

Agreement No. HMWSD 1/2019 (EP)
Post-Construction Monitoring of Chinese
White Dolphin (Line-transect Vessel
Surveys) for the Hong Kong-Zhuhai-Macao
Bridge Hong Kong Link Road at West
Lantau Waters – Investigation

Monthly EM&A Report – August 2019

Highways Department

Ramboll Hong Kong Limited
21st Floor, BEA Harbour View Centre
56 Gloucester Road
Wan Chai, Hong Kong

**Attention: Mr. Manson Yeung – Independent
Environmental Checker**

Our Reference
GC/HY/jt/411565/L041

3/F International Trade
Tower
348 Kwun Tong Road
Kowloon
Hong Kong

T +852 2828 5757
F +852 2827 1823
mottmac.hk

**Agreement No. HMWSD 1/2019 (EP)
Post-Construction Monitoring of Chinese White Dolphin (Line-transect Vessel
Surveys) for the Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road at
West Lantau Waters – Investigation**

Monthly EM&A Report for August 2019

14 August 2020
By Email

Dear Sir,

In accordance with Condition 4.4 of the Environmental Permit (EP-352/2009/D) covering the captioned assignment, we are pleased to submit the certified Monthly EM&A Report for August 2019 for your verification.

Yours faithfully,
For Mott MacDonald Hong Kong Limited



Gary Chow
Environmental Team Leader

Encl.

cc.
Highways Department – Mr. Xavier Yam (By Email)

18 August 2020

By Fax (3188 6614) and By Post

Highways Department
Major Works Project Management Office (Special Duties)
4th Floor, Ho Man Tin Government Offices
88 Chung Hau Street, Ho Man Tin, Kowloon

Attention: Mr David Chan

Dear Sirs,

**Re: Agreement No. CE 48/2011 (EP)
Environmental Project Office for the
HZMB Hong Kong Link Road, HZMB Hong Kong Boundary Crossing Facilities,
and Tuen Mun-Chek Lap Kok Link – Investigation**

**Agreement No. HMWSD 1/2019 (EP)
Post-Construction Monitoring of Chinese White Dolphin (Line-transect Vessel
Surveys) for the Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road at West
Lantau Waters - Investigation
Monthly EM&A Report for August 2019**

Reference is made to the Environmental Team's submission of the Monthly EM&A Report for August 2019 certified by the ET Leader (ET's ref.: "GC/HY/jt/411565/L039" dated 14 August 2020) and provided to us via e-mail on 17 August 2020.

We are pleased to inform you that we have no adverse comments on the captioned submission. We write to verify the captioned submission in accordance with Condition 4.4 the Environmental Permit No. EP-352/2009/D.

Thank you very much for your attention and please feel free to contact the undersigned should you require further information.

Yours faithfully,
For and on behalf of
Ramboll Hong Kong Limited

Manson Yeung
Independent Environmental Checker
HZMB HKLR

c.c. HyD Attn.: Ms Karen Ho (By Fax: 3188 6614)
MMHK Attn.: Mr Gary Chow (By Fax: 2827 1823)

Internal: DY, YH, ENPO Site

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Executive Summary

This Monthly Environmental Monitoring and Audit (EM&A) Report is prepared for “Agreement No. HMWSD 1/2019 (EP) Post-Construction Monitoring of Chinese White Dolphin (Line-transect Vessel Surveys) for the Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road at West Lantau Waters – Investigation” (hereafter referred to as “the Assignment”) for the Highways Department of Hong Kong Special Administrative Region (HKSAR).

This is the Monthly EM&A Report for the 10th month of the post-construction phase of the Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road Project which summarises findings of the post-construction EM&A activities during the reporting period from 1 to 31 August 2019.

Environmental Monitoring and Audit Progress

A summary of the post-construction monitoring activities during the reporting period is listed as below:

- Chinese White Dolphin Monitoring (Line-transect Vessel Surveys): 12 and 28 August 2019
- Landscape establishment monitoring (bi-monthly): 1 August 2019

1 Introduction

1.1 Background of the Project

The Hong Kong-Zhuhai-Macao Bridge (HZMB) Hong Kong Link Road (HKLR) is a designated project under the Environmental Impact Assessment Ordinance (EIAO). The Environmental Impact Assessment (EIA) Report and Environmental Monitoring and Audit (EM&A) Manual (EIA Register No.: AEIAR-144/2009) for the project were approved by the Director of Environmental Protection in October 2009 and the Environmental Permit No. EP-352/2009 (EP) was issued in November 2009. The EP has been subject to several variations and the current one is EP No. EP-352/2009/D.

The HZMB HKLR was constructed under two works contracts namely Contract No. HY/2011/03 (HZMB HKLR – Section between Scenic Hill and Hong Kong Boundary Crossing Facilities (HKBCF)) and Contract No. HY/2011/09 (HZMB HKLR – Section between HKSAR Boundary and Scenic Hill). In accordance with the EP, the Contractors of Contract No. HY/2011/03 and Contract No. HY/2011/09 have separately employed their own Environmental Team (ET) and ET Leader to conduct construction phase monitoring of Chinese White Dolphin (CWD) in the North Lantau (NL) and West Lantau (WL) waters following the requirements specified in the EM&A Manual and the relevant contract specifications of the two contracts.

In accordance with Section 10.3 of the EM&A Manual, an ecological monitoring and audit programme is needed which will monitor potential impacts through construction and operation activities, and will verify the assessments which were made in the EIA report. In particular, the programme should include dolphin monitoring at NL and WL waters to be set up in order to verify the predictions of impacts and to ensure that there are no unforeseen impacts on the dolphin population during construction phase. Such dolphin monitoring should cover the pre-construction phase, the entire period of construction phase and after the completion of construction works (i.e. post-construction phase). In accordance with Section 14.2.1 of the EM&A Manual, mitigation measures for landscape and visual impacts implemented during construction phase should be checked every 2 months to ensure compliance with the intended aims throughout the one-year landscape establishment period in the post-construction phase.

The main objective of the current Assignment commissioned by the Highways Department (HyD) is to conduct Post-Construction Monitoring of CWD in WL waters in compliance with the requirements stipulated in the EM&A Manual and the EP for the HZMB HKLR Project. The post-construction monitoring of CWD should be conducted for two years upon the completion of all marine-based construction activities.

The marine-based construction activities for the Contract No. HY/2011/09 was completed in October 2018. Subsequently, 10 months of post-construction dolphin monitoring (from November 2018 to August 2019) had been carried out by the Contract, while the remaining 14 months of post-construction dolphin monitoring (from September 2019 to October 2020) will be completed under this Assignment. In August 2019, Mott MacDonald Hong Kong Limited was appointed by the HyD to undertake the Environmental Team (ET) services for this Assignment for the post-construction monitoring of CWD in WL waters for the HZMB HKLR Project.

This is the Post-construction Phase Monthly EM&A Report for the 10th month of the post-construction phase of the Project summarising the findings of the post-construction EM&A activities during the reporting period from 1 to 31 August 2019, and is submitted to fulfil Condition 4.4 of the EP.

1.2 Project Organisation

The project organisation and lines of communication with respect to the environmental management structure are shown in **Appendix A**. The key personnel contact names and numbers are summarised in **Table 1.1**.

Table 1.1: Contact Information of Key Personnel

| Party | Position | Name | Telephone | Fax |
|--|--|---------------|-----------|-----------|
| Permit Holder (HyD) | Engineer | Ms. Karen Ho | 2762 4979 | 3188 6614 |
| Environmental Project Office / Independent Environmental Checker (Ramboll Hong Kong Limited) | Environmental Project Office Leader | Mr. Y H Hui | 3465 2888 | 3465 2899 |
| | Independent Environmental Checker | Mr. Ray Yan | 3465 2836 | 3465 2899 |
| Environmental Team (Mott MacDonald Hong Kong Limited) | Environmental Team Leader | Mr. Gary Chow | 2828 5874 | 2827 1823 |

1.3 Environmental Status and Programme

As described in Section 1.1, the current Assignment is under the post-construction phase of the HZMB HKLR Project with all marine-based construction activities completed, thus there were no construction works involved.

The CWD monitoring programme covers all transect lines in WL survey area (refer to **Figure 1**) for twice per month throughout the entire post-construction monitoring period for two years. The current reporting period is the 10th month of the post-construction CWD monitoring.

The CWD monitoring and bi-monthly landscape establishment monitoring schedule involved in this reporting period is provided in **Appendix C**. Tentative schedule of the planned CWD and landscape monitoring works in the next reporting period is also provided in **Appendix C**.

Landscape establishment monitoring under Contract No. HY/2011/09 has been initiated since July 2019 with a monitoring programme for once in bi-monthly intervals throughout a monitoring period of one year. The 1st bi-monthly landscape establishment monitoring covering the reporting periods from July to August 2019 has been conducted in this reporting period. The landscape establishment monitoring checklist, soft landscape layout plans and photographic records are provided in **Appendix D**.

2 Chinese White Dolphin Monitoring

2.1 Monitoring Requirements

According to the requirement stated in the EM&A Manual, a CWD monitoring programme was set up to conduct surveys for twice per month adopting the line-transect vessel survey method and covering the following transect lines in the West Lantau (WL) survey area as in the AFCD long-term marine mammal monitoring programme.

The CWD monitoring works were undertaken by a dedicated survey team comprising qualified dolphin specialist and experienced CWD surveyors. The qualified dolphin specialist was approved by the AFCD and EPD.

2.2 Monitoring Locations

The location of the WL survey area and all transect lines are depicted in **Figure 1**. The co-ordinates of all transect lines are shown in **Table 2.1**.

Table 2.1: Co-ordinates of Transect Lines in WL Survey Area

| Line No. | | Easting | Northing | Line No. | | Easting | Northing |
|----------|-------------|---------|----------|----------|-------------|---------|----------|
| 1 | Start Point | 803750 | 818500 | 7 | Start Point | 800200 | 810450 |
| 1 | End Point | 803750 | 815500 | 7 | End Point | 801400 | 810450 |
| 2 | Start Point | 803750 | 815500 | 8 | Start Point | 801300 | 809450 |
| 2 | End Point | 802940 | 815500 | 8 | End Point | 799750 | 809450 |
| 3 | Start Point | 802550 | 814500 | 9 | Start Point | 799400 | 808450 |
| 3 | End Point | 803700 | 814500 | 9 | End Point | 801430 | 808450 |
| 4 | Start Point | 803120 | 813600 | 10 | Start Point | 801500 | 807450 |
| 4 | End Point | 801640 | 813600 | 10 | End Point | 799600 | 807450 |
| 5 | Start Point | 801100 | 812450 | 11 | Start Point | 800300 | 806500 |
| 5 | End Point | 802900 | 812450 | 11 | End Point | 801750 | 806500 |
| 6 | Start Point | 802400 | 811500 | 12 | Start Point | 801760 | 805450 |
| 6 | End Point | 800660 | 811500 | 12 | End Point | 800700 | 805450 |

2.3 Monitoring Methodology

2.3.1 Line-transect Vessel Survey

The following monitoring protocol is consistent and compatible with the baseline and construction phase dolphin monitoring methodology, which was also designed and adopted by the Hong Kong Cetacean Research Project (HKCRP) team for the HZMB monitoring since 2011.

The survey team used standard line-transect methods (Buckland et al. 2001) to conduct the systematic vessel surveys, and followed the same technique of data collection that has been adopted over the past two decades of marine mammal monitoring surveys in Hong Kong developed by HKCRP (see Hung 2018, 2019). For each monitoring vessel survey, a 15-m inboard vessel with an open upper deck (about 4.5 m above water surface) was used to make observations from the flying bridge area.

Two experienced observers (a data recorder and a primary observer) made up the on-effort survey team, and the survey vessel transited through different transect lines at a constant speed of 13-15 km per hour. The data recorder searched with unaided eyes and filled out the datasheets, while the primary observer searched for CWD continuously through 7 x 50 *Fujinon* marine binoculars. Both observers searched the sea ahead of the vessel, between 270° and 90° (in relation to the bow, which is defined as 0°). One to two additional experienced observers were available on the boat to work in shift (i.e. rotate every 30 minutes) in order to minimize fatigue of the survey team members. All observers are experienced in small cetacean survey techniques and identifying local cetacean species.

During on-effort survey periods, the survey team recorded effort data including time, position (latitude and longitude), weather conditions (Beaufort sea state and visibility), and distance travelled in each series (a continuous period of search effort) with the assistance of a handheld GPS (*Garmin eTrex*). Data including time, position and vessel speed were automatically and continuously logged by a handheld GPS throughout the entire survey for subsequent review.

When dolphins were sighted, the survey team would end the survey effort, and immediately record the initial sighting distance and angle of the dolphin group from the survey vessel, as well as the sighting time and position. Then, the research vessel would be diverted from its course to approach the animals for species identification, group size estimation, assessment of group composition, and behavioural observations. The perpendicular distance (PSD) of the dolphin group to the transect line would later be calculated from the initial sighting distance and angle.

Survey effort being conducted along the parallel transect lines that were perpendicular to the coastlines (as indicated in **Figure 1**) was labelled as “primary” survey effort, while the survey effort being conducted along the connecting lines between parallel lines was labelled as “secondary” survey effort. According to HKCRP long-term dolphin monitoring data, encounter rates of CWD deduced from effort and sighting data collected along primary and secondary lines have been similar in survey areas around Lantau Island. Therefore, both primary and secondary survey effort were presented as on-effort survey effort.

Encounter rates of CWD (number of on-effort sightings per 100 km of survey effort) were calculated in WL survey area in relation to the amount of survey effort conducted during each month of monitoring survey. Only data collected under Beaufort 3 or below condition would be used for encounter rate analysis. Dolphin encounter rates were calculated using primary survey effort alone, as well as the combined survey effort from both primary and secondary lines.

2.3.2 Photo-identification Work

When a group of CWD was sighted during the line-transect survey, the survey team would end effort and approach the group slowly from the side and behind to take photographs of them. Every attempt was made to photograph every dolphin in the group, and even photograph both sides of the dolphins whenever possible, since the colouration and markings on both sides may not be symmetrical.

At least one professional digital camera (Canon EOS 7D model) equipped with long telephoto lens (100-400 mm zoom) was available on board for researchers to take sharp, close-up photographs of dolphins as they surface. The images were shot at the highest available resolution and stored on Compact Flash memory cards for downloading onto a computer.

All digital images taken in the field were first examined, and those containing potentially identifiable individuals were sorted out. These photographs were then examined in greater detail, and were carefully compared to the existing CWD photo-identification catalogue maintained by HKCRP since 1995. CWDs can be identified by their natural markings, such as nicks, cuts, scars and deformities on their dorsal fin and body, and their unique spotting patterns can also be used as secondary identifying features (Jefferson 2000).

All photographs of each individual were then compiled and arranged in chronological order, with data including the date and location first identified (initial sighting), re-sightings, associated dolphins, distinctive features, and age classes entered into a computer database.

2.4 Monitoring Results

2.4.1 Line-transect Vessel Survey

Two sets of systematic line-transect vessel surveys were conducted on 12 and 28 August 2019, to cover all transect lines in WL survey area for twice. The survey routes of each survey day are presented in Figures 2 to 3 of **Appendix B**.

A total of 64.66 km of survey effort was collected, with 100% of total survey effort being conducted under favourable weather conditions (i.e. Beaufort Sea State 3 or below with good visibility), as detailed in **Appendix B**. Out of the 64.66 km of survey effort, the total survey effort conducted on primary lines was 44.22 km, while the effort on secondary lines was 20.44 km.

During the monitoring surveys conducted in August 2019, eight groups of 26 CWDs were sighted. All dolphin groups were sighted during on-effort search, while six of these on-effort sightings were made on primary lines (refer to sighting data presented in **Appendix B**). None of these dolphin groups was associated with operating fishing vessel.

Distribution of the dolphin sightings made in the reporting period is shown in Figure 4 of **Appendix B**. The sightings were scattered between Tai O Peninsula and Fan Lau, with slightly higher concentration near Tai O. Notably, as in the previous three months, no dolphin sighting was made near the HKLR alignment.

Encounter rates of CWD deduced from the survey effort and on-effort sighting data made under favourable conditions (Beaufort 3 or below) are shown in **Table 2.2** and **Table 2.3**.

Table 2.2: Dolphin encounter rates per set in WL survey area during the reporting period

| Survey Area | Survey Set | Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort) | Encounter rate (ANI) (no. of dolphins from all on-effort sightings per 100 km of survey effort) |
|------------------|---------------------------------------|--|--|
| | | Primary Lines Only | Primary Lines Only |
| West Lantau (WL) | Set 1: August 12 th , 2019 | 0.0 | 0.0 |
| | Set 2: August 28 th , 2019 | 27.0 | 94.6 |

Table 2.3: Overall dolphin encounter rates on primary lines only as well as both primary and secondary lines in WL survey area during the reporting period

| Survey Area | Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort) | | Encounter rate (ANI) (no. of dolphins from all on-effort sightings per 100 km of survey effort) | |
|------------------|--|----------------------------------|--|----------------------------------|
| | Primary Lines Only | Both Primary and Secondary Lines | Primary Lines Only | Both Primary and Secondary Lines |
| West Lantau (WL) | 13.6 | 12.4 | 47.5 | 40.2 |

The average group size of CWDs was 3.3 dolphins per group, which was similar to the averages in the previous months. Five of the eight dolphin sightings were consisted of small groups (1-3 animals per group), while three medium-sized groups (4-7 animals) were sighted during the reporting period.

2.4.2 Photo-identification Work

A total of 15 different individual CWDs were identified for 16 times during surveys in this reporting period, with details presented in **Appendix B**. Almost all individuals were re-sighted once during the monitoring, except one individual (WL268) being re-sighted twice. Notably, none of these individuals was accompanied with any young calf during their re-sightings in this month.

3 Landscape Establishment Monitoring

3.1 Monitoring Requirements

According to the requirement stated in the EM&A Manual, landscape establishment monitoring should be carried out every two months for checking of the planting works during the 1-year establishment period. Measures to mitigate landscape and visual impacts should be checked to ensure compliance with the intended aims of the measures. The monitoring was conducted by other parties for Contract No. HY/2011/09.

3.2 Monitoring Location

The monitoring areas locate along South Perimeter Road and Chek Lap Kok South Road, near Scenic Road and a small section of Airport Road and Kwo Lo Wan Road. Locations of the monitoring areas are shown in the Drawing no. HKLR9/MMH/DDA/AI/LS/00100 of **Appendix D**.

3.3 Monitoring Results

Landscape establishment monitoring covering July and August 2019 was conducted on 1 August 2019. The observations made during this reporting period are as follows:

- Some trees (*Phoenix roebelenii*) and shrubs (*Rhododendron pulchrum*) at Portion A were observed to be in poor health or dead. The Contractor was reminded to review the health of all trees and shrubs and replace them if confirmed dead.
- Weeds and unwanted plants were observed at the planter area at Airport Road. The Contractor was reminded to remove them to ensure the healthy establishment of the target species accordingly.
- Weeds and unwanted plants were observed at the planter area at the viaduct between P112 and P114. The Contractor was reminded to remove them and replant the approved species for groundcover according to the approved plan.

Based on the observations, the Contractor was reminded to review the health condition of the plants and remove weeds as necessary to meet the aim of the mitigation measures proposed during EIA stage, i.e. provide proper planting maintenance on the new planting areas to enhance the aesthetic degree.

The landscape establishment monitoring checklist, monitoring photos and locations of trees selected for monitoring are provided in **Appendix D**.

4 Conclusions

Post-construction EM&A works including the monitoring of CWD and landscape establishment were conducted in accordance with the EM&A Manual during the reporting period.

In this month of post-construction monitoring of CWD in WL waters, vessel surveys were conducted on 12 and 28 August 2019 covering all transect lines in WL survey area for twice. A total of 64.66 km of survey effort was collected under favourable weather conditions, with eight groups of 26 CWDs were sighted. All marine-based construction activities have been completed and as a result, no adverse impact on CWD was observed from the HZMB HKLR works.

Bi-monthly landscape establishment monitoring was conducted on 1 August 2019. Three observations were made regarding trees and shrubs found in poor health condition and weeds found in planter areas. The Contractor was reminded to review the health condition of all vegetation and replace them if confirmed dead, as well as to remove the weeds and replant approved species for groundcover accordingly to ensure healthy establishment of target species.

Figures

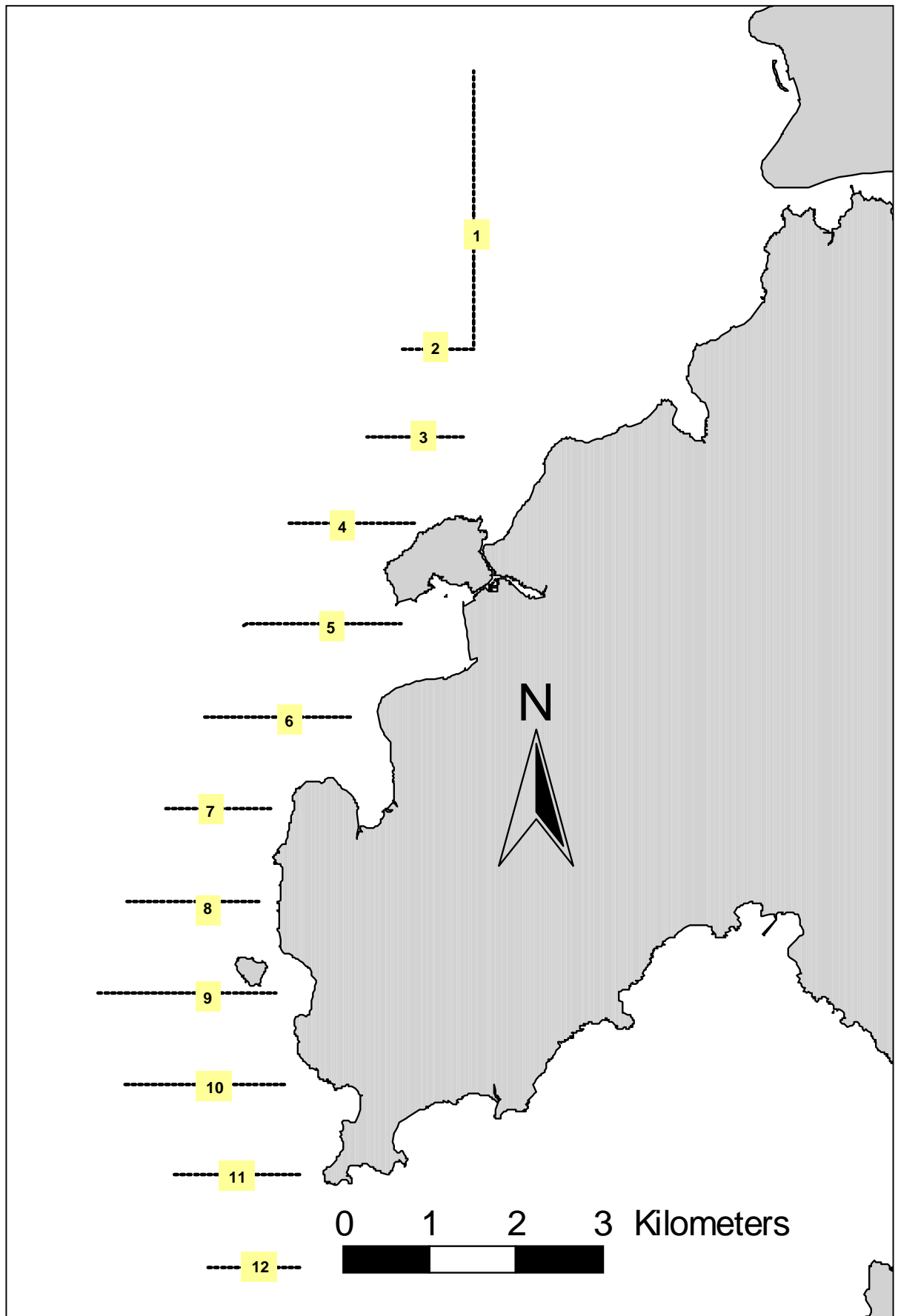
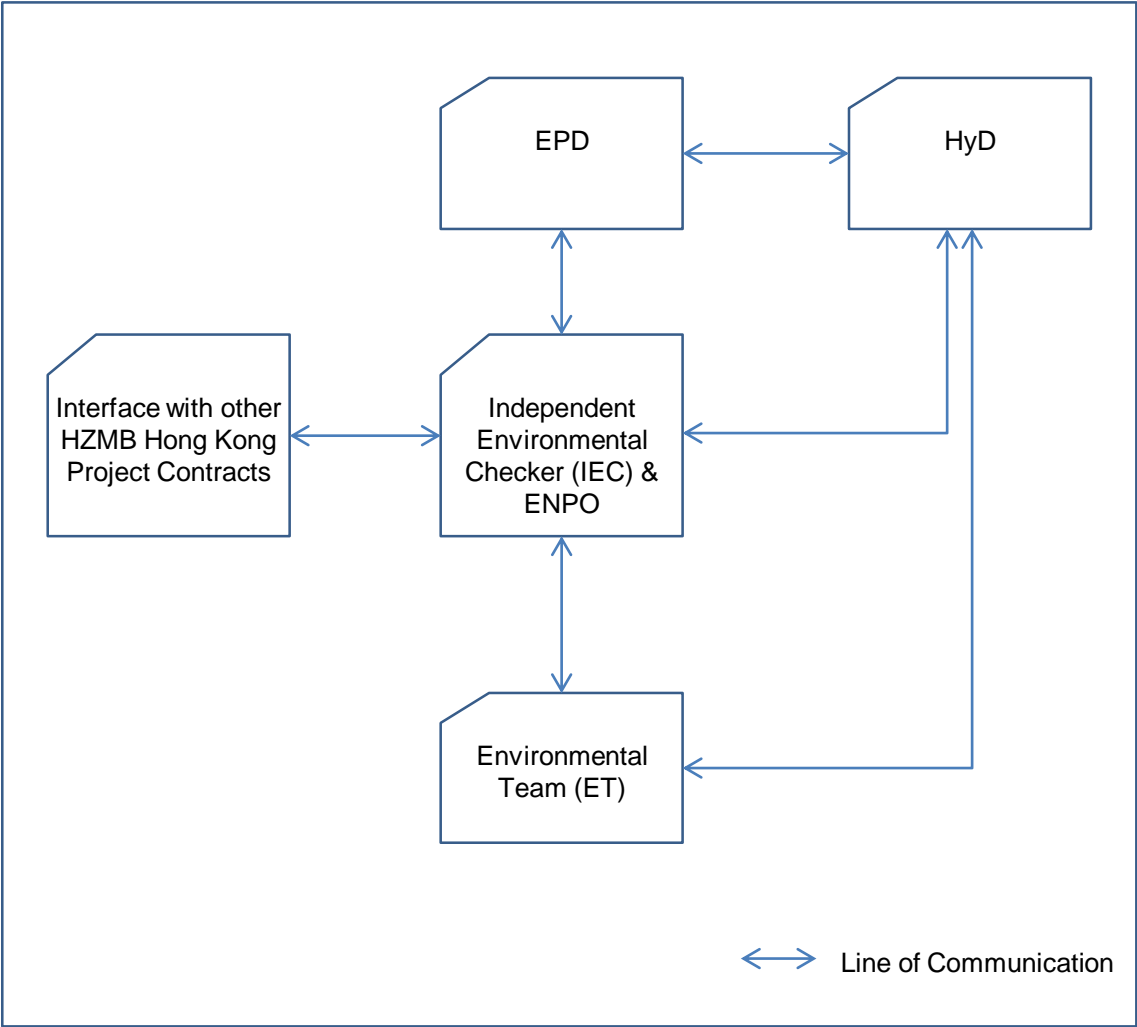


Figure 1. Transect Line Layout in West Lantau Survey Area

Appendix A Project Organisation for Environmental Works

Agreement No. HMWSD 1/2019 (EP)
Post-Construction Monitoring of Chinese White Dolphin (Line-transect Vessel Surveys) for
the Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road at West Lantau Waters –
Investigation

Project Organisation for Environmental Works



Appendix B Chinese White Dolphin Monitoring Results

30 September 2019

By Fax (3767 5922) and By Post

ARUP
Level 5, Festival Walk
80 Tat Chee Avenue
Kowloon Tong, Kowloon

Attention: Mr. Michael Chan / Mr. Mark Ching

Dear Sirs,

**Re: Agreement No. CE 48/2011 (EP)
Environmental Project Office for the
HZMB Hong Kong Link Road, HZMB Hong Kong Boundary Crossing Facilities, and
Tuen Mun-Chek Lap Kok Link – Investigation**

**Contract No. HY/2011/09 HZMB Hong Kong Link Road - Section between HKSAR
Boundary and Scenic Hill
Dolphin Monthly Monitoring – Monthly Progress Report (August 2019)**

Reference is made to the submission of Dolphin Monthly Monitoring – Monthly Progress Report (August 2019) dated 1 September 2019 certified by the ET Leader (ET's ref.: MA12014/DCVJV/it190916_Aug19 dated 16 September 2019) and provided to us via e-mail on 19 September 2019.

We are pleased to inform you that we have no adverse comments on the captioned submission.

Thank you very much for your attention and please feel free to contact the undersigned should you require further information.

Yours sincerely,
For and on behalf of
Ramboll Hong Kong Limited



Ray Yan
Independent Environmental Checker
HZMB HKLR

c.c.

| | | |
|--------|--------------------|---------------------|
| HyD | Mr. Cheng Pan | (By Fax: 3188 6614) |
| HyD | Mr. David Chan | (By Fax: 3188 6614) |
| ARUP | Mr. Eric Chan | (By Fax: 2268 3970) |
| Wellab | Dr. Priscilla Choy | (By Fax: 3107 1388) |
| DCVJV | Mr. C. S. Chu | (By Fax: 3121 6688) |

Internal: DY, YH, HW, ENPO Site

Q:\Projects\HYDZHMBEEM00\02_Proj_Mgt\02_Corr\HYDZHMBEEM00_0_7691L.19

Our Ref: MA12014/DCVJV/it190916_Aug19

Dragages-China Harbour-VSL Joint Venture

Site Office: Tung Chung Waterfront Road,
adjacent to Tung Chung New Development Pier,
New Territories, Hong Kong

By Mail
16 September 2019

Attn.: Mr. W K Poon (Project Director)

Dear Sir,


Contract No. HY/2011/09
Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill
- Dolphin Monthly Monitoring - Monthly Progress Report (August 2019)

I refer to the revised Dolphin Monthly Monitoring - Monthly Progress Report (August 2019) dated 1 September 2019 for the captioned Contract prepared by Samuel Hung of Hong Kong Cetacean Research Project (Document Ref. No.: HKLR9/DCV/ENV/06654/A) according to updated EM&A Manual, Section 10.7.1.

I hereby agree to certify the above document in accordance with the EP (No. EP-352/2009/D), Condition 1.9.

If you need any further information, please call me at 2151 2089 or 9161 7287.

Yours faithfully,
WELLAB Limited



Dr. Priscilla Choy
Environmental Team Leader



CONTRACT NO. HY/2011/09
 HONG KONG-ZHUHAI-MACAO BRIDGE
 HONG KONG LINK ROAD -
 SECTION BETWEEN HKSAR BOUNDARY
 AND SCENIC HILL

Contractor's
 Submission Form (CSF)

To: Mr. Michael CHAN (Supervising Officer's Representatives)

Title of Submission: Monthly Line-transect Survey Report (August 2019)

Submission Number: HKLR9 / CS / DCV / ENV / 06654 / 1

Document No.: HKLR9 / DCV / ENV / 06654 / A

SOR Ref. No. NA

SOR Document No. NA

Specification Reference: NA

Location of Works: NA



A42369

Description of Contents:

We enclose to submit the Chinese White Dolphin monthly line transect survey report (August 2019). The ET's certifying letter to this report was also attached.

ARUP SOR
 RECEIVED
 19 SEP 2019

Remarks: No. of copies : 1

18 SEP 2019

Submission Date:

Purpose of Submission : For Approval For Information For Record

| | | | |
|-------------|-----------------------|----------------|------------------|
| Signature : | | | |
| Name : | CHU Chung Sing | Keith Hui | W K Poon |
| Position : | Environmental Officer | Safety Manager | Project Director |
| Date : | 17-9-2019 | 17-9-2019 | 18-9-2019 |
| | Originated by | Reviewed by | Approved by |

Distribution:

cc: Arup - Mr. Eric Chan (Supervising Officer)



Contract No. HY/2011/09
Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section
between HKSAR Boundary and Scenic Hill


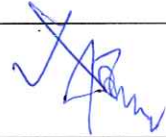
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| Project Code | | | | | Issuer Code | | | | | Doc. Code | | | | | Sequential Number | | | | | Rev. |

Document Title:

Monthly Line-transect Survey Report
(August 2019)

| | PREPARED BY: | INTERNAL REVIEW: | INTERNAL APPROVAL |
|-----------|---|---|---|
| COMPANY | HK Cetacean Research Project | DCVJV | DCVJV |
| NAME | Samuel HUNG | CHU Chung Sing | WK POON |
| POSITION | Director | Environmental Officer | Project Director |
| SIGNATURE |  |  |  |
| DATE | September 2019 | 17.9.2019 | 18.9.2019 |



Contract No. HY/2011/09
Hong Kong-Zhuhai-Macao Bridge
Hong Kong Link Road –
Section between HKSAR Boundary and Scenic Hill

Revision Status

| Rev. | Rev. Date | Sections | Amendment Source and/or Details |
|------|-----------|----------|---------------------------------|
| A | - | - | The First submission |

Contract No. HY/2011/09

**Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road –
Section between HKSAR Boundary and Scenic Hill Dolphin
Monthly Monitoring**

Monthly Progress Report (August 2019)

Submitted by

Samuel K.Y. Hung, Ph.D., Hong Kong Cetacean Research Project

1 September 2019

1. Introduction

- 1.1. The Hong Kong Link Road (HKLR) serves to connect the Hong Kong-Zhuhai-Macao Bridge (HZMB) Main Bridge at the Hong Kong Special Administrative Region (HKSAR) Boundary and the HZMB Hong Kong Boundary Crossing Facilities (HKBCF) located at the northeastern waters of the Hong Kong International Airport.
- 1.2. According to the updated Environmental Monitoring and Audit (EM&A) Manual (for HKLR), monthly line-transect vessel surveys for Chinese White Dolphin should be conducted to cover the West Lantau survey area as in AFCD annual marine mammal monitoring programme.
- 1.3. Since November 2012, Hong Kong Cetacean Research Project (HKCRP) has been commissioned by Dragages – China Harbour – VSL JV to conduct this dolphin monitoring study in order to collect data on Chinese White Dolphins in West Lantau (WL) survey area, and to analyze the collected survey data to monitor distribution, encounter rate, abundance, activities and occurrence of dolphin calves. Photo-identification will also be collected from individual Chinese White Dolphins to examine their individual range patterns and core area use.
- 1.4. The present report summarizes the results of the survey findings during the monitoring month of August 2019.

2. Monitoring Methodology

2.1. Vessel-based Line-transect Survey

2.1.1. According to the requirement of the updated EM&A manual, dolphin monitoring programme should cover all transect lines in WL survey area (see Figure 1) twice per month. The co-ordinates of all transect lines are shown in Table 1.

Table 1. Co-ordinates of transect lines in WL survey area

| Line No. | Easting | Northing | | Line No. | Easting | Northing | |
|----------|-------------|----------|--------|----------|-------------|----------|--------|
| 1 | Start Point | 803750 | 818500 | 7 | Start Point | 800200 | 810450 |
| 1 | End Point | 803750 | 815500 | 7 | End Point | 801400 | 810450 |
| 2 | Start Point | 803750 | 815500 | 8 | Start Point | 801300 | 809450 |
| 2 | End Point | 802940 | 815500 | 8 | End Point | 799750 | 809450 |
| 3 | Start Point | 802550 | 814500 | 9 | Start Point | 799400 | 808450 |
| 3 | End Point | 803700 | 814500 | 9 | End Point | 801430 | 808450 |
| 4 | Start Point | 803120 | 813600 | 10 | Start Point | 801500 | 807450 |
| 4 | End Point | 801640 | 813600 | 10 | End Point | 799600 | 807450 |
| 5 | Start Point | 801100 | 812450 | 11 | Start Point | 800300 | 806500 |
| 5 | End Point | 802900 | 812450 | 11 | End Point | 801750 | 806500 |
| 6 | Start Point | 802400 | 811500 | 12 | Start Point | 801760 | 805450 |
| 6 | End Point | 800660 | 811500 | 12 | End Point | 800700 | 805450 |

2.1.2. The survey team used standard line-transect methods (Buckland et al. 2001) to conduct the systematic vessel surveys, and followed the same technique of data collection that has been adopted over the last 20 years of marine mammal monitoring surveys in Hong Kong developed by HKCRP (see Hung 2017). For each monitoring vessel survey, a 15-m inboard vessel with an open upper deck (about 4.5 m above water surface) was used to make observations from the flying bridge area.

2.1.3. Two experienced observers (a data recorder and a primary observer) made up

the on-effort survey team, and the survey vessel transited different transect lines at a constant speed of 13-15 km per hour. The data recorder searched with unaided eyes and filled out the datasheets, while the primary observer searched for dolphins and porpoises continuously through 7 x 50 *Fujinon* marine binoculars. Both observers searched the sea ahead of the vessel, between 270° and 90° (in relation to the bow, which is defined as 0°). One to two additional experienced observers were available on the boat to work in shift (i.e. rotate every 30 minutes) in order to minimize fatigue of the survey team members. All observers were experienced in small cetacean survey techniques and identifying local cetacean species.

- 2.1.4. During on-effort survey periods, the survey team recorded effort data including time, position (latitude and longitude), weather conditions (Beaufort sea state and visibility), and distance traveled in each series (a continuous period of search effort) with the assistance of a handheld GPS.
- 2.1.5. Data including time, position and vessel speed were also automatically and continuously logged by handheld GPS throughout the entire survey for subsequent review.
- 2.1.6. When dolphins were sighted, the survey team would end the survey effort, and immediately record the initial sighting distance and angle of the dolphin group from the survey vessel, as well as the sighting time and position. Then the research vessel was diverted from its course to approach the animals for species identification, group size estimation, assessment of group composition, and behavioural observations. The perpendicular distance (PSD) of the dolphin group to the transect line was later calculated from the initial sighting distance and angle.
- 2.1.7. Survey effort being conducted along the parallel transect lines that were perpendicular to the coastlines (as indicated in Figure 1) was labeled as “primary” survey effort, while the survey effort being conducted along the connecting lines between parallel lines was labeled as “secondary” survey effort. According to HKCRP long-term dolphin monitoring data, encounter rates of Chinese White Dolphins deduced from effort and sighting data collected along primary and secondary lines were similar in survey areas around Lantau Island. Therefore, primary and secondary survey effort were both presented as on-effort survey effort in this report.

2.1.8. Encounter rates of Chinese White Dolphins (number of on-effort sightings per 100 km of survey effort) were calculated in WL survey area in relation to the amount of survey effort conducted during each month of monitoring survey. Only data collected under Beaufort 3 or below condition would be used for encounter rate analysis. Dolphin encounter rates were calculated using primary survey effort alone, as well as the combined survey effort from both primary and secondary lines.

2.2. *Photo-identification Work*

2.2.1. When a group of Chinese White Dolphins were sighted during the line-transect survey, the survey team would end effort and approach the group slowly from the side and behind to take photographs of them. Every attempt was made to photograph every dolphin in the group, and even photograph both sides of the dolphins, since the colouration and markings on both sides may not be symmetrical.

2.2.2. A professional digital camera (*Canon EOS 7D Mark II* model) equipped with long telephoto lenses (100-400 mm zoom) were available on board for researchers to take sharp, close-up photographs of dolphins as they surfaced. The images were shot at the highest available resolution and stored on Compact Flash memory cards for downloading onto a computer.

2.2.3. All digital images taken in the field were first examined, and those containing potentially identifiable individuals were sorted out. These photographs would then be examined in greater detail, and were carefully compared to the existing Chinese White Dolphin photo-identification catalogue maintained by HKCRP since 1995.

2.2.4. Chinese White Dolphins can be identified by their natural markings, such as nicks, cuts, scars and deformities on their dorsal fin and body, and their unique spotting patterns were also used as secondary identifying features (Jefferson 2000).

2.2.5. All photographs of each individual were then compiled and arranged in chronological order, with data including the date and location first identified (initial sighting), re-sightings, associated dolphins, distinctive features, and age classes entered into a computer database.

3. Monitoring Results

3.1. Vessel-based Line-transect Survey

- 3.1.1. During the monitoring month of August 2019, two complete sets of systematic line-transect vessel surveys were conducted on the 12th and 28th, to cover all transect lines in WL survey area twice. The survey routes of each survey day are presented in Figures 2-3.
- 3.1.2. From these surveys, a total of 64.66 km of survey effort was collected, with 100% of the total survey effort being conducted under favourable weather conditions (i.e. Beaufort Sea State 3 or below with good visibility) (Appendix I). The total survey effort conducted on primary lines (i.e. the horizontal lines perpendicular to the coastlines) was 44.22 km, while the effort on secondary lines (i.e. the lines connecting the primary lines) was 20.44 km.
- 3.1.3. During the monitoring surveys conducted in August 2019, eight groups of 26 Chinese White Dolphins were sighted. All eight dolphin groups were sighted during on-effort search, while six of these on-effort sightings were made on primary lines (Appendix II). None of these dolphin groups was associated with operating fishing vessel during the monitoring month.
- 3.1.4. Distribution of the dolphin sightings made during August's surveys is shown in Figure 4. These sightings were scattered between Tai O Peninsula and Fan Lau with slightly higher concentration near Tai O (Figure 4). Furthermore, as in the previous three monitoring months, dolphins have completely avoided the northern portion of the WL survey area, with no sighting made near the HKLR09 alignment at all (Figure 4).
- 3.1.5. During the August's surveys, encounter rates of Chinese White Dolphins deduced from the survey effort and on-effort sighting data made under favourable conditions (Beaufort 3 or below) are shown in Tables 2 & 3.

Table 2. Dolphin encounter rates (sightings per 100 km of survey effort) per set during August's surveys in West Lantau (WL)

| | | Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort) | Encounter rate (ANI) (no. of dolphins from all on-effort sightings per 100 km of survey effort) |
|------------------------|--------------------------------|--|--|
| | | Primary Lines Only | Primary Lines Only |
| West Lantau | Set 1: August 12 th | 0.0 | 0.0 |
| | Set 2: August 28 th | 27.0 | 94.6 |

Table 3. Overall dolphin encounter rates (sightings per 100 km of survey effort) in August's surveys on primary lines only as well as both primary lines and secondary lines in West Lantau (WL)

| | Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort) | | Encounter rate (ANI) (no. of dolphins from all on-effort sightings per 100 km of survey effort) | |
|--------------------|---|-------------------------------------|---|-------------------------------------|
| | Primary Lines Only | Both Primary and Secondary Lines | Primary Lines Only | Both Primary and Secondary Lines |
| West Lantau | 13.6 | 12.4 | 47.5 | 40.2 |

3.1.6. The average group size of Chinese White Dolphins sighted during August's surveys was 3.3 individuals per group, which was similar to the averages in previous months of HKLR09 monitoring surveys. Five of the eight dolphin sightings were consisted of small groups of 1-3 animals per group, but there were also three medium-sized groups with 4-7 animals being sighted during this monitoring month (Appendix II).

3.2. Photo-identification Work

3.2.1. Fifteen different individual Chinese White Dolphins were identified 16 times during the August's surveys (Appendices III and IV). Almost all individuals were only re-sighted once during the monitoring month, with the exception of one individual (WL268) being re-sighted twice (Appendix III).

3.2.2. Notably, none of these individuals was accompanied with any young calf during their re-sightings in this month's monitoring surveys.

3.3. Conclusion

3.3.1. In this month of dolphin monitoring, marine construction activities have been completed under this contract, and as are result, no adverse impact on Chinese White Dolphins was observed.

4. References

- Buckland, S. T., Anderson, D. R., Burnham, K. P., Laake, J. L., Borchers, D. L., and Thomas, L. 2001. Introduction to distance sampling: estimating abundance of biological populations. Oxford University Press, London.

- Hung, S. K. 2017. Monitoring of marine mammals in Hong Kong waters: final report (2016-17). An unpublished report submitted to the Agriculture, Fisheries and Conservation Department of Hong Kong SAR Government, 162 pp.

- Jefferson, T. A. 2000. Population biology of the Indo-Pacific hump-backed dolphin in Hong Kong waters. Wildlife Monographs 144:1-65.

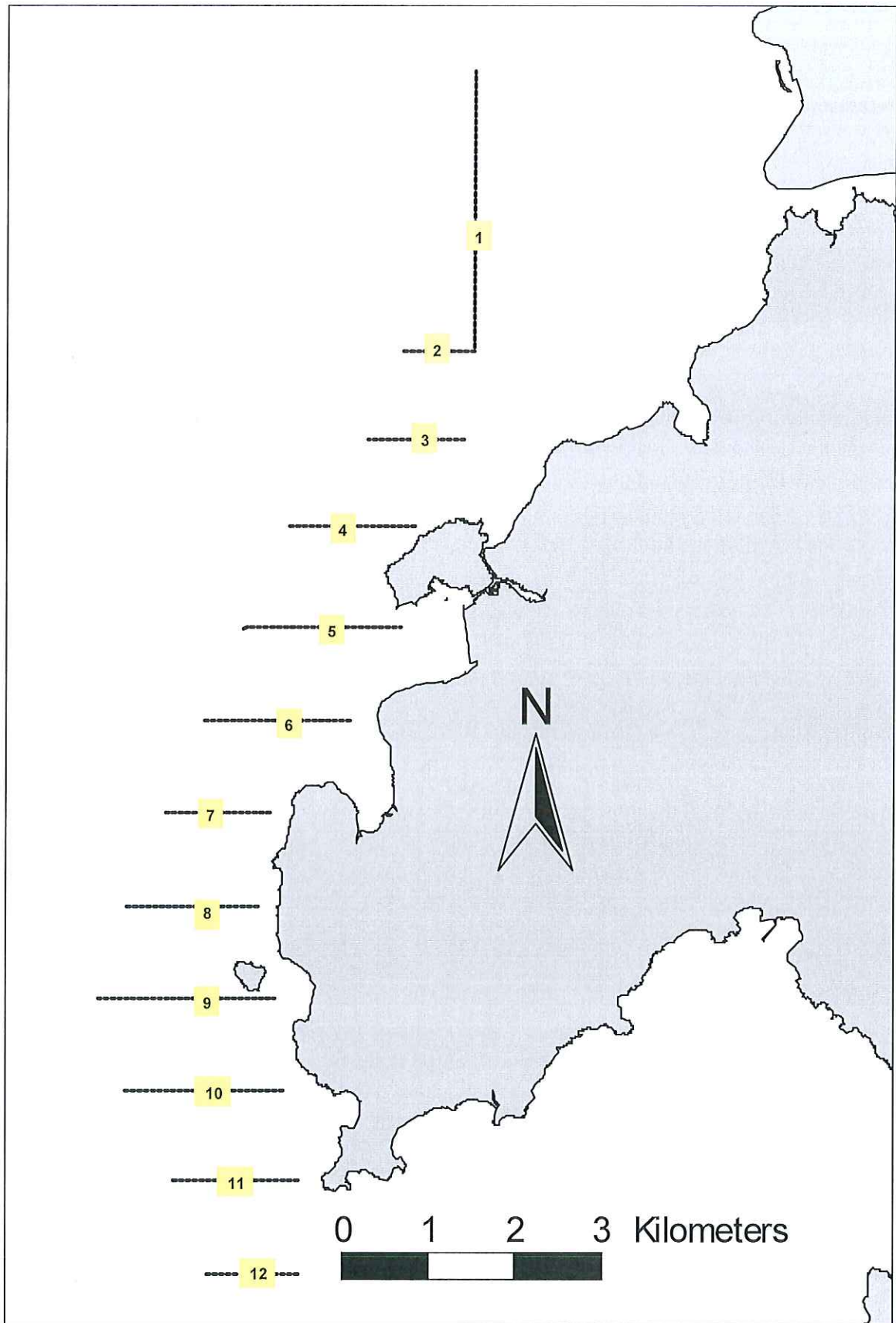


Figure 1. Transect Line Layout in West Lantau Survey Areas

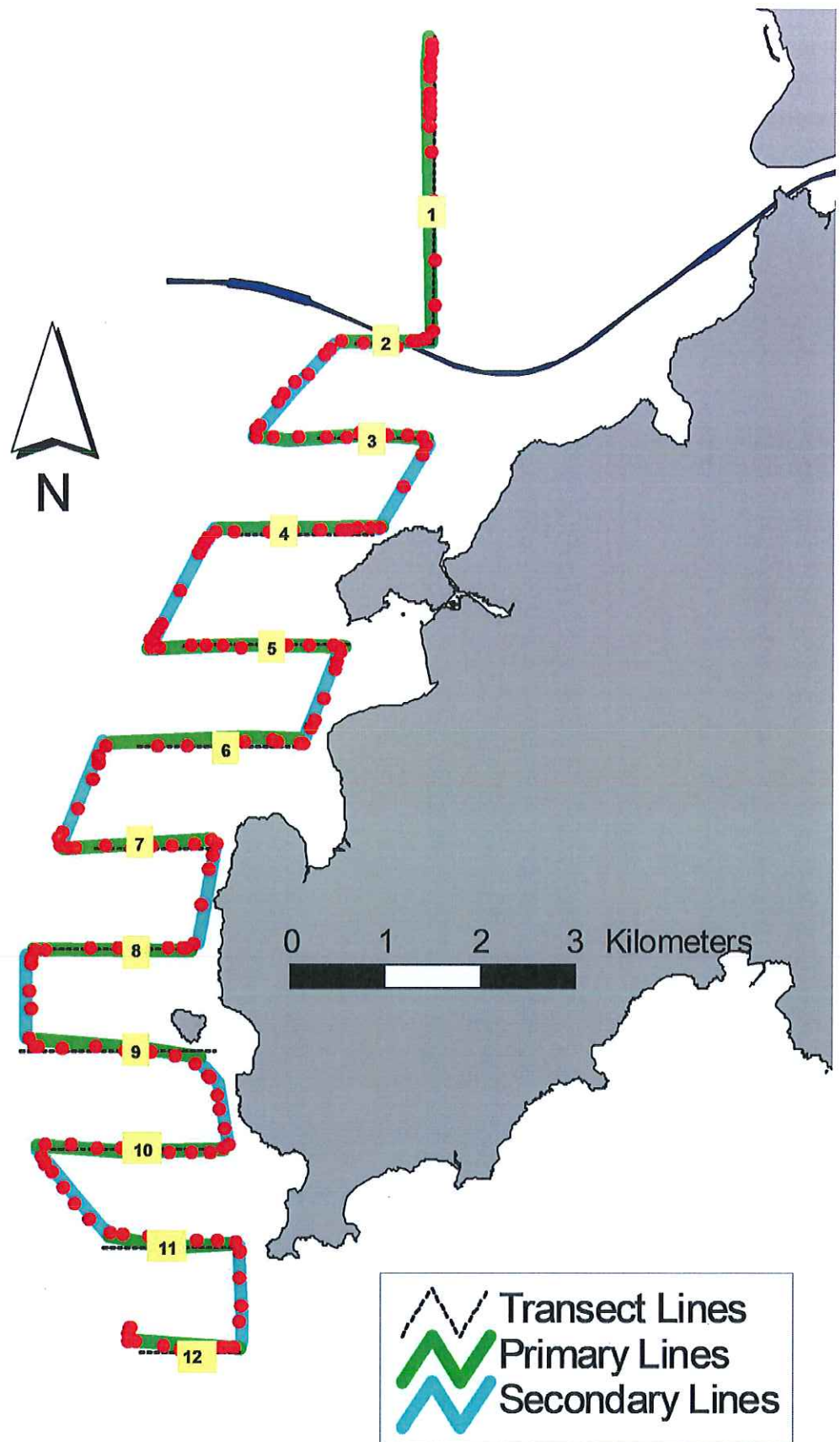


Figure 2. Survey Route on August 12th, 2019 (note: red dots represent the tracked positions of survey boat logged continuously by GPS throughout the course of the survey)

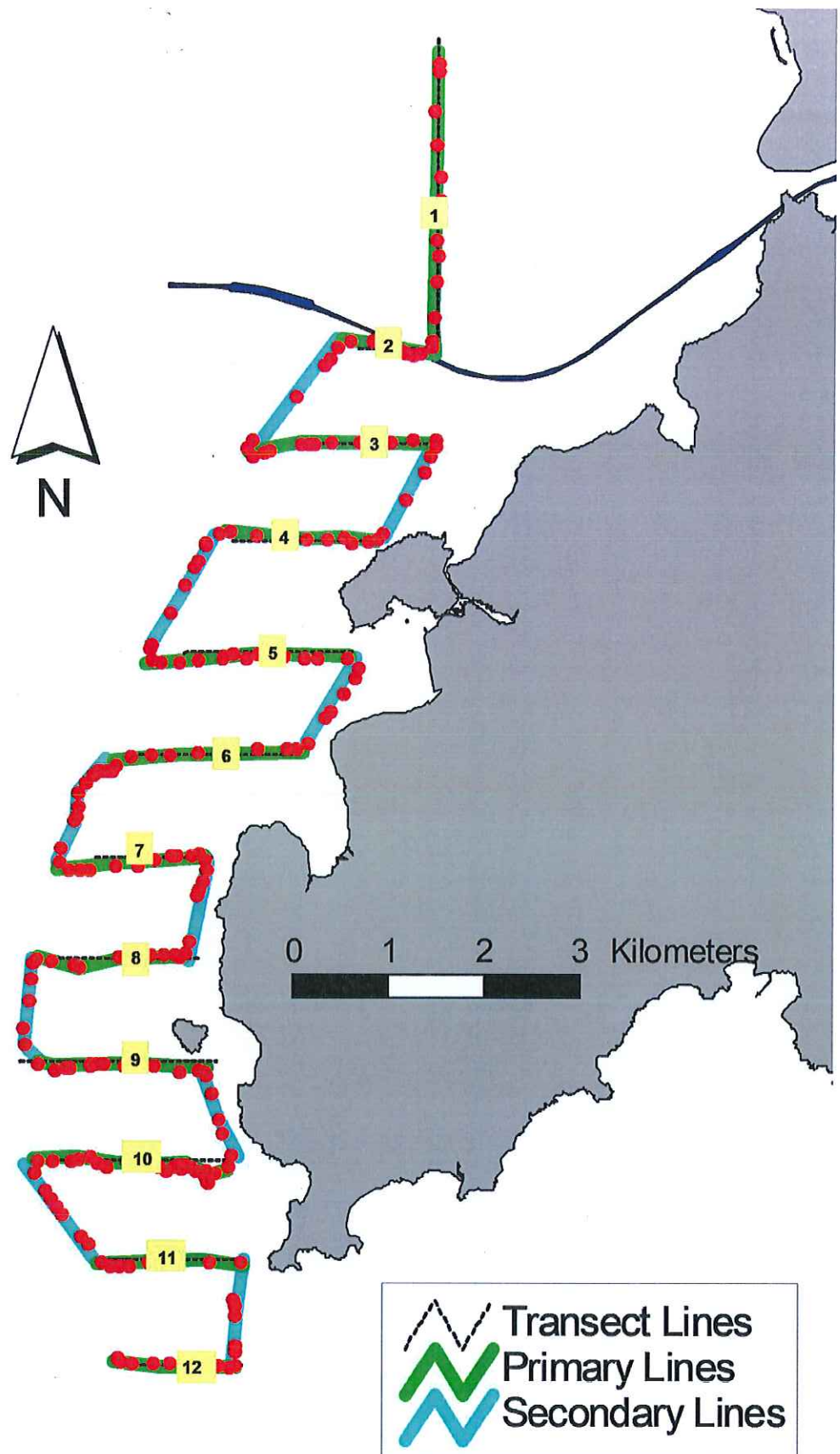


Figure 3. Survey Route on August 28th, 2019 (note: red dots represent the tracked positions of survey boat logged continuously by GPS throughout the course of the survey)

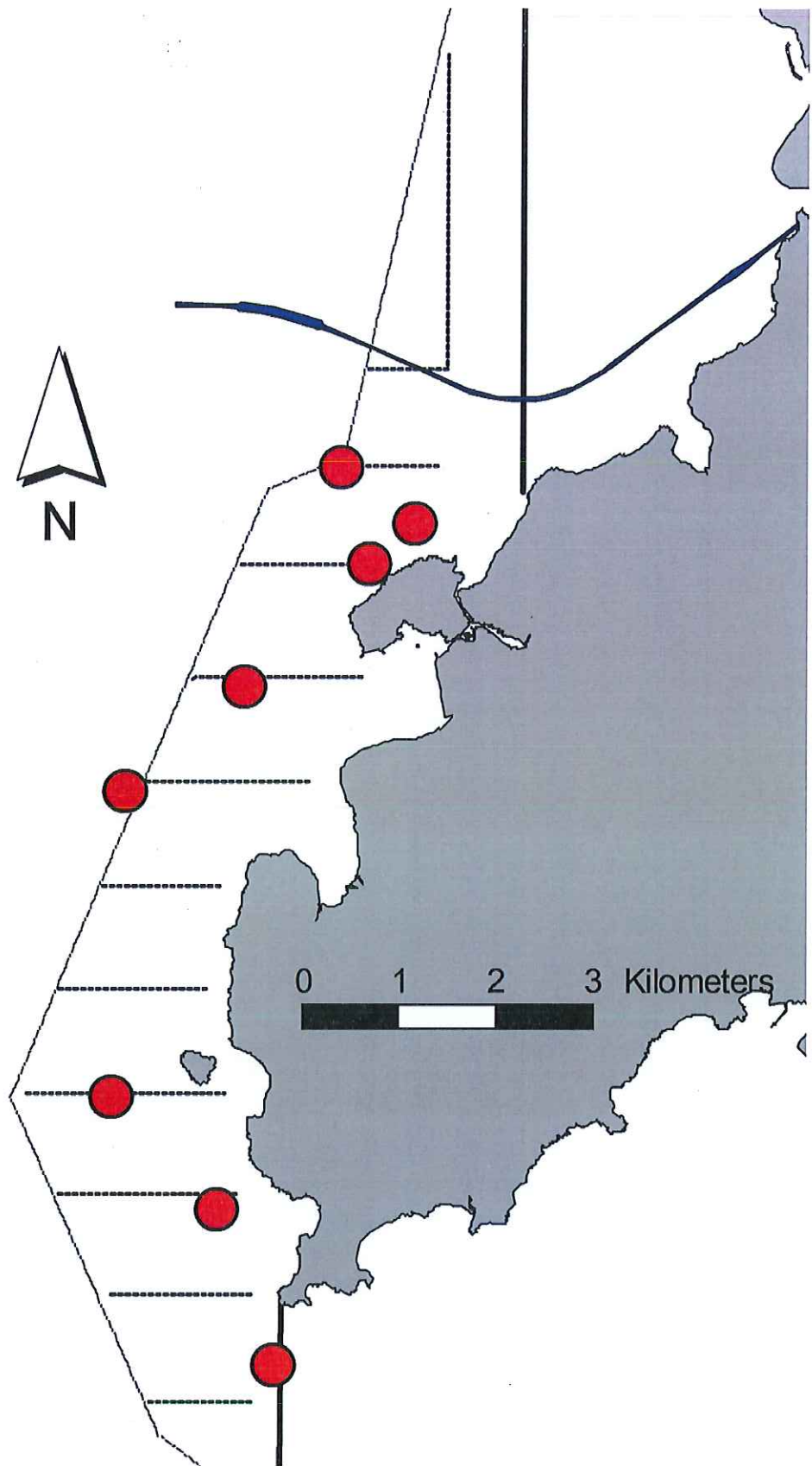


Figure 4. Distribution of Chinese White Dolphin Sightings during August 2019 HKLR09 Monitoring Surveys

Appendix I. HKLR09 Survey Effort Database (August 2019)

(Abbreviations: BEAU = Beaufort Sea State; P = Primary Line Effort; S = Secondary Line Effort)

| DATE | AREA | BEAU | EFFORT | SEASON | VESSEL | TYPE | P/S |
|-----------|----------|------|--------|--------|---------------|------|-----|
| 12-Aug-19 | W LANTAU | 2 | 2.39 | SUMMER | STANDARD36826 | HKLR | P |
| 12-Aug-19 | W LANTAU | 3 | 19.63 | SUMMER | STANDARD36826 | HKLR | P |
| 12-Aug-19 | W LANTAU | 2 | 2.71 | SUMMER | STANDARD36826 | HKLR | S |
| 12-Aug-19 | W LANTAU | 3 | 7.20 | SUMMER | STANDARD36826 | HKLR | S |
| 28-Aug-19 | W LANTAU | 2 | 18.62 | SUMMER | STANDARD36826 | HKLR | P |
| 28-Aug-19 | W LANTAU | 3 | 3.58 | SUMMER | STANDARD36826 | HKLR | P |
| 28-Aug-19 | W LANTAU | 2 | 8.85 | SUMMER | STANDARD36826 | HKLR | S |
| 28-Aug-19 | W LANTAU | 3 | 1.68 | SUMMER | STANDARD36826 | HKLR | S |

Appendix II. HKLR09 Chinese White Dolphin Sighting Database (August 2019)

(Abberviations: STG# = Sighting Number; HRD SZ = Dolphin Herd Size; BEAU = Beaufort Sea State; PSD = Perpendicular Distance; ND = Not Determined; BOAT ASSOC. = Fishing Boat Association; P/S: Sighting Made on Primary/Secondary Lines)

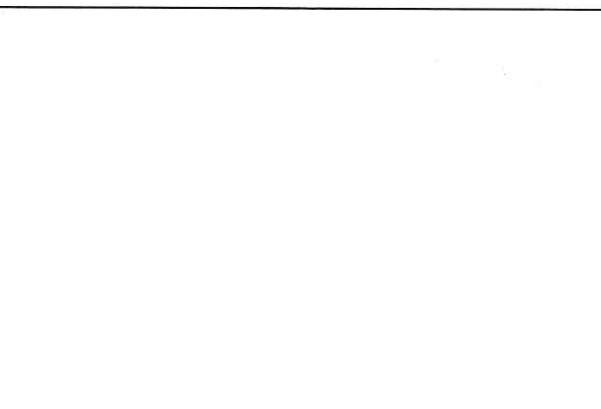
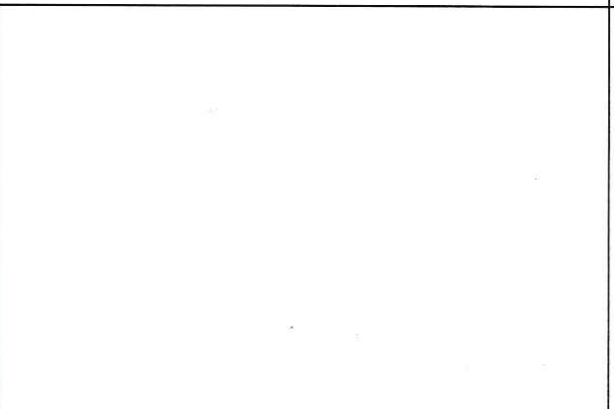
| DATE | STG # | TIME | HRD SZ | AREA | BEAU | PSD | EFFORT | TYPE | NORTHING | EASTING | SEASON | BOAT ASSOC. | P/S |
|-----------|-------|------|--------|----------|------|-----|--------|------|----------|---------|--------|-------------|-----|
| 12-Aug-19 | 1 | 1048 | 4 | W LANTAU | 3 | 90 | ON | HKLR | 813955 | 803401 | SUMMER | NONE | S |
| 28-Aug-19 | 1 | 1041 | 1 | W LANTAU | 2 | 163 | ON | HKLR | 814488 | 802639 | SUMMER | NONE | P |
| 28-Aug-19 | 2 | 1101 | 2 | W LANTAU | 2 | 293 | ON | HKLR | 813568 | 802936 | SUMMER | NONE | P |
| 28-Aug-19 | 3 | 1126 | 7 | W LANTAU | 2 | 95 | ON | HKLR | 812364 | 801655 | SUMMER | NONE | P |
| 28-Aug-19 | 4 | 1200 | 1 | W LANTAU | 3 | 200 | ON | HKLR | 811359 | 800426 | SUMMER | NONE | P |
| 28-Aug-19 | 5 | 1233 | 7 | W LANTAU | 2 | 124 | ON | HKLR | 808392 | 800275 | SUMMER | NONE | P |
| 28-Aug-19 | 6 | 1255 | 3 | W LANTAU | 2 | 26 | ON | HKLR | 807293 | 801376 | SUMMER | NONE | P |
| 28-Aug-19 | 7 | 1321 | 1 | W LANTAU | 2 | 37 | ON | HKLR | 805797 | 801960 | SUMMER | NONE | S |

Appendix III. Individual dolphins identified during HKLR09 monitoring surveys in August 2019

| ID# | DATE | STG# | AREA |
|------------|-------------|-------------|-------------|
| NL33 | 28/08/19 | 6 | W LANTAU |
| NL123 | 28/08/19 | 2 | W LANTAU |
| NL259 | 28/08/19 | 2 | W LANTAU |
| NL311 | 12/08/19 | 1 | W LANTAU |
| SL42 | 28/08/19 | 3 | W LANTAU |
| WL61 | 28/08/19 | 7 | W LANTAU |
| WL72 | 28/08/19 | 5 | W LANTAU |
| WL91 | 28/08/19 | 3 | W LANTAU |
| WL124 | 12/08/19 | 1 | W LANTAU |
| WL145 | 28/08/19 | 6 | W LANTAU |
| WL179 | 28/08/19 | 3 | W LANTAU |
| WL216 | 12/08/19 | 1 | W LANTAU |
| WL227 | 28/08/19 | 3 | W LANTAU |
| WL233 | 28/08/19 | 5 | W LANTAU |
| WL268 | 28/08/19 | 1 | W LANTAU |
| | 28/08/19 | 3 | W LANTAU |



Appendix IV. Photographs of Identified Individual Dolphins in August 2019 (HKLR09)



Appendix IV (cont'd).

Appendix C Monitoring Schedule

2019

AUGUST

Monitoring Schedule

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--|--------|---------|--|---|--------|----------|
| 28 | 29 | 30 | 31 | 01 Bi-monthly landscape establishment monitoring | 02 | 03 |
| 04 | 05 | 06 | 07 | 08 | 09 | 10 |
| 11 Post-construction phase CWD monitoring (vessel survey) | 12 | 13 | 14 | 15 | 16 | 17 |
| 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 Post-construction phase CWD monitoring (vessel survey) | 29 | 30 | 31 |

Agreement No. HMWSD 1/2019 (EP) Post-Construction Monitoring of Chinese White Dolphin (Line-transect Vessel Surveys) for the Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road at West Lantau Waters – Investigation

2019

SEPTEMBER

Monitoring Schedule

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--------|---|---------|--|--|--------|----------|
| 01 | 02 | 03 | 04 | 05 | 06 | 07 |
| 08 | 09 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| | | | | Post-construction phase CWD monitoring (vessel survey) | | |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| | Bi-monthly landscape establishment monitoring (for HKLR Contract No. HY/2011/09 by other parties) | | Post-construction phase CWD monitoring (vessel survey) | | | |
| 29 | 30 | 01 | 02 | 03 | 04 | 05 |

Appendix D Landscape Establishment Monitoring Checklist

Contract HY/2011/09



Hong Kong-Zhuhai-Macao Bridge

Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Site Inspection Record Summary

| | |
|----------------------------|--------------------------|
| Checklist Reference Number | 190801 |
| Date | 1 August 2019 (Thursday) |
| Time | 14:30-16:30 |

| Ref. No. | Non-Compliance | Related Item No. |
|------------|--|------------------|
| - | None identified | - |
| Ref. No. | Remarks/Observations | Related Item No. |
| | A. Landscape and Visual | |
| 190801-O01 | <ul style="list-style-type: none">Some trees (<i>Phoenix roebelenii</i>) and shrubs (<i>Rhododendron pulchrum</i>) at Portion A were observed to be in poor health or dead. The Contractor was reminded to review health of all trees and shrubs and replace them if confirmed dead. | C1.2a |
| 190801-O02 | <ul style="list-style-type: none">Weeds and unwanted plants were observed at the planter area at Airport Road. The Contractor was reminded to remove them to ensure the healthy establishment of the target species accordingly. | C4.5 |
| 190801-O03 | <ul style="list-style-type: none">Weeds and unwanted plants were observed at the planter area at the viaduct between P112 and P114. The Contractor was reminded to remove them and replant the approved species for groundcover accordingly to the approved plan. | C5.1, 5.5 |
| | | |
| | B. Others | |
| | Follow-up on previous audit session (ref no. 190529), follow up action is needed to be reviewed for item 190529-R01 which is renamed as 190801-O03. | |

| | Name | Signature | Date |
|-------------|--------------------|---|---------------|
| Recorded by | Ivy Tam |  | 1 August 2019 |
| Checked by | Dr. Priscilla Choy |  | 1 August 2019 |

Environmental Monitoring and Audit
 Landscape and Visual Audit Checklist (Establishment Works)
 Contract No. HY/2011/09
 Hong Kong-Zhuhai-Macao Bridge
 Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill

Audit Ref. No. 190801

| | |
|--|---|
| Contract <u>Contract HY/2011/09</u> <u>Hong Kong-Zhuhai-Macao Bridge</u> <u>Hong Kong Link Road-Section between</u> <u>HKSAR Boundary and Scenic Hill</u> | Env. Team <u>Wellfab Limited</u> SO Rep. <u>ARUP</u> ENPO / IEC <u>Ramboll Hong Kong Ltd.</u> |
| Inspected By ET Auditor: <u>Tyler</u> CTO / SLOW / IOW / Engineer: ENPO / IEC: | Inspection Date <u>1 August 2019</u> Time Period <u>14:30 ~ 16:30</u> |

Part A Weather

Condition Sunny Fine Overcast Drizzle Rain Storm Hazy

Temperature 27 °C

Humidity High (RH>90%) Moderate (90%>RH>50%) Low (RH<50%)

Wind Calm Light Breeze Strong

Part B Area of Inspection

Portion A / Portion C / Kwo Lo Wan Road / Airport Road / Viaduct between P112 and P114

| Part C Landscape & Visual | N/A or not observed | Yes | No | Follow-up | N/C | Remarks |
|--|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|---------|
| 1. Portion A | | | | | | |
| 1.1 Are the planting works complied with the approved Landscape and Visual Plan? (e.g. size, location and plant species) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 1.2a Are the plants' health conditions satisfactory? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ① |
| 1.2b If not, are replacement planting carried out immediately? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 1.3 Are all plants properly trimmed regularly to maintain/enhance the aesthetic value? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 1.4 Are loose/unfirmed plants as a result of wind rock or other causes avoided? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 1.5 Are all grassed and planted area kept free from weeds/unwanted plants? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 1.6 Is compaction of the soil avoided for the plants? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 1.7 Are litter/ unwanted material removed within the planting area? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 1.8 Is mulch that disturbed by replacement planting, weeding or watering made good? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 1.9 Are wounds/mechanical injuries avoided on tree trunk? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 1.10 Are leaning of trees avoided? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 1.11 Are dead/detached branches avoided? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 1.12 Are decay/cavity avoided on tree trunks? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 1.13 Are all trees kept free from pest, disease or fungal infection? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 1.14 Are trees were topped or pruned (if any) properly? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 1.15 Are there enough area for growth and development of tree roots? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 1.16a Is exposure of tree roots avoided? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 1.16b If not, were broken off or rotting of roots avoided? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

Environmental Monitoring and Audit
 Landscape and Visual Audit Checklist (Establishment Works)
 Contract No. HY/2011/09
 Hong Kong-Zhuhai-Macao Bridge
 Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill

| | N/A or not observed | Yes | No | Follow-up | N/C | Remarks |
|--|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|---------|
| 2. Portion C | | | | | | |
| 2.1 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are the planting works complied with the approved Landscape and Visual Plan? (e.g. size, location and plant species) | | | | | | |
| 2.2a | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are the plants' health conditions satisfactory? | | | | | | |
| 2.2b | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| If not, are replacement planting carried out immediately? | | | | | | |
| 2.3 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are all plants properly trimmed regularly to maintain/enhance the aesthetic value? | | | | | | |
| 2.4 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are loose/unfirmed plants as a result of wind rock or other causes avoided? | | | | | | |
| 2.5 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are all grassed and planted area kept free from weeds/unwanted plants? | | | | | | |
| 2.6 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Is compaction of the soil avoided for the plants? | | | | | | |
| 2.7 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are litter/ unwanted material removed within the planting area? | | | | | | |
| 2.8 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Is mulch that disturbed by replacement planting, weeding or watering made good? | | | | | | |
| 2.9 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are wounds/mechanical injuries avoided on tree trunk? | | | | | | |
| 2.10 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are leaning of trees avoided? | | | | | | |
| 2.11 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are dead/detached branches avoided? | | | | | | |
| 2.12 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are decay/cavity avoided on tree trunks? | | | | | | |
| 2.13 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are all trees kept free from pest, disease or fungal infection? | | | | | | |
| 2.14 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are trees were topped or pruned (if any) properly? | | | | | | |
| 2.15 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are there enough area for growth and development of tree roots? | | | | | | |
| 2.16a | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Is exposure of tree roots avoided? | | | | | | |
| 2.16b | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| If not, were broken off or rotting of roots avoided? | | | | | | |
| 3. Kwo Lo Wan Road | | | | | | |
| 3.1 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are the planting works complied with the approved Landscape and Visual Plan? (e.g. size, location and plant species) | | | | | | |
| 3.2a | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are the plants' health conditions satisfactory? | | | | | | |
| 3.2b | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| If not, are replacement planting carried out immediately? | | | | | | |
| 3.3 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are all plants properly trimmed regularly to maintain/enhance the aesthetic value? | | | | | | |
| 3.4 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are loose/unfirmed plants as a result of wind rock or other causes avoided? | | | | | | |
| 3.5 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are all grassed and planted area kept free from weeds/unwanted plants? | | | | | | |
| 3.6 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Is compaction of the soil avoided for the plants? | | | | | | |
| 3.7 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are litter/ unwanted material removed within the planting area? | | | | | | |
| 3.8 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Is mulch that disturbed by replacement planting, weeding or watering made good? | | | | | | |
| 3.9 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are wounds/mechanical injuries avoided on tree trunk? | | | | | | |
| 3.10 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are leaning of trees avoided? | | | | | | |
| 3.11 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are dead/detached branches avoided? | | | | | | |
| 3.12 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are decay/cavity avoided on tree trunks? | | | | | | |
| 3.13 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are all trees kept free from pest, disease or fungal infection? | | | | | | |
| 3.14 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are trees were topped or pruned (if any) properly? | | | | | | |
| 3.15 | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Are there enough area for growth and development of tree roots? | | | | | | |
| 3.16a | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Is exposure of tree roots avoided? | | | | | | |
| 3.16b | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| If not, were broken off or rotting of roots avoided? | | | | | | |

Environmental Monitoring and Audit
 Landscape and Visual Audit Checklist (Establishment Works)
 Contract No. HY/2011/09
 Hong Kong-Zhuhai-Macao Bridge
 Hong Kong Link Road – Section between IKSAR Boundary and Scenic Hill

| | N/A or not observed | Yes | No | Follow-up | N/C | Remarks |
|--|--|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|---------|
| 4. <u>Airport Road</u> | | | | | | |
| 4.1 | Are the planting works complied with the approved Landscape and Visual Plan? (e.g. size, location and plant species) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4.2a | Are the plants' health conditions satisfactory? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4.2b | If not, are replacement planting carried out immediately? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4.3 | Are all plants properly trimmed regularly to maintain/enhance the aesthetic value? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4.4 | Are loose/unfirmed plants as a result of wind rock or other causes avoided? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4.5 | Are all grassed and planted area kept free from weeds/unwanted plants? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | ② |
| 4.6 | Is compaction of the soil avoided for the plants? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4.7 | Are litter/ unwanted material removed within the planting area? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4.8 | Is mulch that disturbed by replacement planting, weeding or watering made good? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4.9 | Are wounds/mechanical injuries avoided on tree trunk? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4.10 | Are leaning of trees avoided? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4.11 | Are dead/detached branches avoided? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4.12 | Are decay/cavity avoided on tree trunks? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4.13 | Are all trees kept free from pest, disease or fungal infection? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4.14 | Are trees were topped or pruned (if any) properly? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4.15 | Are there enough area for growth and development of tree roots? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4.16a | Is exposure of tree roots avoided? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4.16b | If not, were broken off or rotting of roots avoided? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 5. <u>Viaduct between P112 and P114</u> | | | | | | |
| 5.1 | Are the planting works complied with the approved Landscape and Visual Plan? (e.g. size, location and plant species) | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | ③ |
| 5.2a | Are the plants' health conditions satisfactory? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 5.2b | If not, are replacement planting carried out immediately? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 5.3 | Are all plants properly trimmed regularly to maintain/enhance the aesthetic value? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 5.4 | Are loose/unfirmed plants as a result of wind rock or other causes avoided? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 5.5 | Are all grassed and planted area kept free from weeds/unwanted plants? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | ③ |
| 5.6 | Is compaction of the soil avoided for the plants? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 5.7 | Are litter/ unwanted material removed within the planting area? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 5.8 | Is mulch that disturbed by replacement planting, weeding or watering made good? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

Environmental Monitoring and Audit
Landscape and Visual Audit Checklist (Establishment Works)
Contract No. HY/2011/09
Hong Kong-Zhuhai-Macao Bridge
Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill

| Part D | | Follow-up for the Previous Site Audit on Date: <u>21 May 2019</u> (Ref. No. <u>190619</u>) | | | | | Remarks |
|--------|---|---|-------------------------------------|--------------------------|-------------------------------------|--------------------------|-----------------|
| | | N/A or not observed | Yes | No | Follow-up | N/C | |
| 1. | Is the situation in item <u>R01</u> improved/rectified? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <u>3</u> |
| 2. | Is the situation in item <u>R02</u> improved/rectified? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <u>photo 20</u> |
| 3. | Is the situation in item _____ improved/rectified? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4. | Is the situation in item _____ improved/rectified? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 5. | Is the situation in item _____ improved/rectified? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 6. | Is the situation in item _____ improved/rectified? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 7. | Is the situation in item _____ improved/rectified? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 8. | Is the situation in item _____ improved/rectified? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

Remarks/Observations

Observations:

- ① Some trees (*Phoenix roebelenii*) and shrubs (*Rhododendron pulchrum*) at Position A were observed to be in poor health or dead. The Contractor was reminded to review health of all trees and shrubs and replace them if confirmed dead. (photos 7, 3 and 5)
- ② Weeds and unwanted plants were observed at the planter area at Airport ~~Zhuhai~~ Road. The Contractor was reminded to remove them to ensure the healthy establishment of the target species accordingly. (photo 16)
- ③ Weeds and unwanted plants were observed at the planter area at the viaduct between P112 and P114. The Contractor was reminded to remove them and replace the approved species for ~~planter~~ groundcover according to the approved plan. (photos 19-22)

Remark: Due to the typhoon signals no. 3 & 8 were hoisted on 30 & 31 July 2019, ~~so~~ the bi-monthly L&V audit was re-scheduled to 1 August 2019 for safety reason.

Signatures:

ET Auditor
Jay
(Name: Jay Lam)
(Date: 11/8/2019)

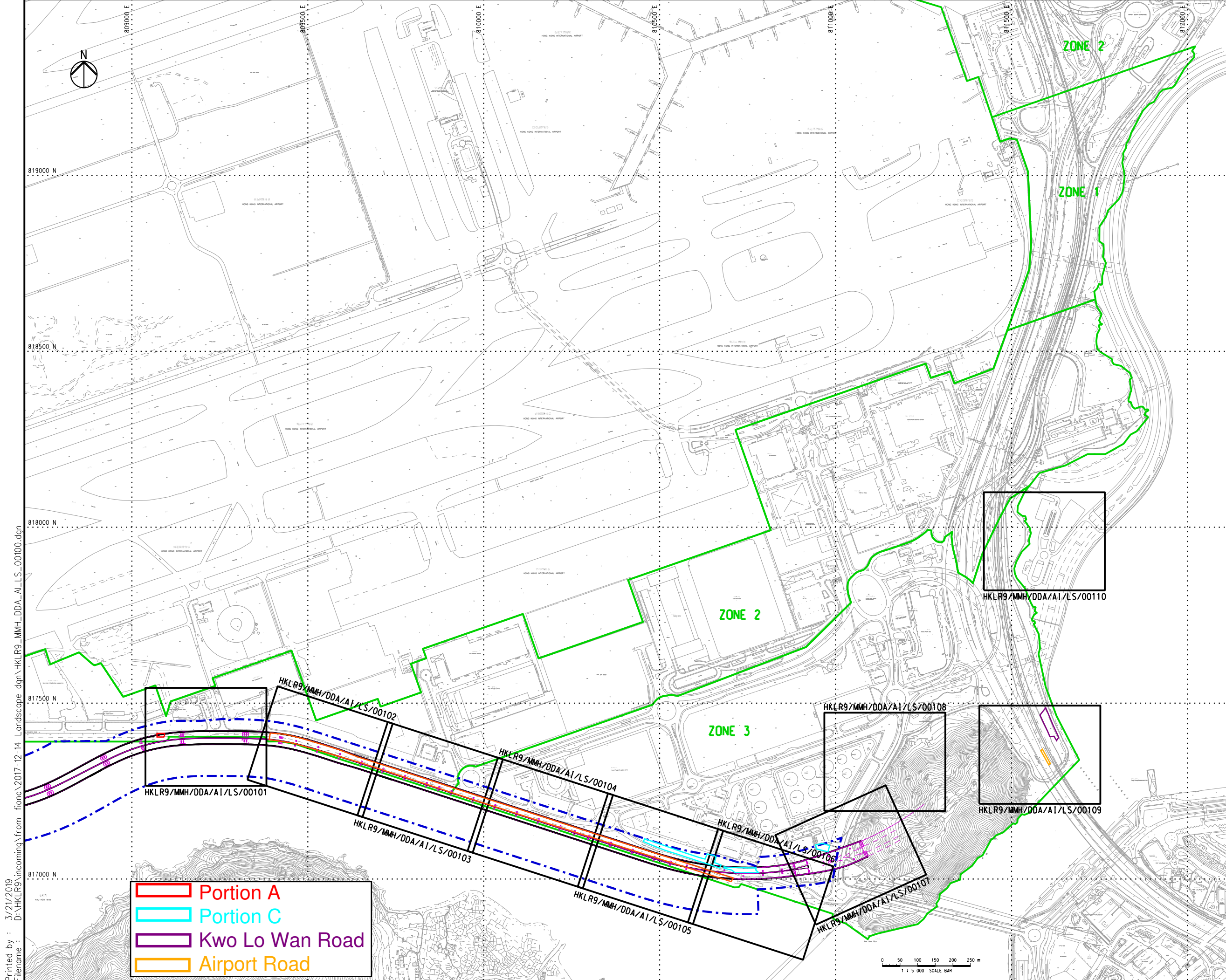
CTO / SIOW / IOW / Engineer

(Name: _____)
(Date: _____)

Contractor's Representative

(Name: _____)
(Date: _____)

IEC/ENPO Auditor
Ray
(Name: Ray Yan)
(Date: 22/10/2019)



LEGEND:
 - - - SITE BOUNDARY
 - - - PROPOSED VIADUCT
 - - - ZONING ACCORDING TO HONG KONG INTERNATIONAL AIRPORT APPROVED PLANT SPECIES LIST (REVISION 3: JUNE 2007) (REFER TO ER PART 4 APPENDIX 4B)

| | | | | |
|------|--------------|--------|-------|----------|
| Rev. | Description | Design | Check | Date |
| A | FOR APPROVAL | MMH | JV | 09/08/13 |



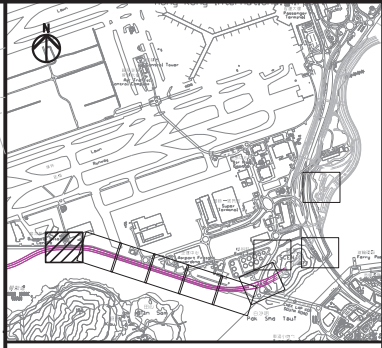
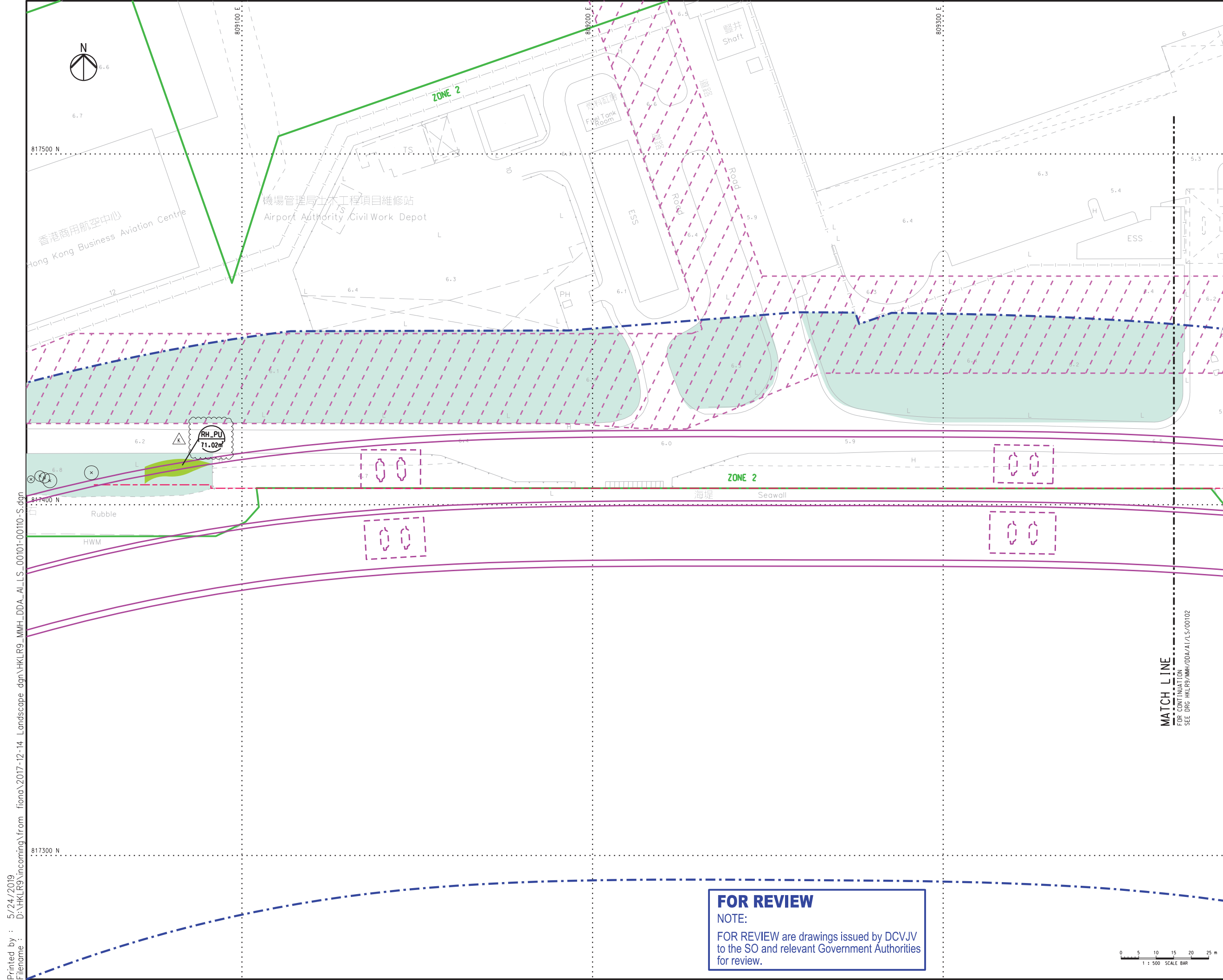
Project Title
 Contract No. HY/2011/09
 Hong Kong - Zhuhai - Macao Bridge
 Hong Kong Link Road
 Section Between HKSAR Boundary and Scenic Hill

Drawing Title
 SOFT LANDSCAPE LAYOUT PLAN - KEY PLAN

| | | | |
|------------|-------------------------------|----------|----------------|
| Design | Drawn | Approved | Status |
| PK | MING | HTC | FOR SUBMISSION |
| Scale | 1:5000 (IN A1) | | |
| Job No. | HKLR9 | | |
| Sheet No. | 1 OF 1 | | |
| Title name | HKLR9_MMH_DDA_A1_LS_00100.dgn | | |



Printed by : 3/21/2019
 Filename : D:\HKLR9_incoming\from_fiona\2017-12-14_Landscape.dgn\HKLR9_MMH_DDA_A1_LS_00100.dgn



KEY PLAN
SCALE 1:35000

- NOTES:
- SUFFICIENT SOIL DEPTH IS CONFIRMED IN ALL PROPOSED COMPENSATORY PLANTING AREAS.
 - PLEASE REFER TO DRAWING NO. HKLR9/MMH/DDA/A1/LS/00481 FOR THE PROPOSED PLANTING SCHEDULE.
 - HYDROSEEDING TO BE PROVIDED AT BARE GROUND WITHIN LANDSCAPE AREA.

- LEGEND:
- SITE BOUNDARY
 - PROPOSED VIADUCT
 - ZONING ACCORDING TO HONG KONG INTERNATIONAL AIRPORT APPROVED PLANT SPECIES LIST (REVISION 31 JUNE 2007) (REFER TO ER PART 4 APPENDIX 4B)
 - LOT BOUNDARY
 - EXISTING LANDSCAPE PLANTING TO BE RETAINED
 - UTILITIES RESERVE ZONE
 - AAMK'S POTENTIAL SUPPORTING AREA FOR FUTURE AIRPORT PROJECTS
 - PORTION OF MAINTENANCE AREA ON RESUMED LAND WITH NO PAVING AND NO PLANTING (FLAT PATHWAY)
 - GOVERNMENT LAND WITH NO PAVING AND NO PLANTING (FLAT PATHWAY)
 - ACCESS FOR MAINTENANCE (APPROX. 2.8m WIDTH, NO PAVING)

- PLANT SPECIES QUANTITY / AREA
- TR_SP 100
 - PROPOSED TREE
 - RETAIN TREE

| Rev. | Description | Design | Check | Date |
|------|---------------------|--------|-------|----------|
| K | REVISED AS CLOUDED | MMH | JV | 24/05/19 |
| J | REVISED AS CLOUDED | MMH | JV | 20/12/18 |
| H | REVISED AS CLOUDED | MMH | JV | 14/11/18 |
| G | REVISED AS CLOUDED | MMH | JV | 21/08/18 |
| F | REVISED AS CLOUDED | MMH | JV | 12/07/18 |
| E | UPDATED RETAIN TREE | MMH | JV | 08/03/18 |

Main Contractor

 Dragages - China Harbour - VSL Joint Venture 寶嘉-中國港灣-威利聯勝

Contractor's Designer

 Mott MacDonald YWL Engineering

Consultant

 ARUP 奧雅納工程顧問
 Ove Arup & Partners Hong Kong Limited

Project Title
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

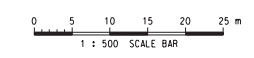
Drawing Title
SOFT LANDSCAPE LAYOUT PLAN

| | | | |
|---|---------------|-----------|----------------|
| Design | Drawn | Approved | Status |
| PK | MING | HTC | FOR SUBMISSION |
| Scale | 1:500 (IN A1) | | |
| Job No. | HKLR9 | Sheet No. | 1 OF 10 |
| Title name: HKLR9_MMH_DDA_A1_LS_00101-00110-S.dgn | | | |

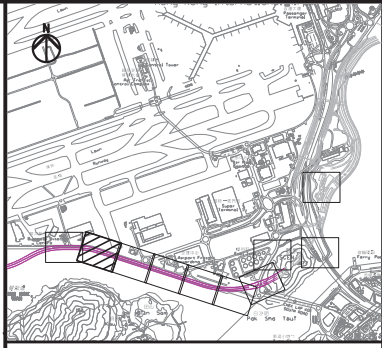
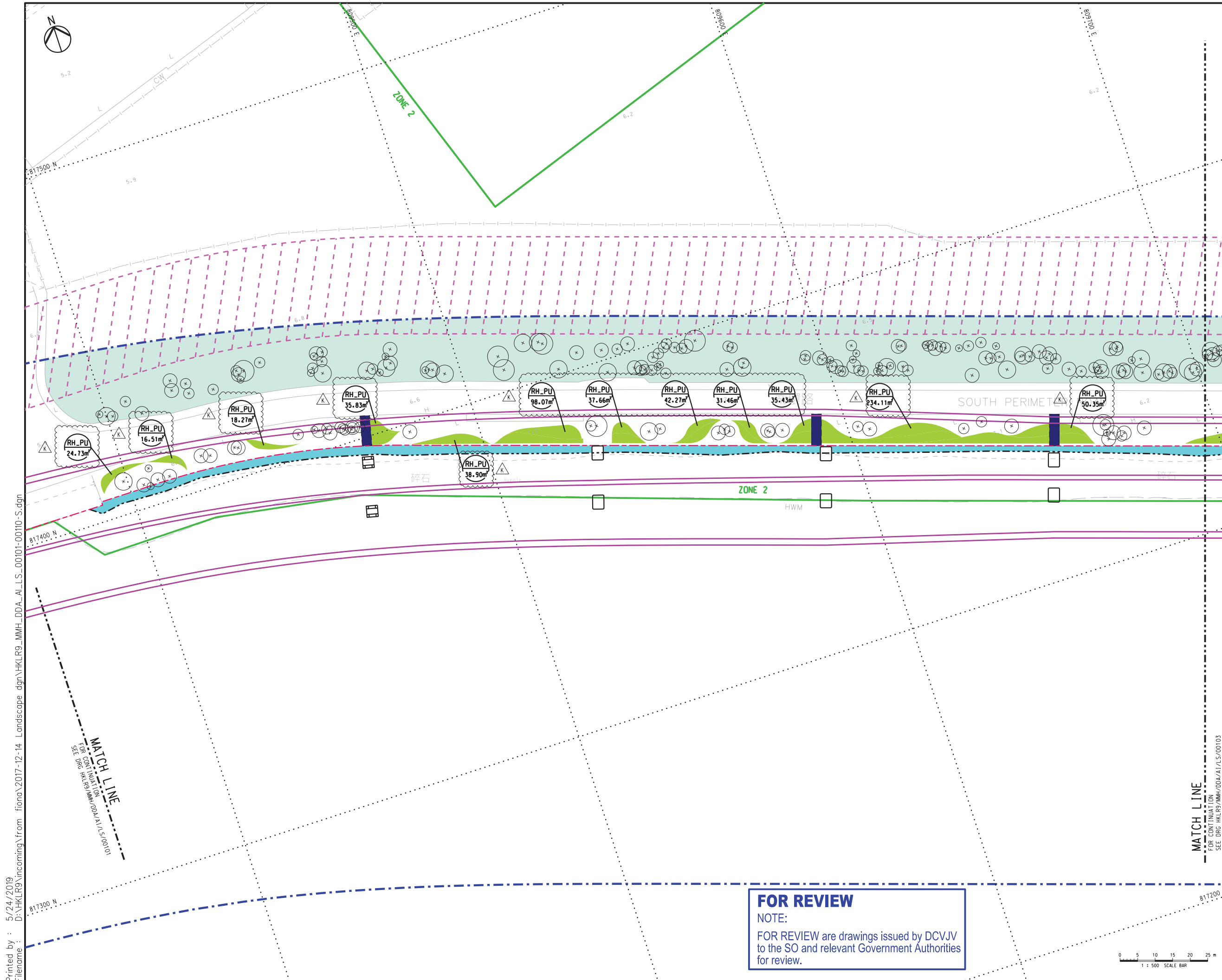
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 路政署 HIGHWAYS DEPARTMENT

FOR REVIEW
 NOTE:
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KEY PLAN
SCALE 1:35000

- NOTES:**
- SUFFICIENT SOIL DEPTH IS CONFIRMED IN ALL PROPOSED COMPENSATORY PLANTING AREAS.
 - PLEASE REFER TO DRAWING NO. HKLR9/MMH/DDA/A1/LS/00481 FOR THE PROPOSED PLANTING SCHEDULE.
 - HYDROSEEDING TO BE PROVIDED AT BARE GROUND WITHIN LANDSCAPE AREA.

- LEGEND:**
- SITE BOUNDARY
 - PROPOSED VIADUCT
 - ZONING ACCORDING TO HONG KONG INTERNATIONAL AIRPORT APPROVED PLANT SPECIES LIST (REVISION 31 JUNE 2007) (REFER TO ER PART 4 APPENDIX 4B)
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 - GOVERNMENT LAND WITH NO PAVING AND NO PLANTING (FLAT PATHWAY)
 - ACCESS FOR MAINTENANCE (APPROX. 2.8m WIDTH, NO PAVING)
 - PLANT SPECIES QUANTITY / AREA
 - PROPOSED TREE
 - RETAIN TREE

| Rev. | Description | Design | Check | Date |
|------|---------------------|--------|-------|----------|
| K | REVISED AS CLOUDED | MMH | JV | 24/05/19 |
| J | REVISED AS CLOUDED | MMH | JV | 20/12/18 |
| H | REVISED AS CLOUDED | MMH | JV | 14/11/18 |
| G | REVISED AS CLOUDED | MMH | JV | 21/08/18 |
| F | REVISED AS CLOUDED | MMH | JV | 12/07/18 |
| E | UPDATED RETAIN TREE | MMH | JV | 08/03/18 |

Main Contractor

Dragages - China Harbour - VSL Joint Venture 寶通-中國港務-威利利聯營

Contractor's Designer

Mott MacDonald YWL Engineering

Consultant

ARUP 奧雅納工程顧問
Ove Arup & Partners Hong Kong Limited

Project Title
**Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary
and Scenic Hill**

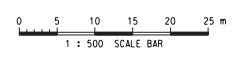
Drawing Title
SOFT LANDSCAPE LAYOUT PLAN

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| Design | PK | Drawn | MING |
| Scale | 1:500 (IN A1) | Approved | HTC |
| Job No. | HKLR9 | Approved | 10MAY16 |
| Sheet No. | | Sheet No. | 2 OF 10 |
| Title name | HKLR9_MMH_DDA_A1_LS_00101-00110-S.dgn | | |

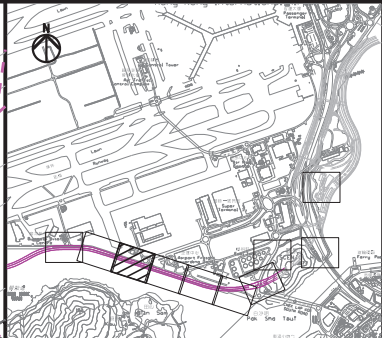
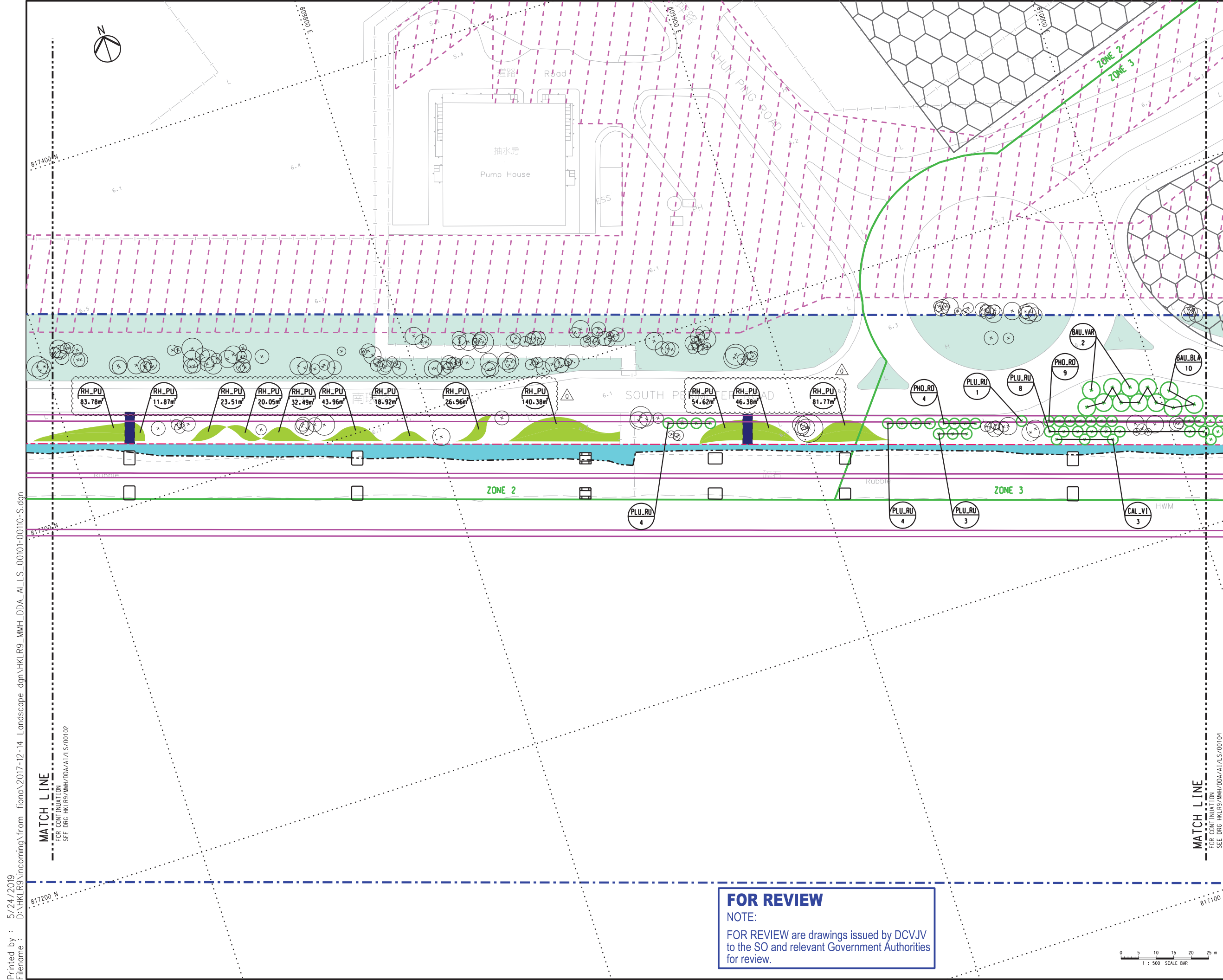
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HIGHWAYS DEPARTMENT

FOR REVIEW
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FOR REVIEW are drawings issued by DCJVJ to the SO and relevant Government Authorities for review.



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KEY PLAN
SCALE 1:35000

- NOTES:**
- SUFFICIENT SOIL DEPTH IS CONFIRMED IN ALL PROPOSED COMPENSATORY PLANTING AREAS.
 - PLEASE REFER TO DRAWING NO. HKLR9/MMH/DDA/A1/LS/00481 FOR THE PROPOSED PLANTING SCHEDULE.
 - HYDROSEEDING IS TO BE PROVIDED AT BARE GROUND WITHIN LANDSCAPE AREA.

- LEGEND:**
- SITE BOUNDARY
 - PROPOSED VIADUCT
 - ZONING ACCORDING TO HONG KONG INTERNATIONAL AIRPORT APPROVED PLANT SPECIES LIST (REVISION 31 JUNE 2017) (REFER TO ER PART 4 APPENDIX 4B)
 - LOT BOUNDARY
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 - UTILITIES RESERVE ZONE
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 - PORTION OF MAINTENANCE AREA ON RESUMED LAND WITH NO PAVING AND NO PLANTING (FLAT PATHWAY)
 - GOVERNMENT LAND WITH NO PAVING AND NO PLANTING (FLAT PATHWAY)
 - ACCESS FOR MAINTENANCE (APPROX. 2.8m WIDTH, NO PAVING)
 - PLANT SPECIES QUANTITY / AREA
 - PROPOSED TREE
 - RETAIN TREE

| Rev. | Description | Design | Check | Date |
|------|--------------------|--------|-------|----------|
| Q | REVISED AS CLOUDED | MMH | JV | 24/05/19 |
| P | REVISED AS CLOUDED | MMH | JV | 06/05/19 |
| N | REVISED AS CLOUDED | MMH | JV | 01/03/19 |
| M | REVISED AS CLOUDED | MMH | JV | 28/02/19 |
| L | REVISED AS CLOUDED | MMH | JV | 20/12/18 |
| K | REVISED AS CLOUDED | MMH | JV | 14/11/18 |

Main Contractor

Contractor's Designer

Consultant

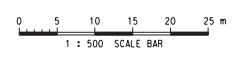
Project Title
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title
SOFT LANDSCAPE LAYOUT PLAN

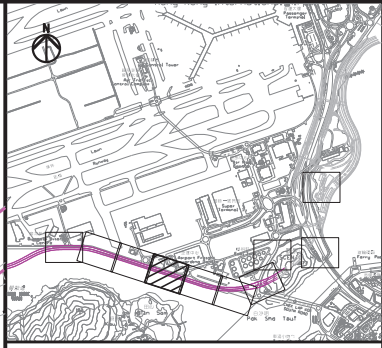
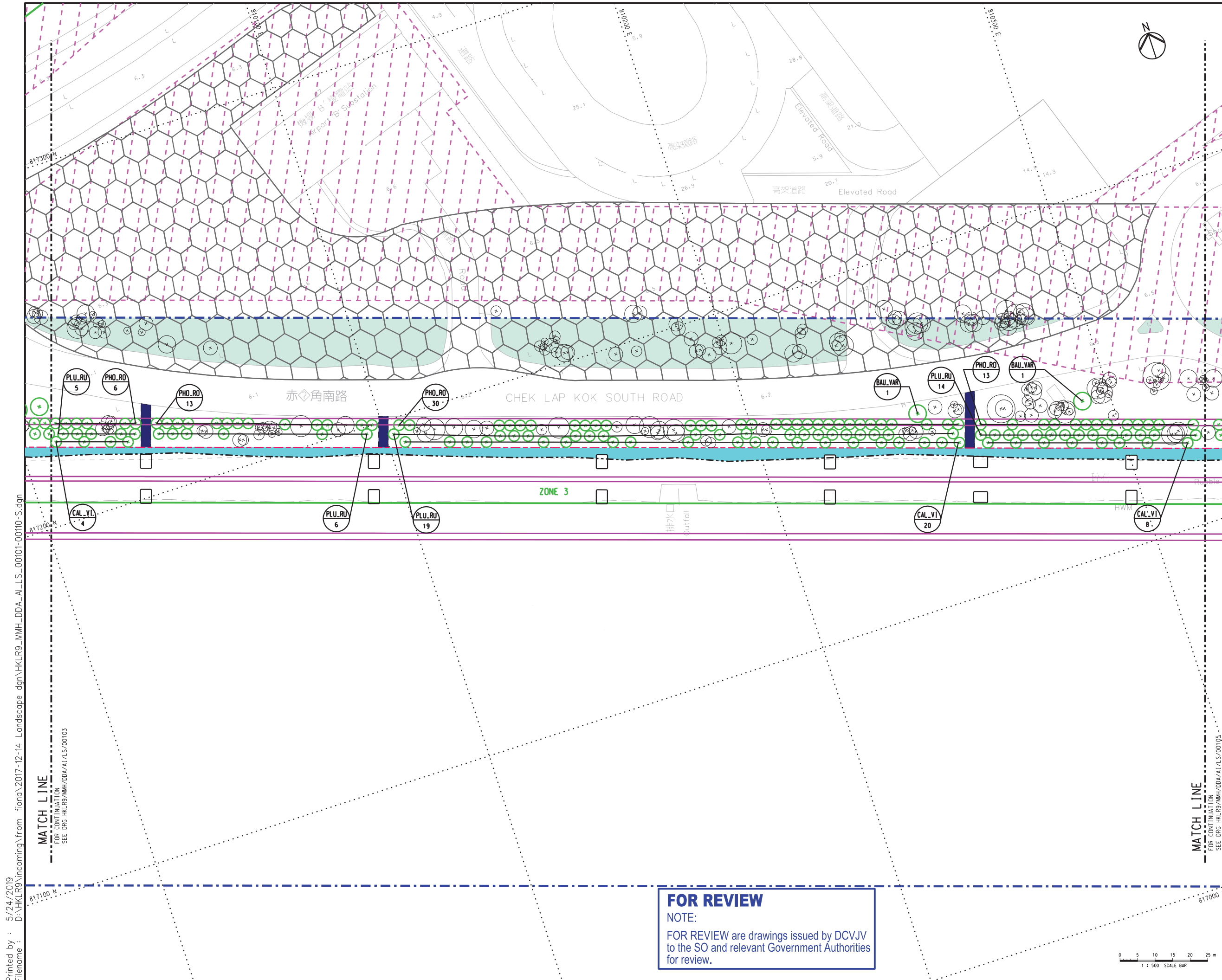
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| Design | Drawn | Approved | Status |
| PK | MING | HTC | FOR SUBMISSION |
| Scale | 1:500 (IN A1) | | Approved 10MAY16 |
| Job No. | HKLR9 | Sheet No. | 3 OF 10 |
| Title name: HKLR9_MMH/DDA/A1/LS_00101-00110-S.dgn | | | |

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KEY PLAN
SCALE 1:35000

- NOTES:**
- SUFFICIENT SOIL DEPTH IS CONFIRMED IN ALL PROPOSED COMPENSATORY PLANTING AREAS.
 - PLEASE REFER TO DRAWING NO. HKLR9/MMH/DDA/A1/LS/00481 FOR THE PROPOSED PLANTING SCHEDULE.
 - HYDROSEEDING TO BE PROVIDED AT BARE GROUND WITHIN LANDSCAPE AREA.

- LEGEND:**
- SITE BOUNDARY
 - PROPOSED VIADUCT
 - ZONING ACCORDING TO HONG KONG INTERNATIONAL AIRPORT APPROVED PLANT SPECIES LIST (REVISION 3: JUNE 2007) (REFER TO ER PART 4 APPENDIX 4B)
 - LOT BOUNDARY
 - EXISTING LANDSCAPE PLANTING TO BE RETAINED
 - UTILITIES RESERVE ZONE
 - AAMK'S POTENTIAL SUPPORTING AREA FOR FUTURE AIRPORT PROJECTS
 - PORTION OF MAINTENANCE AREA ON RESUMED LAND WITH NO PAVING AND NO PLANTING (FLAT PATHWAY)
 - GOVERNMENT LAND WITH NO PAVING AND NO PLANTING (FLAT PATHWAY)
 - ACCESS FOR MAINTENANCE (APPROX. 2.8m WIDTH, NO PAVING)
 - PLANT SPECIES QUANTITY / AREA
 - PROPOSED TREE
 - RETAIN TREE
 - TRANSPLANT TREE

| Rev. | Description | Design | Check | Date |
|------|--------------------|--------|-------|----------|
| Q | REVISED AS CLOUDED | MMH | JV | 24/05/19 |
| P | REVISED AS CLOUDED | MMH | JV | 06/05/19 |
| N | REVISED AS CLOUDED | MMH | JV | 01/03/19 |
| M | REVISED AS CLOUDED | MMH | JV | 28/02/19 |

Main Contractor

Contractor's Designer

Consultant

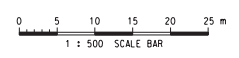
Project Title
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title
SOFT LANDSCAPE LAYOUT PLAN

| | | | | | |
|-------------|---------------------------------------|-------|-----------|----------|-----|
| Drawing No. | HKLR9/MMH/DDA/A1/LS/00104 | | | Rev. | 0 |
| Design | PK | Drawn | MING | Approved | HTC |
| Scale | 1:500 (IN A1) | | Approved | 10MAY16 | |
| Job No. | HKLR9 | | Sheet No. | 4 OF 10 | |
| Title Name | HKLR9_MMH_DDA_A1_LS_00101-00110-S.dgn | | | | |

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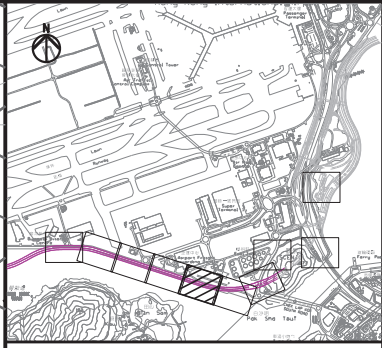
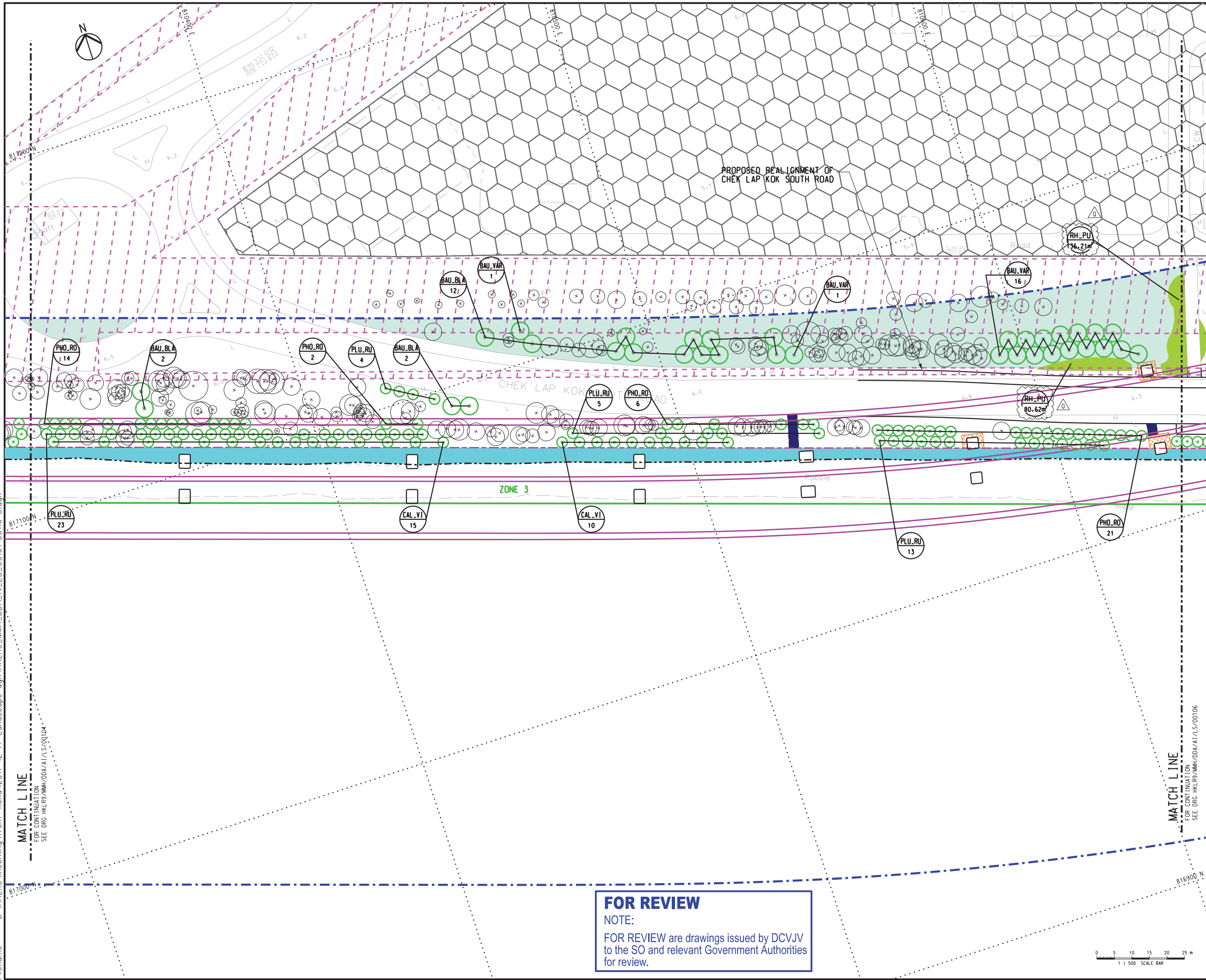


Printed by : 5/24/2019
 Filename : D:\HKLR9\incoming\from_fiona\2017-12-14_Landscape.dgn\HKLR9_MMH_DDA_A1_LS_00101-00110-S.dgn

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 FOR CONTINUATION
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MATCH LINE
 FOR CONTINUATION
 SEE DRG HKLR9/MMH/DDA/A1/LS/00105

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KEY PLAN
SCALE 1:35000

- NOTES:
- SUFFICIENT SOIL DEPTH IS CONFIRMED IN ALL PROPOSED COMPENSATORY PLANTING AREAS.
 - PLEASE REFER TO DRAWING NO. HKLR9/MMH/DDA/AI/LS/00481 FOR THE PROPOSED PLANTING SCHEDULE.
 - HYDROSEEDING TO BE PROVIDED AT BARE GROUND WITHIN LANDSCAPE AREA.

- LEGEND:
- SITE BOUNDARY
 - PROPOSED VIADUCT
 - ZONING ACCORDING TO HONG KONG INTERNATIONAL AIRPORT APPROVED PLANT SPECIES LIST (REVISION 31 JUNE 2007) (REFER TO ER PART 4 APPENDIX 4B)
 - LOT BOUNDARY
 - EXISTING LANDSCAPE PLANTING TO BE RETAINED
 - UTILITIES RESERVE ZONE
 - AAHK'S POTENTIAL SUPPORTING AREA FOR FUTURE AIRPORT PROJECTS
 - PORTION OF MAINTENANCE AREA ON RESUMED LAND WITH NO PAVING AND NO PLANTING (FLAT PATHWAY)
 - GOVERNMENT LAND WITH NO PAVING AND NO PLANTING (FLAT PATHWAY)
 - ACCESS FOR MAINTENANCE (APPROX. 2.8m WIDTH, NO PAVING)
 - PLANT SPECIES
 - QUANTITY AREA
 - PROPOSED TREE
 - RETAIN TREE

| Rev. | Description | Design | Check | Date |
|------|--------------------|--------|-------|----------|
| Q | REVISED AS CLOUDED | MMH | JV | 24/05/19 |
| P | REVISED AS CLOUDED | MMH | JV | 06/05/19 |
| N | REVISED AS CLOUDED | MMH | JV | 01/03/19 |
| M | REVISED AS CLOUDED | MMH | JV | 28/02/19 |
| L | REVISED AS CLOUDED | MMH | JV | 20/12/18 |
| K | REVISED AS CLOUDED | MMH | JV | 14/11/18 |

Main Contractor

Contractor's Designer

Consultant

 Ove Arup & Partners Hong Kong Limited

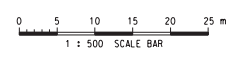
Project Title
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title
SOFT LANDSCAPE LAYOUT PLAN

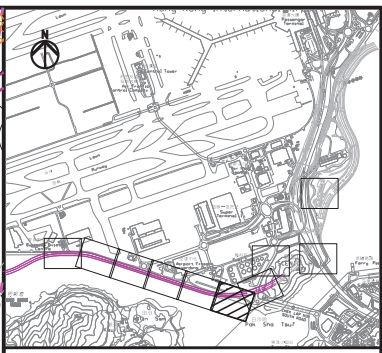
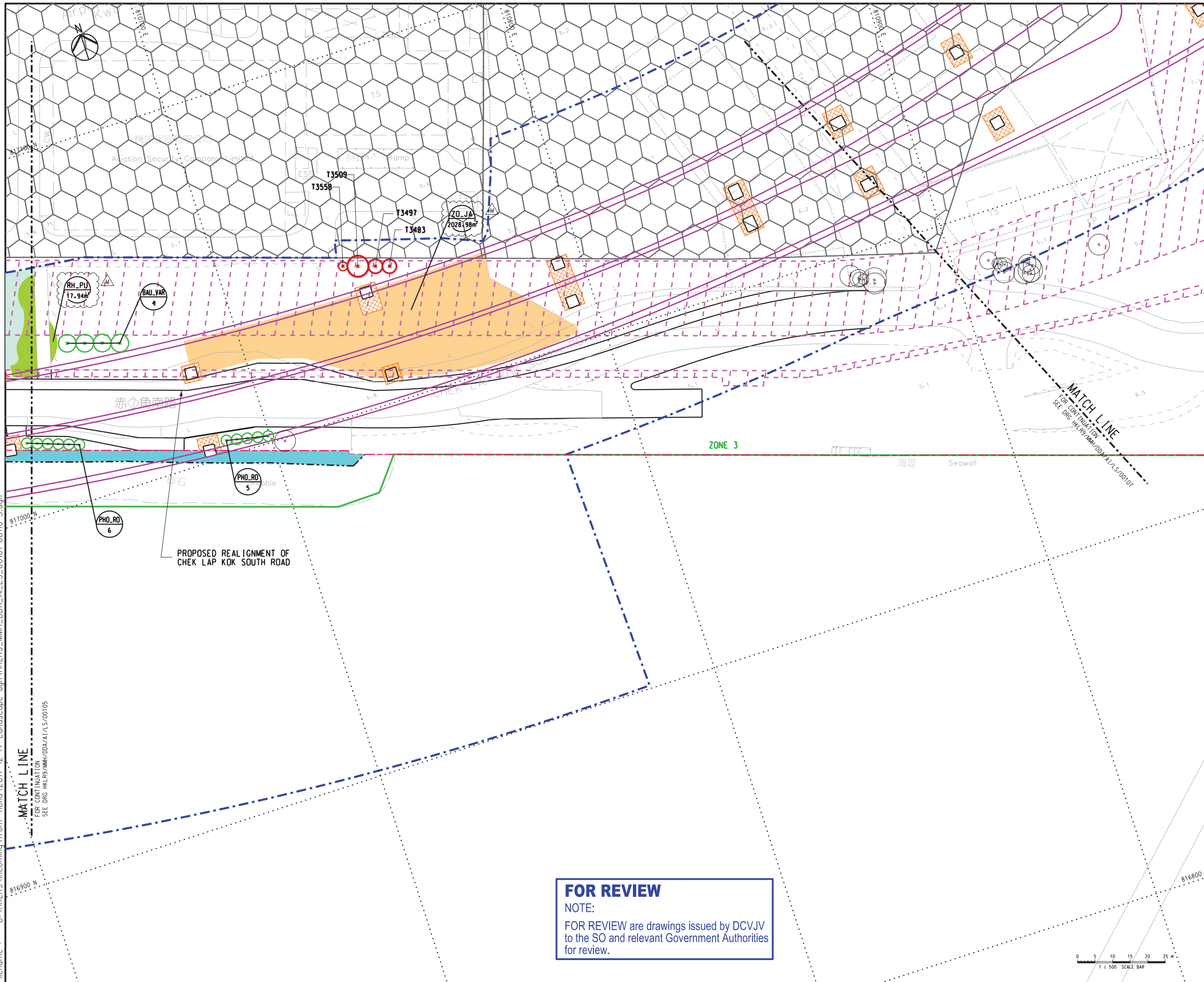
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| Design | PK | Drawn | MING | Approved | HTC |
| Scale | 1:500 (IN A1) | | Approved | 10MAY16 | |
| Job No. | HKLR9 | | Sheet No. | 5 OF 10 | |
| Title Name | HKLR9_MMH_DDA_AI_LS_00101-00110-S.dgn | | | | |

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KEY PLAN
SCALE: 1:355000

- NOTES:**
- SUFFICIENT SOIL DEPTH IS CONFIRMED IN ALL PROPOSED COMPENSATORY PLANTING AREAS.
 - PLEASE REFER TO DRAWING NO. HKLR9/MMH/DDA/AI/LS/00481 FOR THE PROPOSED PLANTING SCHEDULE.
 - HYDROSEEDING TO BE PROVIDED AT BARE GROUND WITHIN LANDSCAPE AREA.

- LEGEND:**
- SITE BOUNDARY
 - PROPOSED VIADUCT
 - ZONING ACCORDING TO HONG KONG INTERNATIONAL AIRPORT APPROVED PLANT SPECIES LIST (REVISION 3: JUNE 2007) (REFER TO ER PART 4 APPENDIX 4B)
 - LOT BOUNDARY
 - EXISTING LANDSCAPE PLANTING TO BE RETAINED
 - UTILITIES RESERVE ZONE
 - AAHK'S POTENTIAL SUPPORTING AREA FOR FUTURE AIRPORT PROJECTS
 - PORTION OF MAINTENANCE AREA ON RESUMED LAND WITH NO PAVING AND NO PLANTING (FLAT PATHWAY)
 - GOVERNMENT LAND WITH NO PAVING AND NO PLANTING (FLAT PATHWAY)
 - ACCESS FOR MAINTENANCE (APPROX. 2.0m WIDTH, NO PAVING)
 - PLANT SPECIES QUANTITY / AREA
 - PROPOSED TREE
 - RETAIN TREE
 - TRANSPLANT TREE

| Rev. | Description | Design | Check | Date |
|------|--------------------|--------|-------|----------|
| M | REVISED AS CLOUDED | MMH | JV | 24/05/19 |
| L | REVISED AS CLOUDED | MMH | JV | 06/05/19 |
| K | REVISED AS CLOUDED | MMH | JV | 20/12/18 |
| J | REVISED AS CLOUDED | MMH | JV | 14/11/18 |

Main Contractor

Contractor's Designer

Consultant

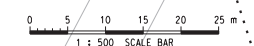
Project Title
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

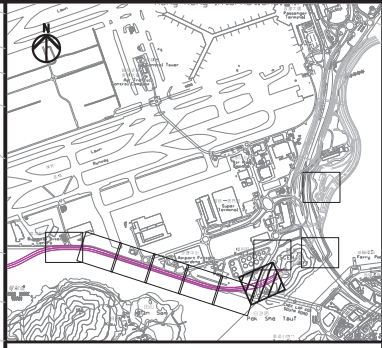
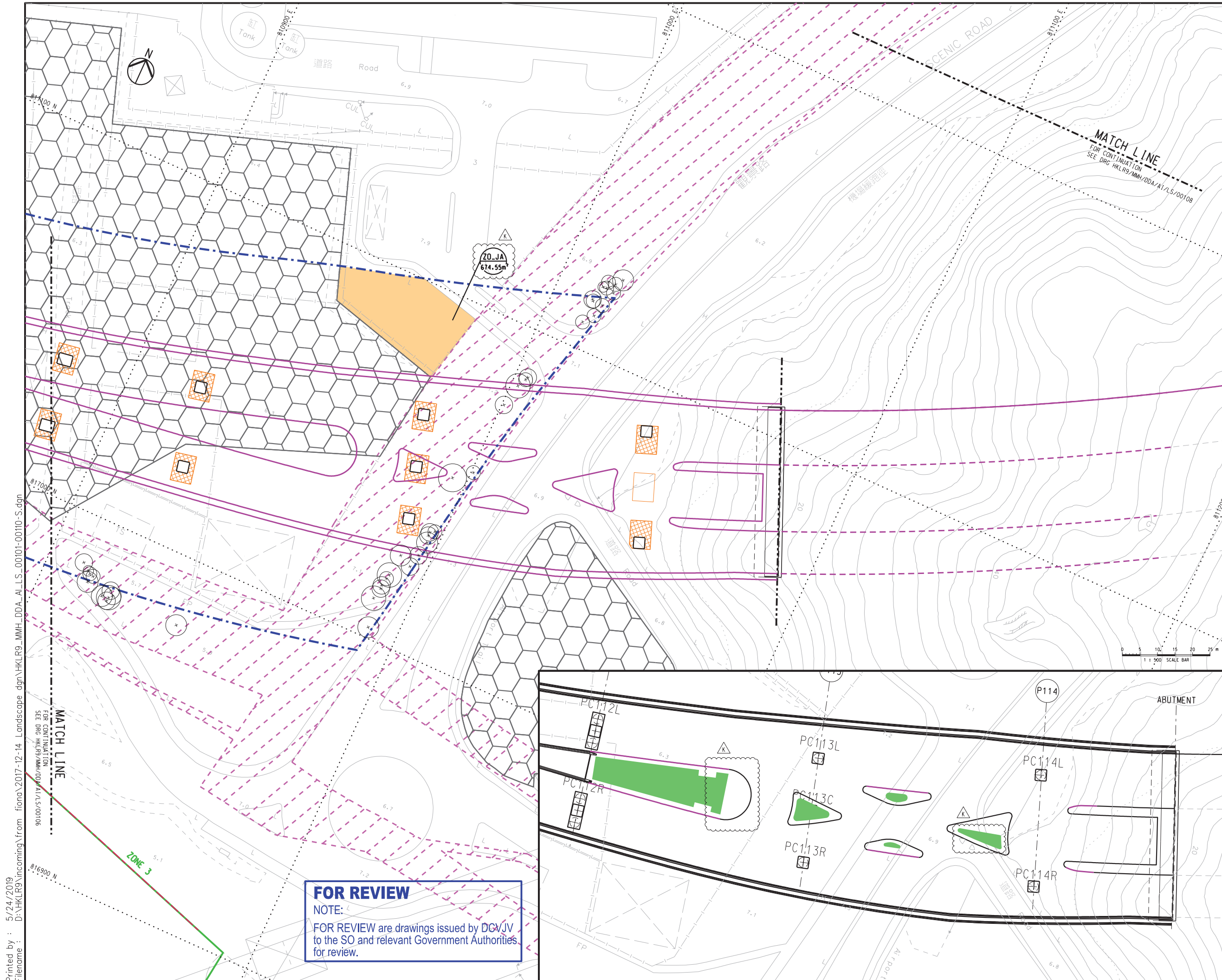
Drawing Title
SOFT LANDSCAPE LAYOUT PLAN

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| Drawing No. | HKLR9/MMH/DDA/AI/LS/00106 | Rev. | M |
| Design | PK | Drawn | MING |
| Approved | HTC | Status | FOR SUBMISSION |
| Scale | 1:500 (IN A1) | Approved | 10MAY16 |
| Job No. | HKLR9 | Sheet No. | 6 OF 10 |
| Title name | HKLR9_MMH_DDA_AI_LS_00101-00110-S.dgn | | |

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KEY PLAN
SCALE 1:35000

- NOTES:**
- SUFFICIENT SOIL DEPTH IS CONFIRMED IN ALL PROPOSED COMPENSATORY PLANTING AREAS.
 - PLEASE REFER TO DRAWING NO. HKLR9/MMH/DDA/A1/LS/00481 FOR THE PROPOSED PLANTING SCHEDULE.
 - HYDROSEEDING TO BE PROVIDED AT BARE GROUND WITHIN LANDSCAPE AREA.

- LEGEND:**
- SITE BOUNDARY
 - PROPOSED VIADUCT
 - ZONING ACCORDING TO HONG KONG INTERNATIONAL AIRPORT APPROVED PLANT SPECIES LIST (REVISION 3: JUNE 2007) (REFER TO ER PART 4 APPENDIX 4B)
 - LOT BOUNDARY
 - EXISTING LANDSCAPE PLANTING TO BE RETAINED
 - UTILITIES RESERVE ZONE
 - AAHK'S POTENTIAL SUPPORTING AREA FOR FUTURE AIRPORT PROJECTS
 - PORTION OF MAINTENANCE AREA ON RESUMED LAND WITH NO PAVING AND NO PLANTING (FLAT PATHWAY)
 - GOVERNMENT LAND WITH NO PAVING AND NO PLANTING (FLAT PATHWAY)
 - ACCESS FOR MAINTENANCE (APPROX. 2.8m WIDTH, NO PAVING)
 - GROUNDCOVER
 - PLANT SPECIES QUANTITY / AREA
 - PROPOSED TREE
 - RETAIN TREE

| Rev. | Description | Design | Check | Date |
|------|--------------------|--------|-------|----------|
| K | REVISED AS CLOUDED | MMH | JV | 24/05/19 |
| J | REVISED AS CLOUDED | MMH | JV | 20/12/18 |
| H | REVISED AS CLOUDED | MMH | JV | 14/11/18 |
| G | REVISED AS CLOUDED | MMH | JV | 21/08/18 |
| F | REVISED AS CLOUDED | MMH | JV | 05/06/18 |

Main Contractor

Contractor's Designer

Consultant

 Ove Arup & Partners Hong Kong Limited

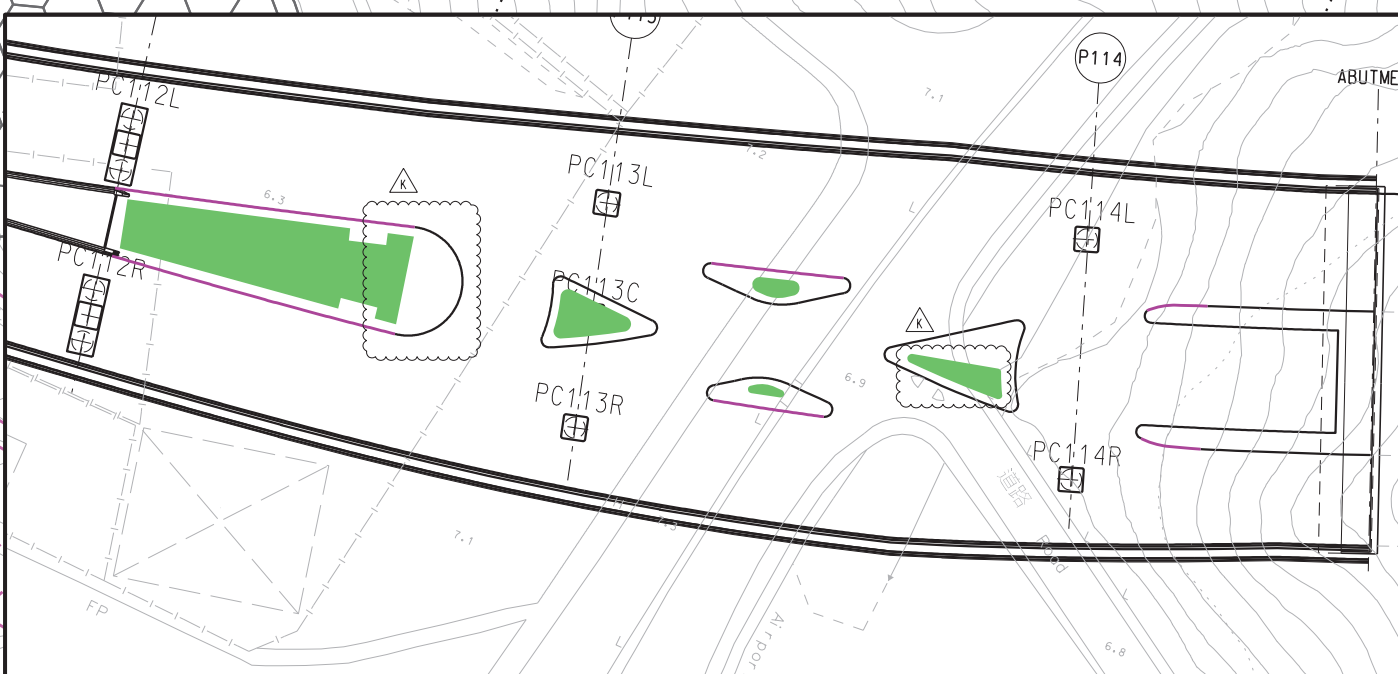
Project Title
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title
SOFT LANDSCAPE LAYOUT PLAN

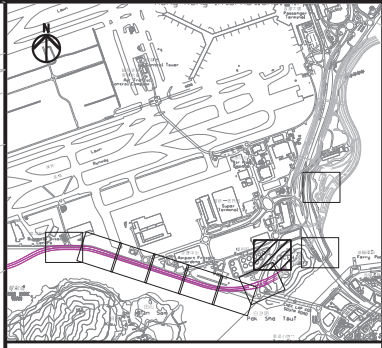
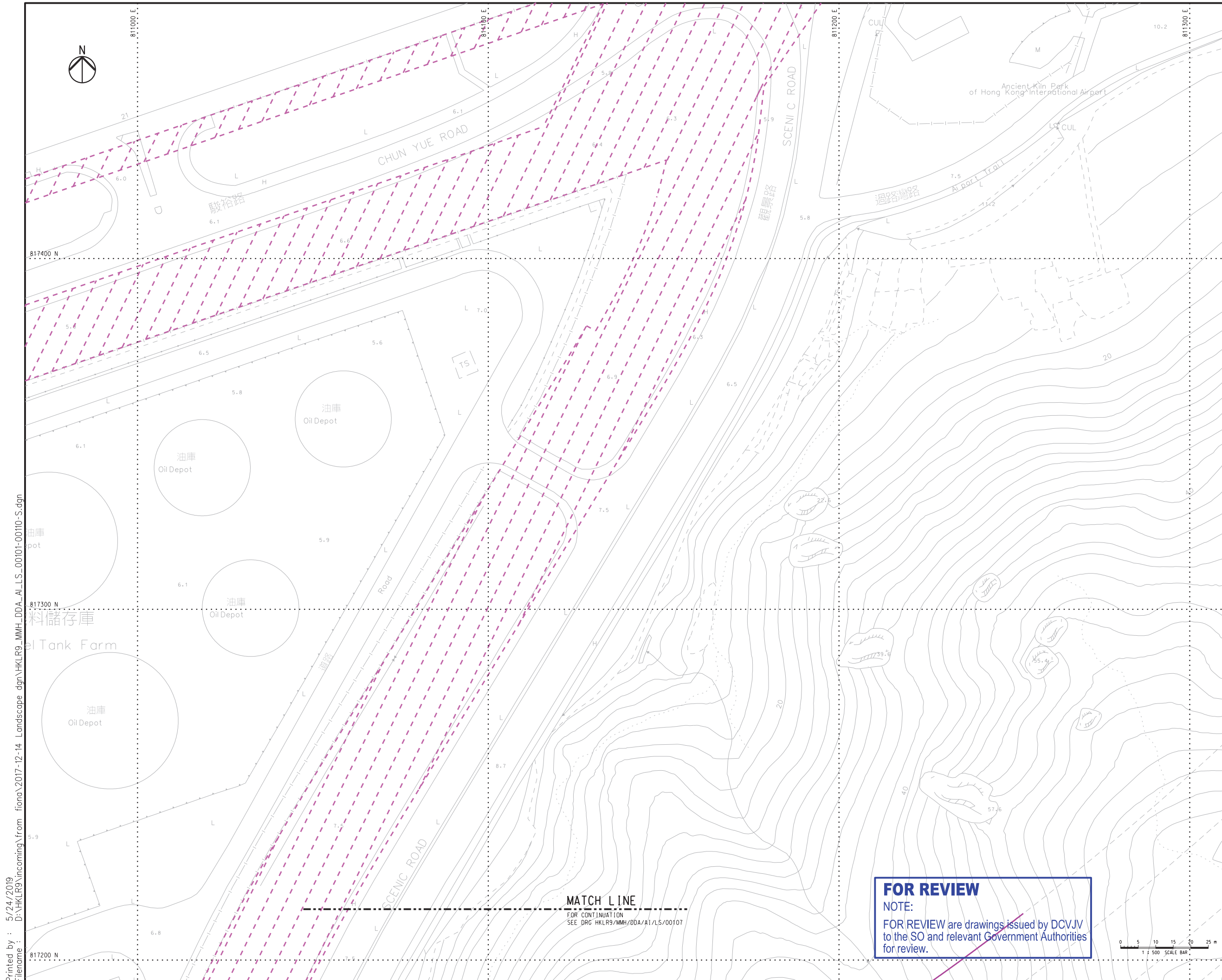
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|--------|-------|----------|----------------|
| PK | MING | HTC | FOR SUBMISSION |

Scale: 1:500 (IN A1)
 Date: 01MAR17
 Job No: HKLR9
 Sheet No: 7 OF 10
 Title name: HKLR9_MMH_DDAA_A1_LS_00101-00110-S.dgn
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KEY PLAN
SCALE 1:35000

- NOTES:**
- SUFFICIENT SOIL DEPTH IS CONFIRMED IN ALL PROPOSED COMPENSATORY PLANTING AREAS.
 - PLEASE REFER TO DRAWING NO. HKLR9/MMH/DDA/A1/LS/00481 FOR THE PROPOSED PLANTING SCHEDULE.
 - HYDROSEEDING TO BE PROVIDED AT BARE GROUND WITHIN LANDSCAPE AREA.

- LEGEND:**
- SITE BOUNDARY
 - PROPOSED VIADUCT
 - ZONING ACCORDING TO HONG KONG INTERNATIONAL AIRPORT APPROVED PLANT SPECIES LIST (REVISION 31 JUNE 2007) (REFER TO ER PART 4 APPENDIX 4B)
 - LOT BOUNDARY
 - EXISTING LANDSCAPE PLANTING TO BE RETAINED
 - UTILITIES RESERVE ZONE
 - AAMK'S POTENTIAL SUPPORTING AREA FOR FUTURE AIRPORT PROJECTS
 - PORTION OF MAINTENANCE AREA ON RESUMED LAND WITH NO PAVING AND NO PLANTING (FLAT PATHWAY)
 - GOVERNMENT LAND WITH NO PAVING AND NO PLANTING (FLAT PATHWAY)
 - ACCESS FOR MAINTENANCE (APPROX. 2.8m WIDTH, NO PAVING)
 - PLANT SPECIES QUANTITY / AREA
 - PROPOSED TREE
 - RETAIN TREE

| Rev. | Description | Design | Check | Date |
|------|--------------------|--------|-------|----------|
| H | REVISED AS CLOUDED | MMH | JV | 24/05/19 |
| G | REVISED AS CLOUDED | MMH | JV | 20/12/18 |
| F | REVISED AS CLOUDED | MMH | JV | 21/08/18 |
| E | REVISED AS CLOUDED | MMH | JV | 12/07/18 |
| D | REVISED AS CLOUDED | MMH | JV | 05/06/18 |
| C | FOR APPROVAL | MMH | JV | 10/05/16 |

Main Contractor

Contractor's Designer

Consultant

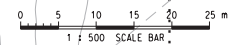
Project Title
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title
SOFT LANDSCAPE LAYOUT PLAN

| | | | |
|-------------|--|-----------|----------------|
| Drawing No. | HKLR9/MMH/DDA/A1/LS/00108 | Rev. | H |
| Design | PK | Drawn | MING |
| Approved | HTC | Status | FOR SUBMISSION |
| Scale | 1:500 (IN A1) | Approved | 10MAY16 |
| Job No. | HKLR9 | Sheet No. | 8 OF 10 |
| Title Name | HKLR9_MMH_DDAA_A1_LS_00101-00110-S.dgn | | |

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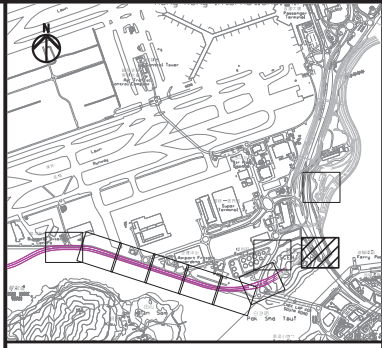
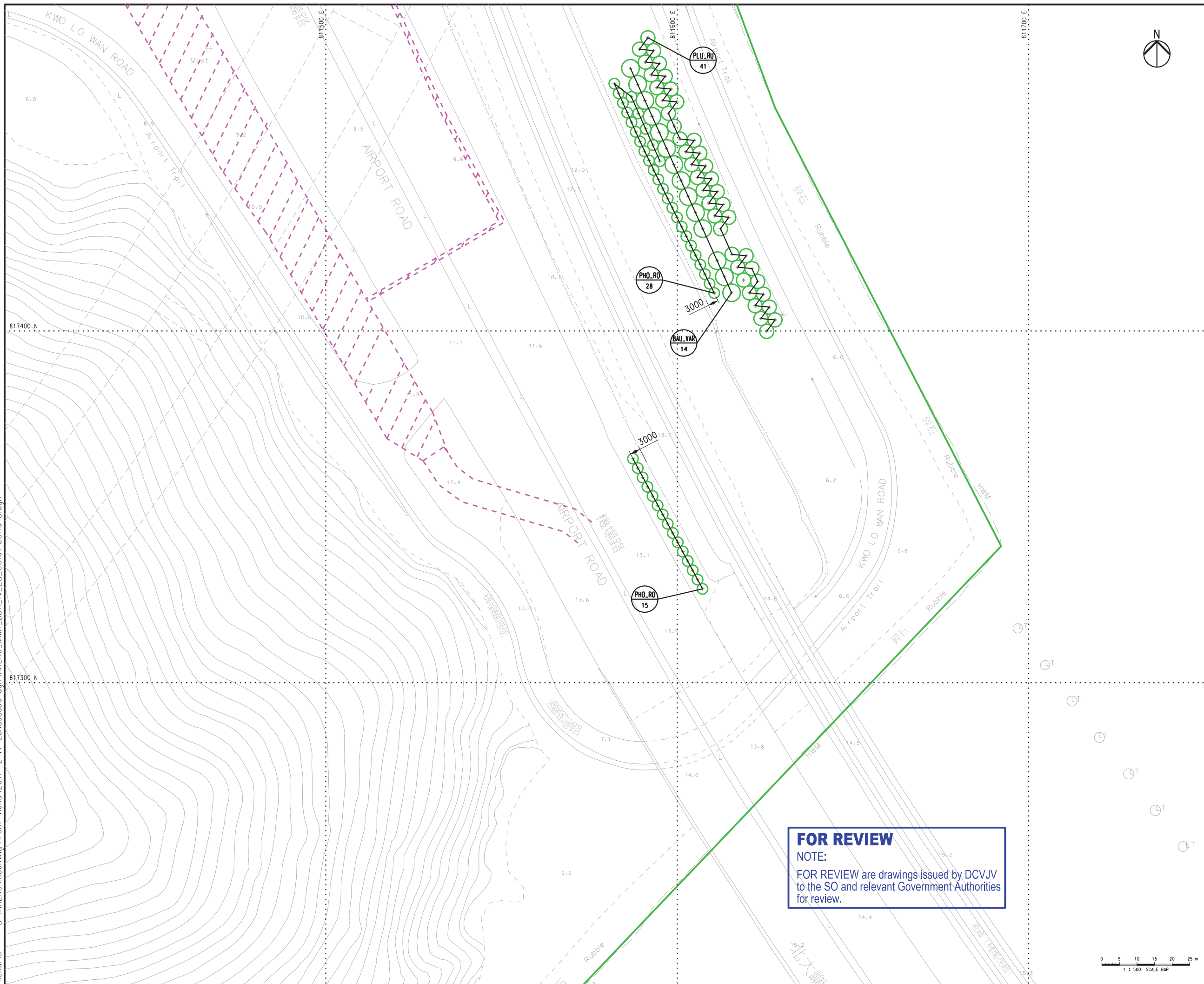
FOR REVIEW
 NOTE:
 FOR REVIEW are drawings issued by DCJVJ to the SO and relevant Government Authorities for review.



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MATCH LINE
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KEY PLAN
SCALE 1:35000

- NOTES:**
- SUFFICIENT SOIL DEPTH IS CONFIRMED IN ALL PROPOSED COMPENSATORY PLANTING AREAS.
 - PLEASE REFER TO DRAWING NO. HKLR9/MMH/DDA/AI/LS/00481 FOR THE PROPOSED PLANTING SCHEDULE.
 - HYDROSEEDING TO BE PROVIDED AT BARE GROUND WITHIN LANDSCAPE AREA.

- LEGEND:**
- SITE BOUNDARY
 - PROPOSED VIADUCT
 - ZONING ACCORDING TO HONG KONG INTERNATIONAL AIRPORT APPROVED PLANT SPECIES LIST (REVISION 31 JUNE 2007) (REFER TO ER PART 4 APPENDIX 4B)
 - LOT BOUNDARY
 - EXISTING LANDSCAPE PLANTING TO BE RETAINED
 - UTILITIES RESERVE ZONE
 - AHK'S POTENTIAL SUPPORTING AREA FOR FUTURE AIRPORT PROJECTS
 - PORTION OF MAINTENANCE AREA ON RESUMED LAND WITH NO PAVING AND NO PLANTING (FLAT PATHWAY)
 - GOVERNMENT LAND WITH NO PAVING AND NO PLANTING (FLAT PATHWAY)
 - ACCESS FOR MAINTENANCE (APPROX. 2.8m WIDTH, NO PAVING)
 - PLANT SPECIES QUANTITY / AREA
 - PROPOSED TREE
 - RETAIN TREE

| Rev. | Description | Design | Check | Date |
|------|--------------------|--------|-------|----------|
| J | REVISED AS CLOUDED | MMH | JV | 24/05/19 |
| H | REVISED AS CLOUDED | MMH | JV | 06/05/19 |
| G | REVISED AS CLOUDED | MMH | JV | 20/12/18 |
| F | REVISED AS CLOUDED | MMH | JV | 30/11/18 |
| E | REVISED AS CLOUDED | MMH | JV | 21/08/18 |
| D | REVISED AS CLOUDED | MMH | JV | 05/06/18 |

Main Contractor

Contractor's Designer

Consultant

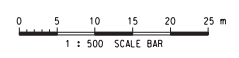
Project Title
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title
SOFT LANDSCAPE LAYOUT PLAN

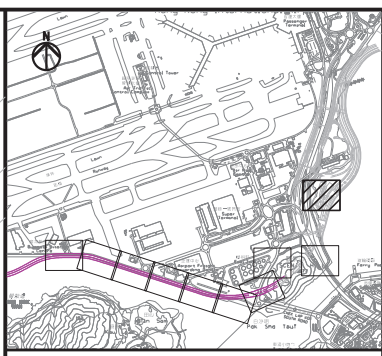
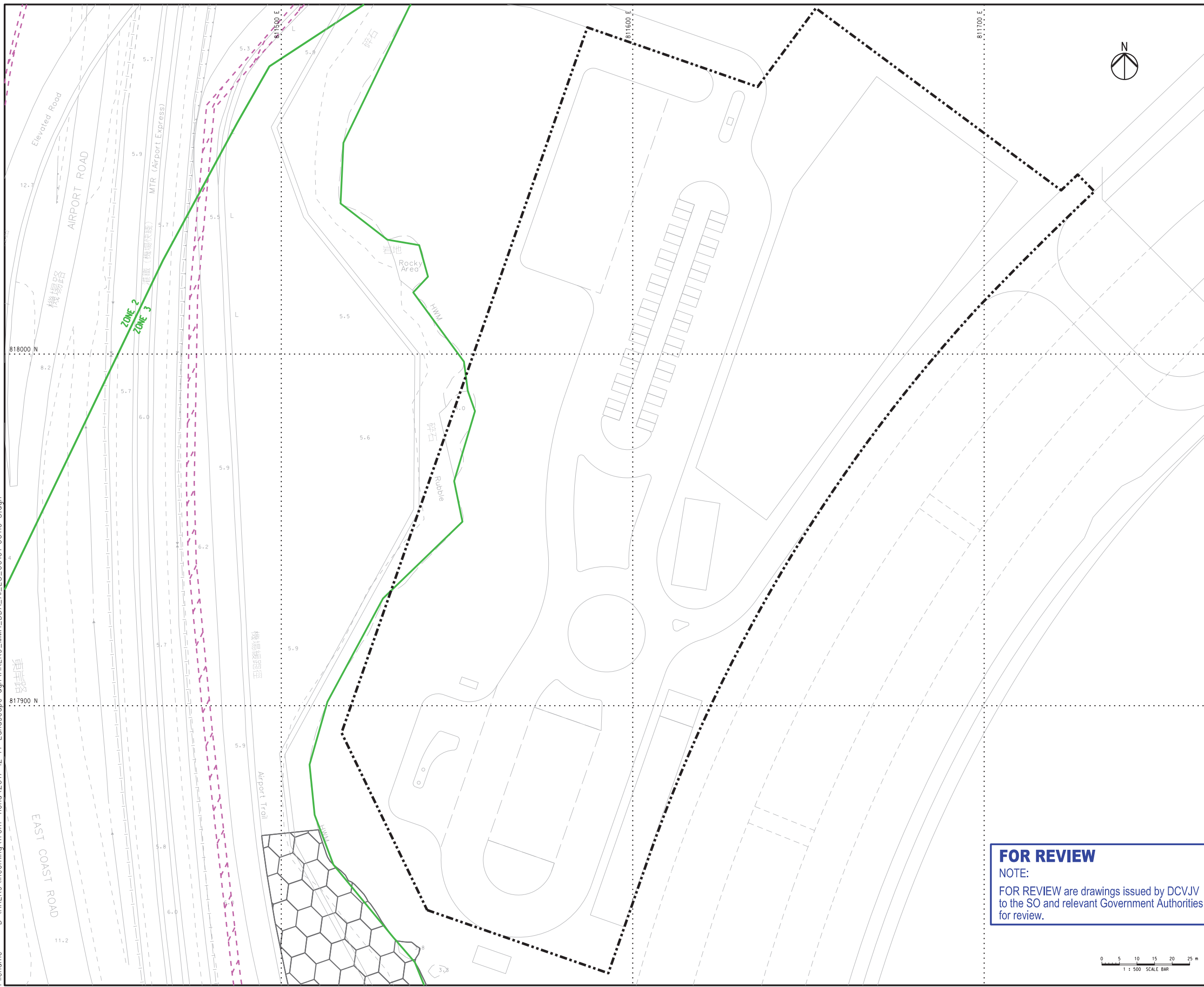
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| Drawing No. | HKLR9/MMH/DDA/AI/LS/00109 | Rev. | J |
| Design | PK | Drawn | MING |
| Approved | HTC | Status | FOR SUBMISSION |
| Scale | 1:500 (IN A1) | Approved | 10MAY16 |
| Job No. | HKLR9 | Sheet No. | 9 OF 10 |
| Title name | HKLR9_MMH_DDA_AI_LS_00101-00110-S.dgn | | |

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KEY PLAN
SCALE 1:35000

- NOTES:**
- SUFFICIENT SOIL DEPTH IS CONFIRMED IN ALL PROPOSED COMPENSATORY PLANTING AREAS.
 - PLEASE REFER TO DRAWING NO. HKLR9/MMH/DDA/AI/LS/00481 FOR THE PROPOSED PLANTING SCHEDULE.
 - HYDROSEEDING TO BE PROVIDED AT BARE GROUND WITHIN LANDSCAPE AREA.

- LEGEND:**
- SITE BOUNDARY
 - PROPOSED VIADUCT
 - ZONING ACCORDING TO HONG KONG INTERNATIONAL AIRPORT APPROVED PLANT SPECIES LIST (REVISION 31 JUNE 2007) (REFER TO ER PART 4 APPENDIX 4B)
 - LOT BOUNDARY
 - BOUNDARY OF HIGHWAY OPERATION AND MAINTENANCE AREA
 - EXISTING LANDSCAPE PLANTING TO BE RETAINED
 - UTILITIES RESERVE ZONE
 - AHK'S POTENTIAL SUPPORTING AREA FOR FUTURE AIRPORT PROJECTS
 - MAINTENANCE ACCESS
 - PLANT SPECIES QUANTITY / AREA
 - PROPOSED TREE
 - RETAIN TREE

| Rev. | Description | Design | Check | Date |
|------|--------------------|--------|-------|----------|
| E | REVISED AS CLOUDED | MMH | JV | 24/05/19 |
| D | REVISED AS CLOUDED | MMH | JV | 21/08/18 |
| C | FOR APPROVAL | MMH | JV | 10/05/16 |
| B | FOR APPROVAL | MMH | JV | 24/01/14 |
| A | FOR APPROVAL | MMH | JV | 09/08/13 |

Main Contractor

Contractor's Designer

Consultant

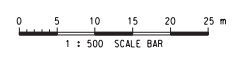
Project Title
Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Drawing Title
SOFT LANDSCAPE LAYOUT PLAN

| | | | | | |
|-------------|---------------------------------------|-------|-----------|----------|-----|
| Drawing no. | HKLR9/MMH/DDA/AI/LS/00110 | | | Rev. | E |
| Design | PK | Drawn | MING | Approved | HTC |
| Scale | 1:500 (IN A1) | | Approved | 10MAY16 | |
| Job No. | HKLR9 | | Sheet No. | 10 OF 10 | |
| Title name | HKLR9_MMH_DDA_AI_LS_00101-00110-S.dgn | | | | |

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 NOTE:
 FOR REVIEW are drawings issued by DCVJV to the SO and relevant Government Authorities for review.



Photographic Records for Landscape / Planting works on 1 August 2019

Location: Portion A

Photo 1



Description: General view of planted shrubs (*Rhododendron pulchrum*)

Photo 2



Description: General view of planted shrubs (*Rhododendron pulchrum*)

Photo 3



Description: The planted shrubs (*Rhododendron pulchrum*) was observed in poor health or dead.

Photo 4



Description: General view of planted trees (*Plumeria rubra*)

Photographic Records for Landscape / Planting works on 1 August 2019

Location: Portion A

Photo 5



Description: General view of planted trees (*Plumeria rubra*, *Callistemon viminalis* and *Phoenix roebelenii*)

Photo 6



Description: General view of planted trees (*Bauhinia variegata* and *Bauhinia blakeana*)

Photo 7



Description: The planted tree (*Phoenix roebelenii*) was observed in poor health or dead.

Photo 8



Description: General view of planted trees (*Plumeria rubra* and *Phoenix roebelenii*)

Photographic Records for Landscape / Planting works on 1 August 2019

Location: Portion A

Photo 9



Description: General view of planted trees (*Phoenix roebelenii*)

Photographic Records for Landscape / Planting works on 1 August 2019

Location: Portion C

Photo 10



Description: General view of planted trees (*Bauhinia variegata* and *Bauhinia blakeana*)

Photo 11



Description: Description: General view of planted trees (*Bauhinia variegata*)

Photo 12



Description: General view of planted shrubs (*Rhododendron pulchrum*)

Photo 13



Description: General view of *Zoysia japonica*

Photographic Records for Landscape / Planting works on 1 August 2019

Location: Kwo Lo Wan Road

Photo 14



Description: General view of planted trees (*Plumeria rubra*)

Photo 15



Description: General view of planted trees (*Bauhinia variegata* and *Phoenix roebelenii*)

Photographic Records for Landscape / Planting works on 1 August 2019

Location: Airport Road

Photo 16



Description: Weeds and unwanted plants were observed at the planter area for *Phoenix roebelenii*

Photographic Records for Landscape / Planting works on 1 August 2019

Location: Viaduct between P112 – P114

Photo 17



Description: General view of groundcover (*Nephrolepis exaltata*)

Photo 18



Description: General view of groundcover (*Nephrolepis exaltata*)

Photo 19



Description: Weeds and unwanted were observed at the planter area for *Catharanthus roseus*

Photo 20



Description: Weeds and unwanted were observed at the planter area for *Lantana montevidensis*

Photographic Records for Landscape / Planting works on 1 August 2019

Location: Viaduct between P112 – P114

Photo 21



Description: Weeds and unwanted were observed at the planter area for *Nephrolepis exaltata*, *Catharanthus roseus* and *Lantana montevidensis*

Photo 22



Description: Weeds and unwanted were observed at the planter area for *Nephrolepis exaltata*, *Catharanthus roseus* and *Lantana montevidensis*

