSR02 thus included for review of the worst case.

2.3 Impact Assessment

Project Construction Activities

2.3.1 The construction method for the cycle track, including the localised areas where

minor design refinements have been made and the Resting Stations remains unchanged and these are described below.

- 2.3.2 Potential air quality impacts during construction would generally be limited to fugitive dust emissions as air pollutions generated by equipment and transport of materials to site would be generally low. The construction will include site clearance such as vegetation removal, breaking up of hard ground and removal of the first 0.2 m of topsoil for forming the sub-base.
- 2.3.3 Typically, the contractor can clear an area of 40 m long by 4 m wide in a day. The daily generation of construction and demolition (C&D) materials would be about 32 m³ in total and may require about 6 trips for removal by dump trucks. To minimize dust levels, working sections of the cycle track will be separated into working areas and no adjacent sections will be worked on simultaneously (e.g. 200 m separation between two works areas of cycle track segments).
- 2.3.4 The cycle track sub-base will then be formed and compacted and applied with asphalt and rolled over to form the permanent surface. Afterwards, it will be fitted with railing, if applicable, and finally road markings will be applied.
- 2.3.5 For Resting Stations and the Information Kiosk, these sites will be paved with bricks with some additional landscaping works, subject to the detailed design.
- 2.3.6 It is expected that works at the sites could generate a small amount of dust during some of the construction stages including:
- Site clearance;
 - Material stockpiling, handling and transportation; and
 - Excavation.
- 2.3.7 Fugitive dust may pose potential impacts on nearby ASRs if not properly controlled. Standard dust control measures recommended in the Air Pollution Control (Construction Dust) Regulation (also as recommended in Section 3.6.2 of the approved EIA Report) should be implemented, including the following:
- The works area for site clearance shall be sprayed with water before, during and after the operation so as to maintain the entire surface wet;
 - Restricting heights from which materials are to be dropped, as far as practicable, to minimize the fugitive dust arising from unloading/ loading;
 - Immediately before leaving a construction site, all vehicles shall be washed to remove any dusty materials from the bodies and wheels. However, all spraying of materials and surfaces should avoid excessive water usage;
 - Where a vehicle leaving a construction site is carrying a load of dusty materials, the load shall be covered entirely by clean impervious sheeting to ensure that the dusty materials will not leak from the vehicle;
 - Travelling speeds should be controlled to reduce traffic induced dust dispersion and re-suspension within the site from the operating haul trucks;
 - Erection of hoarding of not less than 2.4 m high from ground level along the site boundary, where appropriate;
 - Any stockpile of dusty materials shall be covered entirely by impervious sheeting; and/or placed in an area sheltered on the top and 4 sides;

- All dusty materials shall be sprayed with water or a dust suppression chemical immediately prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.

Activities Associated with the Revised Project Boundary at Section 1b

- 2.3.8 With the revised project boundary at Section 1b, there are new areas included and these are to be used for planting purpose. No construction machinery / workers' activities, storage of construction plant/material are expected in these areas during the construction of the cycle track. This requirement will be included in the contract's requirements. No unacceptable construction dust impacts are expected to occur due to the revised project boundary.

Cumulative Impacts

- 2.3.9 Concurrent projects identified in Section 1.6 that may have the potential to cause cumulative dust impacts. Standard dust suppression measures will be adopted for the Stage 1 cycle tracks works as well as these projects as required under the Air Pollution Control (Construction Dust) Regulation to minimise the potential fugitive dust impacts. Therefore, cumulative dust impacts are anticipated to be insignificant.

2.4 Mitigation Measures

- 2.4.1 As the dust control measures recommended in Section 2.3.7 above will be implemented, it is unlikely that there will be adverse dust impacts.

2.5 Evaluation of Residual Impacts

- 2.5.1 With the implementation of the recommended dust control measures, the residual construction dust impact would be controlled within the acceptable levels.

2.6 Environmental Monitoring and Audit Requirements

- 2.6.1 It is necessary to ensure proper implementation of the dust control measures as required under the Air Pollution Control (Construction Dust) Regulation. No specific construction dust monitoring is recommended, as dust generated by the Stage 1 works is expected to be minimal and works in any one segment of the cycle tracks will be relatively short in duration. However, environmental audits shall be undertaken during the construction stage to ensure proper implementation of air quality control measures.

2.7 Conclusion

- 2.7.1 The construction of Stage 1 cycle track alignment and the Resting Stations would not cause adverse air quality impacts on nearby ASRs if the recommended mitigation measures as described in Section 2.3.7 are implemented. The findings and conclusions in the approved EIA Report remain unchanged.

3. AIR QUALITY (OPERATIONAL PHASE)

3.1 Introduction

3.1.1 The operation of the Stage 1 of the cycle track alignment and Resting Stations will not emit air pollutants. Therefore, no assessment has been undertaken to study the potential operational air quality impacts on surrounding environment. In contrary, during the operational phase, the Resting Stations may be affected by vehicular emissions from nearby road networks as cyclists may stay inside the Resting Stations for resting or taking shelters from the weather. Chapter 4 of the approved EIA Report has been reviewed and the potential air quality impacts on the Resting Stations were assessed based on the assessment methodology provided in the approved EIA Report.

3.2 Air Sensitive Receiver

3.2.1 The Resting Stations are designed to serve as stopovers/meeting places along the cycle tracks for the cyclists who want to take a short rest. The Resting Stations are equipped with minimal facilities (e.g., bicycle parking areas, information board and sitting-out areas). No bike riding practice areas are to be provided. Thus, the Resting Stations are considered to be Air Sensitive Receivers (ASRs) being a recreational use. Parking areas of the Resting Stations are not intended for recreational use, thus the parking areas are not considered to be air sensitive.

3.2.2 The Information Kiosk is designed to promote the cycling activities and to provide information on the surrounding areas through information boards. There will not be any formal teaching facilities provided. A food kiosk will be provided and staff working there would stay for relatively longer hours. To this end, the Information Kiosk is considered to be an ASR. The relevant operational phase ASRs for Stage 1 are summarised below:

- Resting Station R5
- Resting Station R9 integrated with Information Kiosk

3.3 Impact Assessment

3.3.1 The location of Resting Stations R5 and R9 integrated with Information Kiosk will remain the same as that in the approved EIA Report. There has been no change in the alignment of the roads (namely Tsing Long Highway, Castle Peak Road – Tam Mi Section, Pok Wai South Road, Fanling Highway, Castle Peak Road – Kwu Tung Section) and no additional chimneys were identified near R5 and R9 since approval of the EIA Report. To this end, the findings and conclusions in the approved EIA Report remain unchanged.

3.3.2 The potential air quality impacts on the two Resting Stations were assessed in accordance with the minimum buffer distances required between roads and recreational uses as recommended in the Hong Kong Planning Standards and Guidelines (HKPSG). Assessment results are presented in **Table 3-1**.

Table 3-1 Setback Distances of ASRs from Roads

Adjoining Road	R5			R9 & Information Kiosk	
	Tsing Long Highway	Castle Peak Road (Tam Mi)	Pok Wai South Road	Fanling Highway	Castle Peak Road (Kwu Tung)
Type of Adjoining Road	Trunk Road	District Distributor	Local Distributor	Trunk Road	District Distributor
Minimum distance of Resting Station boundary from road kerb	35 m	10 m	5 m	900 m	890 m
Setback distance required for Active Recreational Uses	> 20 m	> 10 m	> 5 m	> 20 m	> 10 m
Setback distance required for Passive Recreational Uses	3 – 20 m	< 10 m	< 5 m	3 - 20 m	< 10 m
Minimum distance meets setback distance	✓	✓	✓	✓	✓

3.3.3 The horizontal separation distances between the Resting Stations R5 and R9 and the nearest roads are shown in **Figure 3-1** and **Figure 3-2**, respectively.

3.3.4 One small chimney stack (exit point of diameter about 20 cm at 8 m above ground level (confirmed by the operator)) of a local soy products factory located at about 64 m to the southwest of the R9 was identified in the EIA. Recent site visits also found that the same soy product factory and the same chimney still exist and in operation. Chimney emissions impacts were assessed in Appendix 4-1 of the approved EIA Report. The assessment results indicate that the predicted SO₂, NO₂ and RSP levels at the Information Kiosk are within the relevant AQOs requirements. As no particular change to the soy product factory or the chimney were identified, no change in the assessment results is expected. The findings and conclusions in the approved EIA Report remain unchanged.

3.4 Mitigation Measures

3.4.1 No mitigation measures are required.

3.5 Evaluation of Residual Impacts

3.5.1 No impacts have been identified. Therefore, there would be no unacceptable residual impacts.

3.6 Environmental Monitoring and Audit Requirements

3.6.1 No EM&A program is considered necessary for the operational phase of the Stage 1 cycle track alignment and Resting Stations.

3.7 Conclusion

- 3.7.1 The Stage 1 cycle track alignment and Resting Stations will not cause air quality impacts on nearby ASRs as the cycles track and Resting Stations are not air polluting sources during the operational phase.
- 3.7.2 The potential air quality impacts on the Resting Stations have been evaluated. The evaluation results reveal that there would be no adverse air quality impacts. The findings and conclusions in the approved EIA Report remain unchanged.

4. NOISE

4.1 Introduction

4.1.1 Construction activities for the Stage 1 cycle track alignment and Resting Stations may cause potential noise impacts on nearby Noise Sensitive Receivers (NSRs). Chapter 5 of the approved EIA Report has been reviewed and the potential daytime construction noise impacts have been assessed quantitatively in accordance with the assessment methodology provided in the approved EIA Report.

4.1.2 The Stage 1 of the cycle track alignment and Resting Stations will not generate noise and are not considered as NSRs during the operational phase of the Project. Therefore, no operational noise assessment was undertaken.

4.2 Noise Sensitive Receivers

4.2.1 Since there is no significant change in the Stage 1 cycle track alignment and no change in the Resting Stations, the Noise Sensitive Receivers (NSRs) that would potentially be affected by the Project remain to be the same as those identified in Table 5-2 of the approved EIA Report. One new NSR has been included for assessment of the Stage 1 works. This NSR (A/NSR02a) is located at the Section 1 end which is a village house near Kam Tin River. It is located closer to where Section 1 of the cycle track terminates thus is included for review of the worst case.

4.2.2 Representative NSRs located in the vicinity of the Stage 1 works are summarised in **Table 4-1** and their locations are shown in **Figure 2-1** to **Figure 2-4**.

Table 4-1 Locations of Representative Noise Sensitive Receivers

ASRs	Description	Shortest Horizontal Distance from Works Site	Nature of Use	Figure No.
A/NSR01	Village House near Kam Tin River	55 m from cycle track (Section 1) 156 m from R5	Residential	Figure 2-1
A/NSR_P01a	AFCD Pond-fish Research Sub-station ("CDA" site as in Kam Tin North OZP No. S/YL-KTN/7)	260 m from cycle track (Section 1)	Office	Figure 2-1
A/NSR02	Village House near Kam Tin River	190 m from cycle track (Section 1)	Residential	Figure 2-2
A/NSR22	No. D2A Ho Sheung Heung	170 m from cycle track (Section 1b) 163 from R9	Residential	Figure 2-3
A/NSR23	No. C110 Tsung Pak Long Village	129 m from cycle track (Section 1b)	Residential	Figure 2-4
A/NSR02a	Village House near Kam Tin River	130 m from cycle track (Section 1)	Residential	Figure 2-2

Note:

A/NSR02a, not included in the approved EIA Report, is located closer to the end point of Section 1 compared to the A/NSR02 thus included for review of the worst case.

4.3 Impact Assessment

- 4.3.1 It has been confirmed with the Project Proponent that there are no changes on construction method for the cycle track, including the localised areas where minor design refinements have been made and the Resting Stations. Therefore the plant inventory as assessed in the approved EIA remains applicable and the construction noise impacts on the NSRs as identified in the approved EIA Report (also provided in **Table 4-1**) remains unchanged.
- 4.3.2 With the revised project boundary at Section 1b, there are new areas included and these are to be used for planting purpose. No construction machinery / workers' activities, storage of construction plant/material are expected in these areas during the construction of the cycle track. This requirement will be included in the contract's requirements. No unacceptable construction noise impacts are expected to occur due to the revised project boundary.
- 4.3.3 For NSRs that will be affected by the works at the cycle tracks end point where the distance separations are further away compared to the perpendicular distance from the cycle tracks alignment as in the approved EIA Report, the noise impacts are expected to be less.
- 4.3.4 The potential construction noise impacts on the new NSR selected at the end point has been assessed following the assumptions, assessment approach and methodology presented in the approved EIA Report.
- 4.3.5 The predicted unmitigated noise levels at the new NSR are summarised in **Table 4-2**. Detailed calculations are included in **Appendix 4-1**.

Table 4-2 Predicted Unmitigated Worst Case Construction Noise Levels (Daytime)

NSR	Descriptions	Worst Case Unmitigated Noise Impact		
		Works Type 1, dB(A)	Works Type 2, dB(A)	Cumulative Works Type 1 + Works Type 2, dB(A)
A/NSR02a	Village House near Kam Tin River	73	72	76

Note:

Works Type 1 associated with new cycle tracks, fill slopes, retaining wall, or structures

Works Type 2 associated with Resting Station

- 4.3.6 From **Table 4-2**, the predicted worst case construction noise levels at the new selected NSR A/NSR02a is 76 dB(A) which exceeds the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM) daytime noise standard of 75 dB(A). A noise exceedance of 1 dB(A) is predicted.

4.4 Possible Noise Mitigation Measures and Mitigated Impacts

- 4.4.1 To mitigate the adverse noise impacts, mitigation measures including use of quiet plant and temporary noise barrier / enclosure, and phasing of construction plant operation as recommended in Section 5.6 of the approved EIA Report should be adopted. **Table 4-3** shows mitigated noise levels.

Table 4-3 Predicted Mitigated Construction Noise Levels (Daytime)

NSR	Descriptions	Worst Case Unmitigated Noise Impact		
		Works Type 1, dB(A)	(Works Type 2, dB(A)	Cumulative Works Type 1 + Works Type 2, dB(A)
A/NSR02a	Village House near Kam Tin River	71	65	72

Note:

Works Type 1 associated with new cycle tracks, fill slopes, retaining wall, or structures

Works Type 2 associated with Resting Stations/ Information Kiosk

4.4.2 Noise assessment results show that with the use of quiet plant and temporary noise barrier / enclosure, the construction noise levels would be reduced to 72 dB(A). There would be no noise exceedances. The future Contractor should adopt working practice as recommended in Section 5.6.8 of the approved EIA Report, copied in Section 4.4.3 below.

4.4.3 Good working practices to adopted by Contractor to minimise construction noise as far as possible include the following:

- The Contractor shall adopt the Code of Practice on Good Management Practice to Prevent Violation of the Noise Control Ordinance (Cap. 400) (for Construction Industry) published by EPD;
- The Contractor shall observe and comply with the statutory and non-statutory requirements and guidelines;
- Before commencing any work, the Contractor shall submit to the Project Engineer for approval the method of working, equipment and noise mitigation measures intended to be used at the site;
- The Contractor shall devise and execute working methods to minimise the noise impact on the surrounding sensitive uses, and provide experienced personnel with suitable training to ensure that those methods are implemented;
- Noisy equipment and noisy activities should be located as far away from the NSRs as is practical;
- Unused equipment should be turned off and PME should be kept to a minimum and the parallel use of noisy equipment / machinery should be avoided;
- Regular maintenance of all plant and equipment should be undertaken;
- Material stockpiles and other structures should be effectively utilised as noise barriers, where practicable;
- The Contractor shall liaise with the schools that are located near the works sites regarding their examination period and schedule the noisy works to avoid the examination period as far as possible.

4.5 Evaluation of Residual Impacts

4.5.1 No unacceptable residual impacts are anticipated as the recommended mitigation measures will be implemented.

4.6 Environmental Monitoring and Audit Requirements

- 4.6.1 The requirements provided in the EM&A Manual are applicable for the Stage 1 Works of the cycle track alignment and the Resting Stations. In order to ensure that the nearby NSRs will not be subject to unacceptable construction noise impact, an Environmental Monitoring and Audit (EM&A) programme is recommended. The recommended mitigation measures, monitoring procedures and locations are presented in details in the EM&A Manual. This will facilitate the contractor to have early warning and undertake the necessary actions to reduce noise emissions at specific areas. No additional mitigation measures are required.

4.7 Conclusion

- 4.7.1 The construction of Stage 1 cycle track alignment and Resting Stations may cause construction noise impacts on identified NSRs. With the implementation of mitigation measures including use of quiet plant and temporary noise barrier / enclosures as recommended in the approved EIA Report, the construction noise levels will comply with the noise standards. The findings and conclusions in the approved EIA Report remain unchanged.

5. WATER QUALITY IMPACT

5.1 Introduction

5.1.1 Water quality impacts may arise from uncontrolled surface run-off during the construction of the Stage 1 cycle track alignment and Resting Stations. Chapter 6 of the approved EIA Report has been reviewed and the potential water quality impacts have been assessed and details are presented below.

5.1.2 The operation of the Stage 1 cycle track alignment and Resting Stations will not cause water quality impacts. Therefore, no assessment has been undertaken.

5.2 Water Sensitive Receivers

5.2.1 A review of the Stage 1 cycle track alignment and the Resting Stations indicates that no additional Water Sensitive Receivers (WSRs) will be affected by the Project. The minor design refinements and the revised project boundary will not result in additional WSRs to be affected. The water systems, catchments and WSRs likely to be affected by the Project as identified in Sections 6.3.2 and 6.3.3 of the approved EIA Report remain unchanged and are still valid. The locations of the WSRs as in the approved EIA Report are annexed in **Appendix 5-1**. The main WSR likely to be affected by the Stage 1 cycle track alignment and Resting Stations are Kam Tin River, Sheung Yue River, Shek Sheung River and Ng Tung River, fish ponds, bodies of open water forming the Wetland Conservation Area, and Deep Bay. These WSR locations near Section 1 and Section 1b are shown in **Figure 5-1** and **Figure 5-2**, respectively.

5.3 Water Quality Impact Assessment

5.3.1 The Stage 1 cycle track alignment and Resting Stations are the same as the original cycle track alignment in the approved EIA Report, with some minor design refinements at localised areas. The new areas included within the revised project boundary at Section 1b will be used for planting purpose only. No other construction activities are expected to be carried out at these areas. Potential water quality impacts will remain unchanged and will be mainly due to construction surface run-off if uncontrolled.

5.3.2 During wet seasons, surface run-off from the construction sites will be directed into storm drains via adequately designed wastewater treatment facilities such as sand traps, silt traps and sediment settling basins. This is particularly important for works immediately adjacent to the Kam Tin River for Section 1, and River Beas and Shek Sheung River for Section 1b. Works close to Kam Tin River such as should be avoided as far as possible during the wet season to avoid runoff into the WSR and, if this is not avoidable, careful containment of potential discharge sources shall be implemented. Stream decking works near the Kam Tin River which was also included in the approved EIA Report will not involve works within the water. Thus, avoiding this work during the wet season as mitigation measures, adverse water quality impacts in Section 1 are not anticipated.

5.3.3 There would be no physical, chemical and biological disruptions to the identified WSRs. Works for Section 1b near Long Valley will also be adequately implemented with water pollution control measures to control the surface run-off. As appropriate water pollution control measures, which are set out in Section 6.6.1 of the approved EIA Report (Register No.: AEIAR-133/2009) will be implemented, it is unlikely that

there would be any adverse water quality impacts caused by the construction /operation of Section 1b.

- 5.3.4 The concurrent projects in the vicinity of the Project are PUBCCPR, YLKSSD and NSWCT as listed in **Section 1.6**. Since the Project will only involve land-based construction activities and water pollution control measures will be implemented throughout the construction periods, the potential water quality impacts generated from the construction works of the Project will be limited and insignificant. Therefore, no unacceptable cumulative water quality impacts are anticipated.

5.4 Water Pollution Mitigation and Management

- 5.4.1 Mitigation measures recommended in Section 6.6 of the approved EIA Report, copied in Section 5.4.2 below, will be implemented. No additional mitigation measures are required.

Stormwater and Non-point Source Pollution

- 5.4.2 Mitigation measures should be implemented to prevent the uncontrolled discharge of wastewater from the construction site in accordance with ProPECC PN 1/94 – Construction Site Drainage. It is envisaged that the following measures will effectively control runoff from works sites and avoid water pollution downstream:

- Surface run-off from the construction sites will be directed into storm drains via adequately designed wastewater treatment facilities such as sand traps, silt traps and sediment settling basins. This is important for works immediately along the Kam Tin River, River Beas (Sheung Yue River) and Shek Sheung River;
- Channels, earth bunds or sand bag barriers will be provided on-site to properly direct stormwater to the above-mentioned facilities;
- Existing silt removal facilities, channels and manholes along roads and pedestrian walkways will be maintained and the deposited silt and grit will be removed regularly, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times;
- Other manholes (including any newly constructed ones) will be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system;
- Open stockpiles of materials on site will be avoided or where unavoidable covered with tarpaulin or similar fabric during rainstorms. Measures will be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system and river channels;
- Where possible, works entailing soil excavation will be minimized during the rainy season (i.e. April to September);
- Where applicable, final earthworks surfaces/ slopes will be well compacted and hydro-seeded following completion to prevent erosion;
- During construction works, chemical toilets will be provided for the use of site staff. These will be provided by a licensed contractor, who will be responsible for appropriate disposal and maintenance of the effluent;
- Works adjacent to the fishponds near Kam Tin River inside the conservation area (CA) should be avoided as far as possible during the wet season to avoid runoff into the fishponds;

- All site discharges within the Water Control Zones must comply with the terms and conditions of a valid discharge licence issued by EPD;
- Vehicle wheel washing facilities should be considered, where applicable given the site constraints, at the exits such that mud, debris, etc. deposited onto the vehicle wheels or body can be washed off before the vehicles are leaving the site area;
- Section of the road between the wheel washing bay and the public road should be paved with backfill to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.

Protection Against Accidental Spillage

- The Project may occasionally involve the handling of fuel and generation of chemical wastes. It must be ensured that all fuel tanks and chemical storage are sited on sealed areas and provided with locks.
- The storage areas will be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank to prevent accidentally spilled oil, fuel or chemicals from reaching the receiving waters.
- Oil and grease removal facilities will be provided where appropriate, for example, in areas near plant workshop/ maintenance areas; and
- Chemical waste arising from the site should be properly stored, handled, treated and disposed of in compliance with the requirements stipulated under the Waste Disposal (Chemical Waste) (General) Regulation.

5.5 Evaluation of Residual Impacts

- 5.5.1 There will be no unacceptable residual water quality impacts as the recommended mitigation measures will be implemented throughout the construction phase.

5.6 Environmental Monitoring and Audit Requirements

- 5.6.1 No specific water quality monitoring is considered necessary and effective for non-point runoff, particularly when the baseline water quality in the WSRs does occasionally exceed the WQO. Regular on-site environmental audit is recommended instead to ensure proper implementation of water pollution control measures during the construction phase. The section of the proposed cycle tracks near Kam Tin River (for Section1), River Beas and Shek Sheung River (for Section 1b) shall receive particular attention in the environmental audit to avoid pollution of immediate and downstream waters.

5.7 Conclusion

- 5.7.1 The Stage 1 cycle track alignment and the Resting Stations would not cause adverse water quality impacts on WSRs if the mitigation measures recommended in Section 5.4 are implemented. The findings and conclusions in the approved EIA Report remain unchanged.

6. WASTE MANAGEMENT

6.1 Introduction

6.1.1 The type of wastes that would be generated from the construction and operational phases of the Stage 1 Works of the cycle track alignment and the Resting Stations have been identified. Chapter 7 of the approved EIA Report has been reviewed and the potential environmental impacts that may be resulted from the wastes generation have been evaluated and details are presented below.

6.2 Waste Generation and Potential Impacts

6.2.1 The types of construction waste to be generated from Stage 1 Works of the cycle track alignment and the Resting Stations can be divided into three main streams:

- construction and demolition (C&D) materials;
- chemical wastes; and
- general refuse / sewage.

6.2.2 The estimated quantities of C&D material to be generated from Stage 1 Works, to be re-used and to be disposed of are presented in **Table 6-1**.

Table 6-1 Summary of C&D Material Generation

Type	Material to be Re-used on site (m ³)	Material to be Disposed of at Public Fill Bank (m ³)	Material to be Disposed of at Landfill (m ³)	Total C&D Material (m ³)
Inert C&D Materials (Soft Public Fill)	2009.2	1083.6	0	3092.8
C&D Waste* (Non-inert)	0	0	237.8	237.8
Others: Bitumen of Broken Concrete	0	0	432	432
Total	2009.2	1083.6	669.8	3762.6

Note:

* This includes the timber formwork for the construction of retaining wall and general refuses.

6.2.3 A small amount of chemical waste such as waste oils / grease, spent solvents / detergents, used oil filters and scrap batteries will be generated from the construction of the Stage 1 cycle track and Resting Stations. Considered the nature of the proposed construction activities, the quantity of chemical waste to be generated is anticipated to be small. As appropriate handling process will be implemented such as only licensed chemical waste collectors shall be employed to collect any chemical waste generated at site, and the handling, storage, transportation and disposal of chemical wastes shall be conducted in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes and A Guide to the Chemical Waste Control Scheme both published by EPD, no unacceptable environmental impacts are anticipated.

6.2.4 General refuse to be generated during the construction phase will be collected and disposed of regularly. There would be no adverse environmental impacts. The estimated amount of general works wastes generation provided in Table 7-2 of the approved EIA Report, and presented in **Table 6-2** below, remains unchanged.

Table 6-2 Summary of General Works Wastes Generation during the Construction Phase

Material Type	Likely Time of Arising	Estiamted Amount per 100 metre of Cycle Track	Disposal / Treatment Site
General refuse arising from works	Throughout construction	500 kg/week	Nearest RCP
Chemical waste arising from machineries	Throughout construction	50 litre/month	Chemical Waste Treatment Centre
General refuse (generated by site staff)	Throughout construction	100 kg/week	Nearest RCP

6.2.5 During the operational phase of the Project, general refuse will be generated from the cyclists. This waste will be removed on a daily basis. Therefore, no adverse environmental impacts are anticipated.

6.3 Mitigation Measures

6.3.1 Waste management practice as recommended in Section 7.4 of the approved EIA Report for the construction and operational phases will be implemented and are presented as follows:

- An on-site environmental co-ordinator employed by the Contractor should be identified at the outset of the works. Prior to commencement of Project works, the co-ordinator shall prepare a WMP in accordance with the requirements set out in the ETWB TCW No. 19/2005, Environmental Management on Construction Sites, for the Project Engineer's approval. The WMP shall include monthly and yearly Waste Flow Tables (WFT) that indicate the amounts of waste generated, recycled and disposed of (including final disposal site), and which should be regularly updated;
- The Contractor's waste management practices and effectiveness shall also be audited by the ER on regular basis;
- The reuse/ recycling of all materials on site shall be investigated and exhausted prior to treatment/ disposal off-site;
- Good site practices shall be adopted from the commencement of works to avoid the generation of waste, reduce cross contamination of waste and to promote waste minimisation;
- All waste materials shall be sorted on-site into inert and non-inert C&D materials, and where the materials can be recycled or reused, they shall be further segregated. Inert material, or public fill will comprise stone, rock, masonry, brick, concrete and soil which is suitable for land reclamation and site formation whilst non-inert materials include all other wastes generated from the construction process such as plastic packaging and vegetation (from site clearance);
- The Contractor shall be responsible for identifying what materials can be

recycled/ reused, whether on-site or off-site. In the event of the latter, the Contractor shall make arrangements for the collection of the recyclable materials. Any remaining non-inert waste shall be collected and disposed of to the Public Filling Areas whilst any inert C&D materials shall be re-used on site as far as possible. Alternatively, if no use of the inert material can be found on-site, the materials can be delivered to a Public Fill Area or Public Fill Bank after obtaining the appropriate license;

- In order to monitor the disposal of C&D material and solid wastes at public filling facilities and landfills, and control fly-tipping, a trip-ticket system shall be implemented by the Contractor, in accordance with the contract and the requirements of DEVB TC(W) No. 6/2010 “Trip Ticket System for Disposal of Construction and Demolition Material”;
- Under the Waste Disposal (Chemical Waste) (General) Regulation, the Contractor shall register as a Chemical Waste Producer if chemical wastes such as spent lubricants and paints are generated on site. Only licensed chemical waste collectors shall be employed to collect any chemical waste generated at site. The handling, storage, transportation and disposal of chemical wastes shall be conducted in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes and A Guide to the Chemical Waste Control Scheme both published by EPD;
- A sufficient number of covered bins shall be provided on site for the containment of general refuse to prevent visual impacts and nuisance to the sensitive surroundings. These bins shall be cleared daily and the collected waste disposed of to the refuse transfer station. Further to the issue of ETWB TCW No. 6/2002A, Enhanced Specification for Site Cleanliness and Tidiness, the Contractor is required to maintain a clean and hygienic site throughout the project works;
- All chemical toilets, if any, shall be regularly cleaned and the night-soil collected and transported by a licensed contractor to a Government Sewage Treatment Works facility for disposal; and
- Toolbox talks should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling.

6.4 Residual Impacts

- 6.4.1 No unacceptable residual impacts are expected as the mitigation measures recommended in the approved EIA Report (Register No. AEIAR-133/2009) (and presented in Section 6.3 above) will be implemented.

6.5 Environmental Monitoring and Audit

- 6.5.1 During the construction phase, site inspections and supervisions of waste management procedures and auditing of the effectiveness of implemented mitigation measures should be undertaken on a regular basis (e.g. weekly as a minimum). These tasks shall be scheduled in the Waste Management Plan (WMP) to be prepared by the Contractor, and a summary of the site audits shall be presented in the EM&A reports.
- 6.5.2 Given the nature of use of the project, there is no EM&A requirement considered necessary during the operational phase.

6.6 Conclusion

- 6.6.1 The main construction wastes to be generated are C&D materials, chemical waste and general refuse / sewage. As good waste management practices will be implemented, adverse environmental impacts arising from the storage, handling, collection, transport and disposal of wastes are unlikely.
- 6.6.2 General refuse generated during the operational phase of the Stage 1 cycle track and Resting Stations will be removed daily. No unacceptable environmental impacts are anticipated. The assessment results reveal that there would be no adverse waste management implications. The findings and conclusions in the approved EIA Report remain unchanged.

7. LAND CONTAMINATION

7.1 Introduction

7.1.1 Chapter 8 of the approved EIA Report has been reviewed with respect to the potential contaminated land in the vicinity of the Stage 1 cycle track alignment and Resting Stations. The reviewed has been undertaken in accordance with the assessment approach provided in the approved EIA Report.

7.2 Impact Assessment

7.2.1 There is no significant change in the Stage 1 cycle track alignment and the Resting Stations with respect to that assessed in the approved EIA Report, except there are minor design refinements at localised areas and the revised project boundary in Section 1b. No specific potentially contaminated site was identified near Section 1 and Section 1b of the Stage 1 cycle track alignment as in the approved EIA Report.

7.2.2 A desktop review and site visits were undertaken to review the current land uses within 5m on either side of the Section 1 and Section 1b of the Stage 1 cycle track alignment. There was no change to the land use of the site of the Stage 1 works including the new areas within the revised project boundary in Section 1b since the approval of the EIA Report as these are mitigation planting areas maintained by AFCD. Recent photos of the site surroundings are provided in **Appendix 7-1**. The adjacent land uses at Section 1 and Section 1b cycle tracks alignment remains unchanged as there was no later version of the Nam Sang Wai Outline Zoning Plan OZP No. S/YL-NSW/8 that was approved on 17 October 2006, and the Kwu Tung North Outline Zoning Plan OZP No. S/NE-KTN/8 that was approved on 31 October 2006. There is also no change in the land use zoning of the cycle tracks adjacent areas in the later version of the Fanling and Sheung Shui Outline Zoning Plan OZP No. S/FSS/16 approved on 5 June 2012. No new approval of planning application of the land uses adjacent to the Stage 1 cycle track alignment since the approval of the EIA Report based on the review of information from Town Planning Board.

7.2.3 Based on the approved EIA Report, the various sites identified with potential land contamination are all located distant from the project boundary of Stage 1 works. The nearest potential contaminated site (Site F) is located over 1km from Section 1b. Site F as shown in Figure 8-3 and referred in Table 8-1 of the approved EIA Report is provided in **Appendix 7-2**. As no potential contaminated sites were identified near or within the project boundary of the Stage 1 cycle track alignment and Resting Stations, no site investigations for the Stage 1 works are required.

7.3 Mitigation Measures

7.3.1 No mitigation measures are required for the Stage 1 cycle track alignment and Resting Stations.

7.4 Residual Impacts

7.4.1 No unacceptable residual impacts are anticipated as no contaminated sites are identified for the Stage 1 cycle track alignment and Resting Stations.

7.5 Environmental Monitoring and Audit

7.5.1 No environmental monitoring and audit requirements are required as all sites

identified with potential land contamination are located distant from the project boundary of Stage 1 works.

7.6 Conclusion

- 7.6.1 No potential contaminated areas are found in the vicinity of the Stage 1 cycle track alignment and Resting Stations. Therefore, environmental impacts due to land contamination are not anticipated for the Stage 1 cycle track alignment and Resting Stations. The findings and conclusions in the approved EIA Report remain unchanged.

8. ECOLOGY

8.1 Introduction

8.1.1 Chapter 9 of the approved EIA Report has been reviewed and the potential ecological impacts due to the Stage 1 cycle track alignment and Resting Stations have been reviewed based on the information provided in the approved EIA Report as well as the findings from recent ground-truthing survey for habitats conducted in July 2012 and March / April 2013.

8.2 Impact Assessment

8.2.1 There is no significant change in the Stage 1 cycle track alignment (except minor design refinements at localised areas on-line of the cycle track) and the Resting Stations with respect to the alignment assessed in the approved EIA Report. Thus the study area as shown in Figure 9-1 and Figure 9-4 of the approved EIA Report remains unchanged. The ecological habitat maps covering the Stage 1 cycle track alignment and the Resting Stations presented in Figure 9-1 and Figure 9-4 of the approved EIA Report, showing the respective Section 1 and Section 1b of Stage 1 are provided in **Figure 8-1** and **Figure 8-2**, respectively.

8.2.2 No fish ponds will be directly or indirectly affected or will be lost as part of the implementation of the Stage 1 cycle track alignment and Resting Stations as the alignment is the same as in the approved EIA Report. Direct and indirect impacts on fish ponds are not expected to occur.

8.2.3 Based on the current detailed design, the cycle track alignment of Section 1 along Kam Tin River and Section 1b along Shek Sheung River will generally follow the cycle track alignment as assessed in the approved EIA Report. There are areas on-line of the cycle track alignment that minor design refinements have been made and are illustrated in **Figure 1-3**. The construction activities for the cycle track will be the same as that in the approved EIA Report. The habitat loss due to these minor design refinements will be plantation which is the same as the assessment findings in the approved EIA Report and no additional habitat loss will result.

8.2.4 There are new areas included as a result of the revised project boundary in Section 1b (illustrated in **Figure 1-4**). These areas are remained to be within the DSD's fenced off maintenance areas that are demarcated with the continuous chain link fencing along the agriculture land of private lots, and proposed to be used for planting purpose under this project. These areas are also reserved mitigation planting areas currently maintained by AFCD. For planting within these areas, the planting practice and guidelines shall follow relevant standards / requirements (ETWB TC(W) No. 3/2006) as to protect any existing trees to minimize any potential impacts. No construction machinery / workers' activities, storage of construction plant/material are expected in these areas during the construction of the cycle track. This requirement will be included in the contract's requirements. To this end, additional unacceptable ecological impacts due to the proposed planting in the new areas as a result of the revised project boundary are not anticipated.

8.2.5 No additional habitat loss will result due to inclusion of these new planting areas in the project boundary.

8.2.6 With the implementation of the mitigation measures recommended in Section 9.11 and Table 14-6 of the approved EIA Report, there would be no adverse residual

impact (direct or indirect) due to the construction and operation of the Stage 1 cycle tracks and associated Resting Stations and the findings in the approved EIA remain valid.

8.2.7 The operation of the Stage 1 cycle track alignment and Resting Stations is unlikely to cause direct ecological impacts.

8.2.8 Cumulative ecological impacts may be arising from the concurrent projects as described in **Section 1.6**. However, as the scale of the construction works for the Stage 1 cycle track alignment and Resting Stations is small in local, additional ecological impacts due to the Project are anticipated to have negligible effect on the overall ecological impacts of all concurrent projects. Furthermore, continuous liaison with any potential interfacing / concurrent works in the vicinity of the Stage 1 works will be carried to avoid any cumulative impacts. This requirement will be included in the contract's requirements. Therefore, no negative cumulative impacts are anticipated.

8.3 Mitigation Measures

8.3.1 Mitigation measures and good work practices as recommended in Section 9.11 and Table 14-6 (extracted and described in Section 8.3.2 below) of the EIA Report will be implemented. No additional mitigation measures are required.

8.3.2 In summary, the recommended mitigation measures applicable to Stage 1 works include:

- Survey inspections on trees being felled should be made to check for roosting bats prior to felling as a precautionary measure.
- Construction works at the section of cycle track near Kam Tin River and Long Valley should be carried out during the dry season (between October and March), if possible; and if not, additional measures shall be provided by the contractor to demonstrate that site run-off will not affect sensitive receivers. In addition, work carried out during the dry season would avoid the breeding season of Greater Painted-snipes along this section to prevent any potential disturbance to breeding and nesting birds.
- Compensation planting along the Sheung Yue River and Shek Sheung River as appropriate including at R9 and Information Kiosk.
- The use of signage at the Resting Stations to indicate that wildlife may be present and that noise levels and activities should be kept to a minimum could be implemented to help to reduce any potential disturbance to wildlife.
- To further demonstrate ecological and environmental awareness, a series of mitigation measures should be implemented throughout the construction and future maintenance of the cycle tracks. These are as follows.
 - Avoid soil storage against trees;
 - Fence off any potentially ecologically sensitive areas;
 - Delineation of works area to prevent encroachment onto adjacent habitats;
 - Reinstatement of habitat after works;
 - No on-site burning of waste;
 - Waste and refuse in appropriate receptacles;

- Staff training/toolbox talks for site work near Long Valley and WCA – important areas for birds, therefore staff should reduce amount of noise whilst working and during breaks where possible;
- Regular ecological checks; and
- Silt/ Sediment/ Oil traps for drainage to prevent site run-off.

8.3.3 No unacceptable residual impacts are anticipated to be arisen from the construction and operation of the Stage 1 cycle track alignment and Resting Stations.

8.4 Environmental Monitoring and Audit

8.4.1 The Stage 1 cycle track alignment and Resting Stations would not cause adverse impacts on ecology. No additional ecological monitoring programme is required.

8.5 Conclusion

8.5.1 The construction and operation of the Stage 1 cycle track alignment and the Resting Stations will not cause any unacceptable negative impacts on ecology. The findings and conclusions in the approved EIA Report remain unchanged.

9. FISHERIES

9.1 Introduction

9.1.1 Chapter 10 of the approved EIA Report has been reviewed with respect to the potential fisheries impacts arising from the Stage 1 cycle track alignment and Resting Stations and review findings are presented below.

9.2 Impact Assessment

9.2.1 Based on the current detailed design, the cycle track alignment of Section 1 along Kam Tin River and Section 1b along Shek Sheung River will generally follow the cycle track alignment as assessed in the approved EIA Report. There are areas on-line of the cycle track alignment that minor design refinements have been made and are illustrated in **Figure 1-3**. The construction activities for the cycle track will be the same as that in the approved EIA Report. There will be no direct and indirect impacts to the fish ponds during the construction phase of the Stage 1 cycle track alignment and the Resting Stations, and as a result of the cycle tracks Project.

9.2.2 The Stage 1 cycle track alignment and the Resting Stations are not located close to the fish ponds. The nearest active fish pond is located over 400m to the north of the end of Section 1 along Pok Wai Road South (**Figure 9-1**). No operational phase impacts on fisheries are anticipated.

9.2.3 The mitigation measures as proposed in the approved EIA Report are still valid to mitigate any indirect impacts on fisheries during construction phase.

9.3 Mitigation Measures

9.3.1 No adverse impacts on fisheries are anticipated if the proposed mitigation measures to control construction site run-off as recommended in Section 10.5 (described in Section 5.4.2 above) of the approved EIA Report are properly implemented during construction phase.

9.4 Residual Impacts

9.4.1 No direct impacts on the fisheries would be resulted from the construction and operation of the Stage 1 cycle track alignment and the Resting Stations. Therefore no unacceptable residual impacts will result.

9.5 Environmental Monitoring and Audit

9.5.1 The Stage 1 cycle track alignment and the Resting Stations will not cause impacts on fisheries. Therefore, no additional environmental and audit requirements are required.

9.6 Conclusion

9.6.1 The construction and operation of the Stage 1 cycle track alignment and the Resting Stations will not cause impacts on fisheries. The findings and conclusions in the approved EIA Report remain unchanged.

10. CULTURAL HERITAGE

10.1 Introduction

10.1.1 Chapter 11 of the approved EIA Report has been reviewed with respect to the potential cultural heritage impacts arising from the Stage 1 cycle track alignment and Resting Stations and the review findings are presented below.

10.2 Study Area and Sensitive Receivers

10.2.1 In line with the EIA Report, a study area of 500m envelope of Section 1 and Section 1b of the Project has been used to study the potential cultural heritage impacts.

10.2.2 There are no graded historical buildings or archaeological sites located near the Section 1 of the cycle track alignment; whilst one graded historical building (Bok Man School) was identified near Section 1b of the cycle track, according to the findings of the approved EIA Report. There has been update to the list of graded historical buildings since the approval of the EIA report. No newly listed historical buildings were identified near Section 1, and there are newly listed historical buildings with grading in Tsung Pak Long and within 500m of Section 1b of the cycle track alignment. **Table 10-1** provides a summary of the updated graded historical buildings and their locations are shown in **Figure 10-1**.

Table 10-1 An Inventory of Sites of Cultural Heritage within the 500 m Envelope of Section 1b

Site of Cultural Heritage	Classification	Distance from Cycle Track
Hakka Wai, Tsung Pak Long	Grade I Historic Building	About 275 m southwest
Chan Study Hall, Tsung Pak Long	Grade III Historic Building	About 225 m southwest
Bok Man School, Tsung Pak Long	Grade III Historic Building	About 170 m southwest
Dun Hau Tong, Tsung Pak Long	Grade III Historic Building	About 200 m southwest
Suen Shing Tong, Tsung Pak Long	Grade III Historic Building	About 200 m southwest
Lau Ancestral Hall, Tsung Pak Long	Grade III Historic Building	About 200 m southwest
Chan Ancestral Hall, Tsung Pak Long	Grade III Historic Building	About 200 m south

Notes:

Grade I Buildings of outstanding merit, which every effort should be made to preserve if possible.

Grade II Buildings of special merit; efforts should be made to selectively preserve.

Grade III Buildings of some merit; preservation in some form would be desirable and alternative means could be considered if preservation is not practicable. .

Definitions of grading are internal guidelines adopted by the Antiquities Advisory Board and the Antiquities and Monuments Office for the preservation of historic buildings.

10.3 Assessment of Potential Impacts

10.3.1 The sites of cultural heritage interest that may be affected by the cycle track are similar to those of the original cycle track. The distances between the cycle track and the sites of cultural heritage interest range from about 170 m to 275 m. Potential impacts on the sites of cultural heritage interest are unlikely as they are far from the cycle track.

10.3.2 The cycle track will be running on developed land next to the existing roads that are likely to have been disturbed during their construction. There are no known potential

archaeological sites within the works area of the proposed cycle track and Resting Stations. Therefore, there would be no direct and indirect impacts on archaeology and no mitigation measures are required.

10.4 Mitigation Measures

10.4.1 As no impacts will result, no specific mitigation measures are required. As a precautionary measures however, it is recommended that care should be taken during the construction stage to report any signs of discovery of artefacts.

10.5 Residual Impacts

10.5.1 There would be no unacceptable residual impacts as no impacts are predicted.

10.6 Environmental Monitoring and Audit

10.6.1 No environmental monitoring and audit proposal is required.

10.7 Conclusion

10.7.1 The sites of cultural heritage interest are distant from the cycle track. Therefore, there would be no direct or indirect impacts on the any declared monuments or graded historical buildings. The findings and conclusions in the approved EIA Report remain unchanged.

11. LANDSCAPE AND VISUAL IMPACT

11.1 Introduction

11.1.1 The Stage 1 cycle track alignment and Resting Stations may cause potential landscape and visual impacts. Chapter 12 of the approved EIA Report has been reviewed with respect to the Stage 1 works and the review findings are presented below.

11.2 Impact Assessment

11.2.1 There is an updated Outline Zoning Plan OZP S/FSS/16 Fanling and Sheung Shui area since the approval of the EIA Report. However, the zoned areas within of the Stage 1 cycle track alignment and Resting Stations remain unchanged. The Stage 1 cycle track and Resting Stations will be compatible to the planning intention for the areas.

11.2.2 Based on the current detailed design, the cycle track alignment of Section 1 along Kam Tin River and Section 1b along Shek Sheung River will generally follow the cycle track alignment as assessed in the approved EIA Report. There are areas on-line of the cycle track alignment that minor design refinements have been made and project boundary in Section 1b has been revised in localised location (**Figure 1-4**). No additional landscape resources will be affected by the Stage 1 cycle track alignment and Resting Stations with the design refinements and the revised project boundary. The magnitude of predicted impacts on the identified landscape resources as provided in Table 12-6 of the approved EIA Report remains unchanged. No additional mitigation measures are required.

11.2.3 Since there is no change in the Stage 1 cycle track alignment, no additional significant adverse impacts on the existing landscape character areas are anticipated. The recommended mitigation measures as listed in Table 12-8 of the EIA Report should be implemented. No additional mitigation measures are required.

11.2.4 The new areas included in the revised project boundary in Section 1b are intended for additional areas for planting purpose. These additional new planting areas are not expected to result in negative effect on landscape and visual impacts and the potential impacts as reported in the approved EIA Report will remain unchanged.

11.2.5 According to the updated tree survey report prepared by the IDC Consultant, a total of 1017 trees will be affected by the Stage 1 works. Based on the tree assessment results, 446 trees will be retained, 393 trees will be transplanted and 178 trees will be felled. No old and valuable trees or rare or protected tree species are found in the vicinity of the Stage 1 works. The updated tree survey results and draft tree treatment proposal for the Stage 1 works are provided in **Appendix 11-1**. These are summarised in **Table 11-1**.

Table 11-1 Summary of Tree Survey

Works Area	Total No. of Tree surveyed	Tree To Be Retained	Tree To Be Transplanted	Tree To Be Felled
Section 1 (including R5)	418	282	97	39
Section 1b (including R9)	599	164	296	139
Total:	1017	446	393	178

Notes:

1. The above tree recommendation is based on the tree survey report prepared by IDC consultants under Agreement No. CE22/2006(HY). This tree survey report has been circulated to relevant departments for comment, hence subject to be reviewed, and a formal tree felling, transplanting and compensatory proposals will be submitted to departments for approval.

- 11.2.6 The detailed methodology of tree survey and assessment has been addressed in a Tree Felling and Compensatory Report prepared by the IDC Consultant and has sent to relevant government departments for their review and yet to be approved.
- 11.2.7 The Stage 1 cycle tracks alignment remains the same as the section assessed in the approved EIA Report. Therefore there is no change in the visually sensitive receivers (VSR1, VSR11, VSR12, VSR13 and VSR14). The visual impacts remain unchanged, and Figure 12-8A and Figure 12-8B of the approved EIA Report is provided in **Figure 11-1** and **Figure 11-2**. The mitigation measures proposed in Table 12-10 of the approved EIA Report (provided in **Table 11-2**) will be implemented. The conceptual landscape master plan for Section 1 and Section 1b are provided in **Figure 11-3** and **Figure 11-4**. No additional mitigation measures are required.
- 11.2.8 No cumulative impacts are anticipated as the proposed mitigation measures have taken into account the design of each of the approved concurrent projects.
- 11.2.9 The transplanting of existing trees and compensatory planting proposals should be referred to the final Tree Felling and Compensatory Report which will be prepared by the IDC Consultant in accordance with the ETWB-TC(W) No. 3/2006.
- 11.2.10 The Landscape Master Plans for the Stage 1 cycle tracks alignment and Resting Stations are being prepared by the IDC Consultant following the design concept drawings and recommended landscape mitigation measures as presented in the approved EIA Report and will be subject to government departments' endorsement.

11.3 Mitigation Measures

- 11.3.1 Mitigation measures as recommended in Section 12.10 and Table 12-11 and Table 12-12 (extracted and described in Table 11-3 and Table 11-4 below) of the approved EIA Report should be adopted. No additional mitigation measures are required.

Table 11-2 Visually Sensitive Receiver and Predicted Impacts

Visually Sensitive Receiver (VSR)	Sensitivity	Determinants for Magnitude of Change					Magnitude of Change (Construction / Operation Phase)	Impact Significance Threshold (Unmitigated)		Mitigation Measures*	Impact Significance Threshold (Mitigated)	
		Viewing Distance / Blockage of view	Compatibility with Surrounding Landscape	Scale	Reversibility	Duration Construction / Operation		Construction	Operation		Construction	Operation
VSR1 Pedestrians and Visitors of Kam Tin Riverbank	Medium	Varies Immediate adjacent to proposed alignment. or Opposite riverside at minimum 200 m away from the alignment. No blockage of existing views.	High	Medium for VSRs immediately adjacent to the alignment. Not perceivable for VSRs walking along opposite riverside due to viewing distance.	Irreversible	2yrs/ Permanent	Small/ Small Existing view is dominated by viaduct and engineered riverbank. Availability of open view along river corridor largely remains unchanged. The cycle track alignment is designed along existing maintenance access. Resting Station is designed with a low building height profile. Majority works area will be reinstated to its original status. Given the above reasons, the works will become a minor component in the riverside context.	Moderate Adverse This impact is limited to the travellers alongside with proposed alignment regarding to their proximity to the works whilst views looking from opposite riverside are negligible due to small project profile and viewing distance.	Moderate Adverse The operation impact to these VSRs is the same as construction impact regarding to the nature of project.	CP1, CP3, CP4, OP1, OP2 and OP4.	Slight Adverse Given the implementation programme at specific location along the whole alignment is relatively short, duration of the impact in views of these VSRs will be shortened. Temporary works and affected channelside amenity areas will be reinstated locally upon to sectional completion of the whole alignment. Proper management of material storage and construction activities. Given the implementation of above mitigation measures, the construction impact is minimized.	Slight Adverse Reinstatement of channelside sloping area to its original status with plantation, in combination of new tree planting, ensures the visual quality along Kam Tin River will be restored. The riverside amenity will be enhanced through introduction of new tree planting along the cycle track and within Resting Station R5 integrated with preserved trees. Responsive design of resting station R5 utilised low building height profile and material finishes. New amenity planting is also accommodated in the design to soften the building structures and provide shade seating area for future users. Upon fully established of the above mitigation measures, the impact will be alleviated.

Visually Sensitive Receiver (VSR)	Sensitivity	Determinants for Magnitude of Change					Magnitude of Change (Construction / Operation Phase)	Impact Significance Threshold (Unmitigated)		Mitigation Measures*	Impact Significance Threshold (Mitigated)	
		Viewing Distance / Blockage of view	Compatibility with Surrounding Landscape	Scale	Reversibility	Duration Construction / Operation		Construction	Operation		Construction	Operation
VSR11 Pedestrians and Visitors of Sheung Yue Riverbank Figure 12-10E and Figure 12-10F refer	Medium	Immediate adjacent to proposed alignment. or Opposite riverside at minimum 60 m away from the alignment. No blockage of existing views.	High	Medium	Irreversible	2yrs./ Permanent	Small/ Small Existing view is dominated by engineered riverbank and maintenance access in the foreground and expansive view of Ho Sheung Heung agricultural fields to the west and Long Valley to the east in distance. Availability of open view along river corridor largely remains unchanged. Views looking towards the proposed works is limited to very few pedestrian walking along existing maintenance access from Kwun Tung to Sheung Shui Industrial Area. The cycle track alignment and Resting Station R9 is designed along existing maintenance access and its roadside area. Resting Station R9 is designed with a low building height profile and minimized scale responding to this lowland plain landscape. Majority works area will be reinstated to its original status. Given the above reasons, the works will become a minor component in the riverside context.	Moderate Adverse Visual impact is limited to the VSRs travelling along the western riverside who have close view to the cycle track and Resting Station R9 whilst views of travellers along the opposite riverside at Long Valley will be screened by existing plantation.	Moderate Adverse The operation impact to these VSRs is the same as construction impact regarding to the nature of project.	CP1, CP3, CP4, OP1, OP2 and OP4.	Moderate Adverse Given the implementation programme at specific location along the whole alignment is relatively short, duration of the impact in views of these VSRs will be shortened. Temporary works and affected roadside amenity areas will be reinstated locally upon to sectional completion of the whole alignment. Proper management of material storage and construction activities. Given the implementation of above mitigation measures, the construction impact is minimized.	Slight Adverse Reinstatement of roadside areas to its original status with plantation, in combination of new tree planting, ensures the visual quality along Sheung Yue River will be restored. The riverside amenity will be enhanced through introduction of new tree planting along the cycle track and within Resting Station R9 integrated with preserved trees. Buffer planting contained with the resting station serves for screening purposes for the low profile structure. Responsive design of resting station R9 utilised low building height profile and natural material finishes responding to the context. New amenity planting is also accommodated in the design to soften the building structures and provide shade seating area for future users. Upon fully established of the above mitigation measures, the visual quality in the distance views of these VSRs will be reinstated and the impact will be alleviated.

Visually Sensitive Receiver (VSR)	Sensitivity	Determinants for Magnitude of Change					Magnitude of Change (Construction / Operation Phase)	Impact Significance Threshold (Unmitigated)		Mitigation Measures*	Impact Significance Threshold (Mitigated)	
		Viewing Distance / Blockage of view	Compatibility with Surrounding Landscape	Scale	Reversibility	Duration Construction / Operation		Construction	Operation		Construction	Operation
VSR12 Residents of Ho Sheung Heung Village Settlement	High	Varies from 100 m to 300 m No blockage of existing views	High	Small	Irreversible	2yrs./ Permanent	Small/ Small Existing views of this VSRs is confined by village settlement to the north, east and west in the foreground whilst is opened to the agricultural filed in the foreground to the south. Regarding to the viewing distance views looking towards the proposed works is largely screened by the vegetation in the foreground. lowland village visual context is largely remains unchanged. Limited views looking towards the proposed works in distance is limited to very few villagers living at the southern periphery of the village that have views across the fields. Alternatives views open to the field are available. The cycle track alignment and Resting Station R9 is designed along existing maintenance access and its roadside area in distance views of these VSRs. Resting Station R9 is designed with a low building height profile and minimized scale responding to this lowland plain landscape. Majority works area will be reinstated to its original status.	Slight Adverse Visual impact is limited to the VSRs living at the southeast periphery of Ho Sheung Heung settlement who have a distance view to the works behind plantation along Sheung Yue River with extensive fields and ponds in their foreground.	Slight Adverse The operation impact to these VSRs is the same as construction impact regarding to the nature of project.	CP1, CP3, CP4, OP1, OP2 and OP4.	Slight Adverse Given the implementation programme at specific location along the whole alignment is relatively short, duration of the impact in views of these VSRs will be shortened. Temporary works and affected roadside amenity areas will be reinstated locally upon to sectional completion of the whole alignment. Proper management of material storage and construction activities. Given the implementation of above mitigation measures, the construction impact is minimized.	Negligible Reinstatement of roadside amenity area to its original status with plantation, in combination of new amenity areas, ensures the visual quality along Sheung Yue River will be restored. The riverside amenity will be enhanced through introduction of new tree planting along the cycle track and within Resting Station R9 integrated with preserved trees. Responsive design of resting station R9 utilised low building height profile and material finishes. New amenity planting is also accommodated in the design to soften the building structures and provide shade seating area for future users. Upon fully established of the above mitigation measures, the visual quality in their distance views of the riverside planting area will be restored, the impact will be alleviated.
ATKINS							Given the above reasons, the works will become a lowland plain context.					

Visually Sensitive Receiver (VSR)	Sensitivity	Determinants for Magnitude of Change					Magnitude of Change (Construction / Operation Phase)	Impact Significance Threshold (Unmitigated)		Mitigation Measures*	Impact Significance Threshold (Mitigated)	
		Viewing Distance / Blockage of view	Compatibility with Surrounding Landscape	Scale	Reversibility	Duration Construction / Operation		Construction	Operation		Construction	Operation
VSR13 Pedestrians and Visitors of Shek Sheung Riverbank	Medium	Immediate adjacent to proposed alignment. or Opposite riverside at minimum 60 m away from the alignment. No blockage of existing views.	High	Medium	Irreversible	2yrs./ Permanent	<p>Small/ Small</p> <p>Existing view is dominated by engineered riverbank and maintenance access in the foreground and expansive view of Sheung Shui Industrial Area to the north in the foreground and Long Valley to the south across the river. Availability of open view along river corridor largely remains unchanged.</p> <p>Views looking towards the proposed works is limited to very few pedestrian walking along existing maintenance access along the river.</p> <p>The cycle track alignment is designed along existing maintenance access and its roadside area.</p> <p>Majority works area will be reinstated to its original status.</p> <p>Given the above reasons, the works will become a minor component in the riverside context.</p>	Moderate Adverse Visual impact is limited to the VSRs travelling along the riverside adjacent to the works whilst travellers at the opposite site of the river at Sheung Shui urban fringe will not see the works.	Moderate Adverse The operation impact to these VSRs is the same as construction impact regarding to the nature of project.	CP1, CP3, CP4, OP1, OP2 and OP4.	<p>Slight Adverse</p> <p>Given the implementation programme at specific location along the whole alignment is relatively short, duration of the impact in views of these VSRs will be shortened.</p> <p>Temporary works and affected roadside amenity areas will be reinstated locally upon to sectional completion of the whole alignment.</p> <p>Proper management of material storage and construction activities.</p> <p>Given the implementation of above mitigation measures, the construction impact is minimized.</p>	<p>Slight Adverse</p> <p>Reinstatement of roadside areas to its original status with plantation, in combination of new tree planting, ensures the visual quality along Shek Sheung River will be restored.</p> <p>The riverside amenity will be enhanced through introduction of new tree planting along the cycle track integrated with preserved trees.</p> <p>Responsive design of the alignment follows existing road and maintenance access responding to the context.</p> <p>Upon fully established of the above mitigation measures, the visual quality of Shek Sheung River in the views of these VSRs with Sheung Shui Industrial Area in the background will be enhanced and the impact will be alleviated.</p>

Visually Sensitive Receiver (VSR)	Sensitivity	Determinants for Magnitude of Change					Magnitude of Change (Construction / Operation Phase)	Impact Significance Threshold (Unmitigated)		Mitigation Measures*	Impact Significance Threshold (Mitigated)	
		Viewing Distance / Blockage of view	Compatibility with Surrounding Landscape	Scale	Reversibility	Duration Construction / Operation		Construction	Operation		Construction	Operation
VSR14 Workers of Sheung Shui Industrial Area	Medium	Immediate adjacent to proposed alignment. or Opposite riverside at minimum 20 m away from the alignment. No blockage of existing views	High	Medium	Irreversible	2yrs./ Permanent	Small/ Small Existing view is contrasted with Long Valley village fringe settlement to the west and Sheung Shui Industrial areas to the east. Availability of open view along river corridor largely remains unchanged. Views looking towards the proposed works is limited to pedestrian walking along existing maintenance access along the river. The cycle track alignment is designed along existing maintenance access and its roadside area. Majority works area will be reinstated to its original status. Given the above reasons, the works will become a minor component in the riverside context.	Slight Adverse Visual impact is limited to the VSRs working in the riverside industrial building who have window view to Shek Sheung River.	Slight Adverse The operation impact to these VSRs is the same as construction impact regarding to the nature of project.	CP1, CP3, CP4, OP1, OP2 and OP4.	Slight Adverse Given the implementation programme at specific location along the whole alignment is relatively short, duration of the impact in views of these VSRs will be shortened. Temporary works and affected roadside amenity areas will be reinstated locally upon to sectional completion of the whole alignment. Proper management of material storage and construction activities. Given the implementation of above mitigation measures, the construction impact is minimized.	Negligible Reinstatement of roadside areas to its original status with plantation, in combination of new tree planting, ensures the visual quality along Shek Sheung River will be restored. The riverside amenity will be enhanced through introduction of new tree planting along the cycle track integrated with preserved trees. Responsive design of the alignment follows existing road and maintenance access responding to the context. Upon fully established of the above mitigation measures, the visual quality of Shek Sheung River in the views of these VSRs with Sheung Shui Industrial Area in the background will be enhanced and the impact will be alleviated.

Notes:

* Mitigation measures are detailed in Tables 12-11 and 12-12 of the approved EIA Report, and copied in Table 11-11 and Table 11-12.

Table 11-3 Proposed Construction Phase Mitigation Measures

Mitigation Code	Mitigation Measures
CP1	Preservation of Existing Vegetation - The proposed works should avoid disturbance to the existing trees as far as practicable within the works areas. It is recommended that a full tree survey and felling application will be undertaken and submitted for approval by the relevant government departments in accordance with ETWB TCW No. 3/2006, 'Tree Preservation' during the detailed design phase of the project. Where possible all trees which are not in conflict with the proposals would be retained and shall be protected by means of fencing where appropriate to prevent potential damage to tree canopies and root zones from vehicles and storage of materials. Specifications for the protection of existing trees will be circulated for approval by the relevant government authorities during the preparation of the detailed tree survey by IDC consultants at detailed design and construction stage.
CP2	Preservation of Existing Topsoil - Topsoil disturbed during the construction phase will be tested using a standard soil testing methodology and where it is found to be worthy of retention stored for re-use. The soil will be stockpiled to a maximum height of 2 m and will be either temporarily vegetated with hydroseeded grass during construction or covered with a waterproof covering to prevent erosion. The stockpile should be turned over on a regular basis to avoid acidification and the degradation of the organic material, and reused after completion. Alternatively, if this is not practicable, it should be considered for use elsewhere, including other projects.
CP3	Works Area and Temporary Works Areas - The landscape of these works areas should be restored to its original status or new amenity area following the completion of the construction phase. Construction site controls shall be enforced, where possible, to ensure that the landscape and visual impacts arising from the construction phase activities are minimized including the storage of materials, the location and appearance of site accommodation and the careful design of site lighting to prevent light spillage. Screen hoarding may not be practicable for this project due to the close viewing distances involved and spatial constraints of the works area
CP4	Mitigation Planting - Replanting of disturbed vegetation should be undertaken at the earliest possible stage of the construction phase of the project and this should use predominantly native and/or ornamental plant species.
CP5	Transplantation of Existing Trees - Final recipient site should be, as far as space allows, adjacent to their current locations alongside of the cycle track or within supporting facilities to retain their contribution to the local landscape context, potential recipient sites. The implementation programme of the proposed works should reserve enough time for advance tree transplanting preparation works to enhance the survival of these transplant trees. Transplanting proposals will subject to the findings of the detailed tree survey and felling application undertaken by IDC consultants at the detailed design stage and upon to the approval by relevant departments.
CP6	Coordination with Concurrent Projects- Coordinated implementation program with concurrent projects to minimize cumulative landscape impact.

Table 11-4 Proposed Operational Phase Mitigation Measures

Mitigation Code	Mitigation Measures
OP1	<p>Design of Cycle Track and Associated Facilities - the cycle track, Resting Station and Information Kiosk will incorporate design features as part of design mitigation measures including:</p> <ol style="list-style-type: none"> 1. Integrated design approach – the alignment of cycle track should be integrated, as far as technically feasible, with existing built structures such as existing road, footpath and track and embankment of river and drainage channel as part of design mitigation measures to reduce the potential cumulative impact of the proposed works. The location and orientation of the associated facilities should be away from landscape and visually sensitive areas such as wetland, fishpond and agricultural field. 2. Building massing - the proposed use of simple responsive design with a building height profile, single-storey, lower than the adjacent village houses and avoids large built structure for supporting facilities to reduce the intrusion of mass in the rural area. 3. Treatment of built structures - the architectural design should seek to reduce the apparent visual mass of the facilities further through the use of natural materials such as wooden frame, vertical greening or other sustainable materials such as recycled plastic. 4. Responsive building finishes - In terms of the building finishes natural tones should be considered for the colour palette with non-reflective finishes are recommended on the outward facing building facades to reduce glare effect. 5. Responsive lighting design – Aesthetic design of architectural and track lighting with following glare design measures: <ul style="list-style-type: none"> ▪ Directional and full cut off lighting is recommended particularly for recreation and roadside areas to minimize light spillage to the surrounding areas. ▪ Minimize geographical spread of lighting, only applied for safety at the key access points and staircases; ▪ Limited lighting intensity to meet the minimum safety and operation requirement; and ▪ High-pressure sodium road lighting is recommended for more stringent light control reducing spillage and thus visual impacts.
OP2	<p>Roadside and Amenity Planting – These plantings will utilise large ornamental trees either with high canopy and thin foliage to allow visual access in the views from the adjacent neighbourhoods to the further roadside or rural landscape or dense foliage at selected locations to provide shade environment for cyclist and give accent to the existing roadside planting whilst native species will utilise on sloping or wooded areas improving the ecological connectivity between existing woodland habitats with the advantage of creating a more coherent landscape framework. Large Feature Trees will utilise within the Resting Stations or along the cycle track, where space allows, to create shaded environment and instant greening effect species such as <i>Aleurites moluccana</i>, <i>Bombax malabaricum</i>, <i>Cinnamomum camphora</i>, <i>Ficus bengimina</i>, <i>Ficus microcarpa</i>, <i>Grevillea robusta</i>, are considered. The other ornamental or native species such as <i>Delonix regia</i>, <i>Bauhinia blakeana</i>, <i>Cassia siamea</i>, <i>Cassia surtensis</i>, <i>Celtis sinensis</i> and <i>Microcos paniculata</i> are considered in the planting proposal to create a comprehensive planting framework that could enhance both ecological and landscape value of the context. Vertical greening measures should also be considered on engineering structures</p>

Mitigation Code	Mitigation Measures
OP3	Compensatory Planting Proposals – Given the works extent is largely limited along existing roadside and channel side areas to minimize impact to existing village settlements and valuable landscape resources such as wetland, streamcourse and existing trees, and considered the importance of tree retention within the works area, new tree planting will concentrate in the proposed amenity areas along the track infilling between retained and transplanted trees. The proposed planting will result in a compensatory planting ratio of 1.28:1 (new planting: trees recommended for felling). Trees forming part of the roadside and slope planting will provide amenity and shaded for the cyclists as well as neighbourhood villagers and will utilise species native to Hong Kong or wide canopy evergreen or with ornamental feature while the species selection for the areas within the Resting Stations or information kiosk will required more design accent utilised more flowering species and large feature trees. These proposals will be subject to review at detailed design stage of the project.
OP4	Treatment of Retaining Wall and Slopes- In accordance with GEO Publication No. 1/2000 "Technical Guidelines on Landscape Treatment and Bio-engineering for Man-made Slopes and Retaining Walls", these engineering structures will be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to give man-made slopes a more natural appearance blending into the local rural landscape. Whip sized planting is preferred on the face of soil cut slopes and at the crest and toe of the slope, and within berm planters these smaller, younger plants adapt to their new growing conditions more quickly than larger sized stock and establish a naturalistic effect more rapidly.

11.4 Residual Impacts

11.4.1 With the proposed mitigation measures in place, there would be no unacceptable residual landscape and visual impacts.

11.5 Environmental Monitoring and Audit

11.5.1 The design, implementation and maintenance of landscape and visual mitigation measures is a key aspect and should be checked to ensure that they are fully realised, thus EM&A for landscape and visual resources should be undertaken. Implementation of the mitigation measures recommended shall be monitored through the site audit programme.

11.6 Conclusion

11.6.1 There is no change in the Stage 1 cycle track alignment and the Resting Stations. The findings and conclusions in the approved EIA Report remain unchanged, and the landscape and visual impacts of the Stage 1 cycle track alignment and the Resting Stations would be acceptable with mitigation measures.

12. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

12.1 Air Quality

Construction Phase

- 12.1.1 With the implementation of the dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices, no adverse construction dust impacts would be expected. Hence, no specific construction dust monitoring is recommended. However, regular environmental audits to be implemented by the Environmental Team during the construction stage are recommended to ensure the implementation of the dust control measures.

Operational Phase

- 12.1.2 No air quality impacts are anticipated as a result of the implementation of the Stage 1 works during the operational phase. Thus, no specific EM&A programme with respect to air quality during the operational phase is required.

12.2 Noise

Construction Phase

- 12.2.1 Mitigation measures have been recommended to control the construction noise impacts arising from the Stage 1 works. All the recommended mitigation measures will be incorporated into the EM&A programme for implementation during construction.

- 12.2.2 The recommended mitigation measures, monitoring procedures and locations are detailed in the Environmental Monitoring and Audit (EM&A) Manual and should be implemented by the Environmental Team. This will allow the Contractor to have early warning and undertake the necessary actions to reduce noise emissions at specific areas.

Operational Phase

- 12.2.3 No noise impacts are anticipated as a result of the implementation of the Stage 1 works during the operational phase. Thus, no specific EM&A programme with respect to noise during the operational phase is required.

12.3 Water Quality

Construction Phase

- 12.3.1 No specific water quality monitoring is considered necessary and effective for non-point runoff, particularly when the baseline water quality in the WSRs does occasionally exceed the WQO. Regular on-site environmental audit is recommended instead to ensure proper implementation of water pollution control measures during the construction phase of the Stage 1 works. The section of the proposed cycle tracks near Kam Tin River (for Section 1), River Beas and Shek Sheung River (for Section 1b) shall receive particular attention in the environmental audit to avoid pollution of immediate and downstream waters.

Operational Phase

- 12.3.2 No adverse water quality impacts would be expected as a result of the implementation of the Stage 1 works during operational phase. Thus, no specific EM&A programme with respect to water quality during the operational phase is required.

12.4 Waste Management

Construction Phase

- 12.4.1 Waste management would be the Contractor's responsibility to ensure that all wastes produced during the construction of the Stage 1 works are handled, stored and disposed of in accordance with good waste management practices and EPD's regulations and requirements. The mitigation measures recommended in Section 6.3 should form the basis of the site Waste Management Plan to be developed by the Contractor at the construction phase.
- 12.4.2 Whilst no specific EM&A requirement have been considered necessary, it is recommended that during the construction phase, site inspections and supervisions of waste management procedures and auditing of the effectiveness of implemented mitigation measures should be undertaken by the Environmental Team on a regular basis (e.g. weekly as a minimum). These tasks shall be scheduled in the Waste Management Plan to be prepared by the Contractor, and the site audits summary shall be presented in the EM&A reports.

Operational Phase

- 12.4.3 No adverse waste management impacts would be expected as a result of the implementation of the Stage 1 works during operational phase. Thus, no specific EM&A programme with respect to waste management during the operational phase is required.

12.5 Land Contamination

- 12.5.1 No environmental monitoring and audit requirements are required as all sites identified with potential land contamination are located distant from the project boundary of Stage 1 works.

12.6 Ecology

Construction Phase

- 12.6.1 The implementation of the terrestrial ecological mitigation measures should be checked as part of the environmental monitoring and audit procedures during the construction period. There will be no significant overall loss of valuable ecological habitat and it is considered any impacts to surrounding habitats and species that will arise from the construction and operation of the cycle track will be minor. No other ecology-specific measures are considered necessary.

Operational Phase

- 12.6.2 The operational phase EM&A will comprise of an audit during the first year of operation of the cycle track to ensure appropriate implementation of mitigation measures including signage and mitigation planting at R9.

12.7 Fisheries

Construction Phase

- 12.7.1 As there will be no loss of fishponds, no significant negative or unacceptable impacts on aquaculture fisheries resources and operations will arise as a result of the implementation of the Stage 1 works. No specific fisheries-specific monitoring is required. However, environmental audits will be required to be undertaken by the Environmental Team to ensure proper implementation of runoff control measures during the construction phase.

Operational Phase

- 12.7.2 No adverse fisheries impacts would be expected as a result of the implementation of the Stage 1 works during operational phase. Thus, no specific EM&A programme with respect to fisheries during the operational phase is required.

12.8 Cultural Heritage

Construction Phase

- 12.8.1 There are no direct or indirect impacts to archaeological remains, declared/deemed monuments and historic buildings as a result of the Stage 1 works. No specific EM&A programme is considered necessary. As a precautionary measure however, care should be taken during the construction stage to report any signs of possible discovery of artefacts.

Operational Phase

- 12.8.2 No adverse impacts on any cultural heritage resources would be expected as a result of the implementation of the Stage 1 works during operational phase. Thus, no specific EM&A programme with respect to cultural heritage during the operational phase is required.

12.9 Landscape and Visual

Construction Phase

- 12.9.1 On-site landscape mitigation measures are recommended for incorporation into the Stage 1 works. No off-site mitigation measures have been proposed.
- 12.9.2 Regular audits should be carried out to ensure all the recommended landscape and visual mitigation measures would be effectively implemented and audited by a landscape auditor of the Environment Team during construction and operation phases of the Stage 1 works. The EM&A will comprise audit of the tree transplanting, compensatory planting and planting establishment through site audit programme.

Operational Phase

- 12.9.3 Operational stage EM&A during the operational phase will comprise audit of the implementation of the landscape plan in the form of site inspection.

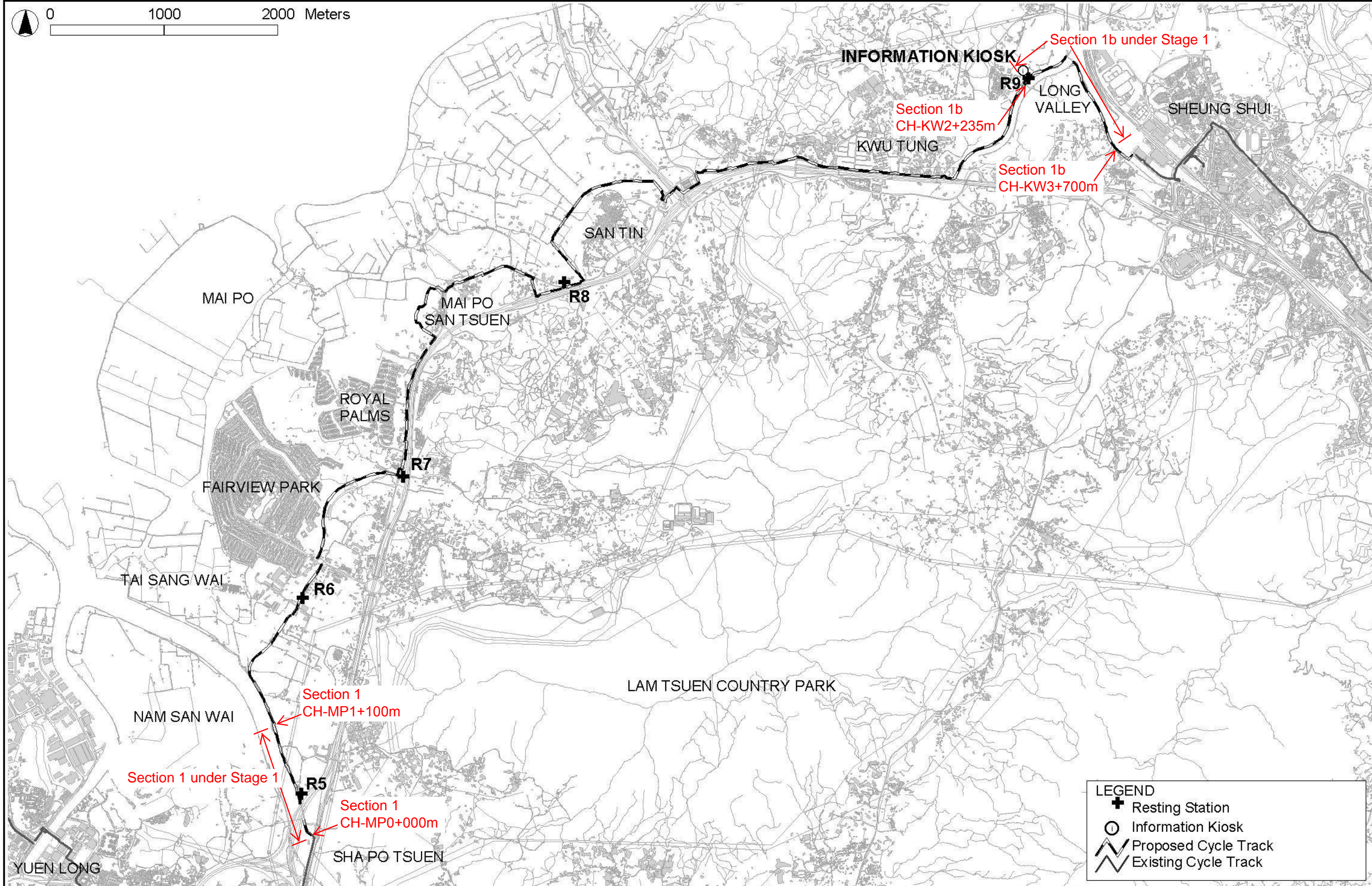
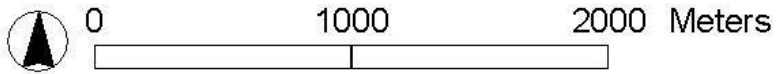
13. IMPLEMENTATION SCHEDULE OF MITIGATION MEASURES

13.1.1 No additional mitigation measures are required for the Stage 1 cycle track alignment and Resting Stations. Therefore, no change to the implementation schedule of mitigation measures as given in the approved EIA Report.

14. CONCLUSIONS

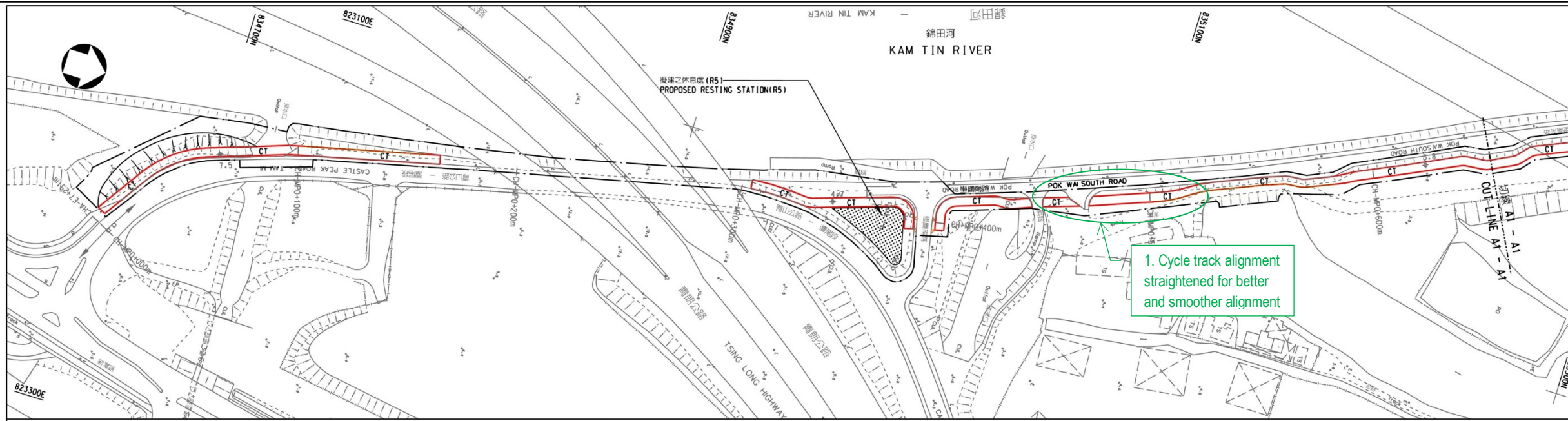
- 14.1.1 With the proposed mitigation measures recommended in the EIA Report, the potential environmental impacts arising from the Stage 1 cycle track and Resting Stations would be within acceptable levels and comply with the relevant environmental legislation. No additional mitigation measures are required.

FIGURES

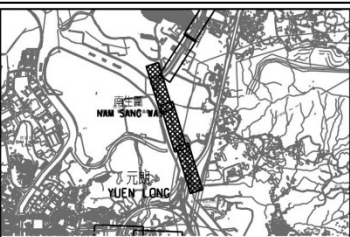


LEGEND

- Resting Station
- Information Kiosk
- Proposed Cycle Track
- Existing Cycle Track

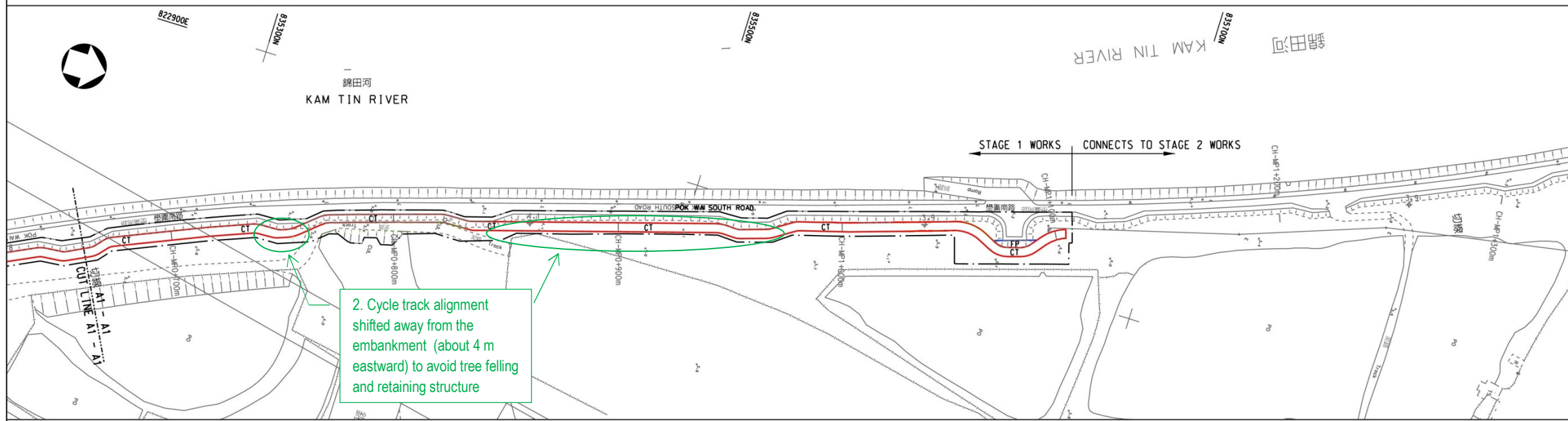


1. Cycle track alignment straightened for better and smoother alignment



- 註釋: NOTES:
1. 所有座標均按香港1980方格網,並以米為單位。 ALL CO-ORDINATES REFER TO HONG KONG 1980 GRID AND ARE IN METRES.
 2. 除在其他方面指定外,所有長度距離均以米為單位。 DIMENSIONS AND CHAINAGE ARE IN METRES UNLESS OTHERWISE SHOWN.
 3. 所有地面水平均以香港主水平基準為準計算根據,並以米為單位。 ALL LEVELS REFER TO HONG KONG PRINCIPAL DATUM (P.D.) AND ARE IN METRES.
 4. 現有的地面水平是以約數表示。 ORIGINAL GROUND LEVELS SHOWN ARE APPROXIMATE ONLY.

- 圖例: LEGEND:
- SITE BOUNDARY OF STAGE 1 WORKS
 - PROPOSED CYCLE TRACK
 - PROPOSED FOOTPATH
 - PROPOSED FILL SLOPE
 - PROPOSED RESTING STATION
 - MARK-UP LOCATION OF DIFFERENCES COMPARED WITH EIA



2. Cycle track alignment shifted away from the embankment (about 4 m eastward) to avoid tree felling and retaining structure

Rev.	Date	Description	Drawn	Checked

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CEDD Civil Engineering and Development Department

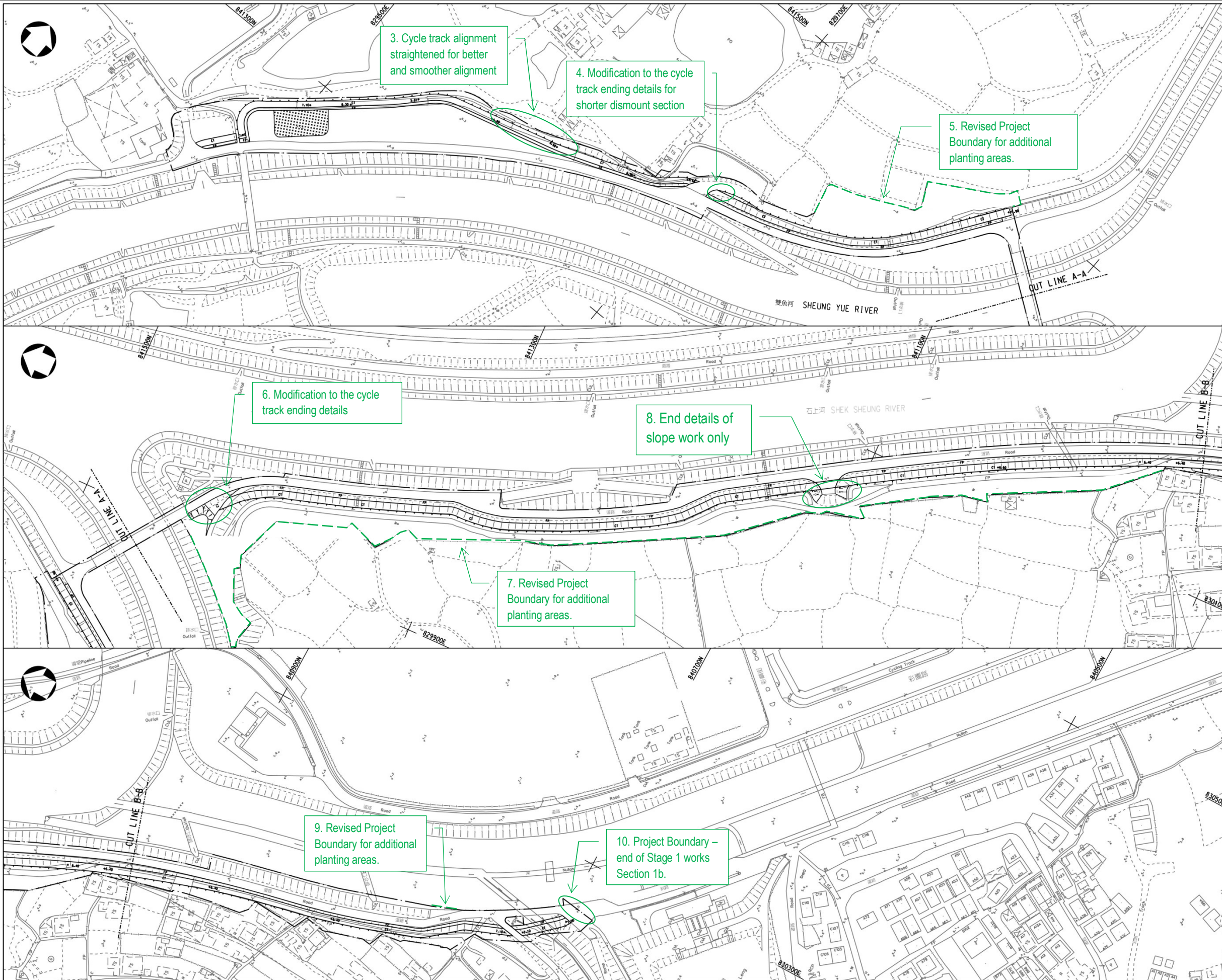
CONTRACT NO. YL/2013/01
CYCLE TRACKS FROM TUEN MUN TO SHEUNG SHUI - STAGE 1

GENERAL LAYOUT PLAN

Drawing No. 圖號	SK534			
Designed 設計	Drawn 繪圖	Checked 校核	Scale 比例	
GT	HAX	DCSC	1 : 1000 (A1)	
Approved 批准	TSN	Date 日期	Status 備註	
		04/13		



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KEY PLAN
1 : 50000

- NOTES :
1. DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE.
 2. COORDINATES ARE BASED ON THE HONG KONG METRIC GRID (1980).
 3. LEVELS REFER TO METRE PRINCIPAL DATUM (m.P.D.) UNLESS SHOWN OTHERWISE.

- LEGEND :
- SITE BOUNDARY OF STAGE 1 WORKS
 - ▨ PROPOSED RESTING STATION R9
 - PROPOSED RETAINING STRUCTURE
 - MARK-UP LOCATION OF DIFFERENCES COMPARED WITH EIA
 - - - REVISED PROJECT BOUNDARY COMPARED WITH EIA

Rev.	Date	Description	Drawn	Checked

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Development Department

CONTRACT NO. YL/2013/01
CYCLE TRACKS FROM TUEN MUN
TO SHEUNG SHUI - STAGE 1

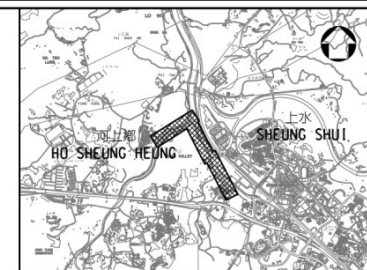
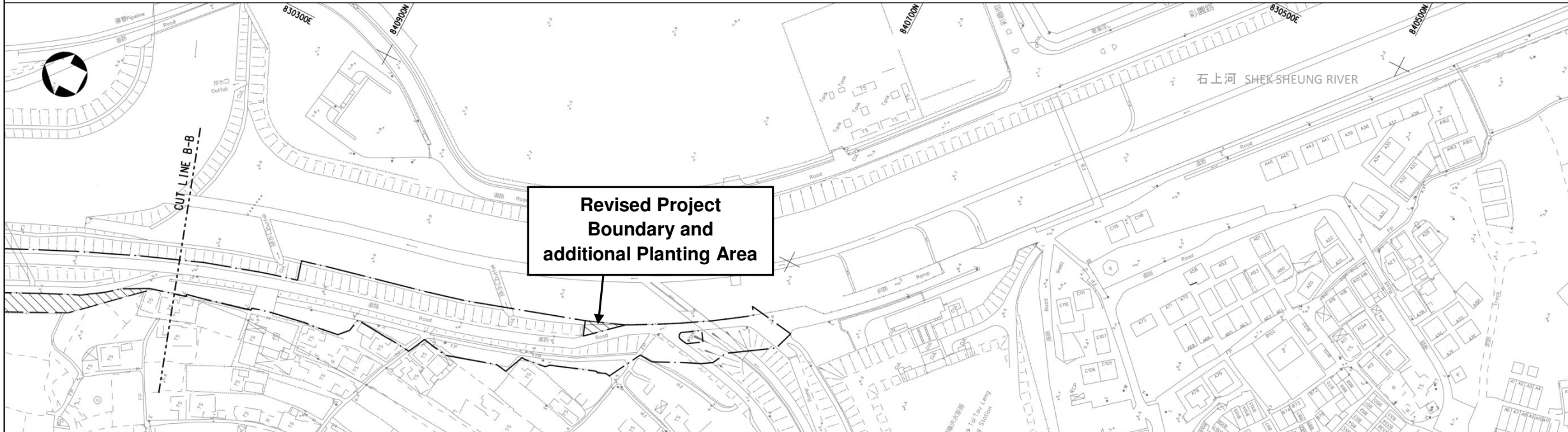
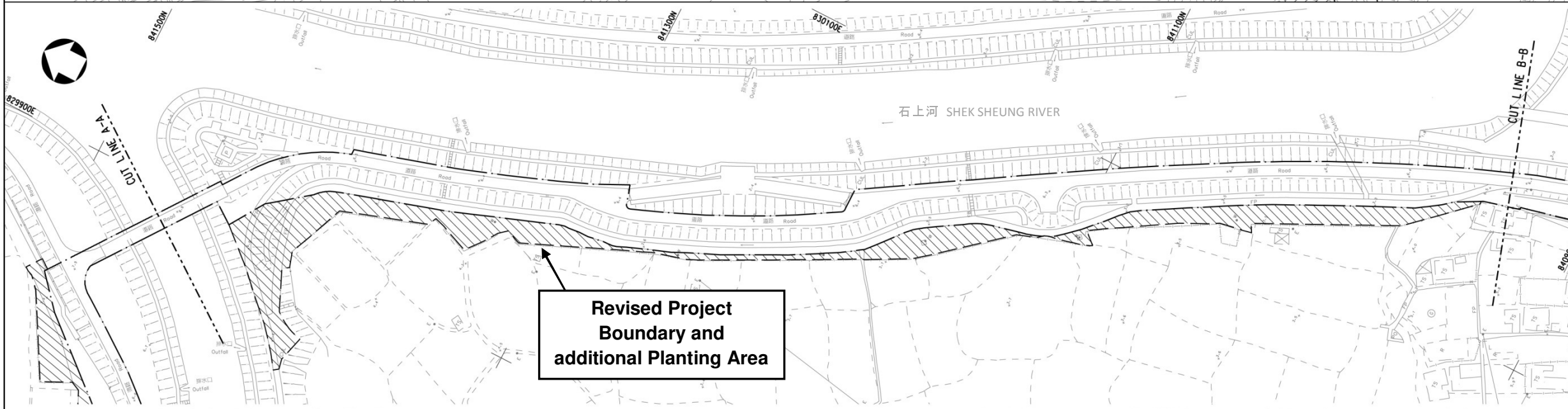
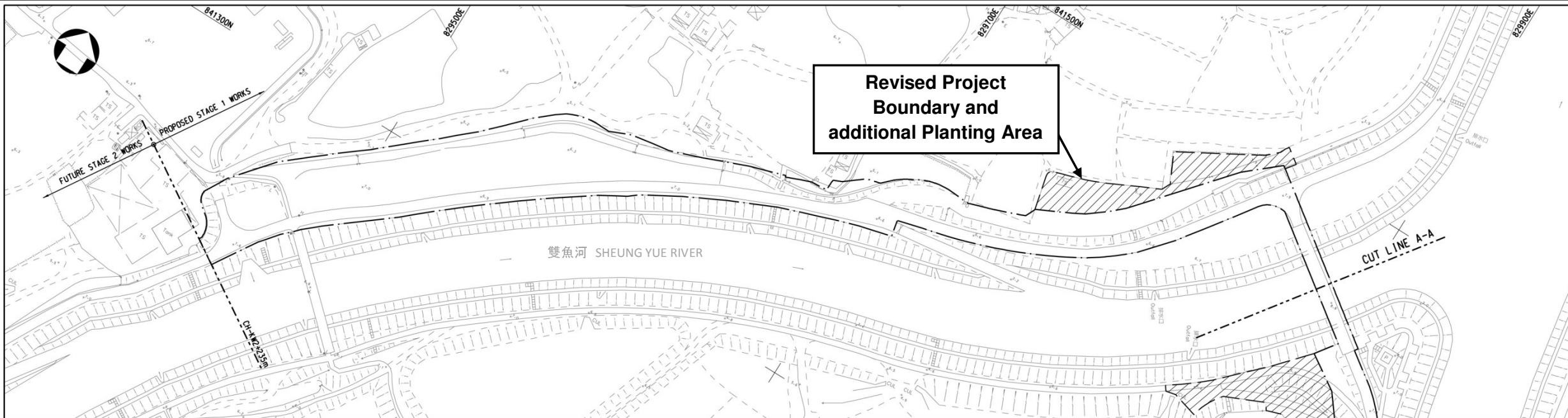
GENERAL LAYOUT PLAN

Drawing No. 圖號	SK535		
Design 設計	Drawn 繪圖	Checked 校核	Scale 比例
GT	HAX	DCSC	1:500 (A1)
Approved 批准	Date 日期	Status 備註	
TSN	04/13		



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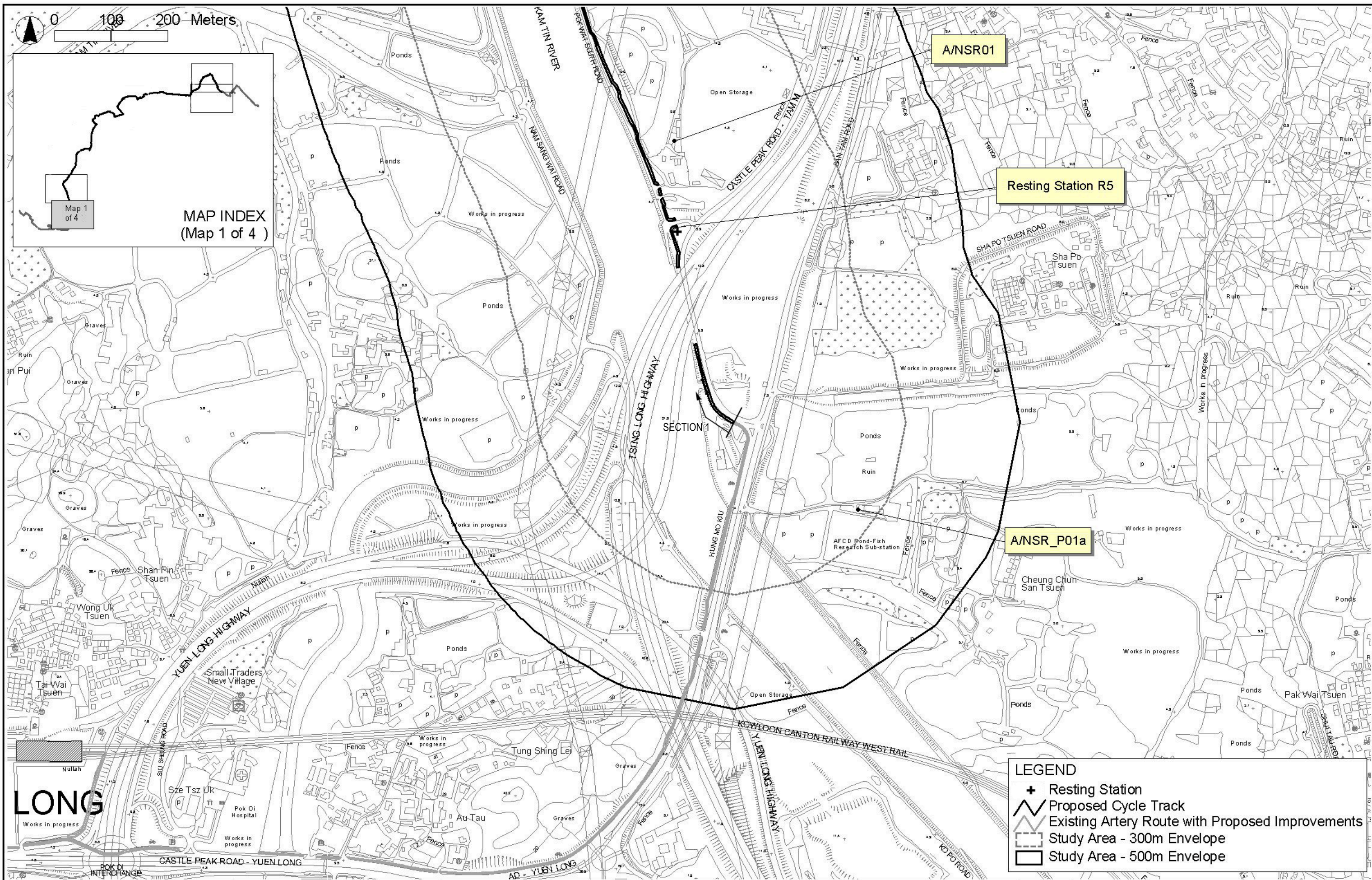


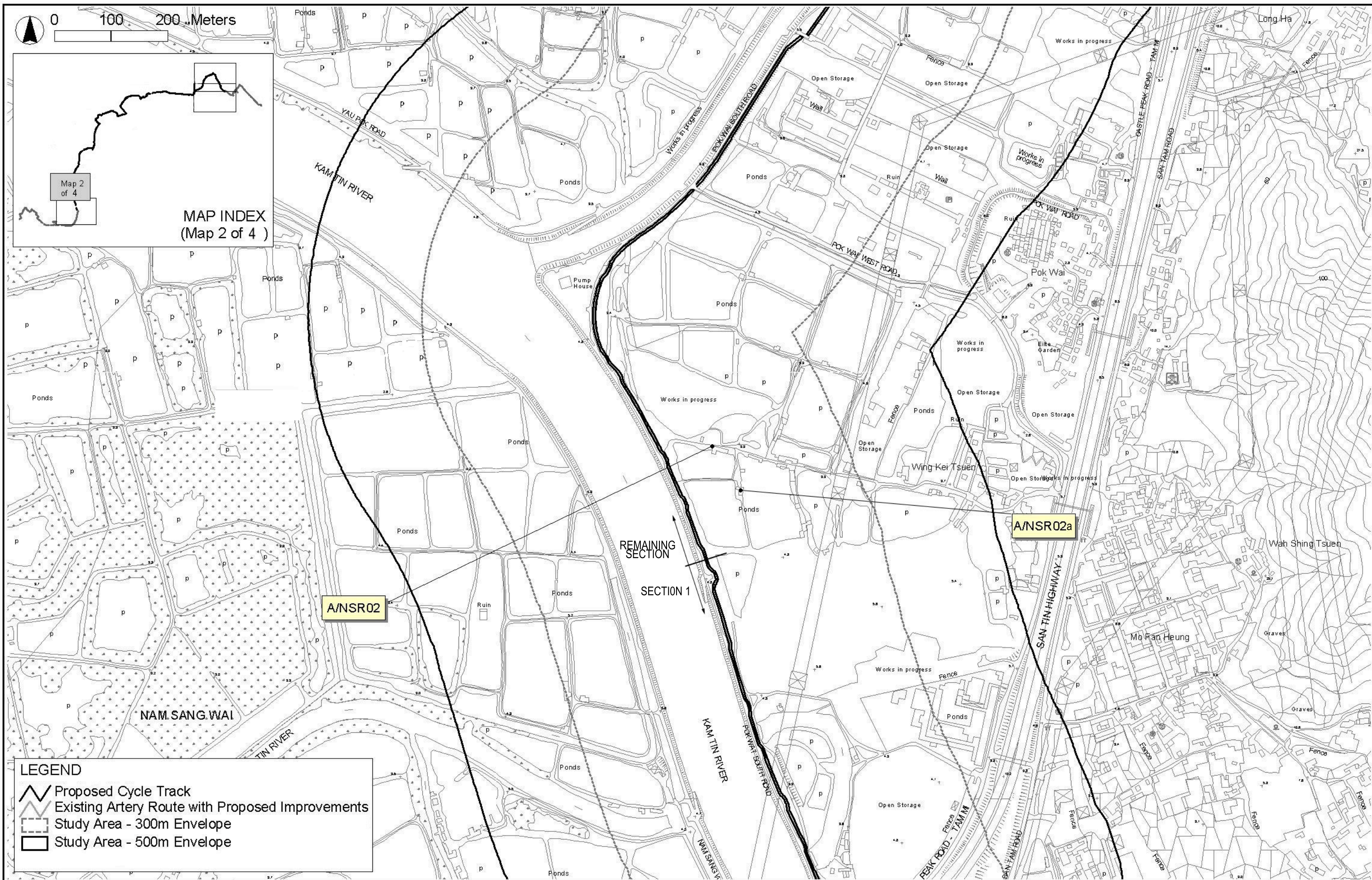
KEY PLAN
N.T.S.

LEGEND :

- PROJECT BOUNDARY IN EIA
- REVISED PROJECT BOUNDARY

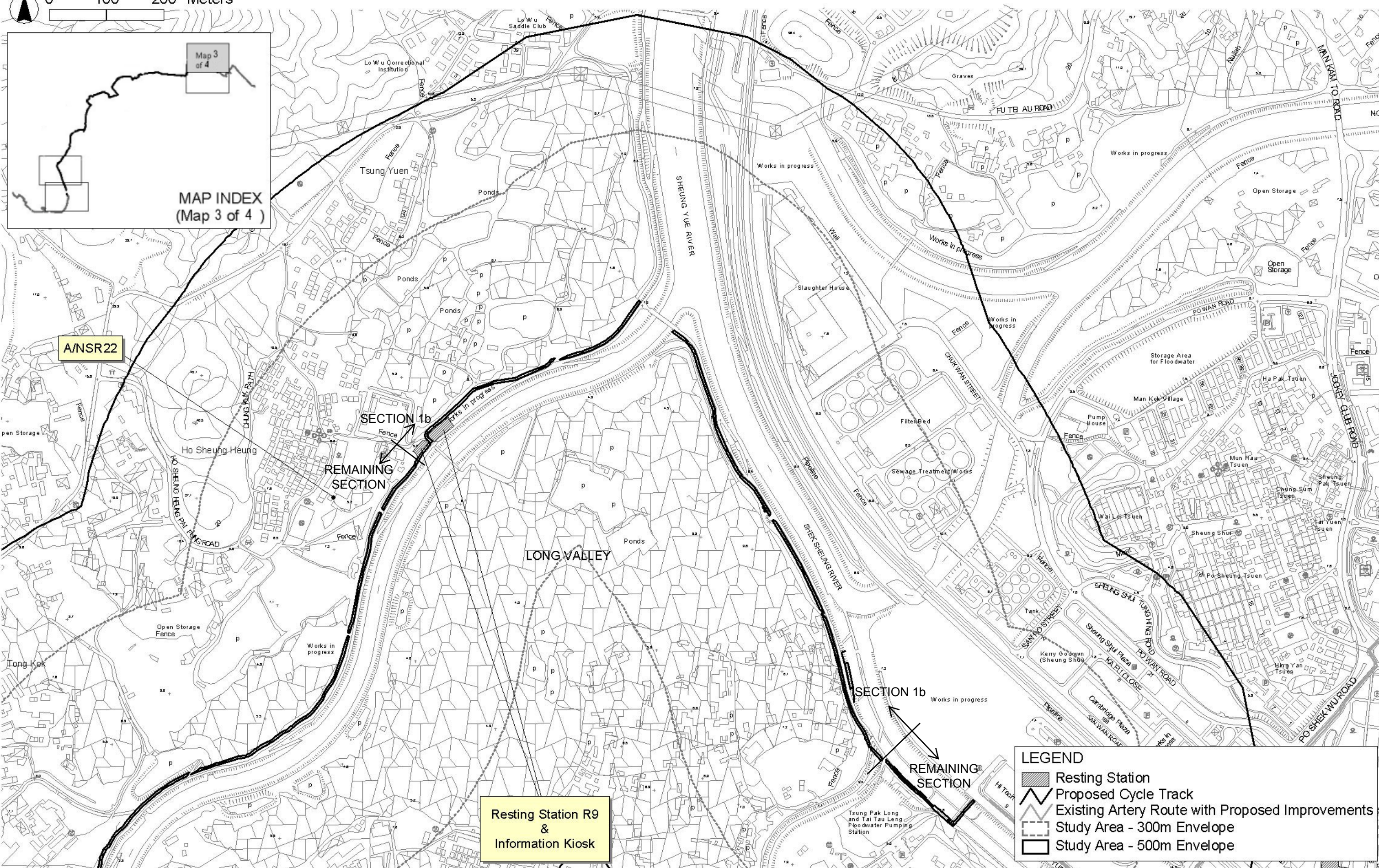
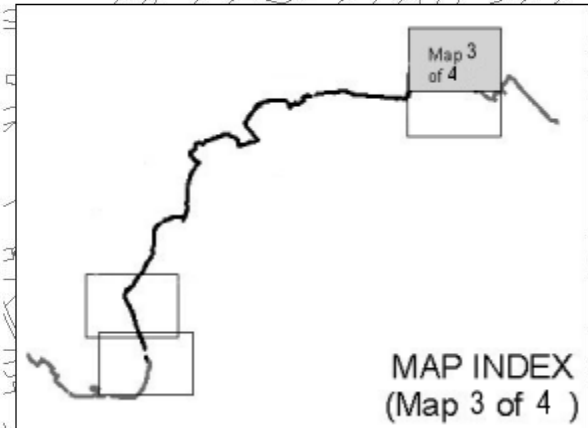
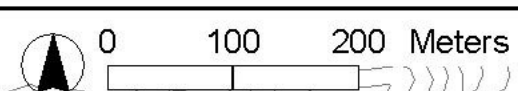
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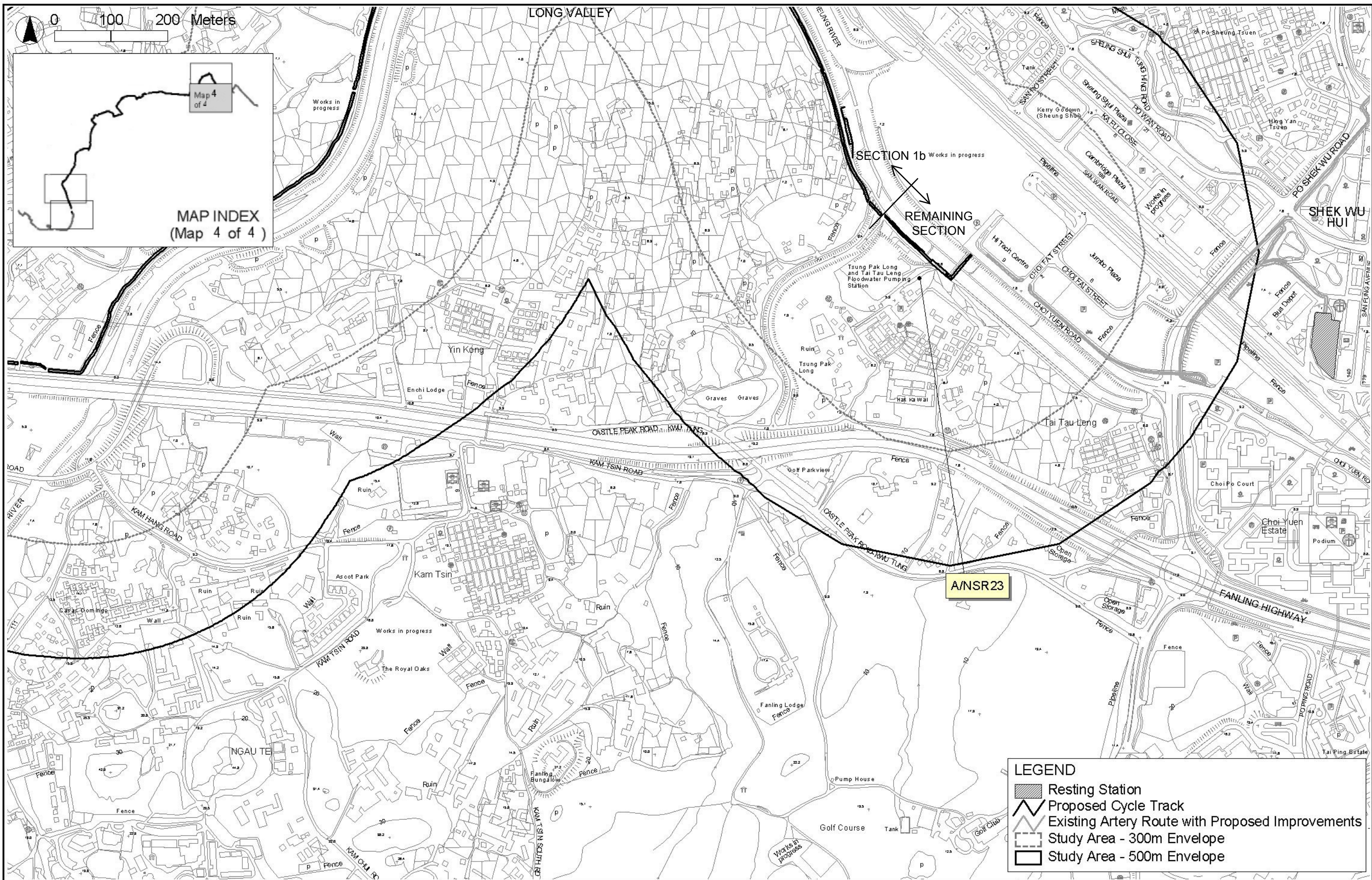
LEGEND

- Proposed Cycle Track
- Existing Artery Route with Proposed Improvements
- Study Area - 300m Envelope
- Study Area - 500m Envelope



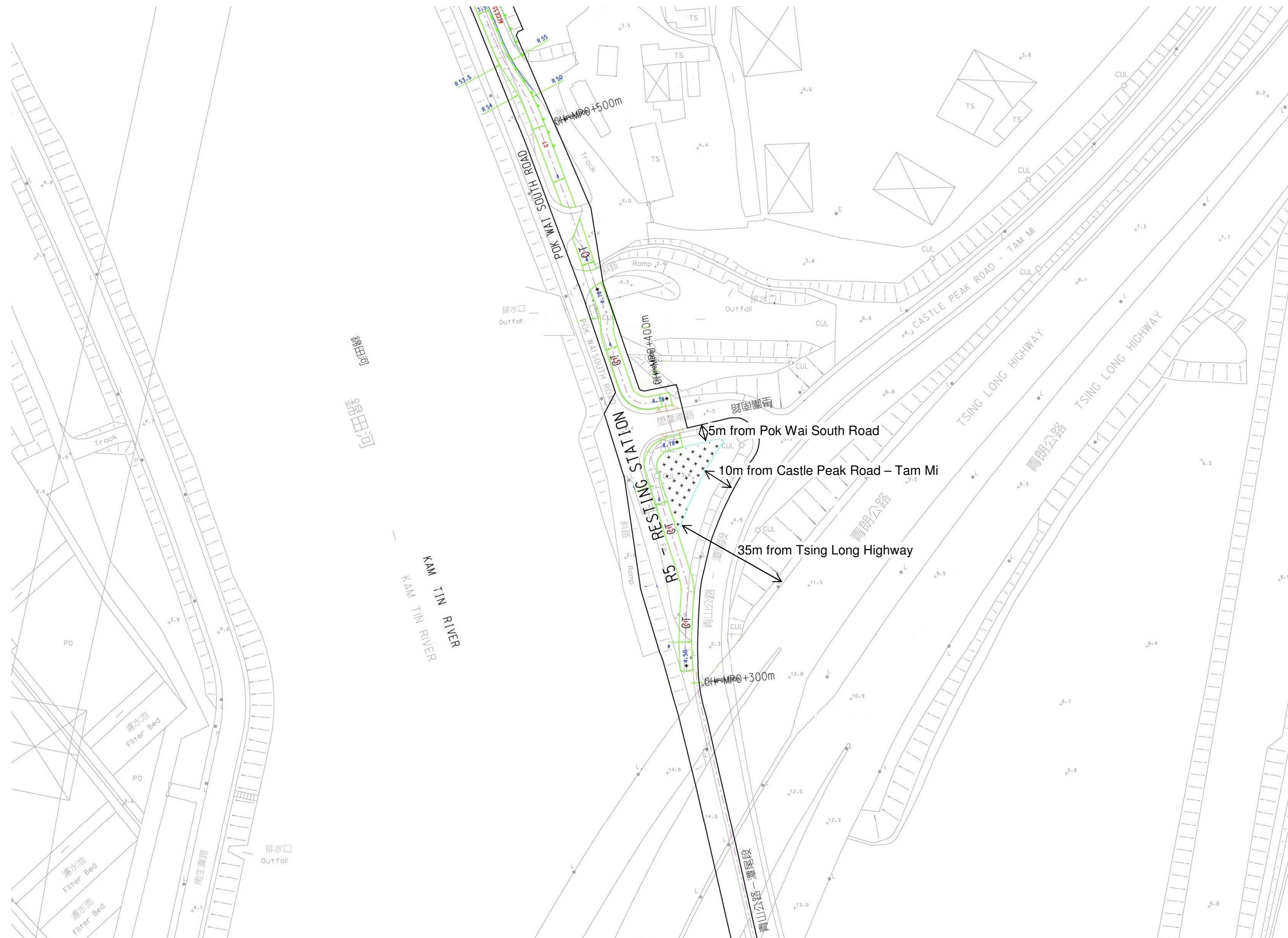
LEGEND

- Resting Station
- Proposed Cycle Track
- Existing Artery Route with Proposed Improvements
- Study Area - 300m Envelope
- Study Area - 500m Envelope



LEGEND

- Resting Station
- Proposed Cycle Track
- Existing Artery Route with Proposed Improvements
- Study Area - 300m Envelope
- Study Area - 500m Envelope



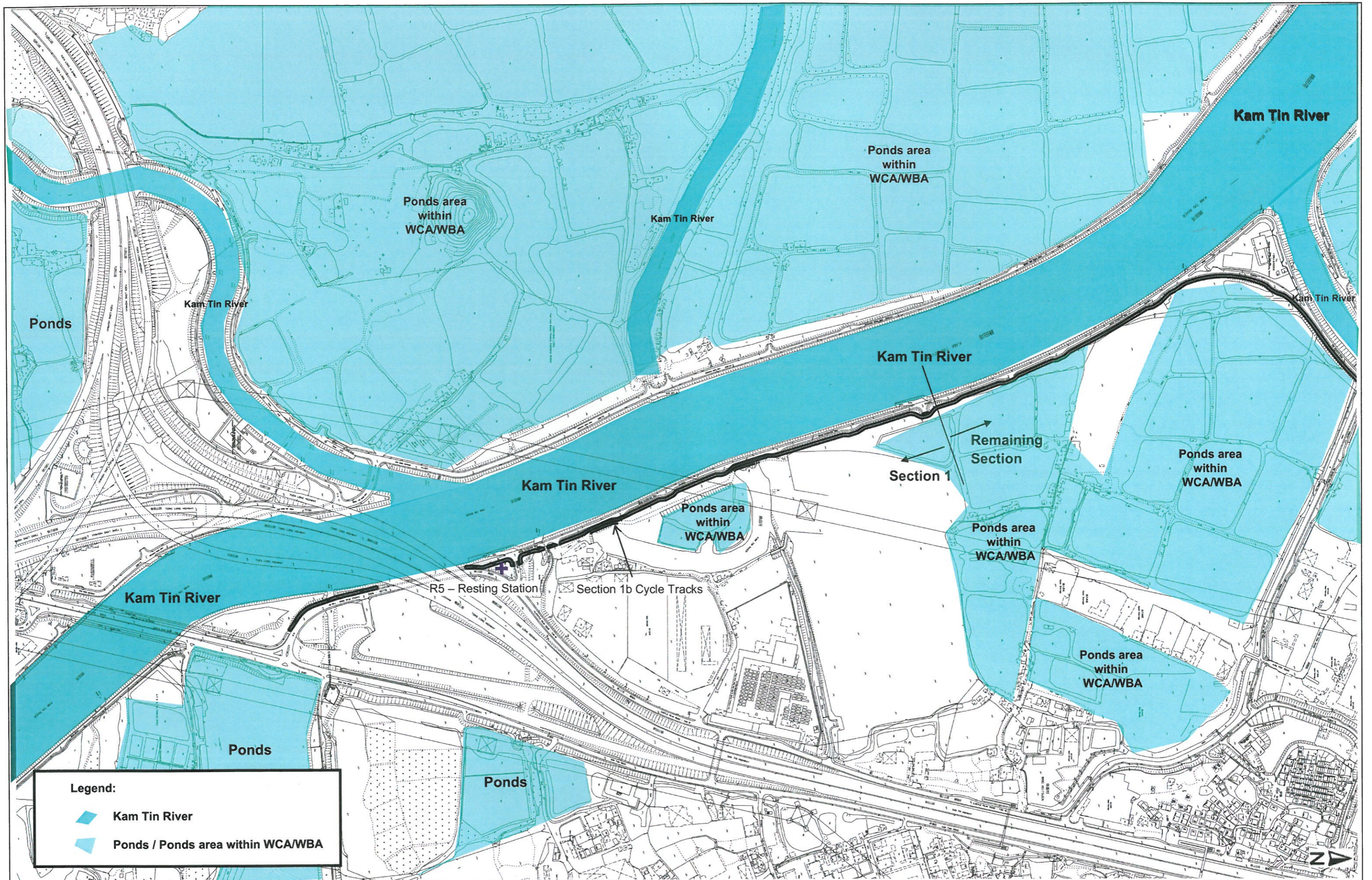


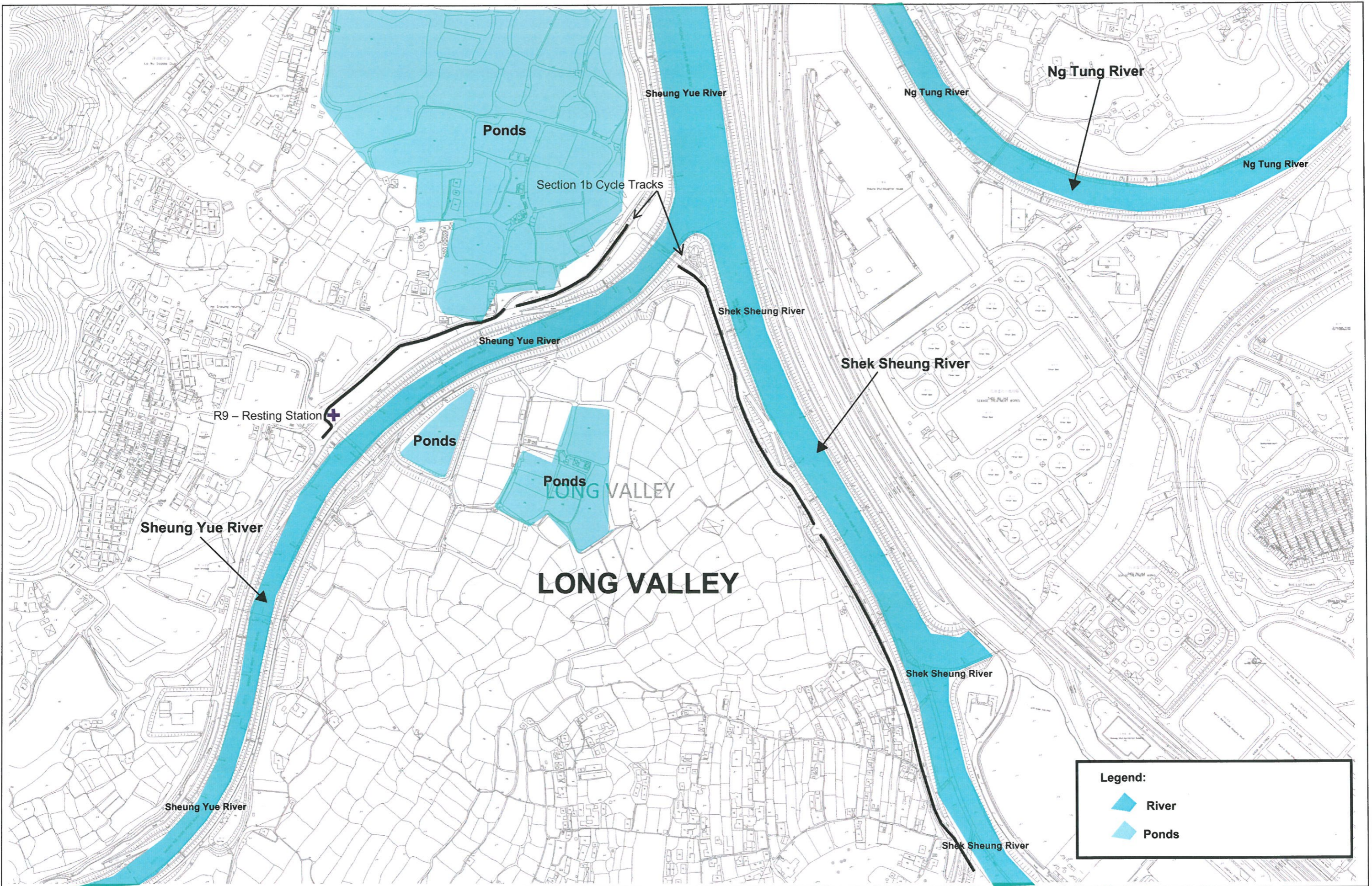
Section 1b Cycle Tracks

R9 – Resting Station

LONG VALLEY

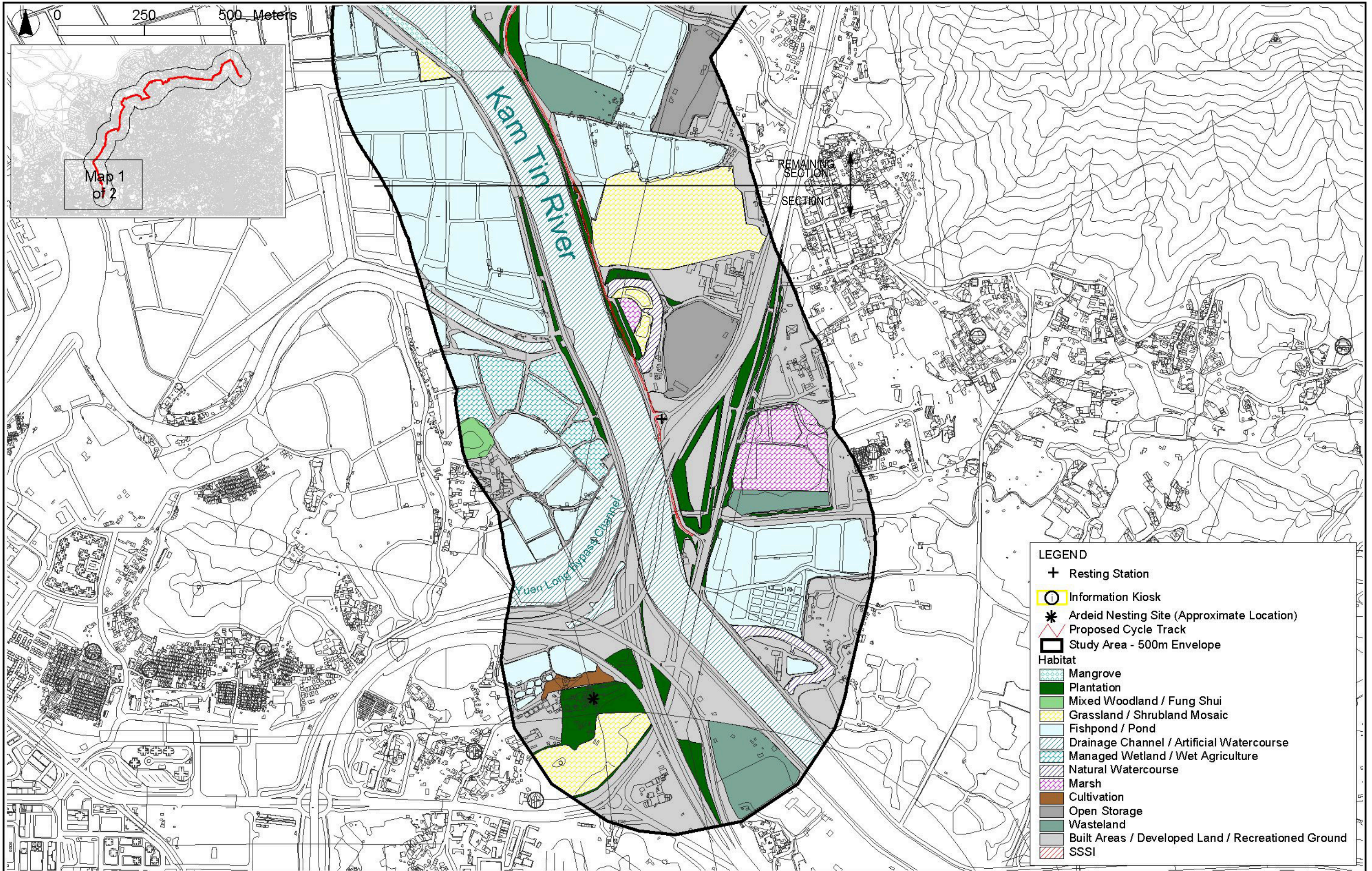
890m from Castle Peak Road – Kwu Tung
900m from Fanling Highway



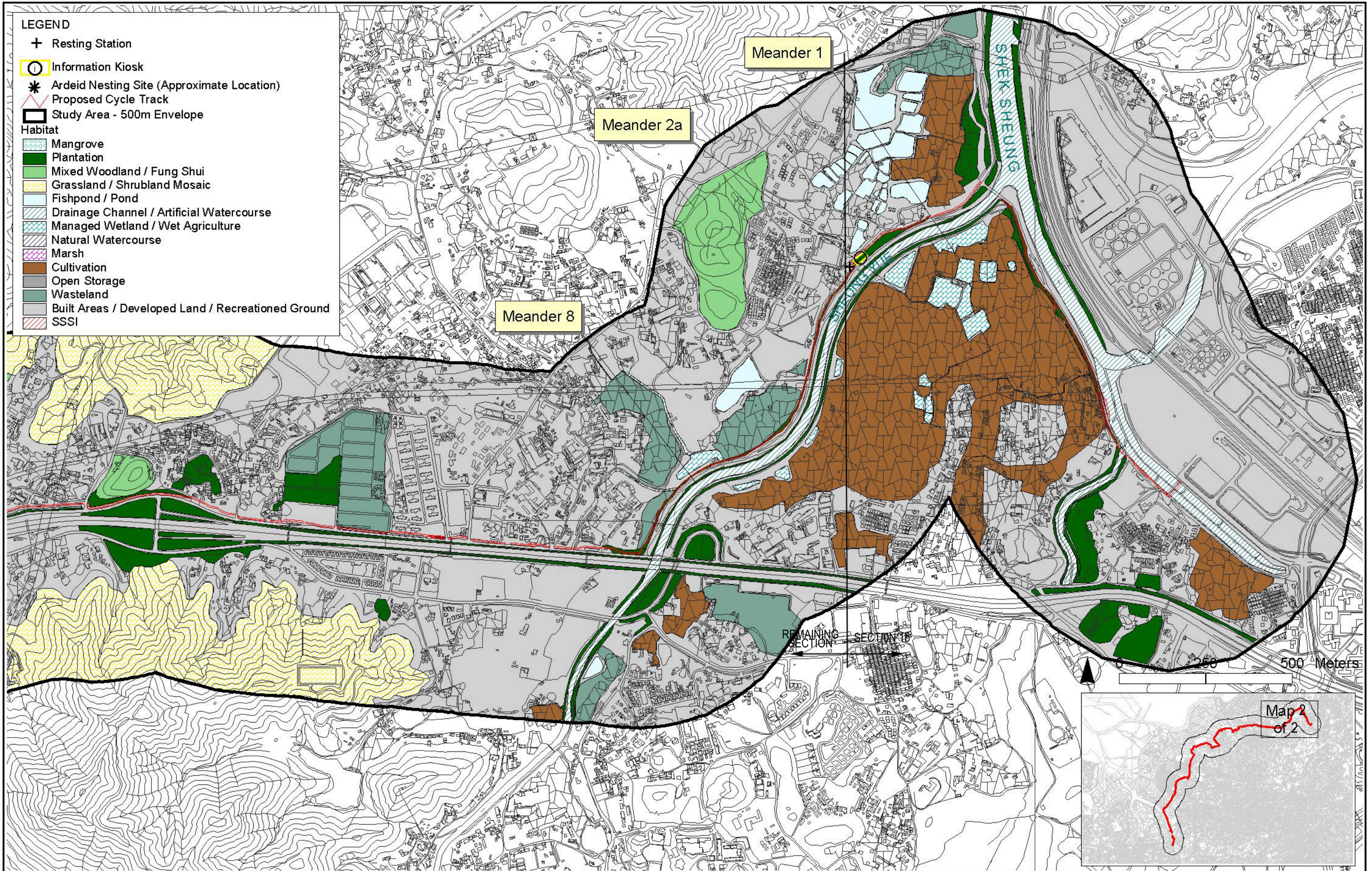


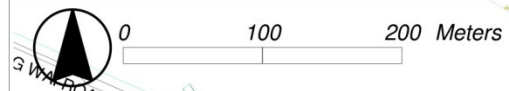
Legend:

- ◆ River
- ◆ Ponds

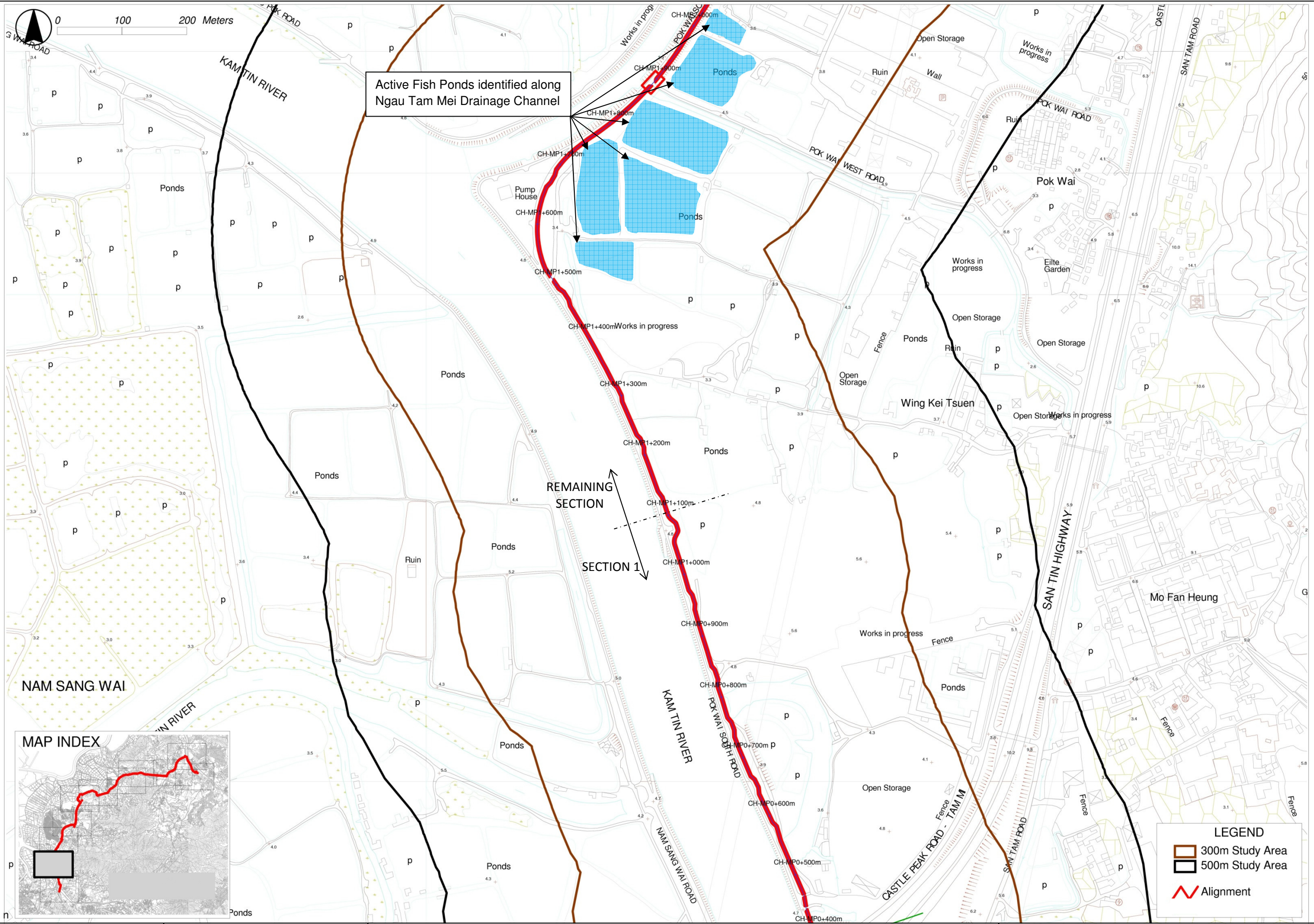


LEGEND	
+	Resting Station
○	Information Kiosk
*	Ardeid Nesting Site (Approximate Location)
—	Proposed Cycle Track
▭	Study Area - 500m Envelope
Habitat	
▨	Mangrove
■	Plantation
■	Mixed Woodland / Fung Shui
▨	Grassland / Shrubland Mosaic
■	Fishpond / Pond
▨	Drainage Channel / Artificial Watercourse
▨	Managed Wetland / Wet Agriculture
▨	Natural Watercourse
▨	Marsh
■	Cultivation
■	Open Storage
■	Wasteland
■	Built Areas / Developed Land / Recreational Ground
▨	SSSI





Active Fish Ponds identified along Ngau Tam Mei Drainage Channel

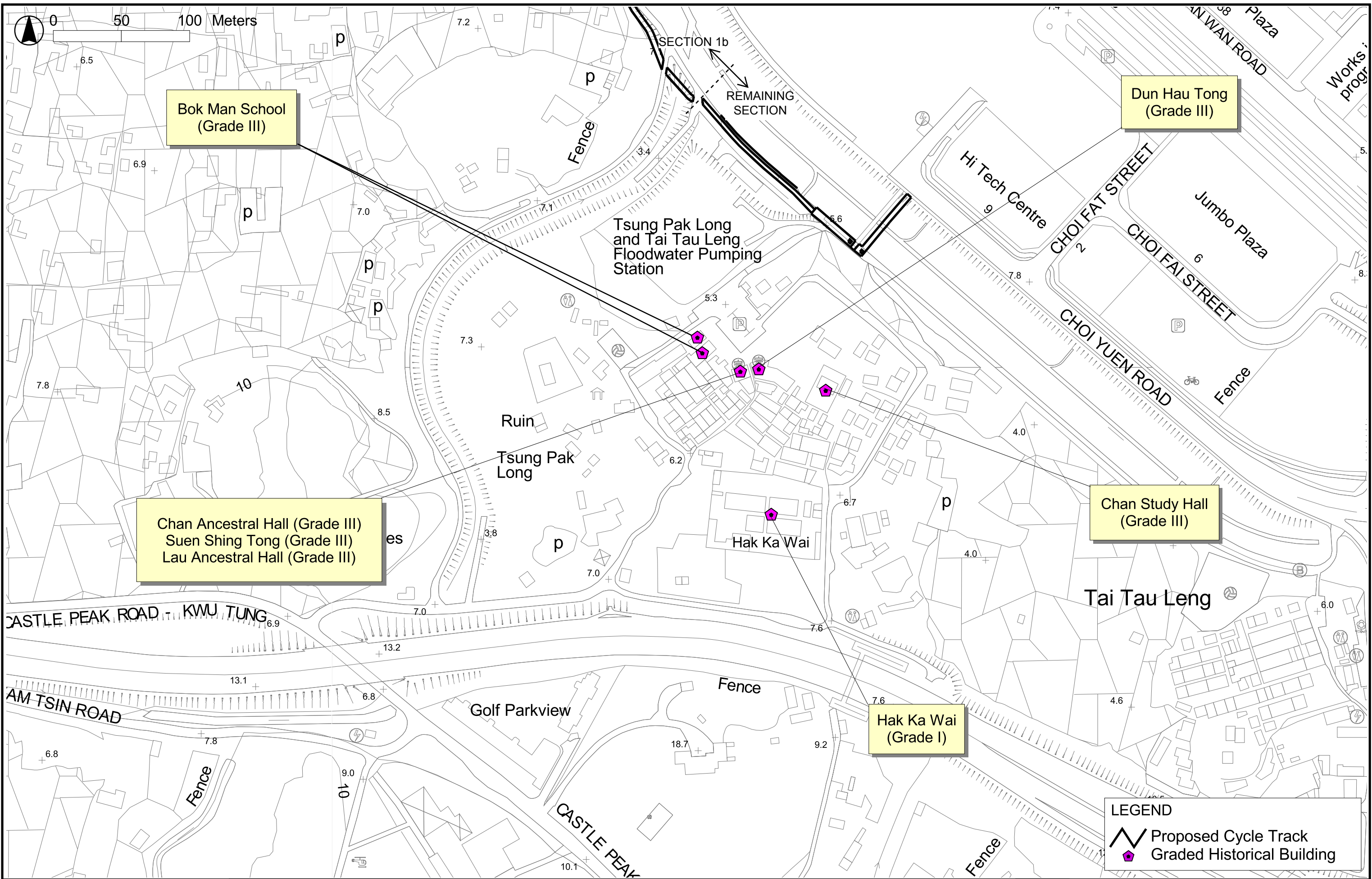


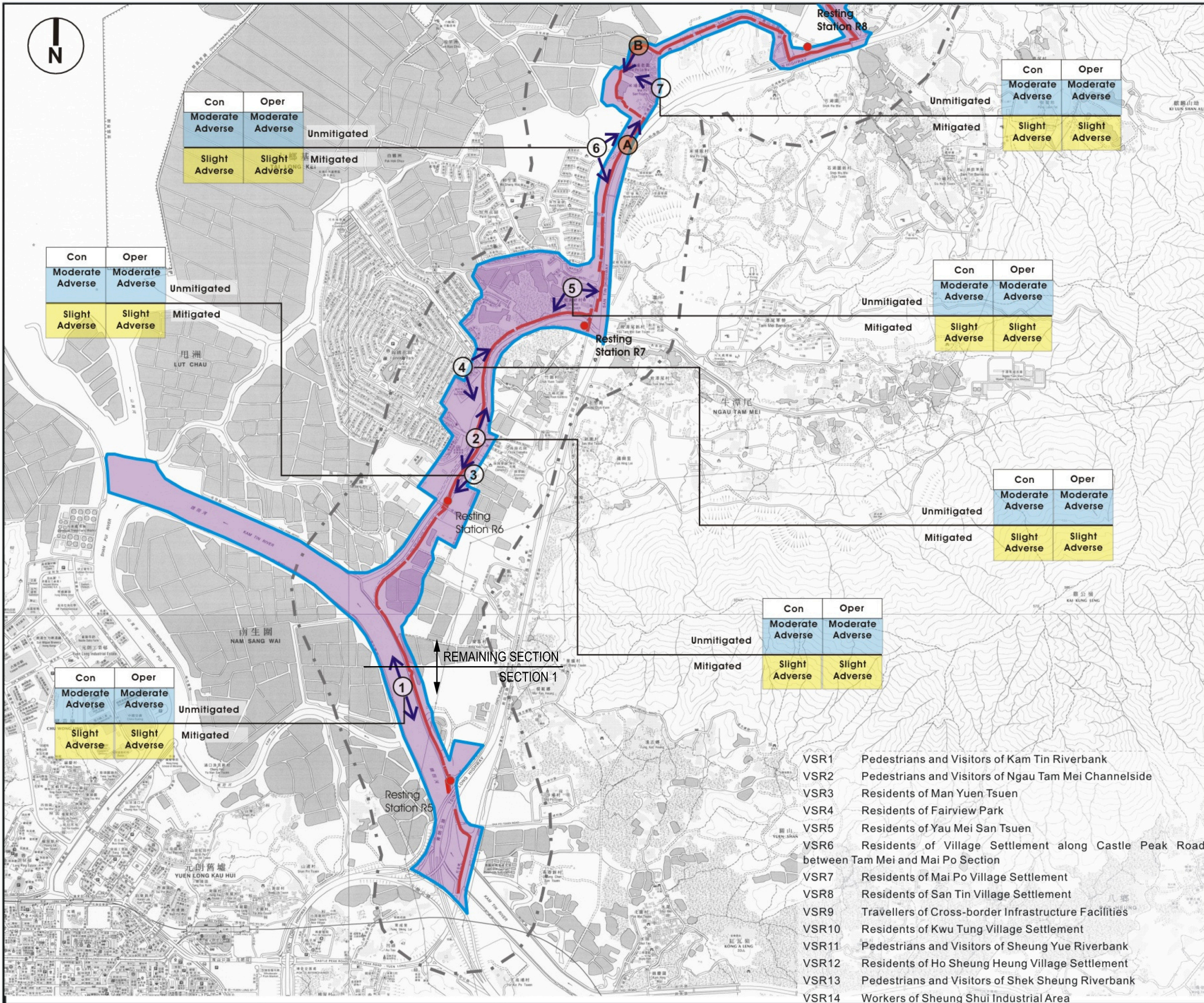
MAP INDEX



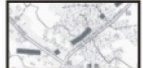




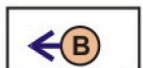
LEGEND

- 300m Study Area
- 500m Study Area
- Alignment



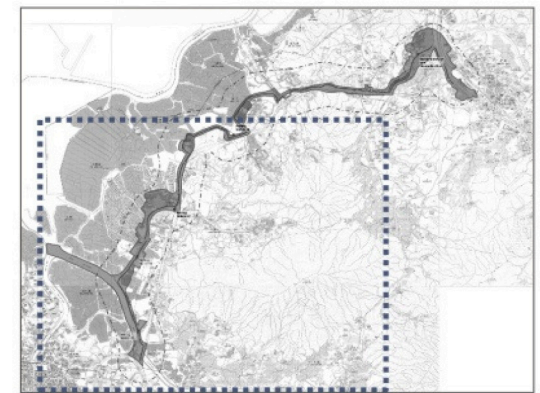


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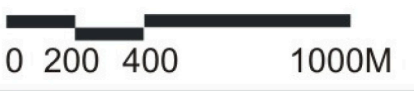
-  Study Area
-  Proposed Cycle Track Alignment
-  Proposed Supporting Facilities
-  Visual Envelop (the areas from which the development can be seen). ZVI from which it is estimated that most of views likely to be partly obscured by intervening highway structures, drainage works, village settlements or vegetation.
-  Visually Sensitive Receiver (VSR) and angle of main views
-  Photomontage Vantage Points

Visual Impacts

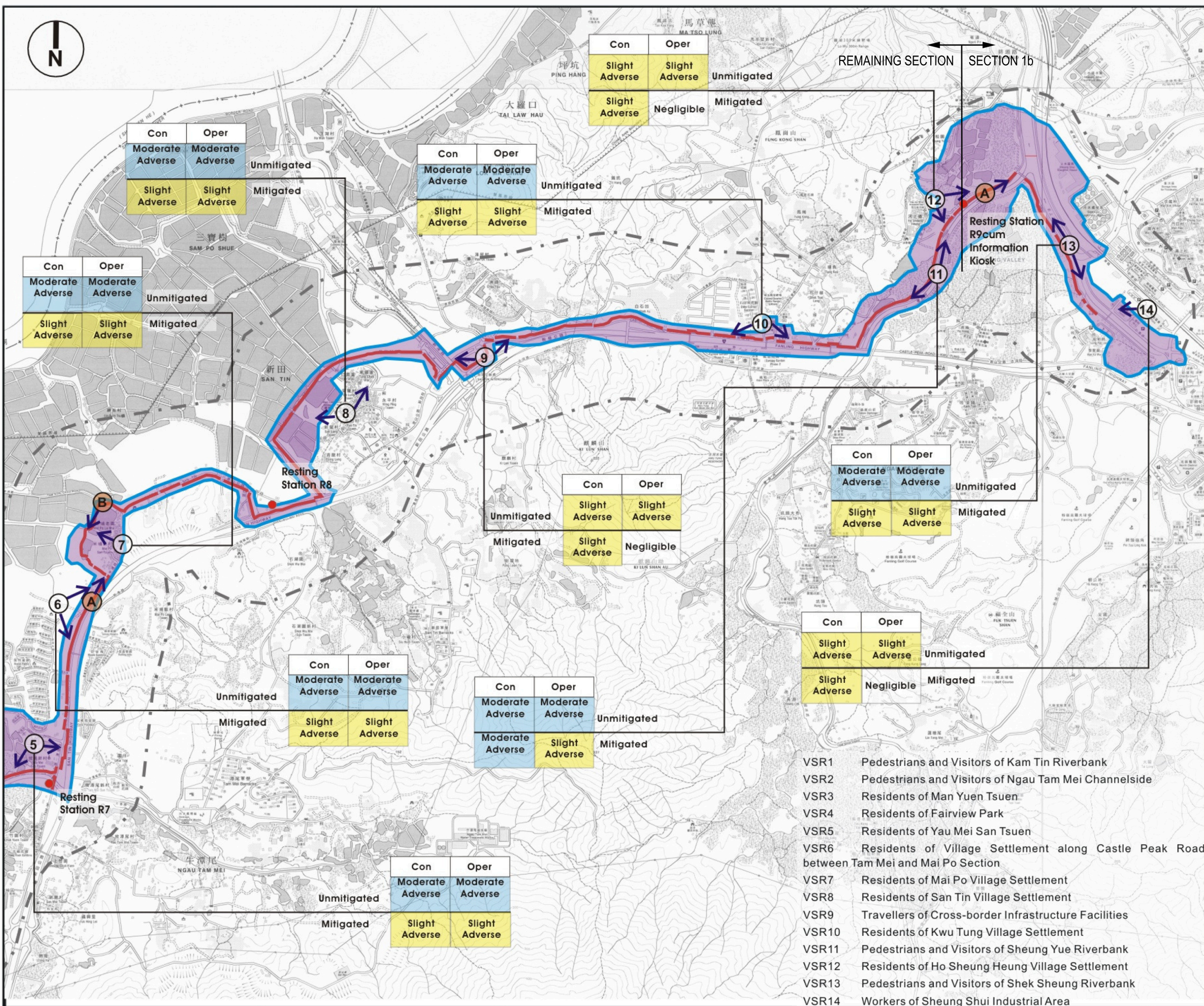
	Construction	Operation
Unmitigated	Slight Adverse	Moderate Adverse
Mitigated	Slight Adverse	Negligible



- Notes
- Zone of Visual Influence refers to Figure 12-7A and 7B.
 - Visual Impact Assessment refers to Table 12-10 in this report.
 - Recommended landscape mitigation measures refers Section 12.10 in the report and Figure 12-9A to 9G.



- VSR1 Pedestrians and Visitors of Kam Tin Riverbank
- VSR2 Pedestrians and Visitors of Ngau Tam Mei Channelside
- VSR3 Residents of Man Yuen Tsuen
- VSR4 Residents of Fairview Park
- VSR5 Residents of Yau Mei San Tsuen
- VSR6 Residents of Village Settlement along Castle Peak Road between Tam Mei and Mai Po Section
- VSR7 Residents of Mai Po Village Settlement
- VSR8 Residents of San Tin Village Settlement
- VSR9 Travellers of Cross-border Infrastructure Facilities
- VSR10 Residents of Kwu Tung Village Settlement
- VSR11 Pedestrians and Visitors of Sheung Yue Riverbank
- VSR12 Residents of Ho Sheung Heung Village Settlement
- VSR13 Pedestrians and Visitors of Shek Sheung Riverbank
- VSR14 Workers of Sheung Shui Industrial Area

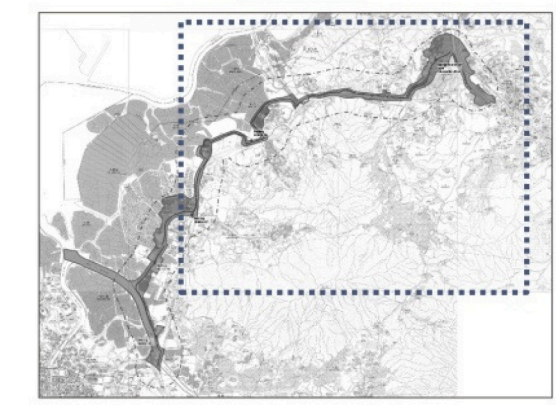


Legend

- Study Area
- Proposed Cycle Track Alignment
- Proposed Supporting Facilities
- Visual Envelop (the areas from which the development can be seen). ZVI from which it is estimated that most of views likely to be partly obscured by intervening highway structures, drainage works, village settlements or vegetation.
- Visually Sensitive Receiver (VSR) and angle of main views
- Photomontage Vantage Points

Visual Impacts

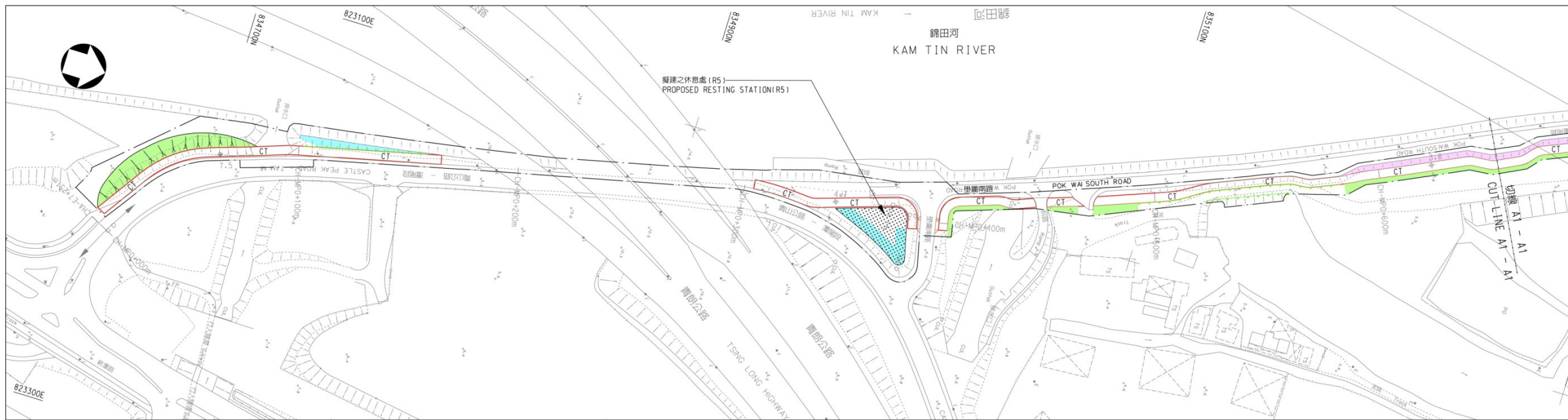
	Construction	Operation
Unmitigated	Slight Adverse	Moderate Adverse
Mitigated	Slight Adverse	Negligible



- VSR1 Pedestrians and Visitors of Kam Tin Riverbank
- VSR2 Pedestrians and Visitors of Ngau Tam Mei Channelside
- VSR3 Residents of Man Yuen Tsuen
- VSR4 Residents of Fairview Park
- VSR5 Residents of Yau Mei San Tsuen
- VSR6 Residents of Village Settlement along Castle Peak Road between Tam Mei and Mai Po Section
- VSR7 Residents of Mai Po Village Settlement
- VSR8 Residents of San Tin Village Settlement
- VSR9 Travellers of Cross-border Infrastructure Facilities
- VSR10 Residents of Kwu Tung Village Settlement
- VSR11 Pedestrians and Visitors of Sheung Yue Riverbank
- VSR12 Residents of Ho Sheung Heung Village Settlement
- VSR13 Pedestrians and Visitors of Shek Sheung Riverbank
- VSR14 Workers of Sheung Shui Industrial Area

- Notes
- Zone of Visual Influence refers to Figure 12-7A and 7B.
 - Visual Impact Assessment refers to Table 12-10 in this report.
 - Recommended landscape mitigation measures refers Section 12.10 in the report and Figure 12-9A to 9G.

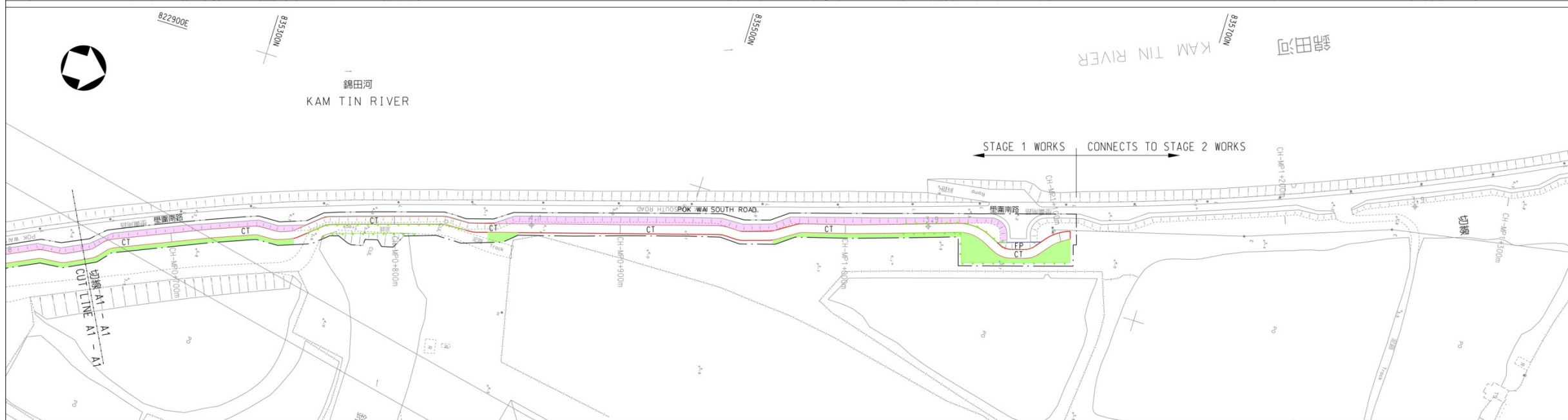




KEY PLAN 位置圖
SCALE 比例 1 : 50000

- 註釋: NOTES:
1. 所有座標均指香港1980方格網並以米為單位。 ALL CO-ORDINATES REFER TO HONG KONG 1980 GRID AND ARE IN METRES.
 2. 除在其他方面指定外, 所有量度距離均以米為單位。 DIMENSIONS AND CHAINAGE ARE IN METRES UNLESS OTHERWISE SHOWN.
 3. 所有地面水平均以香港主水平基準為計算根據, 並以米為單位。 ALL LEVELS REFER TO HONG KONG PRINCIPAL DATUM (P.D.) AND ARE IN METRES.
 4. 標有的地面水平是以約數表示。 ORIGINAL GROUND LEVELS SHOWN ARE APPROXIMATE ONLY.

- 圖例: LEGEND:
- - - LIMIT OF WORKS AREA
 - PROPOSED CYCLE TRACK
 - PROPOSED FOOTPATH
 - PROPOSED RETAINING STRUCTURE
 - PROPOSED FILL SLOPE
 - PROPOSED RESTING STATION
 - PROPOSED LOCATION OF COMPENSATORY PLANTING / TRANSPLANTED TREE AREA
 - EXISTING SHRUB AND HYDROSEEDED AREA WITH EXISTING TREES TO BE RETAINED
 - PROPOSED SHRUB AND HYDROSEEDED AREA



REV. 修訂	DESCRIPTION 內容摘要	BY 編者	CHK. 校核	DATE 日期

工程名稱 project title

工務計劃項目第7259RS號 (部分)
連接新界西北及新界東北之單車徑 -
屯門至上水段
PWP ITEM NO. 7259RS (PART)
CYCLE TRACKS CONNECTING
NORTH WEST NEW TERRITORIES
WITH NORTH EAST NEW TERRITORIES -
SECTION FROM TUEN MUN TO SHEUNG SHUI

圖則名稱 plan title

CONCEPTUAL LANDSCAPE
MASTER PLAN
ALONG CYCLE TRACK

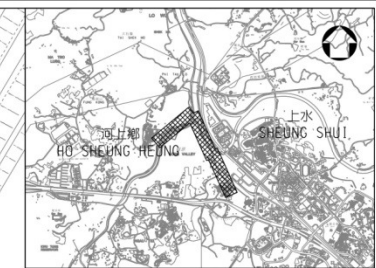
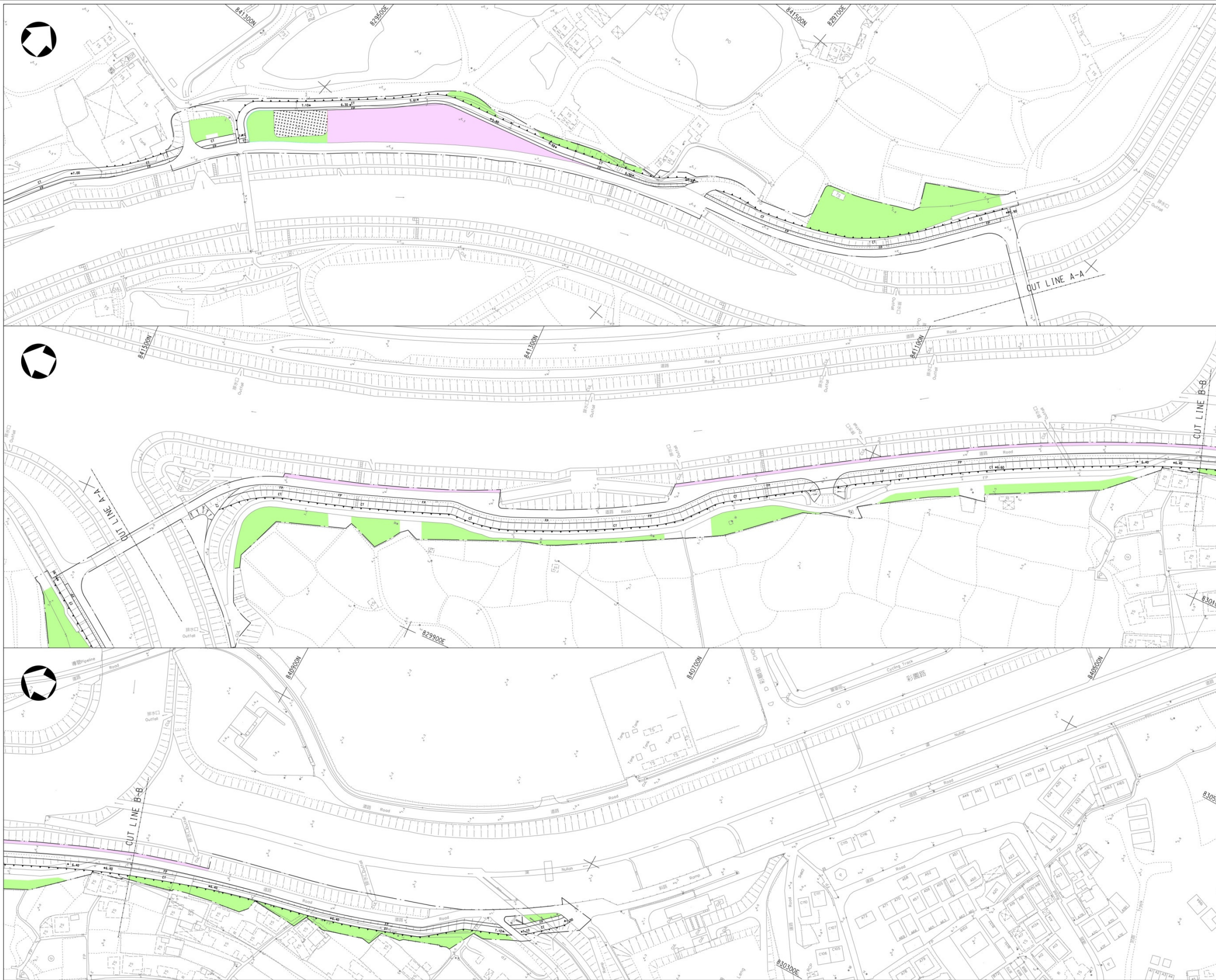
圖則編號 plan no.	比例 scale
SK523	1 : 1000

辦事處 office

新界西及北拓展處
NEW TERRITORIES NORTH & WEST
DEVELOPMENT OFFICE



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KEY PLAN
1 : 50000

- NOTES :
1. DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE.
 2. COORDINATES ARE BASED ON THE HONG KONG METRIC GRID (1980).
 3. LEVELS REFER TO METRE PRINCIPAL DATUM (m.P.D.) UNLESS SHOWN OTHERWISE.
 4. FOR LOCATION OF TREE TREATMENT PLANS, REFER TO KEY PLAN ON DRAWING NO. 06115/TMSS/CT/1700.
 5. FOR GENERAL NOTES, PROPOSED TREE TREATMENT WORKS DETAILS, STANDARD REQUIREMENTS, LANDSCAPE WORKS DETAILS AND INSTALLATION GUIDELINES, SUMMARY OF PLANTING SCHEDULE, REFER TO DRAWING NO. 06115/TMSS/CT/1701.
 6. FOR SUMMARY OF EXISTING TREE INFORMATION AND TREATMENT SCHEDULE IN EACH REGION (EXCEPT IN HUBS AREA), REFER TO DRAWING NOS. 06115/TMSS/CT/1711 TO 1716.

- LEGEND :
- SITE BOUNDARY
 - EXISTING SHRUBS AND HYDROSEEDING / BAMBOO AREA TO BE RETAINED
 - PROPOSED RESTING STATION R9
 - PROPOSED LOCATION OF COMPENSATORY PLANTING / TRANSPLANTED TREE
 - PROPOSED RETAINING STRUCTURE

Rev.	Date	Description	Drawn	Checked

土木工程拓展署
CEDD Civil Engineering and
Development Department

CONTRACT NO. YL/2013/01
CYCLE TRACKS FROM TUEN MUN
TO SHEUNG SHUI - STAGE 1

CONCEPTUAL LANDSCAPE
MASTER PLAN
ALONG CYCLE TRACK

Drawing No.	SK525
Designed	GT
Drawn	HAX
Checked	DCSC
Scale	1:500 (A1)
Approved	TSN
Date	04/13
Status	



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Appendix 4-1

Construction Noise Impact Assessment

Unmitigated Construction Noise Impact on Village House near Kam Tin River A/NSR02a (Works type 1 associated with new cycle tracks, retaining wall/ bridge/ subway)												
Noise Criterion, Leq (30 min) = 75 dB(A)												
Construction Noise Impact on A/NSR12 (Works Type 1 associated with new cycle tracks, fill slopes, retaining wall, or structures)												
PME	TM or other reference	No. of PME	SWL, dB(A)	Total SWL, dB(A)	Slant dist. From NSR, m	Dist. Corr., dB(A)	% on time	% on time Corr., dB(A)	Screening Corr., dB(A)	Façade Corr., dB(A)	CNL, dB(A)	
Stage 1 - Site Clearance												
Excavator/ loader, wheeled/ tracked	CNP 081	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65	
Crane, mobile/ barge mounted (diesel)	CNP 048	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65	
Dump truck	CNP 067	1	117	117	130.0	-50.3	50%	-3.0	0.0	3.0	67	
Saw, circular, wood	CNP 201	1	108	108	130.0	-50.3	100%	0.0	0.0	3.0	61	
Total CNL, dB(A)											71	
Stage 2 - Levelling/ Excavation works												
Air compressor, air flow > 10m3/min and <=	CNP 002	1	102	102	130.0	-50.3	100%	0.0	0.0	3.0	55	
Breaker, hand-held, mass > 10kg and < 20kg	CNP 024	2	108	111	130.0	-50.3	100%	0.0	0.0	3.0	64	
Dump truck	CNP 067	1	117	117	130.0	-50.3	50%	-3.0	0.0	3.0	67	
Excavator/ loader, wheeled/ tracked	CNP 081	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65	
Total CNL, dB(A)											70	
Stage 3 - Construction/ Paving works												
Group 1 - slope works/ retaining wall												
Bar bender and cutter (electric)	CNP 021	1	90	90	130.0	-50.3	100%	0.0	0.0	3.0	43	
Vibrating Hammer	[Note 1]	1	115	115	130.0	-50.3	100%	0.0	0.0	3.0	68	
Generator, silenced, 75 dB(A) at 7 m	CNP 102	1	100	100	130.0	-50.3	100%	0.0	0.0	3.0	53	
Concrete lorry mixer	CNP 044	1	109	109	130.0	-50.3	100%	0.0	0.0	3.0	62	
Lorry	CNP 141	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65	
Poker, vibratory, hand-held	CNP 170	1	113	113	130.0	-50.3	100%	0.0	0.0	3.0	66	
Excavator/ loader, wheeled/ tracked	CNP 081	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65	
Crane, mobile/ barge mounted (diesel)	CNP 048	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65	
Total CNL, dB(A)											73	
Group 2 - paving works												
Asphalt paver	CNP 004	1	109	109	130.0	-50.3	100%	0.0	0.0	3.0	62	
Excavator/ loader, wheeled/ tracked	CNP 081	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65	
Air compressor, air flow > 10m3/min and <=	CNP 002	1	102	102	130.0	-50.3	100%	0.0	0.0	3.0	55	
Compactor, vibratory	CNP 050	1	105	105	130.0	-50.3	50%	-3.0	0.0	3.0	55	
Lorry	CNP 141	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65	
Road roller	CNP 185	1	108	108	130.0	-50.3	100%	0.0	0.0	3.0	61	
Total CNL, dB(A)											70	
Group 3 - foundation for bridges												
Piling, earth auger, auger	CNP 167	1	114	114	130.0	-50.3	100%	0.0	0.0	3.0	67	
Air compressor, air flow > 10m3/min and <=	CNP 002	2	102	105	130.0	-50.3	100%	0.0	0.0	3.0	58	
Crane, mobile/ barge mounted (diesel)	CNP 048	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65	
Grout Mixer	[Note 1]	1	90	90	130.0	-50.3	100%	0.0	0.0	3.0	43	
Grout Pump	[Note 1]	1	105	105	130.0	-50.3	100%	0.0	0.0	3.0	58	
Generator, silenced, 75 dB(A) at 7 m	CNP 102	1	100	100	130.0	-50.3	100%	0.0	0.0	3.0	53	
Total CNL, dB(A)											70	
Group 4 - structures/subways/bridges												
Excavator/ loader, wheeled/ tracked	CNP 081	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65	
Bar bender and cutter (electric)	CNP 021	1	90	90	130.0	-50.3	100%	0.0	0.0	3.0	43	
Concrete lorry mixer	CNP 044	1	109	109	130.0	-50.3	100%	0.0	0.0	3.0	62	
Compactor, vibratory	CNP 050	1	105	105	130.0	-50.3	50%	-3.0	0.0	3.0	55	
Generator, silenced, 75 dB(A) at 7 m	CNP 102	1	100	100	130.0	-50.3	100%	0.0	0.0	3.0	53	
Poker, vibratory, hand-held	CNP 170	1	113	113	130.0	-50.3	100%	0.0	0.0	3.0	66	
Lorry	CNP 141	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65	
Crane, mobile/ barge mounted (diesel)	CNP 048	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65	
Total CNL, dB(A)											72	

Max. = 73

[Note 1] – Details extracted from EPD website: http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf

NB Group 1 - 4 works will not be conducted simultaneously. Work stages will not overlap.

Unmitigated Construction Noise Impact on Village House near Kam Tin River A/NSR02a (Works Type 2 involving Resting Stations/ Information Kiosk)											
Noise Criterion, Leq (30 min) = 75 dB(A)											
PME	TM or other reference	No. of PME	SWL, dB(A)	Total SWL, dB(A)	Slant dist. From NSR, m	Dist. Corr., dB(A)	% on time	% on time Corr., dB(A)	Screening Corr., dB(A)	Façade Corr., dB(A)	CNL, dB(A)
Stage 1 - Site Clearance											
Excavator/ loader, wheeled/ tracked	CNP 081	1	112	112	140.0	-50.9	100%	0.0	0.0	3.0	64
Crane, mobile/ barge mounted (diesel)	CNP 048	1	112	112	140.0	-50.9	100%	0.0	0.0	3.0	64
Dump truck	CNP 067	1	117	117	140.0	-50.9	50%	-3.0	0.0	3.0	66
Saw, circular, wood	CNP 201	1	108	108	140.0	-50.9	100%	0.0	0.0	3.0	60
Total CNL, dB(A)											70
Stage 2 - Levelling/ Excavation works											
Air compressor, air flow > 10m ³ /min and <=	CNP 002	1	102	102	140.0	-50.9	100%	0.0	0.0	3.0	54
Breaker, hand-held, mass > 10kg and < 20kg	CNP 024	2	108	111	140.0	-50.9	100%	0.0	0.0	3.0	63
Dump truck	CNP 067	1	117	117	140.0	-50.9	50%	-3.0	0.0	3.0	66
Excavator/ loader, wheeled/ tracked	CNP 081	1	112	112	140.0	-50.9	100%	0.0	0.0	3.0	64
Total CNL, dB(A)											69
Stage 3 - Construction/ Paving works											
Group 1 - slope works/ retaining wall											
Bar bender and cutter (electric)	CNP 021	1	90	90	140.0	-50.9	100%	0.0	0.0	3.0	42
Vibrating Hammer	Note 1]	1	115	115	140.0	-50.9	100%	0.0	0.0	3.0	67
Generator, silenced, 75 dB(A) at 7 m	CNP 102	1	100	100	140.0	-50.9	100%	0.0	0.0	3.0	52
Concrete lorry mixer	CNP 044	1	109	109	140.0	-50.9	100%	0.0	0.0	3.0	61
Lorry	CNP 141	1	112	112	140.0	-50.9	100%	0.0	0.0	3.0	64
Poker, vibratory, hand-held	CNP 170	1	113	113	140.0	-50.9	100%	0.0	0.0	3.0	65
Excavator/ loader, wheeled/ tracked	CNP 081	1	112	112	140.0	-50.9	100%	0.0	0.0	3.0	64
Crane, mobile/ barge mounted (diesel)	CNP 048	1	112	112	140.0	-50.9	100%	0.0	0.0	3.0	64
Total CNL, dB(A)											72
Group 2 - paving works											
Asphalt paver	CNP 004	1	109	109	140.0	-50.9	100%	0.0	0.0	3.0	61
Excavator/ loader, wheeled/ tracked	CNP 081	1	112	112	140.0	-50.9	100%	0.0	0.0	3.0	64
Air compressor, air flow > 10m ³ /min and <=	CNP 002	1	102	102	140.0	-50.9	100%	0.0	0.0	3.0	54
Compactor, vibratory	CNP 050	1	105	105	140.0	-50.9	50%	-3.0	0.0	3.0	54
Lorry	CNP 141	1	112	112	140.0	-50.9	100%	0.0	0.0	3.0	64
Road roller	CNP 185	1	108	108	140.0	-50.9	100%	0.0	0.0	3.0	60
Total CNL, dB(A)											69
Group 3 - structures											
Excavator/ loader, wheeled/ tracked	CNP 081	1	112	112	140.0	-50.9	100%	0.0	0.0	3.0	64
Bar bender and cutter (electric)	CNP 021	1	90	90	140.0	-50.9	100%	0.0	0.0	3.0	42
Concrete lorry mixer	CNP 044	1	109	109	140.0	-50.9	100%	0.0	0.0	3.0	61
Compactor, vibratory	CNP 050	1	105	105	140.0	-50.9	50%	-3.0	0.0	3.0	54
Generator, silenced, 75 dB(A) at 7 m	CNP 102	1	100	100	140.0	-50.9	100%	0.0	0.0	3.0	52
Poker, vibratory, hand-held	CNP 170	1	113	113	140.0	-50.9	100%	0.0	0.0	3.0	65
Lorry	CNP 141	1	112	112	140.0	-50.9	100%	0.0	0.0	3.0	64
Crane, mobile/ barge mounted (diesel)	CNP 048	1	112	112	140.0	-50.9	100%	0.0	0.0	3.0	64
Total CNL, dB(A)											71
Group 4 - fitting works											
Crane, mobile/ barge mounted (diesel)	CNP 048	1	112	112	140.0	-50.9	100%	0.0	0.0	3.0	64
Drill/grinder, hand-held (electric)	CNP 065	3	98	103	140.0	-50.9	100%	0.0	0.0	3.0	55
Saw, circular, wood	CNP 201	1	108	108	140.0	-50.9	100%	0.0	0.0	3.0	60
Generator, silenced, 75 dB(A) at 7 m	CNP 102	1	100	100	140.0	-50.9	100%	0.0	0.0	3.0	52
Lorry	CNP 141	1	112	112	140.0	-50.9	100%	0.0	0.0	3.0	64
Total CNL, dB(A)											68

Max. = 72

[Note 1] – Details extracted from EPD website: http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf

NB Group 1 - 4 works will not be conducted simultaneously. Work stages will not overlap.

Mitigated Construction Noise Impact on Village House near Kam Tin River											
A/NSR02a (Works Type 1 associated with new cycle tracks, retaining wall/ bridge/ subway)											
Noise Criterion, Leq (30 min) = 75 dB(A)											
Construction Noise Impact on A/NSR12 (Works Type 1 associated with new cycle tracks, fill slopes, retaining wall, or structures)											
PME	TM or other reference	No. of PME	SWL, dB(A)	Total SWL, dB(A)	Slant dist. From NSR, m	Dist. Corr., dB(A)	% on time	% on time Corr., dB(A)	Screening Corr., dB(A)	Façade Corr., dB(A)	CNL, dB(A)
Stage 1 - Site Clearance											
Excavator/ loader, wheeled/ tracked	CNP 081	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65
Crane, mobile/ barge mounted (diesel)	CNP 048	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65
Dump truck	CNP 067	1	117	117	130.0	-50.3	50%	-3.0	0.0	3.0	67
Saw, circular, wood	CNP 201	1	108	108	130.0	-50.3	100%	0.0	0.0	3.0	61
Total CNL, dB(A)											71
Stage 2 - Levelling/ Excavation works											
Air compressor, air flow > 10m3/min and <=	CNP 002	1	102	102	130.0	-50.3	100%	0.0	0.0	3.0	55
Breaker, hand-held, mass > 10kg and < 20kg	CNP 024	2	108	111	130.0	-50.3	100%	0.0	0.0	3.0	64
Dump truck	CNP 067	1	117	117	130.0	-50.3	50%	-3.0	0.0	3.0	67
Excavator/ loader, wheeled/ tracked	CNP 081	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65
Total CNL, dB(A)											70
Stage 3 - Construction/ Paving works											
Group 1 - slope works/ retaining wall											
Bar bender and cutter (electric)	CNP 021	1	90	90	130.0	-50.3	100%	0.0	0.0	3.0	43
Crane mounted auger	BS5228 Table C.4/37	1	111	111	130.0	-50.3	100%	0.0	0.0	3.0	64
Generator, silenced, 75 dB(A) at 7 m	CNP 102	1	100	100	130.0	-50.3	100%	0.0	0.0	3.0	53
Concrete lorry mixer	CNP 044	1	109	109	130.0	-50.3	100%	0.0	0.0	3.0	62
Lorry	CNP 141	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65
Poker, vibratory, hand-held	CNP 170	1	113	113	130.0	-50.3	100%	0.0	0.0	3.0	66
Mini excavator	[Note 1]	1	94	94	130.0	-50.3	100%	0.0	0.0	3.0	47
Mobile crane	BS5228 Table C.7/118	1	99	99	130.0	-50.3	100%	0.0	0.0	3.0	52
Total CNL, dB(A)											71
Group 2 - paving works											
Asphalt paver	CNP 004	1	109	109	130.0	-50.3	100%	0.0	0.0	3.0	62
Excavator/ loader, wheeled/ tracked	CNP 081	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65
Air compressor, air flow > 10m3/min and <=	CNP 002	1	102	102	130.0	-50.3	100%	0.0	0.0	3.0	55
Compactor, vibratory	CNP 050	1	105	105	130.0	-50.3	50%	-3.0	0.0	3.0	55
Lorry	CNP 141	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65
Road roller	CNP 185	1	108	108	130.0	-50.3	100%	0.0	0.0	3.0	61
Total CNL, dB(A)											70
Group 3 - foundation for bridges											
Piling, earth auger, auger	CNP 167	1	114	114	130.0	-50.3	100%	0.0	0.0	3.0	67
Air compressor, air flow > 10m3/min and <=	CNP 002	2	102	105	130.0	-50.3	100%	0.0	0.0	3.0	58
Crane, mobile/ barge mounted (diesel)	CNP 048	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65
Grout Mixer	[Note 1]	1	90	90	130.0	-50.3	100%	0.0	0.0	3.0	43
Grout Pump	[Note 1]	1	105	105	130.0	-50.3	100%	0.0	0.0	3.0	58
Generator, silenced, 75 dB(A) at 7 m	CNP 102	1	100	100	130.0	-50.3	100%	0.0	0.0	3.0	53
Total CNL, dB(A)											70
Group 4 - structures/subways/bridges											
Mini excavator	[Note 1]	1	94	94	130.0	-50.3	100%	0.0	0.0	3.0	47
Bar bender and cutter (electric)	CNP 021	1	90	90	130.0	-50.3	100%	0.0	0.0	3.0	43
Concrete lorry mixer	CNP 044	1	109	109	130.0	-50.3	100%	0.0	0.0	3.0	62
Compactor, vibratory	CNP 050	1	105	105	130.0	-50.3	50%	-3.0	0.0	3.0	55
Generator, silenced, 75 dB(A) at 7 m	CNP 102	1	100	100	130.0	-50.3	100%	0.0	0.0	3.0	53
Poker, vibratory, hand-held	CNP 170	1	113	113	130.0	-50.3	100%	0.0	0.0	3.0	66
Lorry	CNP 141	1	112	112	130.0	-50.3	100%	0.0	0.0	3.0	65
Mobile crane	BS5228 Table C.7/118	1	99	99	130.0	-50.3	100%	0.0	0.0	3.0	52
Total CNL, dB(A)											70

Max. = 71

[Note 1] – Details extracted from EPD website: http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf

NB Group 1 - 4 works will not be conducted simultaneously. Work stages will not overlap.

Mitigated Construction Noise Impact on Village House near Kam Tin River											
A/NSR02a (Works Type 2 involving Resting Stations/ Information Kiosk)											
Noise Criterion, Leq (30 min) = 75 dB(A)											
PME	TM or other reference	No. of PME	SWL, dB(A)	Total SWL, dB(A)	Slant dist. From NSR, m	Dist. Corr., dB(A)	% on time	% on time Corr., dB(A)	Screening Corr., dB(A)	Façade Corr., dB(A)	CNL, dB(A)
Stage 1 - Site Clearance											
Mini excavator	[Note 1]	1	94	94	130.0	-50.3	100%	0.0	0.0	3.0	47
Mobile crane	BS5228 Table C.7/118	1	99	99	130.0	-50.3	100%	0.0	0.0	3.0	52
Dump truck	BS5228 Table C.9/39	1	103	103	130.0	-50.3	50%	-3.0	0.0	3.0	53
Saw, circular, wood	CNP 201	1	108	108	130.0	-50.3	100%	0.0	0.0	3.0	61
Total CNL, dB(A)											62
Stage 2 - Levelling/ Excavation works											
Air compressor, air flow > 10m ³ /min and <=	CNP 002	1	102	102	130.0	-50.3	100%	0.0	0.0	3.0	55
Breaker, hand-held, mass > 10kg and < 20kg	CNP 024	2	108	111	130.0	-50.3	100%	0.0	0.0	3.0	64
Dump truck	BS5228 Table C.9/39	1	103	103	130.0	-50.3	50%	-3.0	0.0	3.0	53
Mini excavator	[Note 1]	1	94	94	130.0	-50.3	100%	0.0	0.0	3.0	47
Total CNL, dB(A)											65
Stage 3 - Construction/ Paving works											
Group 1 - slope works/ retaining wall											
Bar bender and cutter (electric)	CNP 021	1	90	90	130.0	-50.3	100%	0.0	0.0	3.0	43
Crane mounted auger	BS5228 Table C.4/37	1	111	111	130.0	-50.3	100%	0.0	0.0	3.0	64
Generator, silenced, 75 dB(A) at 7 m	CNP 102	1	100	100	130.0	-50.3	100%	0.0	0.0	3.0	53
Concrete lorry mixer (6m ³)	BS5228 Table C.6/23	1	100	100	130.0	-50.3	100%	0.0	0.0	3.0	53
Lorry	BS5228 Table C.8/25	1	101	101	130.0	-50.3	100%	0.0	0.0	3.0	54
Poker, vibratory, hand-held	BS5228 Table C.6/40	1	98	98	130.0	-50.3	100%	0.0	0.0	3.0	51
Mini excavator	[Note 1]	1	94	94	130.0	-50.3	100%	0.0	0.0	3.0	47
Mobile crane	BS5228 Table C.7/118	1	99	99	130.0	-50.3	100%	0.0	0.0	3.0	52
Total CNL, dB(A)											65
Group 2 - paving works											
Asphalt paver	CNP 004	1	109	109	130.0	-50.3	100%	0.0	0.0	3.0	62
Mini excavator	[Note 1]	1	94	94	130.0	-50.3	100%	0.0	0.0	3.0	47
Air compressor, air flow > 10m ³ /min and <=	CNP 002	1	102	102	130.0	-50.3	100%	0.0	0.0	3.0	55
Compactor, vibratory	CNP 050	1	105	105	130.0	-50.3	50%	-3.0	0.0	3.0	55
Lorry	BS5228 Table C.8/25	1	101	101	130.0	-50.3	100%	0.0	0.0	3.0	54
Road roller	CNP 185	1	108	108	130.0	-50.3	100%	0.0	0.0	3.0	61
Total CNL, dB(A)											66
Group 3 - structures											
Mini excavator	[Note 1]	1	94	94	130.0	-50.3	100%	0.0	0.0	3.0	47
Bar bender and cutter (electric)	CNP 021	1	90	90	130.0	-50.3	100%	0.0	0.0	3.0	43
Concrete lorry mixer	CNP 044	1	109	109	130.0	-50.3	100%	0.0	0.0	3.0	62
Compactor, vibratory	CNP 050	1	105	105	130.0	-50.3	50%	-3.0	0.0	3.0	55
Generator, silenced, 75 dB(A) at 7 m	CNP 102	1	100	100	130.0	-50.3	100%	0.0	0.0	3.0	53
Poker, vibratory, hand-held	BS5228 Table C.6/40	1	98	98	130.0	-50.3	100%	0.0	0.0	3.0	51
Lorry	BS5228 Table C.8/25	1	101	101	130.0	-50.3	100%	0.0	0.0	3.0	54
Mobile crane	BS5228 Table C.7/118	1	99	99	130.0	-50.3	100%	0.0	0.0	3.0	52
Total CNL, dB(A)											64
Group 4 - fitting works											
Mobile crane	BS5228 Table C.7/118	1	99	99	130.0	-50.3	100%	0.0	0.0	3.0	52
Drill/grinder, hand-held (electric)	CNP 065	3	98	103	130.0	-50.3	100%	0.0	0.0	3.0	56
Saw, circular, wood	CNP 201	1	108	108	130.0	-50.3	100%	0.0	0.0	3.0	61
Generator, silenced, 75 dB(A) at 7 m	CNP 102	1	100	100	130.0	-50.3	100%	0.0	0.0	3.0	53
Lorry	BS5228 Table C.8/25	1	101	101	130.0	-50.3	100%	0.0	0.0	3.0	54
Total CNL, dB(A)											64

Max. = 66

[Note 1] – Details extracted from EPD website: http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf

NB Group 1 - 4 works will not be conducted simultaneously. Work stages will not overlap.

Construction of Cycle Tracks and the Associated Supporting Facilities
From Sha Po Tsuen to Shek Sheung River

NSR Label	Descriptions	Worst Case Noise Impact (Works Type 1), dB(A)	Worst Case Noise Impact (Works Type 2), dB(A)	Unmitigated Cumulative Worst Case Noise Impact (Works Type 1 + Works Type 2), dB(A)	Noise Criteria, dB(A)	Unmitigated Worst Case Noise Impact, dB(A)						Unmitigated Worst Case Noise Impact, dB(A)					
						Works Type 1						Works Type 2					
						[1]	[2]	[3-1]	[3-2]	[1-3-3]	[1-3-4]	[1]	[2]	[3-1]	[3-2]	[2-3-3]	[2-3-4]
A/NSR 02a	Village House near Kam Tin	73	72	76	75	71	70	73	70	70	72	70	69	72	69	71	68

NSR Label	Descriptions	Worst Case Noise Impact (Works Type 1), dB(A)	Worst Case Noise Impact (Works Type 2), dB(A)	Unmitigated Cumulative Worst Case Noise Impact (Works Type 1 + Works Type 2), dB(A)	Noise Criteria, dB(A)	Mitigated Worst Case Noise Impact, dB(A)						Mitigated Worst Case Noise Impact, dB(A)					
						Works Type 1						Works Type 2					
						[1]	[2]	[3-1]	[3-2]	[1-3-3]	[1-3-4]	[1]	[2]	[3-1]	[3-2]	[2-3-3]	[2-3-4]
A/NSR 02a	Village House near Kam Tin	71	66	72	75	71	70	71	70	70	70	62	65	65	66	64	64

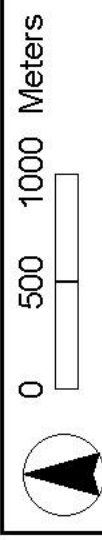
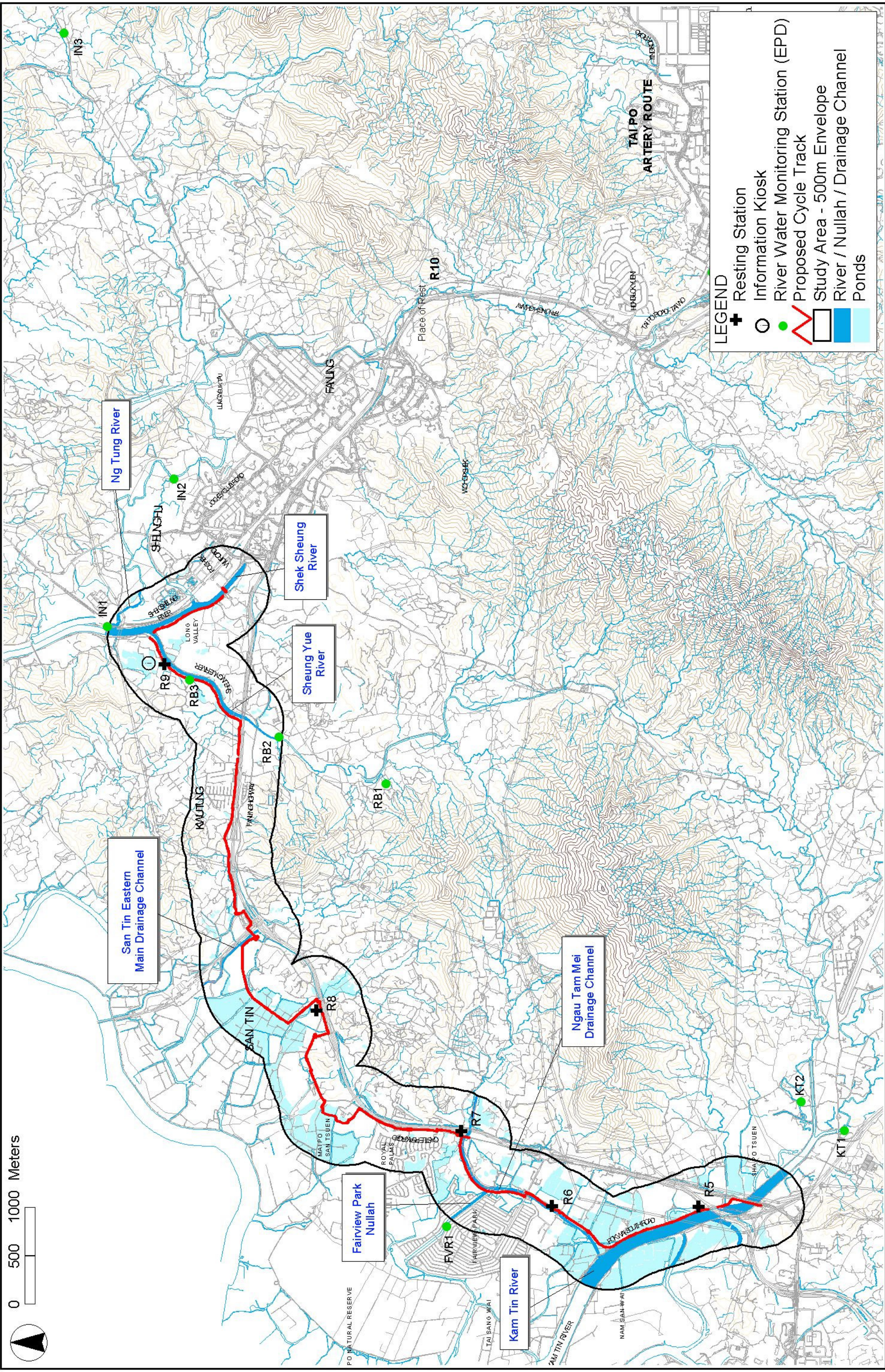
Works Type 1 associated with new cycle tracks, fill slopes, retaining wall, or structures
Works Type 2 associated with Resting Stations/ Information Kiosk

Works Type Description

- [1] Site clearance
- [2] Levelling / excavation
- [3-1] Slope Works / retaining wall
- [3-2] Paving
- [1-3-3] Foundation for bridges
- [1-3-4] Structure / subway / bridge
- [2-3-3] structures
- [2-3-4] Fitting

Appendix 5-1

Water Sensitive Receivers (Figure 6-1 of the Approved EIA Report)



LEGEND

- + Resting Station
- Information Kiosk
- River Water Monitoring Station (EPD)
- ▬ Proposed Cycle Track
- Study Area - 500m Envelope
- River / Nullah / Drainage Channel
- Ponds



土木 工程 拓展 署
Civil Engineering and
Development Department

**Construction of Cycle Tracks and the Associated Supporting Facilities
from Sha Po Tsuen to Shek Sheung River
Environmental Impact Assessment**

Title:	Water Sensitive Receivers and Related Water Systems
Date:	December 2008
Figure:	6-1

Appendix 7-1

Recent Photos of Site Surroundings



Location: (Section 1) Castle Peak Road (Tam Mi). Section underneath Tsing Long Highway.



Location: (Section 1) Surrounding areas east of Pok Wai South Road



Location: (Section 1) Pok Wai South Road and its surroundings



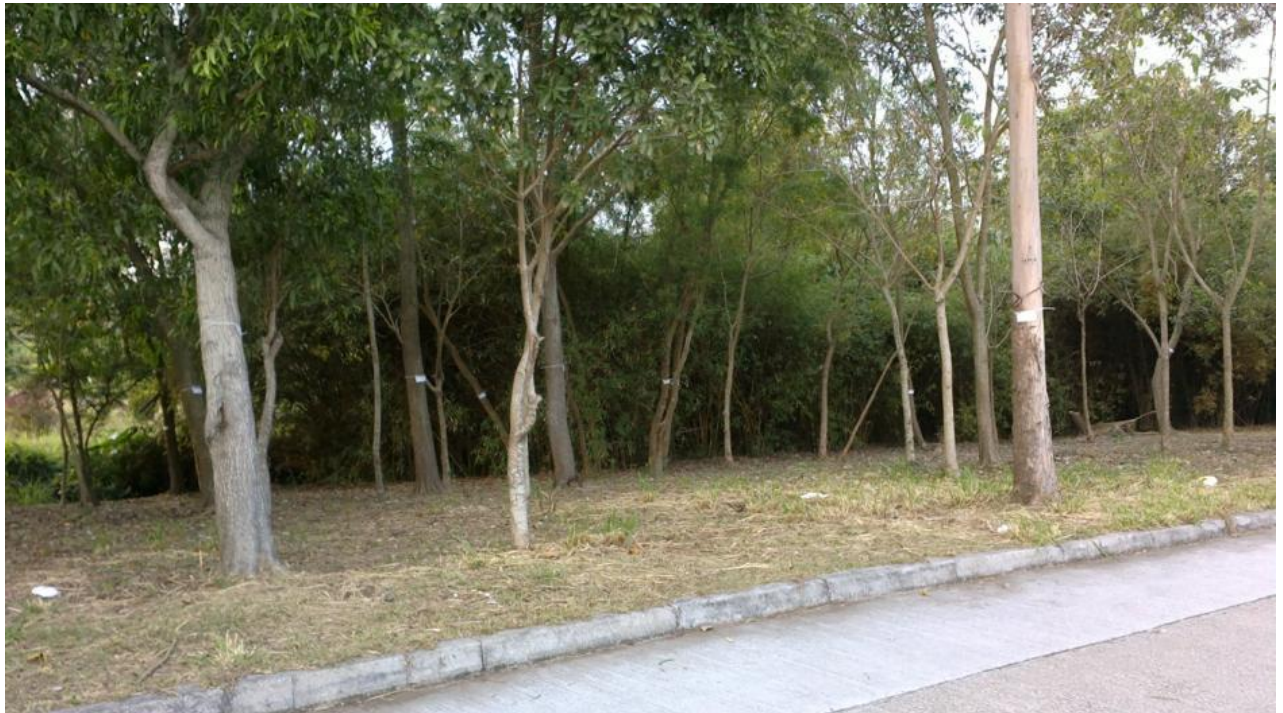
Location: (Section 1) Plantation next to Pok Wai South Road



Location: (Section 1b) view of Long Valley



Location: Plantation nearby Long Valley



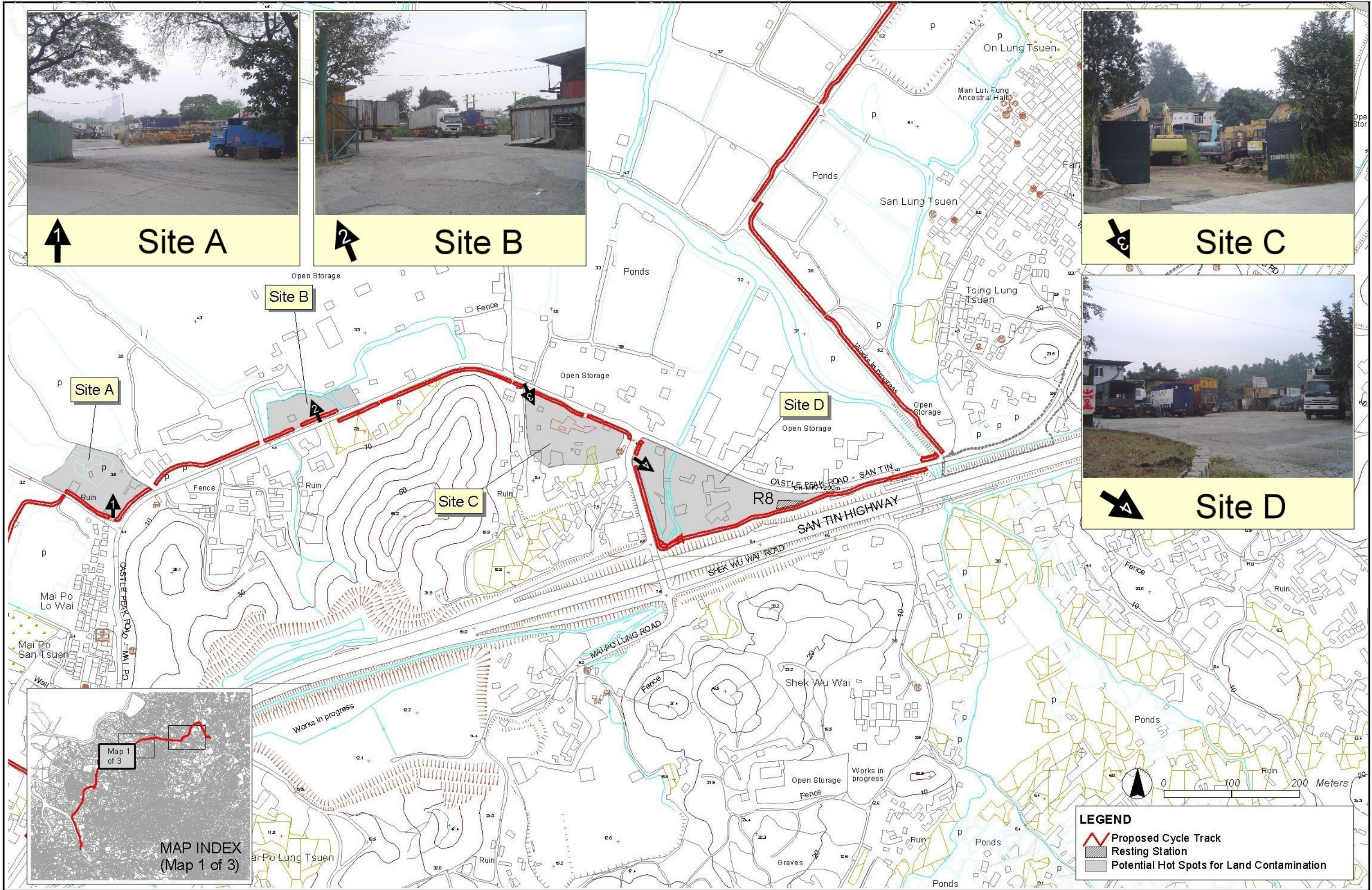
Location: (Section 1b) Plantation at proposed R9 location



Location: (Section 1b) Plantation at the proposed alignment surroundings

Appendix 7-2

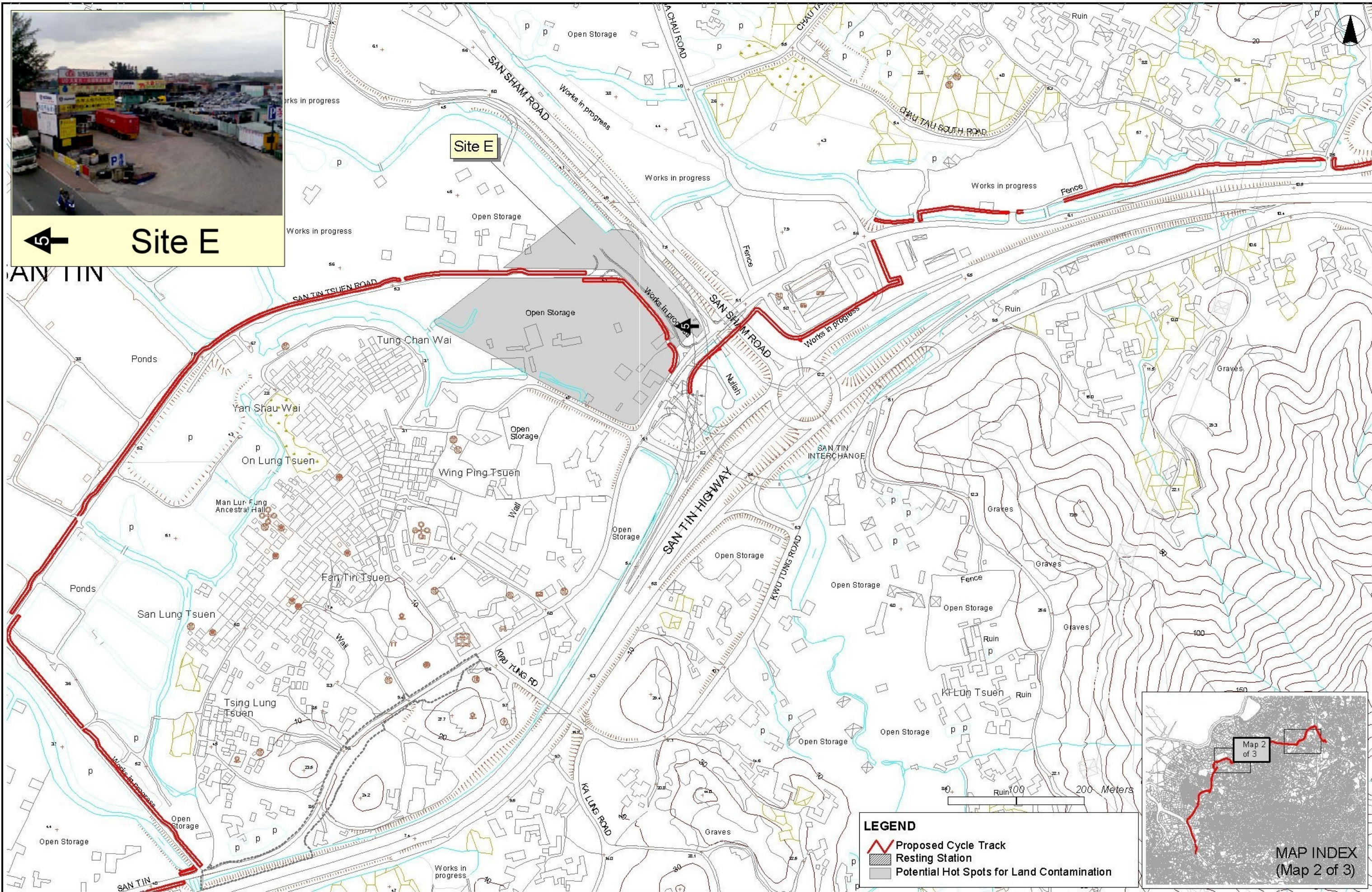
Areas Assessed in Site Reconnaissance (Figure 8-1 to Figure 8-3 of the Approved EIA Report)

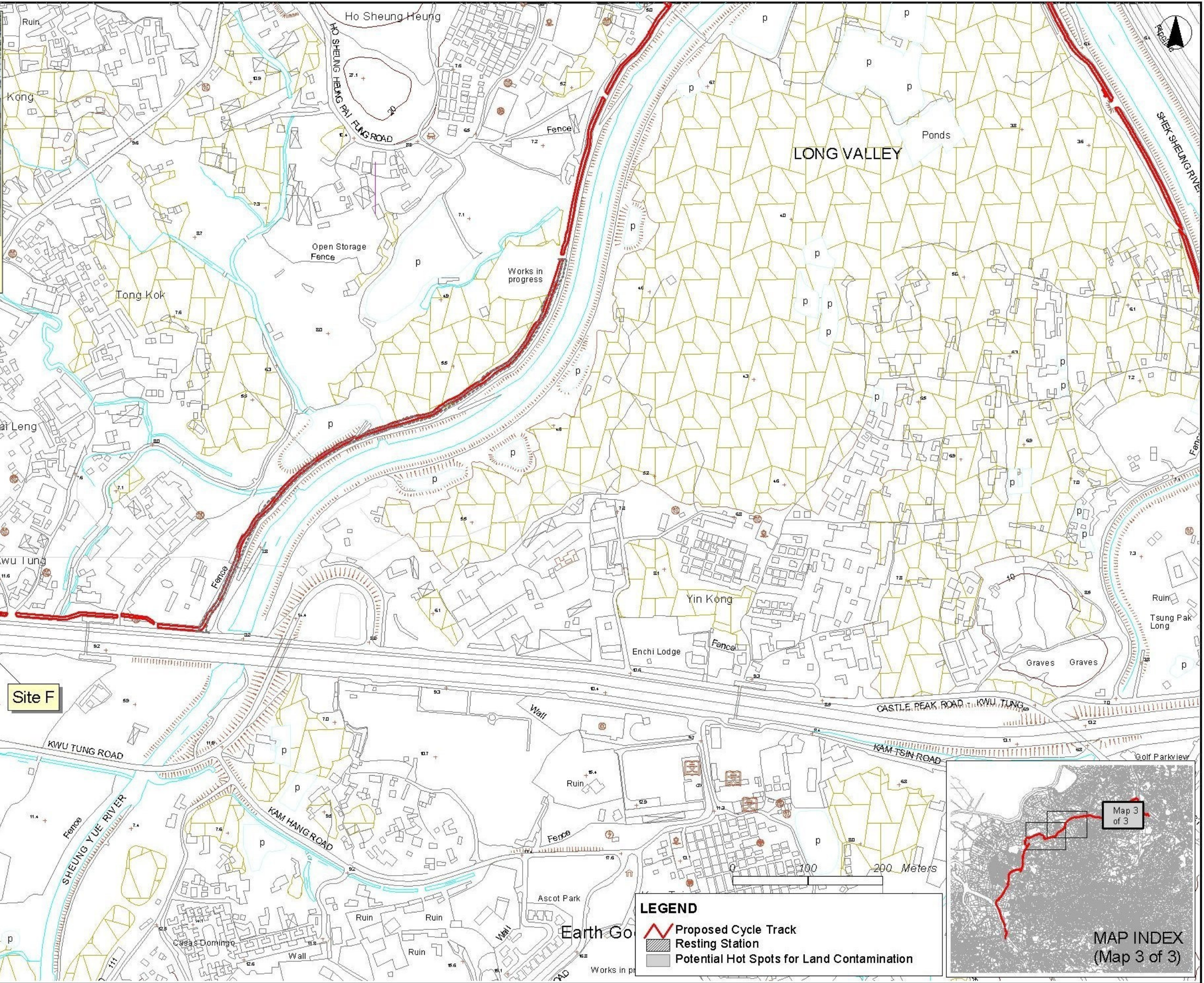


Title:	Areas Assessed in Site Reconnaissance (1 of 3)		
Date:	December 2008	Figure:	8-1



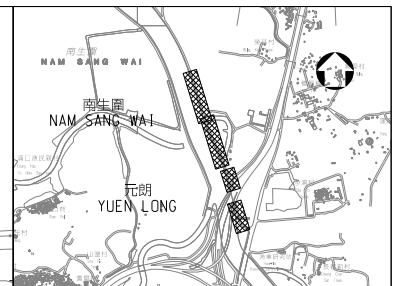
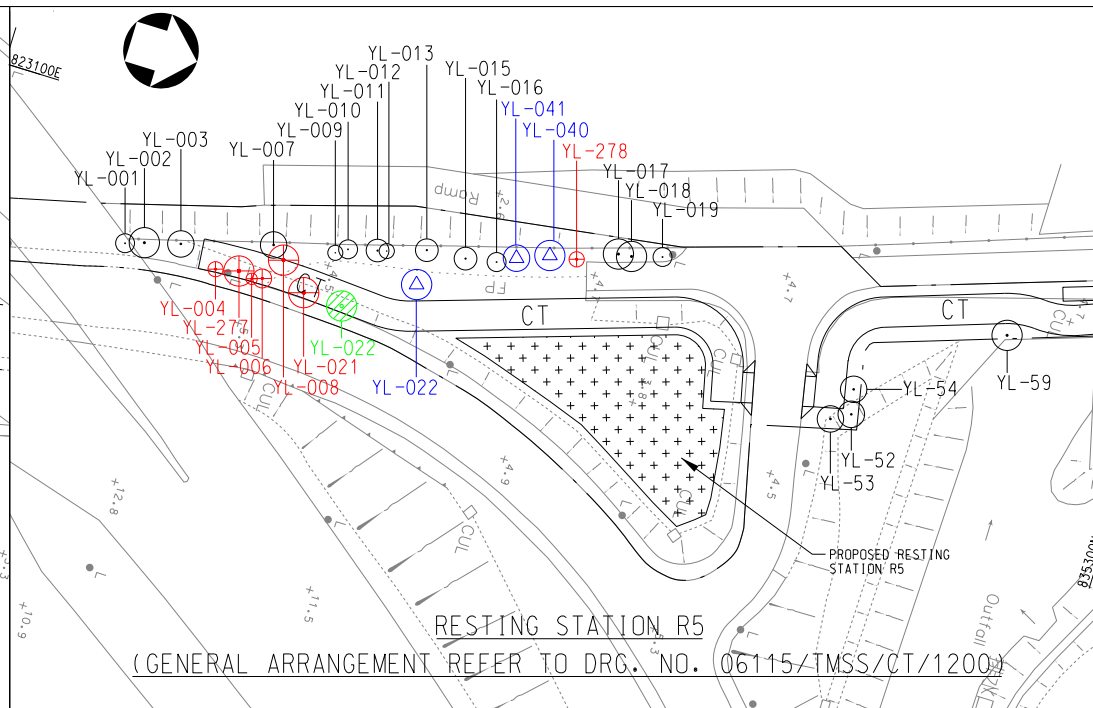
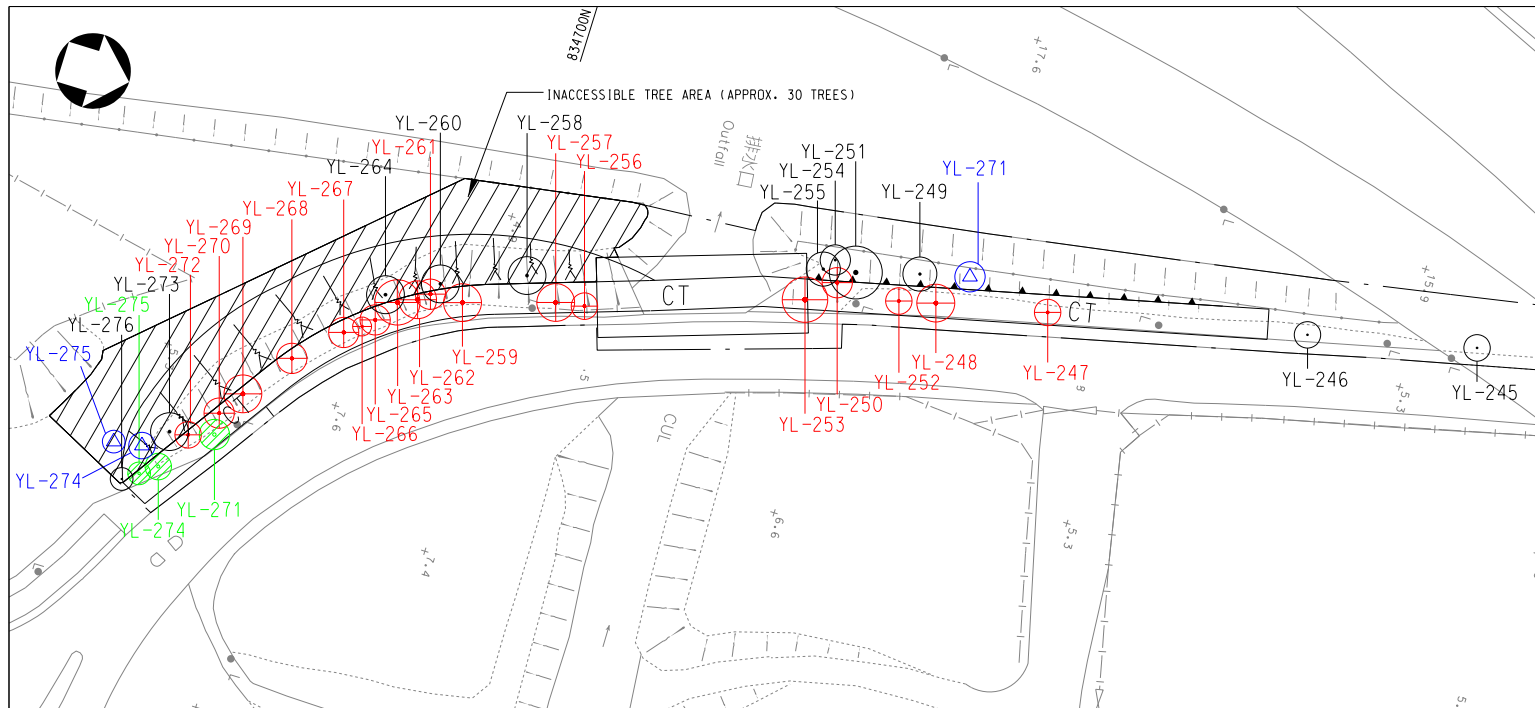
← Site E



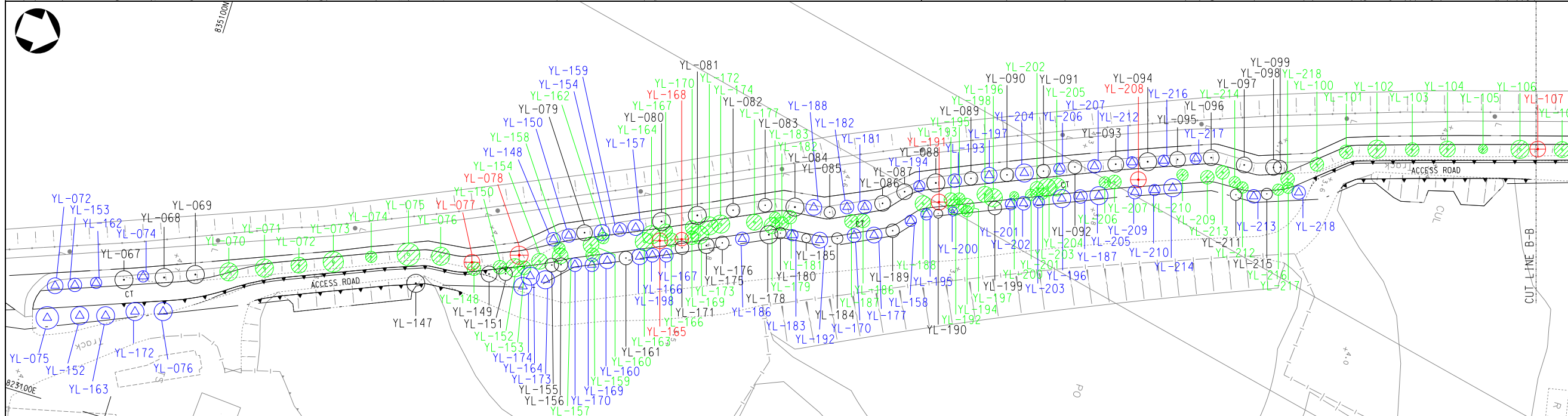


Appendix 11-1

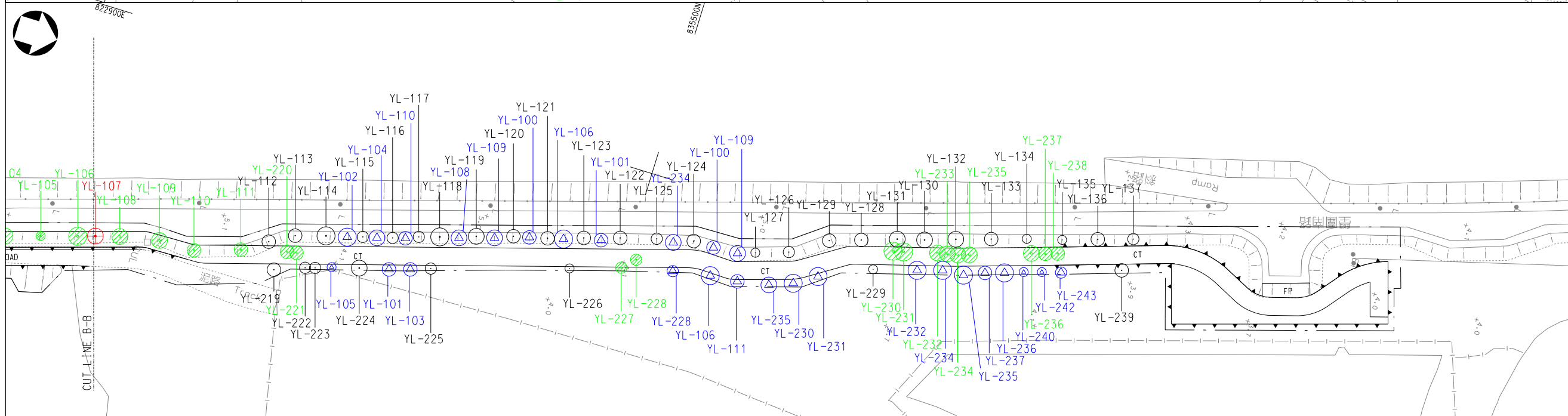
Draft Tree Survey (Treatment) Plan



- NOTES :
- DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE.
 - COORDINATES ARE BASED ON THE HONG KONG METRIC GRID (1980).
 - LEVELS REFER TO METRE PRINCIPAL DATUM (M.P.D.) UNLESS SHOWN OTHERWISE.
 - TREE TREATMENT PROPOSAL AND COMPENSATORY PLANTING DETAILS OF PROPOSED RESTING STATION R5, PLEASE REFER TO DRAWING NO. 06115/TMSS/CT/1202.
 - FOR LOCATION OF TREE TREATMENT PLANS, REFER TO KEY PLAN ON DRAWING NO. 06115/TMSS/CT/1700.
 - FOR GENERAL NOTES, PROPOSED TREE TREATMENT WORKS DETAILS, STANDARD REQUIREMENTS, LANDSCAPE WORKS DETAILS AND INSTALLATION GUIDELINES: SUMMARY OF PLANTING SCHEDULE, REFER TO DRAWING NO. 06115/TMSS/CT/1701.
 - FOR SUMMARY OF EXISTING TREE INFORMATION AND TREATMENT SCHEDULE: IN EACH REGION (EXCEPT IN HUBS AREA), REFER TO DRAWING NOS. 06115/TMSS/CT/1711 TO 1716.
 - FOR EXISTING TREE SURVEY, TREATMENT AND COMPENSATORY PLANTING OF RESTING STATION R5B, REFER TO DRAWING NO. 06115/TMSS/CT/1208.



- LEGEND :
- SITE BOUNDARY
 - FP FOOTPATH
 - CT CYCLE TRACK
 - YL-001 TREE TO BE RETAINED
 - YL-001 TREE TO BE TRANSPLANTED
 - YL-001 TRANSPLANTED TREE
 - YL-001 TREE TO BE FELLED
 - RESTING STATION AREA



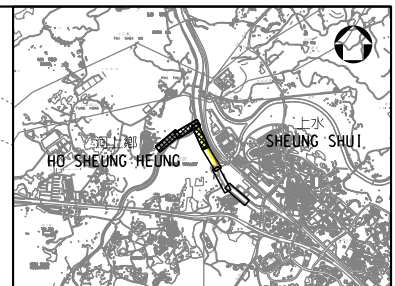
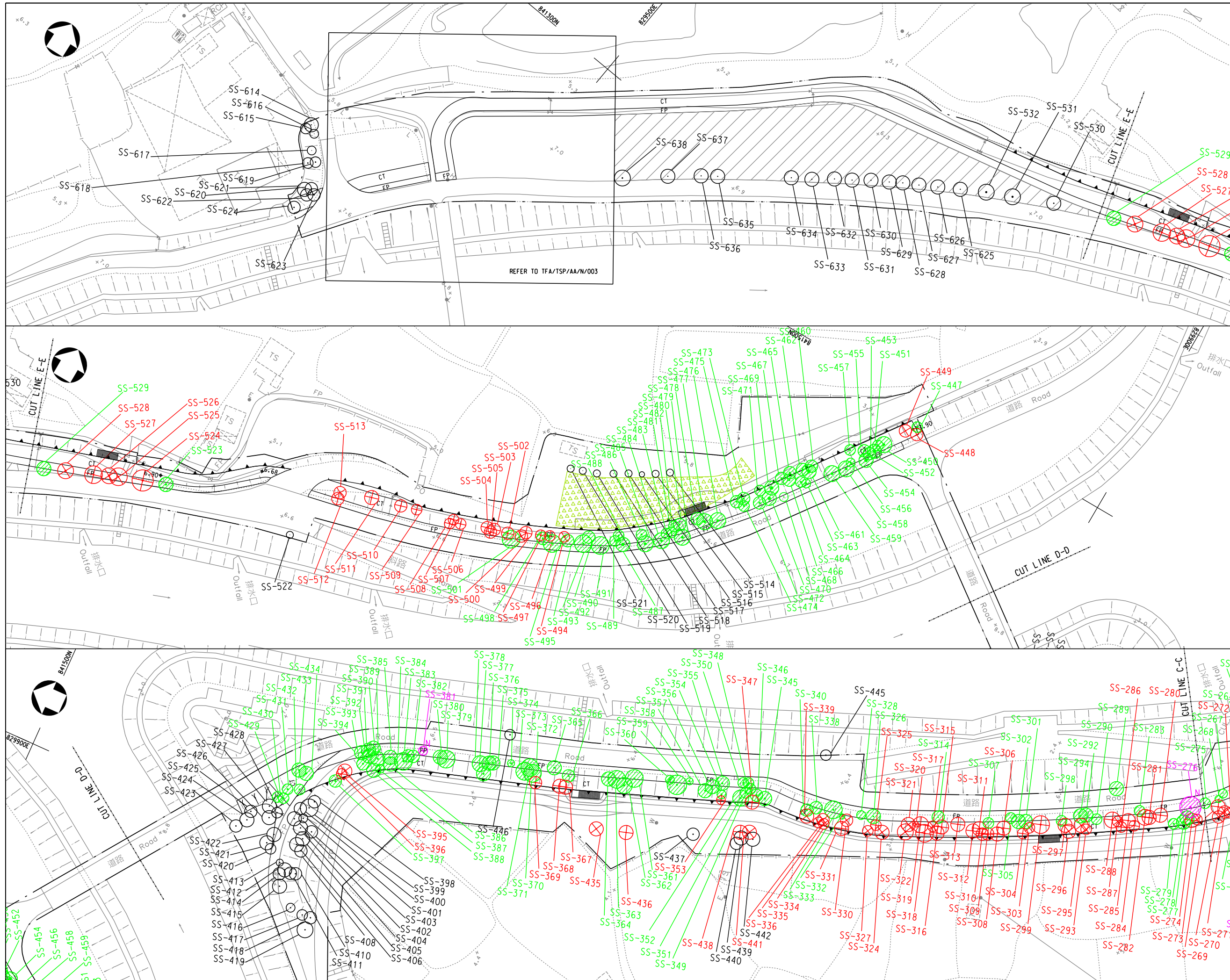
Rev.	Date	Description	Drawn	Checked

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CEDD Civil Engineering and Development Department

CONTRACT NO. YL/2013/01
 CYCLE TRACKS FROM TUEN MUN TO SHEUNG SHUI - STAGE 1

TREE SURVEY (TREATMENT) PLAN ALONG CYCLE TRACK - SECTION 1

Drawing No.	SK533
Design	AYNS
Drawn	NGOK
Checked	GT
Scale	1 : 500 (A1)
Approved	
Date	01/13
Status	PRELIMINARY



- KEY PLAN**
1 : 50000
- NOTES :**
1. DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE.
 2. COORDINATES ARE BASED ON THE HONG KONG METRIC GRID (1980).
 3. LEVELS REFER TO METRE PRINCIPAL DATUM (M.P.D.) UNLESS SHOWN OTHERWISE.
 4. FOR LOCATION OF TREE TREATMENT PLANS, REFER TO KEY PLAN ON DRAWING NO. 06115/TMSS/CT/1700.
 5. FOR GENERAL NOTES, PROPOSED TREE TREATMENT WORKS DETAILS, STANDARD REQUIREMENTS, LANDSCAPE WORKS DETAILS AND INSTALLATION GUIDELINES, SUMMARY OF PLANTING SCHEDULE, REFER TO DRAWING NO. 06115/TMSS/CT/1701.
 6. FOR SUMMARY OF EXISTING TREE INFORMATION AND TREATMENT SCHEDULE IN EACH REGION (EXCEPT IN HUBS AREA), REFER TO DRAWING NOS. 06115/TMSS/CT/1711 TO 1716.

- LEGEND :**
- SITE BOUNDARY
 - ▲ PROPOSED RETAINING STRUCTURE
 - ▬ PROPOSED COMBINED STAIRCASE AND RAMP DETAILS REFER TO DRAWING NO.06115/TMSS/CT/0915
 - ▬ PROPOSED STAIRCASE DETAILS REFER TO DRAWING NO. 06115/TMSS/CT/0915
 - ⊕ PROPOSED 1.2x1.2m TREE PIT @4m INTERVALS DETAILS REFER TO DRAWING NO. XXXX
 - YYY PROPOSED FILL SLOPE
 - ▨ UNACCESSIBLE BAMBOO FOREST AREA
 - △△△ DESIGNATED AREA FOR PROPOSED NURSERY TREATMENT FOR TRANSPLANTED TREE
 - SS-630 TREE TO BE RETAINED
 - SS-457 TREE TO BE TRANSPLANTED
 - ⊗ SS-448 TREE TO BE FELLED
 - ⊕ SS-260 TRANSPLANTED TREE REQUIRE NURSERY TREATMENT BEFORE RELOCATE TO FINAL DESTINATION AFTER COMPLETION OF PERMANENT WORKS

Rev.	Date	Description	Drawn	Checked

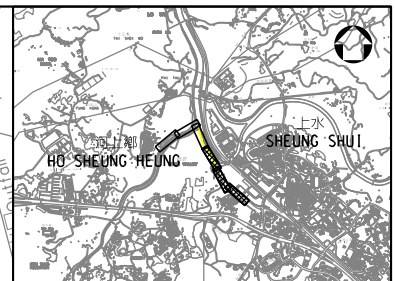
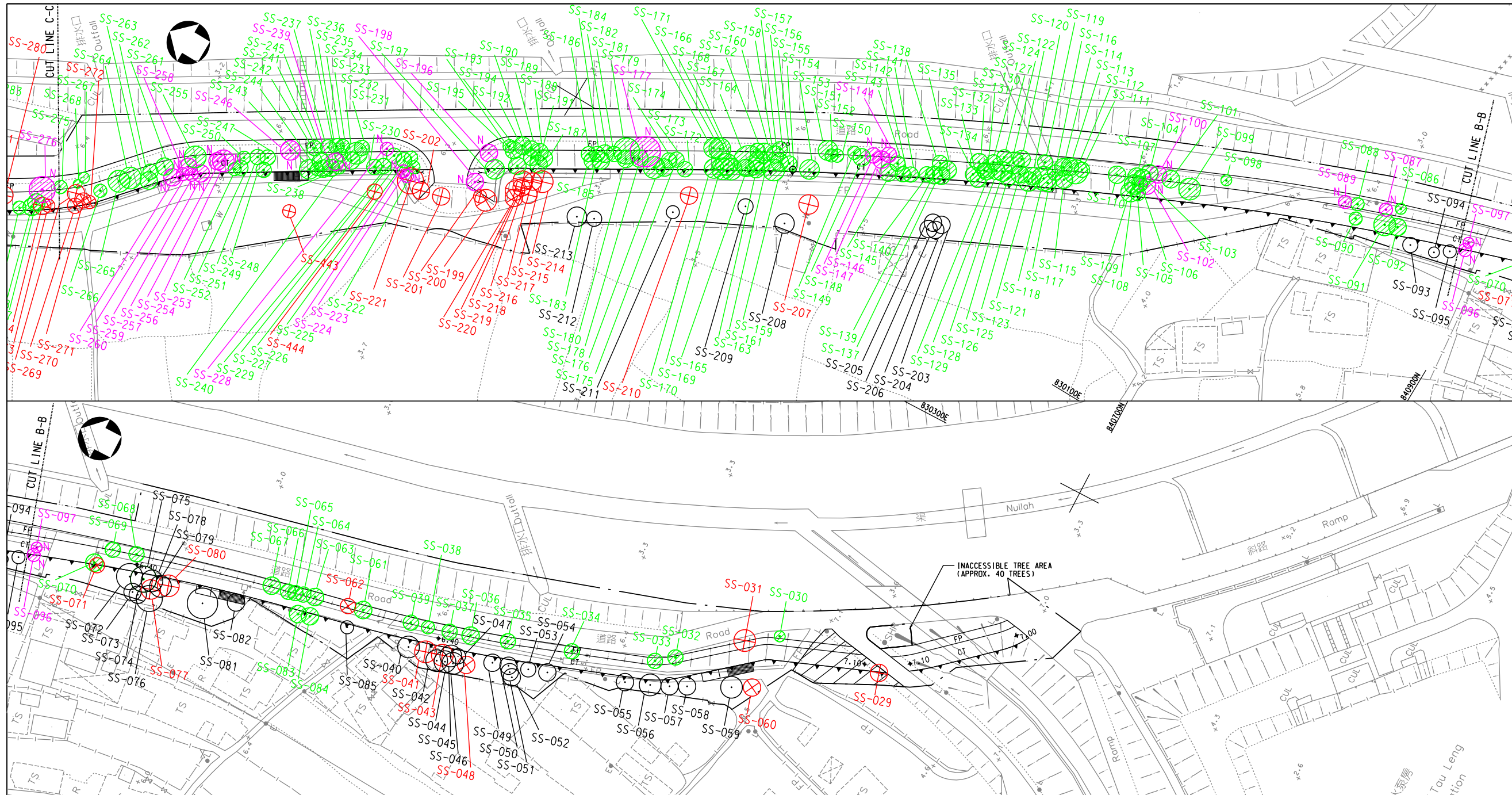
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 Civil Engineering and Development Department

CONTRACT NO. YL/2013/01
 CYCLE TRACKS FROM TUEN MUN TO SHEUNG SHUI - STAGE 1

TREE SURVEY (TREATMENT) PLAN ALONG CYCLE TRACK - SECTION 1B (SHEET 1 OF 2)

Drawing No.	SK/ACL/526
Design	AYNS
Drawn	NGOK
Checked	GT
Scale	1:500 (A1)
Approved	
Date	02/13
Status	PRELIMINARY

URS



KEY PLAN
1 : 50000

- NOTES :
1. DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE.
 2. COORDINATES ARE BASED ON THE HONG KONG METRIC GRID (1980).
 3. LEVELS REFER TO METRE PRINCIPAL DATUM (m.p.d.) UNLESS SHOWN OTHERWISE.
 4. FOR LOCATION OF TREE TREATMENT PLANS, REFER TO KEY PLAN ON DRAWING NO. 06115/TMSS/CT/1700.
 5. FOR GENERAL NOTES, PROPOSED TREE TREATMENT WORKS DETAILS, STANDARD REQUIREMENTS, LANDSCAPE WORKS DETAILS AND INSTALLATION GUIDELINES, SUMMARY OF PLANTING SCHEDULE, REFER TO DRAWING NO. 06115/TMSS/CT/1701.
 6. FOR SUMMARY OF EXISTING TREE INFORMATION AND TREATMENT SCHEDULE IN EACH REGION (EXCEPT IN HUBS AREA), REFER TO DRAWING NOS. 06115/TMSS/CT/1711 TO 1716.

- LEGEND :
- SITE BOUNDARY
 - PROPOSED RETAINING STRUCTURE
 - PROPOSED COMBINED STAIRCASE AND RAMP DETAILS REFER TO DRAWING NO.06115/TMSS/CT/0915
 - PROPOSED STAIRCASE DETAILS REFER TO DRAWING NO. 06115/TMSS/CT/0915
 - PROPOSED 1.2x1.2m TREE PIT @4m INTERVALS DETAILS REFER TO DRAWING NO. XXXX
 - Y Y Y PROPOSED FILL SLOPE
 - UNACCESSIBLE BAMBOO FOREST AREA
 - DESIGNATED AREA FOR PROPOSED NURSERY TREATMENT FOR TRANSPLANTED TREE
 - SS-630 TREE TO BE RETAINED
 - SS-457 TREE TO BE TRANSPLANTED
 - SS-448 TREE TO BE FELLED
 - SS-260 TRANSPLANTED TREE REQUIRE NURSERY TREATMENT BEFORE RELOCATE TO FINAL DESTINATION AFTER COMPLETION OF PERMANENT WORKS

Rev.	Date	Description	Drawn	Checked

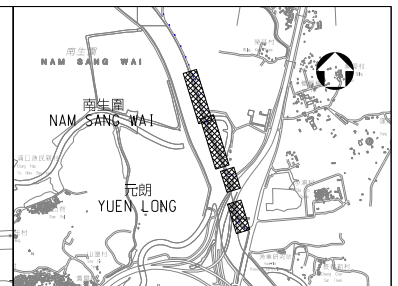
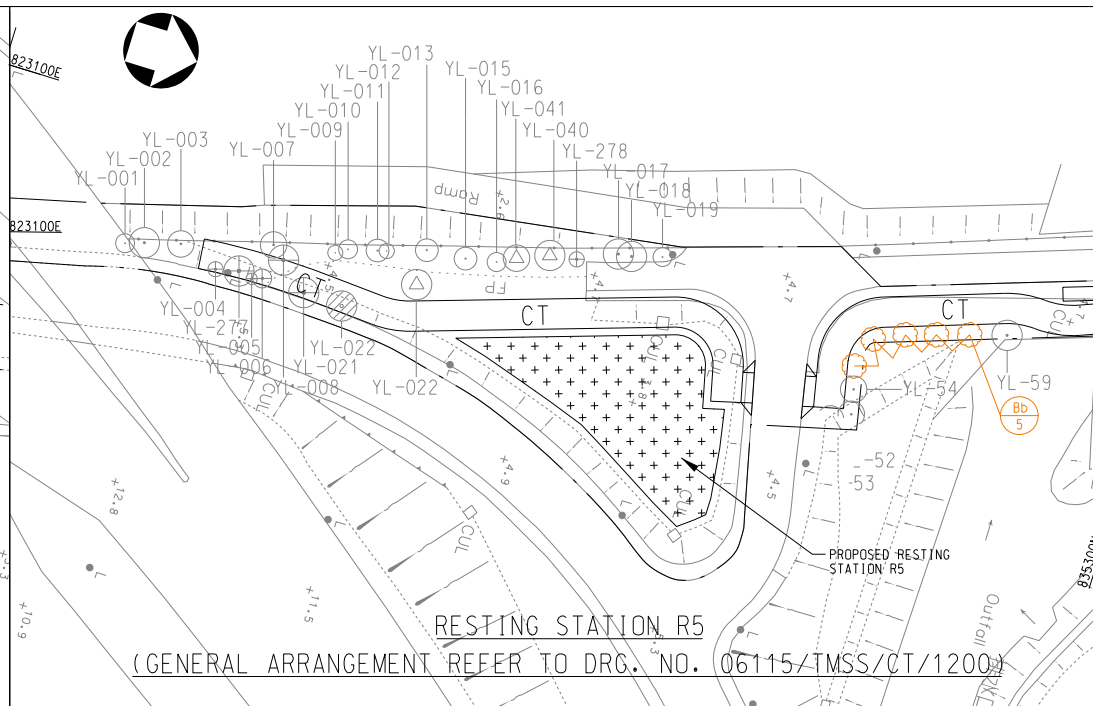
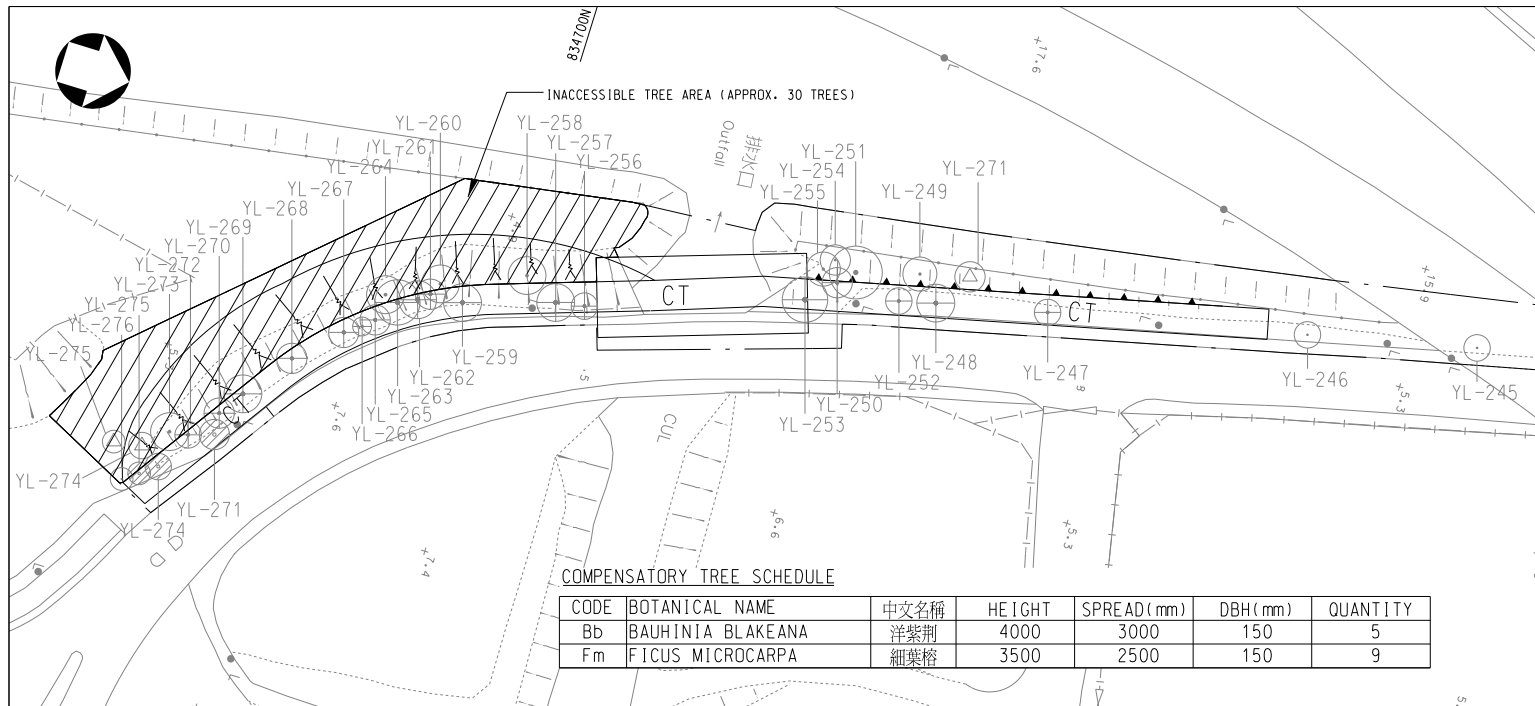
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CEDD Civil Engineering and
Development Department

CONTRACT NO. YL/2013/01
CYCLE TRACKS FROM TUEN MUN
TO SHEUNG SHUI - STAGE 1

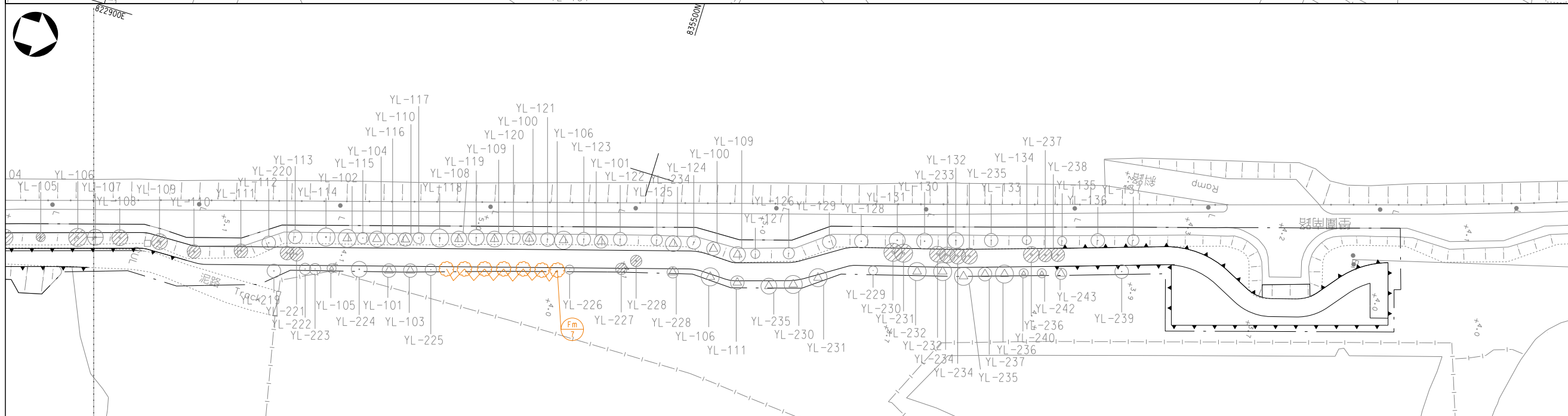
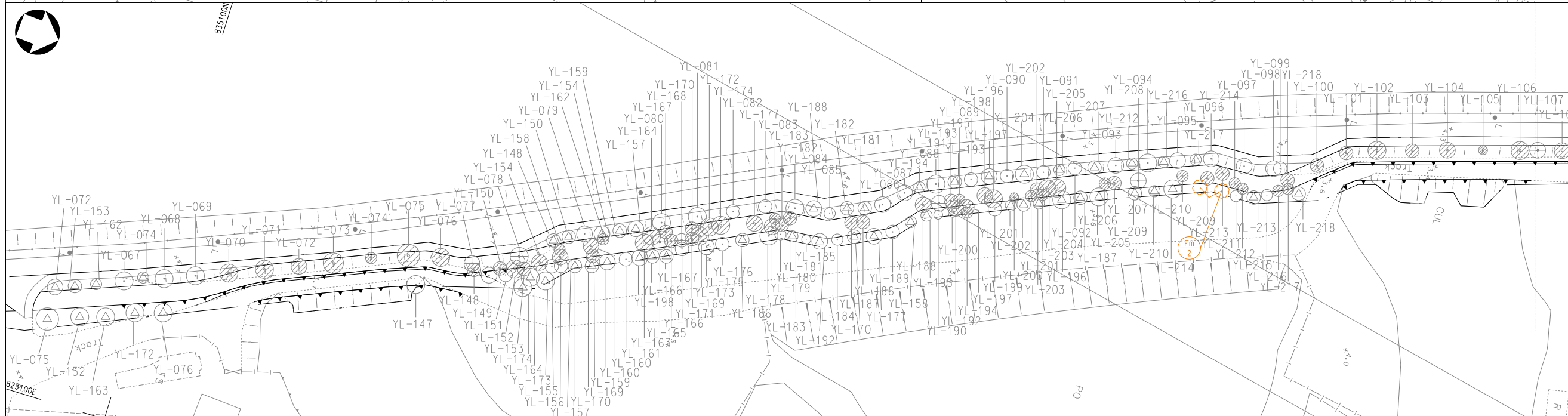
TREE SURVEY (TREATMENT)
PLAN ALONG CYCLE TRACK
- SECTION 1B
(SHEET 2 OF 2)

Drawing No. 圖號	SK/ACL/527
Designed 設計	AYNS
Drawn 繪圖	NGOK
Checked 校核	GT
Scale 比例	1:500 (A1)
Approved 批准	
Date 日期	02/13
Status 階段	PRELIMINARY





- NOTES :
- DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE.
 - COORDINATES ARE BASED ON THE HONG KONG METRIC GRID (1980).
 - LEVELS REFER TO METRE PRINCIPAL DATUM (m.P.D.) UNLESS SHOWN OTHERWISE.
 - PLEASE READ IN CONJUNCTION WITH TREE TREATMENT PLAN NO. 06115/TMSS/CT/1706 FOR PROPOSED TREE TREATMENT OF EXISTING TREES.
 - FOR LOCATION OF TREE TREATMENT PLANS, REFER TO KEY PLAN ON DRAWING NO. 06115/TMSS/CT/1700.
 - FOR GENERAL NOTES, PROPOSED TREE TREATMENT WORKS DETAILS, STANDARD REQUIREMENTS, LANDSCAPE WORKS DETAILS AND INSTALLATION GUIDELINES, SUMMARY OF PLANTING SCHEDULE, REFER TO DRAWING NO. 06115/TMSS/CT/1701.
 - FOR SUMMARY OF EXISTING TREE INFORMATION AND TREATMENT SCHEDULE IN EACH REGION (EXCEPT IN HUBS AREA), REFER TO DRAWING NOS. 06115/TMSS/CT/1711 TO 1716.
 - LOCATION OF COMPENSATORY PLANTING IS INDICATIVE ONLY. EXACT LOCATION SHALL SUBJECT TO SITE CONDITION, TREE TREATMENT AND AGREED BY THE ENGINEER OR HIS REPRESENTATIVE.
 - FOR COMPENSATORY PLANTING PROPOSALS OF RESTING STATION R5 & R5B, REFER TO DRAWING NOS. 06115/TMSS/CT/1202 & 1208 RESPECTIVELY.



Rev.	Date	Description	Drawn	Checked
01	01/13	PRELIMINARY		

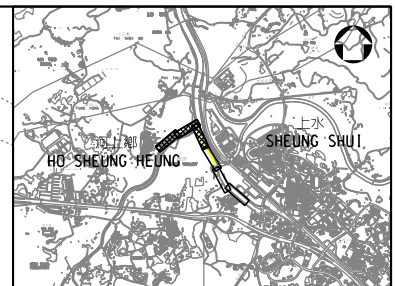
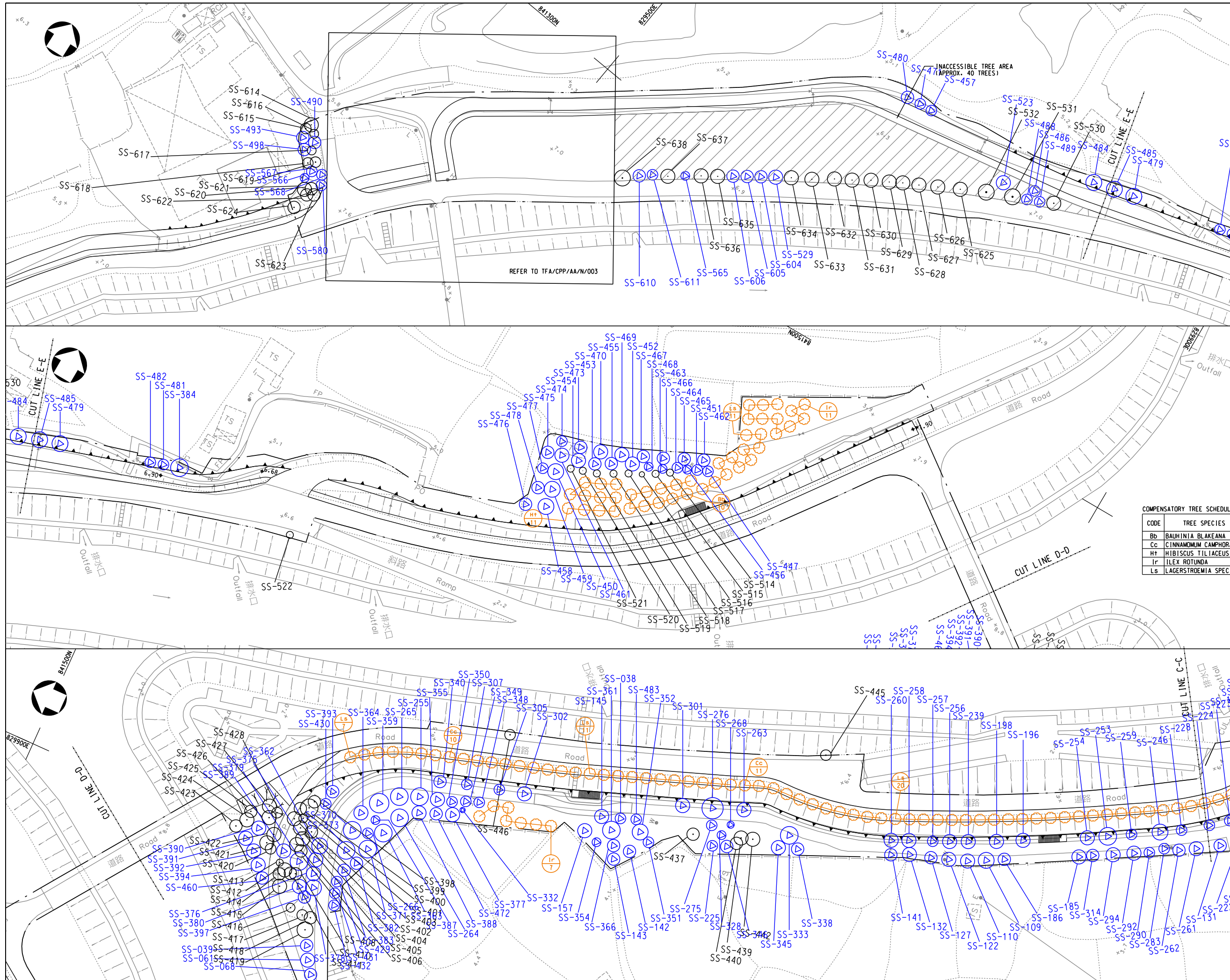
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CEDD Civil Engineering and Development Department

CONTRACT NO. YL/2013/01
CYCLE TRACKS FROM TUEN MUN TO SHEUNG SHUI - STAGE 1

COMPENSATORY AND PROPOSED SHRUB PLANTING PLAN- SECTION 1

Drawing No.	SK532			
Designed	Drawn	Checked	Scale	
A/NS	NGOK	GT	1:500(A1)	
Approved	Date	Status		
	01/13	PRELIMINARY		





KEY PLAN
1 : 50000

- NOTES :
1. DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE.
 2. COORDINATES ARE BASED ON THE HONG KONG METRIC GRID (1980).
 3. LEVELS REFER TO METRE PRINCIPAL DATUM (m.P.D.) UNLESS SHOWN OTHERWISE.
 4. FOR LOCATION OF TREE TREATMENT PLANS, REFER TO KEY PLAN ON DRAWING NO. TFA/TSP/N/001.

- LEGEND :
- SITE BOUNDARY
 - SS-630 TREE TO BE RETAINED
 - ⊕ SS-605 TRANSPLANTED TREE
 - ⊙ PROPOSED COMPENSATORY HEAVY STANDARD TREE OF DBH = 150mm
 - ⊙ (Bb/5) PROPOSED COMPENSATORY TREE SPECIES AND NUMBER
 - ▬ PROPOSED COMBINED STAIRCASE AND RAMP DETAILS REFER TO DRAWING NO.06115/TMSS/CT/0915
 - ▬ PROPOSED STAIRCASE DETAILS REFER TO DRAWING NO. 06115/TMSS/CT/0915

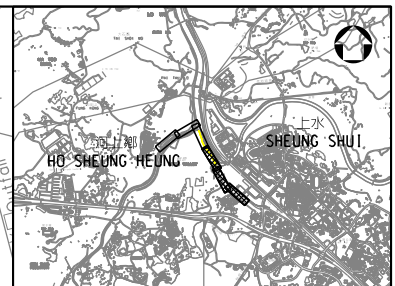
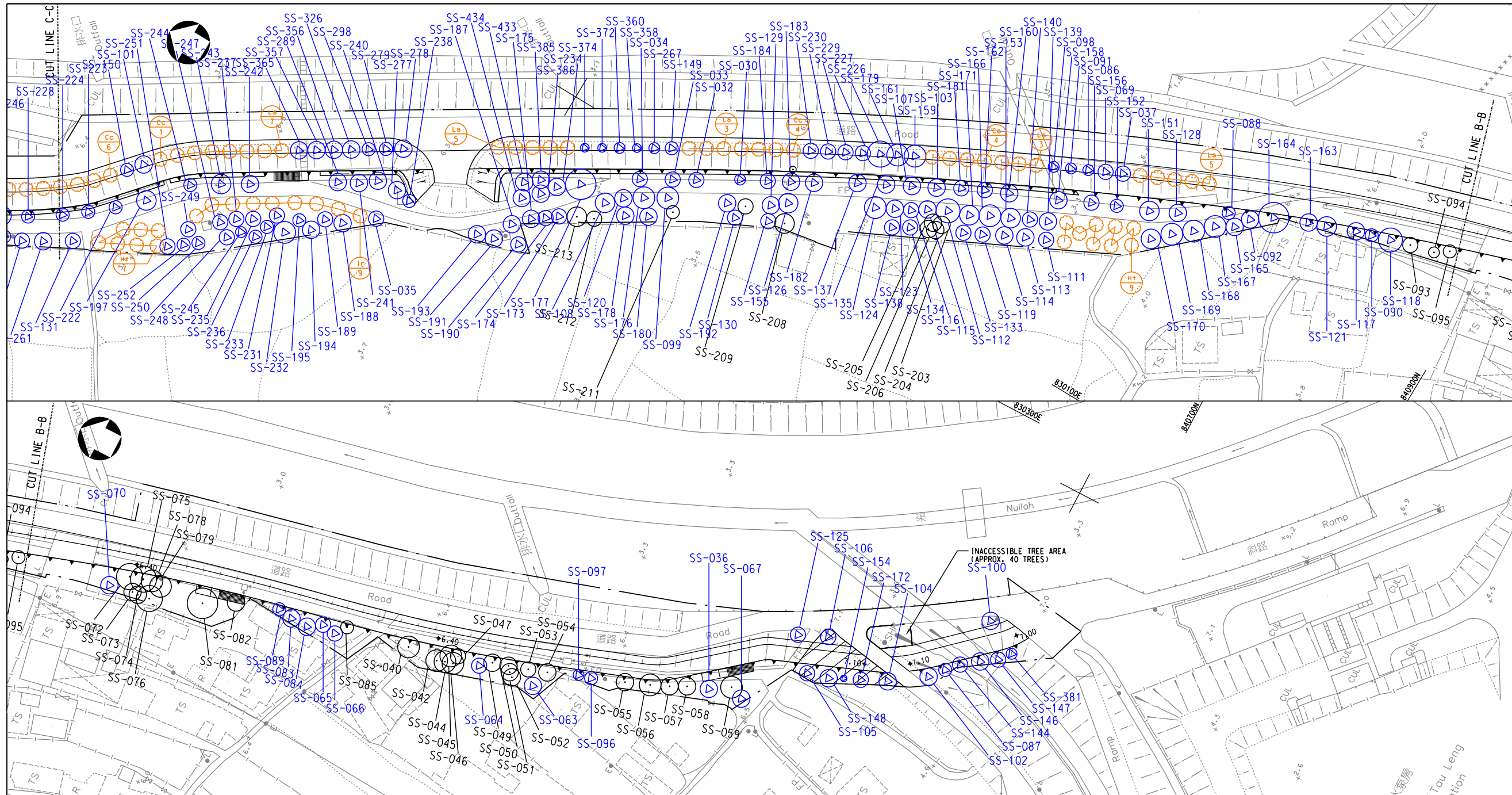
COMPENSATORY TREE SCHEDULE

CODE	TREE SPECIES	HEIGHT (mm)	SPREAD (mm)	DBH (mm)	QUANTITY
Bb	BAUHINIA BLAKEANA 洋紫荊	4000	3500	150	10
Cc	CINNAMOMUM CAMPHORA 香樟	6000	3500	150	21
Ht	HIBISCUS TILIAEUS 黃瑾	6000	3500	150	11
Ir	ILEX ROTUNDA 鐵冬青	5000	3000	125	18
Ls	LAGERSTROEMIA SPECIOSA 大花紫薇	3000	3000	125	49

Rev.	Date	Description	Drawn	Checked
1	02/13	PRELIMINARY	AYNS	NGOK

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CEDD Civil Engineering and Development Department
 CONTRACT NO. YL/2013/01
 CYCLE TRACKS FROM TUEN MUN TO SHEUNG SHUI - STAGE 1
 COMPENSATORY AND PROPOSED SHRUB PLANTING PLAN - SECTION 1B (SHEET 1 OF 2)
 Drawing No. SK/ACL/528
 Designed 設計 AYNS Draw 繪圖 NGOK Checked 校核 GT Scale 比例 1:500 (A11) Approved 批准 Date 日期 02/13 Status 狀態 PRELIMINARY





KEY PLAN
1 : 50000

- NOTES :
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 2. COORDINATES ARE BASED ON THE HONG KONG METRIC GRID (1980).
 3. LEVELS REFER TO METRE PRINCIPAL DATUM (m.P.D.) UNLESS SHOWN OTHERWISE.
 4. FOR LOCATION OF TREE TREATMENT PLANS, REFER TO KEY PLAN ON DRAWING NO. TFA/TSP/N/002.

- LEGEND :
- SITE BOUNDARY
 - SS-630 TREE TO BE RETAINED
 - SS-605 TRANSPLANTED TREE
 - PROPOSED COMPENSATORY HEAVY STANDARD TREE OF DBH = 150mm
 - PROPOSED COMPENSATORY TREE SPECIES AND NUMBER
 - PROPOSED COMBINED STAIRCASE AND RAMP DETAILS REFER TO DRAWING NO. 06115/TMSS/CT/0915
 - PROPOSED STAIRCASE DETAILS REFER TO DRAWING NO. 06115/TMSS/CT/0915

COMPENSATORY TREE SCHEDULE

CODE	TREE SPECIES	HEIGHT (mm)	SPREAD (mm)	DBH (mm)	QUANTITY
Cc	CINNAMMUM CAMPHORA 香樟	6000	3500	150	15
Ht	HIBISCUS TILIAEUS 黃瑾	6000	3500	150	16
Ir	ILEX ROTUNDA 鐵冬青	5000	3000	125	9
Ls	LAGERSTROEMIA SPECIOSA 大花紫薇	3000	3000	125	23

Rev.	Date	Description	Drawn	Checked

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CEDD Civil Engineering and Development Department

CONTRACT NO. YL/2013/01
CYCLE TRACKS FROM TUEN MUN TO SHEUNG SHUI - STAGE 1

COMPENSATORY AND PROPOSED SHRUB PLANTING PLAN - SECTION 1B (SHEET 2 OF 2)

Drawing No. 圖則編號	SK/ACL/529
Designed 設計	AYNS
Drawn 繪圖	NGOK
Checked 校核	GT
Scale 比例	1:500 (A1)
Approved 批准	
Date 日期	02/13
Status 狀態	PRELIMINARY

