

# **Tung Chung New Town Extension – Salt Water Supply System**

## **Detailed Preservation and/or Translocation Plan for Plant Species of Conservation Importance for Tung Chung East**

November 2021

Tung Chung New Town Extension – Salt Water Supply System  
**Detailed Preservation and/or Translocation Plan for  
Plant Species of Conservation Importance for Tung Chung East**

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Your Ref:

By Post

Our Ref. 198377-0419

Date 24 November 2021

Sustainable Lantau Office  
Civil Engineering and Development Department  
13/F, North Point Government Offices  
333 Java Road, North Point  
Hong Kong

Attention: Mr. S.K. LO / Mr. K.T. WO

Dear Sir / Madam,

**Agreement No. CE 59/2017 (EP)**  
**Independent Environmental Checker for Tung Chung New Town Extension – Investigation**  
**Detailed Preservation and/or Translocation Plan for Plant Species of Conservation Importance**  
**(EP condition 2.21)**

We refer to the Detailed Preservation and/or Translocation Plan for Plant Species of Conservation Importance for Tung Chung New Town Extension (East) (TCE) dated November 2021 and certified by the Environmental Team Leader of TCE on 24 November 2021. Please note we have no adverse comments on the captioned submission. The captioned submission is hereby verified in accordance with the requirement stipulated in Condition 2.21 of EP-519/2016.

Should you have any query, please feel free to contact the undersigned at 2608 7314 ([chuwawo@binnies.com](mailto:chuwawo@binnies.com)) or our Edward Lau at 6848 5737 ([mc\\_tcntr@gmail.com](mailto:mc_tcntr@gmail.com) or [lauky@binnies.com](mailto:lauky@binnies.com)).

Yours faithfully,  
for and on behalf of  
BINNIES HONG KONG LIMITED

MANUEL CHUA  
INDEPENDENT ENVIRONMENTAL CHECKER

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## Tung Chung New Town Extension

### Environmental Certification Sheet for Environmental Permit No. EP-519/2016

#### Reference Document/Plan

Document/Plan to be Certified:	Detailed Preservation and/or Translocation Plan for Plant Species of Conservation Importance
Date of Report:	November 2021

#### Reference EP Condition

Environmental Permit Condition:	Condition 2.21
<p>The Permit Holder shall, no later than 3 months before the commencement of construction works at Tung Chung Valley, submit 3 hardcopies and 1 electronic copy of a Preservation and/or Translocation Plan (The Plan) for the plant species of conservation importance, including but not limited to <i>Aquilaria sinensis</i>, <i>Pavetta hongkongensis</i> and <i>Gnetina chinensis</i>, that could be affected by the Project to the Director for approval. The Plan shall include at least the following information:</p> <ul style="list-style-type: none"><li>(i) the target species;</li><li>(ii) methodology for pre-construction survey, preservation and/or translocation for each species;</li><li>(iii) identification of suitable receptor sites;</li><li>(iv) an implementation programme; and</li><li>(v) a post-translocation monitoring programme.</li></ul>	

#### ET Certification

I hereby certify that the above referenced document/plan complies with the above referenced condition of EP-519/2016	
Ray Yan Environmental Team Leader ERM-Hong Kong, Limited	Date: 24 November 2021



**Qualified Ecologist Certification**

I hereby confirm that the Qualified Ecologist of the EI has been consulted in preparing ecological aspects of the above referenced document/plan.

Raymond Chow  
Qualified Ecologist  
ERM-Hong Kong, Limited



Date: 24 November 2021



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## **1 INTRODUCTION**

### **1.1 General**

1.1.1 AECOM Asia Co Ltd has been commissioned by the Civil Engineering and Development Department (CEDD) to undertake Agreement No. CE 69/2015 (CE) – Tung Chung New Town Extension (East) – Design and Construction. The Agreement commenced on 16 June 2016 and is scheduled to be completed in June 2027.

1.1.2 The development of Tung Chung New Town Extension (TCNTE), comprising Tung Chung East (TCE) and Tung Chung West (TCW), is a mega-scale and complex project aiming to provide land to meet the future housing economic and social development needs of Hong Kong. Due to the fact that the proposed works are geographically separated, the implementation of mega-scale Project is divided into two packages, namely TCE and TCW respectively. In accordance with the tight delivery programme, the Project will be implemented in phases under separate contracts for the developments of TCE and TCW. This Plan only covers the work in TCE. Detailed Preservation and/or Translocation Plan for Plant Species of Conservation Importance for TCW can be found at dedicated project website: [www.env.tcnte-west.hk/ep-submissions.html](http://www.env.tcnte-west.hk/ep-submissions.html).

### **1.2 Background**

1.2.1 The study in North Lantau including Tung Chung area has been started since Port and Airport Development Strategy in 1989 for the study on the construction of replacement international airport at Chek Lap Kok.

1.2.2 Various studies have been continued after 1989 including North Lantau Development Study in 1990, Territorial Development Strategic Review in 1996 and Remaining development in Tung Chung and Tai Ho - Comprehensive Feasibility Study (CFS) in 1997. The latest CFS showed that it was feasible for Tung Chung and Tai Ho areas to accommodate a population target of about 334,000 in anticipation of the projected territory-wide demand by 2011.

1.2.3 Initial phase of development for Tung Chung has been completed and the housing developments of the Tung Chung area have a total capacity to accommodate 108,000 people upon full occupation

1.2.4 According to the latest Revised Concept Plan for Lantau, Tung Chung would be a comprehensively planned new town with a capacity to accommodate a total population of about 220,000.

1.2.5 The Civil Engineering and Development Department (CEDD) and the Planning Department (PlanD) jointly commissioned Agreement No. CE 32/2011(CE) - Planning and Engineering Study on the Remaining Development in Tung Chung (P&E Study) in 2012. The P&E Study aims at identifying development potentials and opportunities to extend Tung Chung into a distinct community to meet housing, social, economic, environmental and local needs. Under the P&E Study, various planning, engineering and environmental studies were carried out to formulate a

development scheme to extend existing Tung Chung to the east and the west (i.e. TCE and TCW).

- 1.2.6 The TCE is proposed to be developed in phases. An implementation programme with phasing and packaging of works for the TCE project has been recommended under the P&E Study.

### **1.3 The Project**

- 1.3.1 The Project of this Assignment (the Project) includes reclamation, site formation and engineering infrastructure works (including construction of Road P1) for the developments of TCE, provision of salt water supply to TCNT and SHW topside and infrastructure works in Tung Chung Area 58 in the existing TCNT.

- 1.3.2 The scope of Works under this Project comprises:

a) Works in TCE

- (i) Reclamation of about 120 hectares of seabed abutting the coastal area between Tung Chung Phase 3A and Tai Ho Bay Inlet and associated site formation works for the proposed developments;
- (ii) Engineering infrastructure works including roads, drainage, sewerage including sewage pumping stations, and waterworks to support the proposed developments;
- (iii) Provision of a marina;
- (iv) Provision of a cycle track network;
- (v) Construction of a salt water pumping station for flushing use in TCNT, TCE, TCW and SHW topside;
- (vi) Landscaping, streetscaping and ancillary works; and
- (vii) Provision of environmental mitigation measures for the works mentioned in (i) to (vi) above;

b) Works in the existing TCNT or SHW

- (i) Construction of a FWSR near Chek Lap Kok New Village or at Siu Ho Wan for TCE and TCW;
- (ii) Construction of a SWSR near Chek Lap Kok New Village for flushing use in TCNT, TCE, TCW and SHW topside;
- (iii) Site formation works including natural terrain hazards mitigation measures for the works mentioned in (i) and (ii) above;
- (iv) Changeover of salt water supply for toilet flushing in TCNT;
- (v) Waterworks for salt water supply for toilet flushing in SHW topside; and
- (vi) Engineering infrastructure works including roads, drainage, sewerage and waterworks to support the land allocation at Area 58 of the existing TCNT.

c) Works related to Road P1

- (i) Reclamation of about 9 hectares of seabed for Road P1 (section between TCE and Tai Ho);
- (ii) Construction of Road P1 with cycle track (section between TCE and Tai Ho) and associated engineering infrastructure works including drainage, sewerage and waterworks;

- (iii) Site formation works for a cycle park of about 2 hectares near Tai Ho Interchange;
- (iv) Improvement works to existing Tung Chung Waterfront Road and Ying Hei Road, including construction of noise barriers and footbridges, resurfacing of road pavement, etc., for upgrading them to a primary distributor as part of Road P1;
- (v) Construction of an elevated interchange near Tai Ho connecting Road P1 to NLH and Cheung Tung Road (Tai Ho Interchange);
- (vi) Landscaping, streetscaping works and ancillary works; and
- (vii) Provision of environmental mitigation measures for the works mentioned in (i) to (vi) above.

#### 1.4 Scope of Works

- 1.4.1 The Preservation and/or Translocation Plan for Plant Species of Conservation Importance of TCNTE development will be split and implemented under TCE and TCW respectively.
- 1.4.2 This Plan deals with potential impacts to plant species of conservation importance associated with all contracts in TCE, and CEDD has submitted another “Preservation and/or Translocation Plan for Plant Species of Conservation Importance” for TCW under the same environmental permit condition in the 3<sup>rd</sup> Quarter in year 2021 for approval. It was confirmed that there were no plant species of conservation importance except for NL/2020/02 Salt Water Supply System under TCE. The location and general layout of the extend of TCE are provided in **Figure 1.1 to 1.5** respectively.
- 1.4.3 This Plan is prepared in accordance with the EP (Environmental Permit No. EP-519/2016) Condition 2.21 - Submission of Detailed Preservation and/or Translocation Plan for Plant Species of Conservation Importance.
- 1.4.4 To ensure the proposed measures are in compliance with the EIA requirements, relevant sections of the report addressing the EP requirements are tabulated in **Table 1.1** below:

**Table 1.1 EP Requirements**

Requirements	Report Section
<p><b>Submission of Detailed Preservation and/ or Translocation Plan for Plant Species of Conservation Importance</b></p> <p><b>Condition 2.21</b> - The Permit Holder shall, no later than 3 months before the commencement of construction works at Tung Chung Valley, submit 3 hardcopies and 1 electronic copy of a Preservation and/ or Translocation Plan (The Plan) for the plant species of conservation importance, including but not limited to <i>Aquilaria sinensis</i>, <i>Pavetta hongkongensis</i> and <i>Gmelina chinensis</i>, that could be affected by the Project to the Director for approval. The Plan shall include at least the following information:</p>	-

(i) the target species;	• Section 2.1
(ii) methodology for pre-construction survey, preservation and /or translocation for each species;	• Section 2.2, 2.3
(iii) identification of suitable receptor sites;	• Section 4,
(iv) an implementation programme; and	• Appendix E
(v) a post-translocation monitoring programme.	• Section 5.1, Appendix F

## 2 TARGET SPECIES

### 2.1 Target Species

2.1.1 According to the Condition 2.21 of the EP, this Plan should include plant species of conservation importance, including but not limited to *Aquilaria sinensis*, *Pavetta hongkongensis* and *Gmelina chinensis*, that could be affected by the Project.

2.1.2 A numbers of individuals of *Aquilaria sinensis* and *Gmelina chinensis* were recorded from the indicative SWSR works area in the Ecological Impact Assessment and Landscape Visual Impact Assessment under the EIA Report (Figure 9.5b and Appendix 11.1 of the EIA Report refers), and associated site formation works. A group vegetation survey was conducted in August 2020 under the consultancy agreement for the SWSR works area, in which 3 no. of *Aquilaria sinensis* and 35 no. of *Gmelina chinensis* were identified, (in which 4 no. of *Gmelina chinensis*, RT03, RT06, RT07 and RT08 were proposed to be transplanted) under the group vegetation survey conducted in August 2020. Photographic record of representative habitat conditions in the group survey is presented in **Appendix A**, **Appendix B** and **Appendix C** respectively.

2.1.3 Further to the tree inspection conducted in August 2021 by the Contractor, it was recorded that 2 no. of *Gmelina chinensis*, RT03 and RT06 proposed to be transplanted were missing. Please refer to **Appendix F** for the abstract of the detailed tree survey report regarding the findings for the captioned trees.

### 2.2 Methodology for Pre-construction Surveys

2.2.1 In accordance with the EP requirement, a group vegetation survey was conducted by certified arborists in August 2020 before the commencement of construction to identify the potentially affected individual plant species of conservation interest within the latest works area of the proposed SWSR. Identification of vegetation species was made with reference to Flora of Hong Kong – Vol. 1 – 4 (Hong Kong Herbarium and South China Botanical Gardens, 2007; 2008; 2009; 2011).

2.2.2 In the group vegetation survey, all identified individuals with conservation value were labelled on-site and mapped. The following characteristics were also recorded for each identified individuals:

- Estimate overall height (m);

- Estimate trunk diameter (mm);
- Estimate crown spread (m);
- Amenity value (good/fair/poor);

2.2.3 Form (good/fair/poor);

- Health (good/fair/poor);
- Structural condition (good/fair/poor);

2.2.4 Suitability for transplanting (high/medium/low);

- Conservation status;
- Recommendation (retain/transplant/remove);
- Justification; and
- Remarks.

**2.3 Methodology for Preservation of Transplanted and Retained Plant Species of Conservation Importance**

2.3.1 Regular preservation should be implemented in order to ensure the health condition of the transplanted trees during the establishment period and maintenance period.

2.3.2 The following regular preservation works shall carry out during the establishment period in order to subjoin the condition of the transplanted trees:

- Watering shall be carried out daily during the dry season (September to April) and as requested during wet season to maintain a health growing condition.
- Stakes shall be applied to firm up the transplanted trees and supporting materials shall be undertaken from time to time during the period and particularly after inclement weather.
- Organic mulching shall be applied to improve the preservation environment and the plant health. The recommended mulching depth is 50mm, extending 150mm beyond the perimeter of the tree pit and covering at least the entire root ball zone.
- Slow-release fertilizer shall applied as instructed by certified Arborist and shall carried out in March and September each year.
- Tree pruning to remove dead or dangerous branches as required by tree technician.
- Pest and fungal control including regular inspection on pest and infection, removal of diseased plant and application of pesticide if necessary.



- 2.3.3 Apart from the transplanted individuals, retained individuals plant species of conservation importance should be fenced off prior to the commencement of construction if they are located in close proximity to the proposed works. Monthly monitoring of retained individuals by the Contractor's Qualified Personnel should also be carried out throughout the construction period in order to check their conditions and report any injuries/damages. Photographic record of the retained individuals should be taken during every monitoring visit.

*Erection of Protective Fencing*

- 2.3.4 Prior to the commencement of site clearance works and during the whole of the construction period, protection zone should be set up around the existing plants of conservation importance including 3 no. of *Aquilaria sinensis* and 33 no. of *Gmelina chinensis* which were recorded in the updated vegetation survey conducted in August 2021 (in which 2 no. of *Gmelina chinensis*, RT07 and RT08, are to be transplanted). In locations where site hoarding is not erected, protective fencings with sufficient buffer zone will be provided. Signposts should also be erected and regular tool box talk should be provided to inform the workers about the precautionary measures for protecting the concerned plant individuals and their root system. The Contractor should keep the protection zone clean and tidy without building materials, waste and excess soil. No digging, trenching, compaction, or other soil disturbance should be allowed in the protection zone.

*Dust Control*

- 2.3.5 During periods of drought, trunks, limbs and foliage should be sprayed with water to remove any accumulated construction dust.

*Reporting Injury*

- 2.3.6 Any damage or injury to the retained / transplanted plants should be reported to the Project Manager, ET and IEC immediately. The Contractor should arrange a Qualified Personnel to inspect and conduct appropriate arboricultural / horticultural operation as necessary to the damaged / injured trees.

### **3 PRE-CONSTRUCTION VEGETATION SURVEY RESULTS**

- 3.1.1 The SWSR works area largely comprises natural slope next to the existing Tung Chung Fresh Water Service Reservoir (FWSR). The vegetation is dominated by pine trees *Pinus massoniana*, *Lophostemon confertus*, *Canthium dicoccum*, *Itea chinensis* and *Aporosa dioica* scattered with other native trees such as *Mallotus paniculatus*, *Schefflera heptaphylla*, and some other common exotic plantation species, e.g. *Acacia confusa* and *Casuarina equisetifolia* along the vehicular access. Photographic record of representative habitat conditions in the group survey is presented in **Appendix A**.
- 3.1.2 Under the group vegetation survey conducted in August 2020, 35 no. of *Gmelina chinensis* and 3 no. of *Aquilaria sinensis* were identified, in which 2 no. of *Gmelina chinensis*, RT03 and RT06 were missing during the tree inspection conducted in August 2021 respectively, as plant species with conservation importance at or adjoining the Project Site. Detailed information and locations of each of the recorded individuals are presented in **Appendix B** and **Figure 2.1 to Figure 2.3** respectively.
- 3.1.3 Based on the layout of the SWSR, none of the *Aquilaria sinensis* and only two of the *Gmelina chinensis* individuals (i.e. RT07 and RT08) are located within the area that would be affected by the proposed works (refer to **Figure 2.1 to Figure 2.3**). The photographic record, abstract of the detailed tree survey reporting regarding the findings of the two affected *Gmelina chinensis* is shown in **Appendix C** and **Appendix F respectively**. The affected individuals are in fair health condition, so it is proposed to be transplanted.

## **4 REVIEW OF RECEPTOR SITE**

- 4.1.1 In order to provide consistent habitat characteristics (i.e. soil condition, topography, dominant plant species, degree of exposure to wind/sunlight, overhead/ground space for tree growth, and degree of human disturbance) allowing quick adaptation, the affected individuals are proposed to be transplanted within the project boundary of the SWSR Site. Indicative location of the receptor site is shown in **Figure 3** and a photograph is presented in **Appendix D**.
- 4.1.2 The receptor site is located at the existing planting area to the west of the proposed SWSR. The site is within WSD's purview with some existing trees proposed to be retained in the Tree Preservation and Removal Proposal. In between the retained trees, it is mainly covered with grass, vines and self-seeded invasive species *Leucaena leucocephala* below <95mm DBH. Site preparation works such as clearance and removal of existing vegetation, preparation of planting pits and importing of soil mix are required prior to the actual transplanting works.
- 4.1.3 The receptor site will be reassessed by the Qualified Personnel (e.g. an Arborist in the List of Minimum Personnel Requirements for Landscape Works, Tree Management Works and Vegetation Maintenance Contracts) and agreed with ET/IEC, Project Manager and the future maintenance party prior to the commencement of transplantation taking into account the latest site condition. Habitat characteristics of the alternative sites should be similar to that of their original locations. Should any changes in the location of final receptor site be proposed afterwards, agreement from the Qualified Personnel, Project Manager, ET and IEC should be sought before informing the Director of Environmental Protection (DEP).

## **5 TRANSPANTATION PROPOSAL**

### **5.1 Transplantation Program**

- 5.1.1 According to the tentative construction program, two of the affected individuals of *Gmelina chinensis* would be uplifted and transplanted in mid-November 2021 and would last for 14 working days tentatively subject to the approval of this Plan as required in EP Condition 2.21 and after one month root pruning period, of which three stages at two weeks interval. (i.e. root pruning works to be commenced in mid-October 2021 to mid-November 2021 tentatively). After uplifting, these individuals would be transplanted immediately to the tentative receptor sites on the same day.
- 5.1.2 The Contractor shall engage a Qualified Personnel to prepare and submit and detailed method statement and works programme for transplanting the existing trees, outlining the method, sequencing, timing of operations, and the location and type of machinery to be used for the following operations, prior to submit to the Project Manager. The transplanting operation of each tree should be documented in a report with photographic record.
- 5.1.3 Transplanting operations including root pruning stages should refer to Guidelines on Tree Transplanting by DEVB. Preparation for root pruning should ideally begin several months before the transplanting operation is required.
- 5.1.4 The transplanting method statement incorporated the methodology for pre-construction survey, preservation and translocation for each species, implementation programme and post translocation monitoring programme is shown in **Appendix F**.

### **5.2 Transplantation Methodology**

#### *Preparation of Receptor Site*

- 5.2.1 Before transplanting, site clearance at the receptor sites should be carried out and overgrown weeds should be removed. Planting holes should be marked with individual tree numbers before the transplant and chosen to provide adequate growth space for future growth. Any large stones and concrete materials in and around the selected planting holes should be removed. Soil at the receptor sites should be ploughed and conditioned before the transplant as necessary. Preparation of receptor site should be done carefully so that the root systems of the nearby vegetation are not damaged.

#### *Preparation of Rootball and Root Pruning*

- 5.2.2 Root pruning should normally take place during the wet season with a minimum of one month allowed for root regeneration between each stage of root pruning.
- 5.2.3 Further to the inspection conducted in August 2021 by the Contractor's Qualified Personnel, it was confirmed the root pruning would be carried out in mid-October 2021 to mid-November 2021 and subsequently transplanting works tentatively, subject to the approval of this Plan.

- 5.2.4 The period of root pruning may be adjusted to suit specific tree species and/or imposed contract constraints.
- 5.2.5 The diameter of the rootball to be cut shall be determined by the Qualified Personnel. Normally, the rootball to be cut should be ten times the trunk diameter at breast height and not less than 1500mm diameter, and 600 – 1200mm deep to enhance survival rate for transplanting. Method statements should be submitted by the Contractor taking into account the size and species of trees, site constraints, arboricultural practices, etc for particular tree(s).
- 5.2.6 After determining the size of the rootball, the proposed circumference of the rootball shall be marked on the ground around the tree.
- 5.2.7 The trenches that are made for rootball preparation shall be backfilled with backfilling materials, to encourage new growth of root tips. Rootball shall be kept moist from time to time during the preparatory period to stimulate new-root.
- 5.2.8 Roots shall be cut with a clean sharp knife or similar sharp implement to prevent tearing of the roots.
- 5.2.9 The Contractor's Qualified Personnel shall make regular checks to ensure the stability of the tree and adjustments made accordingly throughout the entire root pruning/crown pruning stages.
- 5.2.10 Transplanted plants shall be inspected monthly by the Qualified Personnel to check the health of the tree. Any sign of deterioration shall be notified to the Project Manager, ET and IEC and remedial action shall be taken. The Contractor shall water regularly, remove weed growth, fertilize, aerate the soil, folia feed, carry out insecticide treatment and any other horticultural work as necessary and as instructed by Qualified Personnel.

*Tree Lifting and Protection*

- 5.2.11 Transplanting shall be carried out during early morning or late afternoon when the sun is not directly overhead. No lifting shall take place during rainfall. Tree shall be transplanted within twenty-four hours of lifting.
- 5.2.12 Wrap trunk and lower branches with accepted hessian and tie with jute string at least one day prior to rootball preparation. Before lifting, the outer edge of the previously dug trenches shall be loosened from the surrounding soil and the rootball undercut to allow the tree to be lifted free from the ground with the rootball intact.
- 5.2.13 A crane or lifting device shall be used to secure the tree and support its full weight when lifted without damaging the branches or trunk. No items of hardware shall be inserted into the trunk or branches for lifting or other purposes. Cables used for lifting shall be wrapped with protective rubber sheaf to prevent damage.
- 5.2.14 Plants shall be lifted carefully to avoid damage to rootball. Roots shall be cut free from ground, not pulled, using a suitable implement to give a clean cut.
- 5.2.15 A board shall be placed under the rootball or a rootball box shall be constructed to support the full width and depth of the rootball.

5.2.16 The Qualified Personnel shall be present to supervise the work.

*Planting*

5.2.17 Prior to the lifting of the trees, tree pits at their receptor sites shall be already prepared and agreed on site. All pits shall be 300-500mm greater than the size of the rootball of the tree to be transplanted at all sides and bottom. Tree pit base shall be scarified to a depth of 150mm. Loosen the base and sides of the tree pit and fill with water twenty-four hours before planting to ensure free drainage. Trees shall be transplanted to the new tree pits within twenty-four hours after being lifted. All transplanted individuals should be saturated with water.

**5.3 Post-transplantation Maintenance**

*Maintenance Duration*

5.3.1 All of the transplanted *Gmelina chinensis* individuals should be maintained by the Contractor for 12 months (establishment period) after planting into their final receptor sites.

*Watering*

5.3.2 These receptor sites should be thoroughly watered immediately after planting. During the establishment period, the soil should be regularly monitored to prevent drying out. The individuals should be watered properly and adequately or daily, if required. After that, watering frequency should be conducted at least twice a week until the end of the establishment period. Frequency of watering should be adjusted accordingly so that the soil is kept moist. The Qualified Personnel would be responsible for determining and advising the Contractor the suitable moisture level and the frequency of watering.

*Use of Mulch*

5.3.3 Mulches help conserve moisture, maintain moderate soil temperature, and control weeds around plants. If required, organic mulches such as peat moss, thoroughly dried grass clippings or small wood chips could be placed on the soil surface over the plant root system.

*Pruning/Weeding*

5.3.4 Insect/fungal infested stems, or those infected with disease would be removed after transplantation. Pruning may also be required after transplantation to remove any broken stems. The receptor sites should be kept free from weeds throughout 12-months establishment period. Any unwanted weeds found in these areas should be removed by the Contractor once identified and/or when instructed by the Project Manager. Weeding should be carried out by hand as much as possible and removed weeds should be disposed of appropriately by the Contractor.

## **5.4 Post-transplantation Monitoring**

### *Performance*

- 5.4.1 Health conditions of the transplanted individuals should be monitored by the Qualified Personnel in the presence of ET for two years at the receptor sites. Monitoring of the transplanted individuals should be conducted once per month for the first year, and then quarterly for the second year as stipulated in EM&A Manual Section 11.4.4, given that the health conditions during the establishment period remained fair to good. Should problems relating to the transplanted tree health arise during the establishment period, monitoring frequency during post establishment period (throughout construction phase) would be subject to the situation and the advice of the ET.
- 5.4.2 Any post-transplantation monitoring findings should be included in the monthly inspection checklist/report and it should be submitted to the Project Manager, Environmental Team Leader and Independent Environmental Checker for review and record.
- 5.4.3 The Contractor shall be responsible if any *Gmelina chinensis* die during the transplantation process, within the two years monitoring period due to negligence or non-compliance of this Plan. Replacement planting of new trees of the same species, or other species to the satisfaction of the Project Manager, at the Contractors' expense would be deemed necessary under these conditions.

### *Construction Activities*

- 5.4.4 Any construction activities that may adversely affect the identified individual plant species of conservation importance should be reported in advance to the Project Manager for planning of preventive measures to avoid possible damage.

### *Photographic Record*

- 5.4.5 The Contractor should submit a photographic record for the two *Gmelina chinensis* individuals to be transplanted during each of the following stages for record purpose:
- 5.4.6 Before transplantation - recording the existing growth angle and compass orientation of the plant, in order to allow replication during transplanting;
- 5.4.7 During Transplantation - recording each procedure, including digging and root pruning, any stems/branches pruning, formation of rootball, preparation works at all receptor sites, transportation of uplifted individuals to the receptor sites, planting of individuals at the receptor sites and after transplanting into the receptor sites; and
- 5.4.8 Post-Transplantation Period – recording the status of transplanted individuals during the 12-month establishment period and until the end of construction phase, following the aforementioned monitoring schedule.



## 6 CONCLUSION

- 6.1.1 To fulfill the requirement of EP Condition 2.21, prior to commencement of construction of SWSR, a detailed vegetation survey was conducted in August 2020, in order to identify and record potentially affected plant species of conservation interest
- 6.1.2 During this group vegetation survey in August 2020, a total of 35 individuals of *Gmelina chinensis* and 3 individuals of *Aquilaria sinensis* were recorded within the proposed SWSR works area.
- 6.1.3 Based on the proposed layout of the SWSR, none of the *Aquilaria sinensis* and only two of the *Gmelina chinensis* individuals are located within the area that would be affected by the proposed works. It is proposed that the two directly affected *Gmelina chinensis* trees are transplanted.
- 6.1.4 To provide consistent habitat condition, receptor site would be located within the project boundary of SWSR and would receive the two potentially affected *Gmelina chinensis* individuals. Although potential receptor site has been proposed, the Contractor should review the actual conditions before transplantation and propose suitable alternative receptor sites where necessary by Qualified Personnel and agreed with ET/IEC and Project Manager. Appropriate transplantation techniques, and post-transplantation care and monitoring are recommended and should be adopted as far as practicable. In addition, protective measures for the retained / transplanted individuals should also be adopted during the construction phase.

## 7 REFERENCE

Hong Kong Herbarium and South China Botanical Garden (2007). *Flora of Hong Kong. Volume 1*. Agriculture, Fisheries and Conservation Department, Government of Hong Kong Special Administrative Region.

Hong Kong Herbarium and South China Botanical Garden (2008). *Flora of Hong Kong. Volume 2*. Agriculture, Fisheries and Conservation Department, Government of Hong Kong Special Administrative Region.

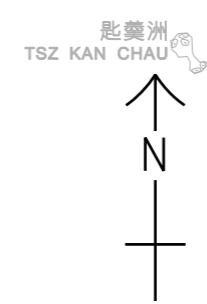
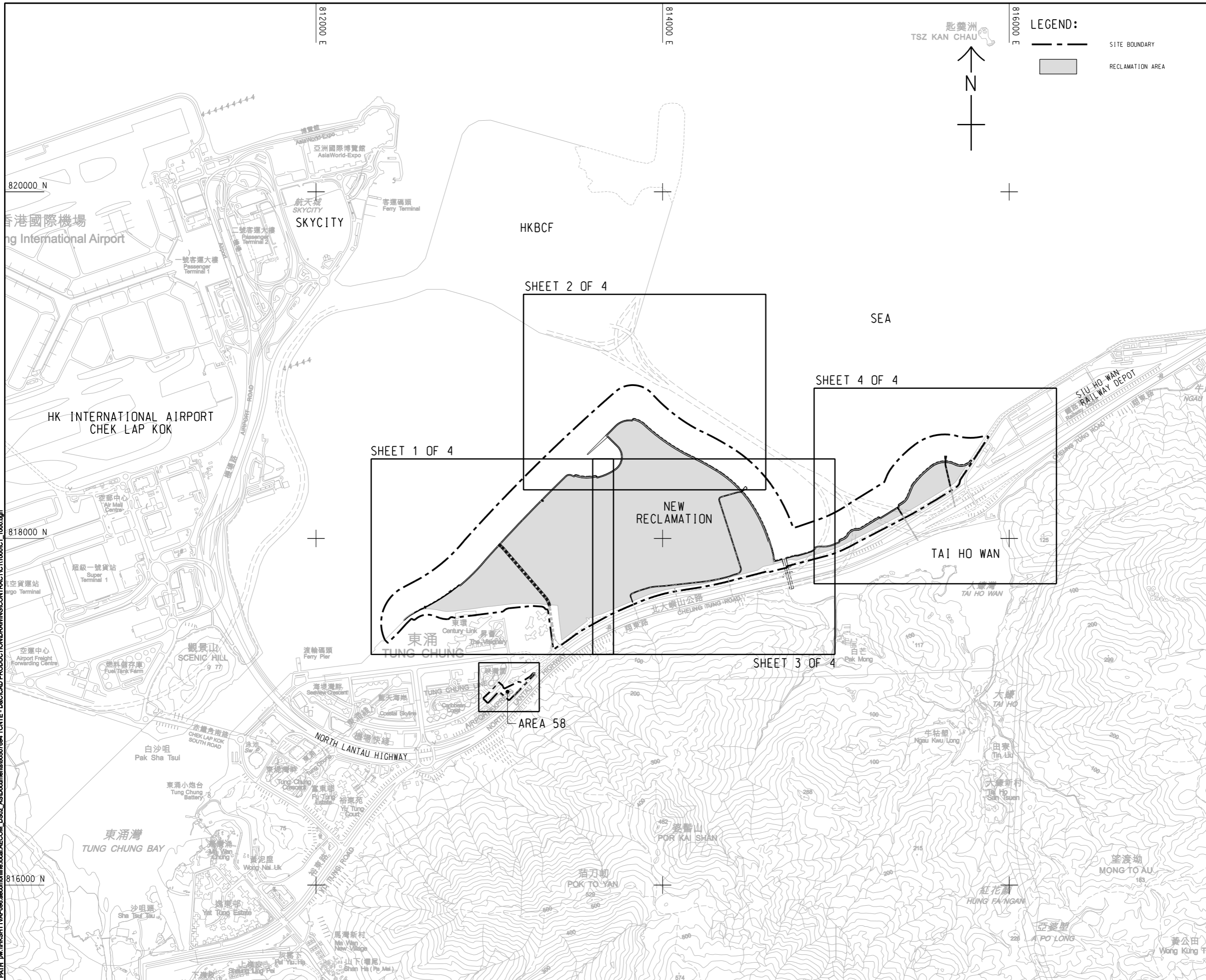
Hong Kong Herbarium and South China Botanical Garden (2009). *Flora of Hong Kong. Volume 3*. Agriculture, Fisheries and Conservation Department, Government of Hong Kong Special Administrative Region.

Hong Kong Herbarium and South China Botanical Garden (2011). *Flora of Hong Kong. Volume 4*. Agriculture, Fisheries and Conservation Department, Government of Hong Kong Special Administrative Region.

## Figures

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**LEGEND:**

--- SITE BOUNDARY

■ RECLAMATION AREA

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 TUNG CHUNG NEW TOWN  
 EXTENSION (EAST) -  
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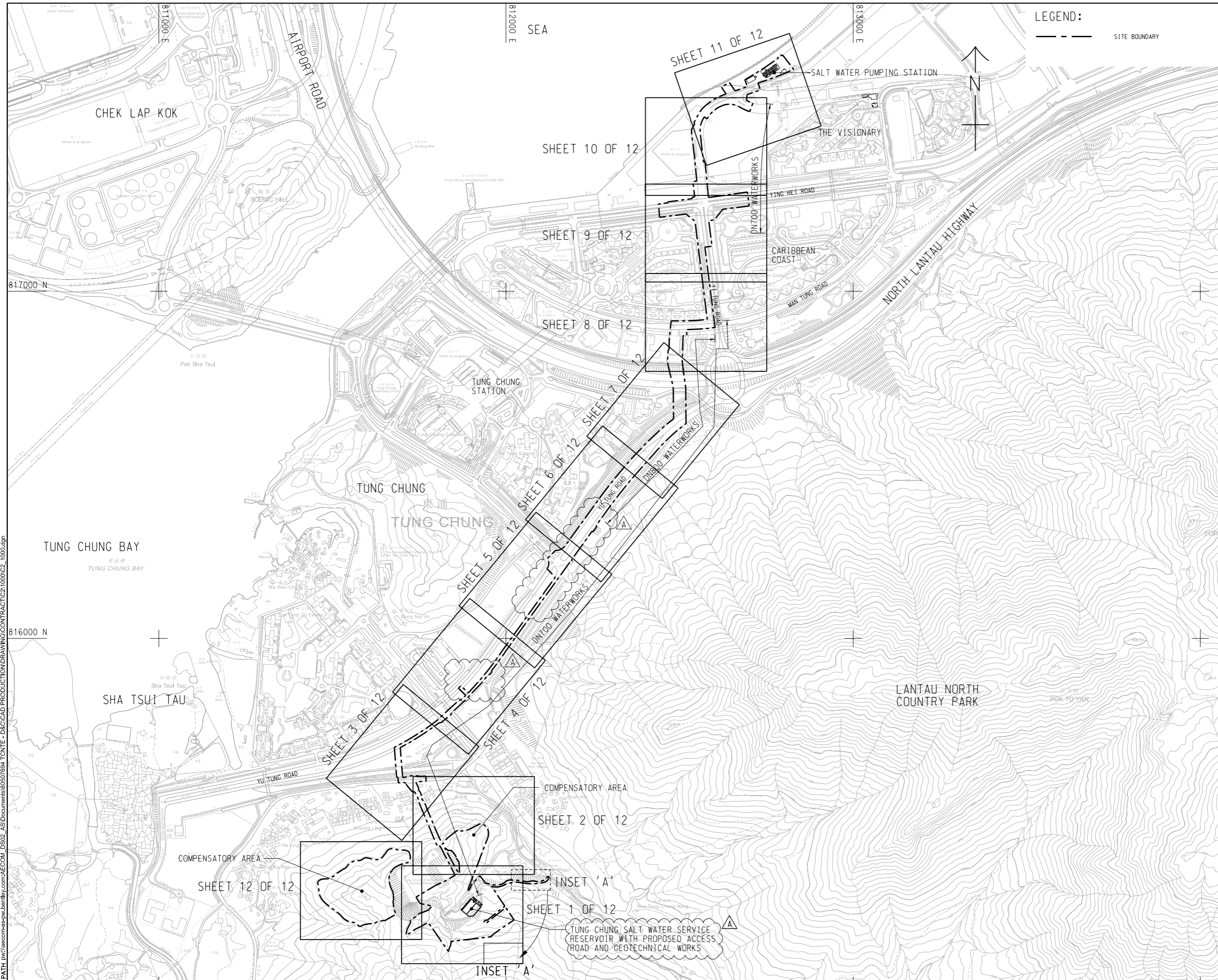
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 圖則名稱: GENERAL LAYOUT OF CONTRACT NO. NL/2017/03

**SHEET NUMBER**  
 圖則編號: 60507694/Z47/FIGURE 1.1



LEGEND:  
 - - - - - SITE BOUNDARY



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 項目  
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-	DEC. 20	TENDER DRAWING	TKML

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**KEY PLAN**  
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 項目編號  
 60507694

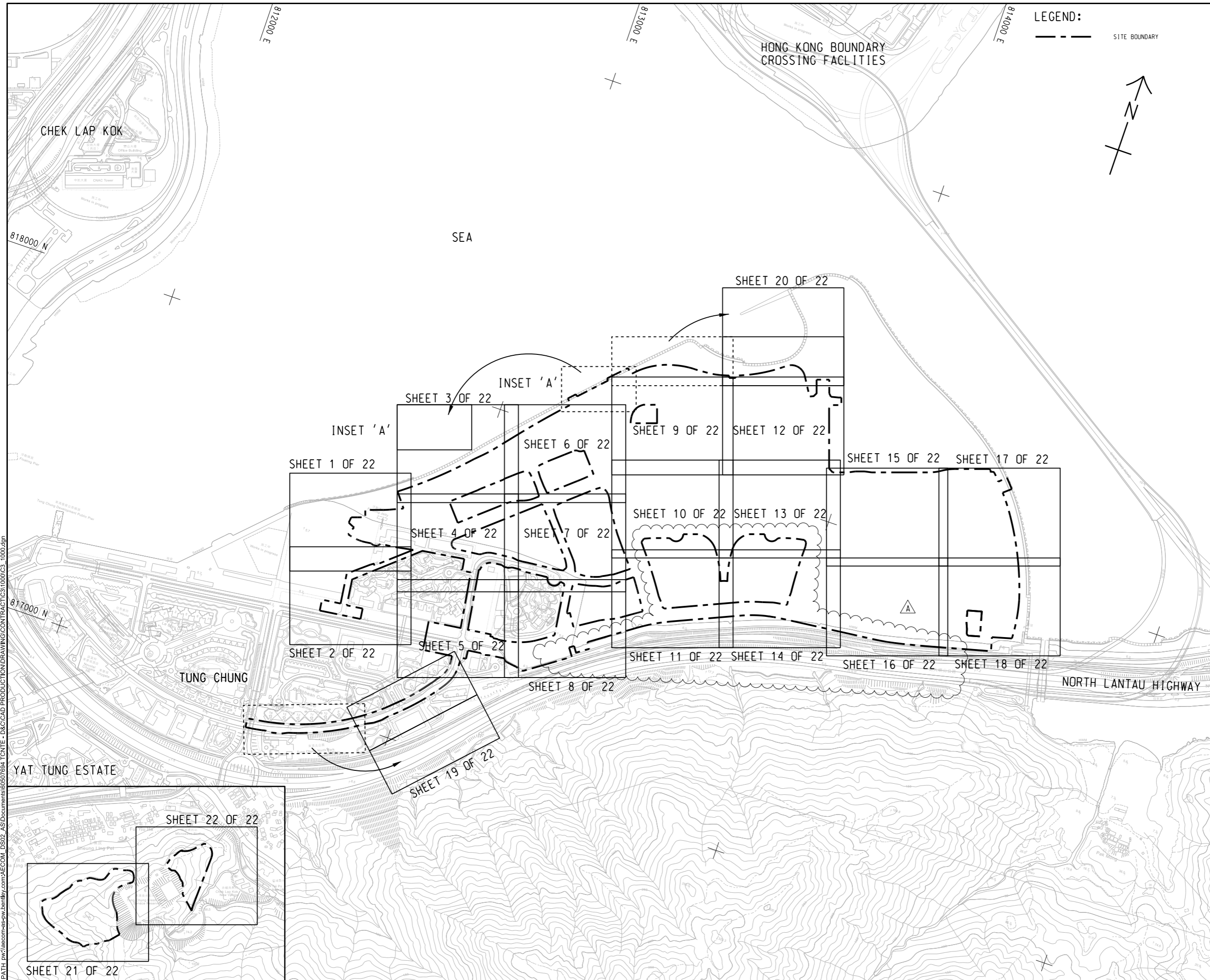
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**SHEET NUMBER**  
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 60507694/Z47/FIGURE 1.2

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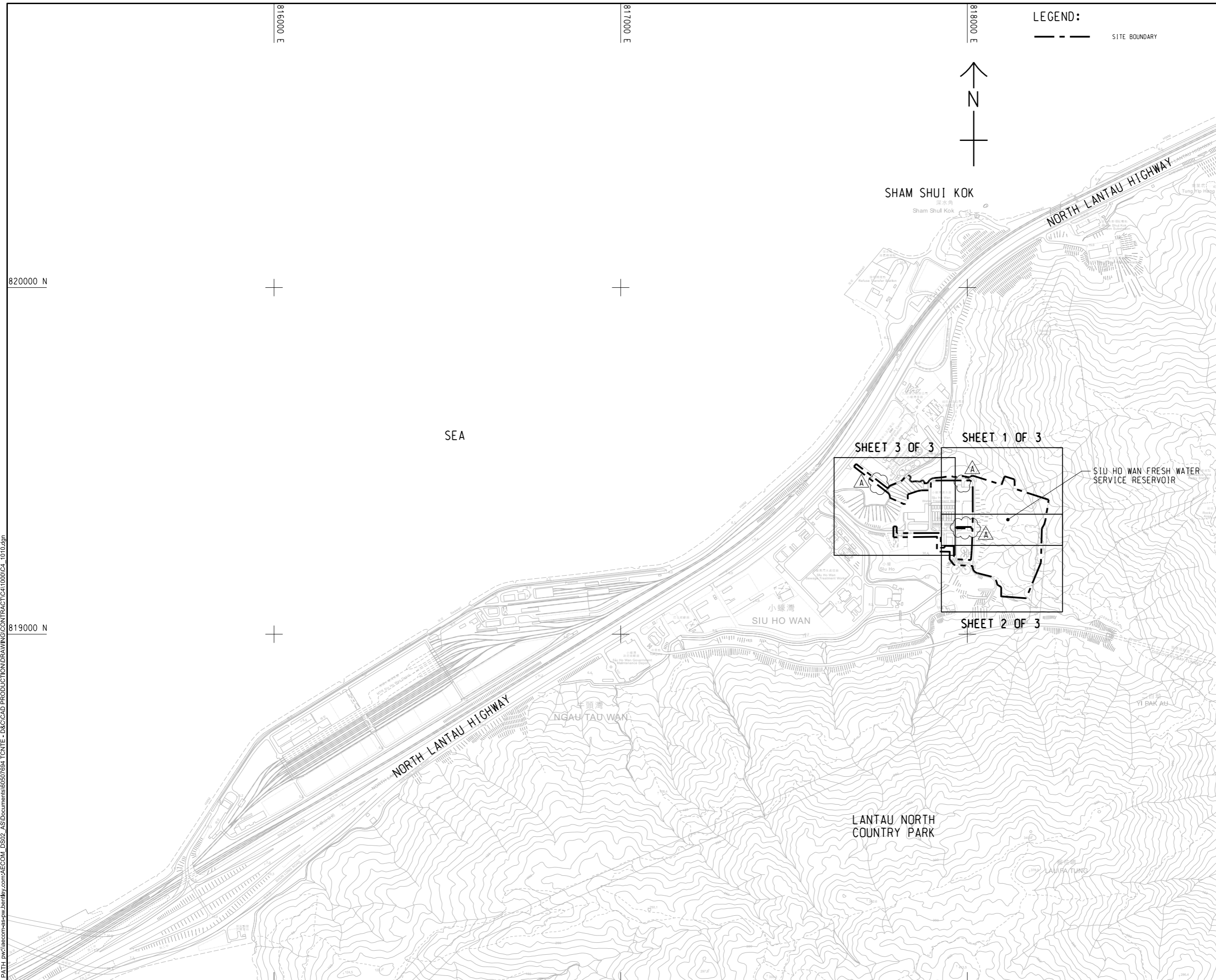
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**DIMENSION UNIT**  
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**KEY PLAN**  
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**PROJECT NO.**  
 項目編號  
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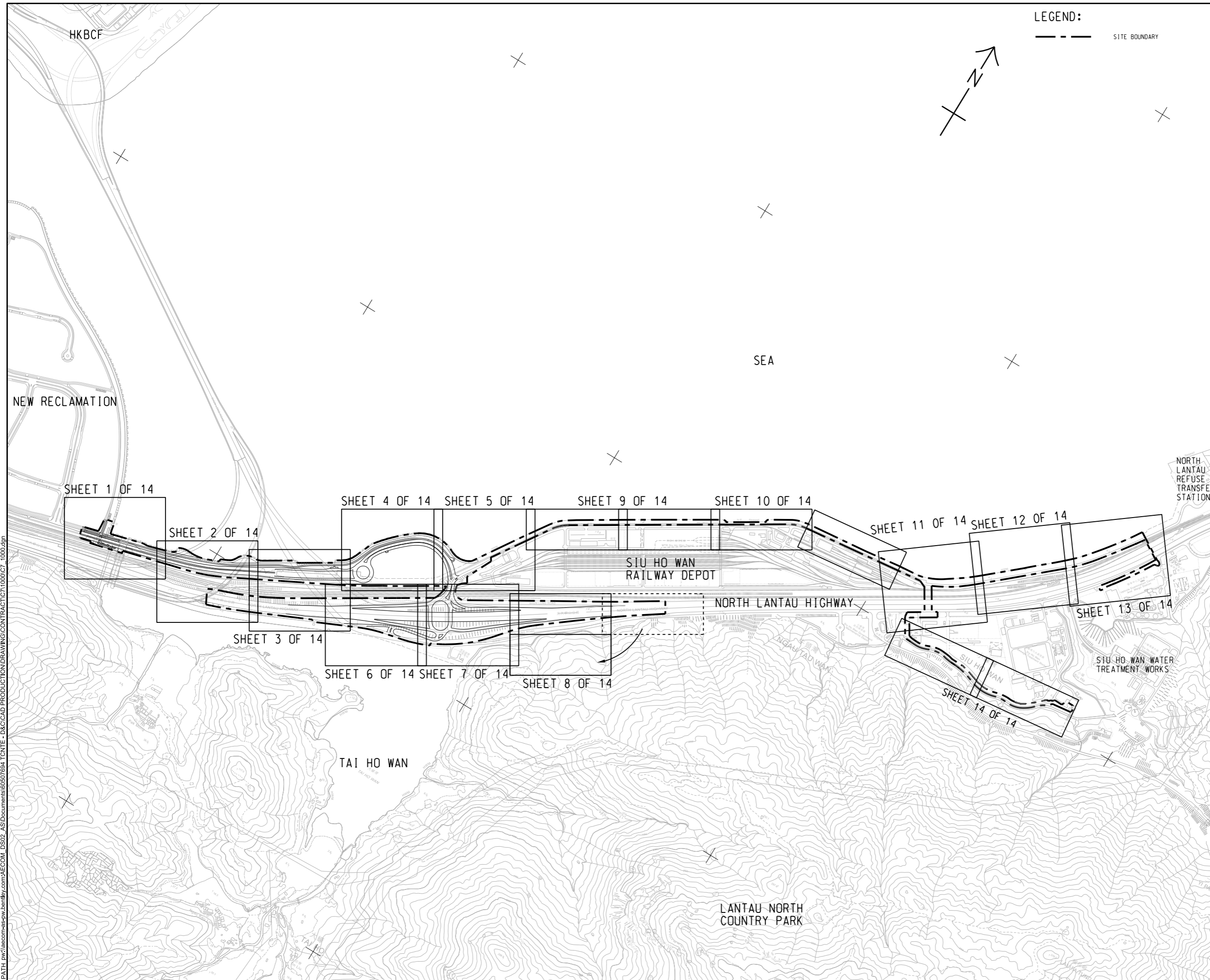
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**GENERAL LAYOUT OF CONTRACT  
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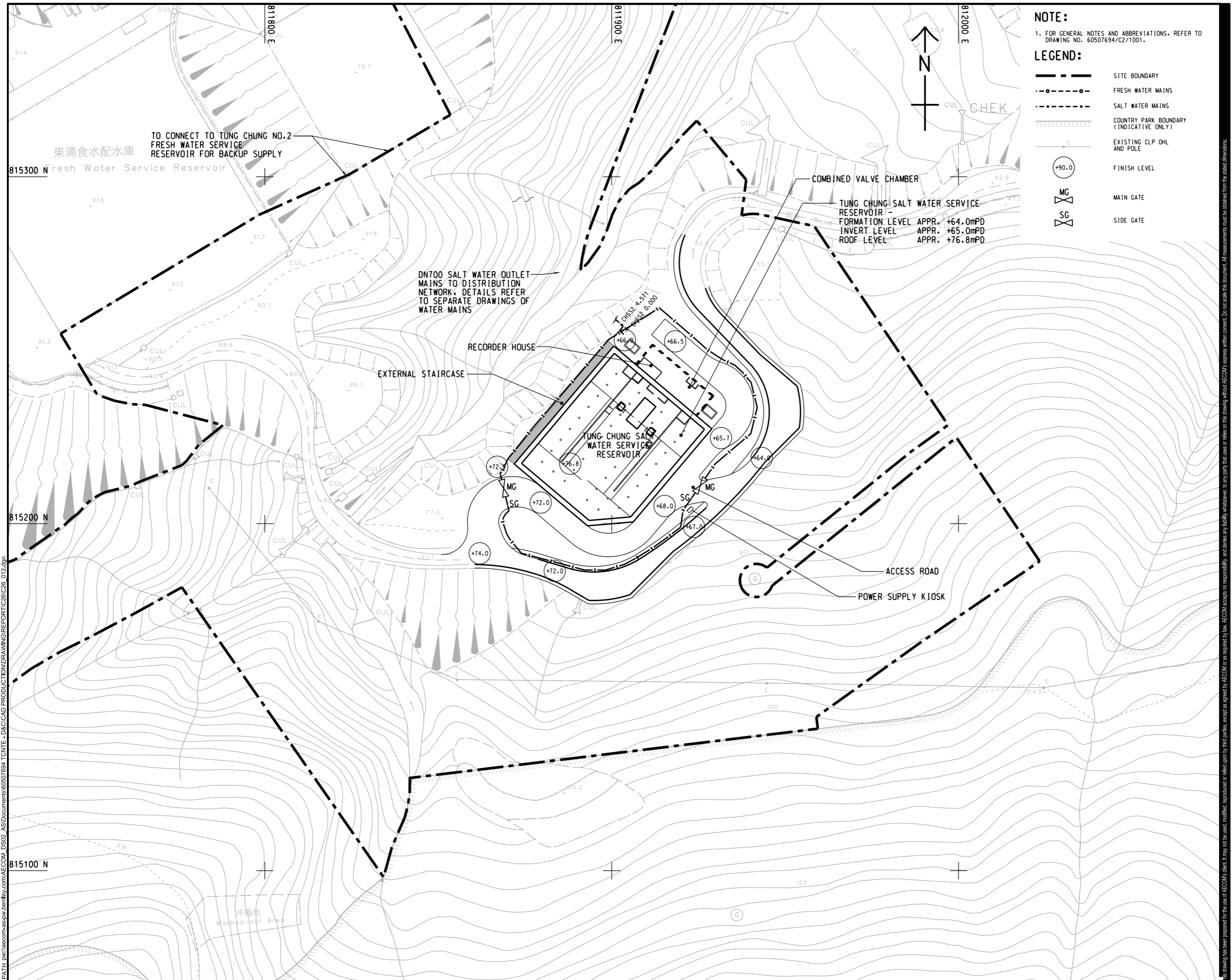
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**LEGEND:**

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- FRESH WATER MAINS
- SALT WATER MAINS
- COUNTRY PARK BOUNDARY (INDICATIVE ONLY)
- EXISTING CLP OHL AND POLE
- FINISH LEVEL
- MAIN GATE
- SIDE GATE

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**SHEET TITLE**  
 LOCATION AND LAYOUT PLAN OF SWSR




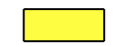


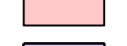


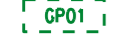










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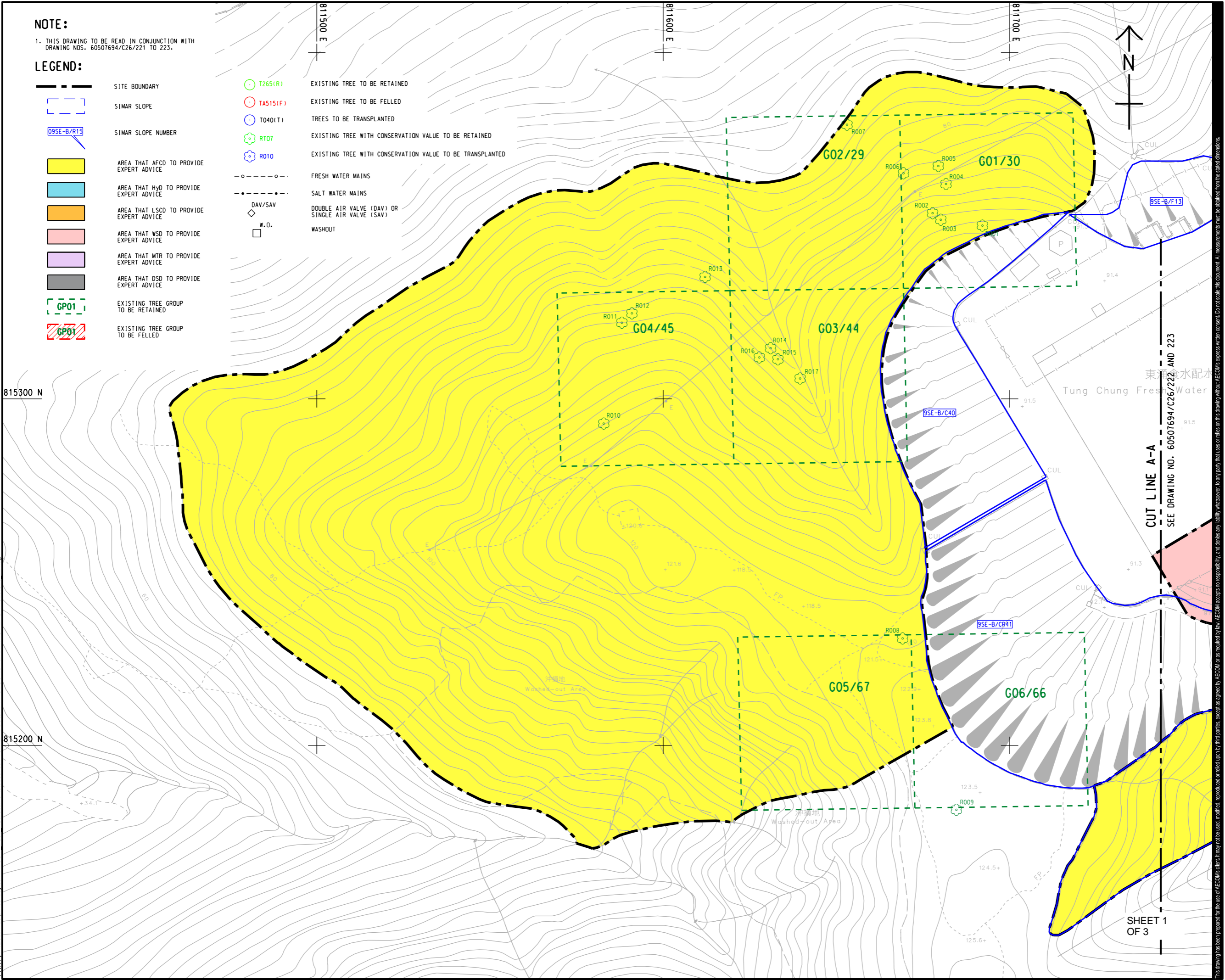


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-  SIMAR SLOPE NUMBER
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-  AREA THAT HyD TO PROVIDE EXPERT ADVICE
-  AREA THAT LSD TO PROVIDE EXPERT ADVICE
-  AREA THAT MTR TO PROVIDE EXPERT ADVICE
-  AREA THAT WSD TO PROVIDE EXPERT ADVICE
-  AREA THAT OSD TO PROVIDE EXPERT ADVICE
-  EXISTING TREE GROUP TO BE RETAINED
-  EXISTING TREE GROUP TO BE FELLED
-  EXISTING TREE TO BE RETAINED
-  EXISTING TREE TO BE FELLED
-  TREES TO BE TRANSPLANTED
-  EXISTING TREE WITH CONSERVATION VALUE TO BE RETAINED
-  EXISTING TREE WITH CONSERVATION VALUE TO BE TRANSPLANTED
-  FRESH WATER MAINS
-  SALT WATER MAINS
-  DAV/SAV  
DOUBLE AIR VALVE (DAV) OR SINGLE AIR VALVE (SAV)
-  W.O.  
WASHOUT



**PROJECT**  
 TUNG CHUNG NEW TOWN  
 EXTENSION (EAST) -  
 DESIGN AND  
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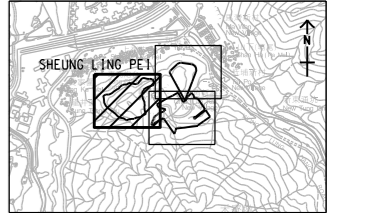
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**KEY PLAN** A1 1:20000



**PROJECT NO.**  
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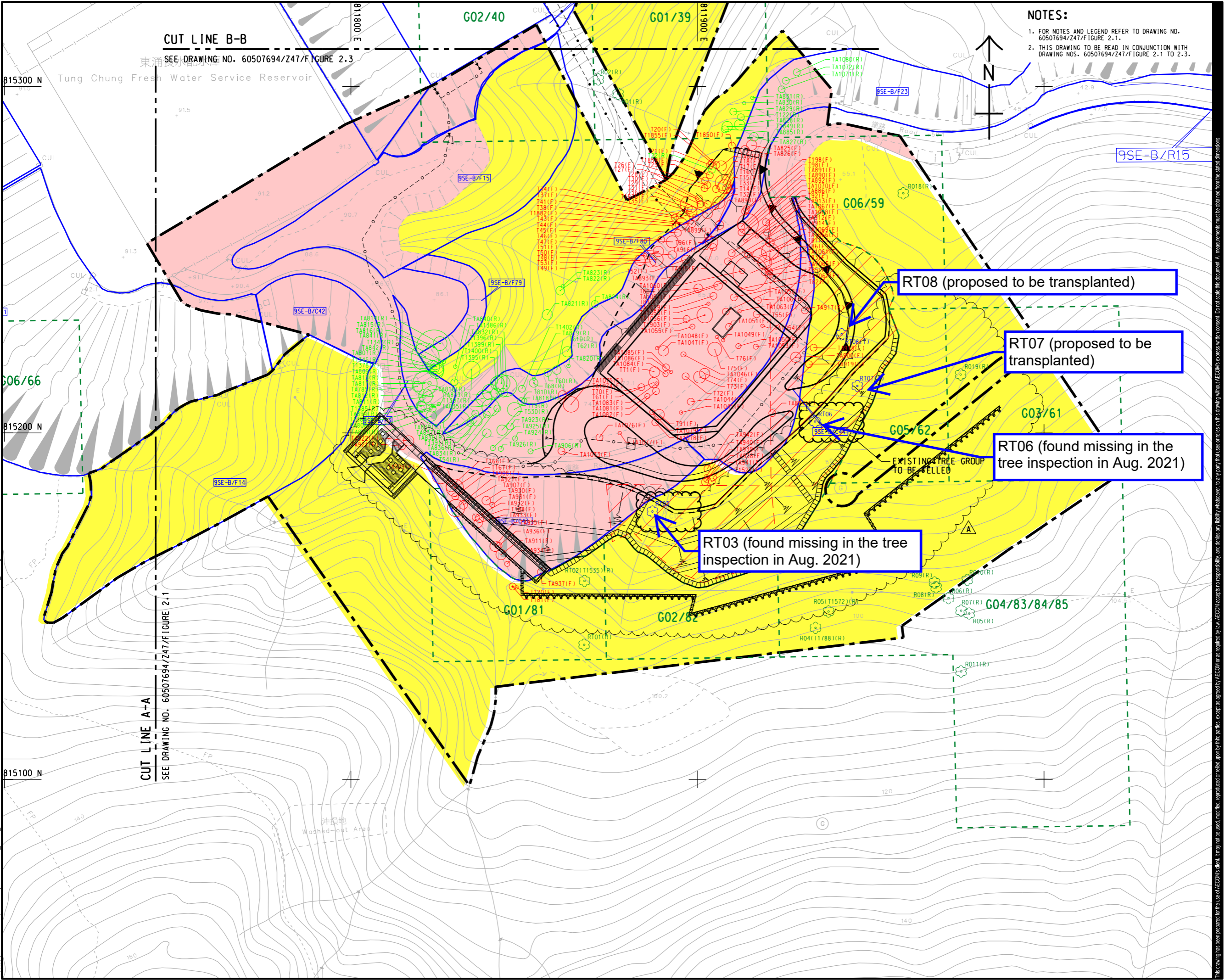
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 LOCATION AND RECOMMENDATION  
 OF RECORDED PLANTS OF  
 CONSERVATION IMPORTANCE  
 SHEET 1 OF 3

**SHEET NUMBER**  
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**PROJECT**  
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**SCALE**      **DIMENSION UNIT**  
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**KEY PLAN** A1 1:20000



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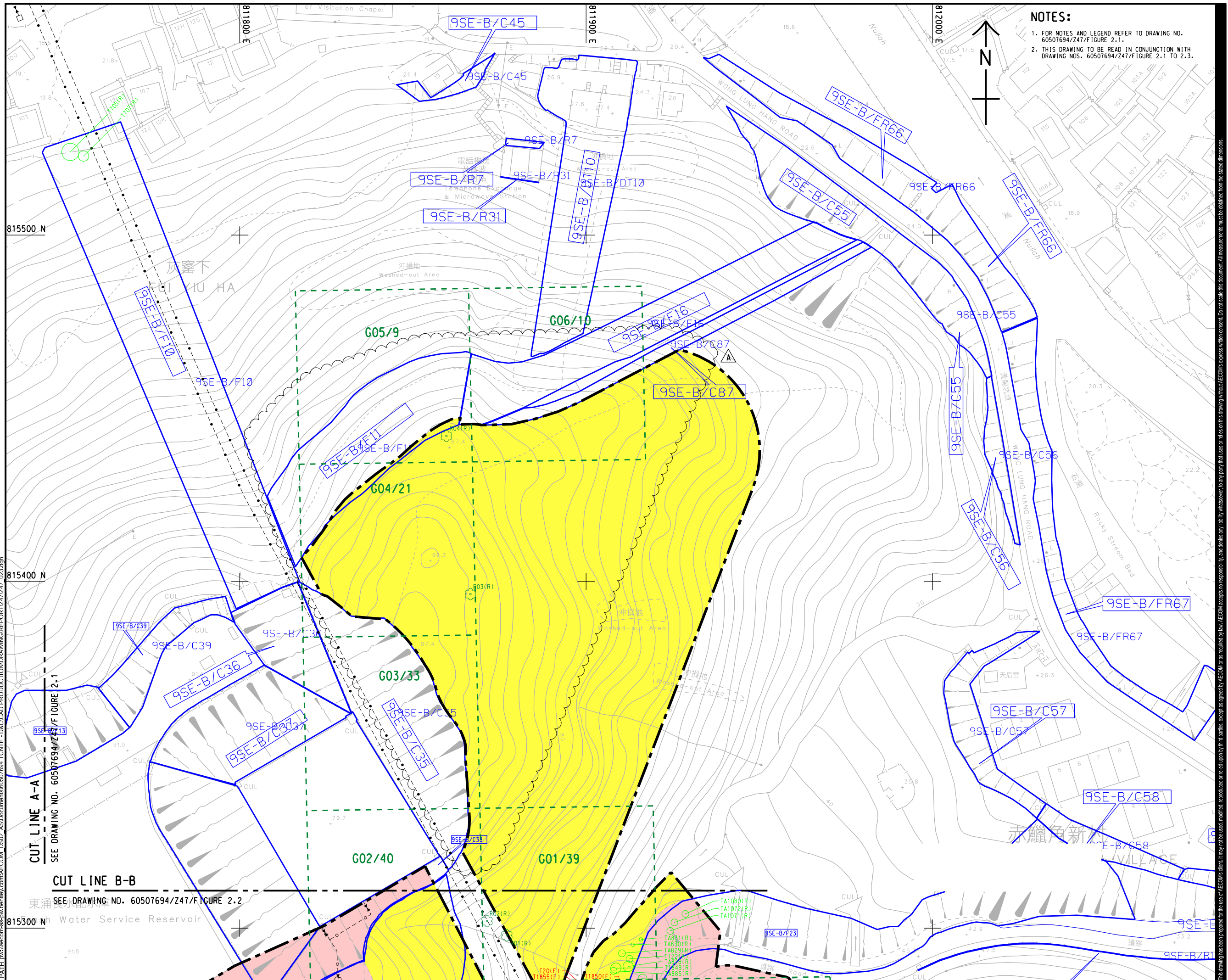
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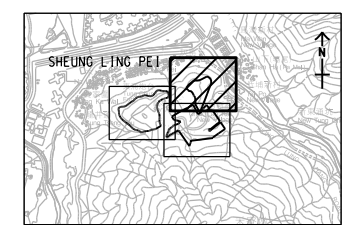
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**KEY PLAN** A1 1:20000



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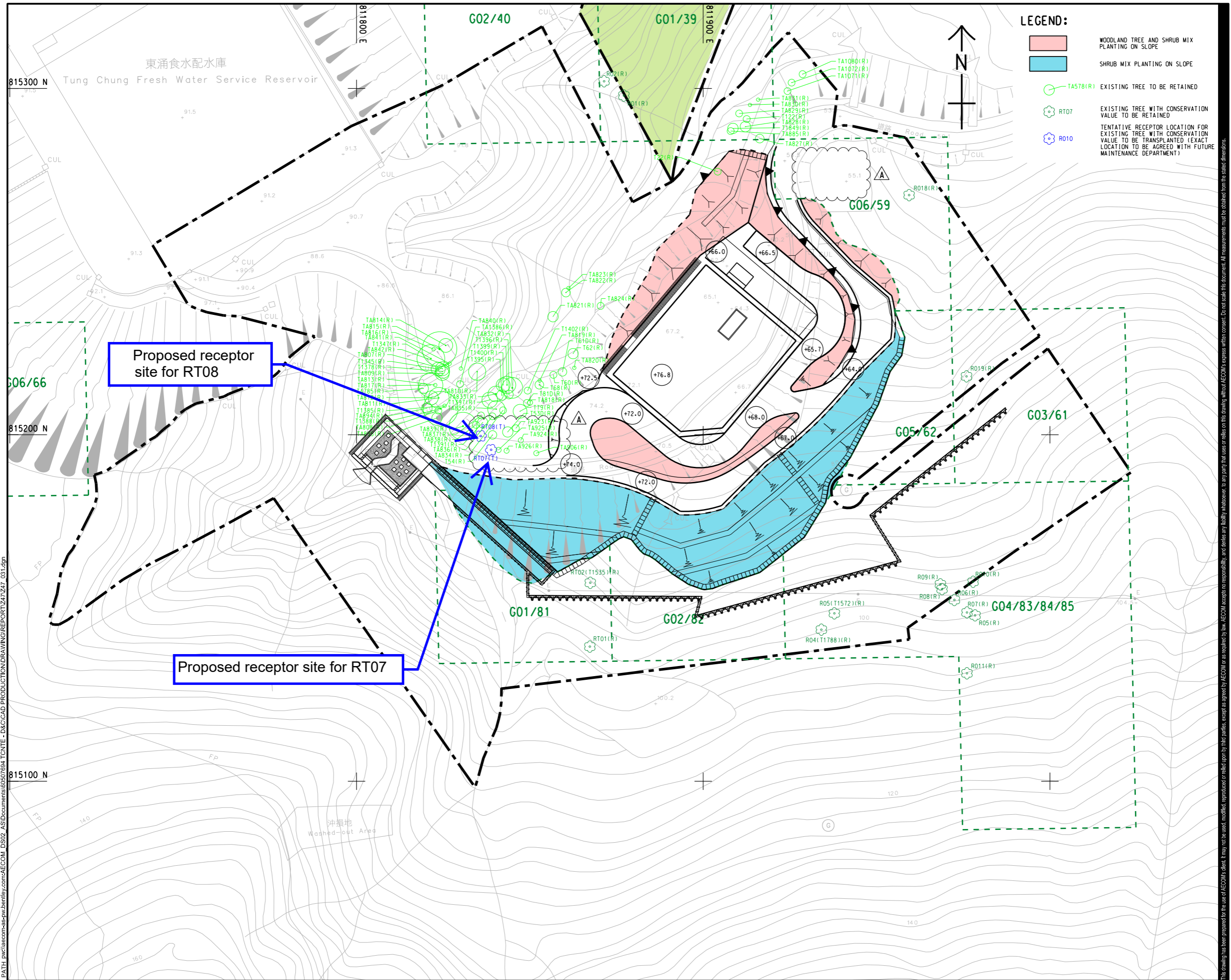
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 Checked:  
 Designer:  
 Project Management Initials:  
 11-November-2020  
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 Plot File by: Shuyun.Wang@aecom.com  
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**LEGEND:**

- WOODLAND TREE AND SHRUB MIX PLANTING ON SLOPE
- SHRUB MIX PLANTING ON SLOPE
- TA578(R) EXISTING TREE TO BE RETAINED
- RT07 EXISTING TREE WITH CONSERVATION VALUE TO BE RETAINED
- R010 TENTATIVE RECEPTOR LOCATION FOR EXISTING TREE WITH CONSERVATION VALUE TO BE TRANSPLANTED (EXACT LOCATION TO BE AGREED WITH FUTURE MAINTENANCE DEPARTMENT)

**AECOM**

**PROJECT**  
 TUNG CHUNG NEW TOWN EXTENSION (EAST) - DESIGN AND CONSTRUCTION

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

**CONSULTANT**  
 AECOM Asia Company Ltd.  
 www.aecom.com

**SUB-CONSULTANTS**  
 分判工程師/顧問

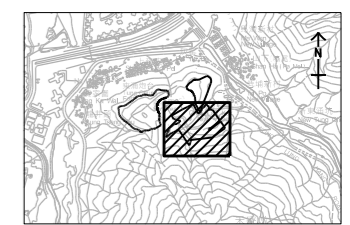
**ISSUE/REVISION**

NO.	DATE	DESCRIPTION	CHK.
A	NOV. 20	REVISED LAYOUT	CC
-	OCT. 20	FIRST ISSUE	CC

**STATUS**  
 現狀

**SCALE**      **DIMENSION UNIT**  
 1:500      METRES

**KEY PLAN**    A1 1:20000



**PROJECT NO.**      **CONTRACT NO.**  
 60507694      CE 69/2015 (CE)

**SHEET TITLE**  
 LOCATION OF RECEPTOR SITE FOR THE TRANSPLANTED PLANTS OF CONSERVATION IMPORTANCE

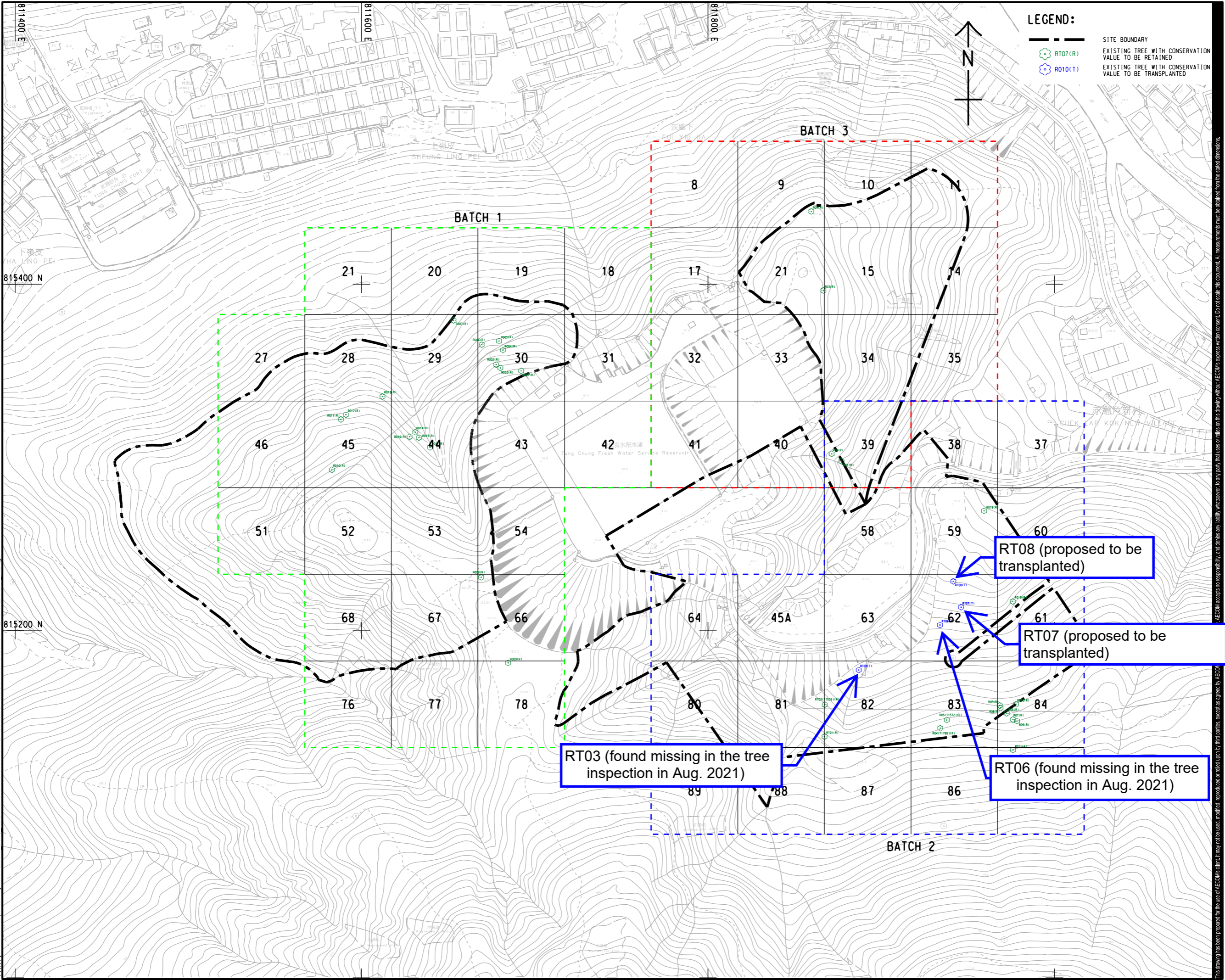
**SHEET NUMBER**  
 60507694/Z47/FIGURE 3

## **Appendix A**

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Plot File by: Shuyan.Wang@aecom.com 20-November-2020  
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 Project Management Initials: Designer: Checked: Approved: ISO A1 594mm x 841mm



**LEGEND:**

- SITE BOUNDARY
- RT07(R) EXISTING TREE WITH CONSERVATION VALUE TO BE RETAINED
- R010(T) EXISTING TREE WITH CONSERVATION VALUE TO BE TRANSPLANTED

**AECOM**

**PROJECT**

**TUNG CHUNG NEW TOWN EXTENSION (EAST) - DESIGN AND CONSTRUCTION**

**CLIENT**

土木工程拓展署  
Civil Engineering and Development Department

**CONSULTANT**

AECOM Asia Company Ltd.  
www.aecom.com

**SUB-CONSULTANTS**

分列上列資料公司

**ISSUE/REVISION**

I/R	DATE	DESCRIPTION	CHK.

**STATUS**

**SCALE**      **DIMENSION UNIT**

A1 1 : 1000      METRES

**KEY PLAN**

**PROJECT NO.**      **CONTRACT NO.**

60507694      CE 69/2015 (CE)

**SHEET TITLE**

TREE GROUP SURVEY BOUNDARY

**SHEET NUMBER**

60507694/Z47/FIGURE 1.1

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**Contract 2 (Batch 1)**

**TREE GROUP SURVEY REPORT**

**CHEK LAP KOK NEW VILLAGE**

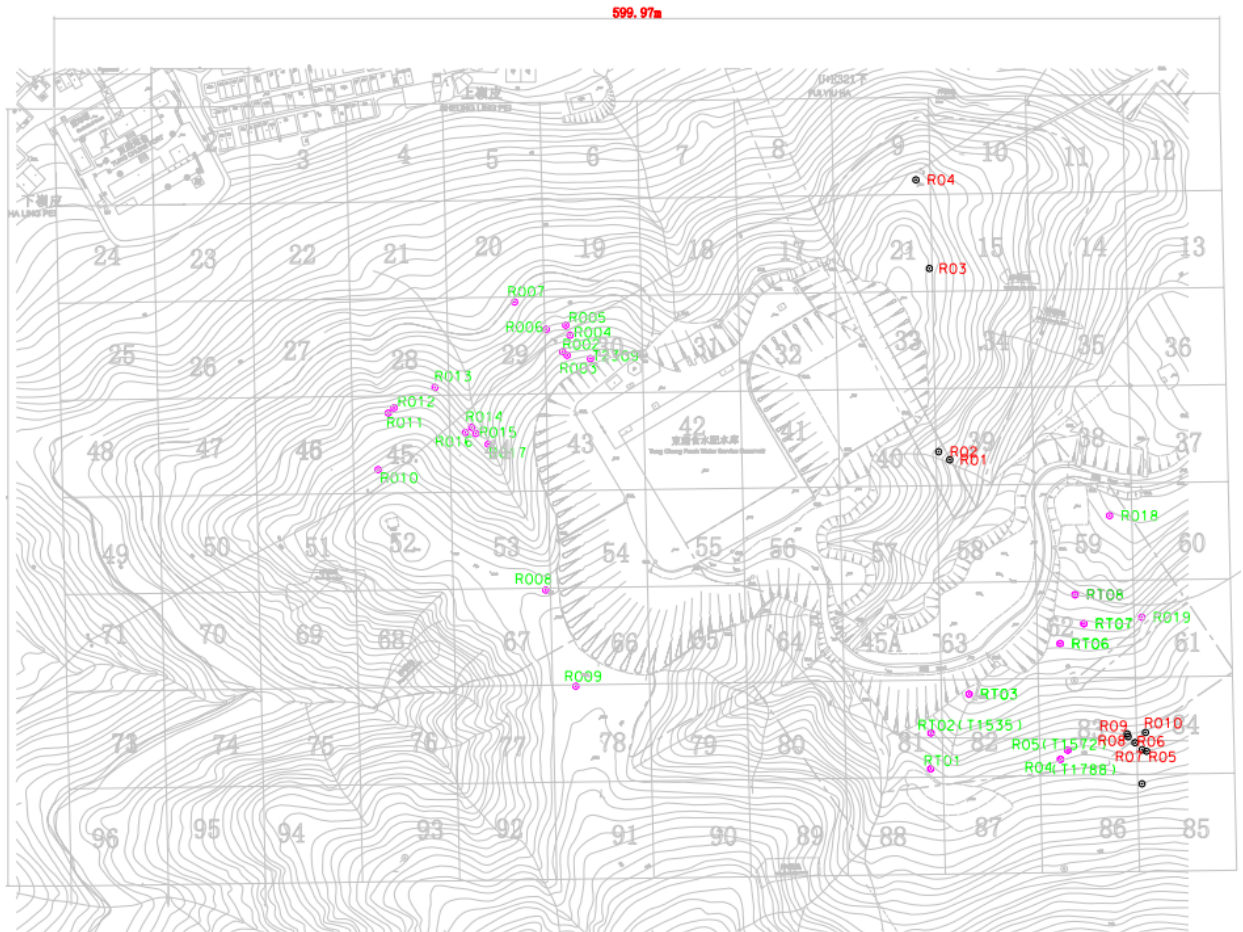
**17 AUGUST 2020**

**BATCH 1**



# Contract 2 (Batch 1)

## TREE GROUP PLAN

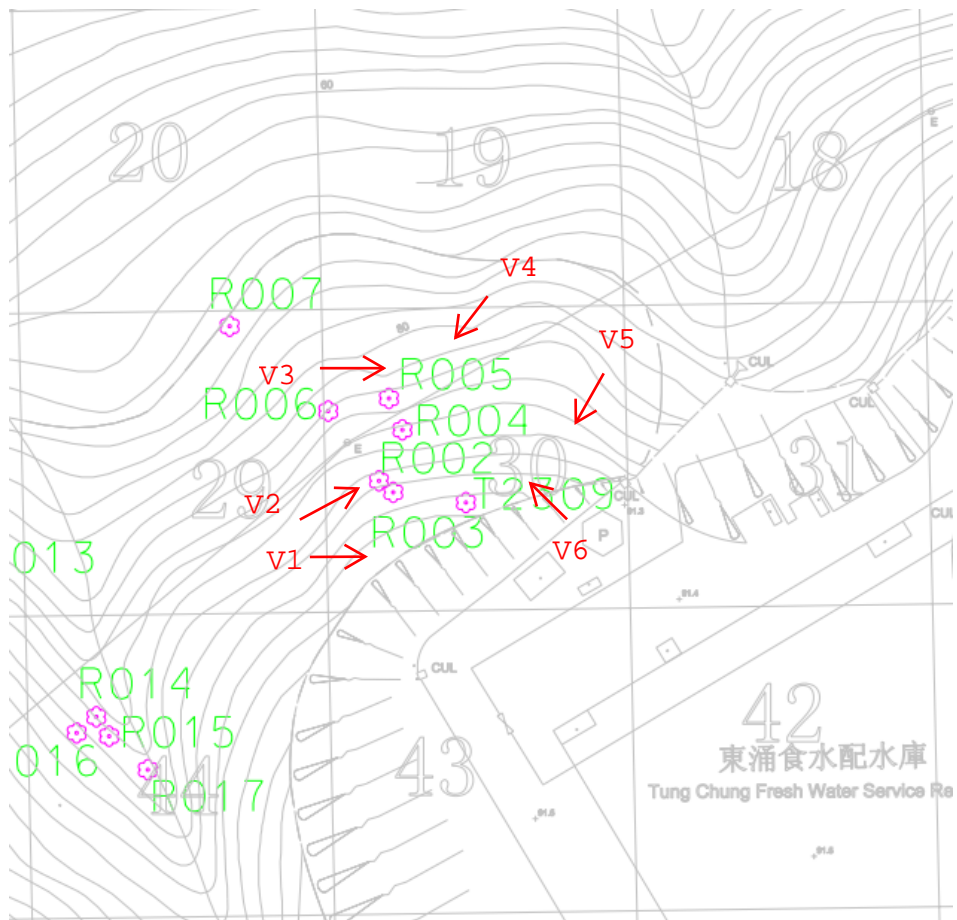


50m\*50m

# Contract 2 (Batch 1)

## TREE GROUP PHOTOGRAPHS

Tree Group No. G01/30







# Contract 2 (Batch 1)

Tree Group No. G01/30	
G01/30_V1	G01/30_V2
	
G01/30_V3	G01/30_V4
	
G01/30_V5	G01/30_V6
	

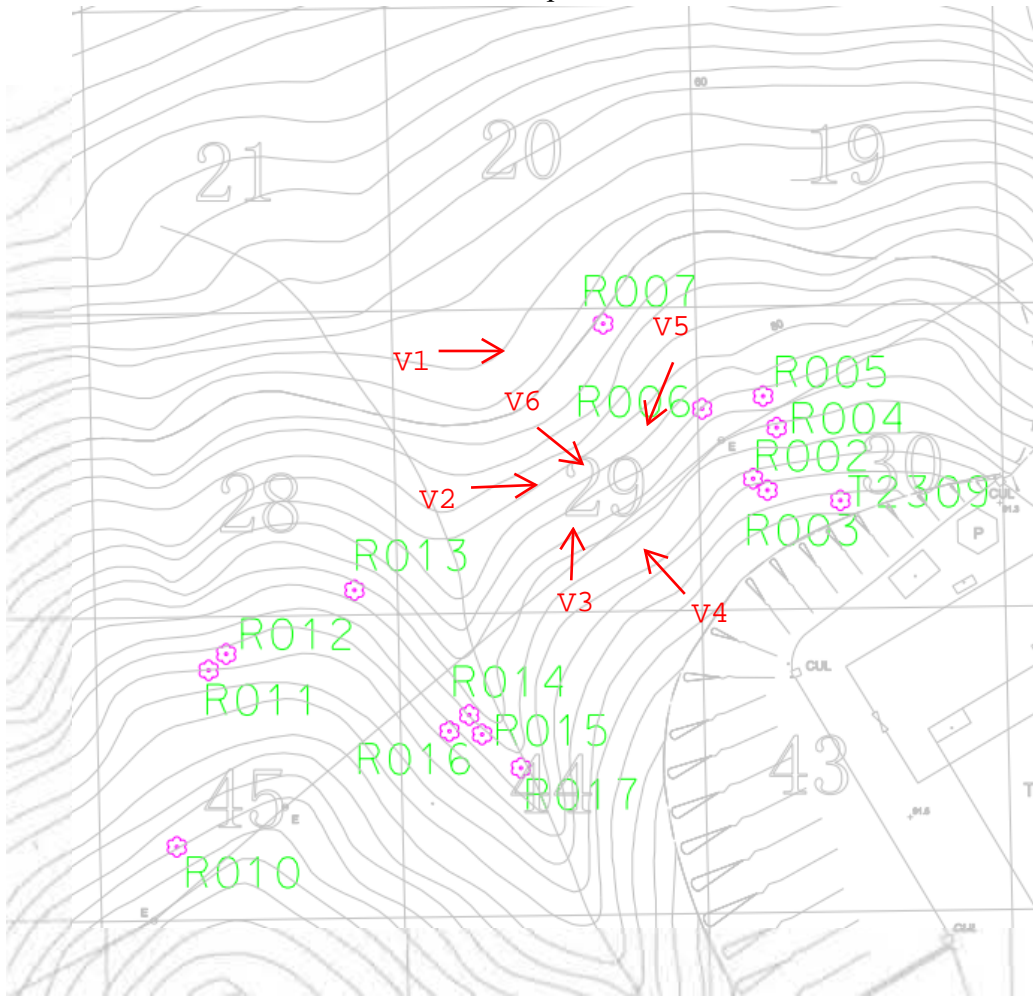


## Contract 2 (Batch 1)

Close up_1	Close up_2
	
Close up_3	Close up_4
	

# Contract 2 (Batch 1)

Tree Group No. G02/29









# Contract 2 (Batch 1)

Tree Group No. G02/29	
G02/29_V1	G02/29_V2
	
G02/29_V3	G02/29_V4
	
G02/29_V5	G02/29_V6
	

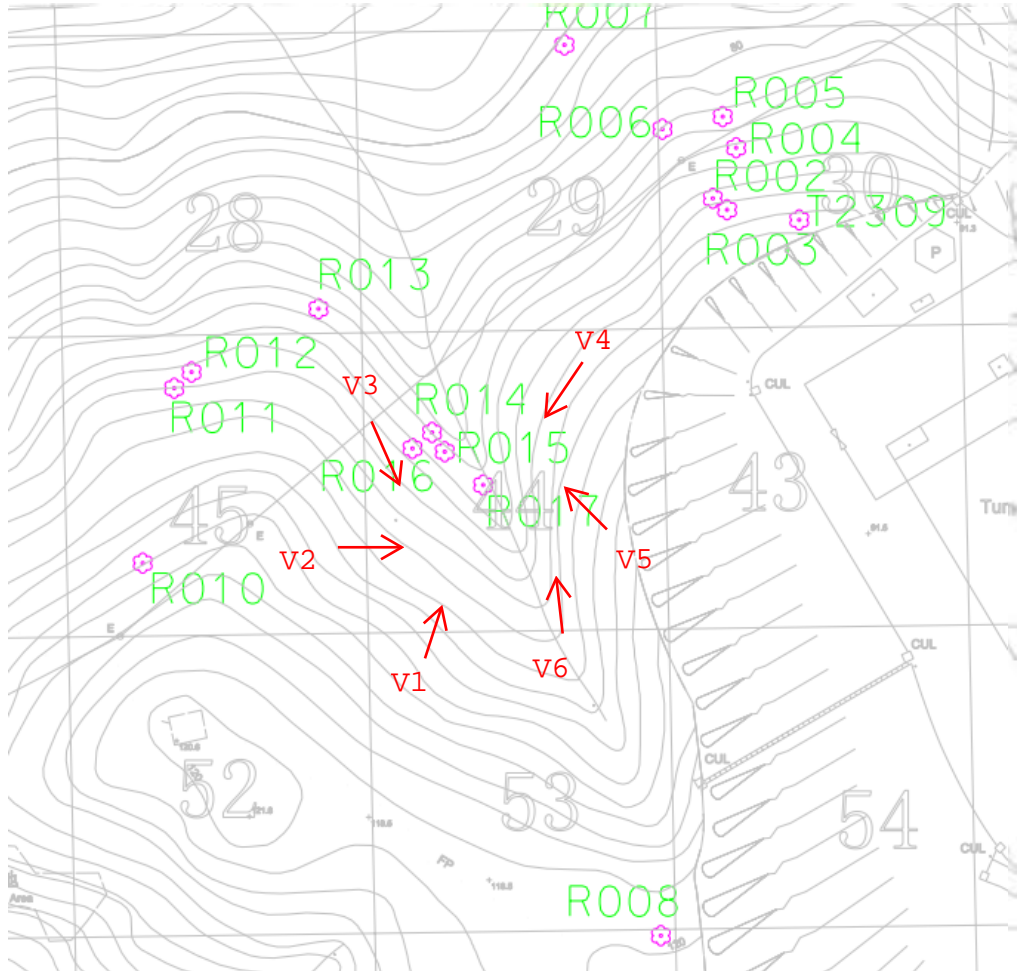


# Contract 2 (Batch 1)

Close up_1	Close up_2
	
Close up_3	Close up_4
	

# Contract 2 (Batch 1)

Tree Group No. G03/44









# Contract 2 (Batch 1)

Tree Group No. G03/44	
G03/44_V1	G03/44_V2
	
G03/44_V3	G03/44_V4
	
G03/44_V5	G03/44_V6
	

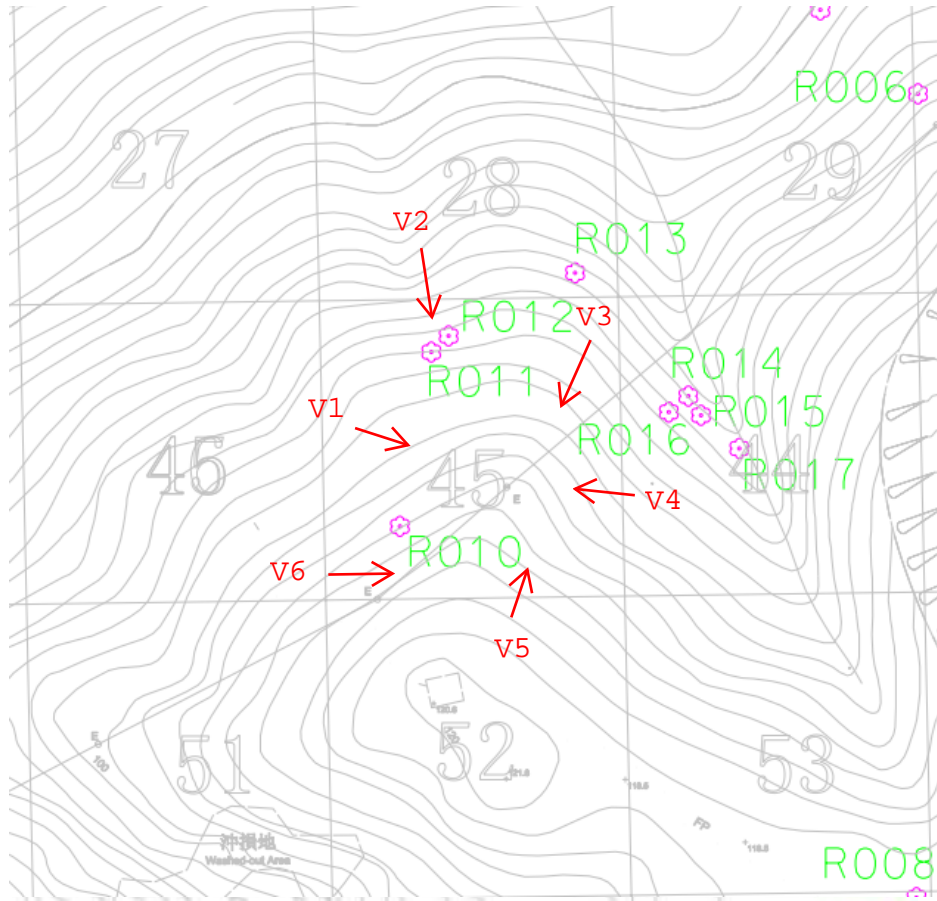


## Contract 2 (Batch 1)

Close up_1	Close up_2
 A photograph showing a close-up of pine needles and branches. The needles are long and thin, and the branches are dark brown. The background is a clear blue sky.	 A photograph showing a close-up of broad, green leaves. The leaves are arranged in a dense canopy, and the background is filled with more green foliage.
Close up_3	Close up_4
 A photograph showing a close-up of broad, green leaves with dark veins. The leaves are arranged in a dense canopy, and the background is filled with more green foliage.	 A photograph showing a close-up of broad, green leaves with dark veins. The leaves are arranged in a dense canopy, and the background is filled with more green foliage.







# Contract 2 (Batch 1)

Tree Group No. G04/45







# Contract 2 (Batch 1)

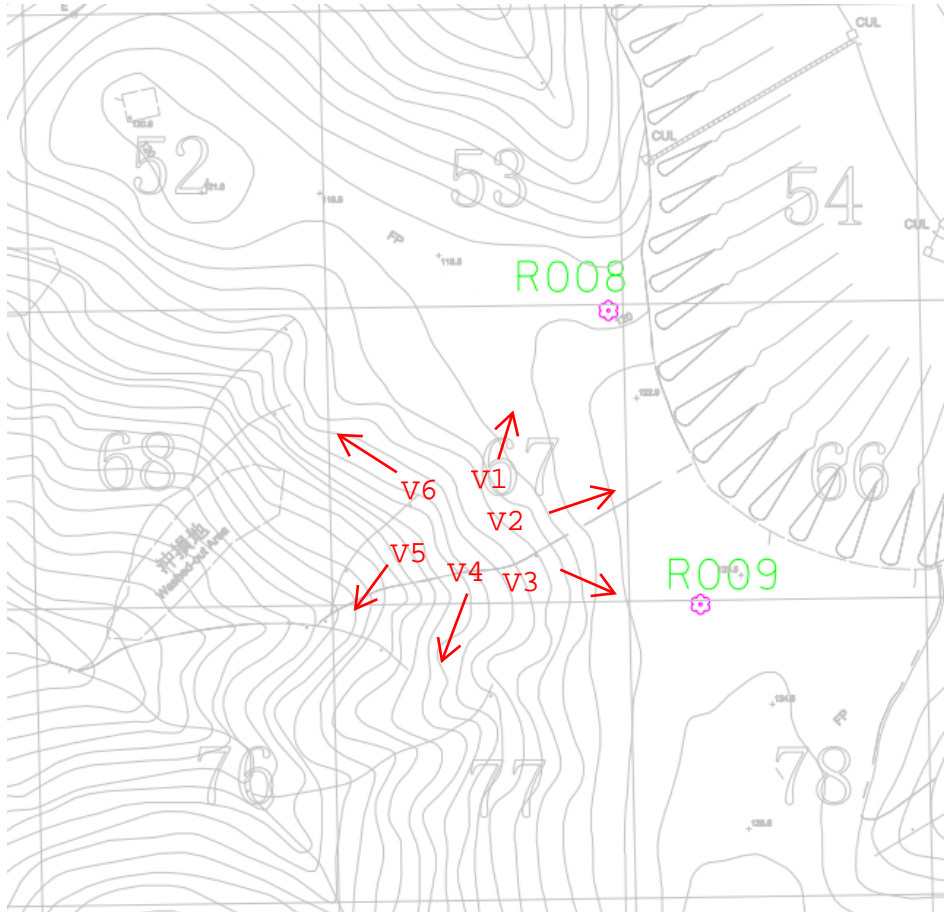
Tree Group No. G04/45	
G04/45_V1	G04/45_V2
	
G04/45_V3	G04/45_V4
	
G04/45_V5	G04/45_V6
	

**Contract 2 (Batch 1)**

Close up 1	Close up 2
	







# Contract 2 (Batch 1)

Tree Group No. G05/67









# Contract 2 (Batch 1)

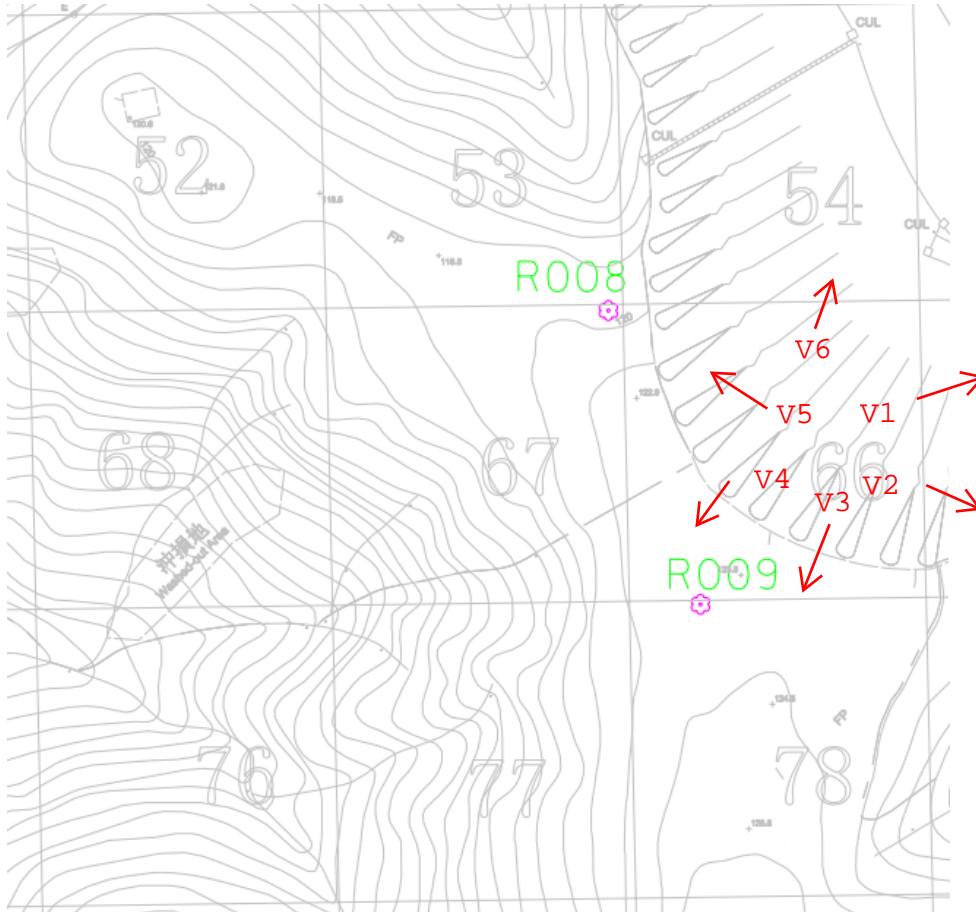
Tree Group No. G05/67	
G05/67_V1	G05/67_V2
	
G05/67_V3	G05/67_V4
	
G05/67_V5	G05/67_V6
	

**Contract 2 (Batch 1)**

Close up_1	Close up_2
	
Close up_3	Close up_4
	


# Contract 2 (Batch 1)

Tree Group No. G06/66







# Contract 2 (Batch 1)

Tree Group No. G06/66	
G06/66_V1	G06/66_V2
	
G06/66_V3	G06/66_V4
	
G06/66_V5	G06/66_V6
	



**Contract 2 (Batch 1)**

Close up 1	Close up 2
	

**Contract 2 (Batch 2)**

**TREE GROUP SURVEY REPORT**

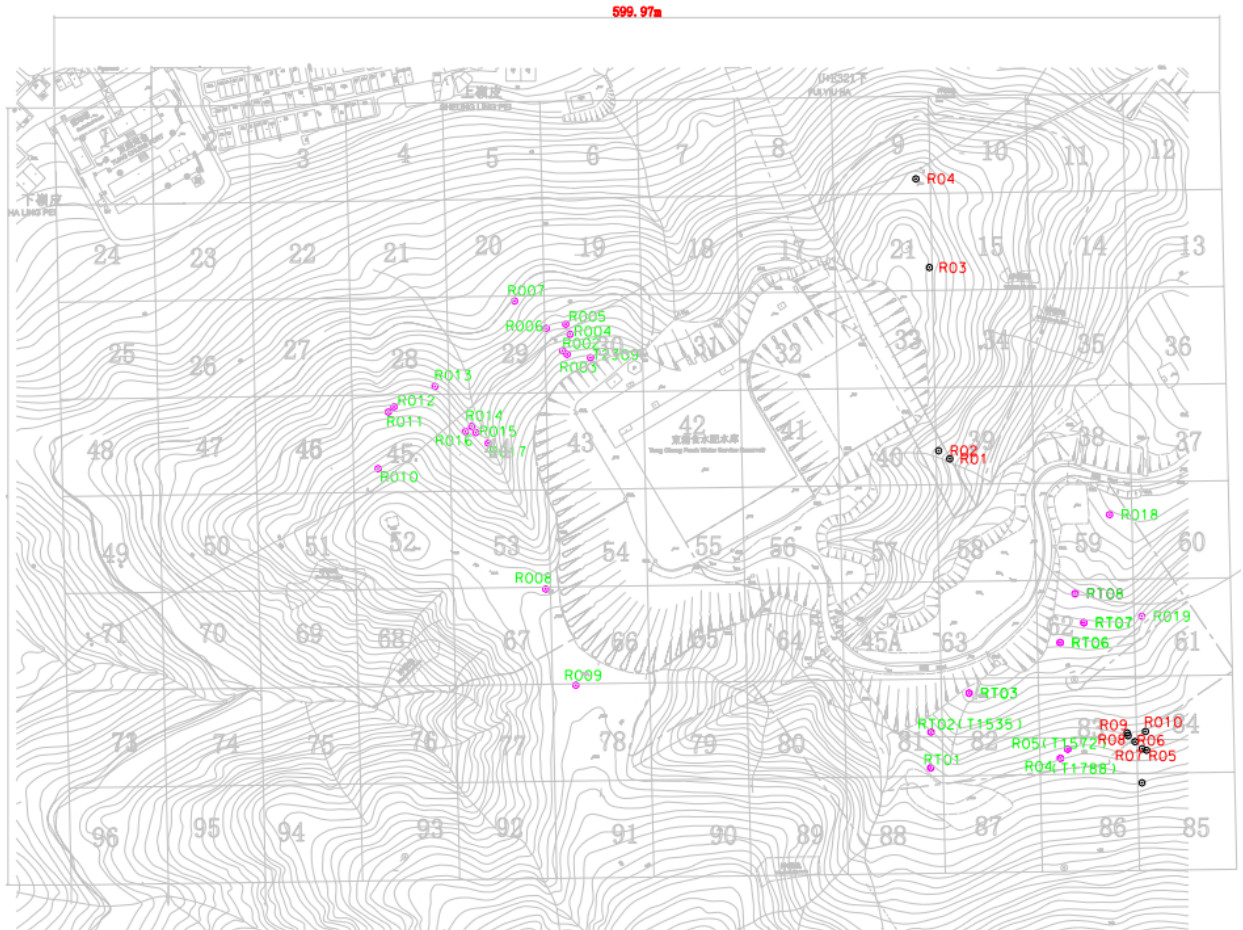
**CHEK LAP KOK NEW VILLAGE**

**17 AUGUST 2020**

**BATCH 2**

# Contract 2 (Batch 2)

## TREE GROUP PLAN

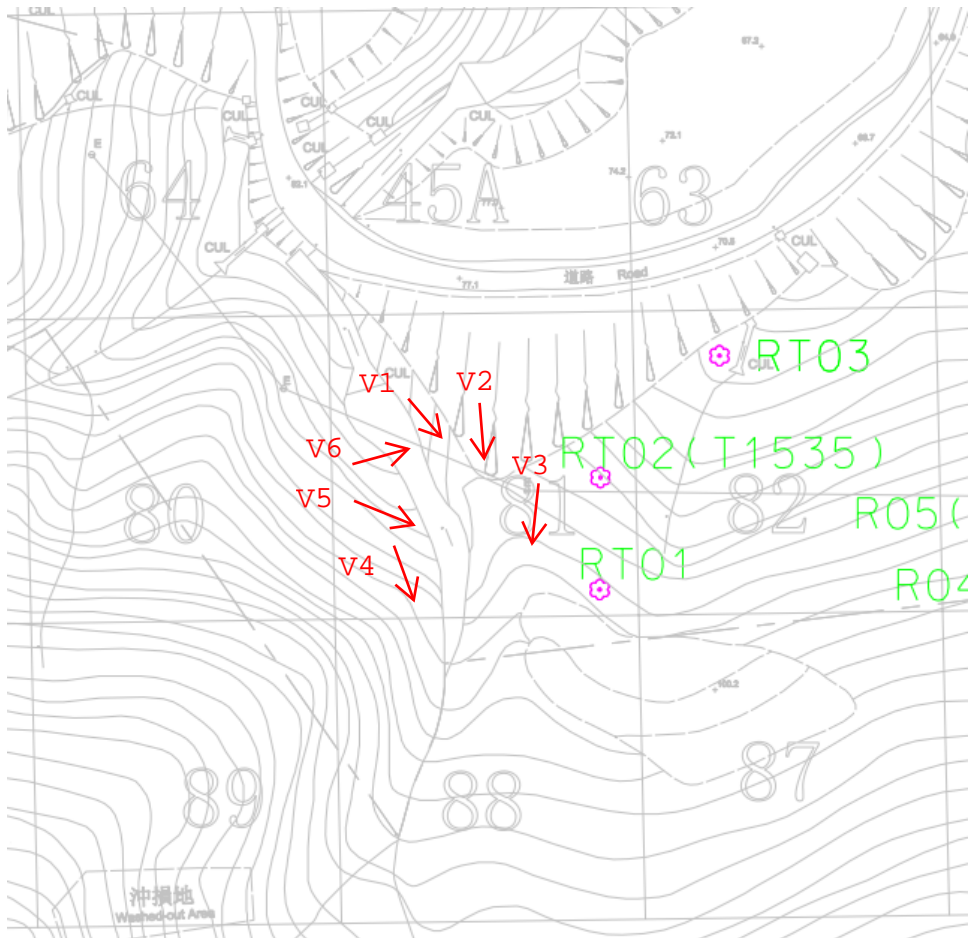


50m\*50m

# Contract 2 (Batch 2)


## TREE GROUP PHOTOGRAPHS

Tree Group No. G01/81









# Contract 2 (Batch 2)

Tree Group No. G01/81	
G01/81_V1	G01/81_V2
	
G01/81_V3	G01/81_V4
	
G01/81_V5	G01/81_V6
	

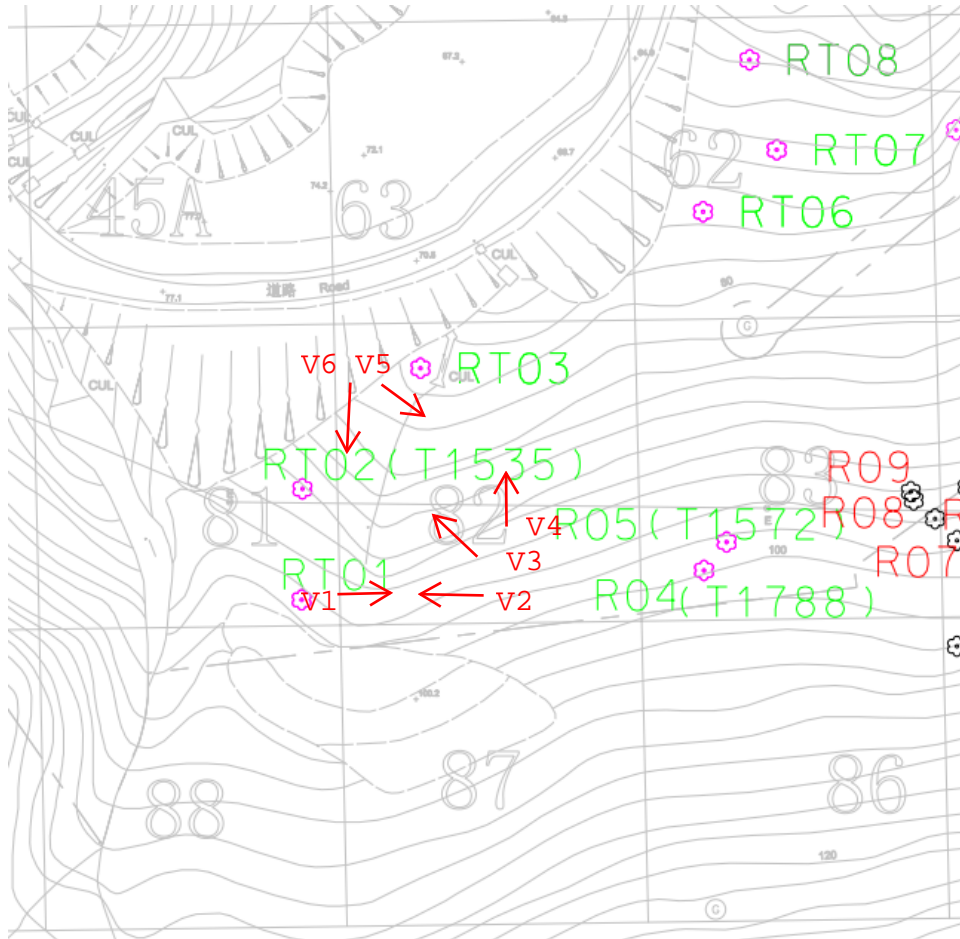
**Contract 2 (Batch 2)**

Close up_1	Close up_2
	
Close up_3	Close up_4
	



# Contract 2 (Batch 2)

Tree Group No. G02/82

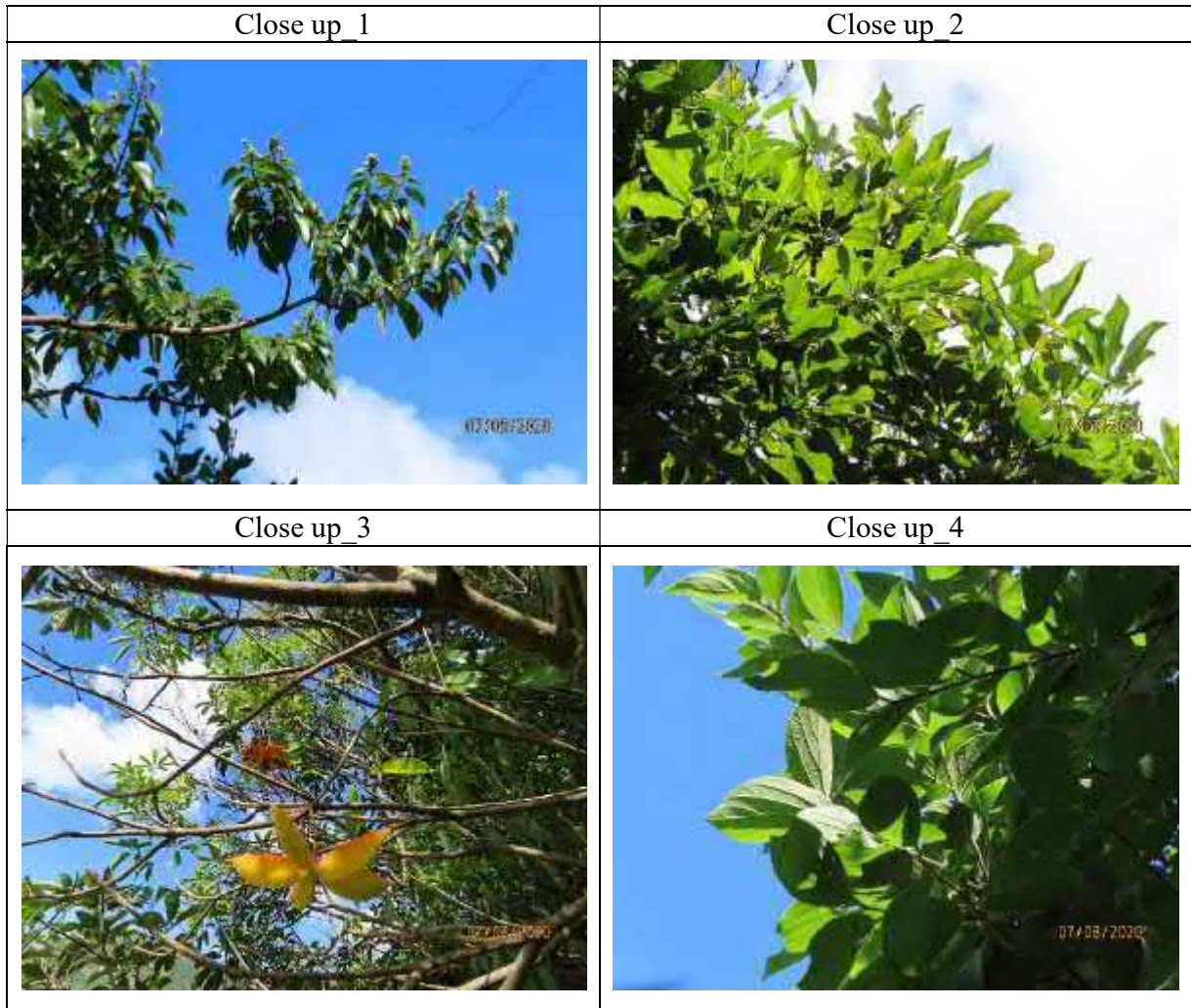


# Contract 2 (Batch 2)

Tree Group No. G02/82	
G02/82_V1	G02/82_V2
	
G02/82_V3	G02/82_V4
	
G02/82_V5	G02/82_V6
	

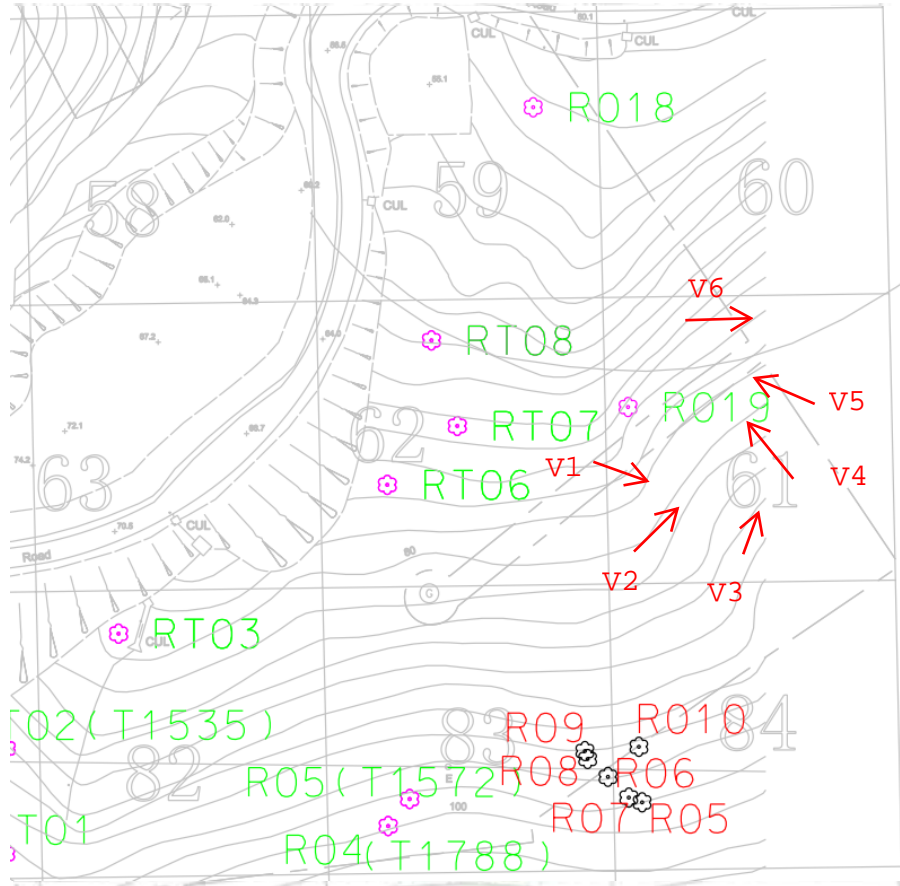


## Contract 2 (Batch 2)





# Contract 2 (Batch 2)

Tree Group No. G03/61









## Contract 2 (Batch 2)

Tree Group No. G03/61	
G03/61_V1	G03/61_V2
 A photograph showing a tree trunk in a forest. The trunk is light-colored and has a rough, textured bark. The surrounding area is filled with green foliage and other trees.	 A photograph showing a tree trunk in a forest. The trunk is dark and has a smooth bark. The surrounding area is filled with green foliage and other trees.
G03/61_V3	G03/61_V4
 A photograph showing a tree trunk in a forest. The trunk is light-colored and has a rough, textured bark. The surrounding area is filled with green foliage and other trees.	 A photograph showing a tree trunk in a forest. The trunk is dark and has a smooth bark. The surrounding area is filled with green foliage and other trees.
G03/61_V5	G03/61_V6
 A photograph showing a tree trunk in a forest. The trunk is light-colored and has a rough, textured bark. The surrounding area is filled with green foliage and other trees.	 A photograph showing a tree trunk in a forest. The trunk is dark and has a smooth bark. The surrounding area is filled with green foliage and other trees.

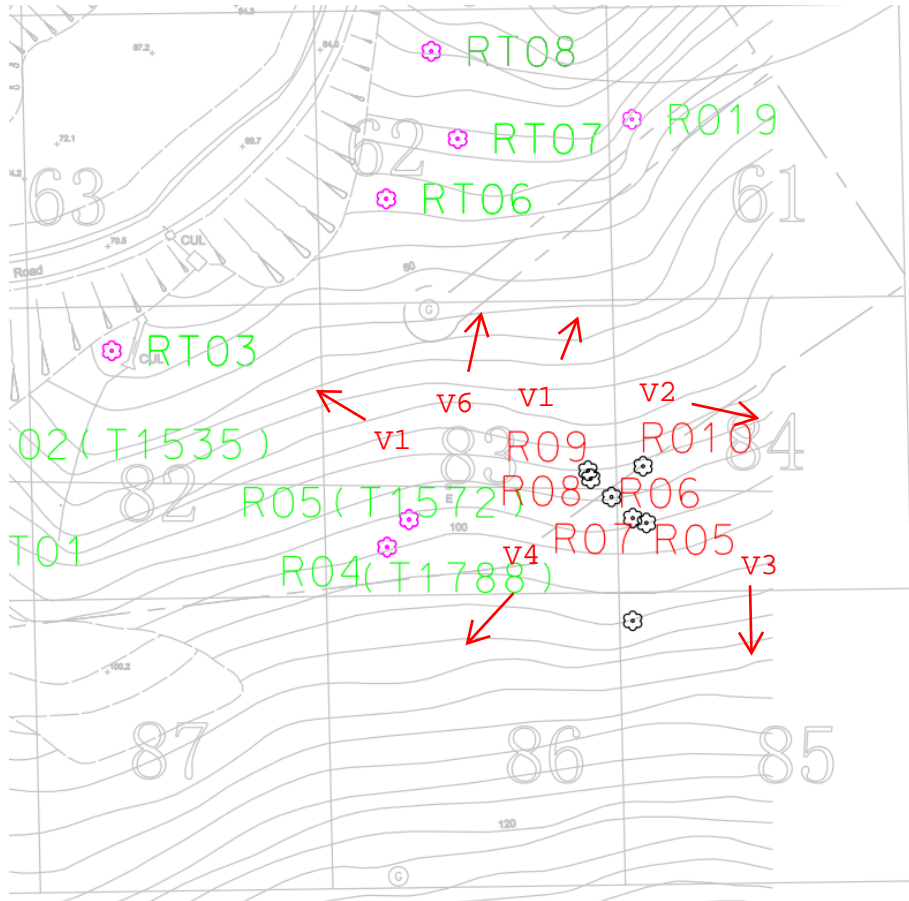
## Contract 2 (Batch 2)

Close up_1	Close up_2
	
Close up_3	Close up_4
	



# Contract 2 (Batch 2)

Tree Group No. G04/83/84/85







# Contract 2 (Batch 2)

Tree Group No. G04/83/84/85	
G04/83/84/85_V1	G04/83/84/85_V2
	
G04/83/84/85_V3	G04/83/84/85_V4
	
G04/83/84/85_V5	G04/83/84/85_V6
	



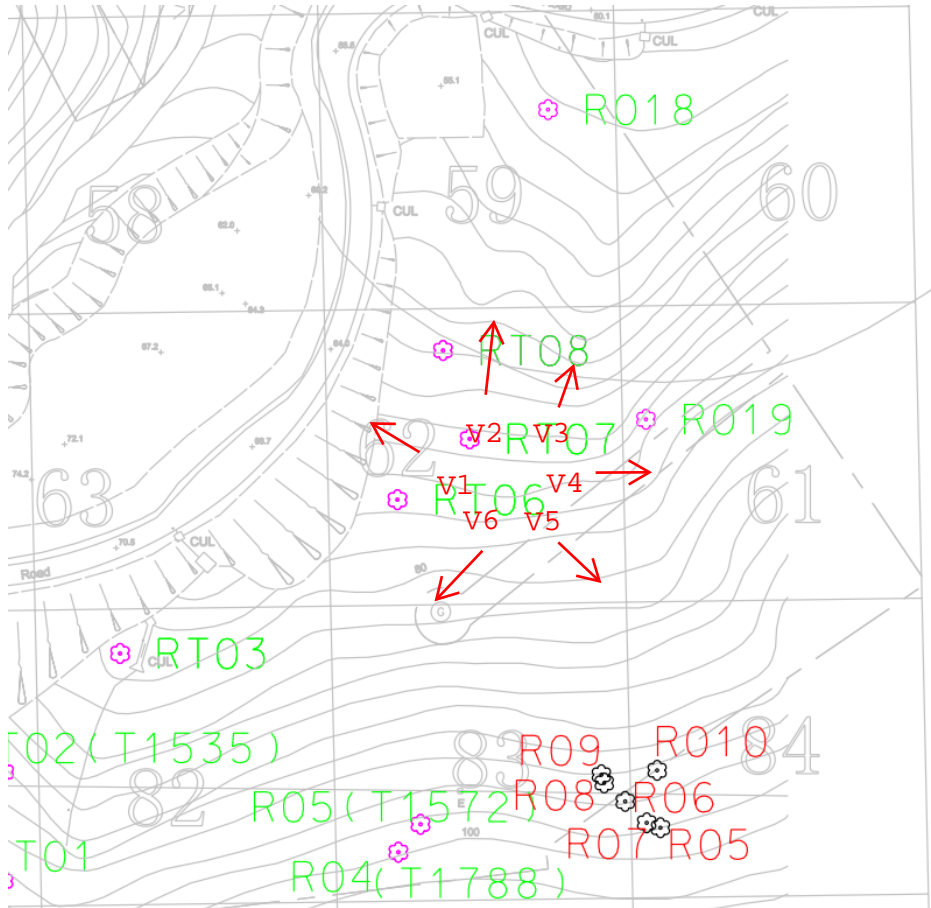
**Contract 2 (Batch 2)**

<p data-bbox="416 282 564 315">Close up_1</p> 	<p data-bbox="1027 282 1176 315">Close up_2</p> 
<p data-bbox="416 792 564 826">Close up_3</p> 	<p data-bbox="1027 792 1176 826">Close up_4</p> 




# Contract 2 (Batch 2)

Tree Group No. G05/62







# Contract 2 (Batch 2)

Tree Group No. G05/62	
G05/62_V1	G05/62_V2
	
G05/62_V3	G05/62_V4
	
G05/62_V5	G05/62_V6
	



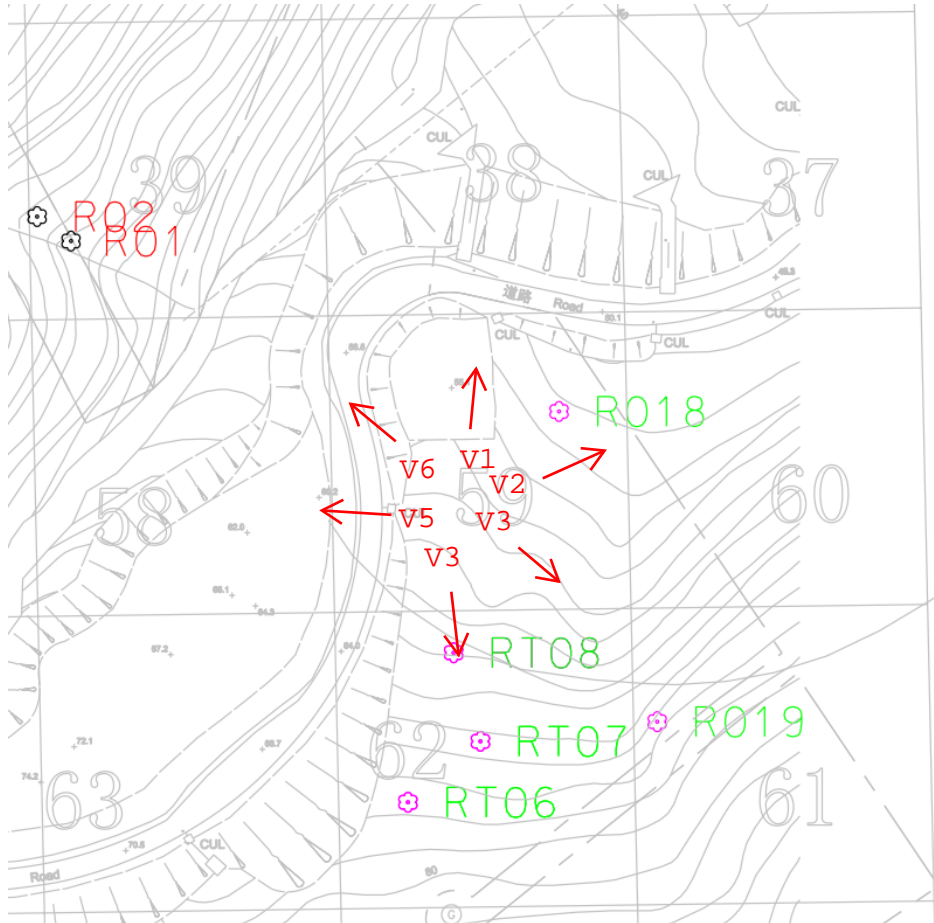
**Contract 2 (Batch 2)**

Close up_1	Close up_2
	
Close up_3	Close up_4
	



# Contract 2 (Batch 2)

Tree Group No. G06/59






# Contract 2 (Batch 2)

Tree Group No. G06/59	
G06/59_V1	G06/59_V2
	
G06/59_V3	G06/59_V4
	
G06/59_V5	G06/59_V6
	



**Contract 2 (Batch 2)**

Close up_1	Close up_2
 A close-up photograph of several bright orange fruits hanging from a tree branch. The leaves are dark green and glossy. The background is a clear blue sky. A small, faint watermark is visible in the bottom right corner of the image.	 A photograph showing a tree branch with green leaves and small, light-colored flowers or buds. The background is a clear blue sky. A small, faint watermark is visible in the bottom right corner of the image.
Close up_3	Close up_4
 A photograph of a tree with large, broad green leaves and clusters of small red flowers. The tree is situated in a grassy area with other trees in the background. A small, faint watermark is visible in the bottom right corner of the image.	 A photograph of a tree with dense green foliage. The background is a clear blue sky with some light clouds. A small, faint watermark is visible in the bottom right corner of the image.



**Contract 2 (Batch 3)**

**TREE GROUP SURVEY REPORT**

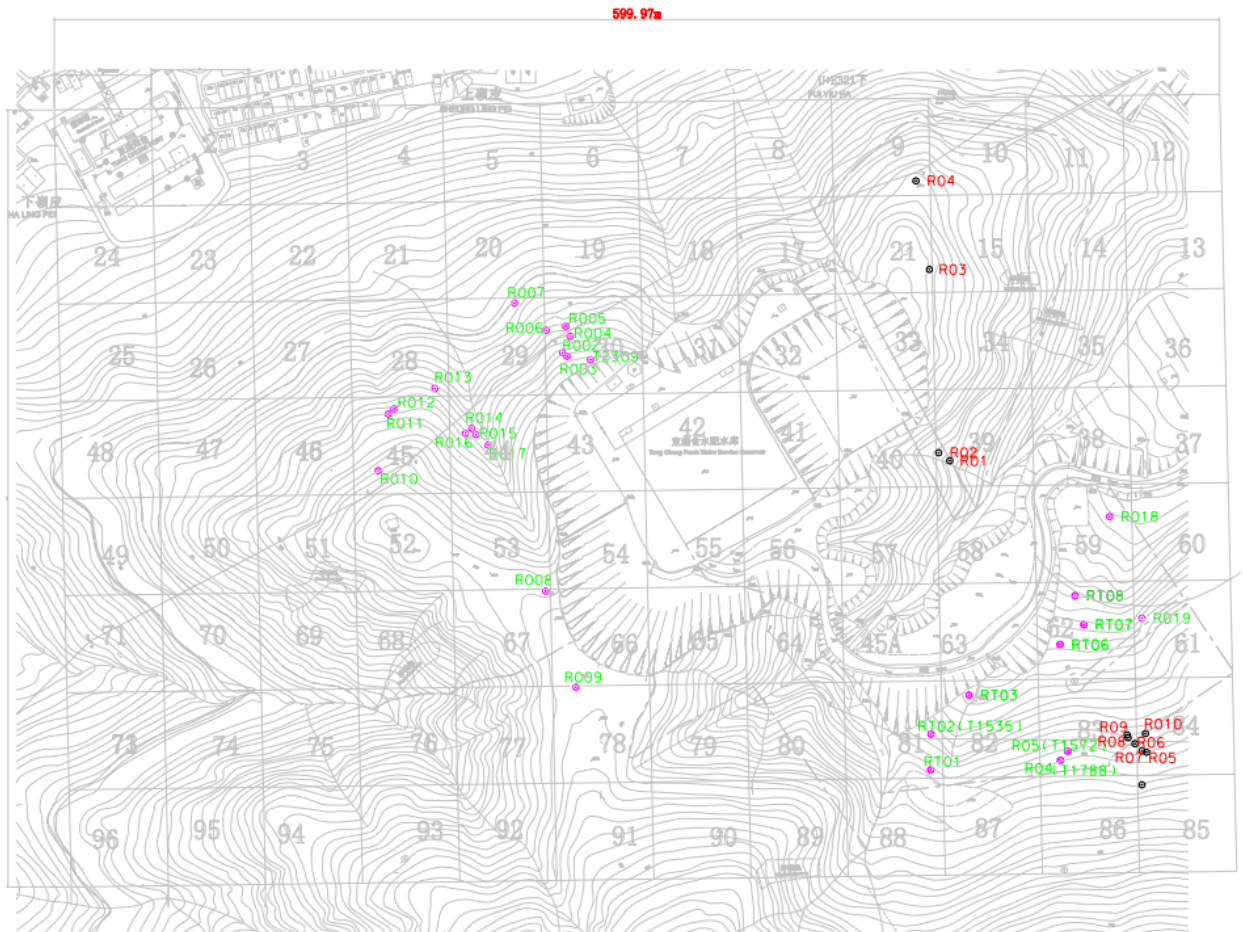
**CHEK LAP KOK NEW VILLAGE**

**17 AUGUST 2020**

**BATCH 3**

# Contract 2 (Batch 3)

## TREE GROUP PLAN

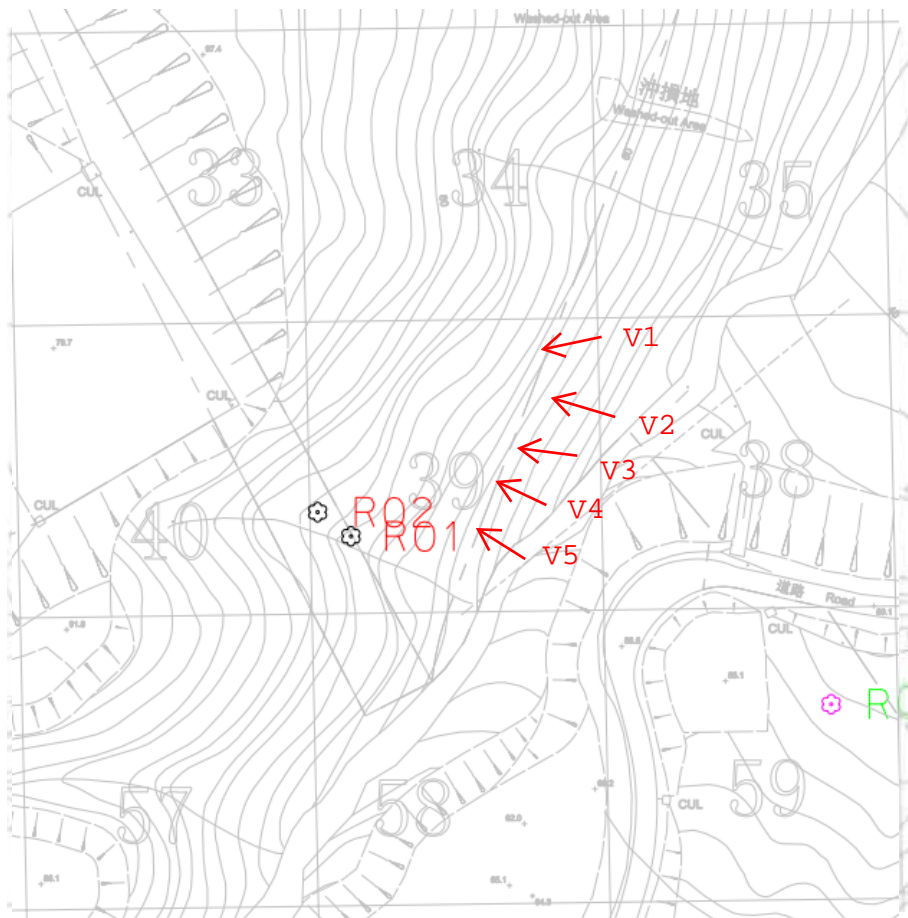


50m\*50m

# Contract 2 (Batch 3)

## TREE GROUP PHOTOGRAPHS

Tree Group No. G01/39









# Contract 2 (Batch 3)

Tree Group No. G01/39	
G01/39_V1	G01/39_V2
	
G01/39_V3	G01/39_V4
	
G01/39_V5	G01/39_V6
	

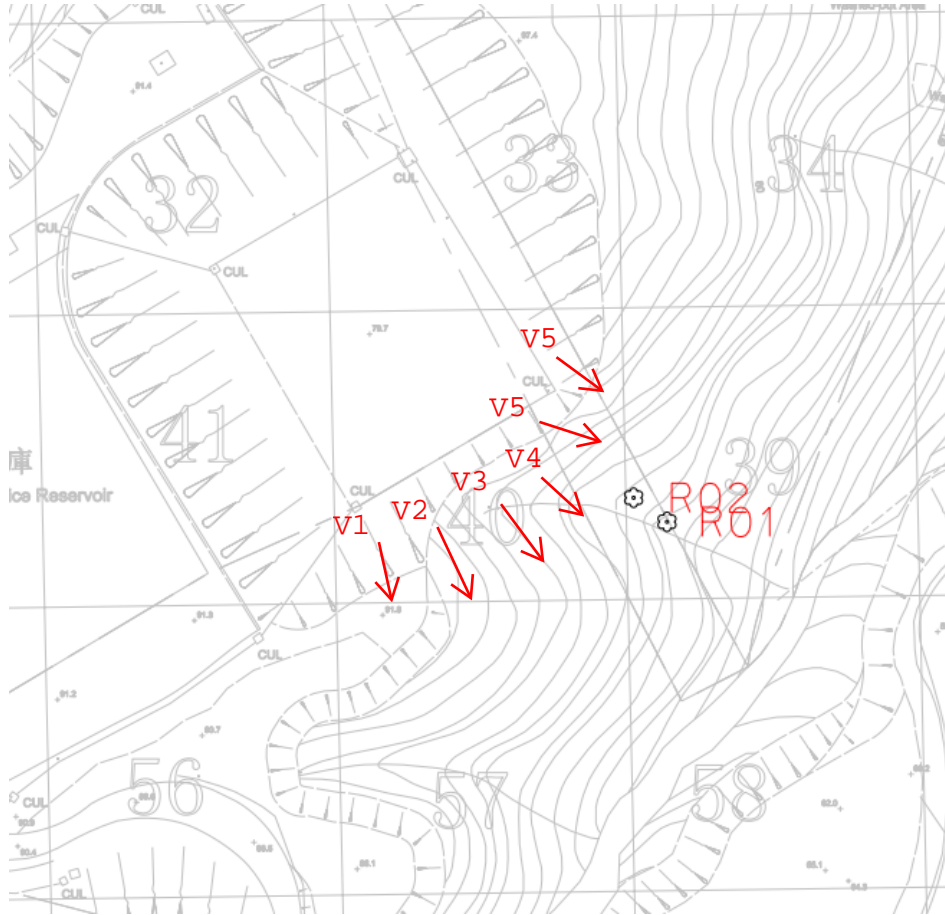
**Contract 2 (Batch 3)**

<p data-bbox="421 282 564 315">Close up_1</p> 	<p data-bbox="1031 282 1174 315">Close up_2</p> 
<p data-bbox="421 792 564 826">Close up_3</p> 	<p data-bbox="1031 792 1174 826">Close up_4</p> 









# Contract 2 (Batch 3)

Tree Group No. G02/40







# Contract 2 (Batch 3)

Tree Group No. G02/40	
G02/40_V1	G02/40_V2
	
G02/40_V3	G02/40_V4
	
G02/40_V5	G02/40_V6
	

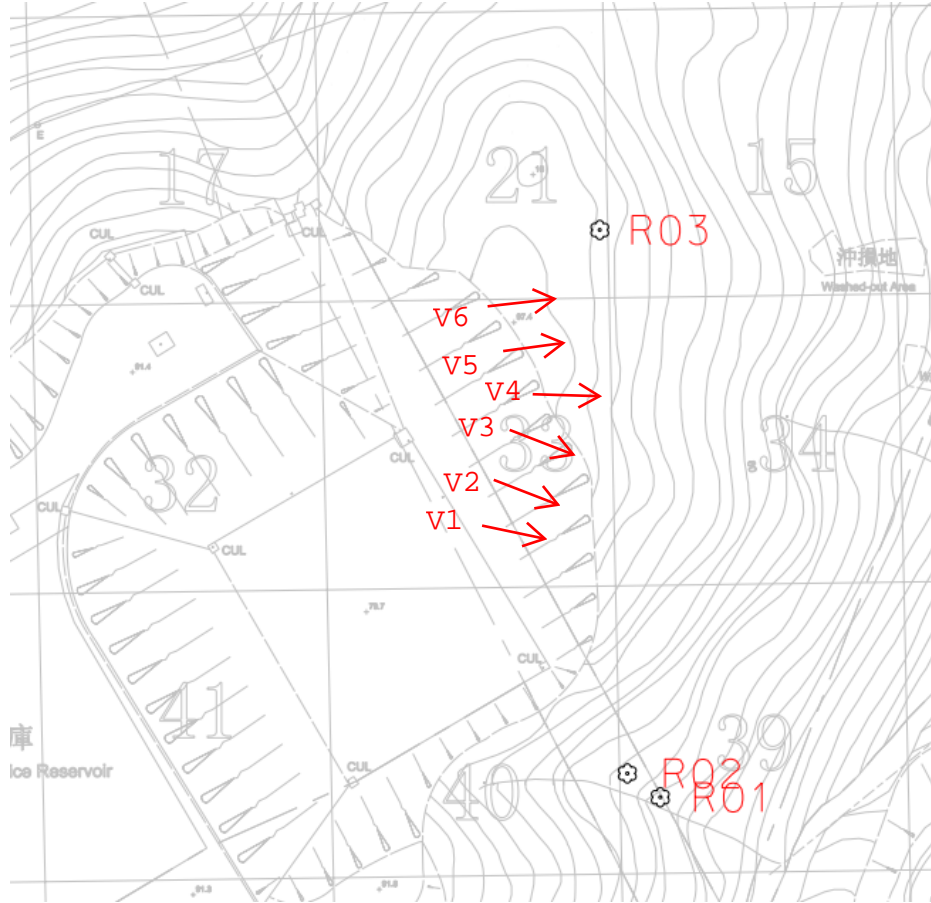


# Contract 2 (Batch 3)

Close up_1	Close up_2
 A photograph showing the upper branches of a pine tree against a clear blue sky. The needles are green and the branches are dark brown.	 A photograph showing a dense canopy of broad, green, ovate leaves, likely from a deciduous tree, with some sunlight filtering through.
Close up_3	Close up_4
 A photograph showing a dense canopy of broad, green, ovate leaves, similar to those in Close up_2, with sunlight filtering through.	 A photograph showing the upper branches of a pine tree against a clear blue sky, similar to Close up_1, with green needles and dark brown branches.







# Contract 2 (Batch 3)

Tree Group No. G03/33









# Contract 2 (Batch 3)

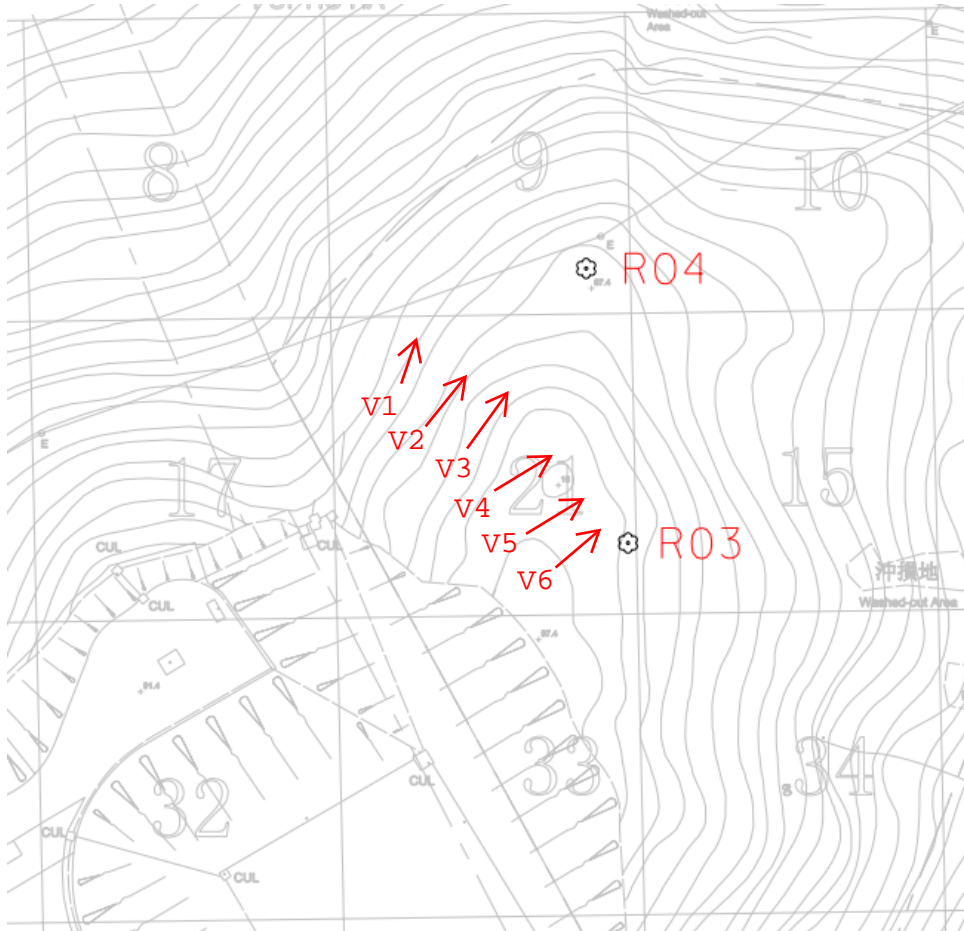
Tree Group No. G03/33	
G03/33_V1	G03/33_V2
	
G03/33_V3	G03/33_V4
	
G03/33_V5	G03/33_V6
	

**Contract 2 (Batch 3)**

<p data-bbox="421 282 564 315">Close up_1</p> 	<p data-bbox="1027 282 1171 315">Close up_2</p> 
<p data-bbox="421 792 564 826">Close up_3</p> 	<p data-bbox="1027 792 1171 826">Close up_4</p> 







# Contract 2 (Batch 3)

Tree Group No. G04/21









# Contract 2 (Batch 3)

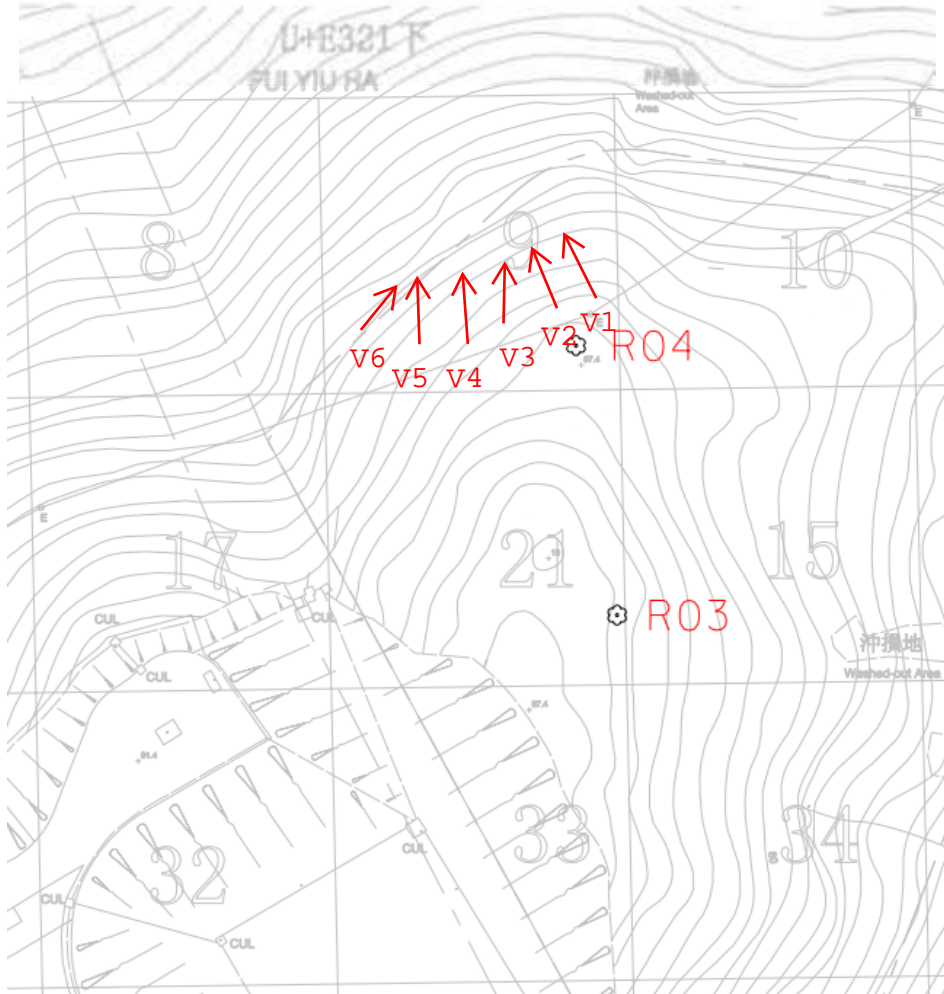
Tree Group No. G04/21	
G04/21_V1	G04/21_V2
	
G04/21_V3	G04/21_V4
	
G04/21_V5	G04/21_V6
	

**Contract 2 (Batch 3)**

Close up_1	Close up_2
	
Close up_3	Close up_4
	







# Contract 2 (Batch 3)

Tree Group No. G05/9









# Contract 2 (Batch 3)

Tree Group No. G05/9	
G05/9_V1	G05/9_V2
	
G05/9_V3	G05/9_V4
	
G05/9_V5	G05/9_V6
	

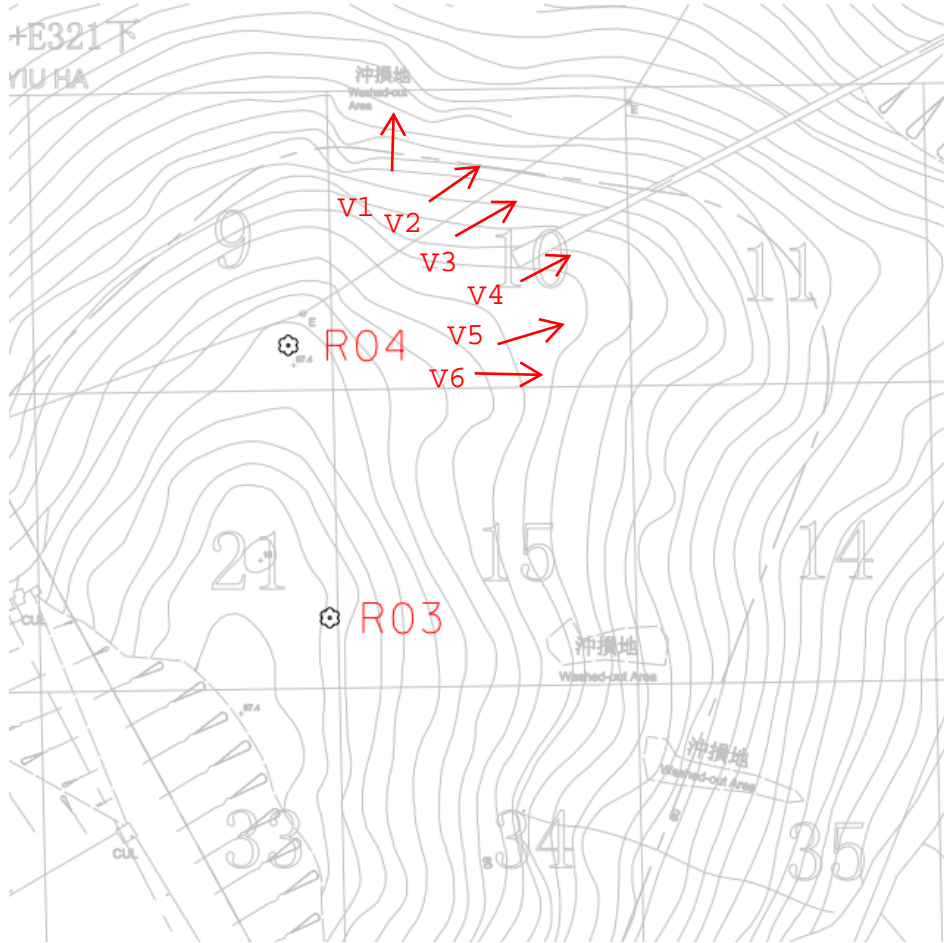
## Contract 2 (Batch 3)

Close up_1	Close up_2
	
Close up_3	Close up_4
	









# Contract 2 (Batch 3)

Tree Group No. G06/10









# Contract 2 (Batch 3)

Tree Group No. G06/10	
G06/10_V1	G06/10_V2
	
G06/10_V3	G06/10_V4
	
G06/10_V5	G06/10_V6
	



## Contract 2 (Batch 3)

Close up_1	Close up_2
	
Close up_3	Close up_4
	

## **Appendix B**

---



Tree Group Assessment Schedule (Contract 2) - Tree Group Batch 1 (including plant species of conservation importance)

Drawing No.	Tree Group No.	Batch 1 Photo View No.	Species		Department to provide Expert Advice (WSD, AFCD)	Measurements			Appx. Quantity of the group	Amenity Value (good(G)/ fair(F)/ poor(P))	Form	Health	Structural condition	Suitability for Transplanting		Conservation Status	Recommendation: retain (R) / transplant (T) / fell (F)				Justification	Additional Remarks
			Scientific name	Chinese name		Height (m)	DBH (mm)	Crown spread (m)						(high(H)/ medium(M)/ low(L))	Remarks		%	R	T	F		
Figure 2.1	G01/30	G01/30_V1, G01/30_V2, G01/30_V3, G01/30_V4, G01/30_V5, G01/30_V6	<i>Itea chinensis</i>	老鼠刺	AFCD	5-8	100-250	4-6	5	P	P	F	F	L	a, c, h	NIL	100% Retain	49	-	-	-	imbalanced crown, on slope
			<i>Tetradium glabrifolium</i>	棟葉吳茱萸		4-7	100-250	2-5	5	P	P-F	F	P-F	L	a, c, h	NIL						imbalanced crown, on slope
			<i>Mallotus paniculatus</i>	白楸		3-4	100-150	2-4	3	P	P-F	F	P-F	L	a, h, g	NIL						leaning, imbalanced crown, on slope
			<i>Pinus massoniana</i>	馬尾松		8-10	250-280	5-6	8	P	P	F	F-P	L	a, c, h	NIL						imbalanced crown, broken branches, on slope
			<i>Canthium dicoccum</i>	魚骨木		5-12	120-350	5-8	18	P	P-F	F	F	L	a, c, h	NIL						covered, imbalanced crown, on slope
			<i>Rhaphiolepis indica</i>	車輪梅		6	120-150	3-5	2	P	P-F	F	F	L	a, c, h	NIL						covered, imbalanced crown
			<i>Gmelina chinensis</i>	石樟		3-8	100-130	2-5	3	G	F	F-P	F-P	L	-	Yes #1						on slope; G30/R001 (T2309) covered; G30/R002 Fungal body on branch; G30/R003 covered & broken branch; G30/R007 double trunked
			<i>Aquilaria sinensis</i>	土沉香		6-10	110-150	2-8	3	G	F	F-P	F-P	L	-	Yes #2						on slope; G30/R004; G30/R005; G30/R006 (Dead)
			<i>Garcinia oblongifolia</i>	嶺南山竹子		12	210-350	6-8	2	P	P	F	F-P	L	a, c, h	NIL						on slope
								sub-total				49										sub-total
Figure 2.1	G02/29	G02/29_V1, G02/29_V2, G02/29_V3, G02/29_V4, G02/29_V5, G02/29_V6	<i>Garcinia oblongifolia</i>	嶺南山竹子	AFCD	10-12	160-280	6-8	5	P	P	F	F-P	L	a, c, h	NIL	100% Retain	32	-	-	-	on slope
			<i>Canthium dicoccum</i>	魚骨木		10-12	120-350	5-8	21	P	P-F	F	F	L	a, c, h	NIL						covered, imbalanced crown, on slope
			<i>Litsea monopetala</i>	假柿木薑子		8-10	100-120	3-4	2	P	P-F	F	F	L	a, c, h	NIL						covered, imbalanced crown
			<i>Pinus massoniana</i>	馬尾松		8-12	180-250	5-6	2	P	P	F	F-P	L	a, c, h	NIL						on slope
			<i>Gmelina chinensis</i>	石樟		7-8	120-130	5-6	2	G	F	F-P	F-P	L	-	Yes #1						on slope; G30/R007 double trunked
					sub-total				32					sub-total	32	0	0					
Figure 2.1	G03/44	G03/44_V1, G03/44_V2, G03/44_V3, G03/44_V4, G03/44_V5, G03/44_V6	<i>Acronychia pedunculata</i>	山油柑	AFCD	10	260	8	1	P	P	F	F-P	L	a, c, h	NIL	100% Retain	29	-	-	-	on slope
			<i>Endospermum chinense</i>	黃桐		8-12	120-530	3-8	4	P	P	F	F-P	L	a, c, h	NIL						on slope
			<i>Pinus massoniana</i>	馬尾松		8-10	180-520	5-8	11	P	P	F	F-P	L	a, c, h	NIL						on slope, covered
			<i>Gmelina chinensis</i>	石樟		6-8	120-160	4-5	4	G	F	F	F	L	-	Yes #1						on slope (G44/R014, G44/R015, G44/R016, G44/R017)
			<i>Canthium dicoccum</i>	魚骨木		5-12	120-480	5-8	6	P	P-F	F	F	L	a, c, h	NIL						covered, imbalanced crown, on slope
			<i>Schefflera heptaphylla</i>	鴨腳木		4-7	100-180	5-10	2	P	P-F	F	F	L	a, c	NIL						on slope
			<i>Rhaphiolepis indica</i>	車輪梅		3	600	3-5	1	P	P-F	F	F	L	a, c, h	NIL						covered, with 8 trunks
								sub-total				29										sub-total
Figure 2.1	G04/45	G04/45_V1 to V6	<i>Gmelina chinensis</i>	石樟	AFCD	6-8	120-160	4-5	3	G	F	F	F	L	-	Yes #1	100% Retain	8	-	-	-	on slope (G45/R010, G45/R011, G45/R012)
			<i>Lophostemon confertus</i>	紅膠木		5-8	100-200	4-5	5	P	P	F	F-P	L	a, c, h	NIL						on slope
					sub-total				8					sub-total	8	0	0					
Figure 2.1	G05/67	G05/67_V1, G05/67_V2, G05/67_V3, G05/67_V4, G05/67_V5, G05/67_V6	<i>Gmelina chinensis</i>	石樟	AFCD	6	160	4	1	G	F	F	F	L	-	Yes #1	100% Retain	44	-	-	-	on slope, G67/R008 multi-trunks
			<i>Endospermum chinense</i>	黃桐		6-8	100-120	3-8	3	P	P	F	F-P	L	a, c, h	NIL						on slope
			<i>Canthium dicoccum</i>	魚骨木		6-8	200-250	5-8	3	P	P-F	F	F	L	a, c, h	NIL						covered, on slope
			<i>Pinus massoniana</i>	馬尾松		8-10	180-520	5-8	6	P	F	F	F-P	L	a, c, h	NIL						on slope, covered
			<i>Lophostemon confertus</i>	紅膠木		6-8	150-280	5-8	27	P	F	F	F	L	a, c	NIL						on slope
			<i>Phyllanthus emblica</i>	油甘子		2	95	3	2	P	F	F	F	L	a, c	NIL						covered, on slope
			<i>Acacia auriculiformis</i>	耳葉相思		5	100	4	1	P	F	F	F	L	a, c, h, g	NIL						covered
			<i>Trema orientalis</i>	山黃麻		5	100	3	1	P	F	F	F	L	a, c, h	NIL						covered, on slope
								sub-total				44										sub-total

**Tree Group Assessment Schedule (Contract 2) - Tree Group Batch 1 (including plant species of conservation importance)**

Drawing No.	Tree Group No.	Batch 1 Photo View No.	Species		Department to provide Expert Advice (WSD, AFCD)	Measurements			Appx. Quantity of the group	Amenity Value (good(G)/ fair(F)/ poor(P))	Form	Health	Structural condition	Suitability for Transplanting		Conser- vation Status	Recommendation: retain (R) / transplant (T) / fell (F)				Justification	Additional Remarks
			Scientific name	Chinese name		Height (m)	DBH (mm)	Crown spread (m)						(good(G)/ fair(F)/ poor(P))	(good(G)/ fair(F)/ poor(P))		(high(H)/ medium(M)/ low(L))	Remarks	%	R		
Figure 2.1	G06/66	G06/66_V1 to V6	<i>Gmelina chinensis</i>	石櫟	AFCD	6	160	4	1	G	F	F	F	L	-	Yes #1	100% Retain	1	-	-	-	on slope, multi-trunks
								sub-total	1								sub-total	1	0	0		
								Total	163								Total	163	0	0		

**Remarks for Suitability for Transplanting**

- (a) Low amenity value;
- (b) Irrecoverable form after transplanting (e.g. transplanting requires substantial crown and root pruning);
- (c) Low chance of survival upon transplanting;
- (d) Very large size (unless the feasibility to transplant has been considered financially reasonable and technically feasible during the feasibility stage);
- (e) With evidence of over-maturity and onset of senescence;
- (f) With poor health, structure or form (e.g. imbalanced form, leaning, with major cavity/cracks/splits);
- (g) Undesirable species (e.g. *Leucaena leucocephala* which is an invasive exotic and self-seeding tree); or
- (h) Trees grown under poor conditions which have limited the formation of proper root ball necessary for transplanting (e.g. on steep slope).

**#Remarks for Conservation Status**

- 1. Species under Vulnerable (VU) category of the International Union for Conservation of nature and Natural Resources (IUCN) Red List.
- 2. Species under Protection of Endangered Species of Animals and Plants Ordinance Cap. 586.

Tree Group Assessment Schedule (Contract 2) - Tree Group Batch 2 (including plant species of conservation importance)

Drawing No.	Tree Group No.	Batch 2 Photo View No.	Species		Department to provide Expert Advice (WSD, AFCD)	Measurements			Appx. Quantity of the group	Amenity Value (good(G)/fair(F)/poor(P))	Form	Health	Structural condition	Suitability for Transplanting		Conservation Status	Recommendation: retain (R) / transplant (T) / remove (F)				Justification	Additional Remarks	
			Scientific name	Chinese name		Height (m)	DBH (mm)	Crown spread (m)						(high(H)/medium(M)/low(L))	Remarks		%	R	T	F			
Figure 2.2	G01/81	G01/81_V1, G01/81_V2, G01/81_V3, G01/81_V4, G01/81_V5, G01/81_V6	<i>Aporosa dioica</i>	銀柴	AFCD	5-8	100-200	4-8	12	P	P	F	F-P	L	a, c, h	NIL	100% retain	31	-	0	Please refer to Individual Tree Survey for those trees with direct conflict with proposed works	wound on trunk, imbalanced crown, on slope	
			<i>Canthium dicoccum</i>	魚骨木		5-10	140-400	5-8	6	P	P	F	F	L	a, c, h	NIL						imbalanced crown, on slope	
			<i>Litsea cubeba</i>	木薑子		5-8	100-130	3-5	5	P	P-F	F	F	L	a, c	NIL						imbalanced crown, on slope	
			<i>Schefflera heptaphylla</i>	鴨腳木		4-7	100-180	5-10	6	P	P-F	F	F	L	a, c	NIL						imbalanced crown, on slope	
			<i>Gmelina chinensis</i>	石梓		3-8	60-280	4-8	2	G	F	F	F	L	-	Yes #1						on slope, G81/RT-01, G81/RT-02 (T1535)	
								sub-total				31											
Figure 2.2	G02/82	G02/82_V1, G02/82_V2, G02/82_V3, G02/82_V4, G02/82_V5, G02/82_V6	<i>Aporosa dioica</i>	銀柴	AFCD	5-8	100-220	4-8	19	P	P	F	F	L	a, c, h	NIL	53% retain, 45% fell, 2% transplant	26	-	22	Direct conflict with proposed works	imbalanced crown, leaning, on slope	
			<i>Schefflera heptaphylla</i>	鴨腳木		4-7	100-180	5-10	6	P	P-F	F	F	L	a, c	NIL						-	imbalanced crown, on slope
			<i>Gmelina chinensis</i>	石梓		3-8	60-280	4-8	1	G	F	F	F	L	-	Yes #1						1	on slope (G82/RT-03)
			<i>Pinus massoniana</i>	馬尾松		5-10	150-350	5-6	5	P	P	F	F	L	a, c, h	NIL						-	wound on trunk, imbalanced crown, on slope
			<i>Polyspora axillaris</i>	大頭茶		4-10	200-380	5-8	3	P	P	F	F	L	a, c, h	NIL						-	on slope, (T1558 group)
			<i>Itea chinensis</i>	老鼠刺		5-8	120-150	4-6	3	P	P	F	F	L	a, c, h	NIL						-	imbalanced crown, on slope
			<i>Cratogeomys cochinchinense</i>	黃牛木		6-8	120-150	4-8	5	P	P	F	F	L	a, c, h	NIL						-	imbalanced crown, covered, on slope
			<i>Sterculia lanceolata</i>	假猴婆		5-8	100-150	5-6	3	G	P-F	F	F	L	a, c, h	NIL						-	imbalanced crown, covered
			<i>Canthium dicoccum</i>	魚骨木		5-8	120-140	5-8	3	P	P-F	F	F	L	a, c, h	NIL						-	covered, imbalanced crown, on slope
			<i>Celtis sinensis</i>	朴樹		6-10	280-350	6-7	1	P	P-F	F	F	L	a, c, h	NIL						-	covered, imbalanced crown
				sub-total				49								sub-total	26	1	22				
Figure 2.2	G03/61	G03/61_V1, G03/61_V2, G03/61_V3, G03/61_V4, G03/61_V5, G03/61_V6	<i>Aporosa dioica</i>	銀柴	AFCD	5-8	100-200	4-8	12	P	P	F	F-P	L	a, c, h	NIL	100% retain	18	-	-	-	imbalanced crown, on slope	
			<i>Pinus massoniana</i>	馬尾松		8-10	250-280	5-6	5	P	P	F	F-P	L	a, c, h	NIL						imbalanced crown, on slope	
			<i>Gmelina chinensis</i>	石梓		6	150	4	1	G	F	F	F	L	-	Yes #1						covered, on slope, (G69/ R019)	
				sub-total				18								sub-total	18	0	0				
Figure 2.2	G04/83/84/85	G04/83/84/85_V1, G04/83/84/85_V2, G04/83/84/85_V3, G04/83/84/85_V4, G04/83/84/85_V5, G04/83/84/85_V6	<i>Pinus massoniana</i>	馬尾松	AFCD	5-10	220-350	5-7	6	P	P	F	F-P	L	a, c, h	NIL	98% retain, 2% fell	49	-	1	Direct conflict with proposed works	imbalanced crown, on slope	
			<i>Canthium dicoccum</i>	魚骨木		5-10	150-480	6-10	19	P	P	F	F	L	a, c, h	NIL						covered, imbalanced crown, on slope	
			<i>Itea chinensis</i>	老鼠刺		5-8	120-250	4-6	9	P	P	F	F	L	a, c, h	NIL						imbalanced crown, on slope	
			<i>Gmelina chinensis</i>	石梓		3-8	100-280	4-8	9	G	F	F	F	L	-	Yes #1						covered, on slope, RT-04 (T1788), RT-05 (T1572) broken branches	
			<i>Machilus velutina</i>	絨毛潤楠		8	120	5	1	P	P	F	F	L	a, c, h	NIL						covered, on slope	
			<i>Acronychia pedunculata</i>	山油柑		5-6	180-220	5-6	5	P	P	F	F	L	a, c, h	NIL						covered, on slope	
			<i>Endospermum chinense</i>	黃桐		12	480	5	1	P	P	F	F	L	a, c, h	NIL						covered, on slope	
				sub-total				50								sub-total	49	0	1				



Tree Group Assessment Schedule (Contract 2) - Tree Group Batch 2 (including plant species of conservation importance)

Drawing No.	Tree Group No.	Batch 2 Photo View No.	Species		Department to provide Expert Advice (WSD, AFCD)	Measurements			Appx. Quantity of the group	Amenity Value (good(G)/fair(F)/poor(P))	Form	Health	Structural condition	Suitability for Transplanting		Conservation Status	Recommendation: retain (R) / transplant (T) / remove (F)				Justification	Additional Remarks								
			Scientific name	Chinese name		Height (m)	DBH (mm)	Crown spread (m)						(high(H)/medium(M)/low(L))	Remarks		%	R	T	F										
Figure 2.2	G05/62	G05/62_V1, G05/62_V2, G05/62_V3, G05/62_V4, G05/62_V5, G05/62_V6	<i>Pinus massoniana</i>	馬尾松	AFCD	8-10	250-280	5-6	2	P	P	F	F-P	L	a, c, h	NIL	46% retain, 46% fell, 8% transplant	20	-	20	Direct conflict with proposed works	on slope								
			<i>Rhus succedanea</i>	野漆樹		4-8	110-180	2-6	3	P	P	F	F-P	L	a, c, h	NIL						imbalanced crown, on slope								
			<i>Itea chinensis</i>	老鼠刺		5-8	100-250	4-6	19	P	P	F	F	L	a, c, h	NIL						imbalanced crown, on slope								
			<i>Zanthoxylum avicennae</i>	薊櫨花椒		6-8	110-150	4-5	2	P	P	F	F	L	a, c, h	NIL						imbalanced crown								
			<i>Garcinia oblongifolia</i>	嶺南山竹子		8-10	280-320	6-8	4	P	P	F	F	L	a, c, h	NIL						on slope								
			<i>Litsea cubeba</i>	木薑子		8-10	110-150	5-6	2	P	P	F	F	L	a, c, h	NIL						on slope								
			<i>Polyspora axillaris</i>	大頭茶		8	1000	10	1	G	P	F	F	L	-	NIL						on slope, RT-06 group x 16 trunks								
			<i>Cratogeomys cochinchinense</i>	黃牛木		6-8	120-150	4-8	3	P	P	F	F	L	a, c, h	NIL						imbalanced crown, covered, on slope								
			<i>Schefflera heptaphylla</i>	鴨腳木		4-7	100-180	5-10	2	P	P-F	F	F	L	a, c, h	NIL						imbalanced crown, on slope								
			<i>Gmelina chinensis</i>	石梓		6-8	120-160	4-5	3	G	F	F	F	L	-	Yes #1						on slope, G62/RT-06, G62/RT-07 (T1761), G62/RT-08								
			<i>Diospyros morrisiana</i>	羅浮柿		5-7	120-150	3-5	2	P	P-F	F	F	L	a, c	NIL						imbalanced crown, on slope								
											sub-total	43													sub-total	20	3	20		
			Figure 2.2	G06/59		G06/59_V1, G06/59_V2, G06/59_V3, G06/59_V4, G06/59_V5, G06/59_V6	<i>Mallotus paniculatus</i>	白楸	AFCD	6-8	100-180	4-6	12	P	P-F	F						F	L	a, c	NIL	67% retain, 33% fell	34	-	16	Direct conflict with proposed works
<i>Pinus massoniana</i>	馬尾松	8-10			150-180		5-6	2		P	P	F	F-P	L	a, c, h	NIL	on slope													
<i>Schefflera heptaphylla</i>	鴨腳木	4-7			100-180		4-5	2		P	P-F	F	F	L	a, c, h	NIL	imbalanced crown, on slope													
<i>Gmelina chinensis</i>	石梓	8			160		6	1		G	F	F	F	L	-	Yes #1	covered, on slope, RO-08													
<i>Zanthoxylum avicennae</i>	薊櫨花椒	6-8			110-150		4-5	2		P	P	F	F	L	a, c, h	NIL	imbalanced crown													
<i>Microcos nervosa</i>	布渣菜	5-6			110-130		4-5	2		P	P	F	F	L	a, c, h	NIL	on slope													
<i>Listea rotundifolia</i>	豺皮樟	5-6			120-150		4-5	7		P	P	F	F	L	a, c, h	NIL	on slope, covered, broken branches													
<i>Endospermum chinense</i>	黃桐	6-8			110-130		4-6	2		P	P	F	F	L	a, c, h	NIL	on slope, covered, broken branches													
<i>Garcinia oblongifolia</i>	嶺南山竹子	6-8			180-220		6-8	3		P	P	F	F	L	a, c, h	NIL	group x 3													
<i>Bridelia tomentosa</i>	土蜜樹	6-8			110-150		6-8	2		P	P	F	F	L	a, c, h	NIL	covered													
<i>Acacia confusa</i>	台灣相思	6-9			100-120		6-8	3		P	P	F	F	L	a, c, h, g	NIL	covered crown													
<i>Leucaena leucocephala</i>	銀合歡	8-10			100-150		6-8	9		P	P	F	F	L	a, c, h, g	NIL	imbalanced crown													
<i>Itea chinensis</i>	老鼠刺	6-8			120-150		4-6	3		P	P	F	F	L	a, c, h	NIL	imbalanced crown													
							sub-total	50								sub-total	34	0	16											
							Total	241								Total	178	4	59											

Remarks for Suitability for Transplanting

- (a) Low amenity value;
- (b) Irrecoverable form after transplanting (e.g. transplanting requires substantial crown and root pruning);
- (c) Low chance of survival upon transplanting;
- (d) Very large size (unless the feasibility to transplant has been considered financially reasonable and technically feasible during the feasibility stage);
- (e) With evidence of over-maturity and onset of senescence;
- (f) With poor health, structure or form (e.g. imbalanced form, leaning, with major cavity/cracks/splits);
- (g) Undesirable species (e.g. *Leucaena leucocephala* which is an invasive exotic and self-seeding tree); or
- (h) Trees grown under poor conditions which have limited the formation of proper root ball necessary for transplanting (e.g. on steep slope).

#Remarks for Conservation Status

- 1. Species under Vulnerable (VU) category of the International Union for Conservation of nature and Natural Resources (IUCN) Red List.
- 2. Species under Protection of Endangered Species of Animals and Plants Ordinance Cap. 586.

Tree Group Assessment Schedule (Contract 2) - Tree Group Batch 3 (including plant species of conservation importance)

Drawing No.	Tree Group No.	Batch 3 Photo View No.	Species		Department to provide Expert Advice (WSD, AFCD)	Measurements			Appx. Quantity of the group	Amenity Value (good(G)/fair(F)/poor(P))	Form	Health	Structural condition	Suitability for Transplanting		Conservation Status	Recommendation: retain (R) / transplant (T) / remove (F)				Justification	Additional Remarks
			Scientific name	Chinese name		Height (m)	DBH (mm)	Crown spread (m)						(high(H)/medium(M)/low(L))	Remarks		%	R	T	F		
Figure 2.3	G01/39	G01/39_V1 to V6	<i>Itea chinensis</i>	老鼠刺	AFCD	5-8	100-250	4-6	2	P	P	F	F	L	a, c, h	NIL	100% retain	13	-	-	-	imbalanced crown, on slope
			<i>Acacia confusa</i>	台灣相思		6-8	100-250	6-8	2	P	P-F	F	P-F	L	a, c, h	NIL						imbalanced crown, on slope
			<i>Schefflera heptaphylla</i>	鴨腳木		3-4	100-150	2-4	3	P	P-F	F	P-F	L	a, h, g	NIL						leaning, imbalanced crown, on slope
			<i>Canthium dicoccum</i>	魚骨木		5-12	120-150	5-8	2	P	P-F	F	F	L	a, c, h	NIL						covered, imbalanced crown, on slope
			<i>Gmelina chinensis</i>	石樟		3-8	100-130	2-5	2	G	F	F	F-P	L	-	Yes #1						on slope G30/R001 (T12309) cover, G30/R002 Fungi body on branch
			<i>Garcinia oblongifolia</i>	嶺南山竹子		12	210-350	6-8	2	P	P	F	F-P	L	a, c, h	NIL						on slope
						sub-total			13					sub-total				13	0	0		
Figure 2.3	G02/40	G02/40_V1 to V6	<i>Canthium dicoccum</i>	魚骨木	AFCD	6-8	120-150	4-6	3	P	P-F	F	F	L	a, c, h	NIL	100% retain	7	-	-	-	covered, imbalanced crown, on slope
			<i>Itea chinensis</i>	老鼠刺		4-5	100-120	3-4	2	P	P-F	F	F	L	a, c, h	NIL						covered, imbalanced crown
			<i>Pinus massoniana</i>	馬尾松		8-12	160-180	5-6	2	P	P	F	F-P	L	a, c, h	NIL						on slope
						sub-total			7					sub-total				7	0	0		
Figure 2.3	G03/33	G03/33_V1 to V6	<i>Itea chinensis</i>	老鼠刺	AFCD	4-5	100-120	3-4	8	P	P	F	F-P	L	a, c, h	NIL	100% retain	10	-	-	-	on slope
			<i>Litsea cubeba</i>	木薑子		6	120	4	1	P	P-F	F	F	L	a, c, h	NIL						covered, imbalanced crown, on slope
			<i>Garcinia oblongifolia</i>	嶺南山竹子		8	180	4	1	P	P-F	F	F	L	a, c, h	NIL						covered, on slope
						sub-total			10					sub-total				10	0	0		
Figure 2.3	G04/21	G04/21_V1 to V6	<i>Pinus massoniana</i>	馬尾松	AFCD	6-8	110-150	5-6	6	P	P	F	F-P	L	a, c, h	NIL	100% retain	13	-	-	-	on slope
			<i>Itea chinensis</i>	老鼠刺		6-8	100-170	4-5	5	P	P-F	F	F	L	a, c, h	NIL						covered, imbalanced crown
			<i>Garcinia oblongifolia</i>	嶺南山竹子		8	110	5	1	P	P	F	F-P	L	a, c, h	NIL						on slope, cover
			<i>Gmelina chinensis</i>	石樟		6	120	4-5	1	G	F	F	F	L	-	Yes #1						on slope, multi trunks RO03
						sub-total			13					sub-total				13	0	0		
Figure 2.3	G05/9	G05/9_V1 to V6	<i>Gmelina chinensis</i>	石樟	AFCD	6	160-250	4-5	1	G	F	F	F	L	-	Yes #1	100% retain	17	-	-	-	on slope, multi trunks RO04
			<i>Pinus massoniana</i>	馬尾松		8-10	120-320	5-8	15	P	F	F	F-P	L	a, c, h	NIL						on slope, covered
			<i>Machilus velutina</i>	絨毛潤楠		6	150	4	1	P	F	F	F	L	a, c	NIL						on slope
						sub-total			17					sub-total				17	0	0		
Figure 2.3	G06/10	G06/10_V1 to V6	<i>Acacia auriculiformis</i>	耳葉相思	AFCD	5	100	4	1	P	F	F	F	L	a, c, h, g	NIL	100% retain	27	-	-	-	covered
			<i>Pinus massoniana</i>	馬尾松		8-10	120-320	5-8	18	P	F	F	F-P	L	a, c, h	NIL						on slope, covered
			<i>Itea chinensis</i>	老鼠刺		6-8	100-170	4-5	5	P	P-F	F	F	L	a, c, h	NIL						covered, imbalanced crown
			<i>Tetradium glabrifolium</i>	棟葉吳茱萸		8	150	5	1	P	P-F	F	F	L	a, c, h	NIL						covered, imbalanced crown
			<i>Rhus succedanea</i>	野漆樹		5-6	200-250	6	2	P	F	F	F	L	a, c, h	NIL						covered, on slope
						sub-total			27					sub-total				27	0	0		
						Total			87					Total				87	0	0		

Remarks for Suitability for Transplanting

- (a) Low amenity value;
- (b) Irrecoverable form after transplanting (e.g. transplanting requires substantial crown and root pruning);
- (c) Low chance of survival upon transplanting;
- (d) Very large size (unless the feasibility to transplant has been considered financially reasonable and technically feasible during the feasibility stage);
- (e) With evidence of over-maturity and onset of senescence;
- (f) With poor health, structure or form (e.g. imbalanced form, leaning, with major cavity/cracks/splits);
- (g) Undesirable species (e.g. *Leucaena leucocephala* which is an invasive exotic and self-seeding tree); or
- (h) Trees grown under poor conditions which have limited the formation of proper root ball necessary for transplanting (e.g. on steep slope).

#Remarks for Conservation Status

- 1. Species under Vulnerable (VU) category of the International Union for Conservation of nature and Natural Resources (IUCN) Red List.
- 2. Species under Protection of Endangered Species of Animals and Plants Ordinance Cap. 586.

## **Appendix C**

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**Appendix C**

**Photographic Record of the Affected Rare and Protected Plants**

RT03 *Gmelina chinensis* (Missing while tree inspection conducted in August 2021)





RT06 *Gmelina chinensis* (Missing while tree inspection conducted in August 2021)





RT07 (T1535) *Gmelina chinensis* (Transplant)





RT08 *Gmelina chinensis* (Transplant)

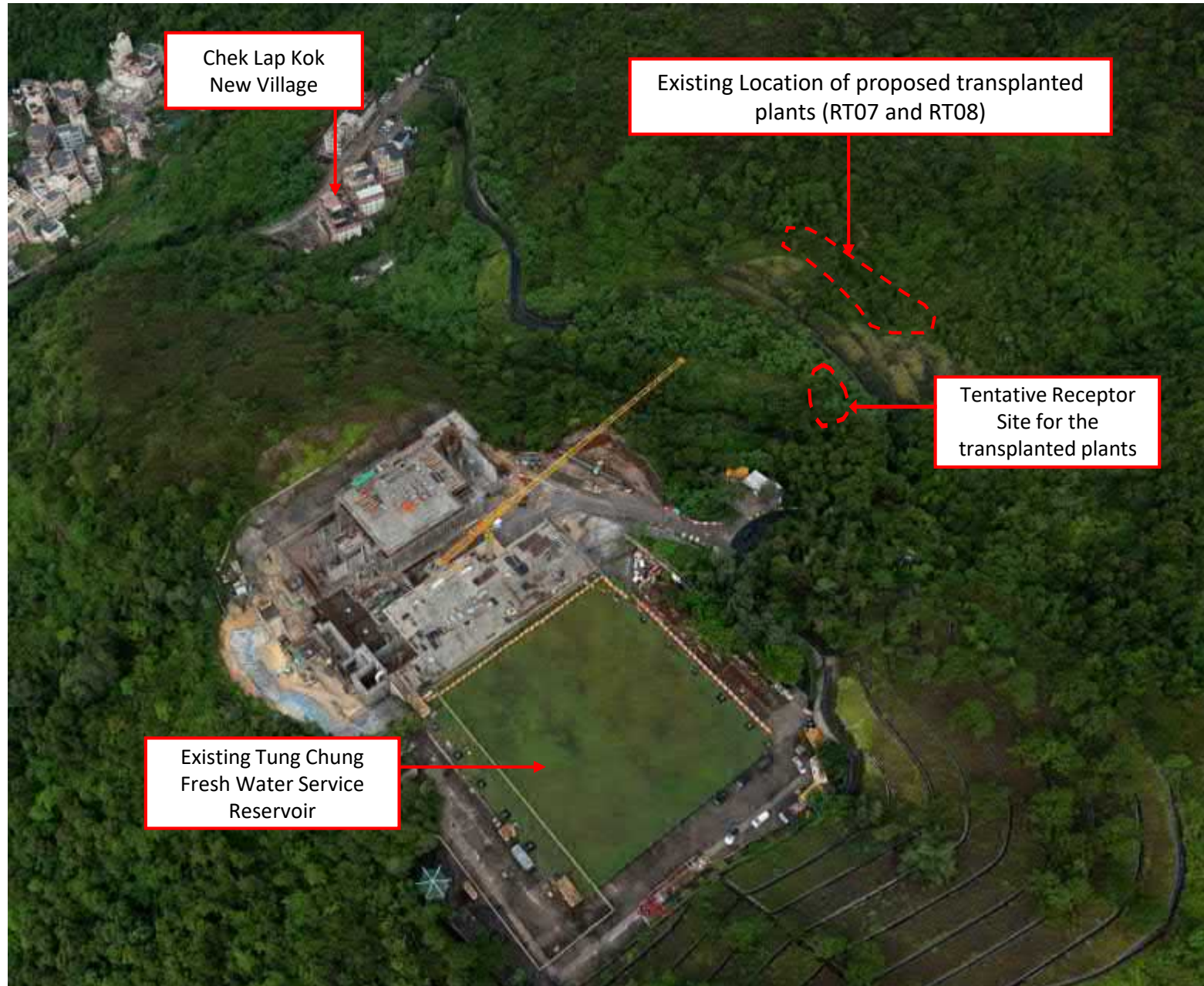


## **Appendix D**

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## Appendix D – Photographic Record of Tentative Receptor Site







Tentative Receptor Site for the 2 nos. transplanted plants.

The following site preparation work is required prior to actual transplanting:

- Rearrangement of site traffic
- Removal of the existing concrete surface
- Preparation of planting areas
- Importing of soil mix

## **Appendix E**

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Recommended Mitigation Measures	Objective of the Measures	Who to Implement / Maintain the Measures	Location of the Measures	When to Implement the Measures?	Refer to paragraph(s) in this Plan
<p><b>Review of Receptor Site</b></p> <p>a. The receptor site will be reassessed by the Qualified Personnel (e.g. an Arborist in the List of Minimum Personnel Requirements for Landscape Works, Tree Management Works and Vegetation Maintenance Contracts) and agreed with ET/IEC, Project Manager and the future maintenance party prior to the commencement of transplantation taking into account the latest site condition.</p> <p>b. Habitat characteristics of the alternative sites should be similar to that of their original locations. Should any changes in the location of final receptor site be proposed afterwards, agreement from the Qualified Personnel, Project Manager, ET and IEC should be sought before informing the Director of Environmental Protection (DEP).</p>	<p>a. Identify suitable alternative receptor site should changes to the existing receptor site be identified</p>	<p>Qualified Personnel</p>	<p>Receptor sites of transplanted trees.</p>	<p>Prior to commencement of transplantation works</p>	<p>S4.1.1-S4.1.3</p>
<p><b>Transplantation Methodology</b></p> <p><i>Preparation of Receptor Site</i></p> <p>a. Before transplanting, site clearance at the receptor sites should be carried out and overgrown weeds should be removed. Planting holes should be marked with individual tree numbers before the transplant and chosen to provide adequate growth space for future growth. Any large stones and concrete materials in and around the selected planting holes should be removed. Soil at the receptor sites should be ploughed and conditioned before the transplant as necessary. Preparation of receptor site should be done carefully so that the root systems of the nearby vegetation are not damaged.</p> <p><i>Preparation of Rootball and Root Pruning</i></p> <p>b. Root pruning should normally take place during the wet season with a minimum of one month allowed for root regeneration between each stage of root pruning.</p>	<p>a. Safely transplant plant species of conservation importance that would be directly impacted by proposed work to nearby suitable receptor site</p>	<p>Qualified Personnel</p>	<p>i) Existing location of the retained / transplanted trees; and</p> <p>ii) Receptor sites of transplanted trees.</p>	<p>August 2021 to November 2021 tentatively (root pruning works to be commenced at least 3 months before the tentative uplifting and transplantation works in November 2021)</p>	<p>S5.2.1-S5.2.17</p>



Recommended Mitigation Measures	Objective of the Measures	Who to Implement / Maintain the Measures	Location of the Measures	When to Implement the Measures?	Refer to paragraph(s) in this Plan
<p>c. Further to the inspection conducted in August 2021 by the Contractor's Qualified Personnel, it was confirmed the root pruning would be carried out in mid-October 2021 to mid-November 2021 and subsequently transplanting works tentatively, subject to the approval of this Plan.</p> <p>d. The period of root pruning may be adjusted to suit specific tree species and/or imposed contract constraints.</p> <p>e. The diameter of the rootball to be cut shall be determined by the Qualified Personnel. Normally, the rootball to be cut should be ten times the trunk diameter at breast height and not less than 1500mm diameter, and 600 – 1200mm deep to enhance survival rate for transplanting. Method statements should be submitted by the Contractor taking into account the size and species of trees, site constraints, arboricultural practices, etc for particular tree(s).</p> <p>f. After determining the size of the rootball, the proposed circumference of the rootball shall be marked on the ground around the tree.</p> <p>g. The trenches that are made for rootball preparation shall be backfilled with backfilling materials, to encourage new growth of root tips. Rootball shall be kept moist from time to time during the preparatory period to stimulate new-root.</p> <p>h. Roots shall be cut with a clean sharp knife or similar sharp implement to prevent tearing of the roots.</p> <p>i. The Contractor's Qualified Personnel shall make regular checks to ensure the stability of the tree and adjustments made accordingly throughout the entire root pruning/crown pruning stages.</p>					

Recommended Mitigation Measures	Objective of the Measures	Who to Implement / Maintain the Measures	Location of the Measures	When to Implement the Measures?	Refer to paragraph(s) in this Plan
<p>j. Transplanted plants shall be inspected monthly by the Qualified Personnel to check the health of the tree. Any sign of deterioration shall be notified to the Project Manager, ET and IEC and remedial action shall be taken. The Contractor shall water regularly, remove weed growth, fertilize, aerate the soil, folia feed, carry out insecticide treatment and any other horticultural work as necessary and as instructed by Qualified Personnel.</p> <p><i>Tree Lifting and Protection</i></p> <p>k. Transplanting shall be carried out during early morning or late afternoon when the sun is not directly overhead. No lifting shall take place during rainfall. Tree shall be transplanted within twenty-four hours of lifting.</p> <p>l. Wrap trunk and lower branches with accepted hessian and tie with jute string at least one day prior to rootball preparation. Before lifting, the outer edge of the previously dug trenches shall be loosened from the surrounding soil and the rootball undercut to allow the tree to be lifted free from the ground with the rootball intact.</p> <p>m. A crane or lifting device shall be used to secure the tree and support its full weight when lifted without damaging the branches or trunk. No items of hardware shall be inserted into the trunk or branches for lifting or other purposes. Cables used for lifting shall be wrapped with protective rubber sheaf to prevent damage.</p> <p>n. Plants shall be lifted carefully to avoid damage to rootball. Roots shall be cut free from ground, not pulled, using a suitable implement to give a clean cut.</p> <p>o. A board shall be placed under the rootball or a rootball box shall be constructed to support the full width and depth of the rootball.</p>					

Recommended Mitigation Measures	Objective of the Measures	Who to Implement / Maintain the Measures	Location of the Measures	When to Implement the Measures?	Refer to paragraph(s) in this Plan
<p>p. The Qualified Personnel shall be present to supervise the work.</p> <p><i>Planting</i></p> <p>q. Prior to the lifting of the trees, tree pits at their receptor sites shall be already prepared and agreed on site. All pits shall be 300-500mm greater than the size of the rootball of the tree to be transplanted at all sides and bottom. Tree pit base shall be scarified to a depth of 150mm. Loosen the base and sides of the tree pit and fill with water twenty-four hours before planting to ensure free drainage. Trees shall be transplanted to the new tree pits within twenty-four hours after being lifted. All transplanted individuals should be saturated with water.</p>					
<p><b>Post-transplantation Maintenance</b> <i>Maintenance Duration</i></p> <p>a. All of the transplanted <i>Gmelina chinensis</i> individuals should be maintained by the Contractor for 12 months (establishment period) after planting into their final receptor sites.</p> <p><i>Watering</i></p> <p>b. These receptor sites should be thoroughly watered immediately after planting. During the establishment period, the soil should be regularly monitored to prevent drying out. The individuals should be watered properly and adequately or daily, if required. After that, watering frequency should be conducted at least twice a week until the end of the establishment period. Frequency of watering should be adjusted accordingly so that the soil is kept moist. The Qualified Personnel would be responsible for determining and advising the Contractor the suitable moisture level and the frequency of watering.</p> <p><i>Use of Mulch</i></p> <p>c. Mulches help conserve moisture, maintain moderate soil temperature, and control weeds around plants. If required, organic mulches such as peat moss,</p>	<p>a. Provide care for newly transplanted individuals</p>	<p>Contractor</p>	<p>Receptor sites of transplanted trees.</p>	<p>Immediately after transplantation for 12 months</p>	<p>S.5.3.1-S5.3.4</p>



Recommended Mitigation Measures	Objective of the Measures	Who to Implement / Maintain the Measures	Location of the Measures	When to Implement the Measures?	Refer to paragraph(s) in this Plan
<p>thoroughly dried grass clippings or small wood chips could be placed on the soil surface over the plant root system.</p> <p><i>Pruning/Weeding</i></p> <p>d. Insect/fungal infested stems, or those infected with disease would be removed after transplantation. Pruning may also be required after transplantation to remove any broken stems. The receptor sites should be kept free from weeds throughout 12-months establishment period. Any unwanted weeds found in these areas should be removed by the Contractor once identified and/or when instructed by the Project Manager. Weeding should be carried out by hand as much as possible and removed weeds should be disposed of appropriately by the Contractor.</p>					
<p><b>Post-transplantation Monitoring Performance</b></p> <p>a. Health conditions of the transplanted individuals should be monitored by the Qualified Personnel in the presence of ET throughout the 12-month establishment period at the receptor sites. Monitoring of the transplanted individuals should be conducted once per week in the first three months and once in each of the following month in the remaining establishment period. During the remainder of the construction phase, monitoring of transplanted individuals should continue, however the frequency would be reduced to once every 3 months, given that the health conditions during the establishment period remained fair to good. Should problems relating to the transplanted tree health arise during the establishment period, monitoring frequency during post establishment period (throughout construction phase) would be subject to the situation and the advice of the ET.</p> <p>b. Any post-transplantation monitoring findings should be included in the monthly inspection checklist/report and it should be submitted to the Project Manager,</p>	<p>a. Monitoring the health of newly transplanted individuals</p>	<p>Qualified Personnel</p>	<p>Receptor sites of transplanted trees.</p>	<p>Immediately after transplantation for 12 months</p>	<p>S.5.4.1-S5.4.8</p>

Recommended Mitigation Measures	Objective of the Measures	Who to Implement / Maintain the Measures	Location of the Measures	When to Implement the Measures?	Refer to paragraph(s) in this Plan
<p>Environmental Team Leader and Independent Environmental Checker for review and record.</p> <p>c. The Contractor shall be responsible if any <i>Gmelina chinensis</i> die during the transplantation process, within the two years monitoring period due to negligence or non-compliance of this Plan. Replacement planting of new trees of the same species, or other species to the satisfaction of the Project Manager, at the Contractors' expense would be deemed necessary under these conditions.</p> <p><i>Construction Activities</i></p> <p>d. Any construction activities that may adversely affect the identified individual plant species of conservation importance should be reported in advance to the Project Manager for planning of preventive measures to avoid possible damage.</p> <p><i>Photographic Record</i></p> <p>e. The Contractor should submit a photographic record for the two <i>Gmelina chinensis</i> individuals to be transplanted during each of the following stages for record purpose:</p> <p>f. Before transplantation - recording the existing growth angle and compass orientation of the plant, in order to allow replication during transplanting;</p> <p>g. During Transplantation - recording each procedure, including digging and root pruning, any stems/branches pruning, formation of rootball, preparation works at all receptor sites, transportation of uplifted individuals to the receptor sites, planting of individuals at the receptor sites and after transplanting into the receptor sites; and</p> <p>h. Post-Transplantation Period – recording the status of transplanted individuals during the 12-month establishment period and until the end of construction</p>					

Recommended Mitigation Measures	Objective of the Measures	Who to Implement / Maintain the Measures	Location of the Measures	When to Implement the Measures?	Refer to paragraph(s) in this Plan
phase, following the aforementioned monitoring schedule.					
<p><b>Protection Measures for Retained / Transplanted Individuals</b></p> <p><i>Erection of Protective Fencing</i></p> <p>a. Prior to the commencement of site clearance works and during the whole of the construction period, protection zone should be set up around the existing plants of conservation importance including 3 no. of <i>Aquilaria sinensis</i> and 33 no. of <i>Gmelina chinensis</i> (in which 2 no. of <i>Gmelina chinensis</i>, RT07 and RT08, are to be transplanted). In locations where site hoarding is not erected, protective fencings with sufficient buffer zone will be provided. Signposts should also be erected to inform the workers about the precautionary measures for protecting the concerned plant individuals and their root system. The Contractor should keep the protection zone clean and tidy without building materials, waste and excess soil. No digging, trenching, compaction, or other soil disturbance should be allowed in the protection zone.</p> <p><i>Dust Control</i></p> <p>b. During periods of drought, trunks, limbs and foliage should be sprayed with water to remove any accumulated construction dust.</p> <p><i>Reporting Injury</i></p> <p>c. Any damage or injury to the retained / transplanted plants should be reported to the Project Manager, ET and IEC immediately. The Contractor should arrange a Qualified Personnel to inspect and conduct appropriate arboricultural / horticultural operation as necessary to the damaged / injured trees.</p>	<p>a. Ensure plant species of conservation importance close to proposed works areas are protected during construction phase</p>	Contractor	<p>i) Existing location of the retained / transplanted trees; and</p> <p>ii) Receptor sites of transplanted trees.</p>	Prior to and during construction period.	S2.3.4-S2.3.6



Recommended Mitigation Measures	Objective of the Measures	Who to Implement / Maintain the Measures	Location of the Measures	When to Implement the Measures?	Refer to paragraph(s) in this Plan
<p><b>Ecology (Construction Phase)</b></p> <p>a. Preservation and/or Transplantation of plant species of conservation importance and the following monitoring of preserved/transplanted plant individuals</p>	<p>a. Protection of plant species of conservation importance</p>	<p>Contractor</p>	<p>Within construction sites</p> <p>All areas for public works</p>	<p>For preservation and/or transplantation, before commencement of site formation.</p>	<p>EIA S9.8.3 EM&amp;A Appendix 4.1 Log. Ref EC10</p>
<p>b. Monitoring of preserved / transplanted plant species</p>	<p>b. Monitor and evaluate the effectiveness of the preservation and transplantation programme.</p>	<p>Contractor</p>	<p>Construction sites for preserved plants; recipient sites for transplanted plants</p>	<p>After transplantation or preservation. For transplanted individuals, for two years, monthly for the first year, and then quarterly for the second year. For the preserved individuals, monthly throughout the construction.</p>	<p>EIA S9.11.1 EM&amp;A Appendix 4.1 Log. Ref EC22</p>

## **Appendix F**

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## 1. Scope

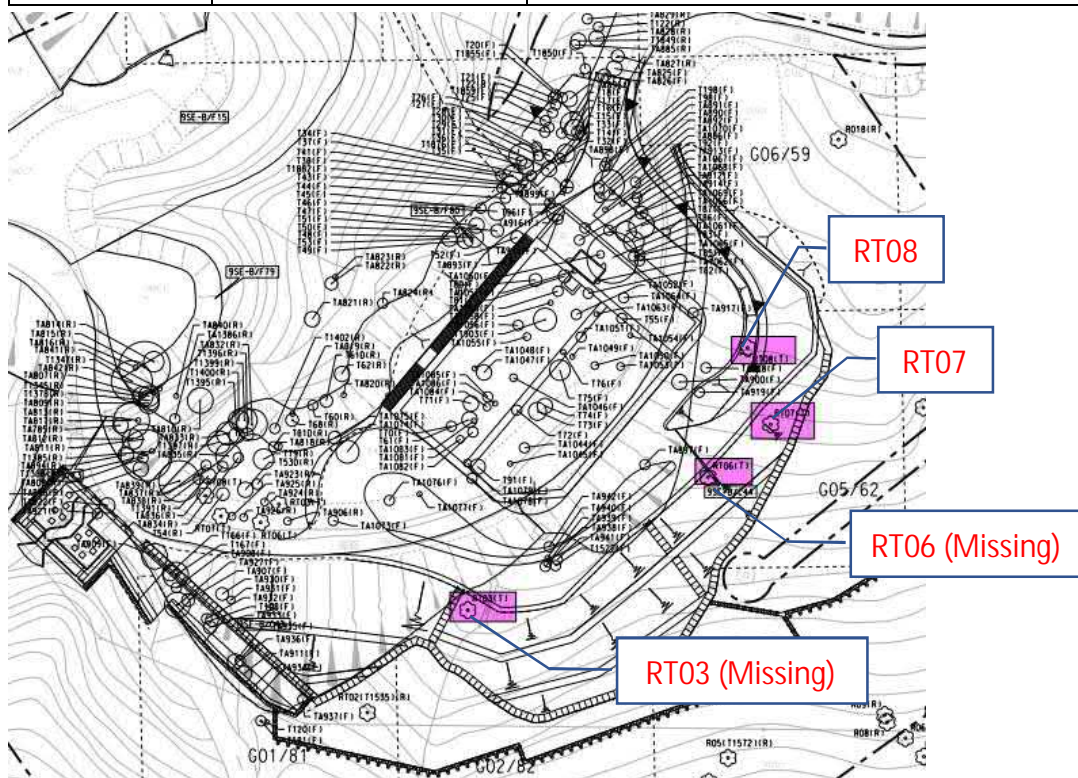
For execution of construction works, two *Gmelina chinensis* (Verbenaceae) under this contract have been identified to be transplanted. This document is to present the methodology of the transplanting works of the captioned trees.

The trees will be transplanted to designated positions or in the holding nursery. The transplanted trees will then be re-planted to the final locations as instructed by the Project Manager and maintained for a specified establishment period. The photographic records for each root pruning and transplanting will be submitted. Also, the location plan of holding nursery will also be submitted and for which is suitable for receiving the transplanted trees.

**Table 1 The Target Species to be transplanted**

**Location plan for RT03, RT06, RT07, RT08**

Tree No.	Botanical Name	Chinese Common Name
RT08	<i>Gmelina chinensis</i>	石梓
RT07	<i>Gmelina chinensis</i>	石梓
RT06 (MISSING)	<i>Gmelina chinensis</i>	石梓
RT03 (MISSING)	<i>Gmelina chinensis</i>	石梓



Please refer to Attachment 1 for the abstract of detailed tree survey report and supplementary tree photos for the captioned trees.



## 2. Methodology for Pre-Construction Survey

- The transplanting operations – Root Pruning should be referring to Guidelines on Tree Transplanting by DEVB.
- A root ball area which incorporates at least half of the area of the tree crown should be marked out and later a trench is dug around this area. Roots should be carefully pruned and treated with an accepted fungicidal gel. The root zone should be watered.
- The rootball size for transplanted trees should be a minimum of 1000 mm in diameter and 700 mm in depth.
- Before the commencement of root pruning, 3 wiring with anchors shall be fixed to the tree.
- The diameter of root ball shall be subject to Qualified Personnel's assessment and should be ten times the trunk diameter at breast height and not less than 1500mm diameter, and 600 – 1200mm deep to enhance survival rate for transplanting.
- For young trees – tree no. RT07 & RT08, the root pruning shall be carried out in three stages at two weeks interval.
- After completion of each stage of root pruning, trenches shall be backfilled with soil mix to encourage new growth of roots.
- When root pruning is done. The root ball shall be wrapped with damp hessian or Geotextile (Terram). Root activator and water crystal shall be applied to increase the survival rate.
- Cutting of the underside of the root ball and root ball shall be wrapped with geotextile or hessian. The space shall be filled with moist soil conditioner as transplanting of the tree to the holding nursery immediately.

## 3. Preservation and Translocation for Each Species

- No transplanting operations will take place until the final planting area is fully prepared and approved by the Engineer.
- Transplanting shall be carried out during early morning or late afternoon when the sun is not directly overhead. No lifting shall take place during rainfall. Trees shall be transplanted within twenty-four hours of lifting.
- A crane or lifting device shall be used to secure the tree and support its full weight when lifted without damaging the branches or trunk. No items of hardware shall be inserted into the trunk or branches for lifting or other purposes. Cables used for lifting shall be wrapped with protective rubber sheaf to prevent damage.
- Upon lifting, the root ball shall be wrapped with damp hessian and kept moist from the time of lifting until it is transplanted. Trunk shall be tied and secured on burlap material during transplanting.

- Plants shall be lifted carefully to avoid damage to rootball. Roots shall be cut free from ground, not pulled, using a suitable implement to give a clean cut.
- During transportation, trees shall be protected against excessive sunlight, wind and drought.

#### 4. Identification of Suitable receptor Sites and Preparation

- Prior to the transplanting of the trees, tree pits and transplantation records shall be approved by the Engineer.
- The tree pit shall be prepared as follows:
  - All pits shall be 300mm-500mm greater than the size of root ball of the tree to be transplanted at all dimensions.
  - The base and sides of the pit shall be broken up to a depth of 150mm.
- For trees requiring to be held in a holding nursery at the period between lifting and planting, they shall be carefully protected and maintained. Maintenance shall include watering, weeding and if necessary, addition of fertilizer, insecticide and herbicide until the final planting location is available
- The holding nursery is well equipped with manual irrigation system. The trees maintained in the nursery will be lined up in rows with sufficient spaces in between.
- After the tree has been placed in its final position, adjust orientation of crown, backfill with topsoil which has been mixed with a slow release fertilizer at a rate of 500gm/m<sup>3</sup>.
- Backfilling shall be done in layers, each being firmly consolidated to eliminate air pockets. The base of the tree trunk shall be level with surrounding ground level and a saucer shaped depression of the diameter of the root ball shall be left to facilitate watering; The trees shall be thoroughly watered in after planting.

#### 5. Implementation Programme

For tree no. RT07 & RT08, the tentative commencement of root pruning will be in mid-October 2021 and the corresponding tree transplanting work will be carried out in November 2021 or immediately after acceptance of this method statement.

#### 6. Post Translocation Monitoring Programme

- The transplanted trees shall be maintained immediately after transplanting works, from existing location and maintenance shall continue for a period of time.
- Regular watering, weeding and pest control should be implemented during the maintenance period of the transplanted trees. Also, regular report as well as inspection reports should be carried out to monitor the health condition of the

transplanted trees.

i. Watering

Watering shall be more frequent during the early part of the establishment period. Watering frequency would be applied daily during the dry season (September to April). Watering shall be carried out as required during the wet season to maintain a vigorous and healthy growing condition.

ii. Stakes

Firming up of the transplanted trees and the supporting materials shall be undertaken from time to time during the period and particularly after heavy rain and/or wind.

iii. Mulching

Apply a layer of organic mulch can mimic a more natural environment and improve the plant health. The recommended mulching depth is 50mm, extending 150mm beyond the perimeter of the tree pit and covering at least the entire root ball zone.

iv. Fertilizer

Instructed by the qualified Arborist, slow-release fertilizer application would be carried out in March and September each year.

v. Tree Pruning

The transplanted trees shall be pruned to remove dead or dangerous branches follow the advice of the Tree technician.

vi. Pest and Fungal Control

Regularly check on pest and disease infection during maintenance period. Removal of diseased plant or the use of pesticide shall be applied if necessary.

vii. Inspection & Reporting

Recording the status of transplanted individuals during the establishment period and the post-establishment period until the end of construction phase, following the accepted monitoring schedule.



# Attachment 1

Project Title:  
Survey Area:  
Inspector:  
Date of Survey:

Detailed Tree Surveys for Tung Chung New Town Extension - Salt Water Supply System  
Portion 3  
Kenneth Kwok (ISA CA No.: HK-1798A)  
13/8/2021

Tree No.	Botanical Name	Chinese Name	SIZE (M)			Amenity Value	Form	Health	Structural Condition	Suitability for Transplanting		Conservation Status	Recommendation (Retain/ Transplant/ Fell)	Justification	Additional Remarks
			Height	Trunk DBH	Spread					(Good/ Fair/ Poor)					
G82/RT-03	<i>Casuarina equisetifolia</i>	石梓	-	-	-	-	-	-	-	-	-	Yes	Transplant	Direct conflict with proposed works	Missing
G62/RT-06	<i>Casuarina equisetifolia</i>	石梓	-	-	-	-	-	-	-	-	-	Yes	Transplant	Direct conflict with proposed works	Missing
G62/RT-07	<i>Casuarina equisetifolia</i>	石梓	9	110	6	Fair	Poor	Fair	Fair	Low	-	Yes	Transplant	Direct conflict with proposed works	Young tree, on slope, leaning, broken leader, imbalanced crown, root flare was in conflict with other tree, not suitable to be transplanted
G62/RT-08	<i>Casuarina equisetifolia</i>	石梓	8	110	6	Fair	Poor	Fair	Fair	Low	-	Yes	Transplant	Direct conflict with proposed works	Young tree, imbalanced crown, broken bark



G62 RT-06\_Missing



G62 RT-07\_\_Tag



G62 RT-07\_\_WholeView



G62 RT-08\_\_Tag





G62 RT-08\_\_WholeView



G82 RT-03\_Missing



# **Supplementary Photos For RT-07 & RT-08**





202202 Tung Chung New Town Extension

Supply System

*Gmelina chinensis* 石梓

662/RT-07

Transplant 移植





G62/RT-07  
Transplant 1998







6621114







... 0220102 Tung Chung New Town Extension  
... Supply System  
*Gmelina chinensis* 石样  
**62/RT-08**  
Transplant 移植



