

Acuity Sustainability Consulting Limited – Nature & Technologies (HK) Limited Joint Venture



Our ref: ASCL-2018009

AECOM Asia Company Limited 8/F., Grand Central Plaza, Tower 2 138 Shatin Rural Committee Road Shatin, New Territories, Hong Kong

Attention: Mr. Conrad NG

2 November 2018

Dear Sir,

Contract No. NE/2017/07
Cross Bay Link, Tseung Kwan O – Main Bridge and Associated Works
Landscape Mitigation Plan

I refer to the your email dated 1 November 2018 concerning the updated Landscape Mitigation Plan dated October 2018. We have no further comment on it and verify the captioned according to section 1.9 of Environmental Permit with No.EP-459-2013.

Yours faithfully,

K.

Li Wai Ming Kevin Independent Environmental Checker

cc. Mr. Tam (ETL)
Simon Wong (CEDD)



Our Ref: TCS00975/18/300/L0050

AECOM Asia Company Limited

8/F, Grand Central Plaza, Tower 2 138 Shatin Rural Committee Road Shatin, New Territories, Hong Kong

Attn: Mr. Conrad Ng

2 November 2018 By e-mail

Dear Sirs,

Re: CEDD Contract NE/2017/07

Cross Bay Link, Tseng Kwan O, Main Bridge and Associated Works

Landscape Mitigation Plan

With reference to the emails of 24, 25, 31 October 2018 and 1 November 2018 attaching the Landscape Mitigation Plan prepared by AECOM, please note that we have no adverse comments on the captioned submission. We herewith certify the captioned submission pursuant to Specific Condition 2.6 of the Environmental Permit no. EP-459/2013.

Should you have any queries, please feel free to contact the undersigned at Tel: 2959-6059 or Fax: 2959-6079 or Email: twtam@fordbusiness.com.

Yours Faithfully, For and on Behalf of

Action-United Environmental Services & Consulting (AUES)

T. W. Tam

Environmental Team Leader

TW/ml

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Contract No. NE/2017/07 Cross Bay Link, Tseung Kwan O – Main Bridge and Associated Works

Contract No. NE/2017/08 Cross Bay Link, Tseung Kwan O - Road D9 and Associated Works

Landscape Mitigation Plan October 2018

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1. INTRODUCTION

1.1. Background

- 1.1.1. This project, Cross Bay Link, Tseung Kwan O (CBL) is a "Designated Project" under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499) and Environmental Impact Assessment Report (AEIAR-172/2013) was prepared for the Project. The current Environmental Permit (EP) EP-459/2013 for CBL was issued on 15 August 2013.
- 1.1.2. According to Condition 2.6 of EP-459/2013 "The Permit Holder shall, no later than one month before commencement of construction of the Project, deposit with the Director three hard copies and two electronic copies of a Landscape Mitigation Plan."

1.2. Scope of the Project

- 1.2.1. The scope of the project is to complete CBL and associated works to resolve the traffic congestions and associated problems in the Tseung Kwan O Tunnel, Wan Po Road and other roads in TKO town centre. The Project comprises the following:
 - (a) construction of a dual two-lane carriageway of approximately 1.8 kilometre (km) long with a cycle track and a footpath across Junk Bay mainly on viaduct, connecting Tseung Kwan O Lam Tin Tunnel to Wan Po Road near Area 86 of TKO with the necessary slip roads;
 - (b) construction an approximate 210m long cycle track and footpath bridge to the waterfront promenade at the western side of Area 86 of TKO with associated lift and staircase, and junction improvements; and
 - (c) implementation of associated civil, structural, marine, electrical and mechanical, traffic control and surveillance system, landscaping, as well as environmental protection and mitigation work.

2. LANDSCAPE AND VISUAL MITIGATION PLANS

2.1. Objectives

- 2.1.1. To provide landscape design to mitigate the potential landscape and visual impact of the project during the construction and operation phase in accordance with the approved EIA Report of the project and ETWB TCW No. 3/2006 for tree preservation requirements.
- 2.1.2. To enhance the existing landscape and visual quality, making references to the proposed planting themes from Greening Master Plans (GMPs).

2.2. Summary of the Proposed Mitigation Measures

2.2.1. A summary of construction phase and operation phase mitigation measures according to the AEIAR are listed in Table 2.1 and Table 2.2.

2.2.2. The proposed Landscape and Visual Mitigation measures under the approved EIA are shown in Appendix A.

Table 2.1 – Construction Phase Mitigation Measures

ID No.	Construction Phase Mitigation Measures
CN 101	The construction area and contractor's temporary works area should be minimized to avoid impacts
CM01	on adjacent landscape, and the reliance on off-site construction.
CM02	Reduction of construction period to practical minimum.
	Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft
CM03	landscape works, where the soil material meets acceptable criteria and where practical. The Contract
	Specification shall include storage and reuse of topsoil as appropriate.
	Existing trees on boundary of the Project Area shall be carefully protected during construction.
	Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this
CM04	specification, the Contractor shall be required to submit, for approval, a detailed working method
CIVIU4	statement for the protection of trees prior to undertaking any works adjacent to all retained trees,
	including trees in contractor's works areas. Tree protection measures will be detailed at Tree Removal
	Application stage).
	Trees unavoidably affected by the works shall be transplanted where practical. Trees should be
CM05	transplanted straight to their final receptor site and not held in a temporary nursery. A detailed Tree
CIVIOS	Transplanting Specification shall be provided in the Contract Specification, if applicable. Sufficient
	time for necessary tree root and crown preparation periods shall be allowed in the project program.
CM06	Advance screen planting to proposed roads and associated structures.
CM07	Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone).
CM08	Screening of construction works by hoarding/noise barriers around works area in visually unobtrusive
CIVIUO	colours, to screen Works.
CM09	Control night-time lighting and glare by hooding all lights.
CM10	Ensure no run-off into water body adjacent to the Project Area.
CM11	Avoidance of excessive height and bulk of buildings and structures, namely use of longer span pier
CIVITI	design to reduce the number of piers.

Table 2.2 – Operation Phase Mitigation Measures

OM1	Compensatory tree planting for all felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006.
OM2	A continuous belt of screen planting along the roads. Planting of the belt of trees shall be carried out
OIVIZ	as advance works ahead of other site formation and building works.
OM3	Maximise soft landscape of the site, Where space permits, roadside berms /slope treatment works
OIVIS	should be created.
OM4	During detailed design, refine structure layout to create a planting strips along the roads to enhance
01714	greenery.
OM5	Use appropriate (visually unobtrusive and non-reflective) building structural materials and colours,
Olvis	and aesthetic design in built structures.
	Streetscape elements (e.g. paving, signage, street furniture, railing etc.) shall be sensitively designed
OM6	in a manner that responds to the local context, and minimises potential negative landscape and visual
	impacts. Lighting units should be directional and minimise unnecessary light spill.
OM7	Avoidance of excessive height and bulk of buildings and structures.



2.3. Monitoring Details

- 2.3.1. The implementation of landscape construction works and subsequent maintenance operations during the 12-month Establishment Period must be supervised by qualified Landscape Resident Site Staff (Registered Landscape Architect or Professional Member of the Hong Kong Institute of Landscape Architects).
- 2.3.2. Measures to mitigate landscape and visual impacts during construction should be checked and monitored by a Registered Landscape Architect to ensure compliance with the intended aims of the mitigation measures.
- 2.3.3. The progress of the engineering works shall be regularly reviewed on site to identify the earliest practical opportunities for the landscape works to be undertaken.
- 2.3.4. The monitoring programme during construction phase and establishment as required under the EM&A Manual is listed in Table 2.3.

Table 2.3 – Monitoring Programme

Stage	Monitoring Task	Monitoring Period	Form of Approval	Frequency
Construction	Monitoring of the contractor's	Report on	Counter-	Monthly
	operations during the construction	Contractor's	signature of	
	period.	compliance by ET.	report by IEC.	
Establishment	Monitoring of the planting works	Report on	Counter-	Bi-Monthly
	during the 24-month Establishment	Contractor's	signature of	
	Period after completion of the	compliance by ET.	report by IEC	
	construction works.			

2.3.5. The event and action plan as required under the EM&A Manual is listed in Table 2.4.

Table 2.4 - Event and Action Plan

Event		Action		
	ET	IEC	ER	Contractor
Exceedance	1. Identify Source;	1. Check monitoring report;	1. Notify	1. Amend working
	2. Inform IEC and ER;	2. Check Contractors working	Contractor;	methods;
	3.Discussremedial	method;	2. Ensure remedial	2. Rectify damage
	actions with IEC, ER	3. Discuss with ET and Contractor on	measures are	and undertake any
	and Contractor;	possible remedial measures;	properly	necessary
	4. Monitor remedial	4. Advise ER on effectiveness of	implemented.	replacement.
	actions until	proposed remedial measures;		
	rectification has been	5. Check implementation of remedial		
	completed.	measures.		
Repeated	1. Identify source;	1. Check monitoring report;	1. Notify	1. Amend working
Exceedance	2. Inform IEC and ER;	2. Check Contractor's working	Contractor;	methods;
	3. Increase	method;	2. Ensure remedial	2. Rectify damage
	monitoring	3. Discuss with ET and Contractor on	measures are	and undertake any
	frequency;	possible remedial measures; 4.	properly	necessary
	4. Discuss remedial	Advise ER on effectiveness of	implemented.	replacement.
	actions with IEC, ER	proposed remedial measures;		
	and Contractor;	5. Supervise implementation of		
	5. Monitor remedial	remedial measures.		
	actions until			
	rectification has been			
	completed;			
	6. If exceedance			
	stops, cease			
	additional			
	monitoring.			

3. PROPOSED PLANTING AND TREE TREATMENTS FOR CROSS BAY LINK

3.1. Compensatory Planting Proposals

3.1.1. Due to the proposed construction works, 430 trees, (including 13 no. of dead trees) are proposed to be felled. None of them are affected by slope works. 430 heavy standard trees shall therefore be required to compensate the loss trees for the projects. A summary of the tree survey is listed in Table 3.1 below. An updated tree survey was conducted in August 2018 and the updated status is listed below.



Table 3.1 – Summary of Tree Survey and Tree Treatment Recommendations

Total Trees		_	Living Trees to be Felled		Dead Trees to be Felled
Surveyed within the Project Boundary	Trees to be Retained	Trees to be Transplanted	Affected by Proposed Works	Routine Arboriculture Maintenance for Undesirable Species	Within the Construction Works Area
610	70	16	417	94	13

- 3.1.2. Compensatory trees will be provided within the project boundary as far as possible. Available space for possible landscape planting had been explored within the project boundary, however owing to the constraints detailed below and as illustrated in Appendix B, the available landscape space within the project boundary is considered rather limited:
 - Central Median of Road D9

The central median of Road D9 is occupied by supporting columns for the noise enclosure, and its width is less than 2-metre width, which is considered unfavourable for heavy standard tree planting and future tree growth. Moreover, the central median is located between high speed planes where a safe maintenance access could not be provided. Therefore this location is considered not suitable for compensatory planting.

- Planting Area adjacent to Cycle Track and Footpath along CBL Marine Viaduct
 Based on the recently conducted wind tunnel test on the bridge deck section, trees
 planted along the viaduct would have a significantly adverse effect on the wind
 resistance of the bridge, and hence is considered infeasible.
- Planting Area along Existing Wan Po Road

The planting area along Wan Po Road has been occupied by existing trees. As shown in the updated compensatory planting plan, 4 additional compensatory planting trees have been proposed to fill the gaps between existing trees. However, to ensure adequate space for future tree growth, no other compensatory planting trees would be proposed along Wan Po Road.

• Planting Area along the Waterfront of Area 86

This area is located within Yellow Area of TKO Town Lot No. 70, in which the landscape works would be designed and developed by MTRCL. Design coordination is in progress to ensure overall greening quality. However, no compensatory planting under CBL would be located in this area.

Planting Area to the North of Road D9

The proposed Road D9 would be constructed immediately adjacent to the Yellow Hatched Black Area of TKOTL 70 which is a 3m strip abutting the lot boundary of TKOTL70. Proposed landscape works along the 3m strip Yellow-Hatched Black Area would be designed and developed by MTRCL. Design coordination is in progress to ensure overall greening quality. However, no compensatory planting under CBL would be located in this area.

• Planting Areas to the South of Road D9

Apart from planters adjacent to the proposed Road D9, planting along the southern side of Road D9 is restricted by existing seawalls. The clearance between the edge of Road D9 structures and the existing seawall is approximately 2 metres, and the underground space would be occupied by geotextile and spall layers associated with the seawall. This soiling and underground condition is considered not suitable for compensatory tree planting.

3.1.3. An updated tree survey for Cross Bay Link Works Area A was conducted in August 2018. A summary of the trees surveyed and treated are summarize in Table 3.2 below and Appendix E.

Table 3.2 - Tree Survey for Works Area A

	Trees Felled	Dead	To Be Confirmed	Total
Approved treatment	41	1	15	57
Current status	41	1	15	57

- 3.1.4. Having explored possible planting area within the project boundary, it is anticipated that on site compensation to accommodate all affected trees would not be feasible. Off-site tree compensation within the boundary of TKO-LLT project is therefore recommended.
- 3.1.5. Based on the limited available landscape space for compensation within the project boundary, only 60 heavy standard trees can be compensated within the site boundary. The on-site Compensatory Planting Plan is illustrated in Appendix C. The remaining 389 will be compensated off-site and will take up the part of the surplus compensation quota within the project boundary of TKO-LTT as illustrated in Appendix D. The proposed tree species to be compensated are listed in Table 3.3.

Table 3.3 – List of Tree Species to be compensated

Table 3.3 – List of Tree Species to be compensated					
Species	Spacing (mm)	Size			
Tree Planting along roadside planting areas in Road D9					
Pongamiapinnata 水黄皮*	5000	Heavy Standard			
Livistonachinensis 浦葵	3000	Heavy Standard			
Wodyetia bifurcate 狐尾椰子	3000	Heavy Standard			
Tree Planting in reclaimed land at Road P2 of	TKO-LTT				
Ficusmicrocarpa 細葉榕	10000	Heavy Standard			
Bischofiajavanica 秋楓	6000	Heavy Standard			
Terminaliamantaly 細葉欖仁	6000	Heavy Standard			
Liquidambar formosana 楓香*	6000	Heavy Standard			
Litseaglutinosa 潺槁樹	6000	Heavy Standard			
Terminaliacatappa 欖仁樹	6000	Heavy Standard			
Michelia x abla 白蘭	5000	Heavy Standard			
Bauhinia variegate var. candida 白花洋紫荆	5000	Heavy Standard			
Tabebuiachrysantha 黃花風鈴木	5000	Heavy Standard			
Thespesiapopulnea 恒春黃槿*	5000	Heavy Standard			
Pongamiapinnata 水黄皮	5000	Heavy Standard			

Bauhinia variegate 宮粉羊蹄甲	5000	Heavy Standard
Lagerstroemia speciose 大花紫薇	5000	Heavy Standard
Washingtoniarobusta 華盛頓葵	5000	Heavy Standard
Neodypsisdecaryi 三角椰子	5000	Heavy Standard
Tabebuiaimpetiginosa 紅花風鈴木	5000	Heavy Standard
Callistemon rigidus 紅千層	5000	Heavy Standard
Wodyetia bifurcate 狐尾椰子	3000	Heavy Standard

^{*} Native Species

3.2. Compensation by Other Greening Measures

3.2.1. Greening measures including amenity shrub, ground cover planting and climbers on retaining wall/facade of noise enclosure would be provided where possible within the project boundary to recover the loss of greenery in terms of quality, increasing overall site coverage of greenery, and maximizing green opportunities with reference to Para. I(c) of Appendix A of DEVB TCW No. 7/2015.

4. LANDSCAPE PROPOSALS

4.1. Landscape Design

- 4.1.1. Landscape master plan for the Project is shown in Figures 60329339/LM/002 to 60329339/LM/008.
- 4.1.2. The landscape design intention is to maximize greening within the project boundary and provide a pleasant landscaped environment for the enjoyment for the users of the project which include motorists, cyclists and pedestrians.
- 4.1.3. Landscape Proposals for Cross Bay Link include:
 - Retention of existing trees and vegetation where possible;
 - Provision of seamless hard landscape design treatments to the waterfront promenade and roadside landscape areas in TKO area;
 - Provision of amenity planting with ground covers or small shrubs along the planters that separate the carriageway, cycle track and pavement on the bridge deck;
 - Tree and Shrub Planting are proposed along the noise enclosures at the both sides of Road P9 where space is available; and
 - Climbers are proposed to soften the retaining wall and facade of the noise enclosures where space for tree planting is not available.

4.2. Hard Landscape Materials

- 4.2.1. The following hard landscape materials are proposed for the Project:
 - The paving pattern for the pavement at grade along Road D9 is proposed to match the
 existing paving pattern adopted in TKO District and the paving pattern on bridge deck is
 proposed to match the pattern adopted along the TKO waterfront at the eastern side of
 the channel;
 - The cycle track will be surfaced with high friction coating to provide grip to cyclists. Green pigments will be added to give a thematic 'leaf green' colour common to the cycle tracks in Tseung Kwan O;
 - All planters will be clad in natural granite. The planter on bridge deck shall be in fine bush hammered finish to echo with the modern style of the bridge and the planter at grade along Road P9 shall be in natural cleft finish to match to the existing planter finish adopted in TKO District; and
 - Details of hard landscape treatments to the project are illustrated in Figures 60329339/LM/021 to 60329339/LM/023.

4.3. Soft Landscape Materials

4.3.1. Soft Landscape Material for Project is shown in Figures 60329339/LM/031. An indicative planting schedule for the landscape areas is shown in Table 4.1

Table 4.1 – Proposed Plant Species for Cross Bay Link

Species	Spacing	Size (mm)			
Amenity Planting on Bridge Deck					
Shrub / Herbaceous Plant / Ground Cover F	Planting				
Catharanthus roseus 長春花	250	250(H) x 250(S)			
Lantana camara 黃花馬櫻丹	250	250(H) x 250(S)			
Lantana montevidensis 小葉馬櫻丹	250	250(H) x 250(S)			
Cuphea hyssopifolia 細葉雪茄花	250	250(H) x 250(S)			
Amenity Planting along Road P9					
Tree Planting					
Livistonachinensis 蒲葵	5000	Heavy Standard			
Pongamiapinnata* 水黄皮	5000	Heavy Standard			
Wodyetiabifurcata 狐尾椰子	5000	Heavy Standard			
Shrub Planting					
Duranta repens 'Golden leaves' 金連翹	400	500(H) x 500(S)			
Ixona williamsii 龍船花	400	500(H) x 500(S)			
Rhaphiolep isindica* 車輪梅	400	500(H) x 500(S)			
Scaevola sericea* 草海桐	400	500(H) x 500(S)			
Climbers Planting					
Ficuspumila 薜荔	300	Min. 3 shoots per plant, 1000mm long			
Bauhinia corymbosa 首冠藤	300	Min. 3 shoots per plant, 1000mm long			
Podranea ricasoliana 紫雲藤	300	Min. 3 shoots per plant, 1000mm long			

^{*}Native Species



4.4. Proposed Implementation Schedule of Mitigation Measures

4.4.1. Programme of mitigation measures during construction and operation phase.

	Start from	End in			
Construction	Construction Phase				
CM01	Late 2018	Early 2022			
CM02	Late 2018	Early 2022			
CM03	Late 2018	Early 2022			
CM04	Late 2018	Early 2022			
CM05	Late 2018	Early 2022			
CM06	Late 2020	Early 2022			
CM07	Late 2020	Early 2022			
CM08	Late 2018	Early 2022			
CM09	Late 2018	Early 2022			
CM10	Late 2018	Early 2022			
CM11	Late 2018	Early 2022			
Operation Phase					
All OMs	Early 2022	-			

5. MANAGEMENT AND MAINTENANCE OF LANDSCAPE WORKS

5.1. Responsibility of relevant parties on mitigation measures

ID No.	Construction Phase Mitigation Measures	Funding and Implementation Agency	Management and Maintenance Agency
CM01	The construction area and contractor's temporary works area should be minimized to avoid impacts on adjacent landscape, and the reliance on off-site construction.	CEDD (via Contractor)	CEDD
CM02	Reduction of construction period to practical minimum.	CEDD (via Contractor)	CEDD (via Contractor)
CM03	Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where the soil material meets acceptable criteria and where practical. The Contract Specification shall include storage and reuse of topsoil as appropriate.	CEDD (via Contractor)	CEDD (via Contractor)
CM04	Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees,	CEDD (via Contractor)	CEDD (via Contractor)

	including trees in contractor's works areas. Tree protection		
	measures will be detailed at Tree Removal Application		
	stage).		
	Trees unavoidably affected by the works shall be		
	transplanted where practical. Trees should be transplanted		
	straight to their final receptor site and not held in a		
CM05	temporary nursery. A detailed Tree Transplanting	CEDD (via	CEDD (via
Civios	Specification shall be provided in the Contract	Contractor)	Contractor)
	Specification, if applicable. Sufficient time for necessary		
	tree root and crown preparation periods shall be allowed		
	in the project program.		
CN 40C	Advance screen planting to proposed roads and associated	CEDD (via	CEDD (via
CM06	structures.	Contractor)	Contractor)

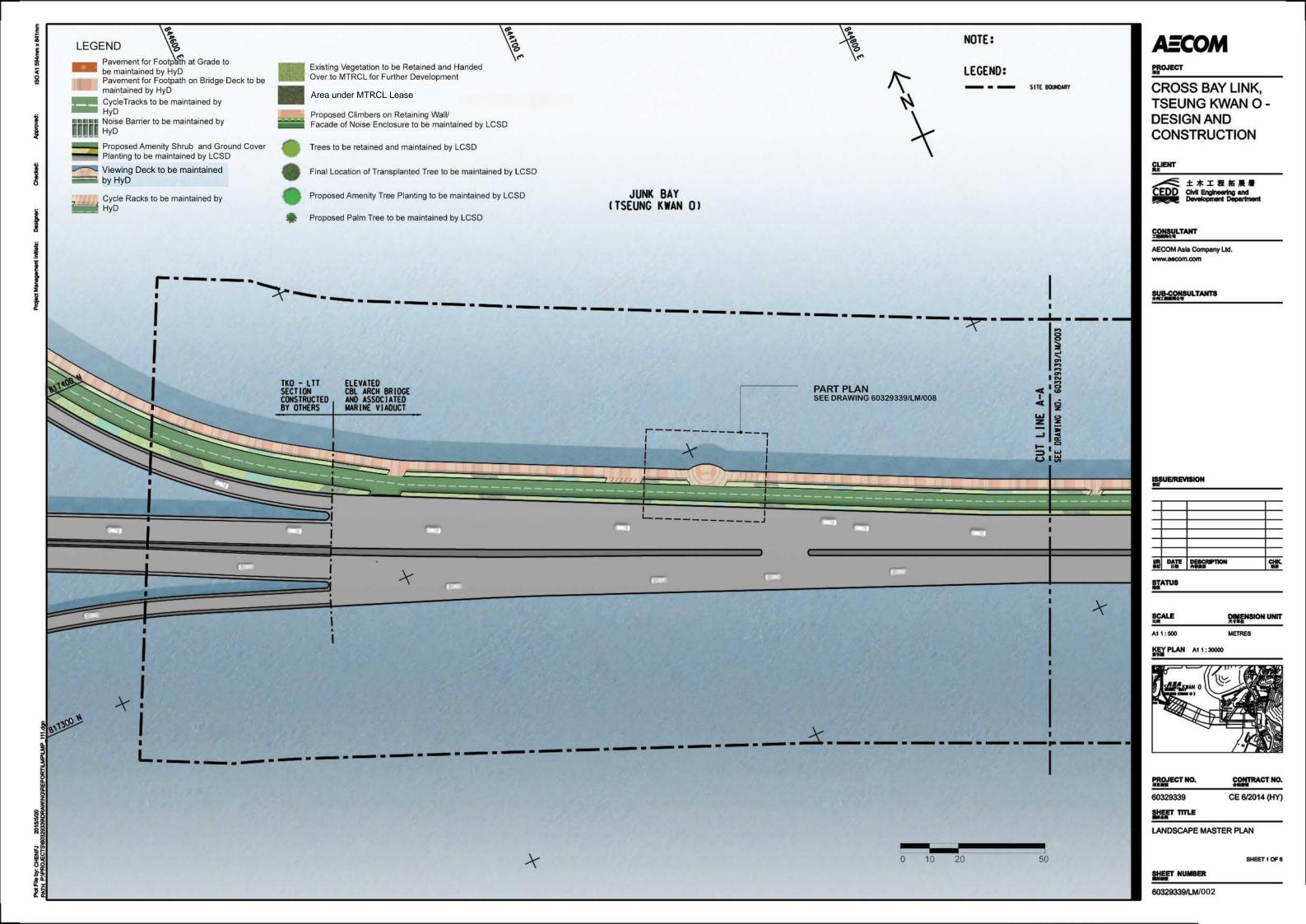
ID No.	Construction Phase Mitigation Measures	Funding and Implementation Agency	Management and Maintenance Agency
CM07	Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material (in earth tone).	CEDD (via Contractor)	CEDD (via Contractor)
CM08	Screening of construction works by hoarding/noise barriers around works area in visually unobtrusive colours, to screen Works.	CEDD (via Contractor)	CEDD (via Contractor)
CM09	Control night-time lighting and glare by hooding all lights.	CEDD (via Contractor)	CEDD (via Contractor)
CM10	Ensure no run-off into water body adjacent to the Project Area.	CEDD (via Contractor)	CEDD (via Contractor)
CM11	Avoidance of excessive height and bulk of buildings and structures, namely use of longer span pier design to reduce the number of piers.	CEDD (via Contractor)	CEDD (via Contractor)

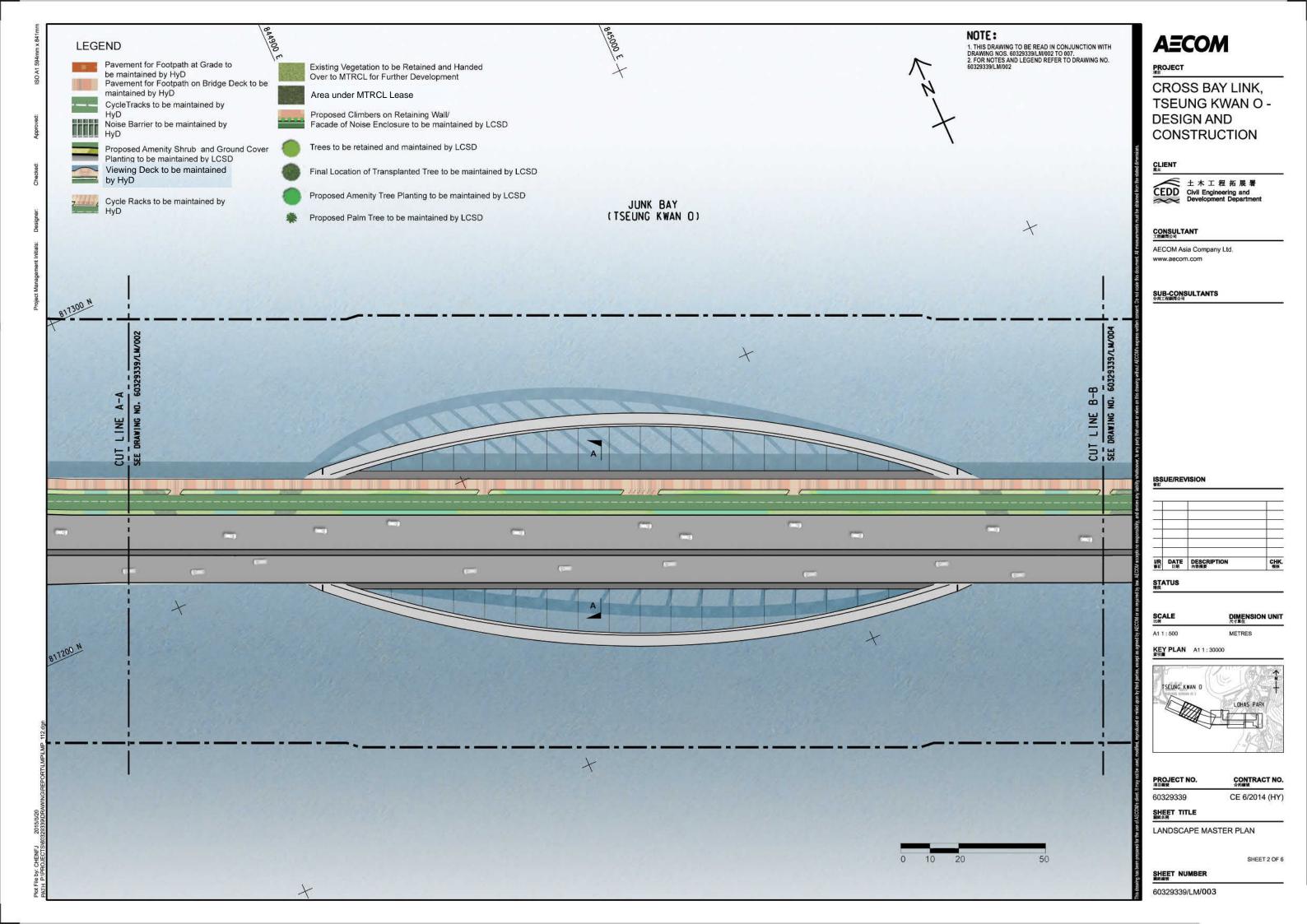


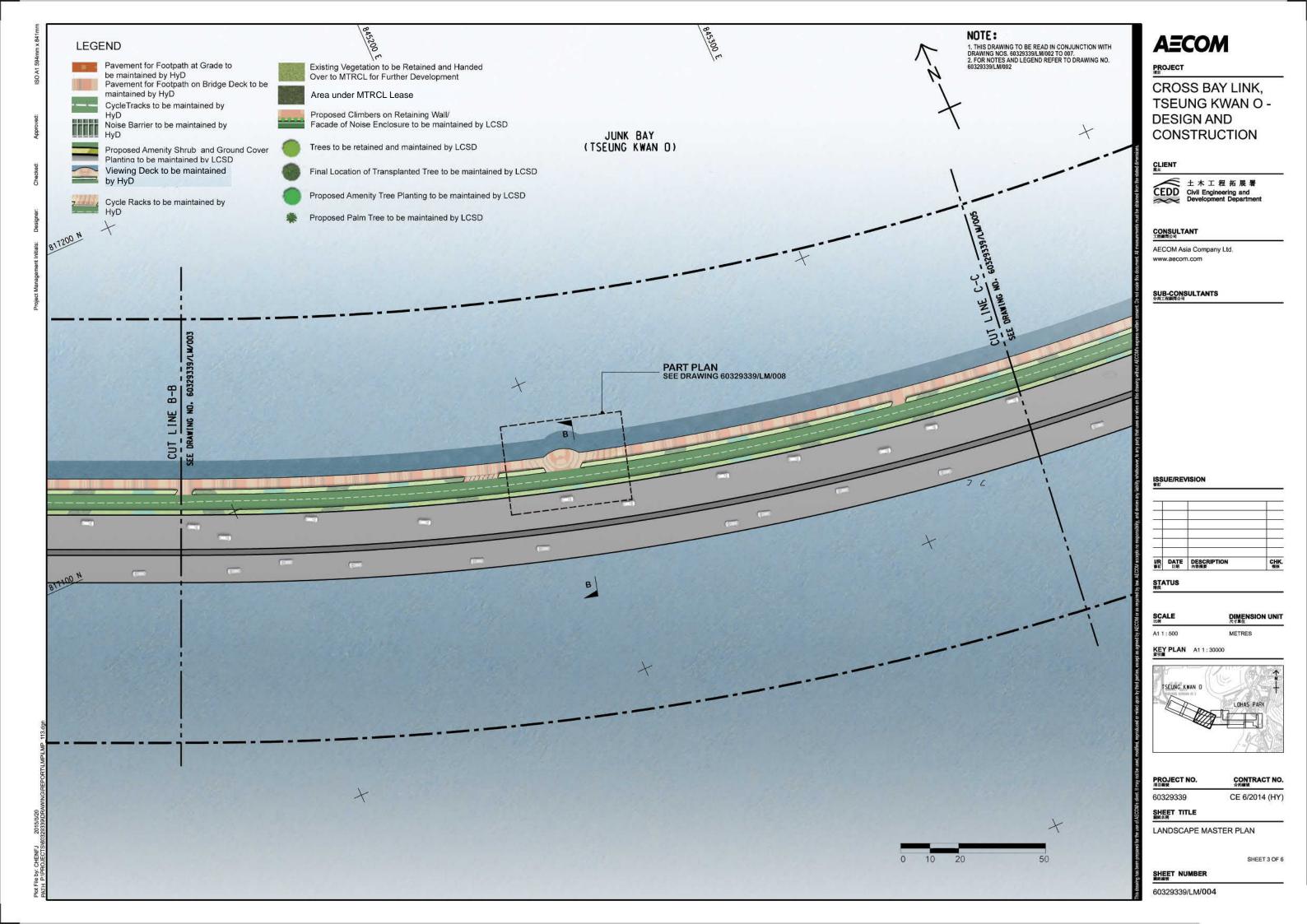
ID No.	Operation Phase Mitigation Measures	Funding and Implementation Agency	Management and Maintenance Agency
OM1	Compensatory tree planting for all felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006.	CEDD	CEDD/LCSD
OM2	A continuous belt of screen planting along the roads. Planting of the belt of trees shall be carried out as advance works ahead of other site formation and building works.	CEDD	CEDD/LCSD
ОМ3	Maximise soft landscape of the site, Where space permits, roadside berms /slope treatment works should be created.	CEDD	CEDD/LCSD
OM4	During detailed design, refine structure layout to create a planting strips along the roads to enhance greenery.	CEDD	CEDD/LCSD
OM5	Use appropriate (visually unobtrusive and non-reflective) building structural materials and colours, and aesthetic design in built structures.	CEDD	CEDD
ОМ6	Streetscape elements (e.g. paving, signage, street furniture, railing etc.) shall be sensitively designed in a manner that responds to the local context, and minimises potential negative landscape and visual impacts. Lighting units should be directional and minimise unnecessary light spill.	CEDD	CEDD
OM7	Avoidance of excessive height and bulk of buildings and structures.	CEDD	CEDD

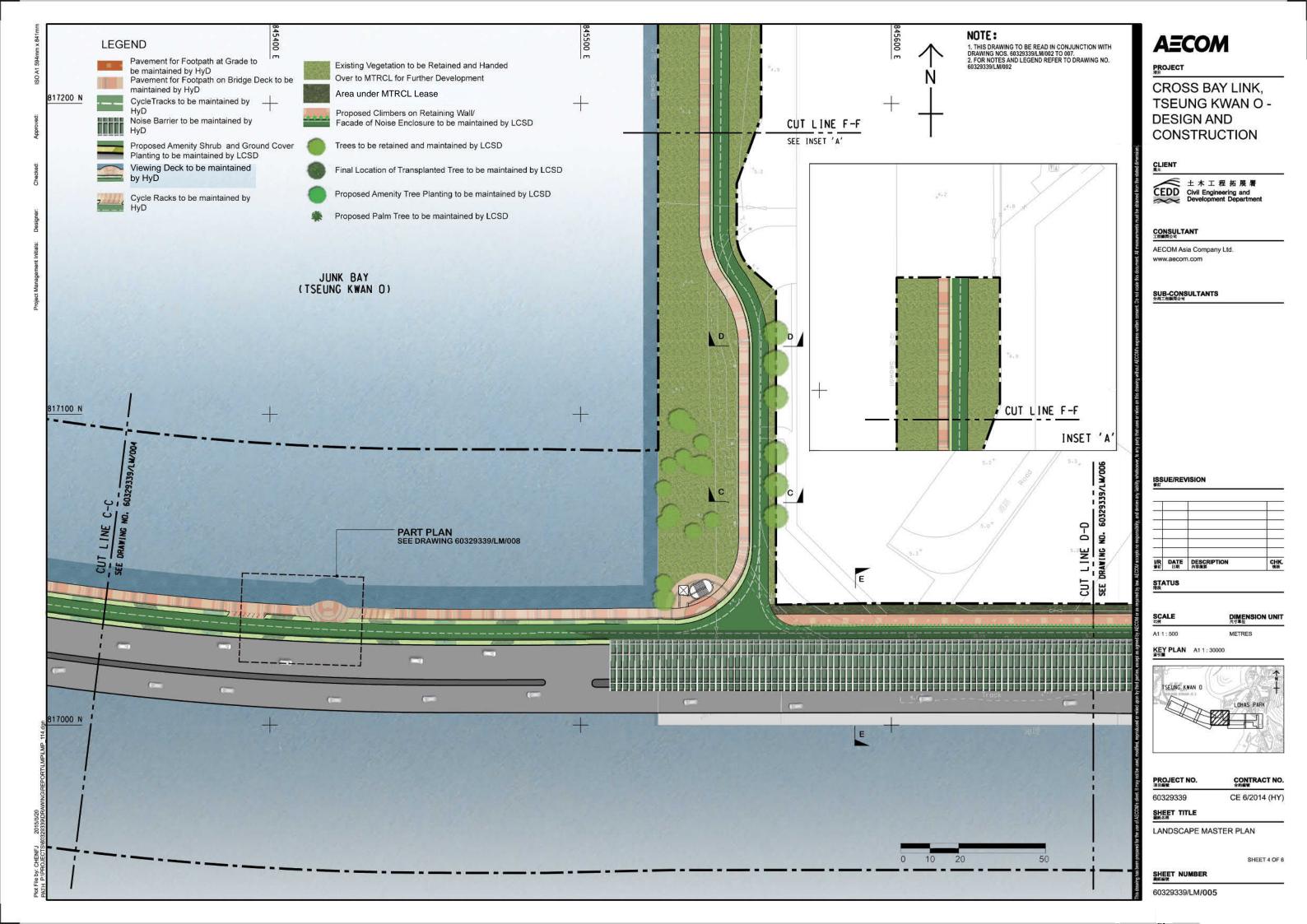


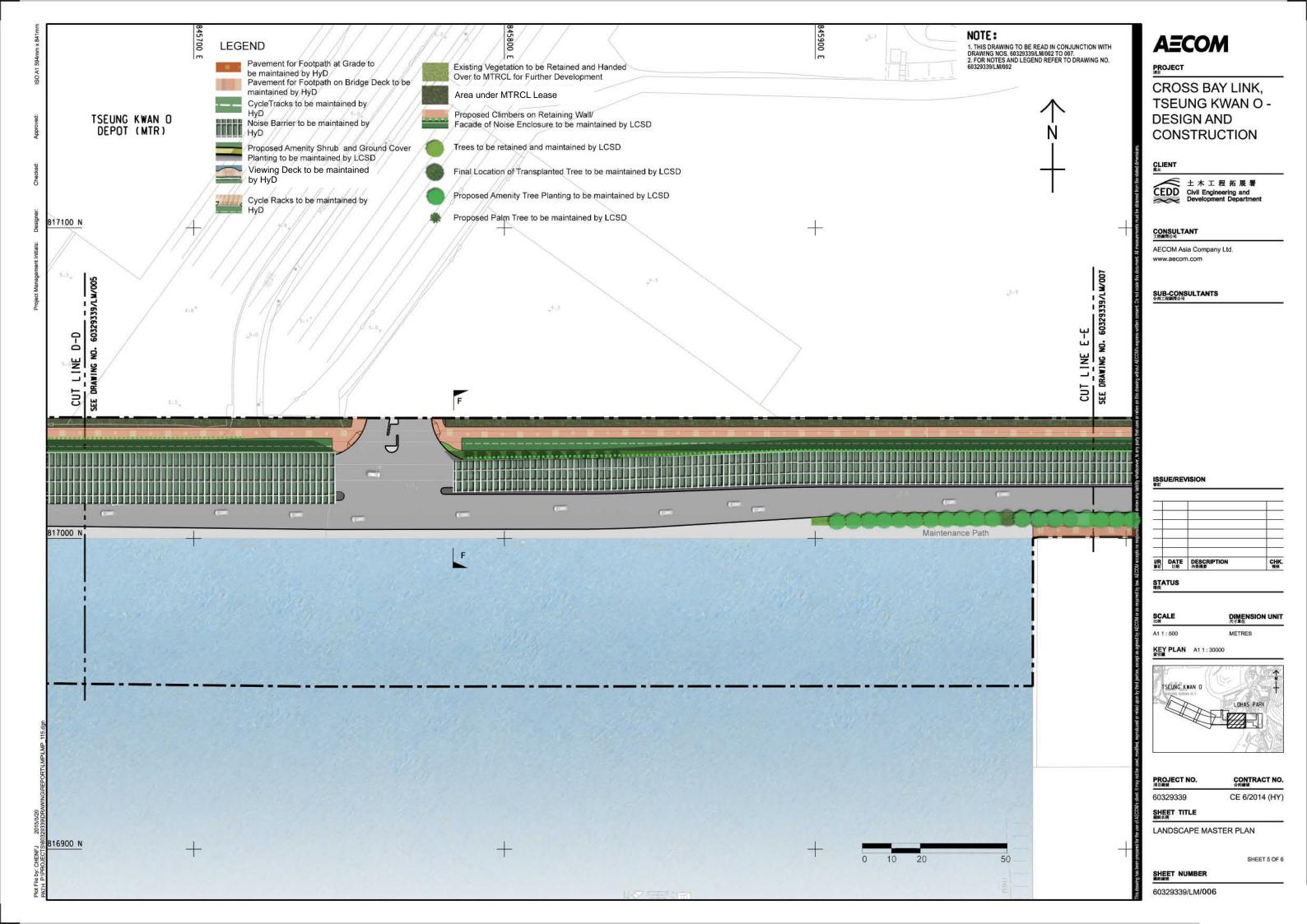


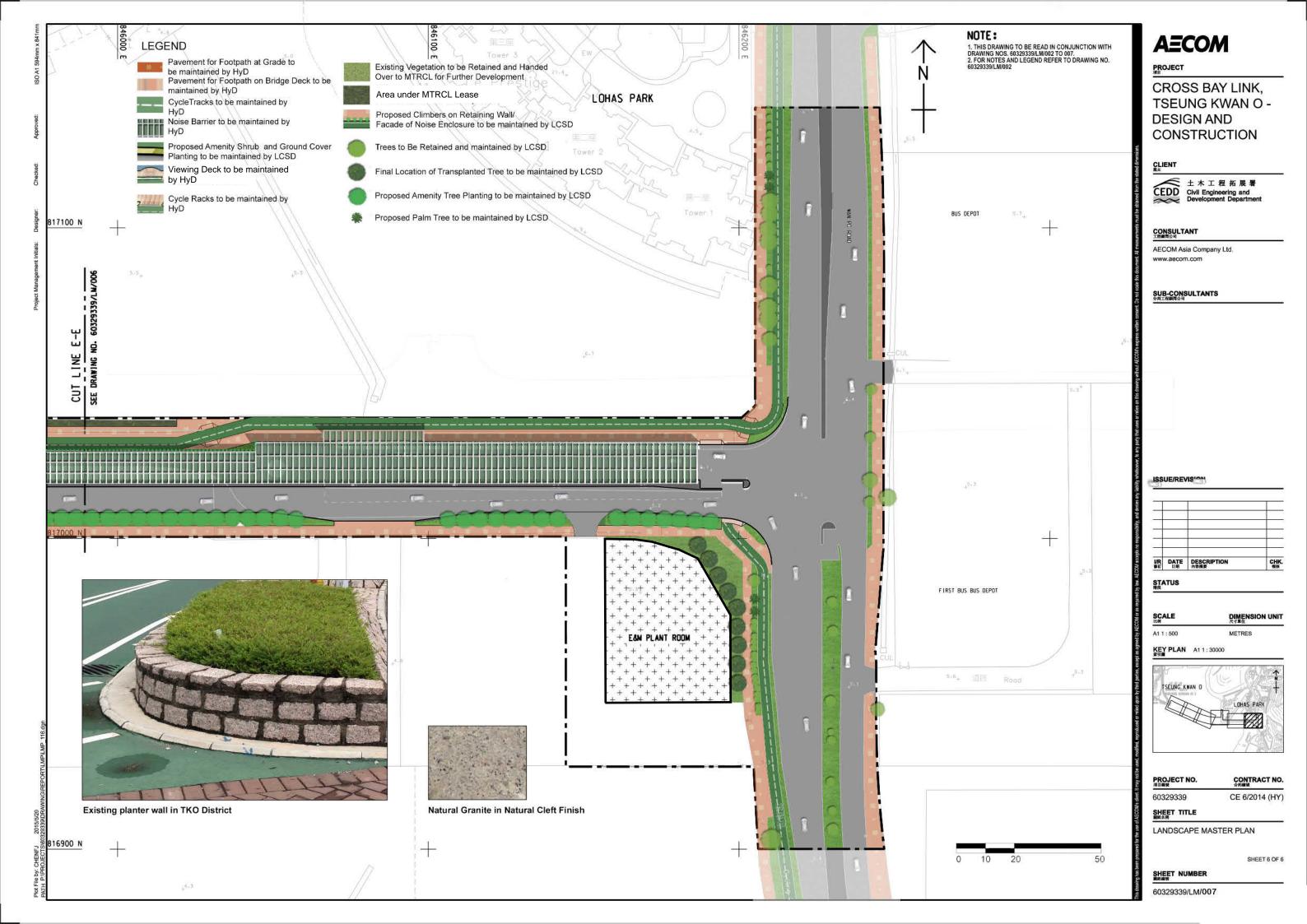


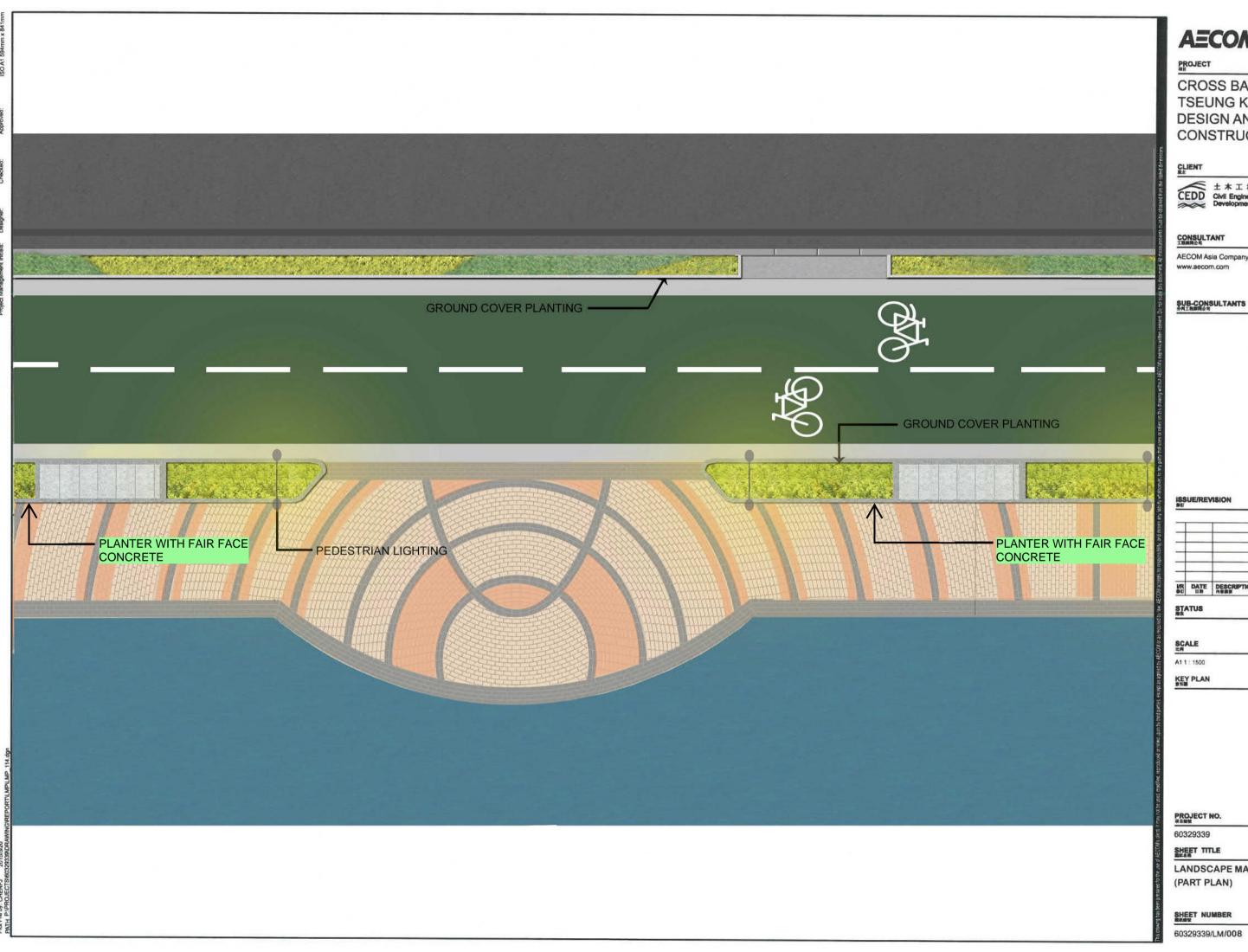












AECOM

CROSS BAY LINK, TSEUNG KWAN O -**DESIGN AND** CONSTRUCTION

土木工程拓展署
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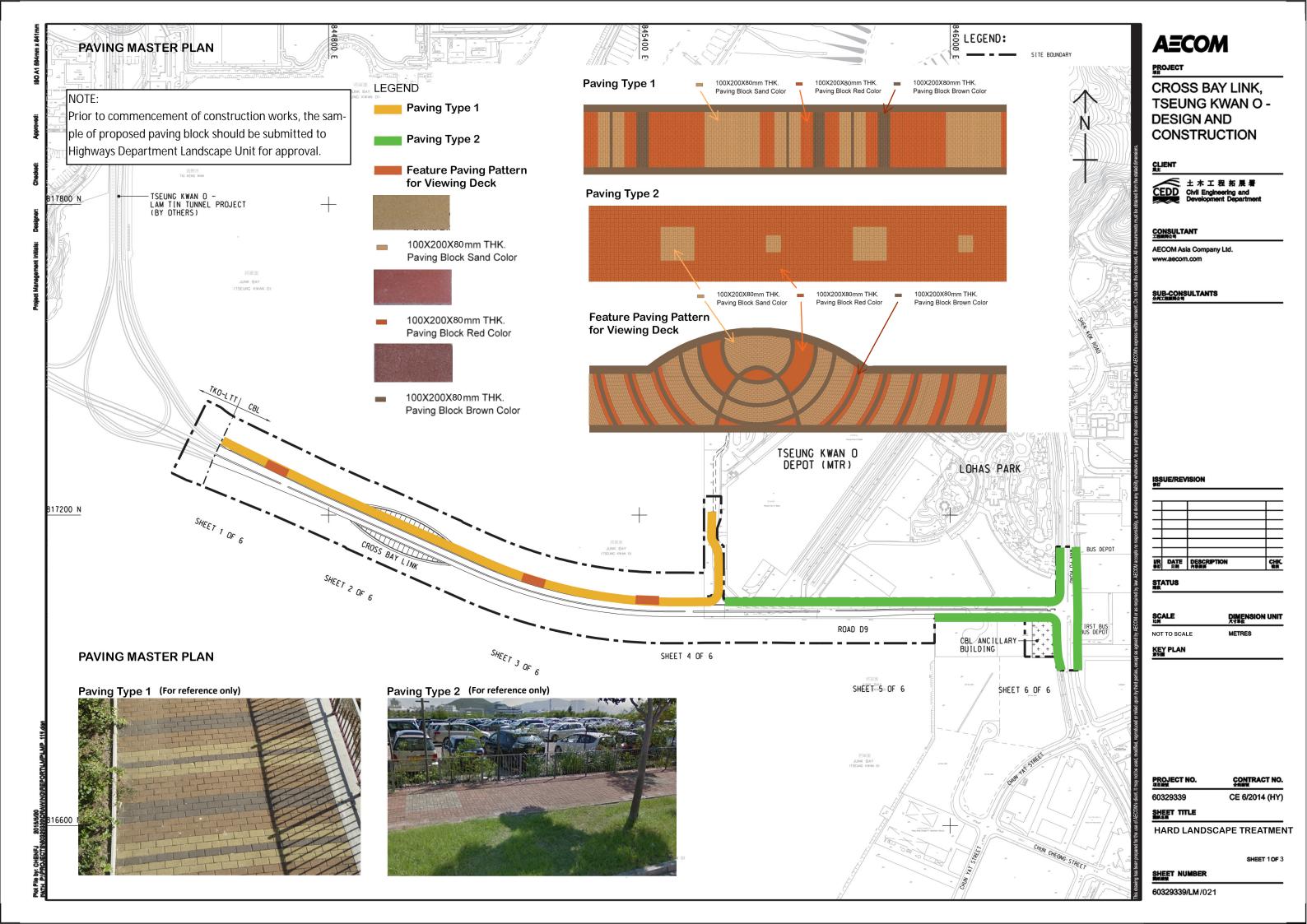
METRES

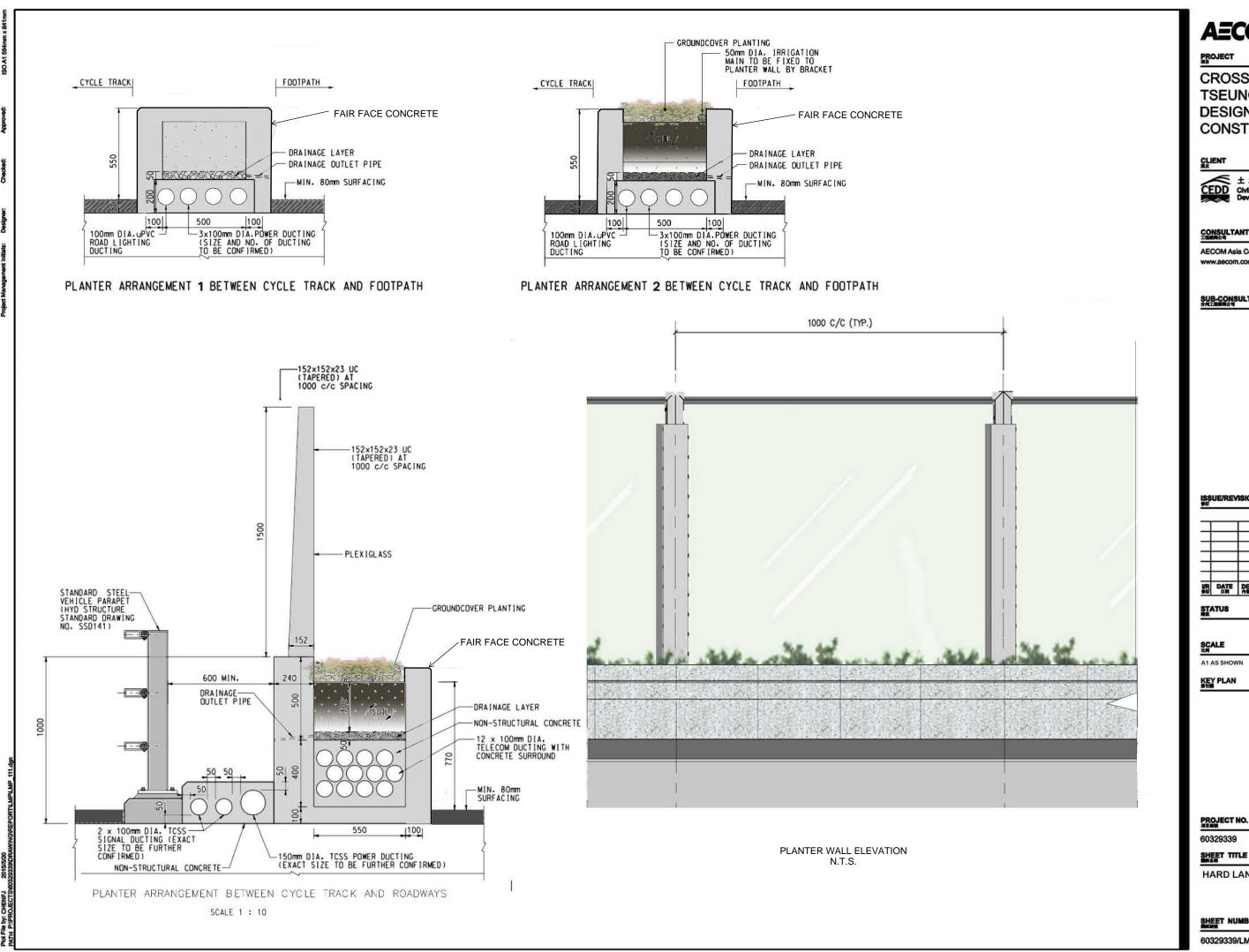
CONTRACT NO.

CE 6/2014 (HY)

LANDSCAPE MASTER PLAN (PART PLAN)

SHEET 1 OF 1





AECOM

CROSS BAY LINK, TSEUNG KWAN O -**DESIGN AND** CONSTRUCTION



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

CONSULTANT

AECOM Asia Company Ltd.

SUB-CONSULTANTS

UR DATE DESCRIPTION CHK

KEY PLAN

CONTRACT NO.

CE 6/2014 (HY)

SHEET TITLE

HARD LANDSCAPE TREATMENT

SHEET 2 OF 3

SHEET NUMBER

60329339/LM/022

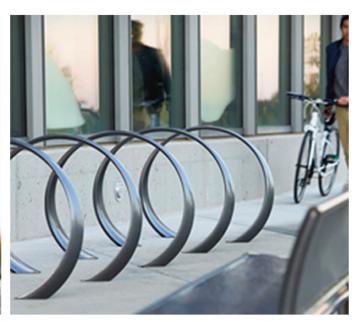
BICYCLE RACKS DESIGN

(For reference only)













PEDESTRIAN LIGHTING

(For reference only)





PROJECT

CROSS BAY LINK, TSEUNG KWAN O -**DESIGN AND** CONSTRUCTION



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

CONSULTANT

AECOM Asia Company Ltd.

SUB-CONSULTANTS

VR.	DATE	DESCRIPTION	CH
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STATUS

NOT TO SCALE KEY PLAN

CONTRACT NO.

CE 6/2014 (HY)

PROJECT NO.

SHEET TITLE

HARD LANDSCAPE TREATMENT

SHEET 3 OF 3

60329339/LM/023

Planting Schedule For Cross Bay Line

Amenity Planting on Bridge Deck Shrub / Herbaceous Plant / Ground Cover Planting



細葉雪茄花



Lantana camara 黃花馬櫻丹



Lantana montevidensis Brig 小葉馬櫻丹



Catharanthus roseus 長春花

Amenity Planting along Road P9 Tree



Pongamia pinnata 水黃皮



Wodyetia bifurcata 狐尾椰子



Livistona chinensis 蒲葵

Shrub / Herbaceous Plant / Ground Cover Planting



Duranta repens 'Golden leaves' Ixora williamsii sandw 金連翹



矮橙龍船花



Scaevola sericea 草海桐



Rhaphiolepis indica 車輪梅

Climber



Podranea ricasoliana 紫芸藤



Ficus pumila 薜荔



Bauhinia corymbosa 首冠藤

AECOM

PROJECT

CROSS BAY LINK, TSEUNG KWAN O -**DESIGN AND** CONSTRUCTION



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

AECOM Asia Company Ltd.

SUB-CONSULTANTS

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NOT TO SCALE KEY PLAN

PROJECT NO.

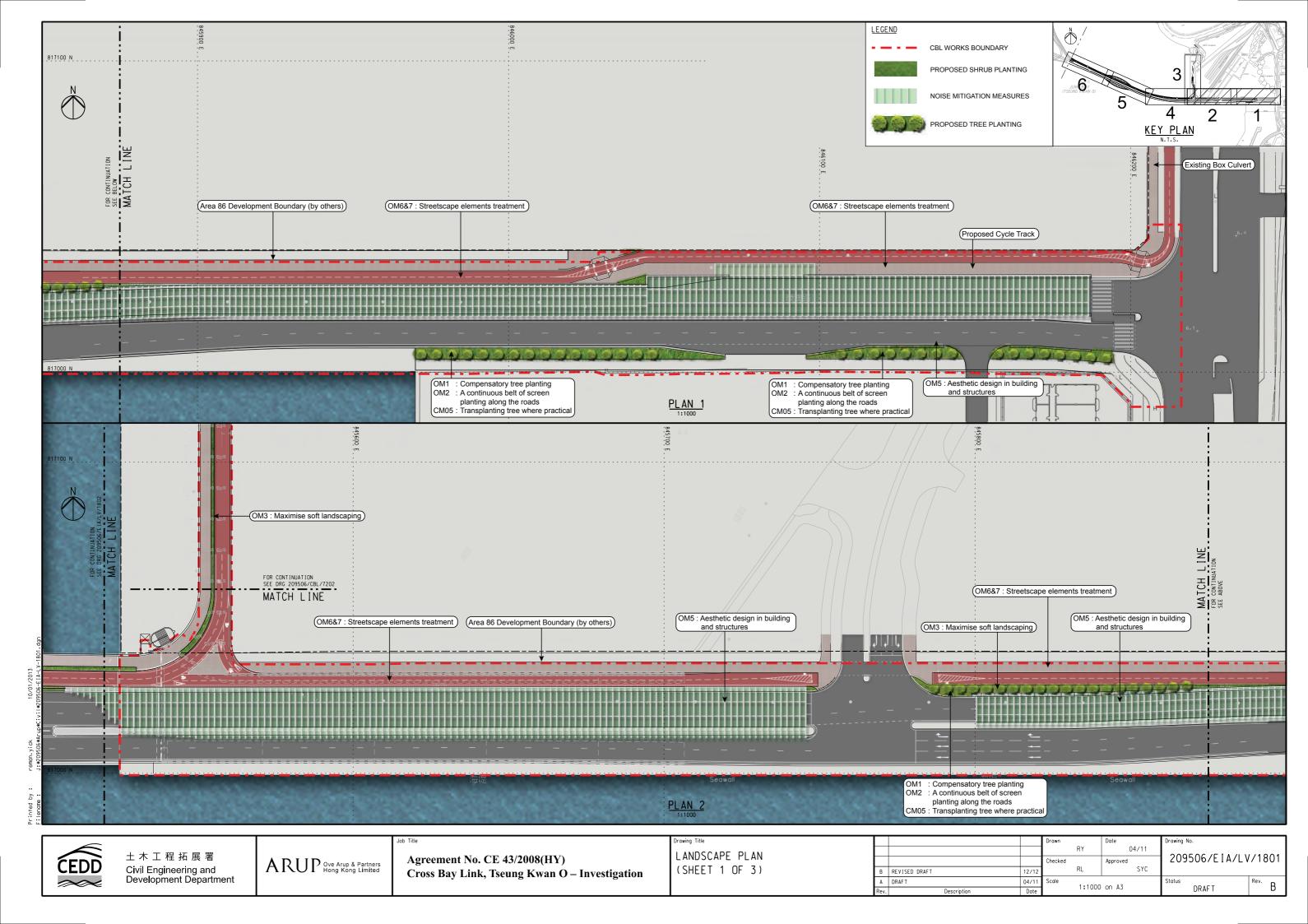
CE 6/2014 (HY)

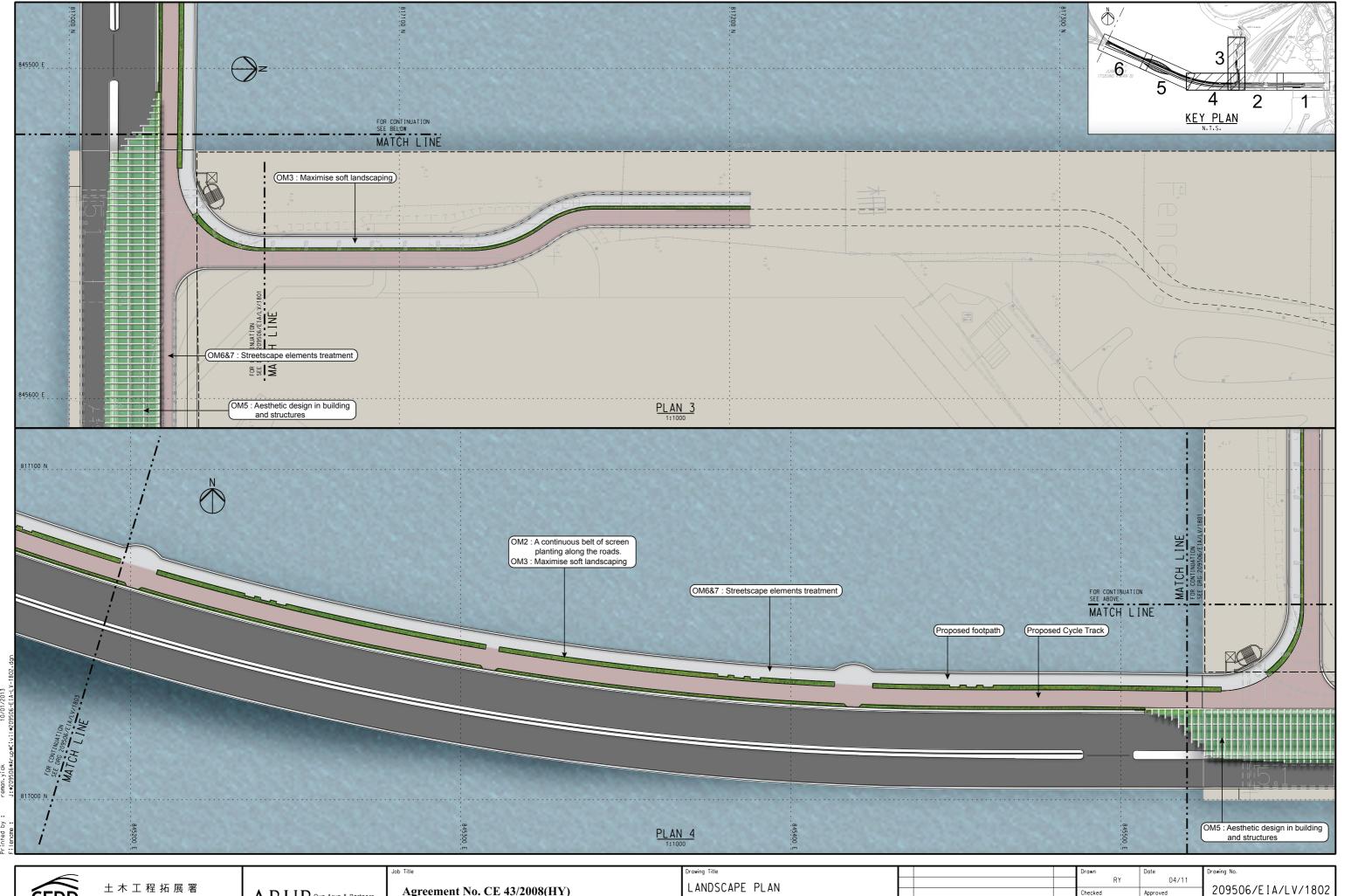
SHEET TITLE

PLANTING PALLETTE

60329339/LMP/031





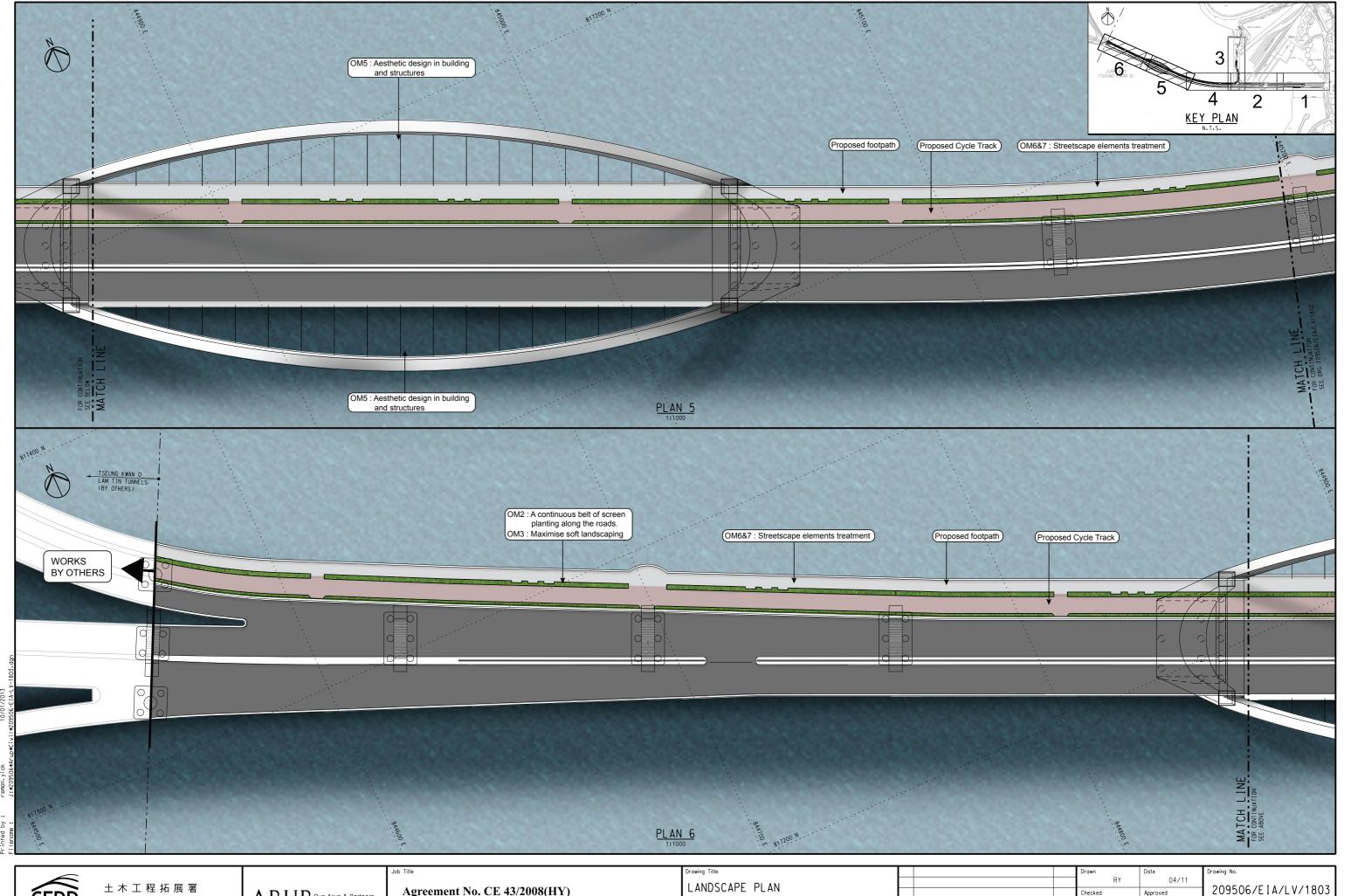


Civil Engineering and Development Department

 $ARUP {\scriptstyle \text{Ove Arup \& Partners}} {\scriptstyle \text{Hong Kong Limited}}$

Agreement No. CE 43/2008(HY) Cross Bay Link, Tseung Kwan O - Investigation LANDSCAPE PLAN (SHEET 2 OF 3)

Checked Approved B REVISED DRAFT A DRAFT 04/11 1:1000 on A3 DRAFT



Civil Engineering and Development Department

 $ARUP \hbox{\tiny Ove Arup \& Partners} \\ \hbox{\tiny Hong Kong Limited}$

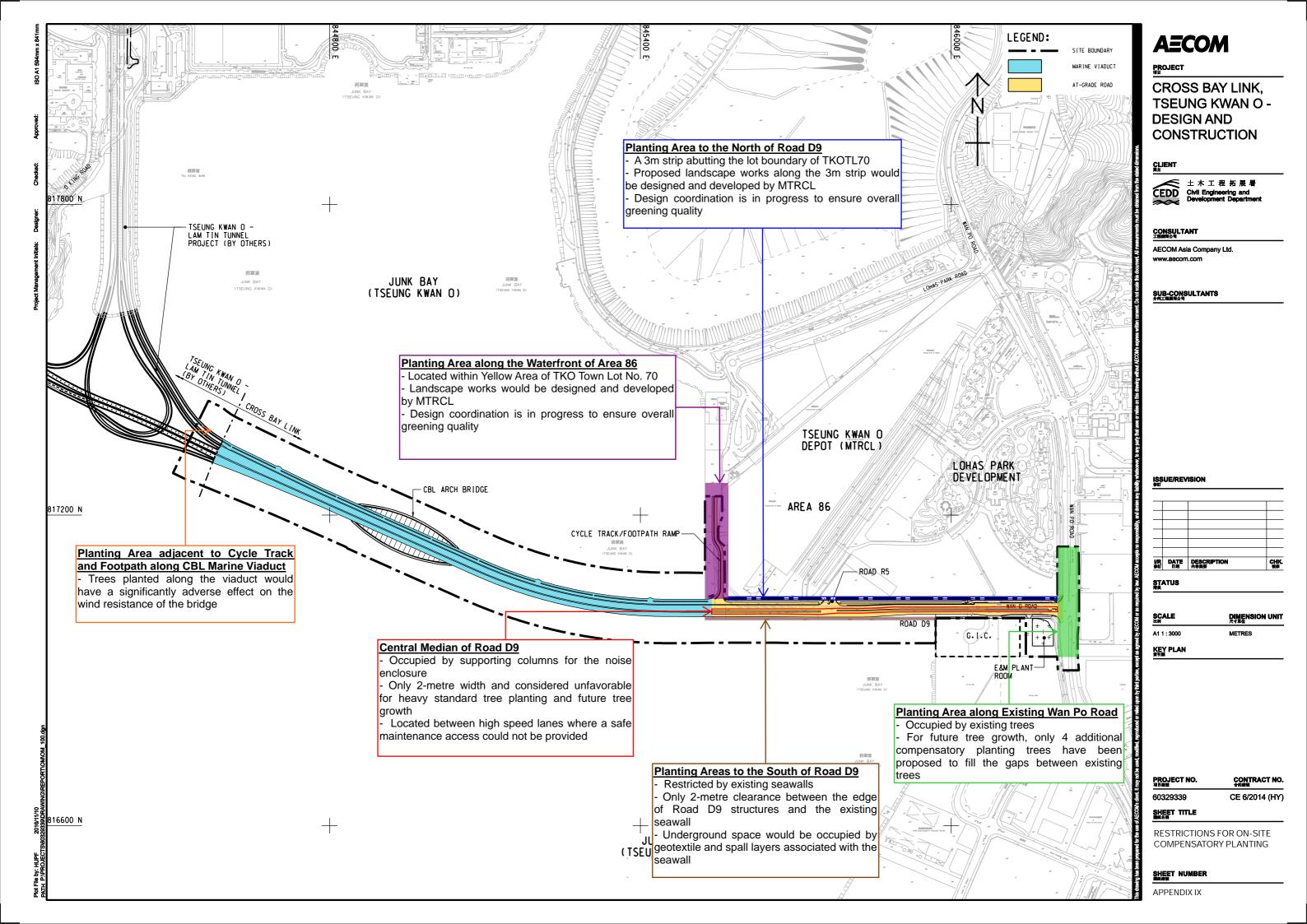
Agreement No. CE 43/2008(HY)

LANDSCAPE PLAN (SHEET 3 OF 3)

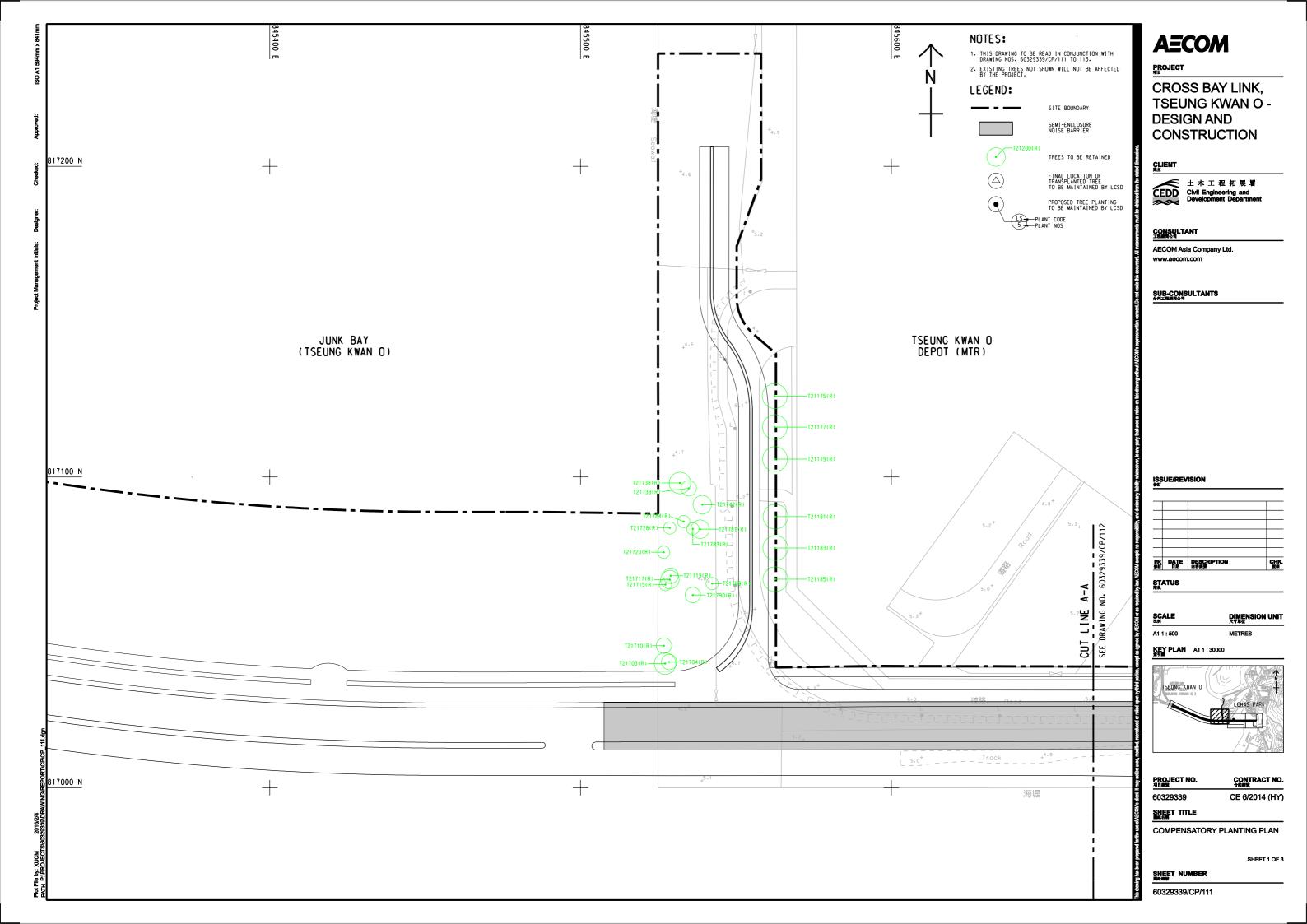
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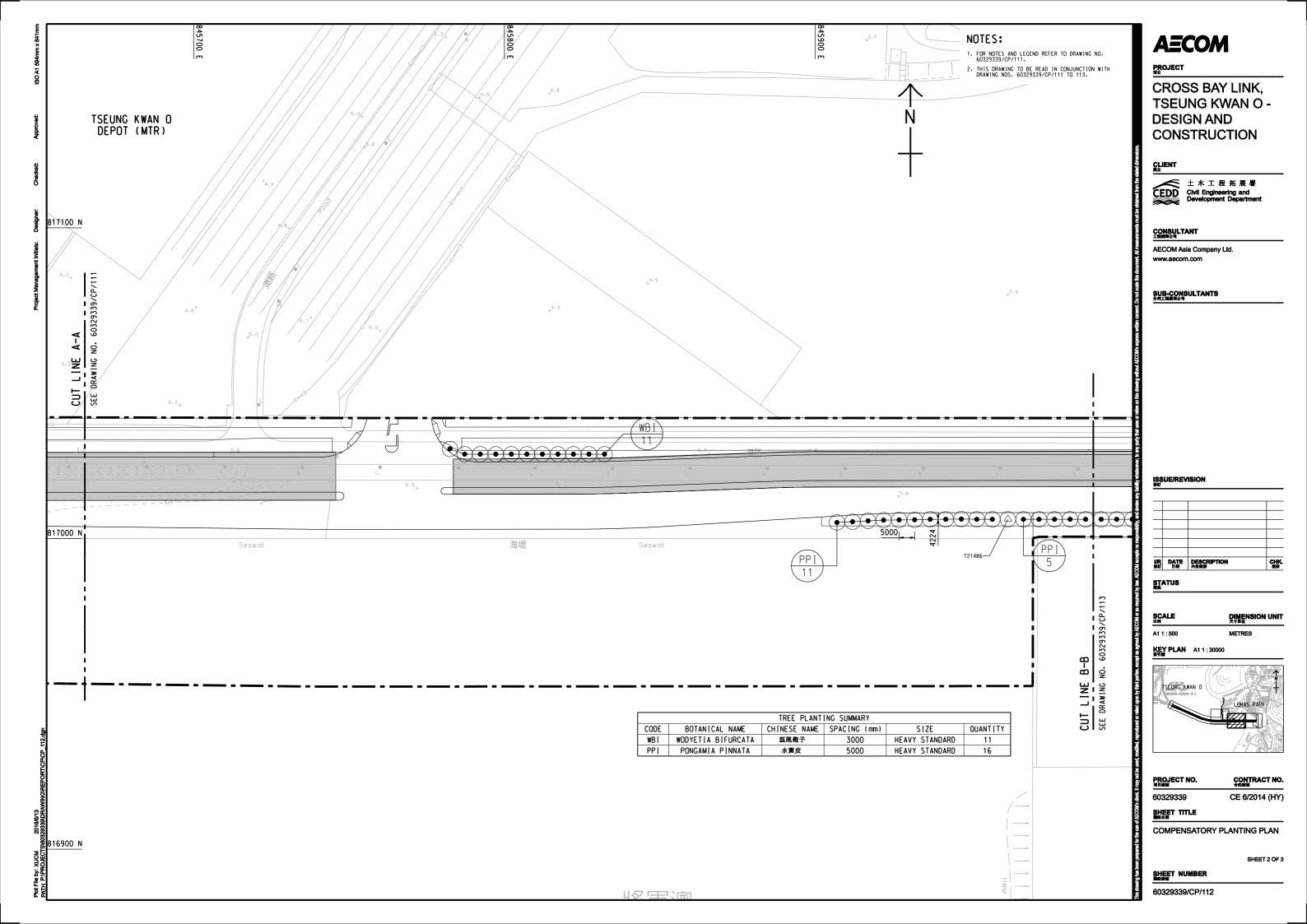
Cross Bay Link, Tseung Kwan O - Investigation

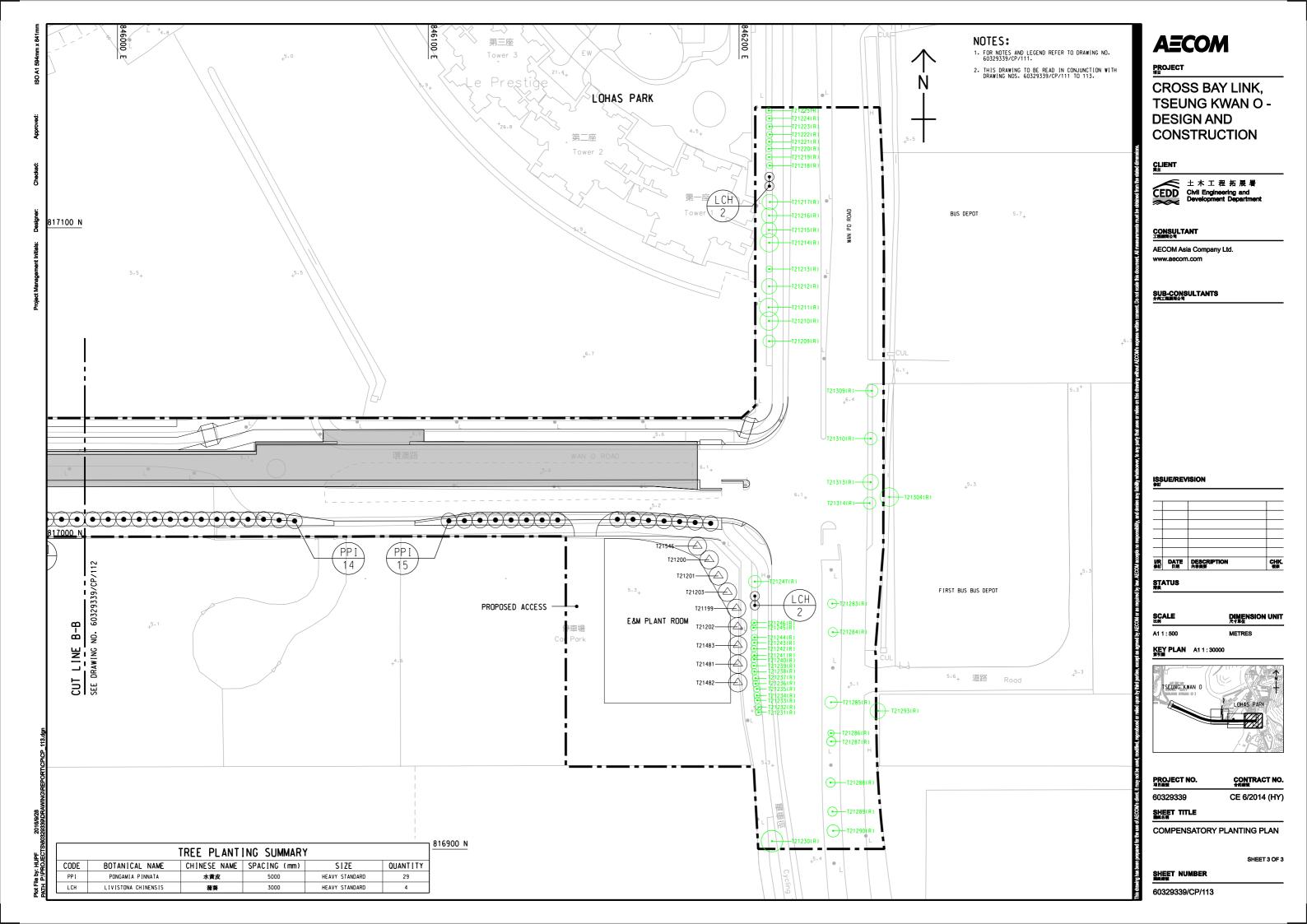




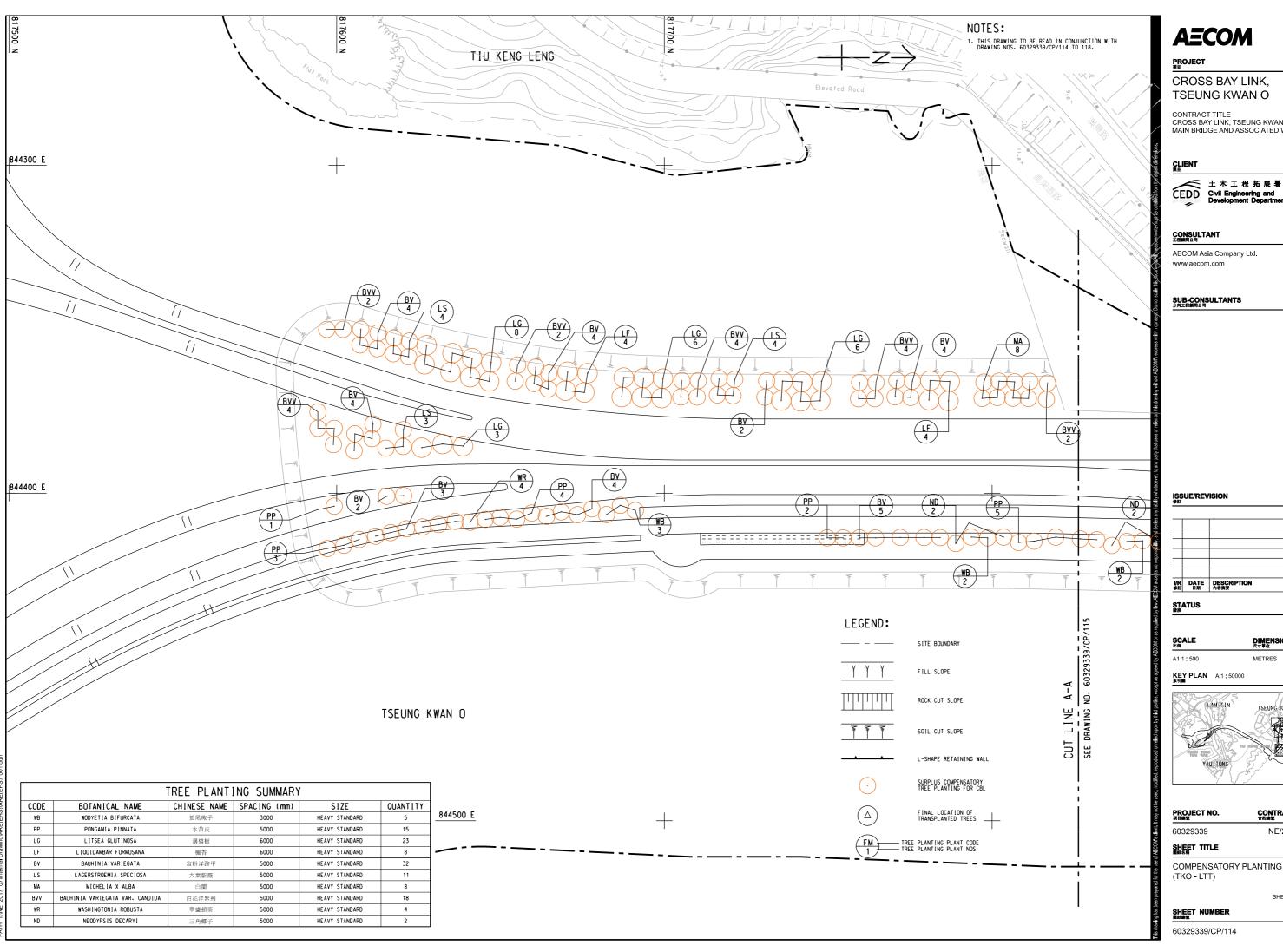




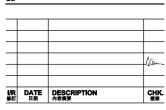








CONTRACT TITLE CROSS BAY LINK, TSEUNG KWAN O MAIN BRIDGE AND ASSOCIATED WORKS

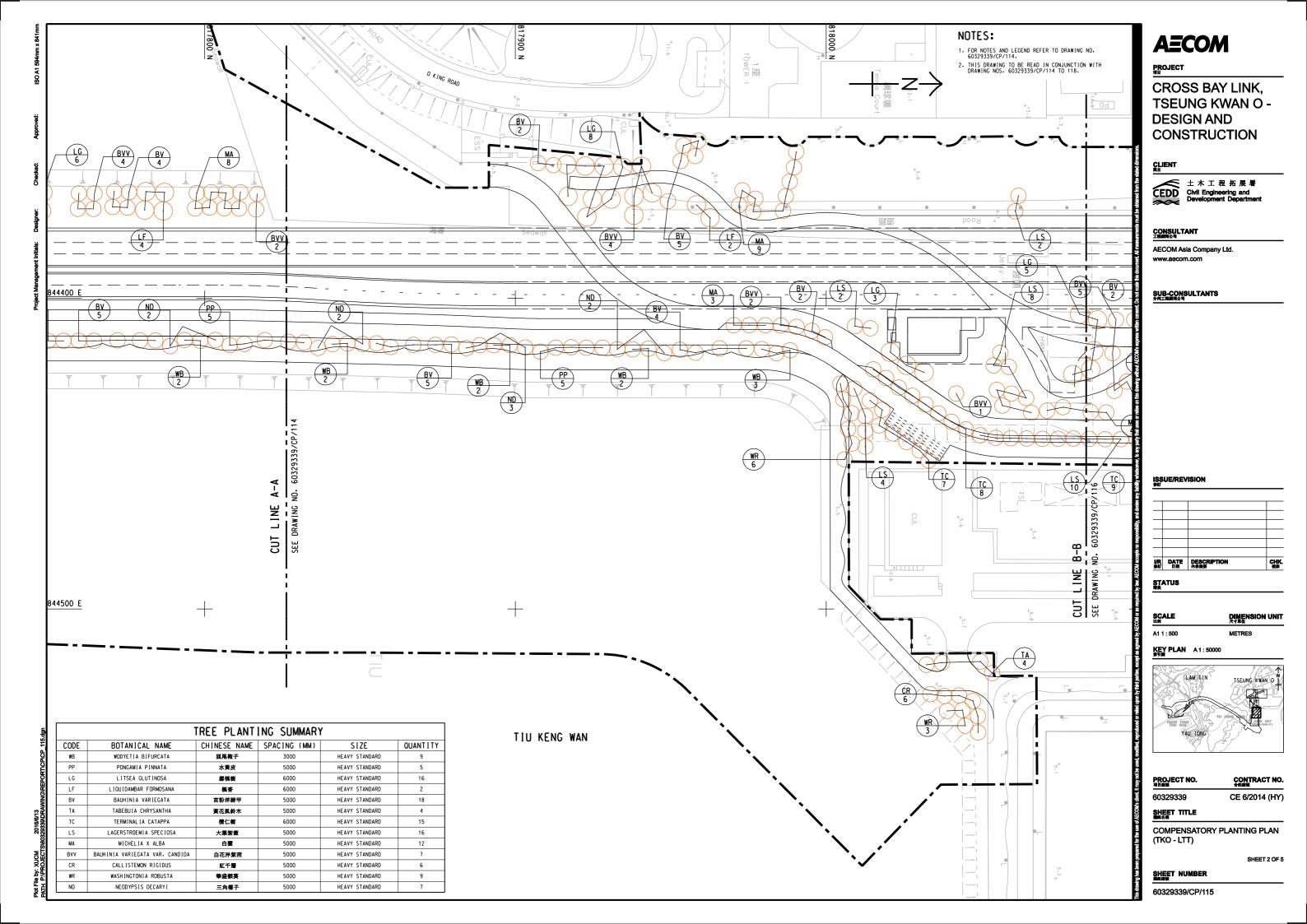


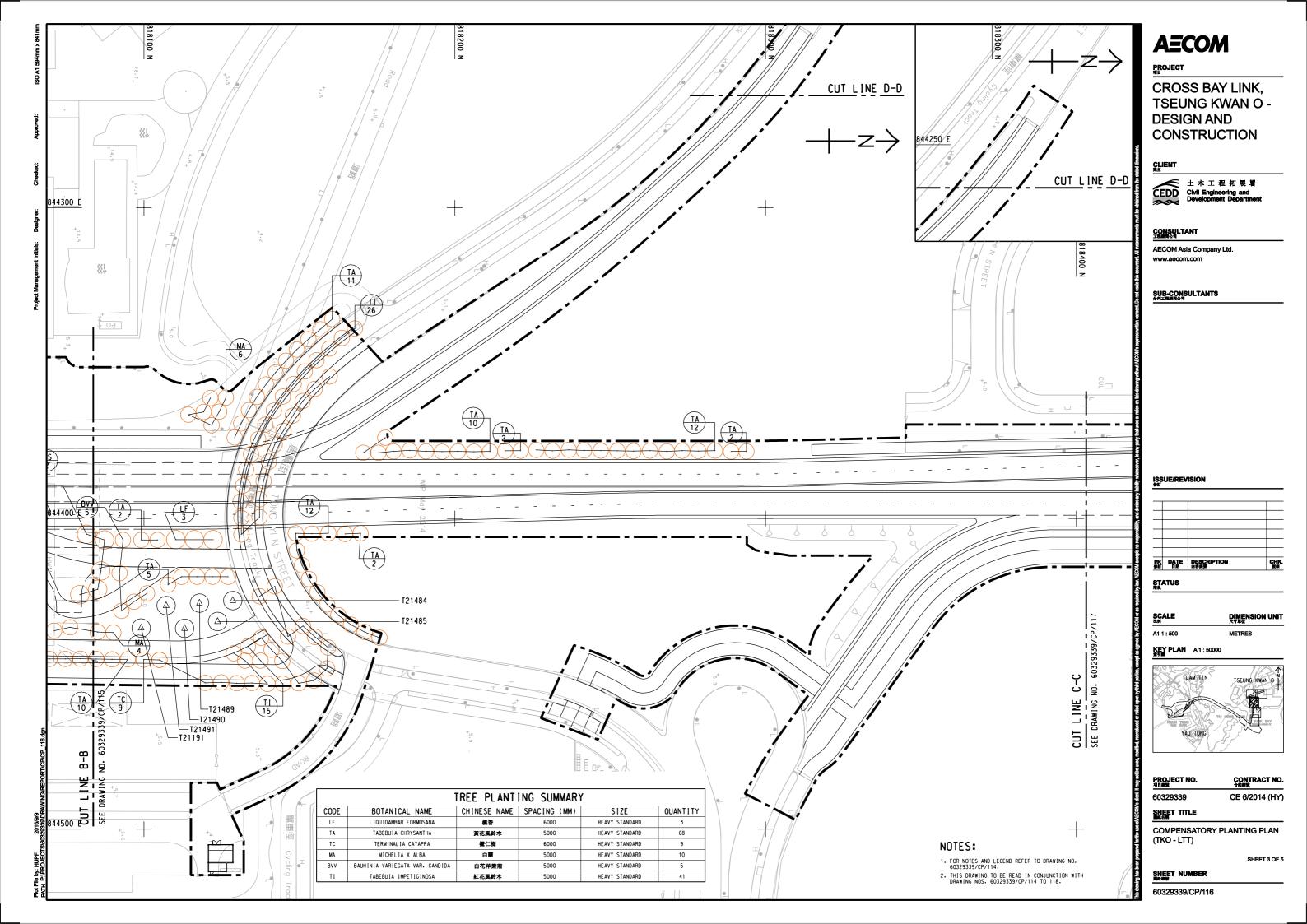
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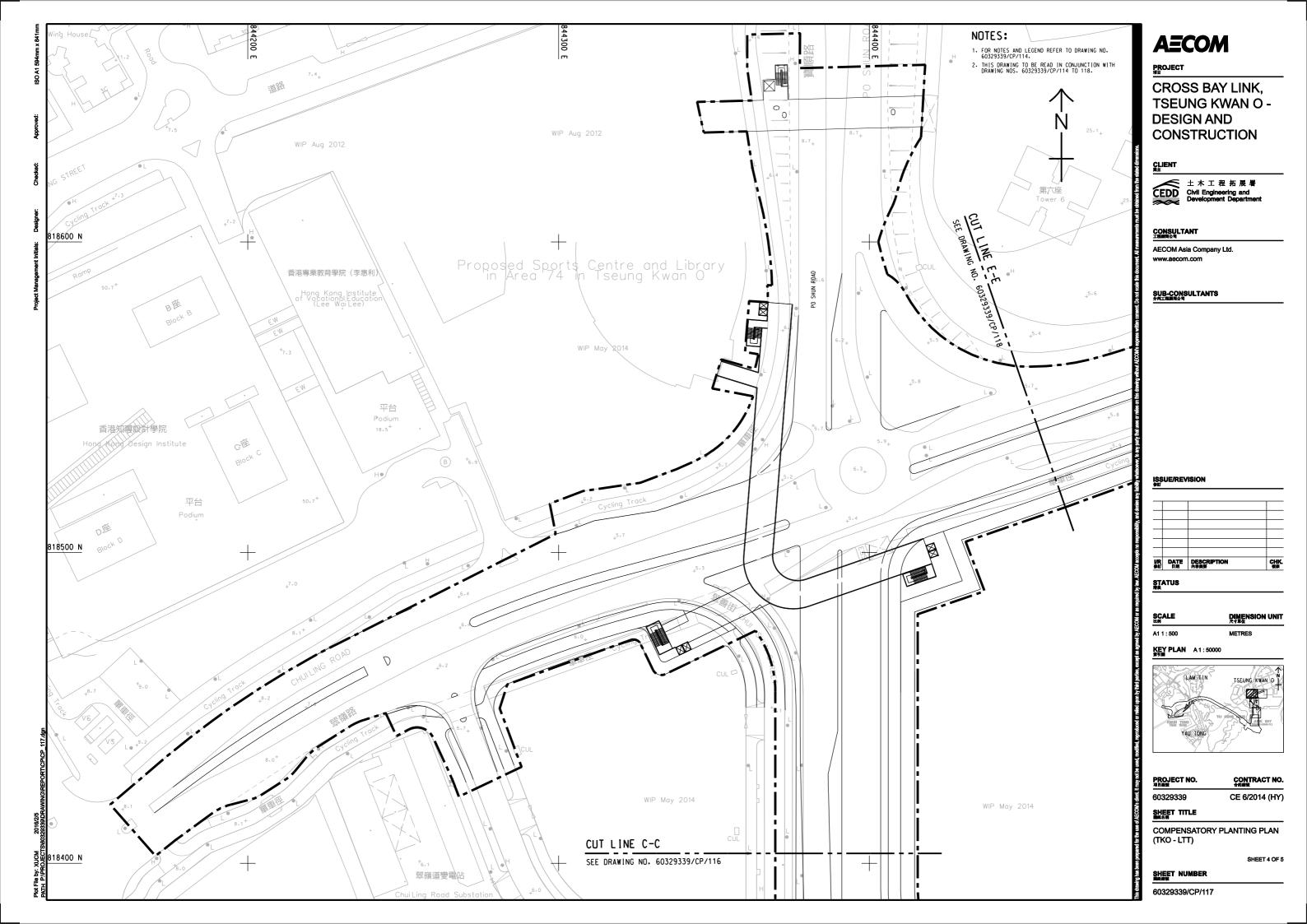
t may not	PROJECT NO. 項目編載	CONTRACT NO
M's dient.	60329339	NE/2017/0

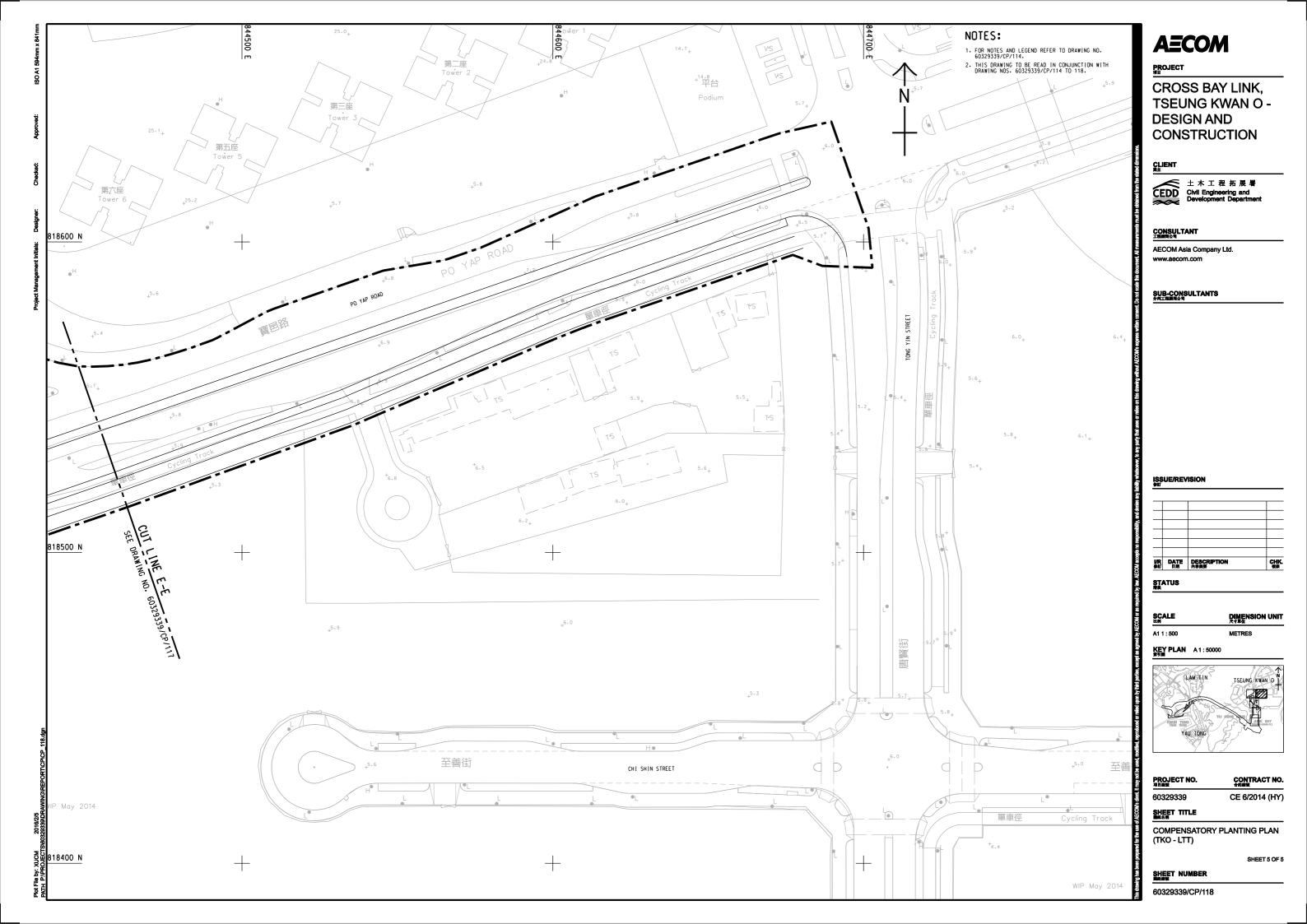
COMPENSATORY PLANTING PLAN

SHEET 1 OF 5











Tree Survey for Works Area A

Contract No. NE/2017/07 Project: Cross Bay Link, Tseung Kwan O - Main Bridge and Associated Works Date of Survey: 16/08/2018

TREE SURVEY SCHEDULE

TREE SURVE	EY SCHE	DULE										Suitak	ility for				
					SIZE (M)								planting		Approved Treatment	In this survey	
Drawing No.	Tree No.	Botanical Name	Chinese Common Name	Height (m)	Trunk DBH (mm)	Spread (m)	Structural Condition (Good/ Fair/ Poor)	Form (Good/ Fair/ Poor)	Health (Good/ Fair/ Poor/ Dead)	Amenity Value (High/ Medium/ Low)	Existing Ground Level At The Trunk Base	(High/ Medium/ Low)	Remarks	Conservation Status	(Retain/ Transplant/ Fell/ Missing/ TBC)	(Retain/ Transplant/ Fell/ Missing/ TBC)	J Additional Remarks
60329339/TS/202	T22001	Acacia confusa	台灣相思	6	190	4	Poor	Poor	Fair	Low		Low	a, b, c, f	NIL	Fell	Fell	Leaning
60329339/TS/202	T22002	Acacia confusa	台灣相思	6	360	6	Poor	Poor	Fair	Low		Low	a, b, c, f	NIL	Fell	Fell	Multi-trunk, wound, diebacks
60329339/TS/202	T22003	Dead Tree	死樹	6	270	4	-	-	Dead			15		NIL	Fell	Fell	-
60329339/TS/202	T22004	Acacia confusa	台灣相思	6	250	6	Poor	Poor	Fair	Low		Low	a, b, c, f	NIL	Fell	Fell	Multi-trunk, closing wounds
60329339/TS/202	T22005	Acacia confusa	台灣相思	6	330	8	Poor	Poor	Fair	Low		Low	a, b, c, f	NIL	Fell	Fell	Leaning
60329339/TS/202	T22006	Leucaena leucocephala	銀合歡	5	280	3	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Leaning, exposed roots
60329339/TS/202	T22007	Leucaena leucocephala	銀合歡	5	340	2	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Leaning, multi-trunk, crossing trunks
60329339/TS/202	T22008	Leucaena leucocephala	銀合歡	5	110	2	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Leaning
60329339/TS/202	T22009	Leucaena leucocephala	銀合歡	5	190	2	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Leaning, embedded into fence
60329339/TS/202	T22010	Leucaena leucocephala	銀合歡	3	110	2	Poor	Poor	Poor	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Broken leader
60329339/TS/202	T22011	Leucaena leucocephala	銀合歡	5	170	3	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Leaning, multi-trunk, exposed roots
60329339/TS/202	T22012	Leucaena leucocephala	銀合歡	6	150	2	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Leaning
60329339/TS/202	T22013	Leucaena leucocephala	銀合歡	5	180	3	Poor	Poor	Fair	Low	2	Low	a, b, c, f, g	NIL	Fell	Fell	Multi-trunk, broken main leader
60329339/TS/202	T22014	Leucaena leucocephala	銀合歡	4	160	3	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Multi-trunk with included bark
60329339/TS/202	T22015	Leucaena leucocephala	銀合歡	6	210	8	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Leaning, multi-trunk
60329339/TS/202	T22016	Leucaena leucocephala	銀合歡	5	220	1	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Leaning
60329339/TS/202	T22017	Macaranga tanarius	血桐	2	190	2	Fair	Poor	Fair	Low		Low	a, b, c, f	NIL	Fell	Fell	Multi-trunk, crossed with T20018
60329339/TS/202	T22018	Leucaena leucocephala	銀合歡	5	110	2	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Multi-trunk, crossed with T20017
60329339/TS/202	T22019	Leucaena leucocephala	銀合歡	7	330	6	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Codominant trunk with included bark, leaning
60329339/TS/202	T22020	Leucaena leucocephala	銀合歡	4	130	2	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Leaning, wound
60329339/TS/202	T22021	Leucaena leucocephala	銀合歡	3	100	3	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Heavy leaning
60329339/TS/202	T22022	Leucaena leucocephala	銀合歡	4	160	3	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Codominant trunk, leaning
60329339/TS/202	T22023	Leucaena leucocephala	銀合歡	5	100	2	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Codominant trunk
60329339/TS/202	T22024	Leucaena leucocephala	銀合歡	5	150	2	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Leaning, dieback
60329339/TS/202	T22025	Leucaena leucocephala	銀合歡	3	180	2	Poor	Poor	Fair	Low	-	Low	a, b, c, f, g	NIL	Fell	Fell	Leaning
60329339/TS/202	T22026	Leucaena leucocephala	銀合歡	6	120	2	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Leaning, broken branch
60329339/TS/202	T22027	Leucaena leucocephala	銀合歡	5	120	2	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Codominant trunk
60329339/TS/202	T22028	Leucaena leucocephala	銀合歡	6	130	4	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	-
60329339/TS/202	T22029	Leucaena leucocephala	銀合歡	5	160	4	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Codominant trunk, leaning, cross trunks
60329339/TS/202	T22030	Leucaena leucocephala	銀合歡	5	110	2	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Leaning
60329339/TS/202	T22031	Leucaena leucocephala	銀合歡	6	380	7	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Codominant trunk, leaning, broken branch
60329339/TS/202	T22032	Leucaena leucocephala	銀合歡	7	130	4	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	On slope
60329339/TS/202	T22033	Leucaena leucocephala	銀合歡	6	140	2	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Leaning
60329339/TS/202	T22034	Leucaena leucocephala	銀合歡	6	180	4	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	On Slope, codominant trunk, broken branch

Contract No. NE/2017/07

Project: Cross Bay Link, Tseung Kwan O - Main Bridge and Associated Works

Date of Survey: 16/08/2018

TREE SURVEY SCHEDULE

									SIZE (M)								oility for planting		Approved	In this	
Drawing No.	Tree No.	Botanical Name	Chinese Common Name	Height (m)	Trunk DBH (mm)	Spread (m)	Structural Condition (Good/ Fair/ Poor)	Form (Good/ Fair/ Poor)	Health (Good/ Fair/ Poor/ Dead)	Amenity Value (High/ Medium/ Low)	Existing Ground Level At The Trunk Base	(High/ Medium/ Low)	Remarks	Conservation Status	Treatment (Retain/ Transplant/ Fell/ Missing/ TBC)	survey (Retain/ Transplant/ Fell/ Missing/ TBC)	Additional Remarks				
60329339/TS/202	T22035	Leucaena leucocephala	銀合歡	6	220	4	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	On Slope, codominant trunk, leaning				
60329339/TS/202	T22036	Leucaena leucocephala	銀合歡	7	200	4	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	On Slope, codominant trunk				
60329339/TS/202	T22037	Leucaena leucocephala	銀合歡	7	200	3	Poor	Poor	Poor	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Codominant trunk, sparse canopy				
60329339/TS/202	T22038	Leucaena leucocephala	銀合歡	7	140	3	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Leaning				
60329339/TS/202	T22039	Leucaena leucocephala	銀合歡	6	140	3	Poor	Poor	Poor	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Broken leader				
60329339/TS/202	T22040	Leucaena leucocephala	銀合歡	12	280	8	Poor	Poor	Poor	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Codominant trunk, leaning, sparse canopy				
60329339/TS/202	T22041	Leucaena leucocephala	銀合歡	12	170	4	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Leaning				
60329339/TS/202	T22042	Leucaena leucocephala	銀合歡	7	160	6	Poor	Poor	Fair	Low		Low	a, b, c, f, g	NIL	Fell	Fell	Heavy leaning, broken branch				
60329339/TS/202	TA1	Leucaena leucocephala	銀合歡	6	110	3	Poor	Poor	Fair	Low	5.16	Low	a, b, c, f, g	NIL	TBC	TBC	Restricted roots				
60329339/TS/202	TA2	Leucaena leucocephala	銀合歡	4	95	4	Poor	Poor	Fair	Low	5.15	Low	a, b, c, f, g	NIL	TBC	TBC	restricted roots				
60329339/TS/202	TA3	Leucaena leucocephala	銀合歡	5	200	4	Poor	Poor	Fair	Low	5.22	Low	a, b, c, f, g	NIL	TBC	TBC	Broken branch, restricted roots				
60329339/TS/202	TA4	Leucaena leucocephala	銀合歡	6	100	3	Poor	Poor	Fair	Low	6.34	Low	a, b, c, f, g	NIL	TBC	TBC	Restricted roots				
60329339/TS/202	TA5	Leucaena leucocephala	銀合歡	5	95	2	Poor	Poor	Fair	Low	6.35	Low	a, b, c, f, g	NIL	TBC	TBC	Restricted roots				
60329339/TS/202	TA6	Leucaena leucocephala	銀合歡	6	140	4	Poor	Poor	Fair	Low	6.35	Low	a, b, c, f, g	NIL	TBC	TBC	Restricted roots				
60329339/TS/202	TA7	Ficus microcarpa	細葉榕	6	180	4	Fair	Fair	Fair	Low	6.36	Low	a, b, c, f	NIL	TBC	ТВС	Restricted roots				
60329339/TS/202	TA8	Sapium sebiferum	烏桕	7	160	5	Poor	Poor	Fair	Low	6.51	Low	a, b, c, f	NIL	TBC	TBC					
60329339/TS/202	TA9	Leucaena leucocephala	銀合歡	9	180	6	Poor	Poor	Fair	Low	6.64	Low	a, b, c, f, g	NIL	TBC	TBC	Broken branch				
60329339/TS/202	TA10	Leucaena leucocephala	銀合歡	3	95	1	Poor	Poor	Poor	Low	6.76	Low	a, b, c, f, g	NIL	TBC	твс					
60329339/TS/202	TA11	Leucaena leucocephala	銀合歡	7	180	4	Poor	Poor	Poor	Low	6.62	Low	a, b, c, f, g	NIL	TBC	твс	Embedded into fence				
60329339/TS/202	TA12	Leucaena leucocephala	銀合歡	5	120	6	Poor	Poor	Poor	Low	6.64	Low	a, b, c, f, g	NIL	твс	твс	Collapsed				
60329339/TS/202	TA13	Leucaena leucocephala	銀合歡	5	95	1	Poor	Poor	Poor	Low	6.82	Low	a, b, c, f, g	NIL	твс	твс	Collapsed				
60329339/TS/202	TA14	Leucaena leucocephala	銀合歓	6	95	1	Poor	Poor	Poor	Low	6.80	Low	a, b, c, f, g	NIL	твс	твс	Collapsed				
60329339/TS/202	TA15	Acacia confusa	台灣相思	7	325	6	Poor	Fair	Fair	Low	6.82	Low	a, b, c, f	NIL	TBC	TBC					

- Remarks for Suitability for Transplanting
 (a) Low amenity value;
 (b) Irrecoverable form after transplanting (e.g. if substantial crown and root pruning are necessary to facilitate the transplanting);
 (c) Low survival rate after transplanting;
 (d) Very large size (unless the feasibility to transplant has been considered financially reasonable and technically feasible during the feasibility stage);
 (e) With evidence of over-maturity and onset of senescence;
 (f) With poor health, structure or form (e.g. imbalanced form, leaning, with majorcavity/cracks/splits); or cavity/cracks/splits); or
 (g) Undesirable species (e.g. Leucaena leucocephala which is an invasive exotic tree).
 (h) On steep slope.

