



JOB No.: TCS00694/13

**AGREEMENT NO. CE 45/2008 (CE)
LIANTANG/HEUNG YUEN WAI
BOUNDARY CONTROL POINT AND ASSOCIATED WORKS**

**ECOLOGICAL MONITORING REPORT FOR THE
WOODLAND COMPENSATION AREA
(NOVEMBER TO DECEMBER 2016)**

**PREPARED FOR
CIVIL ENGINEERING AND DEVELOPMENT
DEPARTMENT (CEDD)**

Date	Reference No.	Prepared By	Certified By
10 January 2017	TCS00694/13/600/R0802v2	 Keith Wong (Ecologist)	 Tam Tak Wing (Environmental Team Leader)

Version	Date	Remarks
1	14 December 2016	First Submission
2	10 January 2017	Amended against the IEC's comments on 20 December 2017

Unit A-C, 27/F Ford Glory Plaza
37- 39 Wing Hong Street
Cheung Sha Wan, Kowloon, Hong Kong
T +852 3995 8100 F +852 3995 8101 E hongkong@smec.com
www.smec.com

16 January 2017

Our ref: 7076192/L21381/AB/AW/MC/rw

AECOM
8/F, Grand Central Plaza, Tower 2
138 Shatin Rural Committee Road
Shatin, N.T.

By Email & Post**Attention: Mr Simon LEUNG**

Dear Sirs

Agreement No. CE 45/2008 (CE)
Liantang/Heung Yuen Wai Boundary Control Point and Associated Works
Independent Environmental Checker – Investigation
Monthly Ecology monitoring Report (No. 2) – November 2016

With reference to the Monthly Ecology monitoring Report No. 2 for November 2016 (Version 2) certified by the ET Leader, please be noted that we have no adverse comments on the captioned submission. We herewith verify the captioned submission in accordance with Section 8.3.2.2 of the EM&A Manual.

Thank you for your attention and please do not hesitate to contact the undersigned on tel. 3995-8120 or by email to antony.wong@smec.com; or our Mr Man CHEUNG on tel. 3995 8132 or by email to man.cheung@smec.com.

Yours faithfully
for and on behalf of
SMEC Asia Limited



Antony WONG
Independent Environmental Checker

cc CEDD/BCP - Mr Desmond LAM
AECOM - Mr Pat LAM / Mr Perry YAM
CCKJV - Mr Vincent CHAN
AUES - Mr TW TAM

by fax: 3547 1659
by email
by email
by email

Table of Content

1.	INTRODUCTION	1
1.1	General.....	1
2.	MONITORING REQUIREMENTS.....	2
2.1	Monitoring Program of the Initial and Enhancement Planting Phases	2
2.2	Monitoring methodology	2
2.3	Quadrat Sampling	2
2.4	Reporting.....	4
3.	RESULTS.....	5
3.1	Transect Inspection	5
3.2	Quadrat Sampling	6

LIST OF TABLES

TABLE 1	TRIGGER AND ACTION LEVELS FOR MONITORING AND ACTION PLAN
TABLE 2	HEALTH CONDITION OF THE ESTABLISHED SEEDLINGS NOTED DURING THE TRANSECT INSPECTION
TABLE 3	THE NUMBER OF SEEDLING RECORDED FOR EACH SPECIES WITHIN THE SAMPLING QUADRATS
TABLE 4	COMPARISON OF THE DENSITY OF THE PLANTED SPECIES RECORDED IN CURRENT MONTH WITH THE PREVIOUS REPORTING PERIOD (SEP - OCT 2016)

LIST OF APPENDICES

APPENDIX A	DRAWING NO. 60212563/SK7037 OF THE WOODLAND COMPENSATION PLAN
APPENDIX B	LATEST PLANTING ARRANGEMENT
APPENDIX C	TRANSECT ROUTES AND SAMPLING QUADRATS OF WOODLAND COMPENSATION MONITORING
APPENDIX D	PHOTOGRAPHIC RECORDS

1. INTRODUCTION

1.1 GENERAL

- 1.1.1 The “Liantang/Heung Yuen Wai Boundary Control Point and Associated Works Project” (hereinafter referred to as “the Project”) comprises a new Boundary Control Point (BCP) proposed at Liantang/Heung Yuen Wai (LT/HYW), its connecting road and other associated works; and the Environmental Impact Assessment (EIA) report (Register No.:AEIAR-161/2011) of the Project has identified that ~6.2ha of secondary woodlands will be directly lose due to the construction of the portals of tunnels and some sections of the connecting road. Subsequently, creation of a 18.6 ha compensatory woodland at Cheung Shan has been recommended in the EIA report to avoid residual ecological impacts from the Project.
- 1.1.2 Under the Environmental Permit (EP-404/2011/C), an updated Woodland Compensation Plan (WCP) detailed with the planting strategy and the subsequent maintenance and monitoring requirements of the compensatory woodland has been submitted and approved by the Authority in the 4th Quarter of 2015.
- 1.1.3 The woodland compensation include an initial planting phase and enhancement planting phase over a 6 years period on the grassland and shrubland at Cheung Shan, i.e., the “Woodland Compensatory Area” (WCA) as shown in the **Drawing No. 60212563/SK7037 of the WCP** and included here as **Appendix A**; and the planting works fall within the work scope of Contract No. CV/2013/08 Liantang/ Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works - Contract 6.
- 1.1.4 As part of the EM&A’s requirements of the Project, this submission presents the findings of the 2nd session of vegetation monitoring according to the latest status of the initial planting phase (refer to the **Appendix B** for details) and cover the Reporting Period from November 2016 to December 2016.

2. MONITORING REQUIREMENTS

2.1 MONITORING PROGRAM OF THE INITIAL AND ENHANCEMENT PLANTING PHASES

2.1.1 According to the implementation program and Section 6.5 of the WCP, the monitoring frequency for the first year of the initial and the enhancement planting phases would be bi-monthly and subsequently reduced to quarterly from the second year onward.

2.1.2 Change of monitoring frequency if needed will be advised by the Project Ecologist of the ET and approved by Environmental Protection Department and Agriculture, Fisheries and Conservation Department before implementation.

2.2 MONITORING METHODOLOGY

2.2.1 An inspection walk monitoring by means of “transect route” and “direct observation” has been undertaken within the WCP as such to provide an overview and observe the general condition of the WCA; After due considerations of the latest planting arrangement within the WCA, the potential trampling damage to the planted seedlings, as well as the limitations in visibility, site access and safety concern when undertaking the monitoring among the steep hillslope, the transect routes has been selected to cover all representative areas where planting has been undertaken within the WCA as far as practicable.

2.2.2 The transect routes are illustrated in **Appendix C**, and the following observations have been made during the inspection walk:

- Weather condition during the time of monitoring
- The general condition of the WCA, including any signs of anthropogenic or natural disturbance/events (such as landslide, lightning strikes, wildlife damage) that has affected the health condition of the planted seedlings, or regeneration or invasive of grassy or self-seeded weedy plants that would or have affected the establishment of the planted vegetation
- The general health condition of each planted species graded in “Good”, “Fair” or “Poor” with the following criteria:
 - i) Phenology – signs of any abnormality in the phenology of the species (such as abnormal flowering/fruitletting/ leaf shedding)
 - ii) Foliage – colour, size and general appearance, signs and severity of insect and fungal infection
 - iii) Branches – presence and extent of die-back, and signs and severity of insect and fungal infection
 - iv) Stem/Trunk - signs and severity of cavities or internal/external decay; signs and severity of insect infection and mechanical damage

2.2.3 Since the monitoring approach adopted for the transect inspection, i.e., “*direct observations*”, would not yield any quantitative information, the survival rate (%) of the planted seedling will be evaluated from the results collected from the quadrat sampling as detailed in next section.

2.3 QUADRAT SAMPLING

2.3.1 A sampling approach has been proposed in the WCP to monitor the survival rate of the planted seedlings by the use of nine 20mx20m quadrats which are to be evenly located within the planted area of the WCA. Based on the latest planting schedule and planting arrangement/pattern provided by the contractor (see **Appendix B**), as well as the local topography of the planted area within the WCA, the practicality in accessing, placing and monitoring nine 20m x 20m fixed quadrats within the planted area of the WCA has been extensively reviewed, 2 of the monitoring quadrats are fixed on the ridgeline of Cheung Shan and 7 of them are located on the north-facing slope of the WCA (see

Appendix C) ¹.

- 2.3.2 Information collected within each sampling unit include:
- General condition of the sampling quadrat especially those factors that would or have found affected the survival rate of the planted vegetation, including biological or environmental factors (such as inter-specific competition as well as signs of stress from water, heat, or pest and disease, etc)
 - The total number of established seedlings for each planted tree and shrub species
 - Health condition of each planted species graded in “Good”, “Fair” or “Poor” with the following criteria:
 - i) Phenology – signs of any abnormality in the phenology of the species (such as abnormal flowering/fruitletting/ leaf shedding)
 - ii) Foliage – colour, size and general appearance, signs and severity of insect and fungal infection
 - iii) Branches – presence and extent of die-back, and signs and severity of insect and fungal infection
 - iv) Stem/Trunk - signs and severity of cavities or internal/external decay; signs and severity of insect infection and mechanical damage

2.3.3 Since this is the first monitoring session in which 20m x 20m quadrats were applied for the initial planting phase, and the quantity of seedlings planted for each species within a particular area (including the sampling units) would be varied and subject to the constraints imposed by the local site condition (e.g., the steepness and presence of rocky outcrops or existing woody vegetation); and hence the quantitative information presented in this report will form the baseline data for the future evaluation of the survival rate of the planted species; and if needed the implementation of the measures as detailed in the “Trigger and Action Levels” specified in the **Table 3** of the WCP would be recommended (included here as **Table 1** below) .

Table 1 Trigger and Action Levels for Monitoring and Action Plan

Parameters	Trigger and Action Level	Action Plan
General Health Condition of planted species (i.e. good/fair/poor; based on parameters e.g. wilting, insect attack, disease, fungal infection, browsing damage)	Trigger Level: % of individual plant species in poor health condition >20%	- the ET should inform Contractor and IEC immediately; - identify the causes(s) of the exceedance; - advise Contractor the necessity of replanting
	Action Level: % of individual plant species in poor health condition >30%	- the ET should inform Contractor and IEC immediately; - identify the cause(s) of the exceedance; - advise remedial action and work out solution including change of species in re-planting, re-soiling of the target areas; and seek acceptance from AFCD; - once the remedial action has been accepted by AFCD, the Contractor should implement the remedial action.

Parameters	Trigger and Action Level	Action Plan
Survival of Planted Species (i.e. dead)	Trigger Level: Survival rate of individual plant species <80%	<ul style="list-style-type: none"> - the ET should inform Contractor and IEC immediately; - identify the causes(s) of the exceedance; - advise Contractor the necessity of replanting.
	Action Level: Survival rate of individual plant species <70%	<ul style="list-style-type: none"> - the ET should inform Contractor and IEC immediately; - identify the cause(s) of the exceedance; - advise remedial action and work out solution including change of species in re-planting, re-soiling of the target areas; and seek acceptance from AFCD; - once the remedial action has been accepted by AFCD, the Contractor should implement the remedial action.

¹ Since it is anticipated that the effectiveness and efficiency of the quadrat monitoring, i.e., elevated risk of trampling and decreased accessibility and visibility to/within the quadrats, would be constrained from the steep topography and the presence of the retained woody plants and/or regenerated clumps/mats of the herbaceous vegetation during the course of the six-years monitoring, quadrat size of 10mx10m has been applied during the previous monitoring without compromising on the theoretical sampling rate of the quadrat monitoring program. However, since this is a deviation is yet approved by EPD, the quadrat size has been restored to 20m x20m in this monitoring.

2.3.4 It should be noted that most of the planted native species are also naturally grown within the WCA, and it would be infeasible and impracticable to differentiate whether the individual plant noted along the transect or within the quadrat is planted, natural recruited, or regenerated after the pre-planting clearance of the site; and hence all established individuals of the planted species found within the sampling unit has been counted during the monitoring.

2.3.5 The WCA monitoring was undertaken by the Environmental Team (ET) and under the supervision of the Qualified Ecologist of the ET, and the Qualified Ecologist has also undertaken a joint transect inspection with representative of the IEC in the reporting.

2.4 REPORTING

Bi-monthly Woodland Compensation Monitoring Reports

2.4.1 During the first year of the initial planting phase and the first year of the enhancement planting phase, the results and findings of the bi-monthly (i.e., once every two months) monitoring will be recorded in a bi-monthly woodland compensation monitoring reports prepared and submitted by the ET Leader within 10 working days from the end of each reporting month. The details to be included in the report will follow the Section 7.3 of the WCP.

Quarterly Woodland Compensation Monitoring Reports

2.4.2 From the second year of the initial planting phase and the enhancement planting phase, the

results and findings of the quarterly monitoring will be recorded in the quarterly woodland compensation monitoring reports prepared and submitted by the ET Leader within 10 working days from the end of each reporting month. The details to be included in the report will follow the Section 7.3 of the WCP.

3. RESULTS

3.1 TRANSECT INSPECTION

3.1.1 The transect inspection was carried out at the ridgeline behind north of the tunnel portal on 24th November 2016 and the north-facing slope and the western ridgeline were inspected on 28th November 2016 with the ecological specialist of the IEC, an overview of the site condition is presented in Figure 1 of the **Appendix D**, and the following observations have been made along the transects:

- The weather on both of the dates was generally cloudy with occasional sunny period, and humidity was moderate. In addition, because of the northwest monsoon, it was fairly windy within the WCA.
- Most of the seedlings noted were in fair condition, and re-sprouting of the planted seedlings was noted in some of the planted native tree species, especially the *Litsea glutinosa*, *Sapium discolor* and *Mallotus paniculatus*.
- Sign of anthropogenic disturbance was noted within the planted area of the WCA, in which a pile of water hose was found among the WCA on the eastern ridgeline behind the tunnel portal (**Appendix D** - Figure 2).
- Signs of disturbance from wild boar, i.e., vegetation trampling, earth ploughing, as well as uprooted seedlings (from planted/self-seeded vegetation) were prominent all over the WCA (**Appendix D** - Figure 3), in particularly on the north-facing slope of Cheung Shan where the site was densely planted with tree/shrub seedlings
- Vigorous regrowth of herbaceous vegetation cleared/cut during the pre-planting site was noted in the whole WCA, especially the fern *Dicranopteris pedata* and the grasses *Ischaemum sp.*, *Arundinella setosa* and *Miscanthus sinensis*.
- Colonization, re-sprouting and/or growth of the woody vegetation, in particularly the trees *Melicope pteleifolia* and *Cratoxylum cochinchinense*, the shrub *Baeckea frutescens*, *Rhodomyrtus tomentosa* and *Breynia fruticosa*, were found to be generally vigorous (e.g., Appendix D - Figure 4).
- It was noted that, probably benefitted from the energy reserve stored in the root system as well as the and the reduction in competition for light/space, the vigorous growth of the woody remnants and regrowth of the cleared herbaceous plants have out-grow and shadowed some of the seedlings planted in their vicinity, and would expect to have a negative impact on the establishment of the planted material because of the inter-specific competition
- The western part of the WCA, i.e., area west of the trigonometrical station of Cheung Shan, was noted to have a higher density of shrub and tree seedlings despite the re-growth of the natural vegetation as described above has impede the range of observation could made along the transect; whereas the density of the planted seedlings, including both of the tree and shrub species, are found to be poorer and sparser along the ridgeline at the eastern part of the WCA.

3.1.2 The general health condition of the planted species, based on the observations made along the transect, is tabulated in the following table.

Table 2 Health condition of the established seedlings noted during the transect inspection

Species	Health Condition		
	Good	Fair	Poor
Trees			
<i>Acacia confusa</i>		√	
<i>Acacia mangium</i>	√		
<i>Castanopsis fissa</i>		√	
<i>Litsea glutinosa</i>		√ ^{(1), (3)}	
<i>Mallotus paniculatus</i>		√ ^{(1), (3)}	
<i>Phyllanthus emblica</i>			√ ^{(1), (2)}
<i>Sapium discolor</i>		√ ^{(1), (3)}	
<i>Schima superba</i>		√	
Shrubs			
<i>Polyspora axillaris</i>		√	
<i>Melastoma candidum</i>		√ ⁽³⁾	
<i>Melastoma sanguineum</i>		√ ⁽³⁾	
<i>Rhaphiolepis indica</i>		√ ^{(1), (3)}	
<i>Rhodomyitrus tomentosa</i>	√ ⁽³⁾		

Note:

(1) - re-sprouting of planted seedlings was noted and most of the foliage of this species were found to be smaller in size

(2) – chlorosis (leave yellowing) was commonly noted on the tree seedlings

(3) – self-seeded seedlings or wild population of this species was presence within the planting area of the WCA, and since it is impracticable and sometimes unfeasible to differentiate them from the planted seedlings, the health condition was evaluated as a whole for this species encountered during the transect walk.

3.2 QUADRAT SAMPLING

3.2.1 The nine 20m x 20m sampling quadrats have been placed within the planted area of the WCA, and at area where the majority of the seedlings were planted and considered suitable for long term monitoring; in which 2 of them were located on the ridgeline and the rest are located on the north-facing slope of Cheung Shan (see **Appendix C**). The quadrat monitoring was conducted on 29th and 30th November 2016.

3.2.2 According to the information provided by the main contractor and the landscaping subcontractor, the distribution of plant seedlings of different species within the WCA are more or less random and usually in small cluster with spacing in accordance with the latest planting arrangement, i.e. group of 3 to 5 with 1.5m spacing for tree and group of 5 to 8 with 0.75m spacing for shrubs, and the planting density of a particular area would also be varied and subject to the site constraints such as local topography and the abundance/coverage of existing woody vegetation.

3.2.3 The Table 3 below presents the findings of the quadrat monitoring of the monitoring month; and a comparison of the density (i.e., no. of seedling) recorded for each planted species between the current and previous monitoring month is presented in Table 4 for information.

Table 3 The number of seedling recorded for each species within the sampling quadrats

	Quantity* and General Health ^ Condition of the Established Seedling Recorded in Each Sampling Quadrat									Total Qty.
	R1	R2	S3	S4	S5	S6	S7	S8	S9	
Trees										
<i>Acacia confusa</i>	22	14	33	16	12	4	1	1	10	113
<i>Acacia mangium</i>	15	30	27	22	16	3	25	17	24	179
<i>Castanopsis fissa</i>	0	1	0	0	0	38	0	0	0	39
<i>Litsea glutinosa</i>	6	16	15	11	8	5	2	7	7	77
<i>Mallotus paniculatus</i>	9	18	16	7	7	5	6	7	5	80
<i>Phyllanthus emblica</i>	5	15	7	7	6	4	3	1	0	48
<i>Sapium discolor</i>	3	5	2	5	1	2	0	0	0	21
<i>Schima superba</i>	3	9	5	2	5	58	0	0	0	82
Sub-Total	63	108	105	70	55	119	37	33	46	636
Shrubs										
<i>Gordonia axillaris</i>	11	21	19	18	25	6	31	10	7	148
<i>Melastoma candidum</i>	24	46	52	41	32	35	43	33	46	352
<i>Melastoma sanguineum</i>	12	72	28	76	65	6	16	7	31	313
<i>Rhaphiolepis indica</i>	35	52	67	78	72	44	27	21	42	480
<i>Rhodomyrtus tomentosa</i>	60	87	95	106	112	45	92	112	115	850
Sub-Total	142	278	261	319	306	136	209	183	241	2143

Notes: ^ General Health Condition:

- Good - No. in normal font type (e.g., “99”)
- Fair - No. in Italic font (e.g., “99”)
- Poor - No. in italic & underlined (e.g., “99”)

* the quantity include all established individuals of the planted species within the quadrat regardless whether they are self-seeded or planted (see Section 2.3.6)

Table 4 Comparison of the density of the planted species recorded in current month with the previous reporting period (Sep - Oct 2016)

Species	Nov - Dec 16*	Sep - Oct 16**
<i>Acacia confusa</i>	0.03	0.09
<i>Acacia mangium</i>	0.05	0.06
<i>Castanopsis fissa</i>	0.01	0.02
<i>Litsea glutinosa</i>	0.02	0.05
<i>Mallotus paniculatus</i>	0.02	0.05
<i>Phyllanthus emblica</i>	0.01	0.03
<i>Sapium discolor</i>	0.01	0.03
<i>Schima superba</i>	0.02	0.06
<i>Gordonia axillaris</i>	0.04	0.08

<i>Melastoma candidum</i>	0.10	0.13
<i>Melastoma sanguineum</i>	0.09	0.19
<i>Rhaphiolepis indica</i>	0.12	0.31
<i>Rhodomyrtus tomentosa</i>	0.23	0.38

Note: * computed from 9 20m x 20m quadrats

** computed from 9 10m x 10m quadrats

3.2.4 Based on the recorded data and observations made within the sampled quadrat and the data presented in Table 3 and Table 4, the following summaries the findings from the quadrat monitoring:

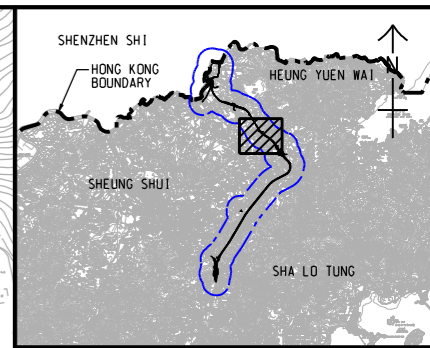
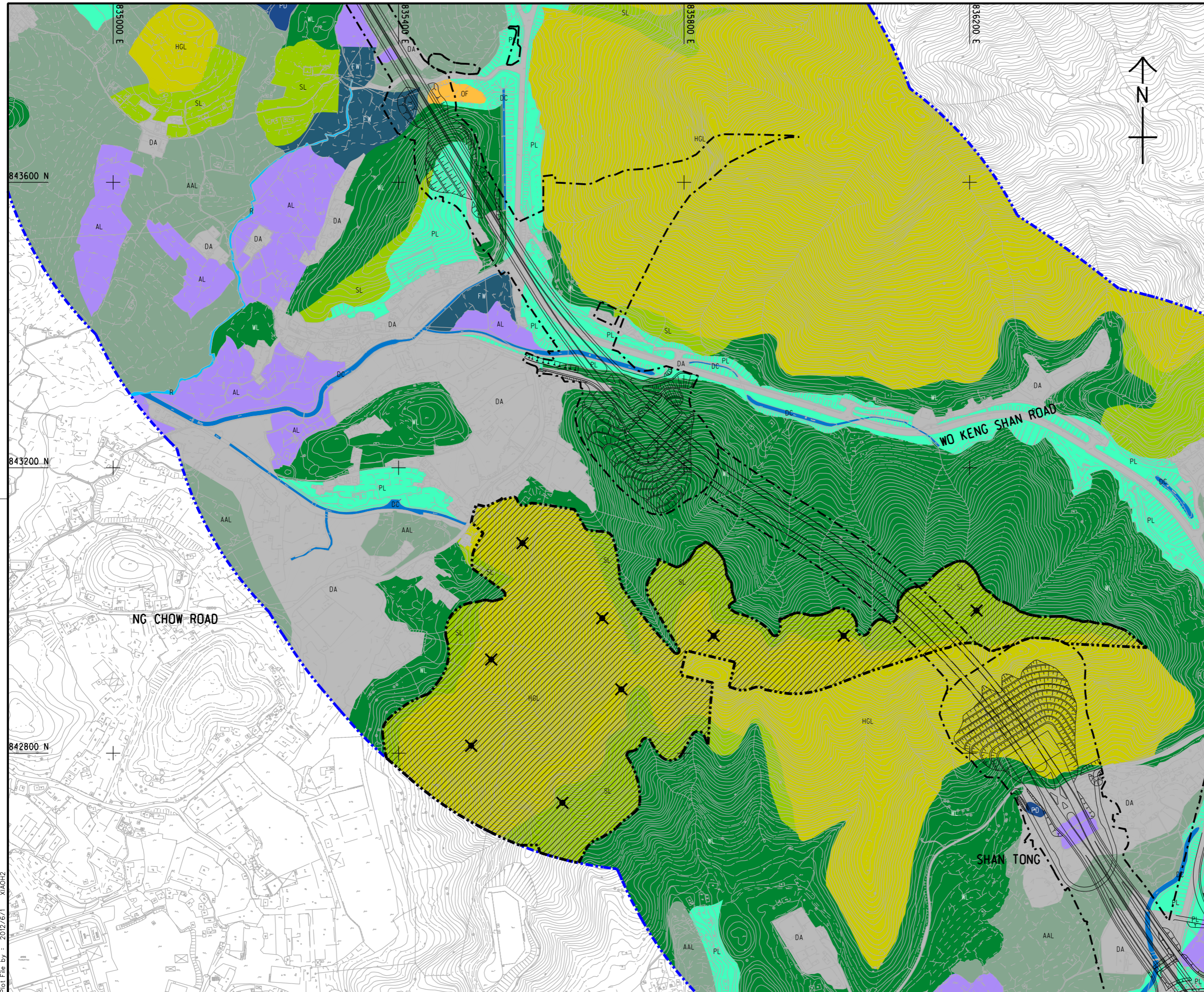
- Most of the recorded seedlings were found in fair to good condition, and the foliage on *Mallotus paniculatus*, *Sapium discolor* and *Litsea glutinosa* are mostly from re-sprouting and smaller in size
- The density of the established seedling recorded from the sampling quadrats is approximately 0.16 no./m² for tree and 0.60 no./m² for shrub, and the overall density for each plant groups is ~33% of the theoretical planting density as computed from the latest planting schedule of 0.56 no./m² for tree and 1.78 no./m² for shrub.
- The difference in density could be attributed to the randomness of the cluster planting arrangement within the WCA, and/or the extensive presence of naturally grown woody plants within the monitoring quadrats and the potential associated negative impact on the survivorship of the planted seedlings, as well as the intensive disturbance of the planting area caused by the wild boar - in which signs of wild boar activities including uprooted seedling/ground ploughing were widely noted within most of the sampling quadrats, in particularly S6, S7, S8 and S9.

3.2.5 Nevertheless, since this is the first set of monitoring data collected from 9 20x20m quadrats, it will form the baseline for the future evaluation of the survival rate of the planted seedlings.

-End-

Appendix A

Drawing No. 60212563/SK7037 of the Woodland Compensation Plan



KEY PLAN
SCALE 1 : 150000

LEGEND:

- 500m ASSESSMENT AREA
- TENTATIVE WORKS AREA
- TUNNEL SECTION
- WOODLAND
- SHRUBLAND
- PLANTATION
- FRESHWATER WETLAND [NET AGRICULTURAL LAND (ACTIVE/ABANDONED)]
- ACTIVE AGRICULTURAL LAND
- ABANDONED AGRICULTURAL LAND
- HILLSIDE GRASSLAND
- POND
- DRAINAGE CHANNEL
- WATERCOURSE
- OPEN FIELD
- DEVELOPED AREA
- EXTENT OF WOODLAND COMPENSATION PLANTING AREA
- TENTATIVE WOODLAND MONITORING QUADRAT (THE EXACT LOCATION TO BE DETERMINED BY THE ENGINEER ON SITE)

REV.	DESCRIPTION	DATE	BY	CHKD.	DATE

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

LIANTANG/HEUNG YUEN WAI BOUNDARY
CONTROL POINT AND ASSOCIATED WORKS
(SITE FORMATION AND INFRASTRUCTURES)
- DESIGN AND CONSTRUCTION

**PROPOSED WOODLAND
COMPENSATION AREA**

AECOM

DRG. NO. 60212563/SK7037
圖紙編號

DESIGNED BY 設計人 KW	CONTRACT NO. 合約編號	P. Dir. APPROVED 批核人
--------------------------	----------------------	-------------------------

DRAWN BY 繪圖人 YJP	STATUS 狀態
------------------------	--------------

SCALE 比例尺
A1 1 : 2500

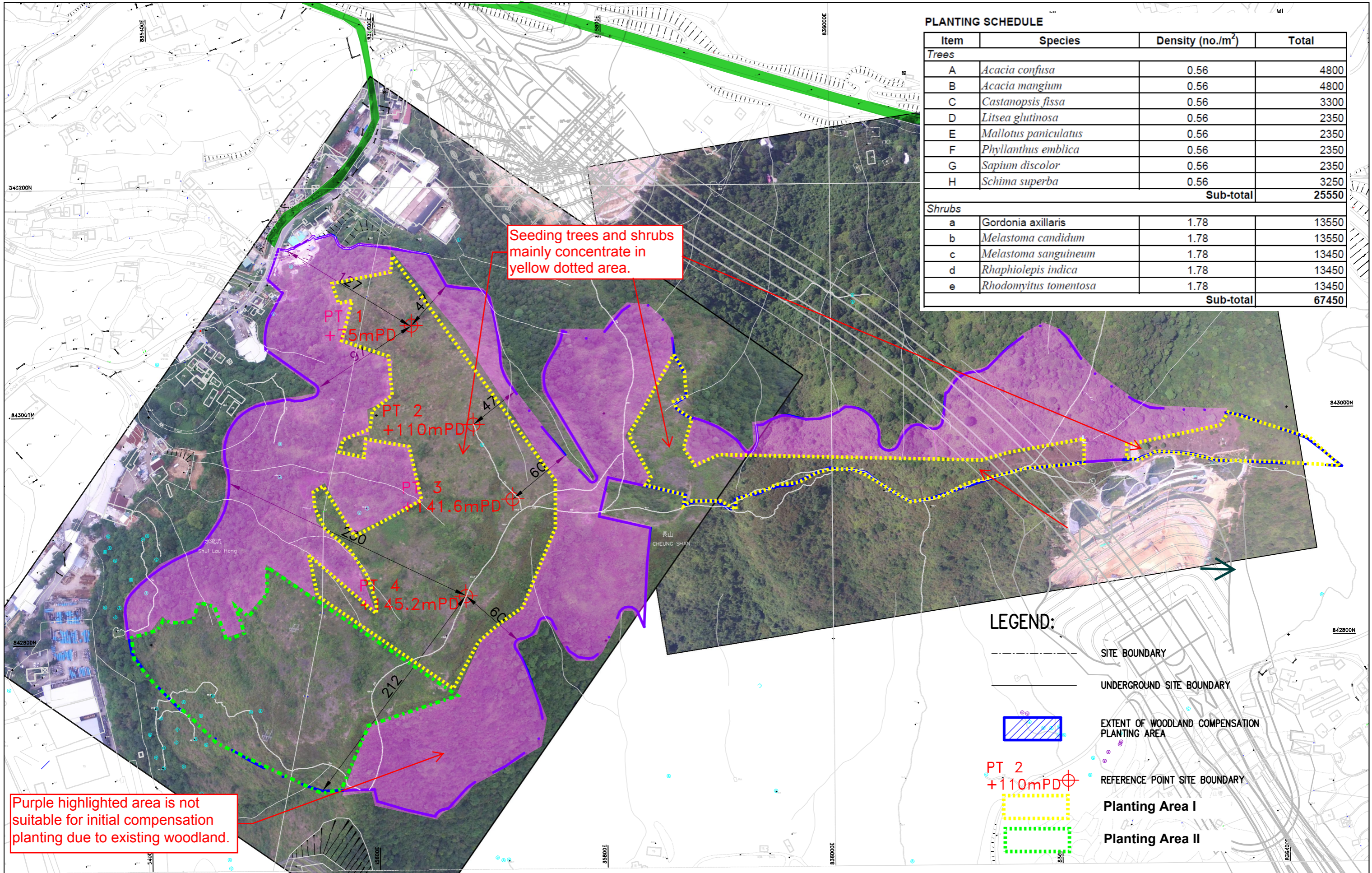
DIMENSIONS ARE IN 尺寸單位
METRES

© COPYRIGHT RESERVED
版權所有

Plot File by : 2012/6/1 XIAO12

Appendix B

Latest Planting Arrangement






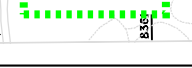
PLANTING SCHEDULE

Item	Species	Density (no./m ²)	Total
Trees			
A	<i>Acacia confusa</i>	0.56	4800
B	<i>Acacia mangium</i>	0.56	4800
C	<i>Castanopsis fissa</i>	0.56	3300
D	<i>Litsea glutinosa</i>	0.56	2350
E	<i>Mallotus paniculatus</i>	0.56	2350
F	<i>Phyllanthus emblica</i>	0.56	2350
G	<i>Sapium discolor</i>	0.56	2350
H	<i>Schima superba</i>	0.56	3250
Sub-total			25550
Shrubs			
a	<i>Gordonia axillaris</i>	1.78	13550
b	<i>Melastoma candidum</i>	1.78	13550
c	<i>Melastoma sanguineum</i>	1.78	13450
d	<i>Rhaphiolepis indica</i>	1.78	13450
e	<i>Rhodomlytus tomentosa</i>	1.78	13450
Sub-total			67450

Purple highlighted area is not suitable for initial compensation planting due to existing woodland.

Seeding trees and shrubs mainly concentrate in yellow dotted area.

LEGEND:

- SITE BOUNDARY
- UNDERGROUND SITE BOUNDARY
-  EXTENT OF WOODLAND COMPENSATION PLANTING AREA
-  REFERENCE POINT SITE BOUNDARY
-  Planting Area I
-  Planting Area II

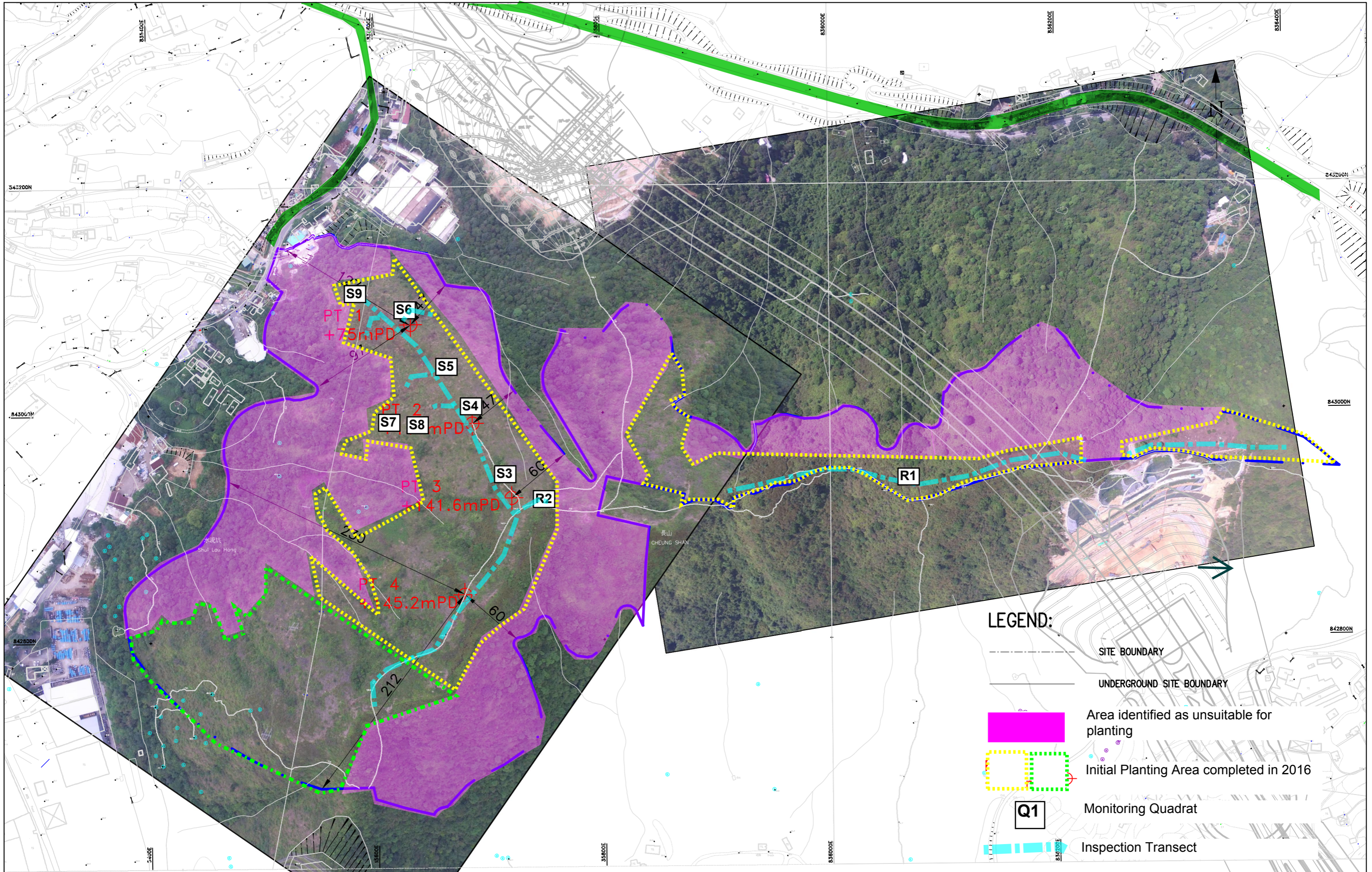
CONTRACT NO. CV/2013/08
LIANTANG/HEUNG YUEN WAI
BOUNDARY CONTROL POINT
SITE FORMATION AND
INFRASTRUCTURE WORKS
- CONTRACT 6

APPENDIX B - SITE CONSTRAINTS AND LATEST PLANTING ARRANGEMENT OF THE INITIAL PLANTING PHASE (2016)

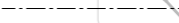


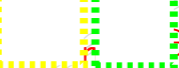


SCALE	1:3000(A3)	SURVEY DATE	8 September 2016
CHECK		DRAWN	K W
JOB NO.		SKETCH NO.	
		REV	-

Appendix C

Transect Routes and Sampling Quadrats of Woodland Compensation Monitoring



LEGEND:

-  SITE BOUNDARY
-  UNDERGROUND SITE BOUNDARY
-  Area identified as unsuitable for planting
-  Initial Planting Area completed in 2016
-  Monitoring Quadrat
-  Inspection Transect

APPENDIX C - LOCATION OF THE THE INSPECTION TRANSECTS AND MONITORING QUADRATS, 2016

CONTRACT NO. CV/2013/08
LIANTANG/HEUNG YUEN WAI
BOUNDARY CONTROL POINT
SITE FORMATION AND
INFRASTRUCTURE WORKS
- CONTRACT 6

SCALE	1:3000(A3)	SURVEY DATE	N/A
CHECK		DRAWN	K W
JOB NO.		SKETCH NO.	WCA_Monitoring Plan-161130
		REV	-

Appendix D

Photographic Records

Contract No. CV/2013/08, Woodland Compensation Area - Vegetation Monitoring



Fig-1a_North Facing Slope (1)



Fig-1b_North-facing Slope (2)



Fig-1c_Western Ridgeline



Fig-1d_Eastern Ridgeline



Fig-2_Site Disturbance



Fig-3a_Site disturbance by Wild Animal



Fig-3b_Site disturbance by Wild Animal



Fig-3c_Site disturbance by Wild Animal

Photographic Record (November 2016)

Contract No. CV/2013/08, Woodland Compensation Area - Vegetation Monitoring



Fig-4_Regrowth of cleared vegetation



Fig-5a_R1



Fig-5b_R2



Fig-5c_S3



Fig-5d_S4



Fig-5e_S5



Fig-5f_S6



Fig-5g_S7

Contract No. CV/2013/08, Woodland Compensation Area - Vegetation Monitoring



Fig-5h_S8



Fig-5i_S9