



Our ref.: LES/J2018-05/CS/L017
Date : 3 December 2018

Civil Engineering and Development Department

East Development Office
East Division 2
Suite 1213,
Chinachem Golden Plaza,
77 Mody Road,
Tsim Sha Tsui East, Kowloon

Attn: Mr. Henry Lu

Dear Mr. Lu

**Service Contract No. EDO/01/2017
ENVIRONMENTAL TEAM FOR
Development of Anderson Road Quarry Site –
Road Improvement Works**

Submission of Detailed Vegetation Survey Report

I refer to the letter from EPD letter ref: EP2/K14/A/17 pt. 4 dated 21 November 2018 regarding the comments on Detailed Vegetation Survey Report.

We hereby submit the revised report which certified by the ET Leader and verified by IEC in accordance with Condition 2.14a and 2.15 of EP-513/2016 for your perusal and processing.

Should you have any queries, please contact the undersigned at 9108 0531.

Yours faithfully,
For and On Behalf Of
Lam Environmental Services Limited

A handwritten signature in blue ink, appearing to be "DL" or similar initials.

Derek Lo
Environmental Team Leader

Encl.

c.c. AECOM
ANewR Consulting Limited

Mr. Dennis Leung
Mr. Adi Lee



Civil Engineering and Development Department
Civil Engineering and Development Building
101 Princess Margaret Road
Kowloon
Hong Kong

Your reference:

Our reference: HKCEDD12/50/105400

Date: 5 December 2018

Attention: Mr Stephen T S Li

BY EMAIL & POST
(email: tsli@cedd.gov.hk)

Dear Sirs

Agreement No. EDO/04/2017
Independent Environmental Checker (IEC) for Development of Anderson Road Quarry Site
– Road Improvement Works
Detailed Vegetation Survey Report

We refer to the emails on 21 August, 24 September and 3 December 2018 from Environmental Team, Lam Environmental Services Limited attaching a Detailed Vegetation Survey Report for the captioned project.

We have no further comment and hereby verify the abovementioned Detailed Vegetation Survey Report in accordance with Clause 2.15 of the Environmental Permit no. EP-513/2016.

Should you have any queries, please do not hesitate to contact the undersigned or our Ms Angie Chan on 2618 2831.

Yours faithfully
ANewR CONSULTING LIMITED



Andy Dee

Independent Environmental Checker

LYMA/LHHN/CWA/lhnh

cc AECOM – Ms Susan He (email: c2-re5@arqaecom.com)
AECOM – Mr Brad C W Chan (email: c3-srec4@arqaecom.com)
Lam Environmental Services Limited – Mr Derek Lo (email: dereklo@lamenviro.com)

CONTRACT NO: NE/2017/03

**DEVELOPMENT OF
ANDERSON ROAD QUARRY SITE -
ROAD IMPROVEMENT WORKS**

DETAILED VEGETATION SURVEY REPORT

CLIENTS:

Civil Engineering and Development Department

PREPARED BY:



Jay WAN
Qualified Ecologist

CERTIFIED BY:



Derek LO
Environmental Team Leader

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DATE: 3 December 2018

Detailed Vegetation Survey for Contract No. NE/2017/03 Development of Anderson Road Quarry Site – Road Improvement Works

1. INTRODUCTION

Lam Environmental Services Limited was appointed by Civil Engineering and Development Department (CEDD) to conduct a detailed vegetation survey as required in Clause 2.14 and 2.15 of the Environmental Permit No. EP-513/2016 for Contract No. NE/2017/03 Development of Anderson Road Quarry Site – Road Improvement Works.

The scale and scope of this Designated Project are summarized as follow:

- Lengthening of existing lay-bys from 12m and 18m to 70m and addition of 2 new lay-bys of 26m long at Lin Tak Road;
- Realignment of Lin Tak Road towards south;
- Enlargement of existing roundabout at the junction of Lin Tak Road and Pik Wan Road;
- Cutting of slope works at the southern side of Lin Tak Road;
- Widening of small section of slip road towards Tseung Kwan O (TKO) Road eastbound with associated slope works for retaining walls;
- Construction of a new westbound flyover from Sau Mau Ping Road to Lin Tak Road;
- TKO Road slip road to Sau Mau Ping Road will be shifted southwards;
- Improvement works on Clear Water Bay Road and detouring right-turn movement from On Sau Road northbound onto Clear Water Bay Road eastbound by construction of a new U-turn facility;
- Widening a section of 130m long of the existing New Clear Water Bay Road westbound carriageway opposite to Shun Lee Estate from one lane to two lanes; and
- Construction of a new Shun Lee Tsuen Road slip road (about 350m) and a merging lane (about 170m) with associated slope works for retaining walls.

As to provide baseline field condition for subsequent environmental monitoring and audit, such detailed vegetation survey is necessary to obtain up-to-date information on flora community, especially conditions, number and locations of individuals of plant species of conservation importance to be affected by the works; and to assess suitability and / or practicality of transplantation of these individuals. Such information facilitates proper implementation of relevant mitigation measures recommended in the approved Environmental Impact Assessment (EIA) report and Environmental Monitoring and Audit (EM&A) manual. Survey results also help formulating the separate transplantation proposal of in next step. Information presented by a tree survey report/ schedule is out of the scope of this report.

2. METHODOLOGY

2.1 Vegetation

Field surveys were conducted on 17th, 19th July, 2nd, 6th August, and 4th September 2018 within survey extents for the three proposed works sites, which is slightly different from the Project Site boundary as per the Environmental Permit (**Figure 1a-e**) by the Plant Specialist of the Environmental Team. All plants including ferns, gymnosperms and angiosperms were recorded by direct observation. Plant individuals which were hard to approach were identified using a pair of 10 x 42 binoculars.

A plant list including growth form is produced, with the relative abundance of each plant species within the survey extent being estimated. Nomenclature for plant species follows AFCD's Hong Kong Herbarium Database. For all the plant species recorded, their local commonness in Hong Kong follows Corlett et al. (2000) and Hong Kong Plant Database managed by the Hong Kong Herbarium. Actual abundance was counted and their locations were recorded for species of conservation importance identified and encountered. Their conservation status follows AFCD (2003), IUCN Red List (2018), China Plant Red Data Book and relevant legislations, including Forests and Countryside Ordinance (Cap. 96) and Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586).

Distribution maps of all recorded plant species of conservation importance will be generated. On-site photographic records of these species will also be provided.

3. RESULTS

3.1 Habitat

The main habitat type of the three proposed works sites matches previous findings in the EIA report. Clear Water Bay Road/ On Sau Road is mainly a secondary woodland; while plantation woodland and landscape plantation are dominated at Sau Mau Ping Road/ Lin Tak Road and New Clear Water Bay Road/ Shun Lee Tsuen Road (**Plate 1**).

3.2 Flora Composition

A total of 176 plant species were recorded within survey extents for the three proposed works sites. They include 68 tree species, 34 shrubs, 42 herbaceous species, 30 climbers and 2 bamboos. Flora diversity in the secondary woodland (Clear Water Bay Road/ On Sau Road) is about double than that in the other two plantation sites (Sau Mau Ping Road/ Lin Tak Road and New Clear Water Bay Road/ Shun Lee Tsuen Road). Relative abundance, composition of all recorded plant species at three proposed works sites are tabulated in **Appendix A**, with actual abundance provided for species of conservation importance.

Trees are dominated by *Acacia confusa* (台灣相思), *Casuarina equisetifolia* (木麻黃), *Celtis sinensis* (朴), *Ficus hispida* (對葉榕) and *Leucaena leucocephala* (銀合歡). The canopy cover is moderately dense and reaches about 6–12m high on average. Sub-canopy layer and ground cover are dominated by *Bidens alba* (白花鬼針草), *Caesalpinia crista* (華南雲實) and *Ligustrum sinense* (山指甲).

Nearly 66% of the recorded species are native. All recorded species is either very common or common in Hong Kong, except *Artabotrys hongkongensis* (香港鷹爪花), *Machilus pauhoi* (刨花潤楠) and *Pteris linearis* (線羽鳳尾蕨) restricts to several localities (Corlett et al., 2000; Hong Kong Herbarium, 2018). Three other species with restricted distribution, namely *Podocarpus macrophyllus* (羅漢松), *Dimocarpus longan* (龍眼) and *Ficus religiosa* (菩提樹) were found to be cultivated/ naturalized individuals, of which the latter two species are exotic.

3.3 Species of Conservation Importance

Five species of conservation importance were detected during the surveys, they are trees and seedlings of *Aquilaria sinensis* (土沉香), *Artocarpus hypargyreus* (白桂木); the shrub *Diospyros vaccinioides* (小果柿), and the climber *Gnetum luofuense* (羅浮買麻藤) and *Artabotrys hongkongensis* (香港鷹爪花). Details such as size, health condition, suitability of transplantation, etc. are listed in **Table 1**. Individuals to be transplanted were listed in **Table 2** and illustrated in **Plate 2**; while those to be retained *in-situ* were shown in **Plate 3**.

Previous tree survey completed by third party surveyors recommended to transplant two *Aquilaria sinensis* (土沉香) trees, namely R-T02142-(T) and R-T02652-(T). However, after vegetation surveys have been completed on 4th September 2018, the signal No. 10 typhoon Mangkhut has made a huge damage to trees all over Hong Kong on 16th September 2018, including R-T02652-(T) at New Clear Water Bay Road/ Shun Lee Tsuen Road site. This tree has already been removed by third party emergency taskforce when site visit was made by the Environmental Team three days after the typhoon (**Figure 2a**; **Plate 4**). Tree Failure Incident Report prepared separately by the Supervisor of the Contract is attached in **Appendix B**).

Another tree R-T02157(F) that identified as *Syzygium levinei* (山蒲桃) by previously submitted tree survey report or Tree Preservation and Removal Proposal (TPRP) is revealed to be *Aquilaria sinensis* (土沉香). While the tree survey report/ TPRP shall be updated, R-T02157(F) shall be included in the transplantation proposal.

On top of the two *Aquilaria sinensis* (土沉香) trees, another 53 *Aquilaria sinensis* (土沉香) seedlings were detected at the Clear Water Bay Road/ On Sau Road site. Among them, 49 were located under the two mother trees R-T02142-(T) and R-T02157(F) that to be transplanted (**Figure 2b**); while the other four was observed within Project Site boundary but outside works site at Clear Water Bay Road/ On Sau Road site (**Figure 2c**).

Aquilaria sinensis (土沉香) is scheduled under Protection of Endangered Species of Animals and Plants Ordinance (Cap.586). It is a rare and precious plant of Hong Kong with a Near Threatened (NT) status in China (AFCD, 2003). It is listed in China Plant Red Data Book and is classified as a wild plant under State Protection Category II. Internationally, it is assessed as Vulnerable (VU) in the IUCN Red List (IUCN, 2018). This species is still locally common but over-exploitation is a continuous threat (AFCD, 2003).

Four individuals of the climber *Gnetum luofuense* (羅浮買麻藤) were detected within works site at the Clear Water Bay Road/ On Sau Road site (**Figure 2b**). It is very common in Hong Kong while it is listed as Near Threatened (NT) internationally under IUCN Red List, due to potential decline in population caused by habitat loss (IUCN, 2018).

Two clutches of *Artabotrys hongkongensis* (香港鷹爪花) were detected on a hillside woodland within Project Site boundary but outside works site at the Clear Water Bay Road/ On Sau Road site (**Figure 2c**). It is listed as a rare and precious plant of Hong Kong (AFCD, 2003).

Two saplings and four seedlings of *Artocarpus hypargyreus* (白桂木) were detected on the same hillside woodland within Project Site boundary but outside works site at the Clear Water Bay Road/ On Sau Road site (**Figure 2c**). This species is listed as a rare and precious plant of Hong Kong (AFCD, 2003) and China Plant Red Data Book, with a Near Threatened (NT) status in China. Internationally it is ranked as Vulnerable (VU) in the IUCN Red List (IUCN, 2018). However this tree species is common throughout Hong Kong (Corlett et al., 2000; AFCD, 2003).

Six individuals of *Diospyros vaccinioides* (小果柿) were detected on the same hillside woodland within Project Site boundary but outside works site at the Clear Water Bay Road/ On Sau Road site (**Figure 2c**). It has been ranked as Critically Endangered (CR) internationally in the IUCN Red List (IUCN, 2018) since over exploitation has depleted all mature individuals in some populations. However, this species is common in woodland of Hong Kong.

4. CONCLUSIONS & RECOMMENDATIONS

The present detailed vegetation survey verified that there are two plant species of conservation importance would be subject to direct ecological impact. They include the two *Aquilaria sinensis* (土沉香) trees (R-T02142-(T) and R-T02157(F)), which is recommended for transplantation.

Aquilaria sinensis (土沉香) R-T02652-(T) that has been recommended for transplantation in previous tree survey was found to be damaged by typhoon Mangkhut on 16th September 2018. It was already removed by third party emergency taskforce. Transplantation is no longer applicable to this tree.

An additional of 53 *Aquilaria sinensis* (土沉香) seedlings were newly discovered from previous EIA surveys. Among them, 49 were located under the two mother trees R-T02142-(T) and R-T02157(F) that to be transplanted, therefore they shall be included in the transplantation proposal as advised in the EM&A Manual, and shall be transplanted along with the two adult trees at suitable recipient site(s). The remaining four that observed within Project Site boundary but outside works site at Clear Water Bay Road/ On Sau Road site would not be affected by construction works. These four individuals should be retained *in-situ*.

The final quantity of *Aquilaria sinensis* (土沉香) seedlings to be transplanted shall be determined by the qualified Plant Specialist of the Environmental Team under his/her on-site verification and supervision during the day(s) of transplantation. Any additional individuals detected shall receive same transplantation treatment as the recorded individuals. Photographic records of all transplanted individuals shall be included in the completion report after transplantation. Monitoring afterwards shall follow such finalised record in the completion report.

The four climber *Gnetum luofuense* (羅浮買麻藤) would also be directly affected by improvement works at the Clear Water Bay Road/ On Sau Road site. Neither the approved EIA report nor the EM&A Manual recommended any specific mitigation measures. These climbers are not suitable for transplantation due to its growth form. Due to its low abundance under direct ecological impact, fast natural recolonization compared to *Aquilaria sinensis* (土沉香) trees; and their high commonness in Hong Kong without being listed under local legislation, the impact arose from unavoidable removal of these four individuals would be minor and acceptable.

The other three plant species of conservation importance, namely *Artabotrys hongkongensis* (香港鷹爪花), *Artocarpus hypargyreus* (白桂木) and *Diospyros vaccinioides* (小果柿) are all recorded on a hillside woodland that outside the currently proposed works sites but within Project Site boundaries. These individuals should be retained *in-situ*.

All transplanted, retained and preserved species of conservation importance should be monitored regularly by a plant specialist to ensure their condition throughout the construction phase.

During the works design stage, vegetation clearance and access shall be restricted within works sites in order to reduce possible disturbance from site staff. Hoarding or fencing should be erected around the works sites during construction phase to restrict access to adjacent habitat, especially where the plant species of conservation importance to be retained *in-situ* at the Clear Water Bay Road/ On Sau Road site.

Alignment of access and hoarding shall be confirmed by the Engineer on site to avoid any avoidable disturbance to existing vegetation. No working platform, equipment, waste or soil shall be placed or dumped outside the work sites. Runoff and discharge shall be controlled not to direct towards these areas too.

Construction dust should be suppressed to avoid and minimize leaves covering on plants, which would affect their photosynthesis, and thus their health and growth. This can be achieved by regular spraying of haul roads; proper storage of construction materials; and minimize windblown litter and dust during waste transportation by covering trucks or transporting wastes in enclosed containers.

In case renewal of landscape softwork would be conducted, native ground covering species should be considered over any exotic and invasive species such as *Wedelia trilobata* (三裂葉蟛蜞菊). Despite high tolerance to various site conditions with even poor soil, *Wedelia trilobata* (三裂葉蟛蜞菊) is one of the 100 most invasive species listed by IUCN Invasive Species Specialist Group (ISSG). It may quickly invade adjacent areas when the site is disturbed (e.g. construction works) and therefore is not recommend to be used within Country Park area (GEO, 2011). The same principle shall be apply to the Clear Water Bay Road/ On Sau Road site with more continuous native woodland.

Vegetation clearance should preserve native canopy and sub-canopy layer as far as practical to maintain shading and soil moisture at woodland edge. Ecologically, planting of native climbers and herbs/ ferns is preferable than hydroseeding grass mix among habitat type of woodland. Any invasive plants such as *Bidens alba* (白花鬼針草), *Lantana camara* (馬纓丹), *Leucaena leucocephala* (銀合歡) and *Mikania micrantha* (薇甘菊) detected during construction phase should be uprooted, packed and removed from the work site.

All mitigation measures recommended in the approved EIA report and EM&A Manual shall be strictly followed.

REFERENCES

- AFCD (2003) Rare and Precious Plants of Hong Kong. AFCD, Friends of the Country Parks and Cosmos Books Ltd. Hong Kong.
- AFCD (2018) Hong Kong Biodiversity Database.
<http://www.afcd.gov.hk/english/conservation/hkbiodiversity/database/search.asp?lang=en>.
Accessed on 10th August 2018.
- Corlett, R.T., Xing, F.W., Ng, S.C., Chau, L.K.C. & Wong, L.M.Y. (2000) Hong Kong vascular plants: Distribution and status. *Memoirs of the Hong Kong Natural History Society*, **23**, 1-157.
- GEO (2011) Technical Guidelines on Landscape Treatment for Slopes Publication No. 1/2011. HKSAR. Hong Kong
- Hong Kong Herbarium (2018) Hong Kong Plant Database.
<http://www.herbarium.gov.hk/index.aspx> Accessed on 10th August 2018.
- IUCN (2018) The IUCN Red List of Threatened Species. <http://www.iucnredlist.org/> Accessed on 10th August 2018.

Figure 1a. Location plan for road improvement works in development of Anderson Road Quarry Site.

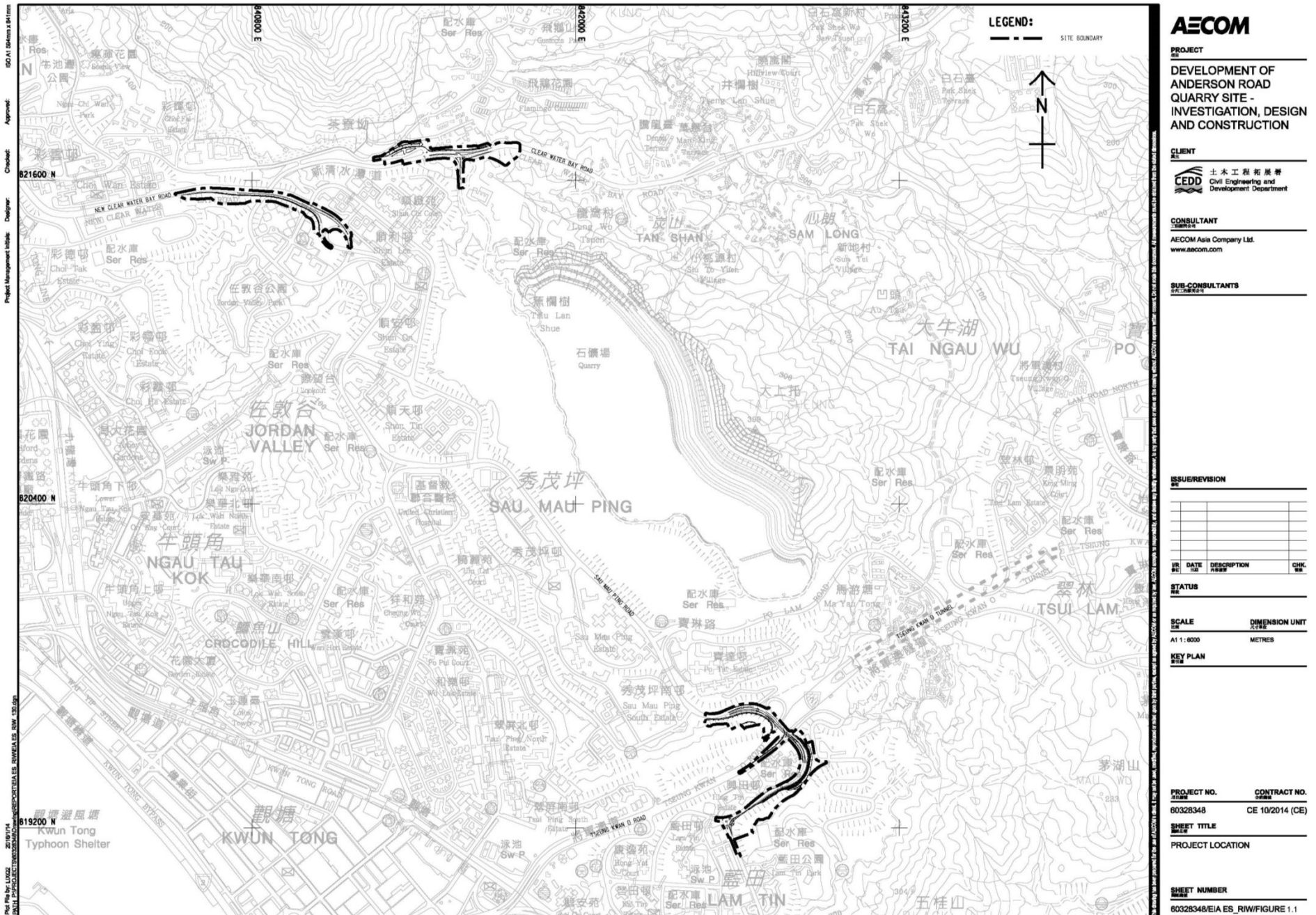


Figure 1b. Project Site boundary at Sau Mau Ping Road/ Lin Tak Road. Arrows indicate general photo view in Plate 1.

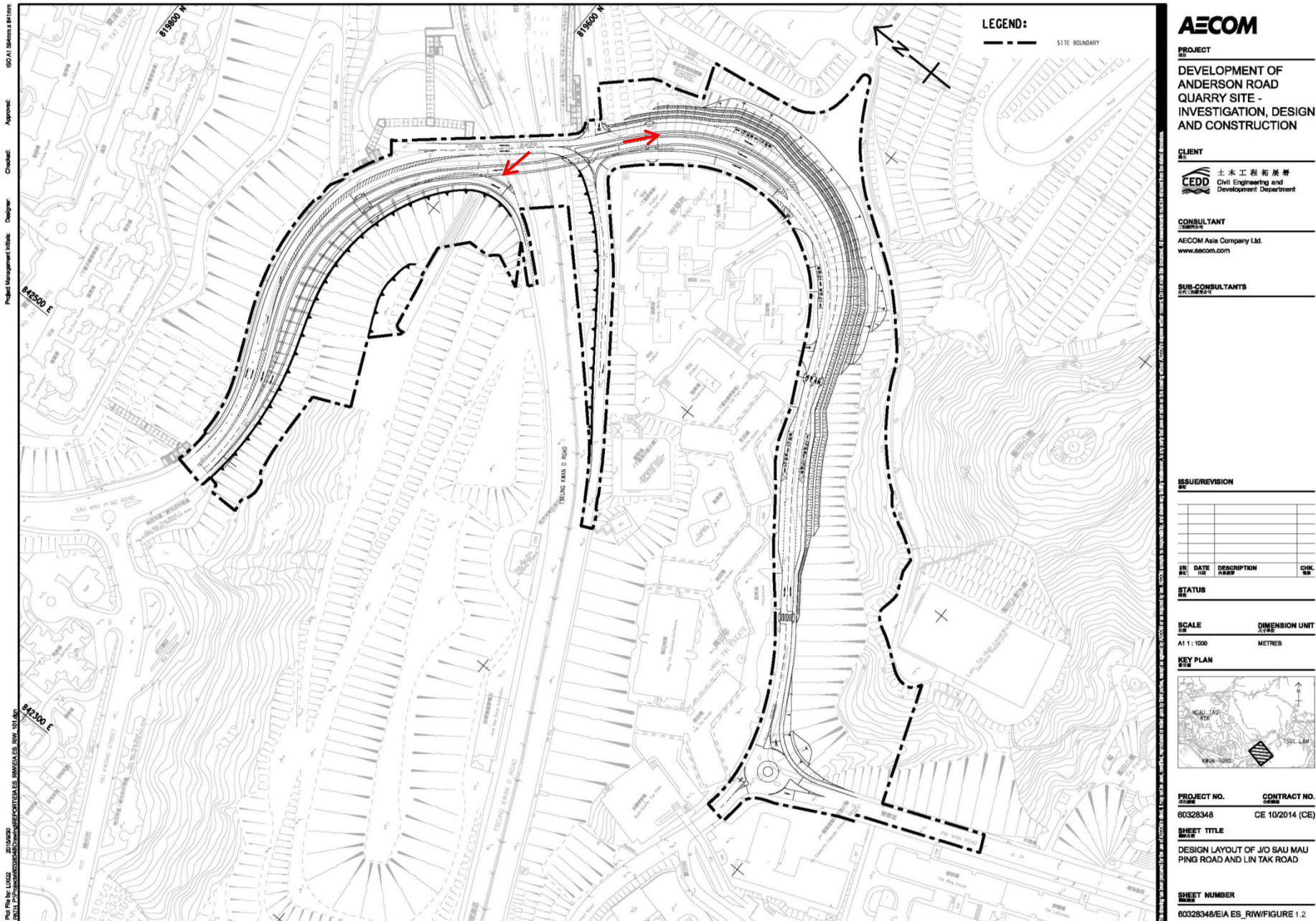


Figure 1c. Project Site boundary at Clear Water Bay Road/ On Sau Road. Arrows indicate general photo view in Plate 1.

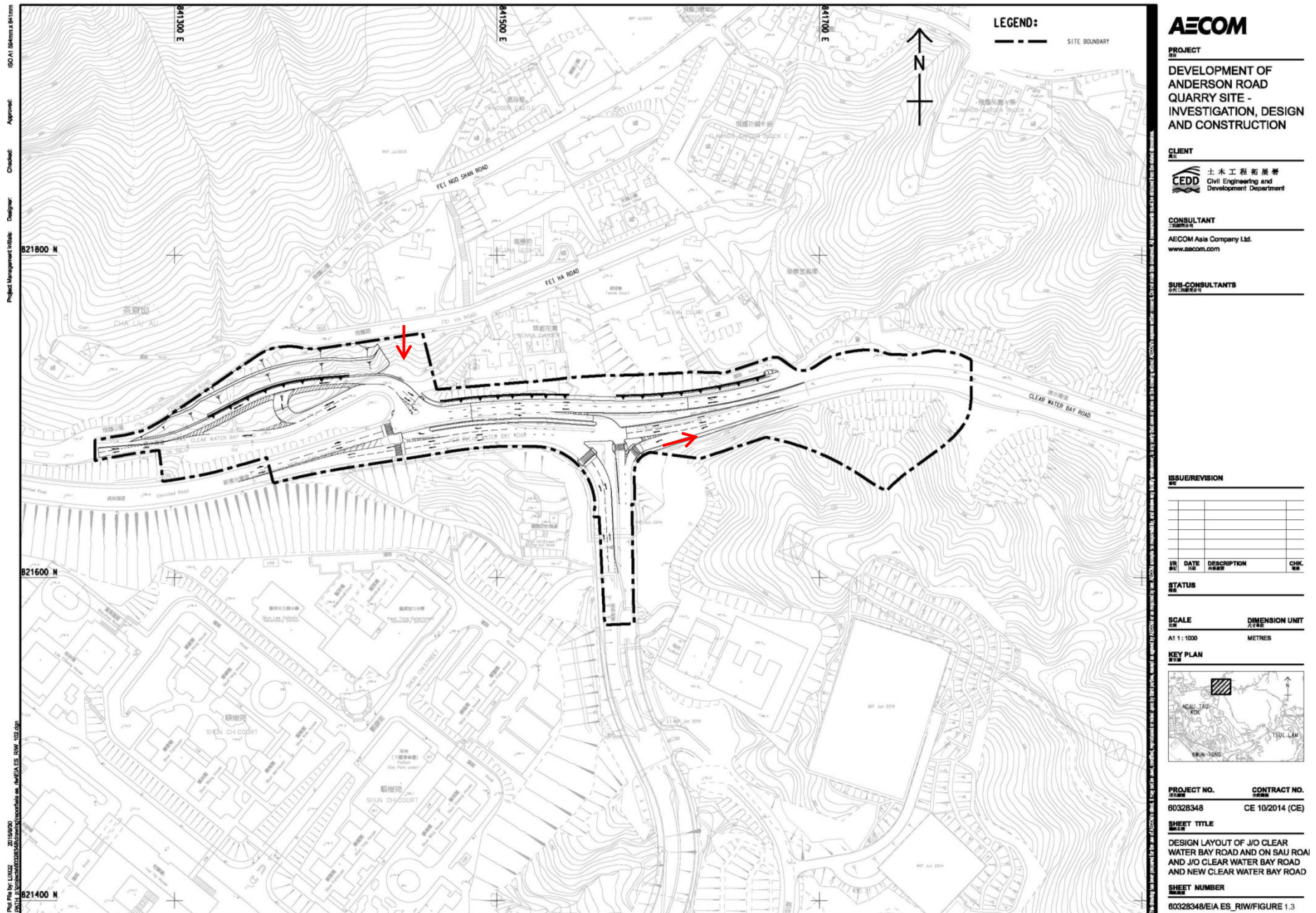


Figure 1d. Project Site boundary at New Clear Water Bay Road/ Shun Lee Tsuen Road. Arrows indicate general photo view in Plate 1.

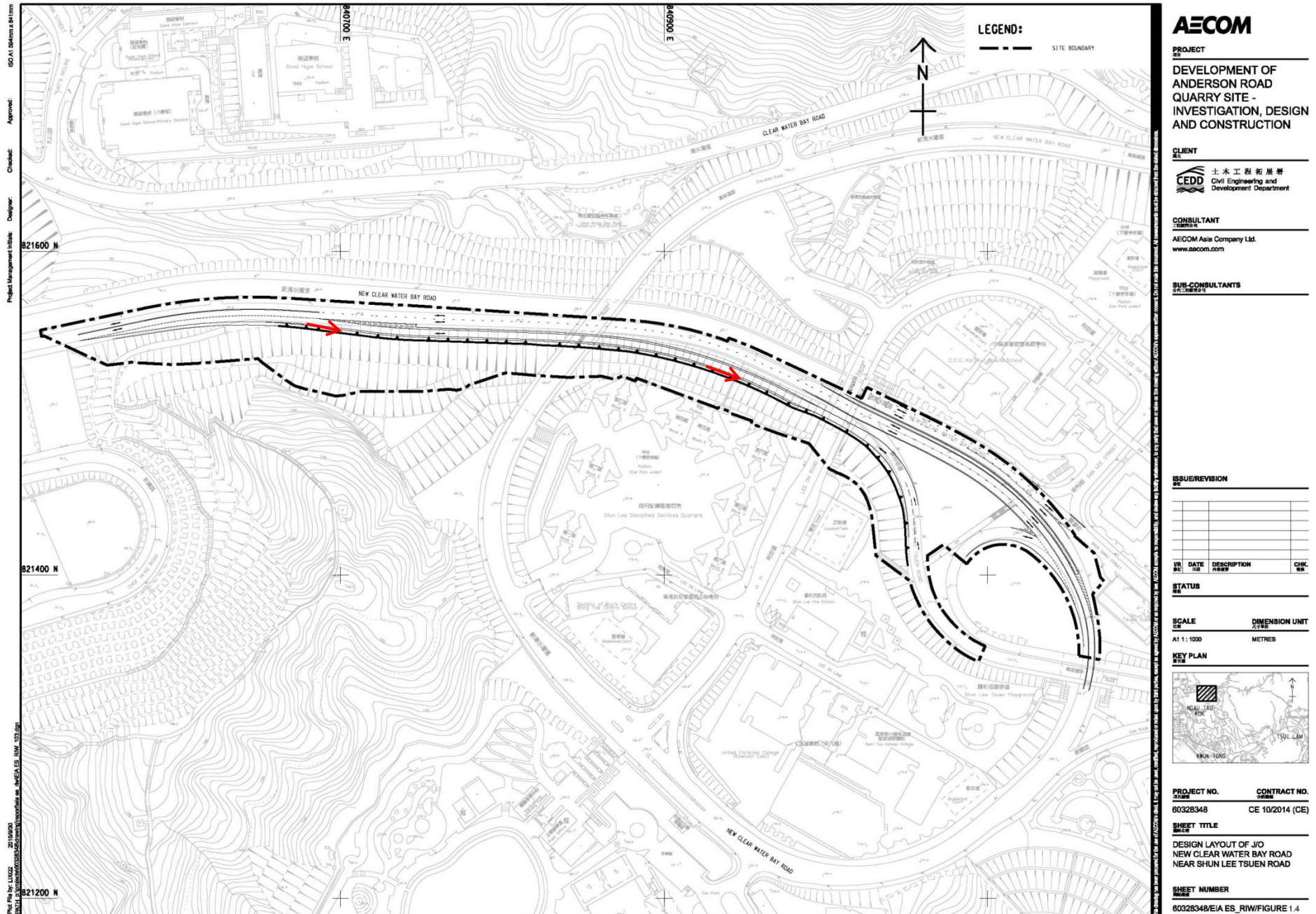


Figure 1e. Vegetation survey extent at the three proposed sites, which includes boundaries enclosed by all three colours. There will be no construction works at areas within Project Sites boundaries but outside exact works sites and overlapping boundaries.

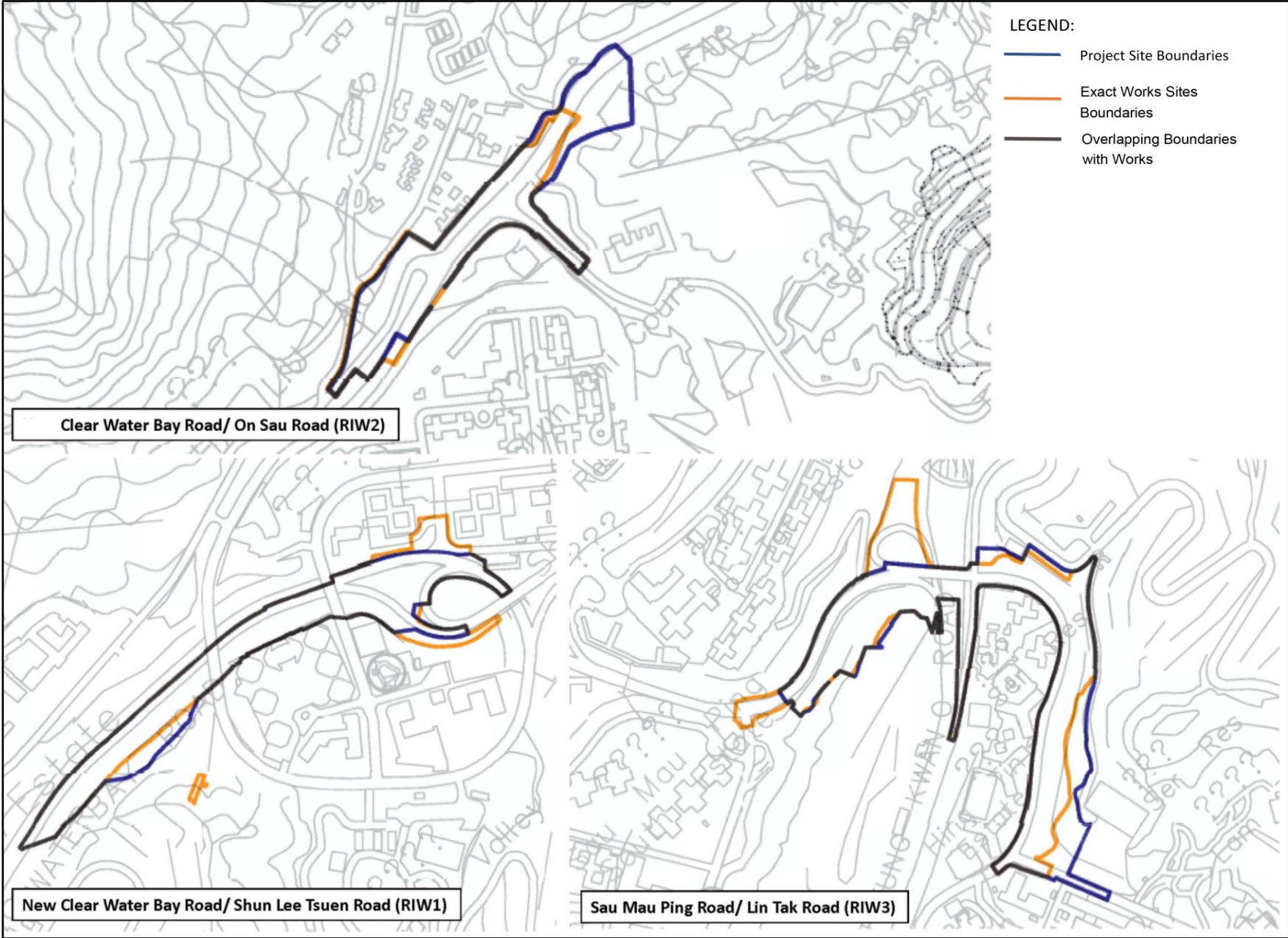


Figure 2a. Location of plant species of conservation importance originally recorded within works site at New Clear Water Bay Road/ Shun Lee Tsuen Road.

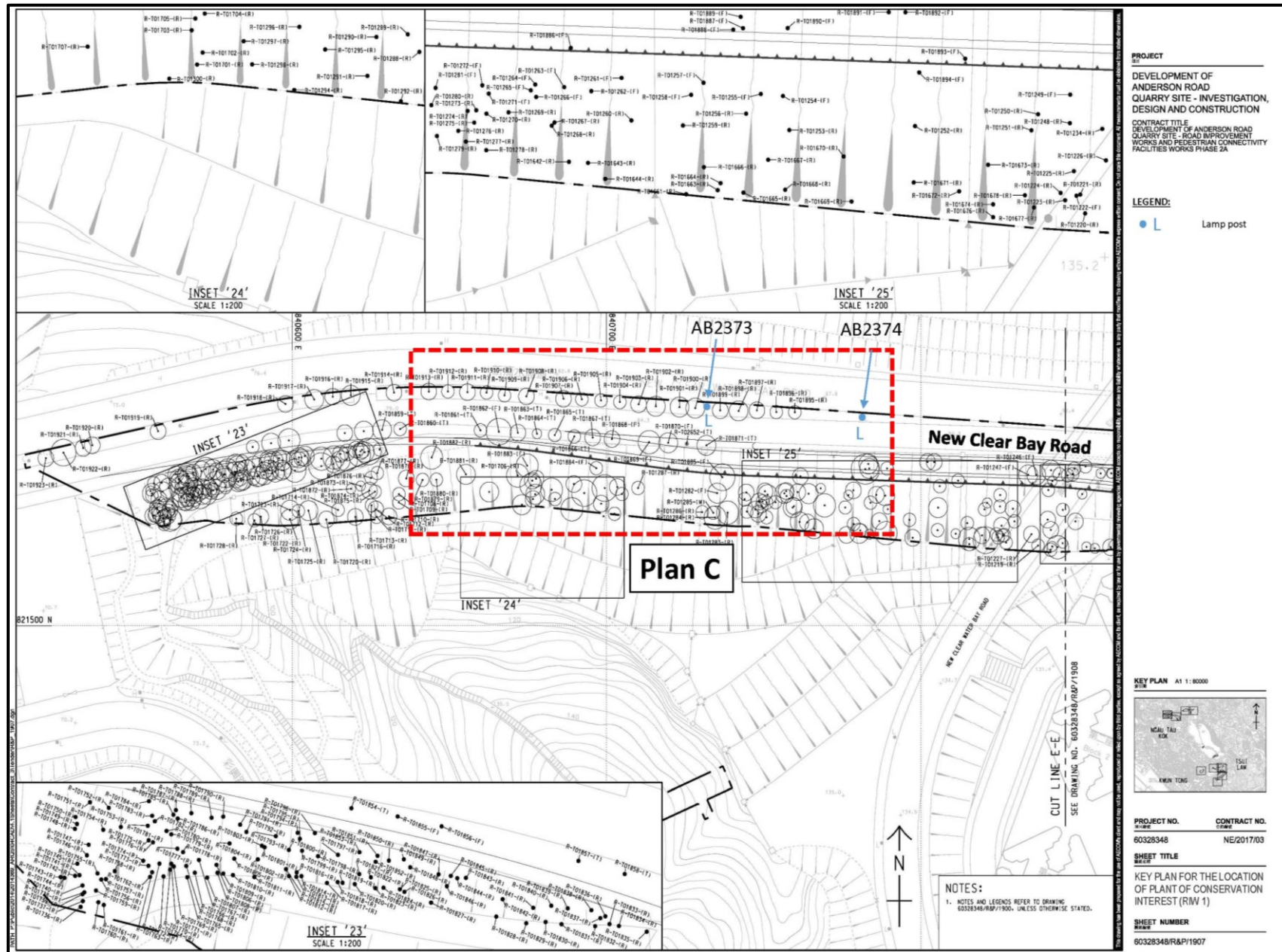


Figure 2a cont'd. Location of plant species of conservation importance originally recorded within works site at New Clear Water Bay Road/ Shun Lee Tsuen Road. Close up of Plan C. this tree was damaged by typhoon Mangkhut and was already removed.



Figure 2b. Location of plant species of conservation importance recorded within works site at Clear Water Bay Road/ On Sau Road site.

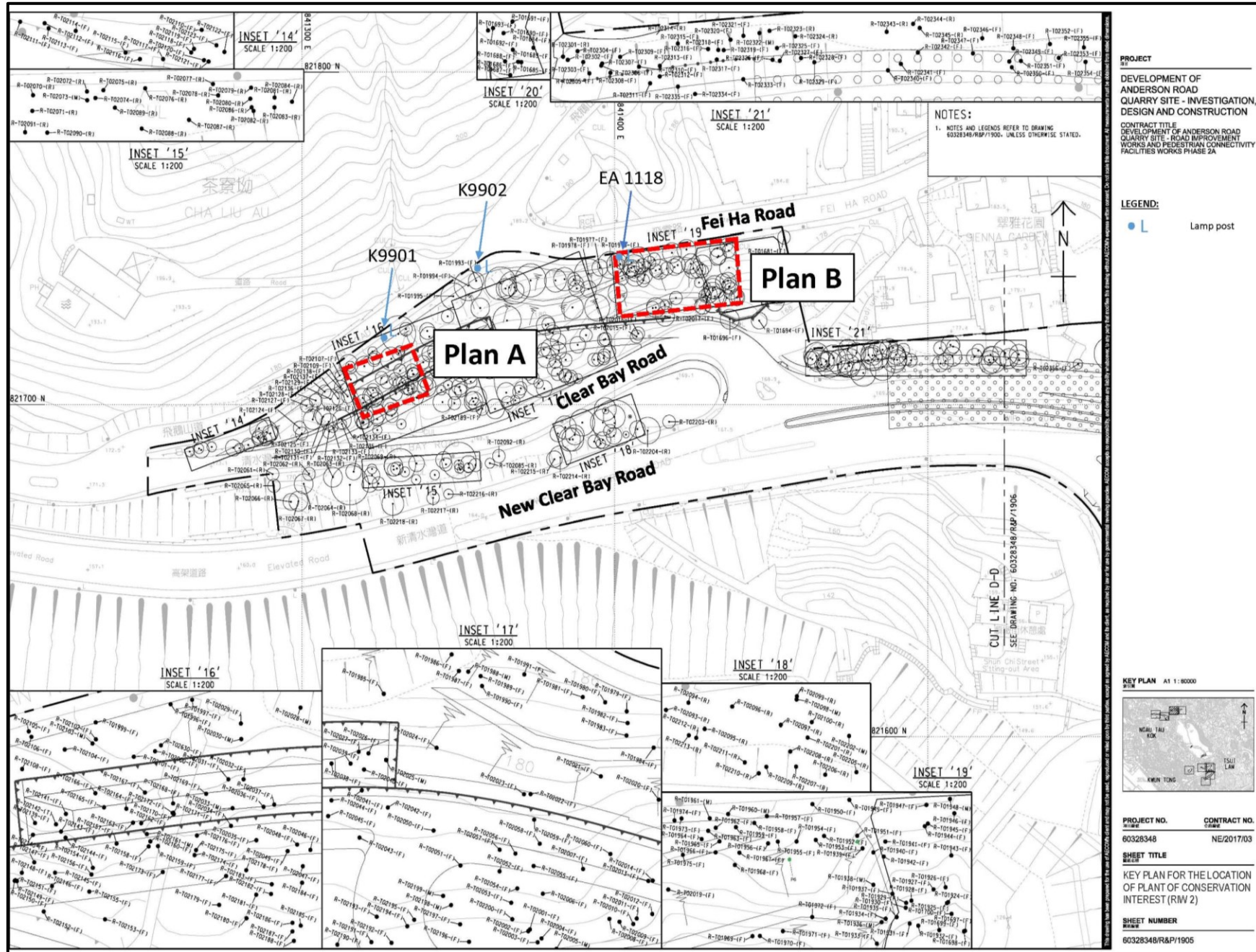


Figure 2b cont'd. Location of plant species of conservation importance recorded within works site at Clear Water Bay Road/ On Sau Road site. Close up of Plan A (above) and Plan B (below).

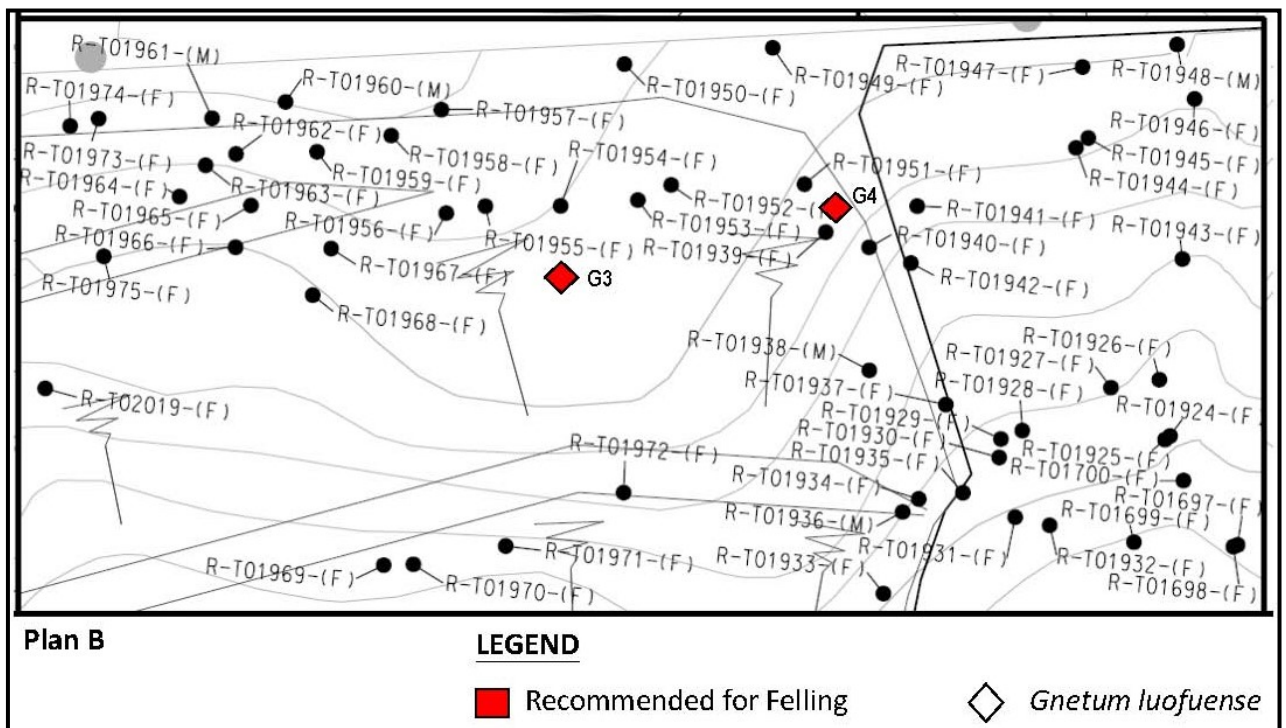
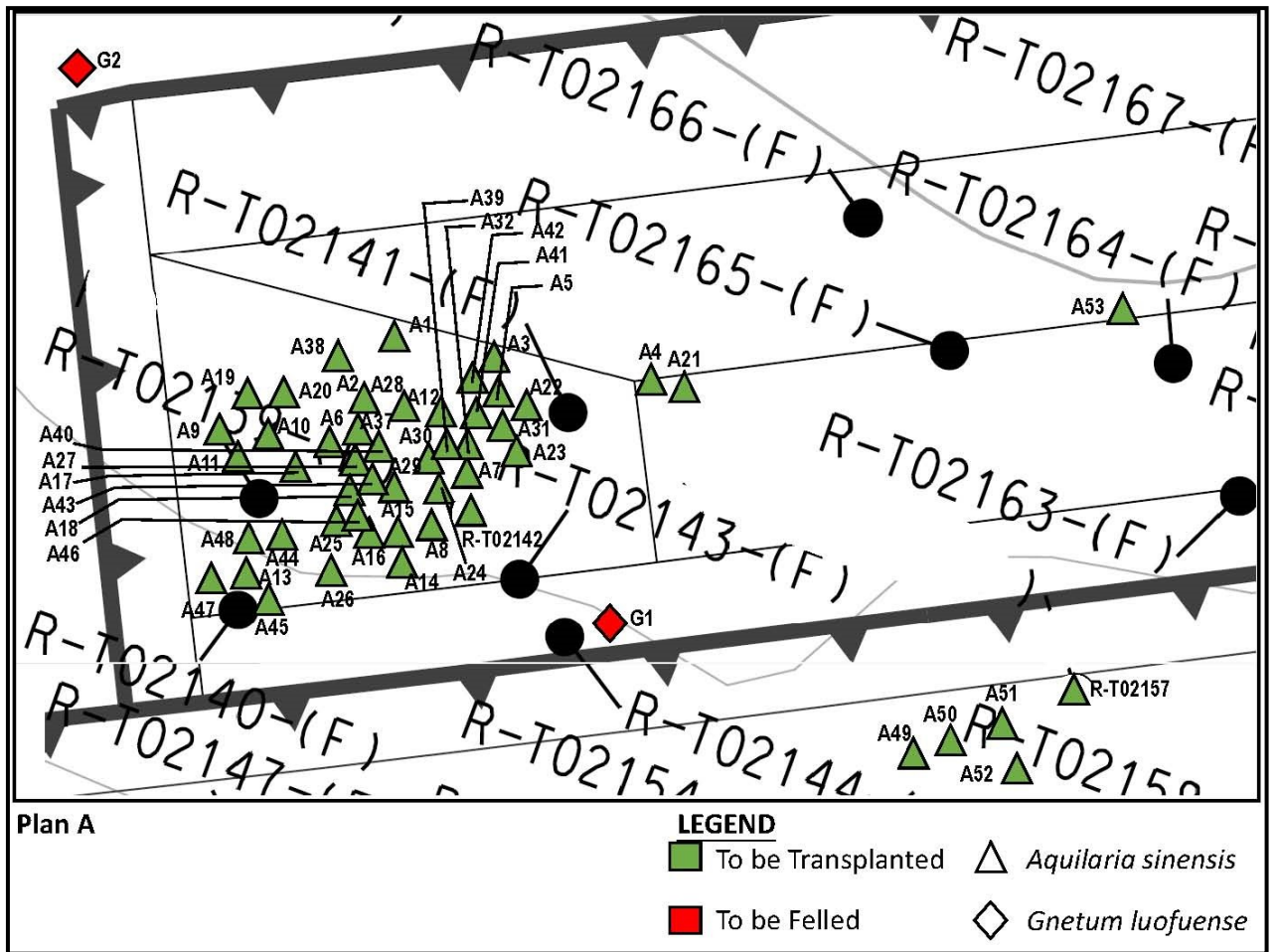


Figure 2c. Location of plant species of conservation importance recorded within Project Site boundary but outside works site at Clear Water Bay Road/ On Sau Road site.

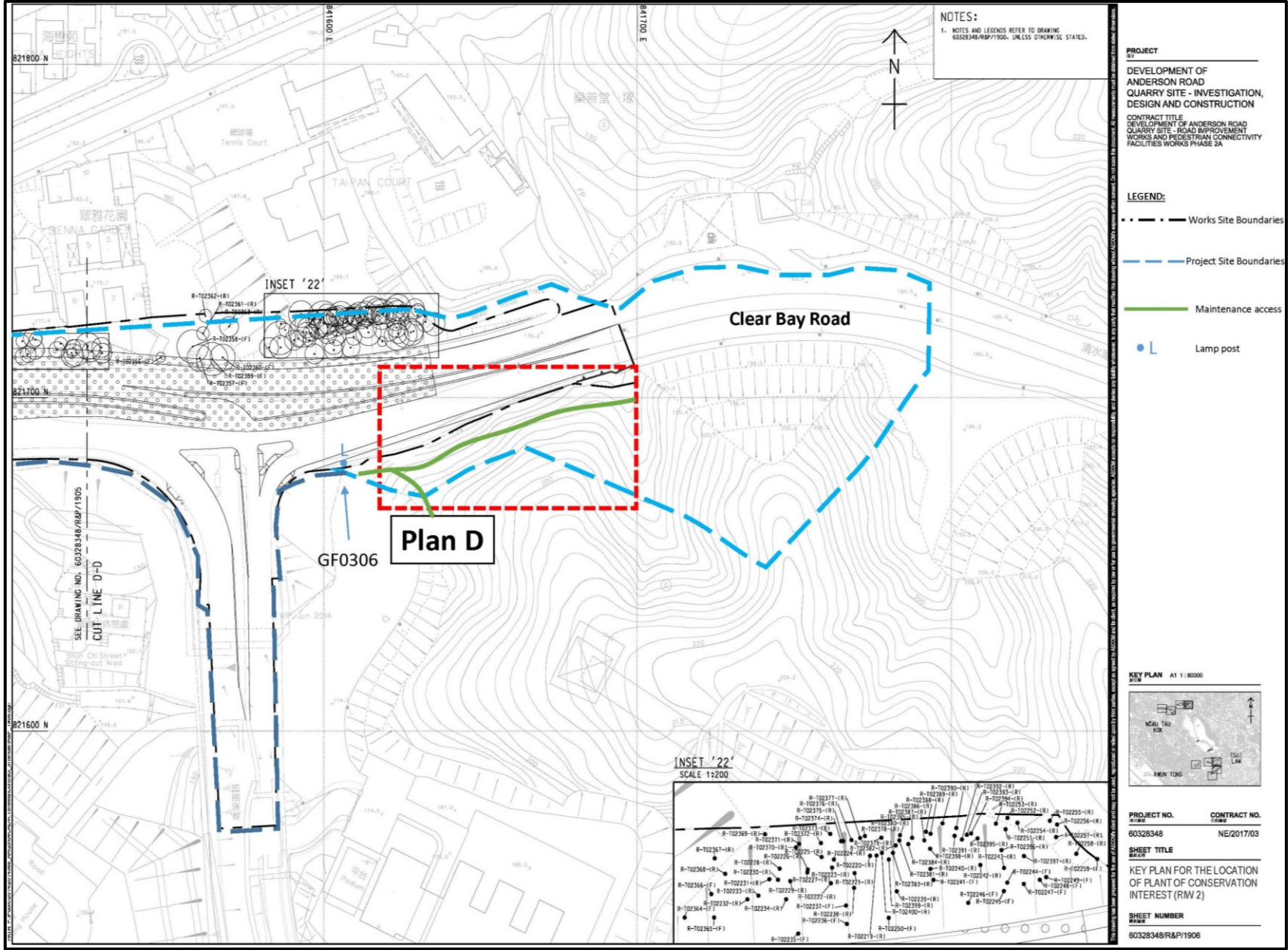


Figure 2c cont'd. Location of plant species of conservation importance recorded within Project Site boundary but outside works site at Clear Water Bay Road/ On Sau Road site. Close up of Plan D. No works would be carried out at this area and the plant species of conservation importance would not be affected.

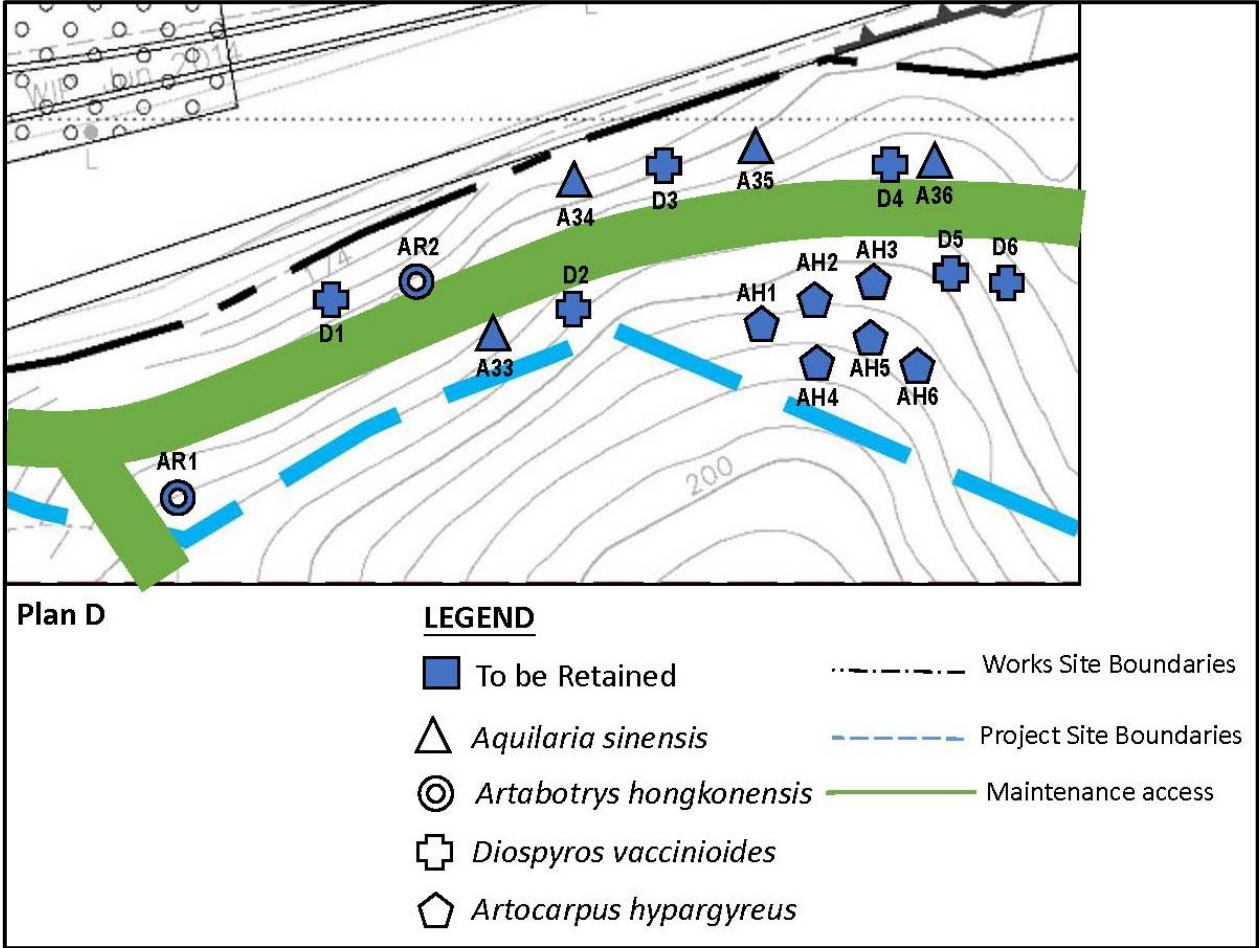


Plate 1. General view and major habitat type of the three survey extents.



Plantation woodland and landscape plantation at Sau Mau Ping Road/ Lin Tak Road



Secondary woodland at Clear Water Bay Road/ On Sau Road

Plate 1 cont'd. General view and major habitat type of the three survey extents.



Landscape plantation and undergrowth at New Clear Water Bay Road/
Shun Lee Tsuen Road

Plate 2. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis R-T02142-(T)



Aquilaria sinensis – R-T02157-(F)

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A1



Aquilaria sinensis – A2

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A3



Aquilaria sinensis – A4

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A5



Aquilaria sinensis – A6

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A7



Aquilaria sinensis – A8

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.

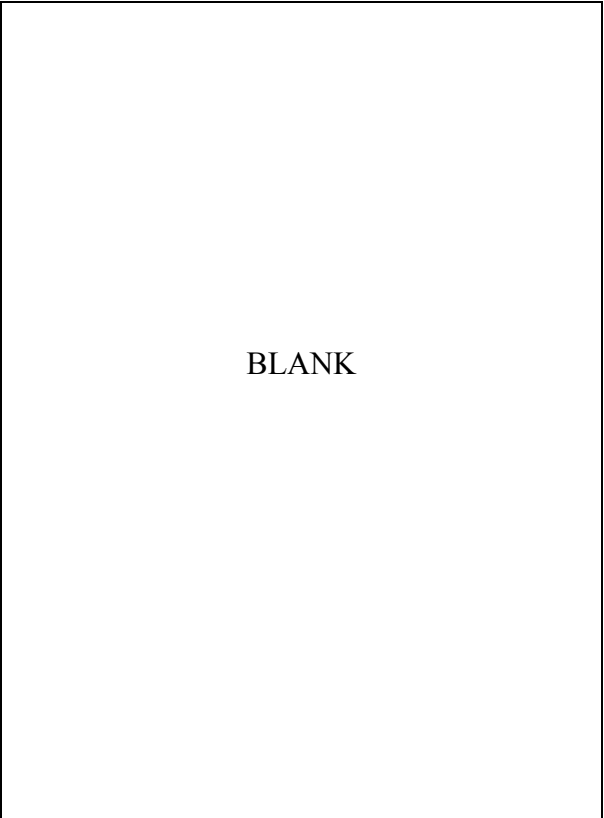


Aquilaria sinensis – A9



Aquilaria sinensis – A10

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A11



Aquilaria sinensis – A12

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



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Aquilaria sinensis – A13



Aquilaria sinensis – A14

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A15



Aquilaria sinensis – A16

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A17



Aquilaria sinensis – A18

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A19

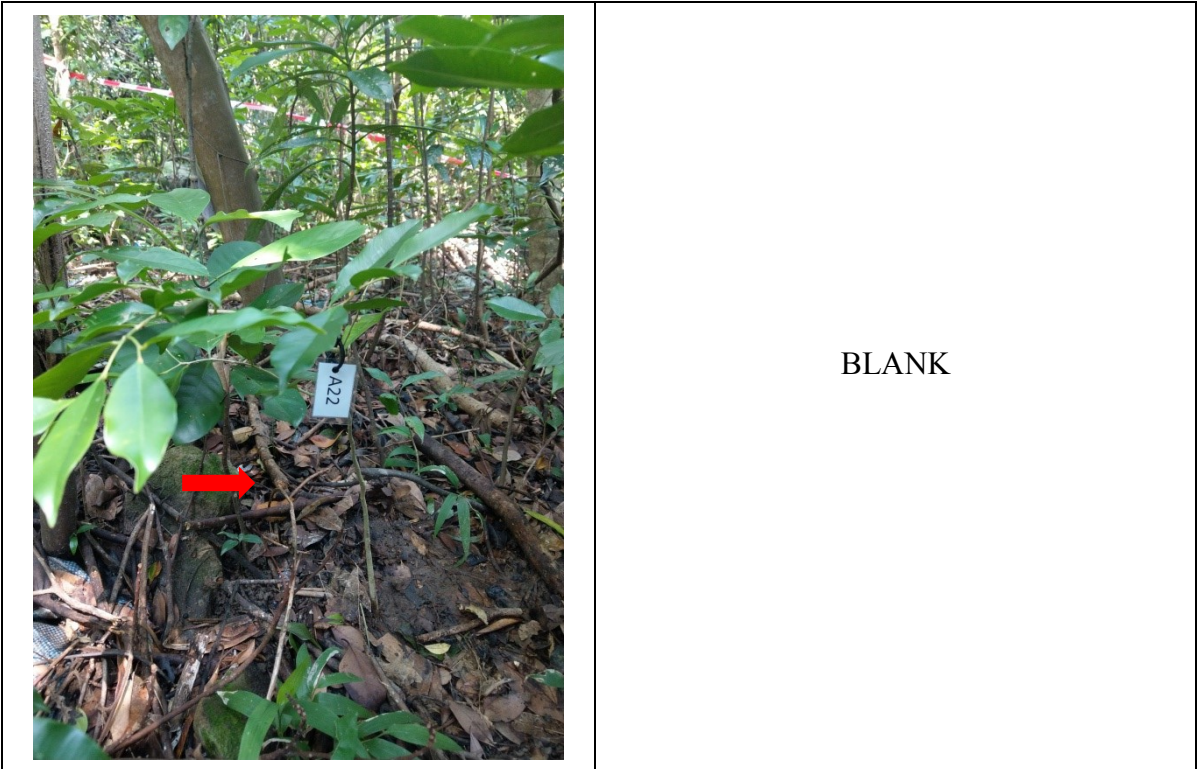


Aquilaria sinensis – A20



Aquilaria sinensis – A21

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A22



Aquilaria sinensis – A23

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A24



Aquilaria sinensis – A25

Aquilaria sinensis – A26

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A27



Aquilaria sinensis – A28

Aquilaria sinensis – A29

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



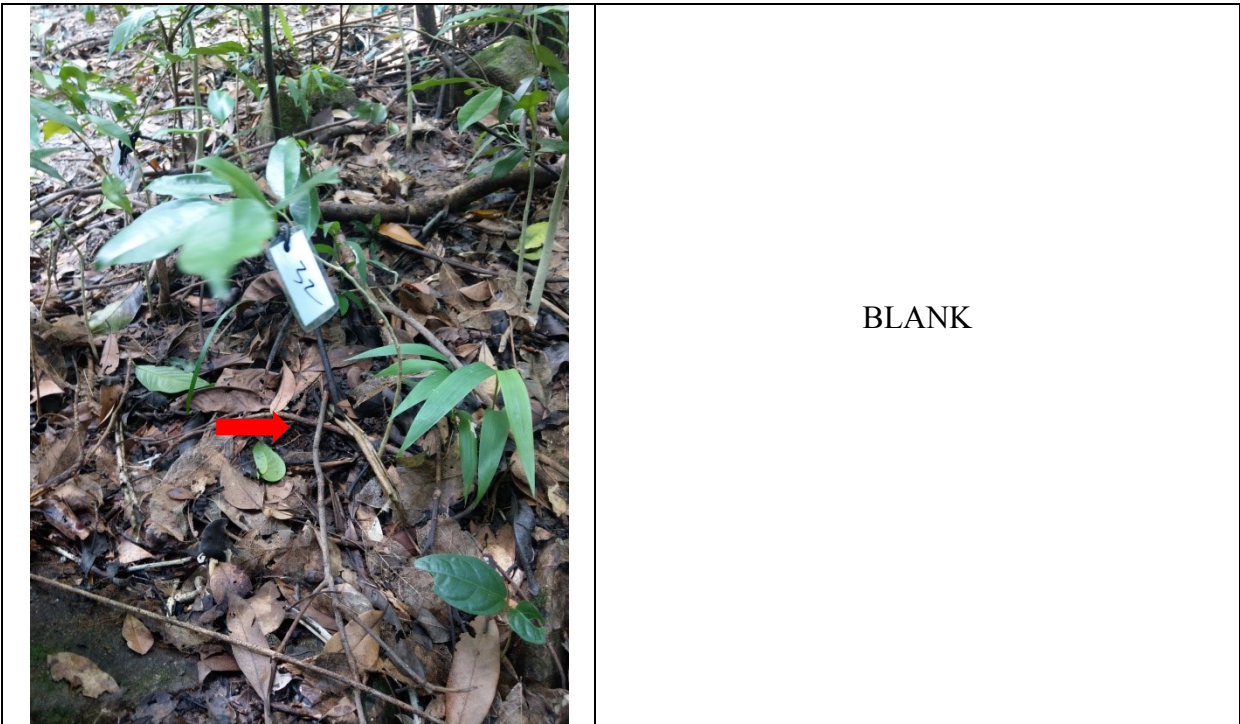
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Aquilaria sinensis – A30



Aquilaria sinensis – A31

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A32



Aquilaria sinensis – A37

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A38



Aquilaria sinensis – A39

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A40



Aquilaria sinensis – A41

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A42



Aquilaria sinensis – A43

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A44



Aquilaria sinensis – A45

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A46



Aquilaria sinensis – A47

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A48



Aquilaria sinensis – A49

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A50



Aquilaria sinensis – A51

Plate 2 cont'd. Photographic records of plant species of conservation importance detected within survey extents. These individuals were tagged and recommended to be transplanted.



Aquilaria sinensis – A52



Aquilaria sinensis – A53

Plate 3. Photographic records of plant species of conservation importance detected within survey extents but outside works site. These individuals would not be affected by works and were recommended to be retained *in-situ*.



Aquilaria sinensis – A33



Aquilaria sinensis – A34

Plate 3 cont'd. Photographic records of plant species of conservation importance detected within survey extents but outside works site. These individuals would not be affected by works and were recommended to be retained *in-situ*.



Aquilaria sinensis – A35



Aquilaria sinensis – A36



Artabotrys hongkonensis – AR1



Artabotrys hongkonensis – AR2

Plate 3 cont'd. Photographic records of plant species of conservation importance detected within survey extents but outside works site. These individuals would not be affected by works and were recommended to be retained *in-situ*.





 <p>A photograph of a young tree with green, lanceolate leaves in a forest setting. A red arrow points to the trunk of the tree.</p>	 <p>A photograph of a young tree with green, lanceolate leaves in a forest setting. A red arrow points to the trunk of the tree.</p>
<p><i>Artocarpus hypargyreus</i> – AH1</p>	<p><i>Artocarpus hypargyreus</i> – AH2</p>
 <p>A close-up photograph of the leaves of a young tree, showing their green color and lanceolate shape.</p>	 <p>A photograph of a young tree with green, lanceolate leaves in a forest setting. A hand is visible holding a blue pen next to the trunk of the tree.</p>
<p><i>Artocarpus hypargyreus</i> – AH3</p>	<p><i>Artocarpus hypargyreus</i> – AH4</p>

Plate 3 cont'd. Photographic records of plant species of conservation importance detected within survey extents but outside works site. These individuals would not be affected by works and were recommended to be retained *in-situ*.





	
<p><i>Artocarpus hypargyreus</i> – AH5</p>	<p><i>Artocarpus hypargyreus</i> – AH5</p>
	
<p><i>Artocarpus hypargyreus</i> – AH6</p>	<p><i>Diospyros vacciniodes</i> – D1</p>

Plate 3 cont'd. Photographic records of plant species of conservation importance detected within survey extents but outside works site. These individuals would not be affected by works and were recommended to be retained *in-situ*.





	
<p><i>Diospyros vacciniodes</i> – D2</p>	<p><i>Diospyros vacciniodes</i> – D3</p>
	
<p><i>Diospyros vacciniodes</i> – D4</p>	<p><i>Diospyros vacciniodes</i> – D5</p>

Plate 3 cont'd. Photographic records of plant species of conservation importance detected within survey extents but outside works site. These individuals would not be affected by works and were recommended to be retained *in-situ*.



D6



G1



G2



G3



G4

Plate 4. The original *Aquilaria sinensis* to be transplanted was removed by third party emergency taskforce after damaged by the signal No. 10 typhoon Mangkhut on 16th September 2018.



R-T02652-(T)

Table 1. Details of plant species of conservation importance recorded in the three survey extents.

No.	Species Name	Chinese Name	Growth Form	Height (m)	Crown spread (m)	DBH (mm)	Tree survival rate after transplanting	Form	Health & structural condition	Amenity value	Potentially hazardous	Recommendation (Retain/Transplant/Fell)	Remarks
R-T02142-(T)	<i>Aquilaria sinensis</i> ¹	土沉香	Tree	8	5	130	Medium	Fair	Fair	Good	No	Transplant	
R-T02157-(F)	<i>Aquilaria sinensis</i>	土沉香	Tree	6	4	135	Medium	Fair	Fair	Good	No	Transplant	
A1-A32; A37-53	<i>Aquilaria sinensis</i>	土沉香	Tree seedlings	-	-	-	Medium	Fair	Fair	Fair	No	Transplant	Seedlings within work site
A33-A36	<i>Aquilaria sinensis</i>	土沉香	Tree	-	-	-	Medium	Fair	Fair	Fair	No	Retain	Seedlings outside work site
AR1-AR2	<i>Artabotrys hongkongensis</i> ²	香港鷹爪花	Climber	-	-	-	Medium	Fair	Fair	Good	No	Retain	2 patches
AH1-AH6	<i>Artocarpus hypargyreus</i> ³	白桂木	Tree	-	-	-	Medium	Fair	Fair	Good	No	Retain	2 saplings and 4 seedlings
D1-D6	<i>Diospyros vaccinioides</i>	小果柿	Shrub	-	-	-	Medium	Fair	Fair	Fair	No	Retain	6 individuals
G1-G4	<i>Gnetum luofuense</i>	羅浮買麻藤	Climber	-	-	-	Low	Fair	Fair	Fair	No	Retain	4 individuals

Note and Conservation Status:

- Height, crown spread and DBH are not measured for seedlings and small individuals

- AFCD (2003) Rare and Precious Plants of Hong Kong; CR = Critically Endangered; VU = Vulnerable; NT = Near Threatened; IUCN = IUCN Red List; CPRDB = China Plant Red Data Book; Cat. II = State Protection Category II; Cap. 586 = Protection of Endangered Species of Animals and Plants Ordinance

1. Cap.586; AFCD (2003); VU in IUCN; NT in China; Cat. II; CPRDB

2. AFCD (2003)

3. AFCD (2003); VU in IUCN; NT in China; CPRDB

4. CR in IUCN

5. NT in IUCN

6. High: Likely to survive after transplantation; Medium: >50% possibility of survival after transplantation; Low: Unlikely to survive due to poor health/form, structurally difficult to transplant, or tree species itself is not adaptive to environmental change.

Table 2. Individuals of plant species of conservation importance recommended for transplantation.

Species Name	Chinese Name	No.	Size	Height (m)	Crown spread (m)	DBH (mm)	Form	Health condition	Structural condition	Amenity value
Original location before transplantation: Clear Water Bay Road/ On Sau Road site										
<i>Aquilaria sinensis</i> ¹	土沉香	R-T02142-(T)	Tree	8	5	130	Fair	Fair	Fair	Good
		R-T02157-(F)	Tree	6	4	135	Fair	Fair	Fair	Good
		A1	Seedling	0.43	0.5	N/A	Fair	Fair	Fair	Fair
		A2	Seedling	0.47	0.68	N/A	Fair	Fair	Fair	Fair
		A3	Seedling	0.55	0.6	N/A	Fair	Fair	Fair	Fair
		A4	Seedling	1.07	1	N/A	Fair	Fair	Fair	Fair
		A5	Seedling	0.95	0.62	N/A	Fair	Fair	Fair	Fair
		A6	Seedling	0.35	0.48	N/A	Fair	Fair	Fair	Fair
		A7	Seedling	0.75	0.74	N/A	Fair	Fair	Fair	Fair
		A8	Seedling	0.5	0.43	N/A	Fair	Fair	Fair	Fair
		A9	Seedling	0.7	0.8	N/A	Fair	Fair	Fair	Fair
		A10	Seedling	0.37	0.32	N/A	Fair	Fair	Fair	Fair
		A11	Seedling	0.5	0.55	N/A	Fair	Fair	Fair	Fair
		A12	Seedling	0.32	0.28	N/A	Fair	Fair	Fair	Fair
		A13	Seedling	0.29	0.27	N/A	Fair	Fair	Fair	Fair
		A14	Seedling	0.72	0.48	N/A	Fair	Fair	Fair	Fair
		A15	Seedling	0.48	0.44	N/A	Fair	Fair	Fair	Fair
		A16	Seedling	0.49	0.41	N/A	Fair	Fair	Fair	Fair
		A17	Seedling	0.53	0.5	N/A	Fair	Fair	Fair	Fair
		A18	Seedling	0.65	0.47	N/A	Fair	Fair	Fair	Fair
		A19	Seedling	0.32	0.39	N/A	Fair	Fair	Fair	Fair
		A20	Seedling	0.3	0.25	N/A	Fair	Fair	Fair	Fair
		A21	Seedling	0.43	0.55	N/A	Fair	Fair	Fair	Fair
		A22	Seedling	0.5	0.4	N/A	Fair	Fair	Fair	Fair
		A23	Seedling	0.9	0.83	N/A	Fair	Fair	Fair	Fair
		A24	Seedling	0.31	0.22	N/A	Fair	Fair	Fair	Fair
		A25	Seedling	0.34	0.32	N/A	Fair	Fair	Fair	Fair
		A26	Seedling	0.41	0.22	N/A	Fair	Fair	Fair	Fair
		A27	Seedling	0.46	0.53	N/A	Fair	Fair	Fair	Fair
		A28	Seedling	0.4	0.32	N/A	Fair	Fair	Fair	Fair
		A29	Seedling	0.56	0.28	N/A	Fair	Fair	Fair	Fair
		A30	Seedling	0.51	0.34	N/A	Fair	Fair	Fair	Fair
		A31	Seedling	0.44	0.3	N/A	Fair	Fair	Fair	Fair
		A32	Seedling	0.33	0.27	N/A	Fair	Fair	Fair	Fair
		A37	Seedling	0.26	0.41	N/A	Fair	Fair	Fair	Fair
		A38	Seedling	0.36	0.29	N/A	Fair	Fair	Fair	Fair

Table 2 (cont'd). Individuals of plant species of conservation importance recommended for transplantation.

Species Name	Chinese Name	No.	Size	Height (m)	Crown spread (m)	DBH (mm)	Form	Health condition	Structural condition	Amenity value
Original location before transplantation: Clear Water Bay Road/ On Sau Road site										
<i>Aquilaria sinensis</i> ¹	土沉香	A39	Seedling	0.35	0.32	N/A	Fair	Fair	Fair	Fair
		A40	Seedling	0.17	0.15	N/A	Fair	Fair	Fair	Fair
		A41	Seedling	0.25	0.2	N/A	Fair	Fair	Fair	Fair
		A42	Seedling	0.34	0.34	N/A	Fair	Fair	Fair	Fair
		A43	Seedling	0.3	0.27	N/A	Fair	Fair	Fair	Fair
		A44	Seedling	0.27	0.2	N/A	Fair	Fair	Fair	Fair
		A45	Seedling	0.29	0.25	N/A	Fair	Fair	Fair	Fair
		A46	Seedling	0.31	0.43	N/A	Fair	Fair	Fair	Fair
		A47	Seedling	0.23	0.17	N/A	Fair	Fair	Fair	Fair
		A48	Seedling	0.14	0.15	N/A	Fair	Fair	Fair	Fair
		A49	Seedling	0.3	0.26	N/A	Fair	Fair	Fair	Fair
		A50	Seedling	0.34	0.35	N/A	Fair	Fair	Fair	Fair
		A51	Seedling	0.24	0.29	N/A	Fair	Fair	Fair	Fair
		A52	Seedling	0.36	0.28	N/A	Fair	Fair	Fair	Fair
A53	Seedling	0.35	0.29	N/A	Fair	Fair	Fair	Fair		

Note and Conservation Status:

DBH are not measured for seedlings

1. Cap.586; AFCD (2003); VU in IUCN; NT in China; Cat. II; CPRDB

APPENDIX A

List of all plant species recorded in the three survey extents. Plant species of conservation importance are highlighted in yellow with number of individuals provided.

Scientific Name	Chinese Name	Origin	Growth Form	Commonness in HK ¹	Conservation Status ²	Relative Abundance ³		
						Sau Mau Ping Road/ Lin Tak Road	Clear Water Bay Road/ On Sau Road	New Clear Water Bay Road/ Shun Lee Tsuen Road
<i>Acacia auriculiformis</i>	耳果相思	Exotic	Tree	Cultivated				+++
<i>Acacia confusa</i>	台灣相思	Exotic	Tree	Very common		++++	++++	++++
<i>Acronychia pedunculata</i>	山油柑	Native	Tree	Very common			++	++
<i>Adiantum flabellulatum</i>	扇葉鐵線蕨	Native	Herb	Very common			++	
<i>Adiantum capillus-veneris</i>	鐵線蕨	Native	Herb	Common			+	
<i>Ageratum conyzoides</i>	蒼香薷	Exotic	Herb	Common			+	
<i>Alangium chinense</i>	八角楓	Native	Tree	Common			+	
<i>Albizia lebbek</i>	大葉合歡	Exotic	Tree	Cultivated		+	+	
<i>Aleurites moluccana</i>	石栗	Exotic	Tree	Cultivated				++
<i>Allamanda cathartica</i>	軟枝黃蟬	Exotic	Shrub	Cultivated		++		
<i>Alocasia macrorrhizos</i>	海芋	Native	Herb	Very common			++	++
<i>Ampelopsis cantoniensis</i>	廣東蛇葡萄	Native	Climber	Very common				++
<i>Aporosa dioica</i>	銀柴	Native	Tree	Very common		+	+	++
<i>Aquilaria sinensis</i>	土沉香	Native	Tree	Common	Cap.586; AFCD (2003); VU in IUCN; NT in China; Cat. II; CPRDB		55	
<i>Araucaria heterophylla</i>	異葉南洋杉	Exotic	Tree	Cultivated				+

Scientific Name	Chinese Name	Origin	Growth Form	Commonness in HK ¹	Conservation Status ²	Relative Abundance ³		
						Sau Mau Ping Road/ Lin Tak Road	Clear Water Bay Road/ On Sau Road	New Clear Water Bay Road/ Shun Lee Tsuen Road
<i>Archidendron lucidum</i>	亮葉猴耳環	Native	Tree	Common			++	
<i>Ardisia crenata</i>	朱砂根	Native	Shrub	Common			+	
<i>Ardisia lindleyana</i>	山血丹	Native	Shrub	Common			+	
<i>Artabotrys hongkongensis</i>	香港鷹爪花	Native	Climber	Restricted	AFCD (2003)		2	
<i>Artocarpus hypargyreus</i>	白桂木	Native	Tree	Common	AFCD (2003); VU in IUCN; NT in China; CPRDB		6	
<i>Asystasia micrantha</i>	小花十萬錯	Exotic	Herb	Common			++++	
<i>Axonopus compressus</i>	地毯草	Exotic	Herb	Cultivated				+
<i>Bambusa</i> sp.	竹屬	N/A	Bamboo	N/A			+	
<i>Bauhinia glauca</i>	羊蹄甲藤	Native	Climber	Very common			+	
<i>Bauhinia</i> sp.	羊蹄甲屬	N/A	Tree	N/A		+		
<i>Bidens alba</i>	白花鬼針草	Exotic	Herb	Very common		++++	++	+++
<i>Blechnum orientale</i>	烏毛蕨	Native	Herb	Very common			+++	
<i>Blumea megacephala</i>	大頭艾納香	Native	Herb	Common			+	
<i>Bombax ceiba</i>	木棉	Exotic	Tree	Cultivated		++		++
<i>Bougainvillea spectabilis</i>	籐杜鵑	Exotic	Climber	Cultivated		++		
<i>Breynia fruticosa</i>	黑面神	Native	Shrub	Very common			+	+
<i>Bridelia tomentosa</i>	土蜜樹	Native	Shrub	Very common		++	+	+++
<i>Broussonetia papyrifera</i>	構樹	Native	Tree	Very common				+

Scientific Name	Chinese Name	Origin	Growth Form	Commonness in HK ¹	Conservation Status ²	Relative Abundance ³		
						Sau Mau Ping Road/ Lin Tak Road	Clear Water Bay Road/ On Sau Road	New Clear Water Bay Road/ Shun Lee Tsuen Road
<i>Byttneria aspera</i>	刺果藤	Native	Climber	Very common			+++	
<i>Caesalpinia crista</i>	華南雲實	Native	Climber	Very common			+++	+++
<i>Caryota mitis</i>	短穗魚尾葵	Exotic	Tree	Very common			+	+
<i>Casuarina equisetifolia</i>	木麻黃	Exotic	Tree	Very common		++++	+	+++
<i>Catharanthus roseus</i>	長春花	Exotic	Herb	Cultivated		+		
<i>Celtis sinensis</i>	朴	Native	Tree	Common		+	+++	+++
<i>Centotheca lappacea</i>	假淡竹葉	Native	Herb	Common		+	+	
<i>Cinnamomum burmannii</i>	陰香	Native	Tree	Common		+	+	
<i>Cinnamomum camphora</i>	樟	Native	Tree	Common				+
<i>Cinnamomum parthenoxylon</i>	黃樟	Native	Tree	Common			+	
<i>Crateva unilocularis</i>	樹頭菜	Exotic	Tree	Cultivated				++
<i>Cratoxylum cochinchinense</i>	黃牛木	Native	Tree	Very common			+	++
<i>Cyclosorus parasiticus</i>	華南毛蕨	Native	Herb	Very common			+	++++
<i>Cynodon dactylon</i>	狗牙根	Native	Herb	Common				++
<i>Dalbergia benthamii</i>	兩廣黃檀	Native	Climber	Common			+	
<i>Daphniphyllum calycinum</i>	牛耳楓	Native	Shrub	Common			+	
<i>Delonix regia</i>	鳳凰木	Exotic	Tree	Cultivated			+	
<i>Desmos chinensis</i>	假鷹爪	Native	Shrub	Common			+	+++
<i>Dianella ensifolia</i>	山菅蘭	Native	Herb	Very common			+	

Scientific Name	Chinese Name	Origin	Growth Form	Commonness in HK ¹	Conservation Status ²	Relative Abundance ³		
						Sau Mau Ping Road/ Lin Tak Road	Clear Water Bay Road/ On Sau Road	New Clear Water Bay Road/ Shun Lee Tsuen Road
<i>Dicranopteris pedata</i>	芒萁	Native	Herb	Very common			++	
<i>Dimocarpus longan</i>	龍眼	Exotic	Tree	Restricted; cultivated			+++	
<i>Diospyros vaccinioides</i>	小果柿	Native	Shrub	Common	CR in IUCN		6	
<i>Diplospora dubia</i>	狗骨柴	Native	Shrub	Common			+	
<i>Duranta erecta</i>	假連翹	Exotic	Shrub	Cultivated		++++	+	
<i>Dypsis lutescens</i>	散尾葵	Exotic	Shrub	Cultivated			+	++
<i>Elaeocarpus chinensis</i>	華杜英	Native	Tree	Common			+	
<i>Emilia sonchifolia</i>	一點紅	Native	Herb	Very common		+	+	+
<i>Eucalyptus citriodora</i>	檸檬桉	Exotic	Tree	Cultivated				++
<i>Eucalyptus robusta</i>	大葉桉	Exotic	Tree	Cultivated				+
<i>Eurya nitida</i>	細齒葉柃	Native	Shrub	Very common			++	
<i>Ficus hirta</i>	粗葉榕	Native	Shrub	Common			+	
<i>Ficus hispida</i>	對葉榕	Native	Tree	Very common		++++	++	+++
<i>Ficus microcarpa</i>	細葉榕	Native	Tree	Common		++	+	++
<i>Ficus pumila</i>	薜荔	Native	Climber	Very common			+	
<i>Ficus religiosa</i>	菩提樹	Exotic	Tree	Restricted; cultivated		+	+	
<i>Ficus subpisocarpa</i>	筆管榕	Native	Tree	Common		+++		+

Scientific Name	Chinese Name	Origin	Growth Form	Commonness in HK ¹	Conservation Status ²	Relative Abundance ³		
						Sau Mau Ping Road/ Lin Tak Road	Clear Water Bay Road/ On Sau Road	New Clear Water Bay Road/ Shun Lee Tsuen Road
<i>Ficus variegata</i>	青果榕	Native	Tree	Common				+
<i>Ficus virens</i>	大葉榕	Native	Tree	Common				+
<i>Ficus elastica</i>	印度橡樹	Exotic	Tree	Cultivated				+
<i>Garcinia oblongifolia</i>	黃牙果	Native	Tree	Very common			+	
<i>Glochidion eriocarpum</i>	毛果算盤子	Native	Shrub	Very common			+	
<i>Gnetum luofuense</i>	羅浮買麻藤	Native	Climber	Very common	NT in IUCN		4	
<i>Grevillea robusta</i>	銀樺	Exotic	Tree	Cultivated				+
<i>Handroanthus/Tabebuia</i> sp.	風鈴木屬/ 黃鐘木屬	Exotic	Tree	Cultivated				+
<i>Heterosmilax gaudichaudiana</i>	合絲肖菝葜	Native	Climber	Common			+	
<i>Hyophorbe lagenicaulis</i>	酒瓶椰子	Exotic	Tree	Cultivated				+
<i>Hypserpa nitida</i>	夜花藤	Native	Climber	Very common		++	+	
<i>Ilex asprella</i>	梅葉冬青	Native	Shrub	Very common			+	
<i>Ilex pubescens</i>	毛冬青	Native	Shrub	Very common			+	
<i>Indocalamus sinicus</i>	華箬竹	Native	Bamboo	Common			+	
<i>Ipomoea cairica</i>	五爪金龍	Exotic	Climber	Very common			+	
<i>Itea chinensis</i>	鼠刺	Native	Tree	Very common			+	
<i>Kalanchoe tubiflora</i>	洋吊鐘	Exotic	Herb	Cultivated		++++		
<i>Lagerstroemia speciosa</i>	大花紫薇	Exotic	Tree	Common				+

Scientific Name	Chinese Name	Origin	Growth Form	Commonness in HK ¹	Conservation Status ²	Relative Abundance ³		
						Sau Mau Ping Road/ Lin Tak Road	Clear Water Bay Road/ On Sau Road	New Clear Water Bay Road/ Shun Lee Tsuen Road
<i>Lantana camara</i>	馬纓丹	Exotic	Shrub	Very common			++	
<i>Lasianthus chinensis</i>	粗葉木	Native	Shrub	Common			+	
<i>Leucaena leucocephala</i>	銀合歡	Exotic	Tree	Common		++++	+	+++
<i>Ligustrum sinense</i>	山指甲	Exotic	Shrub	Common			+++	+++
<i>Liquidambar formosana</i>	楓香	Native	Tree	Common				+
<i>Liriope spicata</i>	山麥冬	Native	Herb	Very common			+	
<i>Litsea cubeba</i>	山蒼樹	Native	Tree	Common			+	
<i>Litsea glutinosa</i>	潺槁	Native	Tree	Very common			+	++
<i>Litsea rotundifolia</i> var. <i>oblongifolia</i>	豺皮樟	Native	Shrub	Very common			+	
<i>Lophatherum gracile</i>	淡竹葉	Native	Herb	Very common			+	
<i>Lophostemon confertus</i>	紅膠木	Exotic	Tree	Very common			++	
<i>Loropetalum chinense</i> f. <i>rubrum</i>	紅花檵木	Exotic	Shrub	Cultivated				+++
<i>Lygodium japonicum</i>	海金沙	Native	Herb	Very common			+	++
<i>Lygodium scandens</i>	小葉海金沙	Native	Herb	Common			+	
<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	Native	Tree	Common		++		+++
<i>Machilus chekiangensis</i>	浙江潤楠	Native	Tree	Very common			+++	
<i>Machilus pauhoi</i>	刨花潤楠	Native	Tree	Restricted			++	
<i>Maesa perlaris</i>	鯽魚膽	Native	Shrub	Common			+	
<i>Mallotus paniculatus</i>	白楸	Native	Tree	Very common		++	++	++

Scientific Name	Chinese Name	Origin	Growth Form	Commonness in HK ¹	Conservation Status ²	Relative Abundance ³		
						Sau Mau Ping Road/ Lin Tak Road	Clear Water Bay Road/ On Sau Road	New Clear Water Bay Road/ Shun Lee Tsuen Road
<i>Malva viscus penduliflorus</i>	垂花懸鈴花	Exotic	Shrub	Cultivated			+	
<i>Melaleuca cajuputi cumingiana</i>	白千層	Exotic	Tree	Cultivated		+		++++
<i>Melastoma sanguineum</i>	毛荳	Native	Shrub	Common			+	
<i>Melia azedarach</i>	苦楝	Exotic	Tree	Common		++		++
<i>Melinis repens</i>	紅毛草	Exotic	Herb	Very common		+++		
<i>Microcos nervosa</i>	布渣葉	Native	Tree	Common			++	++
<i>Microstegium ciliatum</i>	剛莠竹	Native	Herb	Very Common			+++	
<i>Mikania micrantha</i>	薇甘菊	Exotic	Climber	Very common		+	+	++
<i>Millettia nitida</i>	亮葉雞血藤	Native	Climber	Very common		++	++	
<i>Miscanthus sinensis</i>	芒	Native	Herb	Very common		+		++
<i>Miscanthus floridulus</i>	五節芒	Native	Herb	Common			+	
<i>Morinda parvifolia</i>	雞眼藤	Native	Climber	Very common			++	
<i>Musa x paradisiaca</i>	大蕉	Exotic	Herb	Cultivated			+	
<i>Nephrolepis auriculata</i>	腎蕨	Native	Herb	Common				++
<i>Oxalis corniculata</i>	酢漿草	Native	Herb	Very common			+	
<i>Paederia scandens</i>	雞矢藤	Native	Climber	Very common			++	++
<i>Pandanus austrosinensis</i>	露兜草	Native	Herb	Common			+	
<i>Panicum brevifolium</i>	短葉黍	Native	Herb	Very common		+		+
<i>Panicum maximum</i>	大黍	Exotic	Herb	Very common		+	++	+++

Scientific Name	Chinese Name	Origin	Growth Form	Commonness in HK ¹	Conservation Status ²	Relative Abundance ³		
						Sau Mau Ping Road/ Lin Tak Road	Clear Water Bay Road/ On Sau Road	New Clear Water Bay Road/ Shun Lee Tsuen Road
<i>Parthenocissus dalzielii</i>	爬牆虎	Exotic	Climber	Common		+++		
<i>Passiflora foetida</i>	龍珠果	Exotic	Climber	Very common				+
<i>Passiflora suberosa</i>	南美西番蓮	Exotic	Climber	Common		++	+	
<i>Peltophorum pterocarpum</i>	雙翼豆	Exotic	Tree	Cultivated				+
<i>Persicaria chinensis</i>	火炭母	Native	Herb	Very common			++	
<i>Phoenix roebelenii</i>	日本葵	Exotic	Tree	Cultivated				+
<i>Phyllanthus cochinchinensis</i>	越南葉下珠	Native	Shrub	Very common			+	
<i>Phyllanthus tenellus</i>	纖梗葉下珠	N/A	Shrub	N/A		+++		
<i>Podocarpus macrophyllus</i>	羅漢松	Native	Tree	Restricted; cultivated				++
<i>Pogonatherum crinitum</i>	金絲草	Native	Herb	Common		++		
<i>Polyspora axillaris</i>	大頭茶	Native	Tree	Very common			+	
<i>Psychotria asiatica</i>	山大刀	Native	Shrub	Very common			++	
<i>Psychotria serpens</i>	蔓九節	Native	Climber	Very common			+	
<i>Pteris ensiformis</i>	劍葉鳳尾蕨	Native	Herb	Common			+	
<i>Pteris linearis</i>	線羽鳳尾蕨	Native	Herb	Restricted			++	
<i>Pteris semipinnata</i>	半邊旗	Native	Herb	Very common			++	
<i>Pteris vittata</i>	蜈蚣草	Native	Herb	Very common		++	+	
<i>Pueraria lobata</i> var. <i>montana</i>	葛麻姆	Native	Climber	Common			+	

Scientific Name	Chinese Name	Origin	Growth Form	Commonness in HK ¹	Conservation Status ²	Relative Abundance ³		
						Sau Mau Ping Road/ Lin Tak Road	Clear Water Bay Road/ On Sau Road	New Clear Water Bay Road/ Shun Lee Tsuen Road
<i>Pyrrhosia adnascens</i>	貼生石韋	Native	Herb	Common			+	
<i>Rhaphiolepis indica</i>	車輪梅	Native	Shrub	Very common			+	+
<i>Rhus succedanea</i>	野漆樹	Native	Tree	Common			+	++
<i>Roystonea regia</i>	王棕	Exotic	Tree	Cultivated				+
<i>Rubus leucanthus</i>	白花懸鈎子	Native	Climber	Common			++	
<i>Rubus reflexus</i>	蛇泡筋	Native	Climber	Very common			+	
<i>Ruellia coerulea</i>	蘭花草	Exotic	Herb	Cultivated		++		
<i>Russelia equisetiformis</i>	爆仗竹	Exotic	Shrub	Cultivated		+		
<i>Sansevieria trifasciata</i>	虎尾蘭	Exotic	Herb	Cultivated			+	
<i>Sapium discolor</i>	山烏柏	Native	Tree	Very common		+	+	
<i>Sapium sebiferum</i>	烏柏	Native	Tree	Common				+
<i>Sarcandra glabra</i>	草珊瑚	Native	Shrub	Common			+	
<i>Schefflera heptaphylla</i>	鴨腳木	Native	Tree	Very common			++	++
<i>Schefflera arboricola</i>	鵝掌藤	Exotic	Shrub	Cultivated		+		
<i>Scleria ciliaris</i>	緣毛珍珠茅	Native	Herb	Very common			++	
<i>Senna</i> sp.	望江南屬	Exotic	Shrub	Cultivated		+		
<i>Smilax china</i>	金剛藤	Native	Climber	Very common			+	
<i>Smilax hypoglauca</i>	粉背菝葜	Native	Climber	Common			+	
<i>Stephania longa</i>	糞箕篤	Native	Climber	Common			+	

Scientific Name	Chinese Name	Origin	Growth Form	Commonness in HK ¹	Conservation Status ²	Relative Abundance ³		
						Sau Mau Ping Road/ Lin Tak Road	Clear Water Bay Road/ On Sau Road	New Clear Water Bay Road/ Shun Lee Tsuen Road
<i>Sterculia lanceolata</i>	假蘋婆	Native	Tree	Very common		++	++++	
<i>Strophanthus divaricatus</i>	羊角拗	Native	Climber	Common			++	
<i>Symplocos glauca</i>	羊舌樹	Native	Tree	Common			+	
<i>Syzygium jambos</i>	蒲桃	Exotic	Tree	Common			++	
<i>Terminalia mantaly</i>	小葉欖仁	Exotic	Tree	Cultivated				+
<i>Tetradium glabrifolium</i>	棟葉吳茱萸	Native	Tree	Common			+	
<i>Thevetia peruviana</i>	黃花夾竹桃	Exotic	Shrub	Cultivated		++++		
<i>Tylophora ovata</i>	娃兒藤	Native	Climber	Common			+	
<i>Uvaria macrophylla</i>	紫玉盤	Native	Climber	Common			+	
<i>Viburnum odoratissimum</i>	珊瑚樹	Native	Tree	Very common			+	
<i>Wedelia trilobata</i>	三裂葉蟛蜞菊	Exotic	Herb	Common		+++	+	
<i>Wikstroemia indica</i>	了哥王	Native	Shrub	Common		++		
<i>Zanthoxylum avicennae</i>	筍櫨	Native	Tree	Common			+	
<i>Zanthoxylum scandens</i>	花椒筍	Native	Climber	Common			+	

Note:

TOTAL SPECIES 47 126 66

1. Commonness follows Corlett et al. (2000) Hong Kong Vascular Plants: Distribution and Status; Hong Kong Plant Database; N/A: Not Applicable
2. AFCD (2003) Rare and Precious Plants of Hong Kong; CR = Critically Endangered; VU = Vulnerable; NT = Near Threatened; IUCN = IUCN Red List; CPRDB = China Plant Red Data Book; Cat. II = State Protection Category II
Cap. 586 = Protection of Endangered Species of Animals and Plants Ordinance
3. Relative abundance: ++++ = abundant, +++ = common, ++ = uncommon and + = scarce
Species of conservation importance is highlighted

APPENDIX B

Tree Failure Incident Report for R-T02652-(T)



土木工程拓展署

Civil Engineering and Development Department

New Territories East Development Office

Contract No.: NE/2017/03

Development of Anderson Road Quarry Site –


Road Improvement Works and Pedestrian Connectivity Facilities Works Phase 2A

Preliminary Report on Non-serious Tree Failure Incident on CEDD Work Site

(Trees damaged under Super Typhoon Mangkhut on 16 September 2018)

Urgent By Email / Fax

**Preliminary Report on Non-serious Tree Failure Incident on CEDD Work Site
(to be submitted within 48 hours of the incident (excluding weekend and holidays))**

	Email	Fax No.
To	: SLA/HQ2, CEDD landscape.tf@cedd.gov.hk	2760 9401
Our Ref.	: () in _____	_____
From	: Yue Chung Man (Name)	57209963 (Tel. No.)
	ARLA (Post)	24733221 (Fax. No.)
	Landscape Team (Division)	9 October 2018 (Date)
	 (Signature)	Nil (Time)

1. Contract No. : NE/2017/03
2. Contract Title : Development of Anderson Road Quarry Site –
Road Improvement Works and Pedestrian Connectivity Facilities Works Phase 2A
3. Name of Contractor : CW-CMGC JV
- 4. Location of Incident (*Location Plan Attached*) : Clear Water Bay Road , Lin Tak Road
5. Date and Time of Incident : 16 September 2018
- 6. Nature and Brief Account of Incident (*with Site Photographs Attached*) : Trees found collapsed after Typhoon No.10 Super Typhoon Mangkhut on 16 September 2018
7. Species and number of the Failed Tree(s) : *Please see separate sheet.*
8. Measures taken (or to be taken) to mitigate hazard : Tree removal / Pruning
9. Any Other Information : Nil

	Email	Fax No.
c.c.	Division Head _____	_____
	SE/SEA, CEDD seau@cedd.gov.hk	2714 5174

7. Species and number of the Failed Tree(s) :

Acacia confusa 台灣相思 x67

(T19, T22, T23, R-T00219, R-T00364, R-T00366, R-T00459, R-T00461, R-T00463, R-T00464, R-T00465, R-T00466, R-T00470, R-T00471, R-T00473, R-T00474, R-T00475, R-T00476, R-T00477, R-T00481, R-T00482, R-T00483, R-T00484, R-T00486, R-T00487, R-T00488, R-T00489, R-T00490, R-T00491, R-T00492, R-T00493, R-T00494, R-T00969, R-T00970, R-T00971, R-T00972, R-T01142, R-T01143, R-T01144, R-T01145, R-T01146, R-T01147, R-T01148, R-T01149, R-T01150, R-T01152, R-T01153, R-T01155, R-T01157, R-T01158, R-T01159, R-T01160, R-T01453, R-T01552, R-T01553, R-T01554, R-T01555, R-T01804, R-T01996, R-T02214, R-T02350, R-T02351, R-T03295, R-T03296, R-T03297, R-T03300 & R-T03301),

Albizia lebbeck 大葉合歡 x 4

(R-T00367, R-T01154, R-T01156 & R-T03294),

Aquilaria sinensis 土沉香 x1 (R-T02652),

Bauhinia variegata 宮粉羊蹄甲 x1 (P-T00269),

Bombax ceiba 木棉 x1 (R-T00733),

Casuarina equisetifolia 木麻黃 x7

(R-T00220, R-T00221, R-T00358, R-T00462, R-T00469, R-T00808 & R-T00809),

Eucalyptus citriodora 檸檬桉 x3

(R-T00248, R-T00363 & R-T01801),

Ficus hispida 對葉榕 x2 (R-T02108 & R-T02215),

Ficus virens 大葉榕 x1 (R-T01902),

Leucaena leucocephala 銀合歡 x11

(TG01, TG02, TG03, TG04, TG05, TG06, TG07, TG08, TG09, TG10 & T24),

Ligustrum sinense 山指甲 x2 (R-T00729 & R-T00730),

Lophostemon confertus 紅膠木 x1 (R-T01866),

Macaranga tanarius var. tomentosa 血桐 x4

(TG11, R-T00458, R-T00467 & R-T01452),

Machilus pauhoi 刨花潤楠 x1 (R-T02104),

Mallotus paniculatus 白楸 x1 (R-T01451),

Mangifera indica 芒果 x1 (R-T00734),

Melaleuca cajuputi subsp. cumingiana 白千層 x8

(R-T01857, R-T01864, R-T01896, R-T01898, R-T01907, R-T01908, R-T01911 & R-T01912),

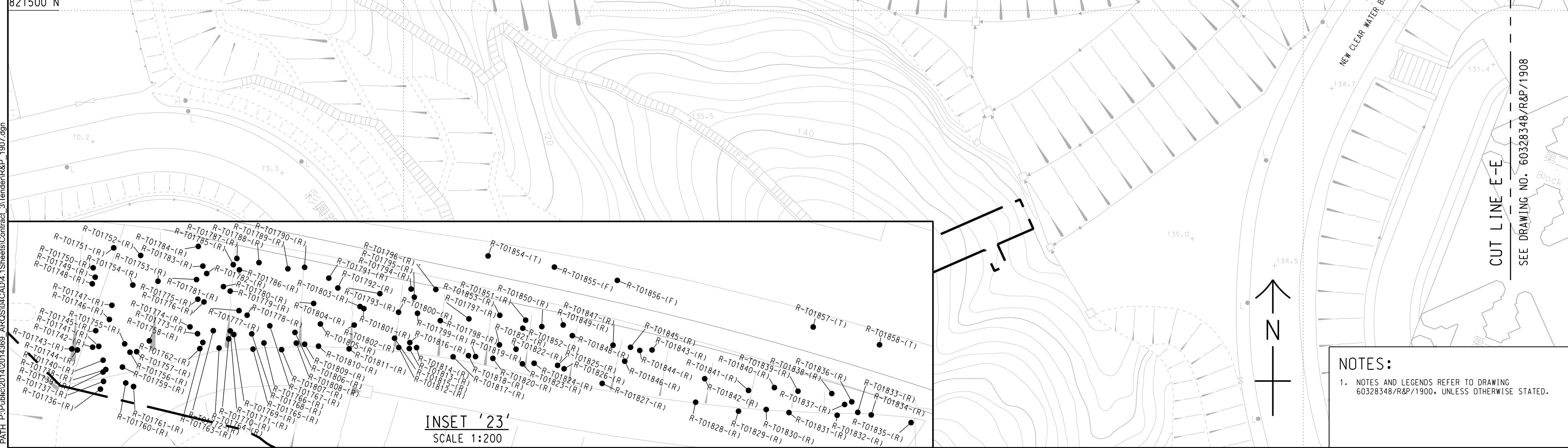
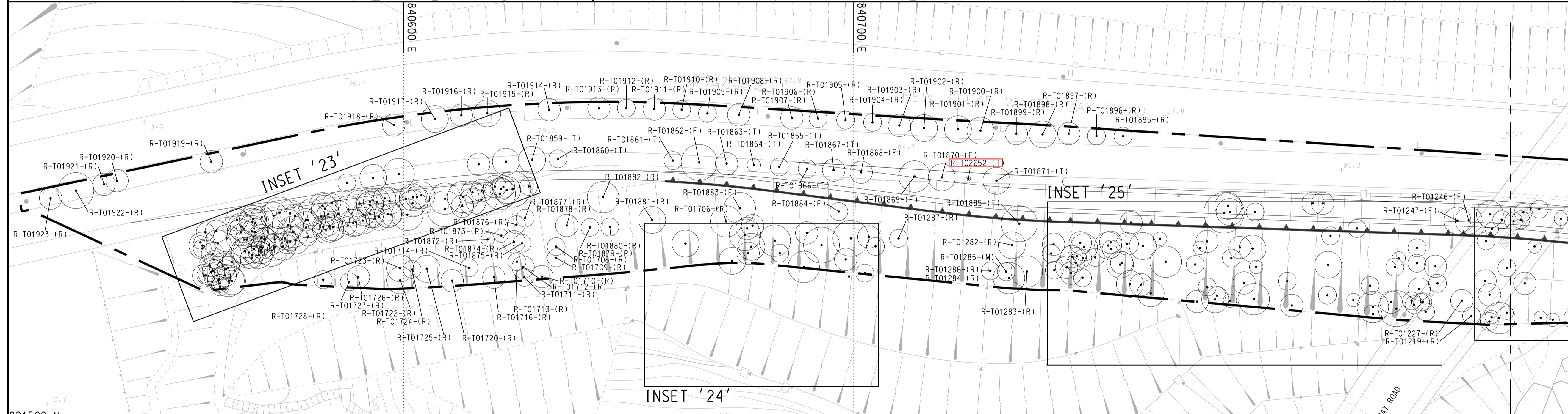
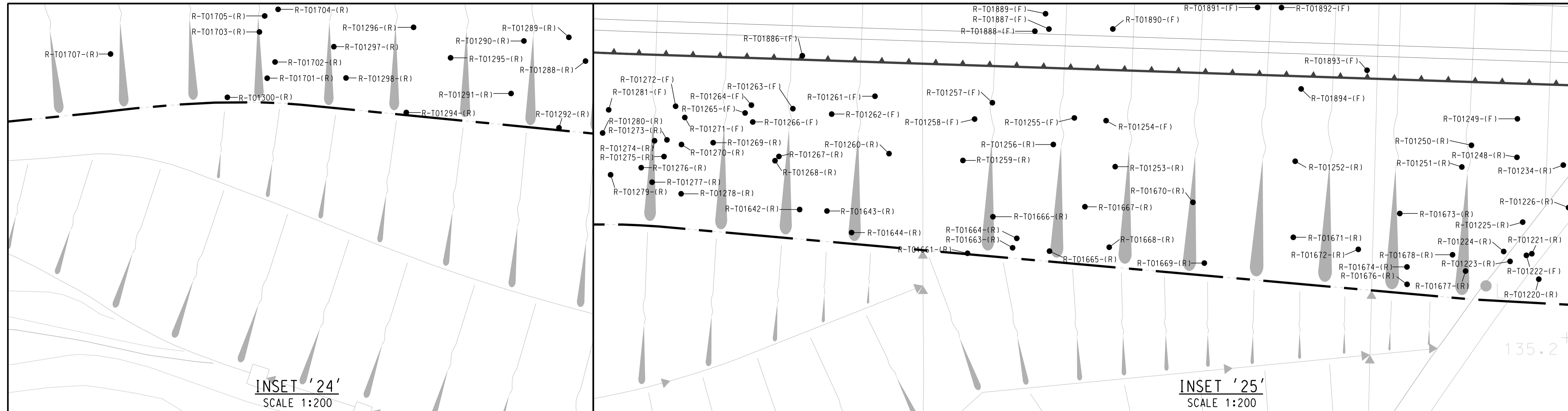
Melia azedarach 苦楝 x 2 (R-T00218 & R-T00732),

Sterculia lanceolata 假蒺藜 x8

(R-T00362, R-T00365, R-T00446, R-T00447, R-T00448, R-T00460, R-T00468 & R-T00472),

Thevetia peruviana jambos 黃花夾竹桃 x1 (R-T00247),

Xanthostemon chrysanthus 金蒲桃 x1 (T21)



PROJECT
 DEVELOPMENT OF
 ANDERSON ROAD
 QUARRY SITE - INVESTIGATION,
 DESIGN AND CONSTRUCTION

CONTRACT TITLE
 DEVELOPMENT OF ANDERSON ROAD
 QUARRY SITE - ROAD IMPROVEMENT
 WORKS AND PEDESTRIAN CONNECTIVITY
 FACILITIES WORKS PHASE 2A

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

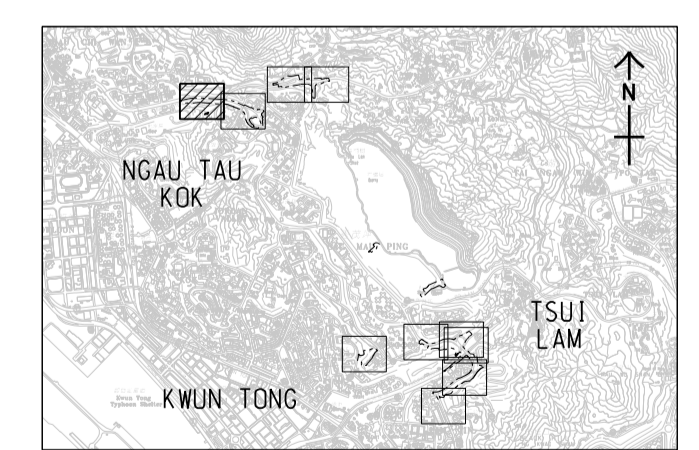
CONSULTANT
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SUB-CONSULTANTS

ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK.
-	OCT. 17	TENDER DRAWING	AWYC

SCALE
 A1 1:500
DIMENSION UNIT
 METRES



PROJECT NO.
 60328348
CONTRACT NO.
 NE/2017/03

SHEET TITLE
 TREE PRESERVATION,
 TRANSPLANTING AND FELLING
 PLAN

SHEET NUMBER
 60328348/R&P/1907
 (SHEET 7 OF 10)

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R-T01911 _R-T01912 (1)



R-T02652