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Your ref. -
Our ref 5207869/18.30/OC093/AL/DL/SW/IW/JC/fl

Date 14 February 2022

By Hand and Email
Environmental Protection Department
Environmental Assessment Division
Strategic Assessment Group
Sheung Shui, Fanling, Tai Po Section (6)
27th floor, Southorn Centre,
130 Hennessy Road,
Wan Chai, Hong Kong

Attn: Ms. LAU Tai, Trista
Env Protection Offr (Strategic Assessment) 61

Dear Madam,

Agreement No. CE 32/2021 (CE)
Improvement Works at Lai Chi Wo Pier and Tung Ping Chau Public Pier – Design and Construction
Environmental Permit No. EP-586/2021
Submission of Pier Design Plan for Lai Chi Wo Pier - Part 1 (Rev.3)

Pursuant to Conditions 2.11 of the EP No. EP-586/2021, we hereby submit the Pier Design Plan for Lai Chi Wo Pier - Part 1 (Rev.3) (4 hard copies and 1 electronic copy) for the captioned Project at Lai Chi Wo Pier.

The aforesaid submission has been certified by the Environmental Team (ET) and verified by the Independent Environmental Checker (IEC). The ET certification and the IEC verification letters have been enclosed for your record.

Part 2 of Pier Design Plan (i.e. a complete plan with specification of the use of locally manufactured/recycled eco-materials, such as eco-tiles and eco-concrete in the design and construction of the pier with a view to enhancing ecological functions of the pier and minimizing the carbon footprint of the Project, etc.) will be submitted for DEP's approval before commencement of the construction of the LCW Pier.

Should you have any queries regarding the above, please feel free to contact our Mr. Arthur Lo (Email: arthur.lo2@atkinsglobal.com) at 2972 1360 or Mr. Joe Chiu (Email: Joe.Chiu@atkinsglobal.com) at 2972 1119.

Yours faithfully,
For and on behalf of
Atkins China Ltd

Dickson LAW
Project Manager

cc CEDD/CEO Mr. CHIK Kan To (Project Coordinator /Projects 3 A)

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Our ref	5207869/18.30/OC093/AL/DL/SW/IW/JC/fl
Title:	Submission of Pier Design Plan for Lai Chi Wo Pier - Part 1 (Rev.3)
Date	11 February 2022

Attachment 1

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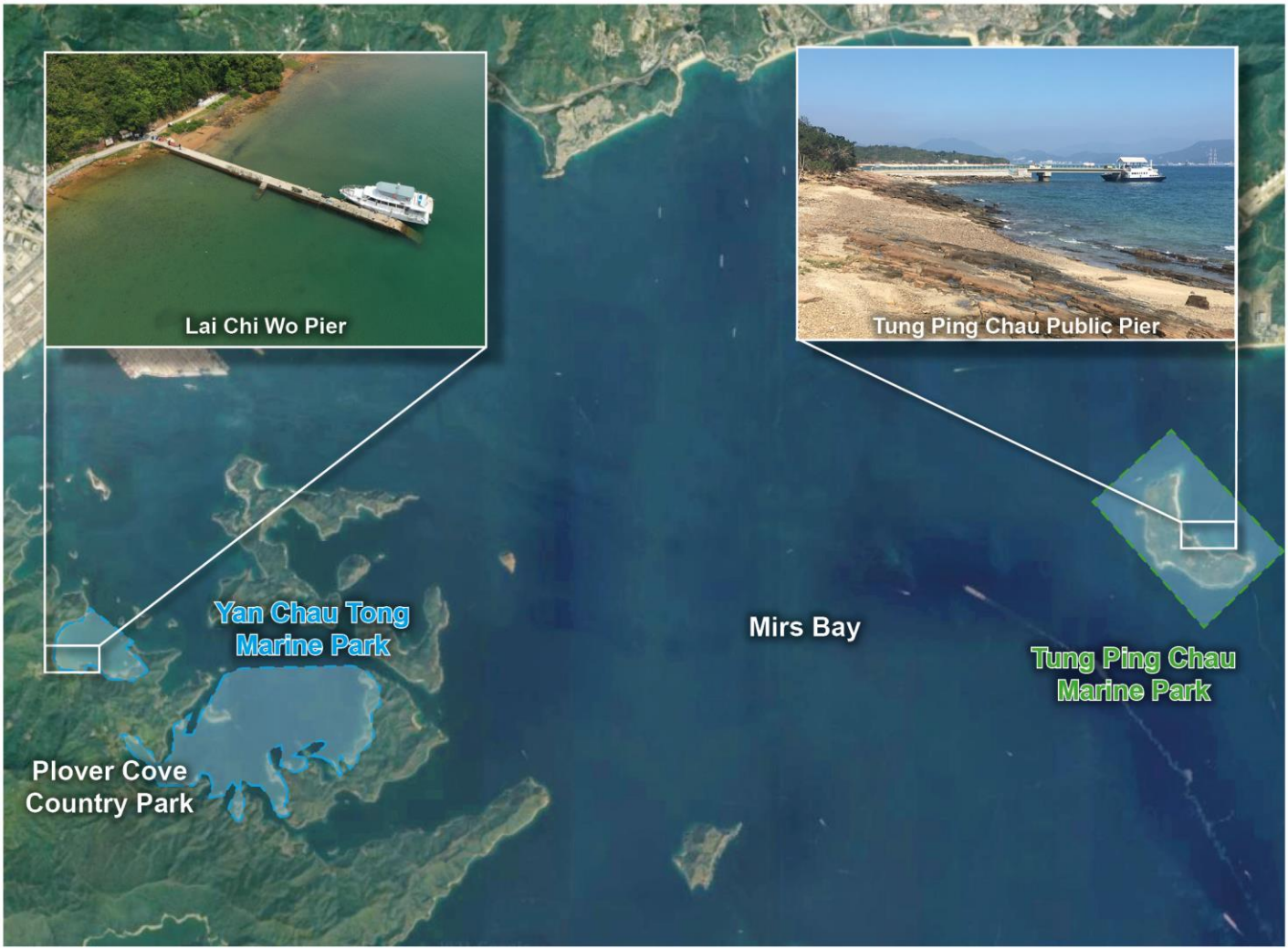
Pier Design Plan for Lai Chi Wo Pier - Part 1 (Rev.3)

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



Agreement No. CE 32/2021 (CE) Improvement Works at Lai Chi Wo Pier and Tung Ping Chau Public Pier -Design and Construction

Pier Design Plan for Lai Chi Wo Pier – Part 1 (Rev. 3)

(5207869-OR015A-03a)

09 February 2022

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Notice

This document and its contents have been prepared and are intended solely as information for Civil Engineering and Development Department and use in relation to this Assignment.

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Document History

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
Rev 0	First Issue	Various	Ivy WANG	Sean WONG	Dickson LAW	30 December 2021
Rev 1	Second Issue	Various	Ivy WANG	Sean WONG	Dickson LAW	7 January 2022
Rev 2	Third Issue	Various	Joe CHIU	Sean WONG	Dickson LAW	31 January 2022
Rev 3	Fourth Issue	Various	Joe CHIU	Sean WONG	Dickson LAW	9 February 2022

Issue Record

Client	Civil Engineering and Development Department			
Project	Agreement No. CE 32/2021(CE) Improvement Works at Lai Chi Wo Pier and Tung Ping Chau Public Pier – Design and Construction			
Document Title	Pier Design Plan for Lai Chi Wo Pier – Part 1(Rev. 3)			
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Appendix

Not Used

1. Introduction

1.1 Background

1.1.1 Hong Kong is an international metropolis and comprises many natural scenic spots, rare geological features, attractions with traditional culture and heritage, and hiking trails with rich biological diversity. The famous Hong Kong UNESCO Global Geopark (Geopark), Marine Parks, old temples, eco-tourism sites and beautiful beaches in coastal areas are some examples. Many attractions are located at remote rural areas without land access and rely on marine transport. In recent years, number of local and non-local visitors attracted to these remote destinations has been constantly increasing.

1.1.2 Public piers play an important role in accessing these remote destinations. There are about 120 public piers in Hong Kong. Majority of these piers are built, maintained and managed by the Government.

1.1.3 Although regular inspections and maintenance for the remote public piers are carried out by the Government to ensure its structural integrity, some public piers at remote rural areas have been in place for many years and cannot cope with the current needs / usages, such as:

a) small or primitive piers leading to safety concerns during berthing and unsatisfactory boarding conditions especially for kids and elderly;

b) inadequate depth of water for berthing during low tide;

c) limited berthing space or narrow accesses which cannot cater for the fluctuating utilization during festive times or weekends; and

d) aged pier structures with a need for improvement works.

1.1.4 Civil Engineering and Development Department (CEDD) commissioned an Investigation Study (IS), “Study for Pier Improvement at Lai Chi Wo and Tung Ping Chau – Investigation” (Agreement No. CE 2/2018 (CE)), in June 2018 to verify the technical feasibility of improving two potential pier items located within Yan Chau Tong Marine Park and Tung Ping Chau Marine Park in the northeast region of Hong Kong. The improvement of these two piers are designated project under Item Q.1, Part 1 of Schedule 2 of the EIAO.

1.1.5 EIA study has been carried out in accordance with the requirement of the EIA Study Briefs including assessment of the potential environmental impacts, in particular water quality impact and ecological impact, and specified environmental monitoring and audit requirements to ensure the effective implementation of the recommended environmental protection and mitigation measures. The EIA Reports of the two piers were approved by DEP under the EIAO on 29 December 2020 and Environmental Permits (EPs) for construction and operation of the improvement works were granted on 19 February 2021. The EIA study made recommendations on the scope of improvement to the Lai Chi Wo Pier and Tung Ping Chau Public Pier with preliminary engineering studies for individual pier taking into account public aspiration and other constraints, prepared preliminary engineering layouts, and evaluated the feasibility of adopting innovative design elements for the piers.

1.1.6 Atkins China Ltd. was commissioned by the Civil Engineering and Development Department of the Hong Kong Government Special Administrative Region on 16 September 2021 to provide consultancy services for Agreement No. CE 32/2021 (CE) Design Consultancy for Improvement Works at Lai Chi Wo Pier and Tung Ping Chau Public Pier - Design and Construction (hereinafter called "the Assignment").

1.2 Scope of the Assignment

1.2.1 The scope of the Assignment comprises:

a) Demolition/reconstruction/re-provision/modification of Lai Chi Wo Pier and Tung Ping Chau Public Pier (hereinafter referred to as "the Piers");

b) Provisioning of temporary piers during construction phase;

c) Following up outstanding issues listed in the approved EIA reports for the improvement works of the two piers and carrying out necessary review for any issues that would affect the assessment results and recommendations of the approved EIA reports, such as modification/revision of the preliminary engineering layout and design of the piers produced by the Investigation Study;

d) Incorporation of associated structural works, architectural works, electrical and mechanical (E&M) works, navigation lights and marine facilities, greening and landscape works, utilities, environmental monitoring and mitigation measures, and other related works as appropriate;

e) Adoption of Building Information Modelling (BIM) to enhance design process and collaboration with cost and time effectiveness throughout the project life cycle; and

f) Providing services relating to the use of New Engineering Contract (NEC) for the works contracts.

1.3 Objectives of the Assignment

1.3.1 The objective of the Assignment is to enable the Piers, namely, **Lai Chi Wo Pier** and **Tung Ping Chau Public Pier** under the Project to be satisfactorily designed, constructed and commissioned in a cost-effective manner, on time and within budget. The Consultants shall provide services to implement and deliver the Project by way of reviews, surveys, impact assessments, stakeholder consultation, detailed designs, tendering, project administration, construction supervision and commissioning of the proposed works as detailed in Clause 2 of the Brief (except otherwise stated) in accordance with an agreed programme and to the satisfaction of the DR.

1.3.2 The main objectives of the Assignment are to:

a) Conduct review of the preliminary engineering studies and carry out detailed design for each of the Piers taking into account public aspiration and other constraints and the recommendations of the Investigation Study, as well as the EIA Reports and EP conditions as stated in (b) below;

b) Study the approved Environmental Impact Assessment Reports prepared under the Investigation Study and examine in details the requirements and conditions of the Environmental Permits in meeting the requirements of the relevant authorities;

c) Review the environmental monitoring and audit requirements recommended under the EIA Study to ensure the effective implementation of the recommended environmental protection and mitigation measures;

d) Evaluate the innovative design elements and carry out detailed innovative design for each of the Piers, including but not limited to floating platform, barrier-free facilities and prefabrication design, etc. recommended in the Investigation Study;

e) Collect and review opinions from stakeholders and the public to enhance the design of the Project;

f) Assist to gain supports from stakeholders, the public, district councils, and other statutory Councils and Committees to facilitate preparation of the PWSC paper and funding approval;

g) Produce tender documents, invite tenders and complete the tendering process for the Works/works package(s); and

h) Administer and supervise all construction works, works contract(s) and, where appropriate, service contract(s) of the Project.

1.4 Objective of this Report

1.4.1 In accordance with Clause 6.3.8.1 (b) (iii) of the Brief and Condition 2.11 of Environmental Permit EP-586/2021, the Pier Design Plan for Eco-materials for Lai Chi Wo Pier shall consist of the followings:

a) Specify the use of locally manufactured/recycled eco-materials, such as eco-tiles and eco-concrete in the design and construction of the pier with a view to enhancing ecological functions of the pier and minimizing the carbon footprint of the Project; and

b) Provide justifications when procurement of eco-materials manufactured by non-local markets is deemed necessary.

1.4.2 According to the Part B (Description of Designated Project) of EP-586/2021, the project includes the followings:

1) Modification of the existing pier and construction of new pier structures. The improved pier would be of approximately 155m long and 6m to 15m wide;

2) Construction and removal of a temporary pier of approximately 70m long and 3m wide;

3) Site investigation works for detailed design; and

4) Associated facilities (e.g. barrier-free access, canopy, seats) and landscaping works, etc under the Project.

1.4.3 To refine the design geotechnical parameter and facilitate the detailed design, site investigation (SI) works for LCW Pier is proposed. According to the programme, the construction phase of the Project will be commenced on 16 February 2022. In accordance with Condition 2.11 of EP-586/2021, the pier design plan shall be submitted to the Director of Environmental for approval no later than one month before the commencement of construction of the Project including site investigation.

1.5 Structure of this Report

1.5.1 This Inception Report is further divided into the following sections to cover the contents mentioned in Paragraph 1.4 above:

a) Section 2 – Site Condition;

b) Section 3 -. Proposed Engineering Design;

c) Section 4 -. Proposed Eco-materials; and

d) Section 5 – Recommendation and Conclusion.

1.6 Abbreviations

1.6.1 The following abbreviations are used in this Report:

AFCD	Agriculture, Fisheries and Conservation Department
AMO	Antiquities and Monuments Office
ArchSD	Architectural Services Department
CEDD	Civil Engineering and Development Department
DEP	Director of Environmental Protection
DEVB	Development Bureau
DO	District Office
DR	Director's Representative
EMSD	Electrical and Mechanical Services Department
EPD	Environmental Protection Department
FSD	Fire Services Department
GEO	Geotechnical Engineering Office under CEDD
GLTMS	Greening, Landscape and Tree Management Section
HAD	Home Affairs Department
HKPF	Hong Kong Police Force
HyD	Highways Department
IUCN	International Union for Conservation of Nature
LandsD	Lands Department
LegCO	The Legislative Council

LCSD	Leisure and Cultural Services Department
MD	Marine Department
MPC	Marine Parks Committee
OGCIO	Office of the Government Chief Information Officer
PIU	Pier Improvement Unit under CEDD
PlanD	Planning Department
PWD	Port Works Division
TC	Tourism Commission
TD	Transport Department
THB	Transport and Housing Bureau
UNESCO	United Nations Educational, Scientific and Cultural Organization
WSD	Water Supplies Department

2. Site Condition

2.1 Site Description

2.1.1 Lai Chi Wo (LCW) Pier is located in North District. The location plan of Lai Chi Wo Pier is as shown in **Appendix A**.

2.1.2 The 300 years old village of Lai Chi Wo was once one of the most affluent hamlets in the north eastern New Territories. Mostly made up of Hakka people, it also has one of the oldest surviving feng shui woodlands in Hong Kong. The village features a God of War temple and a mangrove habitat with ancient vegetation, including huge interlocking-branch trees, hollow trees and "fivefinger" camphor trees. Two buildings at Village of Lai Chi Wo, namely Hip Tin Temple & Hok Shan Monastery are Grade 3 historic buildings. Lai Chi Wo is now taking part in the Agricultural Land Rehabilitation Scheme, which aims to let tourists experience the culture of a Hakka walled village. Tourists may also visit the Siu Ying Story Room to learn about the city's varied geological features and enjoy the beautiful scenery of Lai Chi Wo. There is however only one berthing space at Lai Chi Wo pier. Coupled with the shallow depth of water the pier is inaccessible for typical vessels during low tide.

2.1.3 The pier is located within the Hong Kong UNESCO Global Geopark (HKUGGp) and Yan Chau Tong Marine Park, the spawning and nursery grounds of commercial fisheries resources at north eastern waters and it is also adjacent to Plover Cove Country Park. Lai Chi Wo Beach Site of Special Scientific Interest (SSSI) is located about 180m to the south of the existing pier. It was designated in 1979 due to the presence of seagrass Zostera japonica. In addition to the seagrass bed, Yan Chau Tong Marine Park is also one of the best growing sites for corals. Water quality and other environmental concerns should be duly considered when the pier is to be reconstructed. For works within country parks or marine parks, prior consent shall be obtained from the Country and Marine Parks Authority and Lands Department before the commencement of works. If considered necessary, the Country and Marine Parks Board (CMPB) or its Country Parks Committee (CPC) and/or Marine Parks Committee (MPC) should be consulted. For any marine works in the waters of Hong Kong, and which interface or are likely to interfere with the operation of port facilities, or the navigation of vessels, or the safety of any person in the waters, permission shall be obtained from the Director of Marine prior to the commencement of marine works.

2.1.4 There have been repeated requests from the locals to extend the pier to provide adequate depth of water for vessels.

2.2 Arrangement and Condition of Existing Pier

2.2.1 General

2.2.1.1. The LCW Pier has been built over than 50 years which is a straight solid concrete finger pier of about 64m long and 2.5m wide. Access of the pier is relatively narrow. The existing pier level is about 2.9mPD only. Flooding occurs in the high tide.

The existing pier has only one primitive berth at the head of pier. There are a number of bollards on each side of the pier and one navigation light post at the head. The layout and condition of existing LCW Pier is shown in the **Figure 2.1** and **Figure 2.2**.

Figure 2.1: General Layout of Existing LCW Pier

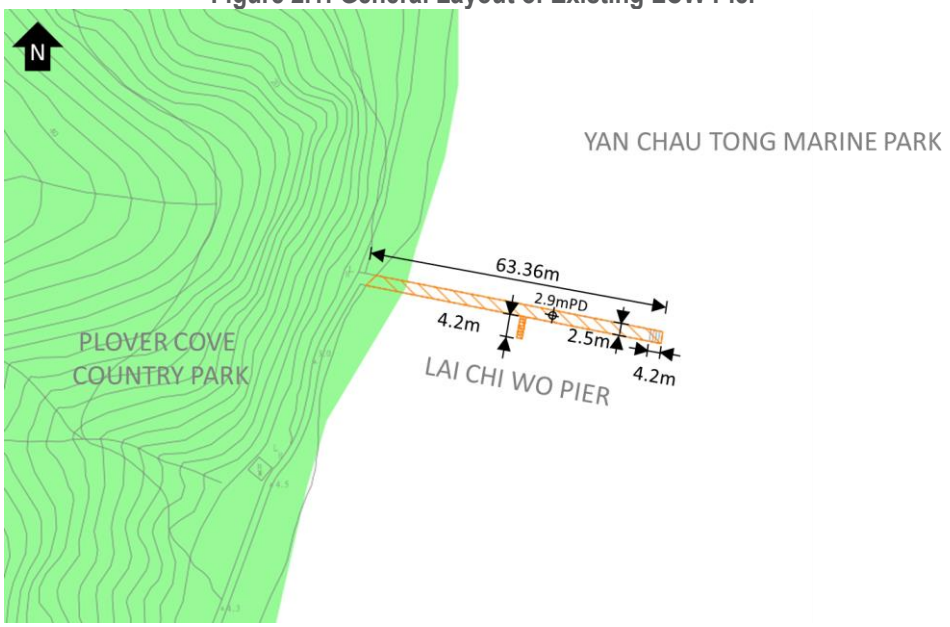


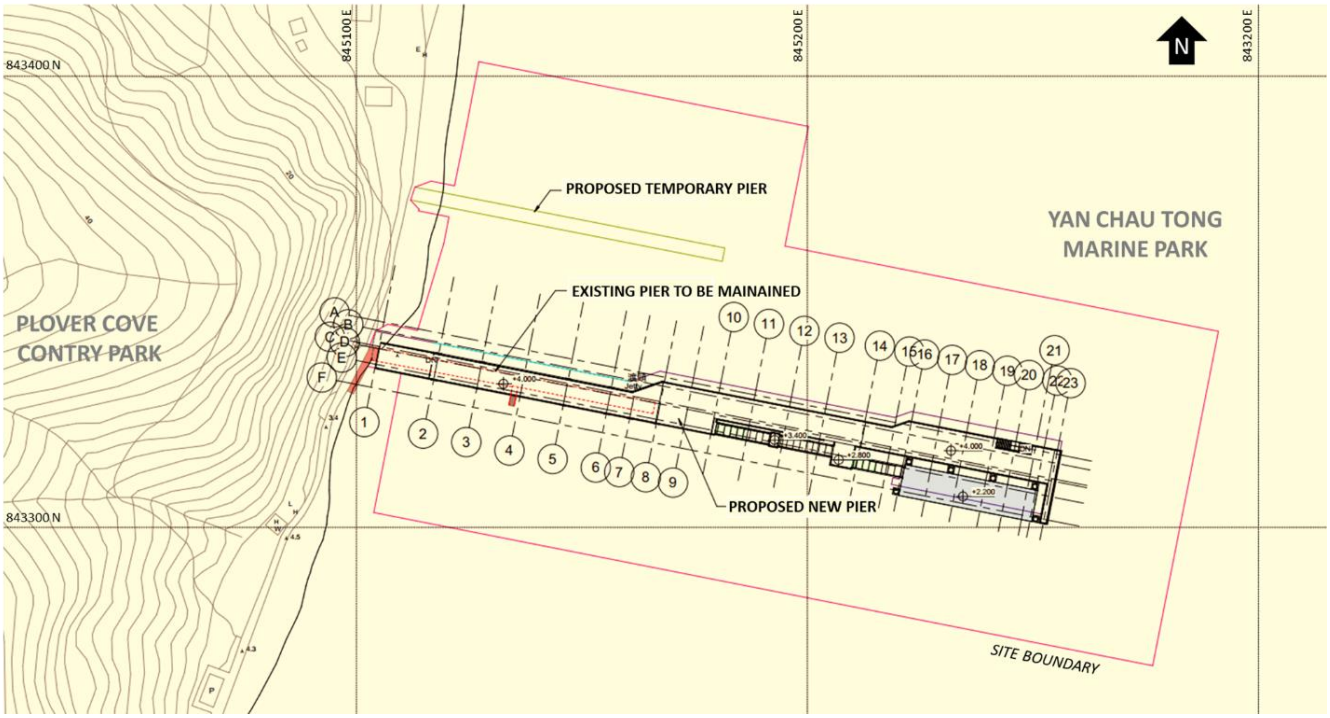
Figure 2.2: Condition of Existing LCW Pier

3. Proposed Engineering Design

3.1 General

3.1.1 The proposed LCW Pier will be constructed on top of the existing pier. The proposed LCW Pier will align in the same direction as the existing pier, and extend to deeper water as shown in the **Figure 3.1**.

Figure 3.1 - General Layout Plan of LCW Pier



3.1.2 The proposed LCW Pier will be a piled deck structure in order to minimise any impact on environment and hydrodynamics. The piled deck structure will be of a length of about 155m and widths ranging from 6m to 8m increased to 15m at the pier head for both traditional pier head and floating pontoon provision. The proposed LCW Pier will consist of a floating pontoon and a gangway for barrier-free access. Layout and section of the pier is shown in the **Figure 3.2**, **Figure 3.3** and **Appendix A**.

Figure 3.2 - Layout Plan of LCW Pier

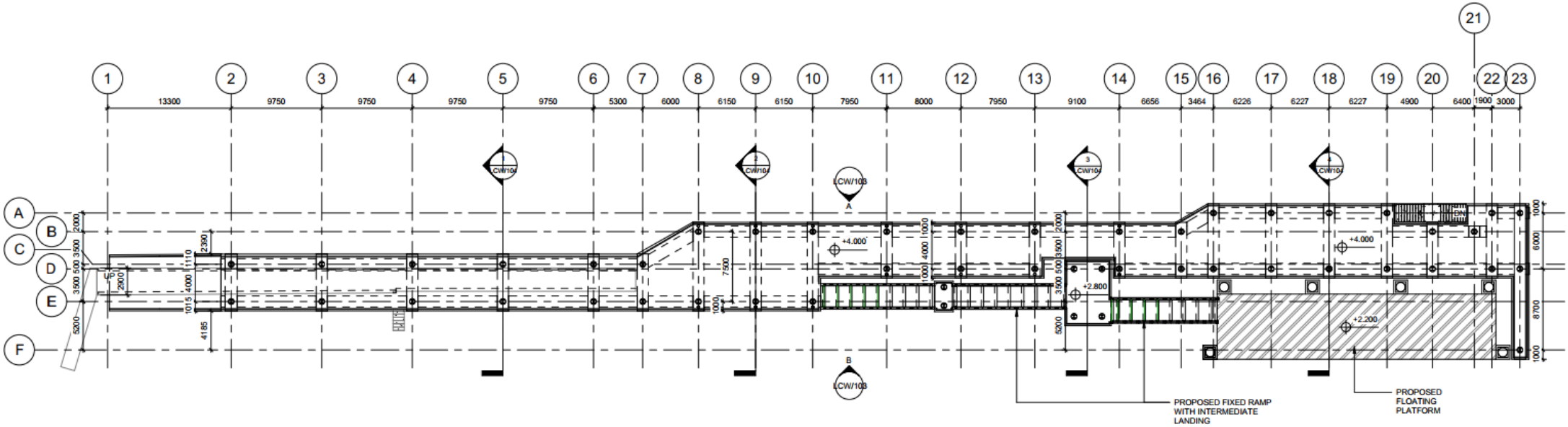
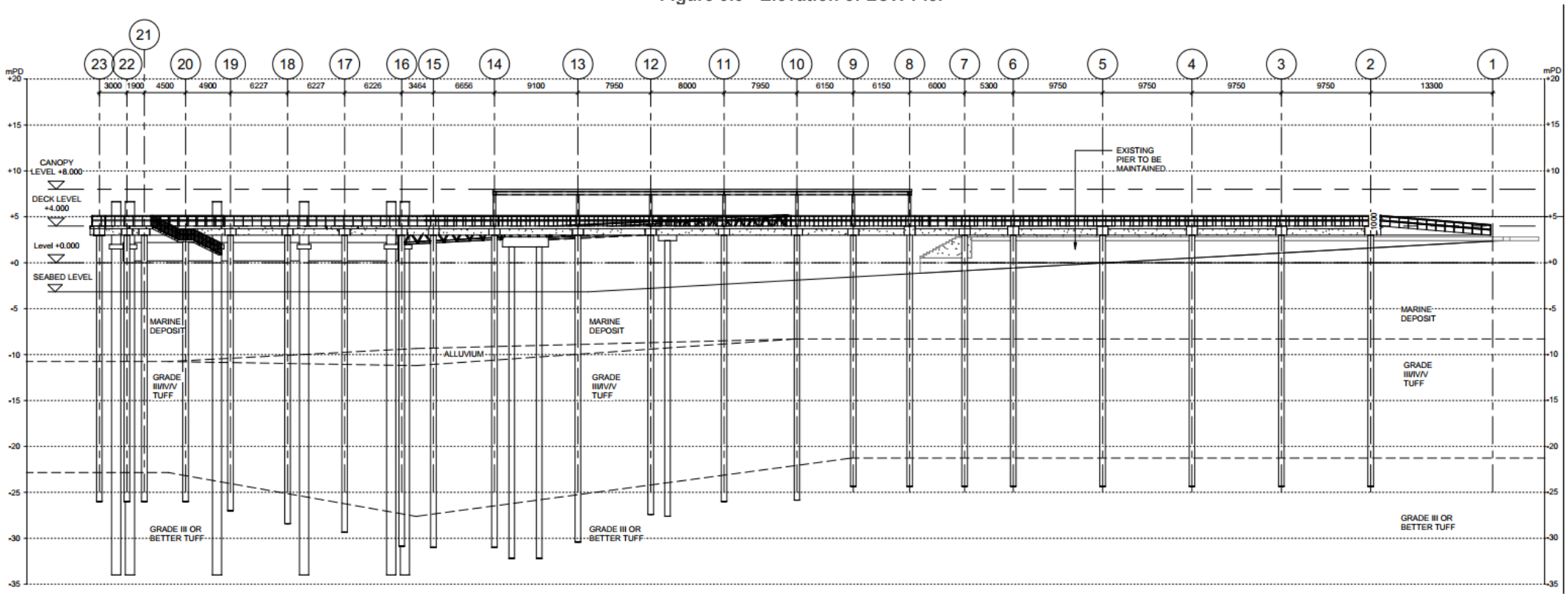


Figure 3.3 - Elevation of LCW Pier



4. Proposed Eco-materials

4.1 General

4.1.1 Whilst a number of design initiatives have been proactively implemented to tackle various environmental challenges, the Project aims to achieve more than the statutory requirements. Thus, various environmental initiatives have been identified and will be adopted for the Project. These initiatives cover different aspects including:

- Enhance biodiversity / greening;
- Clean energy / energy saving; and
- Waste minimisation.

4.1.2 Part 2 of Pier Design Plan (i.e. a complete plan with specification of the use of locally manufactured/recycled eco-materials, such as eco-tiles and eco-concrete in the design and construction of the pier with a view to enhancing ecological functions of the pier and minimizing the carbon footprint of the Project, etc.) will be submitted for DEP's approval before commencement of the construction of the LCW Pier.

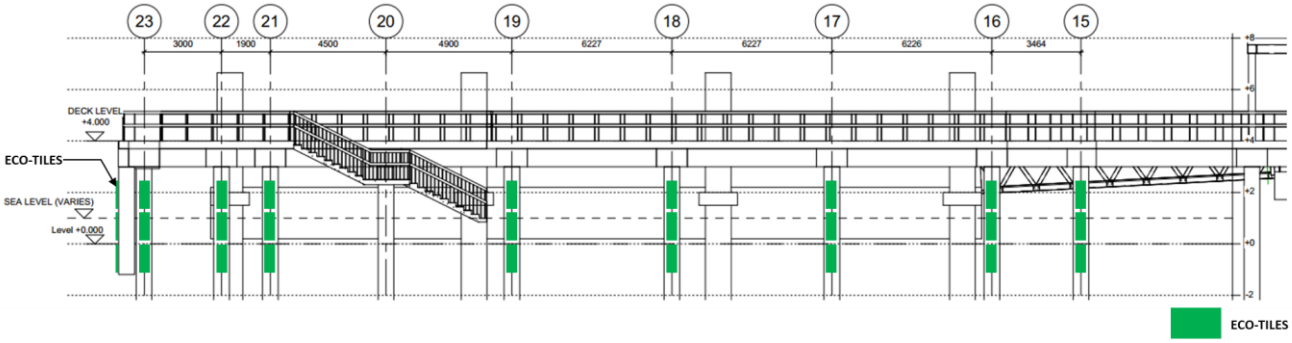
4.2 Enhance Biodiversity

4.2.1.1. To promote seamless integration of biodiversity into the pier design, we shall use eco-tiles at the hard surfaces for vitalising the ecological functions at sub-tidal artificial pier structures such as the downstand wall and piles as shown in **Figure 4.1**.

4.2.1.2. We note that artificial vertical seawalls do not have the natural complexity of rocky shores and can reach extremely high temperatures when exposed at low tide. This makes them unsuitable for many intertidal marine species, including the filter-feeding oysters that improve water quality. The resulting lack of biodiversity weakens the coastal ecosystem.

4.2.1.3. Eco-tiles will be a solution for addressing these issues. Eco-tiles are constructed with crevices and grooved surfaces, based on the combination of ecological and engineering principles. By increasing the surface complexity with crevices, the Eco-tiles provide shelter and reduced the temperature for animals. Species such as snails and limpets preferred the cooler and shaded crevices of the tiles, hence prompting the overall increase in the number of species and individual animals on the tiles.

Figure 4.1 – Application of Eco-tiles at LCW Pier



4.2.1.4. To minimize the carbon footprint of the Project, we will consider the use of Eco-tiles manufactured by local market. Subject to the detailed design and contractor's alternative proposal, if procurement of Eco-tiles manufactured by non-local markets is deemed necessary with consideration on cost and availability, justifications will be provided to the DEP for approval.

4.2.1.5. Details and specification of the Eco-tiles will be further developed and provided in design phase.

4.3 Clean Energy / Energy Saving

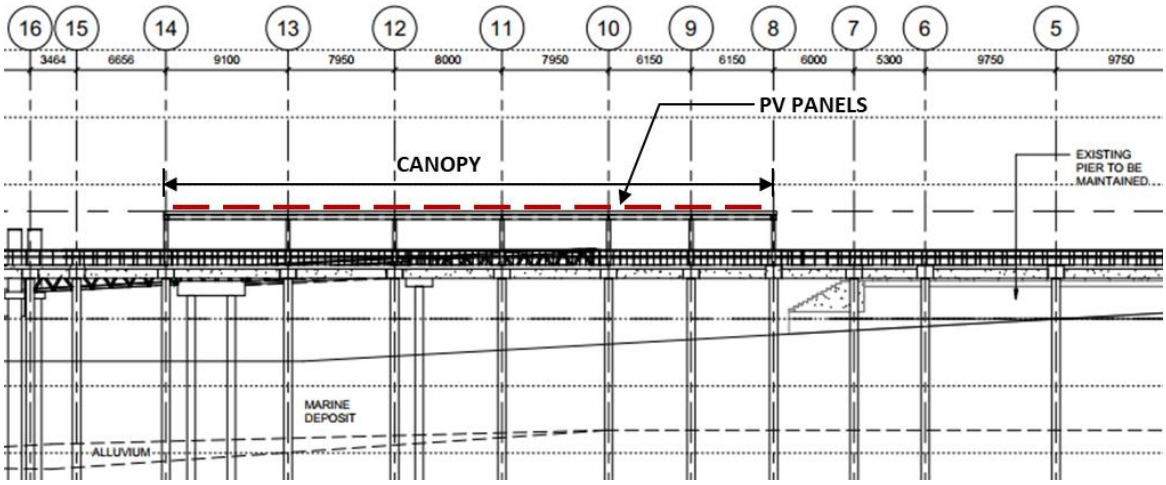
PV Panels

4.3.1 PV panels, also known as solar panels, capture the sun's energy and convert it into electricity. Electricity generated by PV panels can be used for lights at waiting area.

4.3.1.1. PV cells are usually very small but when combined together to form solar panels and solar arrays, they can be very efficient. When the sun shines over the cells, an electric field is created. The stronger the sun, the more electric energy is produced. Nevertheless, the cells do not need direct sunlight to work, and they can still produce electricity on a cloudy day.

4.3.1.2. PV panels are available in various shapes and sizes and can be easily mounted on top of roof. We proposed to install PV panels on the canopy of proposed LCW Pier as shown in the **Figure 4.2**.

Figure 4.2 – Application of PV Panels on Canopy at LCW Pier



4.3.1.3. Among all the benefits of solar panels, the most important thing is that solar energy is a truly renewable energy source. Using of PV panels contributes to cutting the carbon footprint.

4.3.1.4. To minimize the carbon footprint of the Project, we will consider the use of PV panels manufactured by local market. Subject to the detailed design and contractor's alternative proposal, if procurement of PV panels manufactured by non-local markets is deemed necessary with consideration on cost and availability, justifications will be provided to the DEP for approval.

4.3.1.5. Details and specification of the PV panels will be further developed and provided in design phase.

LED Lighting

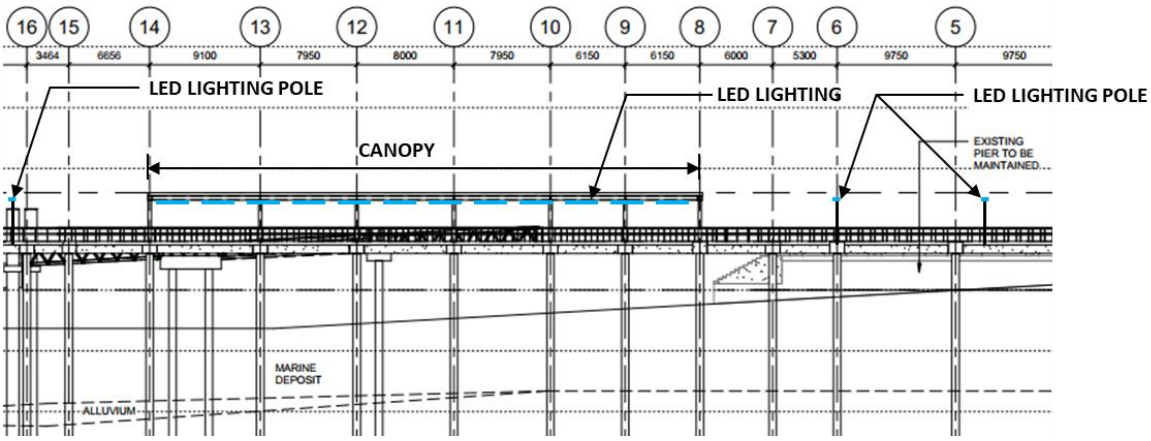
4.3.1.6. LEDs can achieve energy efficient and consume 85% less power than incandescent bulbs. Since LEDs use only a fraction of the energy of incandescent bulbs there is a dramatic decrease in electricity costs. The long life span feature of LEDs helps achieve even more energy efficiency.

4.3.1.7. LED lamps have a long life span up to 50,000 hours, which mirrors a stark contrast to an average incandescent bulb having 1,000 hours only. LED lamps will last over 17 years before needing replacement.

4.3.1.8. Unlike most conventional fluorescent lighting bulbs contain large amounts of toxic and polluting materials like mercury, LED lights are free of toxic chemicals like mercury or harmful gases.

4.3.1.9. The LED Lighting will be adopted at the waiting area and along the walkway of pier as shown in **Figure 4.3**.

Figure 4.3 – Application of LED Lighting on Canopy at LCW Pier



4.3.1.10. To minimize the carbon footprint of the Project, we will consider the use of LED lighting manufactured by local market. Subject to the detailed design and contractor's alternative proposal, if procurement of LED lighting manufactured by non-local markets is deemed necessary with consideration on cost and availability, justifications will be provided to the DEP for approval.

4.3.1.11. Details and specification of the LED lighting will be further developed and provided in design phase.

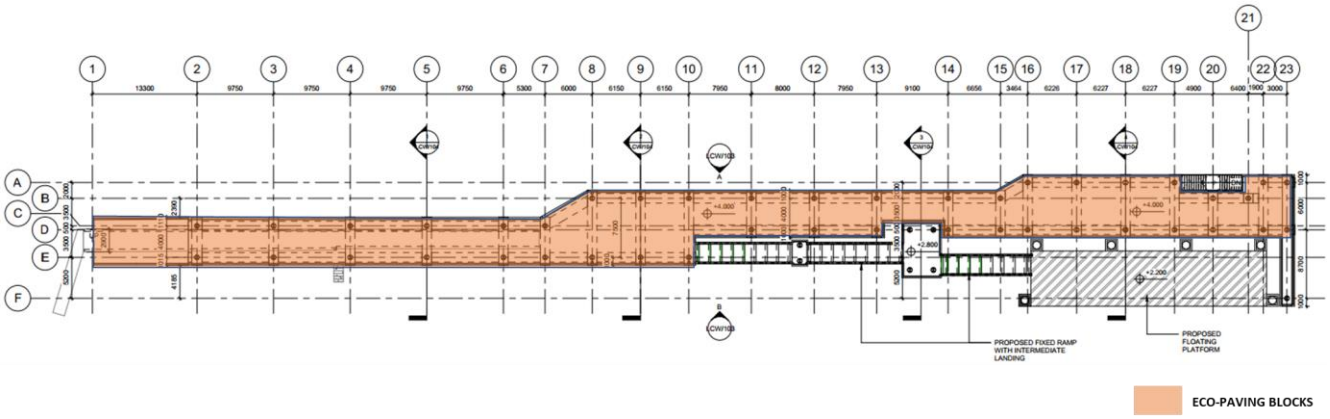
4.4 Waste Minimisation

4.4.1 Eco-paving blocks from recycled waste glass containers has satisfactory performance in trials. It effectively uses recycled glass and construction waste as major constituents in the production of concrete blocks to remove air pollutants, such as nitrogen oxides (NOx). It not only reduces the disposal of waste, but also conserves the use of natural resources, such as river sand. The eco-paving blocks will be considered applying on the deck of LCW Pier. Potential application is shown in **Figure 4.4**.

4.4.2 The special features and advantages of Eco-paving blocks are listed below:

- Air pollutant removal capability;
- Able to replace the natural substances by recycled materials as "Green" application;
- Equivalent to conventional blocks in all performance requirements that has been fulfilled HKSAR's civil engineering work standards;
- Has superiority over conventional blocks in terms of water absorption, hardness and aesthetic values; and
- Its physical life-span is comparable to the conventional blocks.

Figure 4.4 – Application of Eco-paving Blocks on deck of LCW Pier



4.4.2.1. To minimize the carbon footprint of the Project, we will consider the use of Eco-paving blocks manufactured by local market. Subject to the detailed design and contractor's alternative proposal, if procurement of Eco-paving blocks manufactured by non-local markets is deemed necessary with consideration on cost and availability, justifications will be provided to the DEP for approval.

4.4.2.2. Details and specification of the Eco-paving blocks will be further developed and provided in design phase.

5. Recommendation and Conclusion

5.1.1 Three environmental initiatives will be adopted in the proposed LCW Pier, which are:

- Enhance biodiversity – installation of eco-tiles;
- Clean energy / energy saving – use of PV panels and LED lightings; and
- Waste minimisation – application of Eco-paving blocks.

5.1.2 With implementation of a number of design initiatives, various environmental challenges can be proactively tackled, and the Project can achieve more than the statutory requirements.

5.1.2.1. Since the project is still in review phase, further details of application including the specification of proposed materials will be developed and provided in design phase. The Pier Design Plan for Eco-materials will be further updated based on the detailed design.

5.1.2.2. Related supplementary information covered in Part 2 of Pier Design Plan will be submitted for DEP's approval before the construction of the pier structure. Considerations of exploring the use of locally manufactured / recycled eco-materials in the design and construction of the pier with a view to enhancing ecological function of the pier and minimizing the carbon footprint of the Project will be included in the supplementary information.

5.1.3 The tentative submission schedule of the updated plan is May 2023(1).

Remark:
(1) According to the Condition 2.11 of EP-586/2021, the Pier Design Plan for Eco-materials shall be submitted to the Director of Environmental for approval no later than one month before the commencement of construction of the Project. The tentative commencement of main works (i.e. construction of proposed LCW Pier) is August 2023.

Appendix A

Preliminary Design Drawing for LCW Pier

Millimetres 0 10 100

N

845100 E

845200 E

845300 E

843400N

843300N

843200N

墓地
Graves

20

40

R

R

R

E
H

PROPOSED TEMPORARY PIER

EXISTING PIER TO BE MAINTAINED

PROPOSED NEW PIER

A B C D E F

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 16 17 18 19 20 21 22 23

DN

+4.000

滴賭
Jetty

+3.400

+2.800

+4.000

DN

+2.200

3.4

L H

H W 4.5

4.3

P

L H FP

3.3

L H

3.1

SITE PLAN
SCALE 1 : 500

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES ABOVE HONG KONG PRINCIPAL DATUM (mPD) UNLESS NOTED OTHERWISE.

Rev.	Date	Description	By	Chk'd	App'd
A	17/12/2	FIRST ISSUE	EY	JC	SW
	1				

Drawing Status | Suitability

SNC·LAVALIN | ATKINS Member of the SNC-Lavalin Group

Client

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

土木工程處
CIVIL ENGINEERING OFFICE

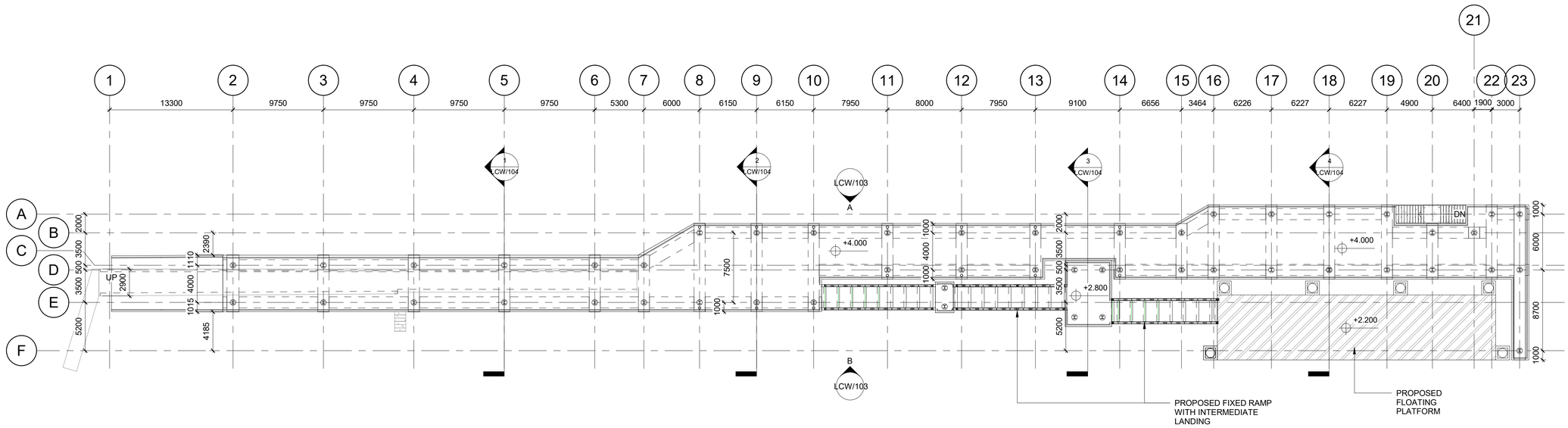
Project Title
Agreement No. CE 32/2021 (CE)
IMPROVEMENT WORKS AT LAI CHI WO PIER
AND TUNG PING CHAU PUBLIC PIER
- DESIGN AND CONSTRUCTION

Drawing Title
PIER IMPROVEMENT AT
LAI CHI WO PIER
SITE PLAN , GENERAL ARRANGEMENT

Scale	Designed	Drawn	Checked	Authorised
As indicated	EY	CS	JC	SW
Original: A1	Date 17/12/21	Date 17/12/21	Date 17/12/21	Date 17/12/21

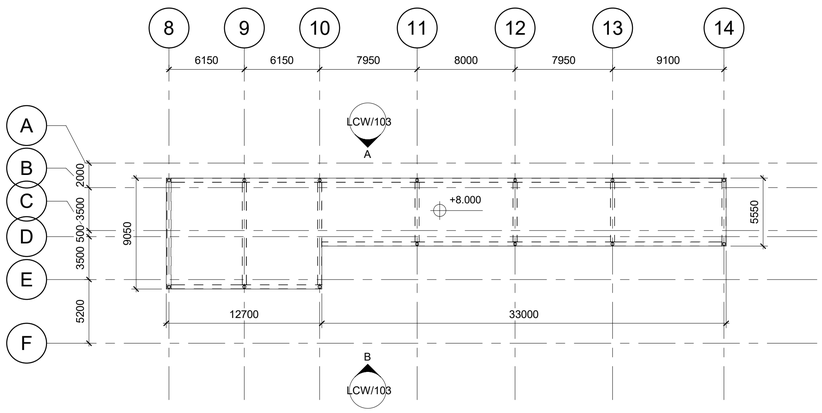
Drawing Number: LCW/101 | Revision: A

Date: 13/2/2023 5:01:39 PM
User name:CS
Filename:



PLAN DECK LEVEL +4.000

1 : 250



PLAN AT ROOF LEVEL +8.000 (DESIGN TBC)

1 : 250

LEGEND:

- SOCKETED STEEL H-PILE
- PROPOSED GUIDE PILES

Rev.	Date	Description	By	Chk'd	App'd
A	17/12/2	FIRST ISSUE	EY	JC	SW
	1				

Drawing Status

Suitability

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Member of the SNC-Lavalin Group

Client

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

土木工程處
CIVIL ENGINEERING OFFICE

Project Title

Agreement No. CE 32/2021 (CE)
IMPROVEMENT WORKS AT LAI CHI WO PIER
AND TUNG PING CHAU PUBLIC PIER
- DESIGN AND CONSTRUCTION

Drawing Title

PIER IMPROVEMENT AT LAI CHI WO PIER
CONCEPTUAL SCHEME
GENERAL LAYOUT PLANS

Scale	Designed	Drawn	Checked	Authorised
As indicated	EY	CS	JC	SW
Original: A1	Date 17/12/21	Date 17/12/21	Date 17/12/21	Date 17/12/21

Drawing Number: LCW/102

Revision: A

Millimetres 0 10 100

Date: 1/3/2023 5:01:39 PM

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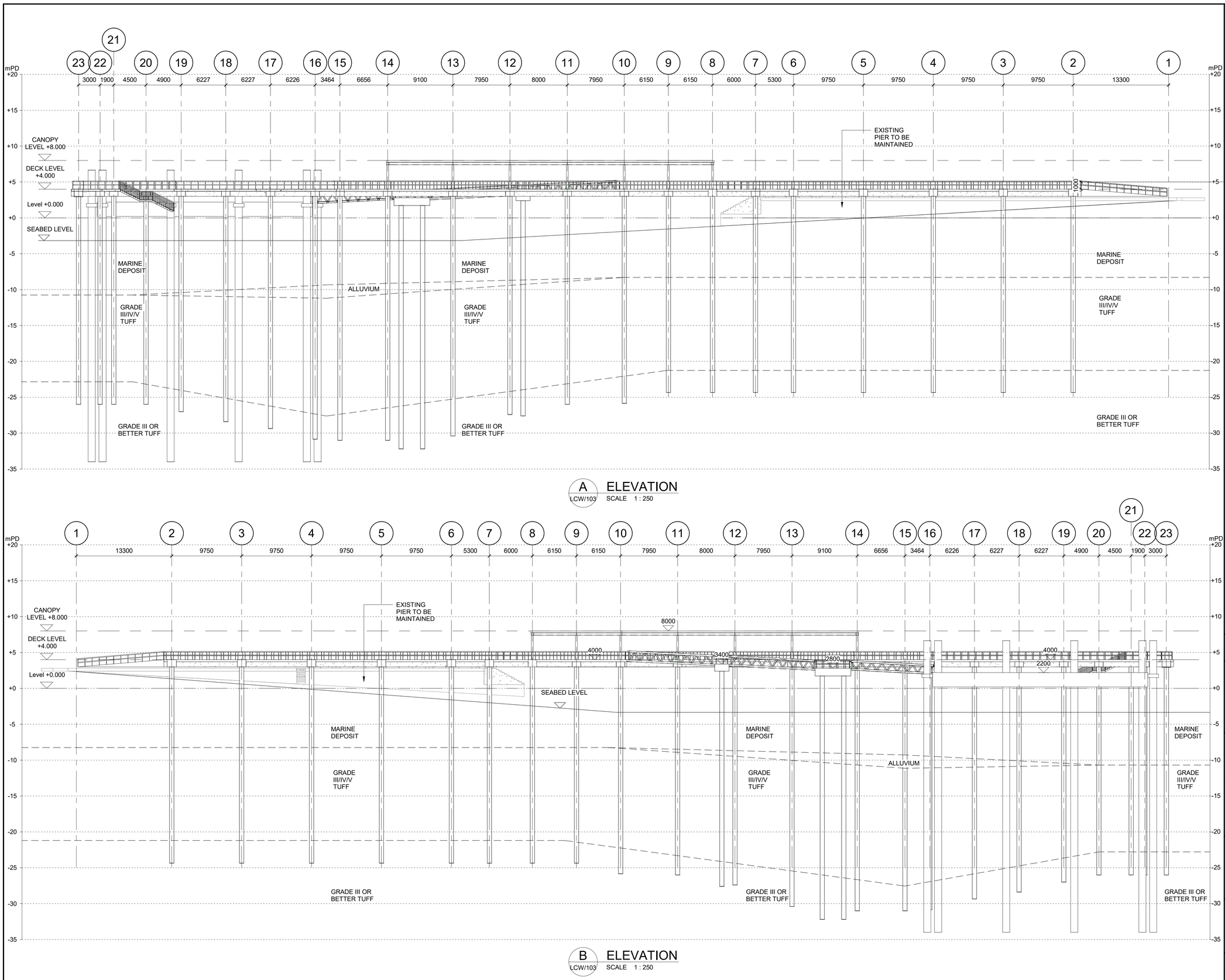
Filename:



A ELEVATION
LCW/103 SCALE 1 : 250

B ELEVATION
LCW/103 SCALE 1 : 250

Millimetres 100 10 0

Date: 1/3/2022 5:01:32 PM

User name:cs
Filename:

Rev.	Date	Description	By	Chk'd	App'd
A	17/12/2	FIRST ISSUE	EY	JC	SW
1					

Drawing Status

Suitability

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

土木工程處
CIVIL ENGINEERING OFFICE

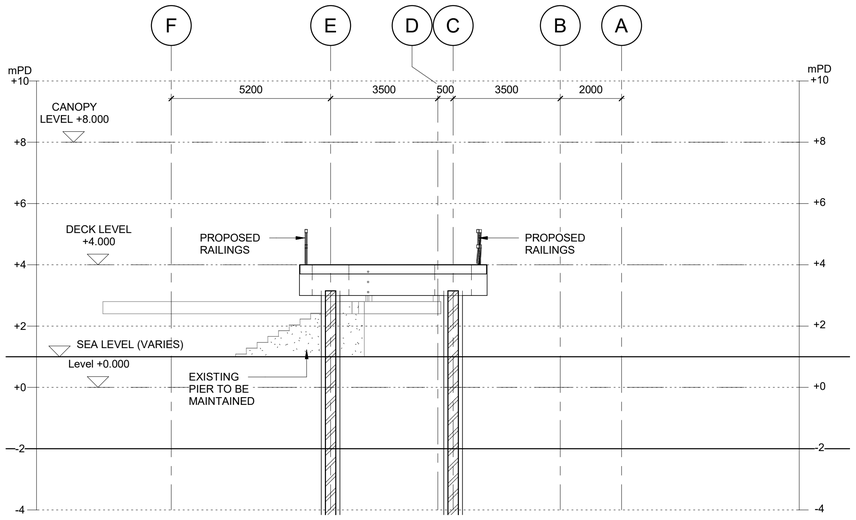
Project Title
Agreement No. CE 32/2021 (CE)
IMPROVEMENT WORKS AT LAI CHI WO PIER
AND TUNG PING CHAU PUBLIC PIER
- DESIGN AND CONSTRUCTION

Drawing Title
PIER IMPROVEMENT AT
LAI CHI WO PIER
ELEVATIONS

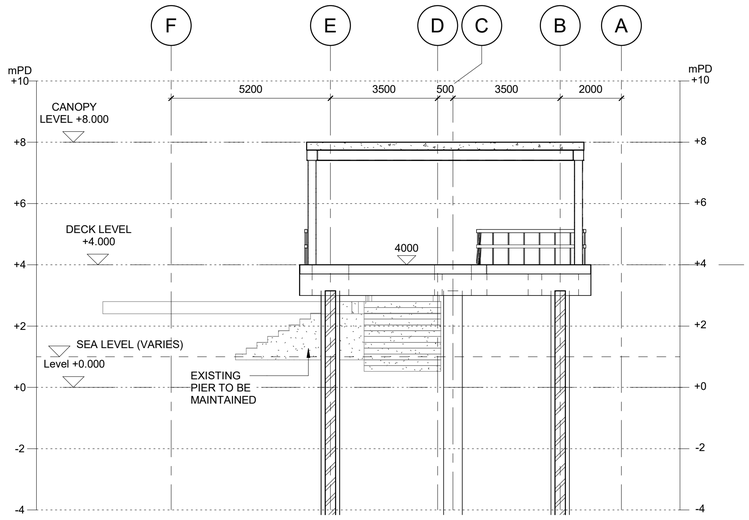
Scale	Designed	Drawn	Checked	Authorised
1 : 250	EY	CS	JC	SW
Original Size	Date	Date	Date	Date
A1	17/12/21	17/12/21	17/12/21	17/12/21

Drawing Number
LCW/103

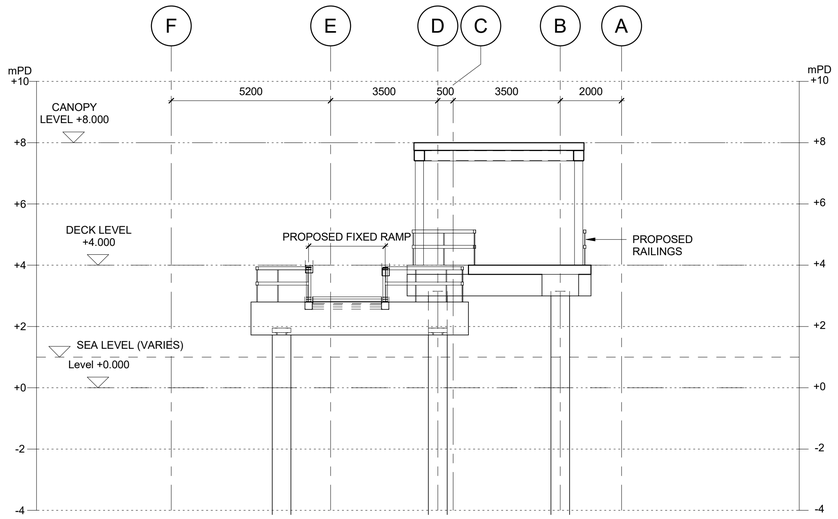
Revision
A



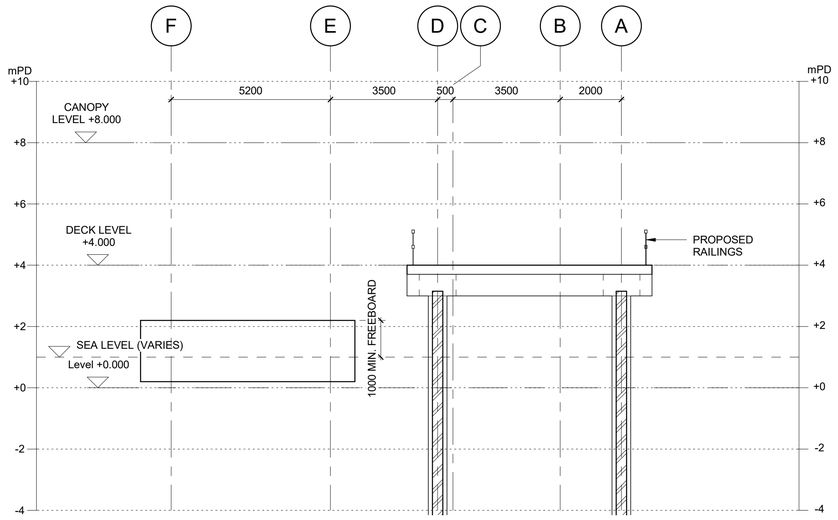
1 SECTION
LCW/104 SCALE 1 : 100



2 SECTION
LCW/104 SCALE 1 : 100



3 SECTION
LCW/104 SCALE 1 : 100



4 SECTION 4
LCW/104 SCALE 1 : 100

Rev.	Date	Description	By	Chk'd	App'd
A	17/12/2	FIRST ISSUE	EY	JC	SW
	1				

Drawing Status

Suitability

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

土木工程處
CIVIL ENGINEERING OFFICE

Project Title
Agreement No. CE 32/2021 (CE)
IMPROVEMENT WORKS AT LAI CHI WO PIER
AND TUNG PING CHAU PUBLIC PIER
- DESIGN AND CONSTRUCTION

Drawing Title
PIER IMPROVEMENT AT
LAI CHI WO PIER
SECTIONS

Scale	Designed	Drawn	Checked	Authorised
1 : 100	EY	CS	JC	SW
Original Size A1	Date 17/12/21	Date 17/12/21	Date 17/12/21	Date 17/12/21

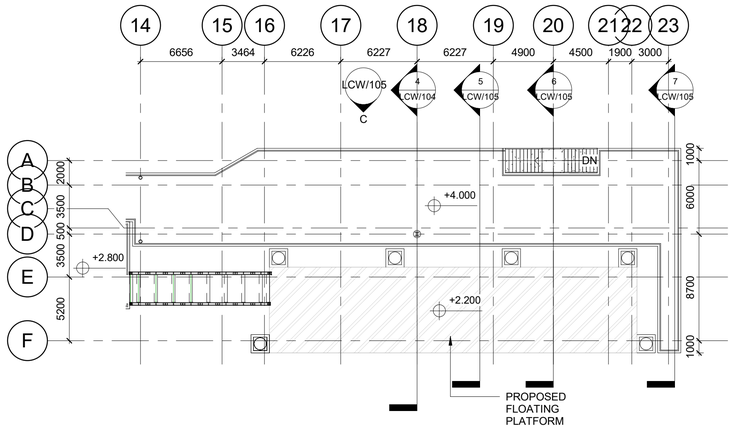
Drawing Number
LCW/104

Revision
A

Millimetres 0 10 100

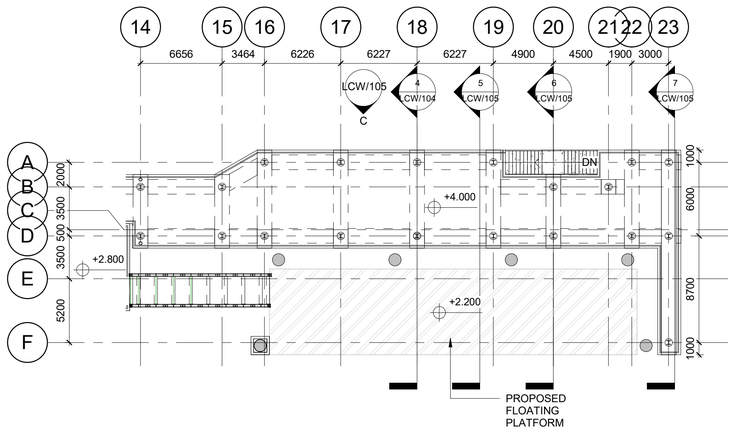
Date: 1/3/2023 5:01:33 PM

User name: cs
Filename:



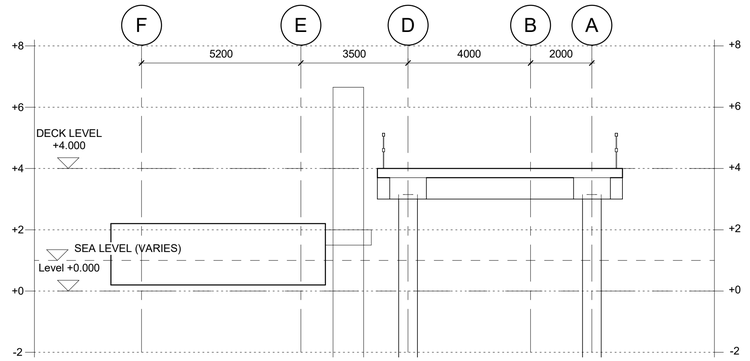
GENERAL ARRANGEMENT - LAYOUT PLAN

1 : 250



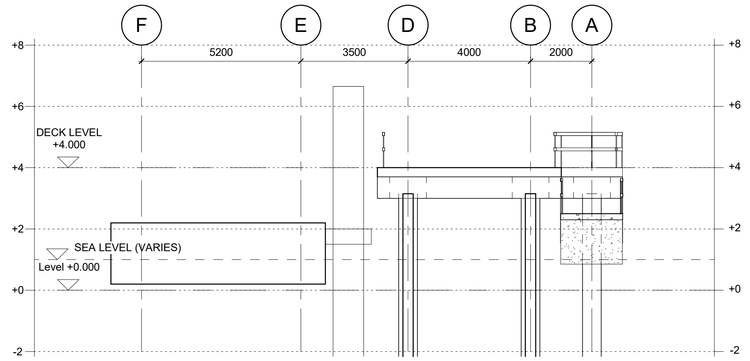
STRUCTURAL FRAMING - LAYOUT PLAN

1 : 250



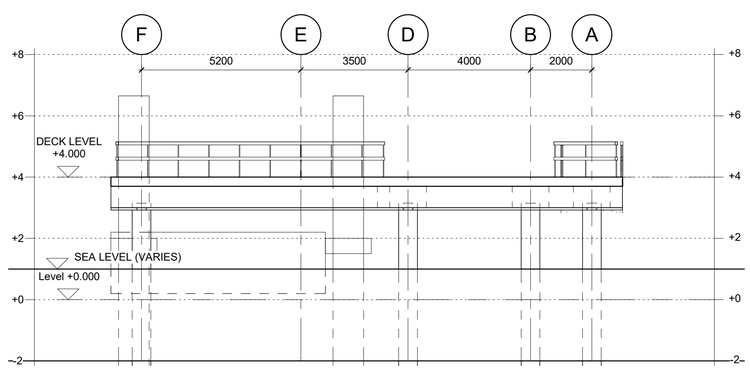
5 LCW/105 SECTION

SCALE 1 : 100



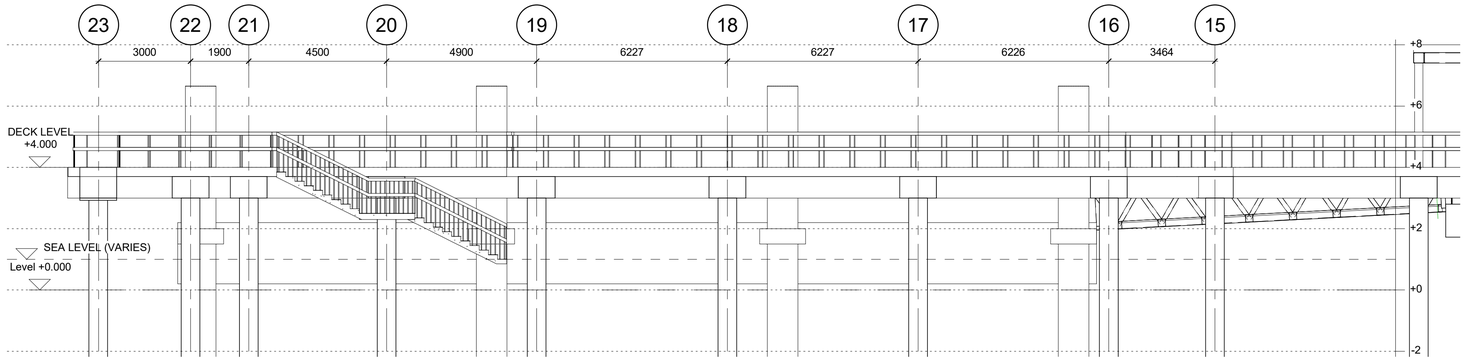
6 LCW/105 SECTION

SCALE 1 : 100



7 LCW/105 SECTION

SCALE 1 : 100



C LCW/105 ELEVATION

SCALE 1 : 100

LEGEND:

- SOCKETED STEEL H-PILE
- PROPOSED GUIDE PILES

Rev.	Date	Description	By	Ch'd	App'd
A	17/12/2	FIRST ISSUE	EY	JC	SW
	1				

Drawing Status

Suitability

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

土木工程處 CIVIL ENGINEERING OFFICE

Project Title

Agreement No. CE 32/2021 (CE)
IMPROVEMENT WORKS AT LAI CHI WO PIER
AND TUNG PING CHAU PUBLIC PIER
- DESIGN AND CONSTRUCTION

Drawing Title

PIER IMPROVEMENT AT
LAI CHI WO PIER
PIER HEAD

Scale	Designed	Drawn	Checked	Authorised
As Indicated	EY	CS	JC	SW
Original A1	Date 17/12/21	Date 17/12/21	Date 17/12/21	Date 17/12/21

Drawing Number: LCW/105

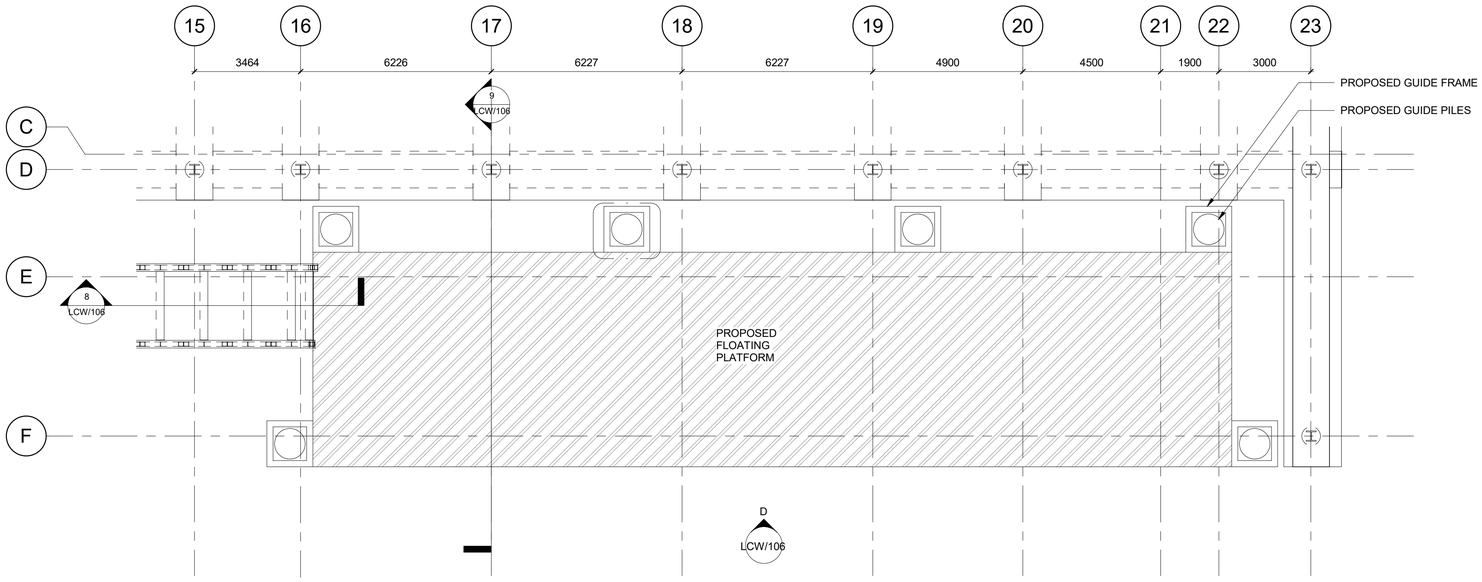
Revision: A

Millimetres 0 10 100

Date: 1/3/2022 5:01:35 PM

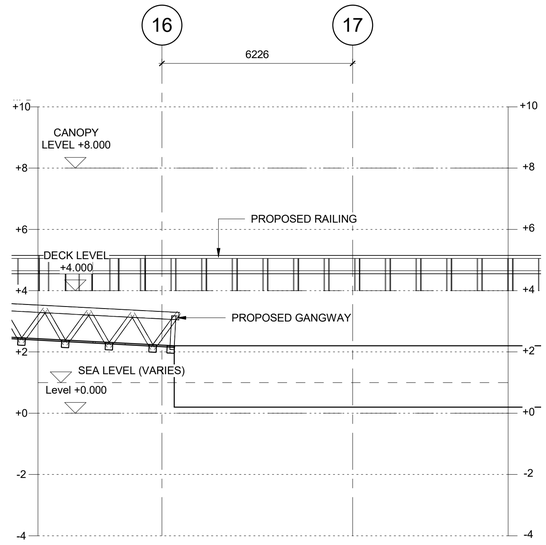
User name: cs

Filename:



FLOATING PLATFORM LEVEL+2.200

1 : 100



8 LCW/106 SECTION

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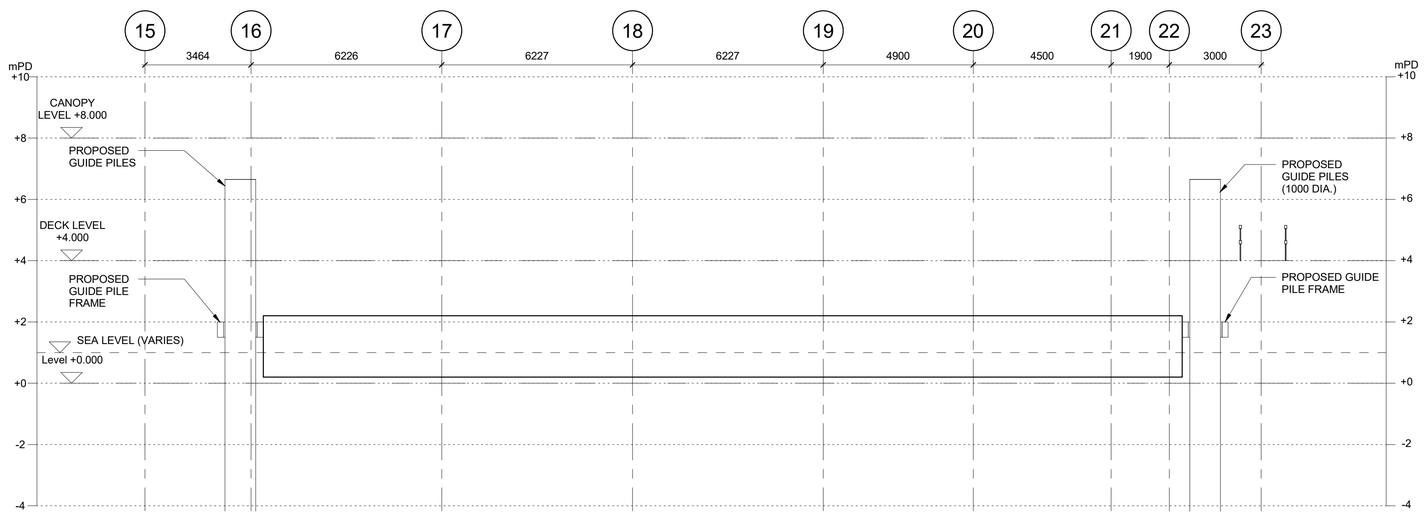
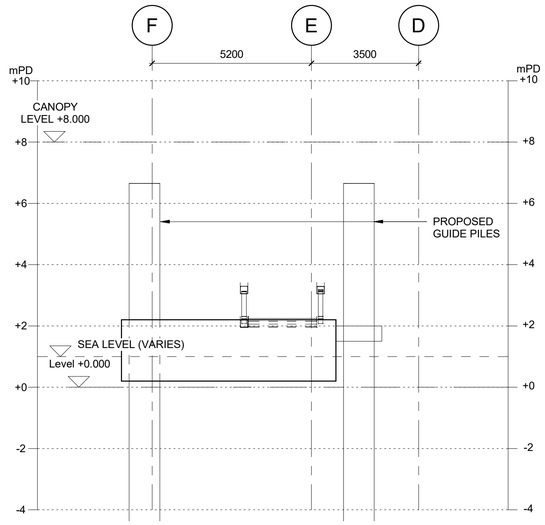


D LCW/106 ELEVATION

SCALE 1 : 100



9 LCW/106 SECTION

SCALE 1 : 100

LEGEND:

SOCKETED STEEL H-PILE

PROPOSED GUIDE PILES

Rev.	Date	Description	By	Chk'd	App'd
A	17/12/2	FIRST ISSUE	EY	JC	SW
	1				

Drawing Status

Suitability

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

土木工程處 CIVIL ENGINEERING OFFICE

Project Title

Agreement No. CE 32/2021 (CE)
IMPROVEMENT WORKS AT LAI CHI WO PIER AND TUNG PING CHAU PUBLIC PIER - DESIGN AND CONSTRUCTION

Drawing Title

PIER IMPROVEMENT AT LAI CHI WO PIER FLOATING PLATFORM

Scale	Designed	Drawn	Checked	Authorised
As indicated	EY	CS	JC	SW
Original: A1	Date 17/12/21	Date 17/12/21	Date 17/12/21	Date 17/12/21

Drawing Number: LCW/106

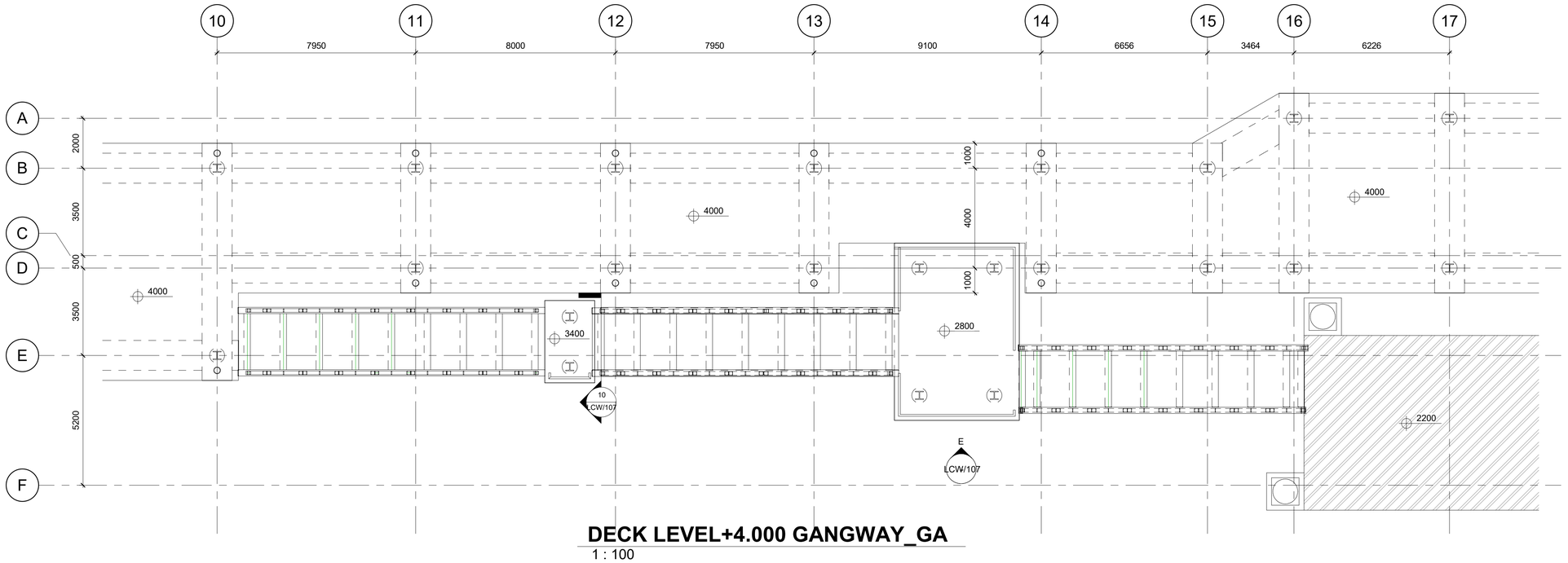
Revision: A

Millimetres 0 10 100

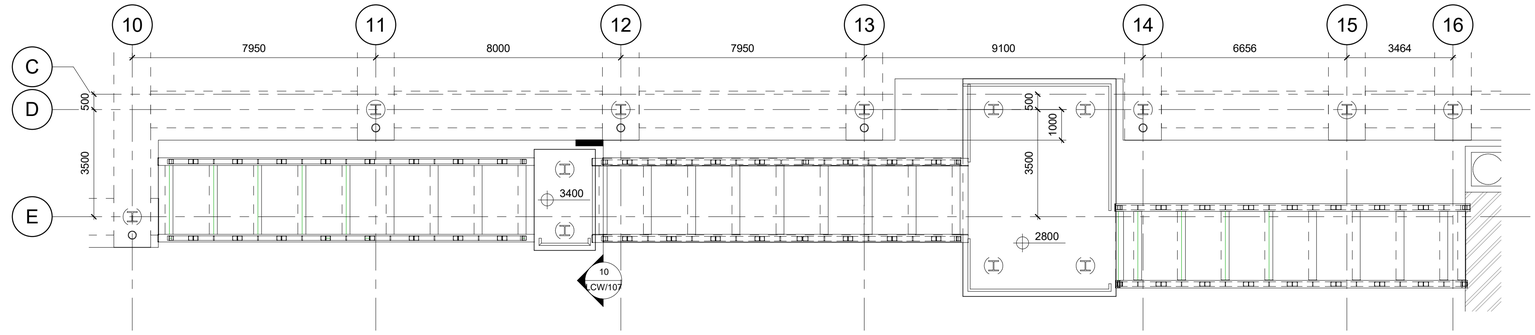
Date: 13/2023 5:01:36 PM

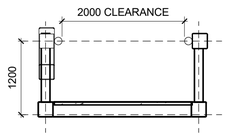
User name: cs

Filename:



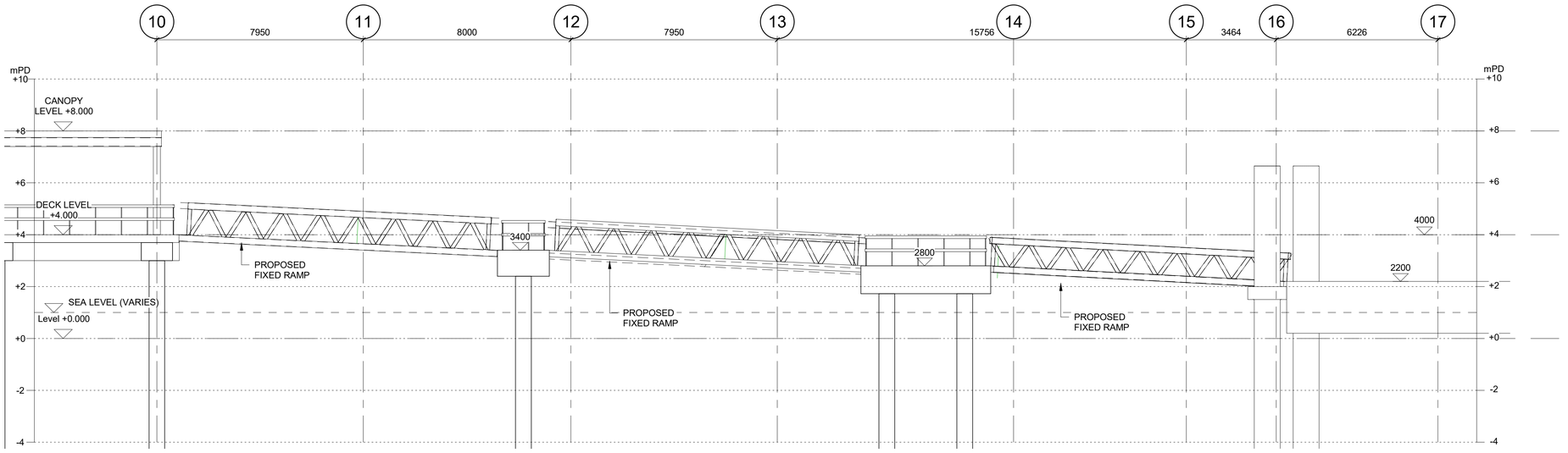
DECK LEVEL+4.000 GANGWAY_GA
1 : 100





10 LCW/107 SECTION
SCALE 1 : 50

DECK LEVEL+4.000 GANGWAY_STR
1 : 100



E LCW/107 ELEVATION E_GANGWAY
SCALE 1 : 100

LEGEND:

- SOCKETED STEEL H-PILE
- PROPOSED GUIDE PILES

Rev.	Date	Description	By	Chk'd	App'd
A	17/12/2	FIRST ISSUE	EY	JC	SW
	1				

Drawing Status

Suitability

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Civil Engineering and Development Department

土木工程處
CIVIL ENGINEERING OFFICE

Project Title
Agreement No. CE 32/2021 (CE)
IMPROVEMENT WORKS AT LAI CHI WO PIER
AND TUNG PING CHAU PUBLIC PIER
- DESIGN AND CONSTRUCTION

Drawing Title
PIER IMPROVEMENT AT
LAI CHI WO PIER
GANGWAY

Scale	Designed	Drawn	Checked	Authorised
As Indicated	EY	CS	JC	SW
Original: A1	Date 17/12/21	Date 17/12/21	Date 17/12/21	Date 17/12/21

Drawing Number
LCW/107

Revision
A

Millimetres 0 10 100

Date: 1/3/2022 5:01:37 PM

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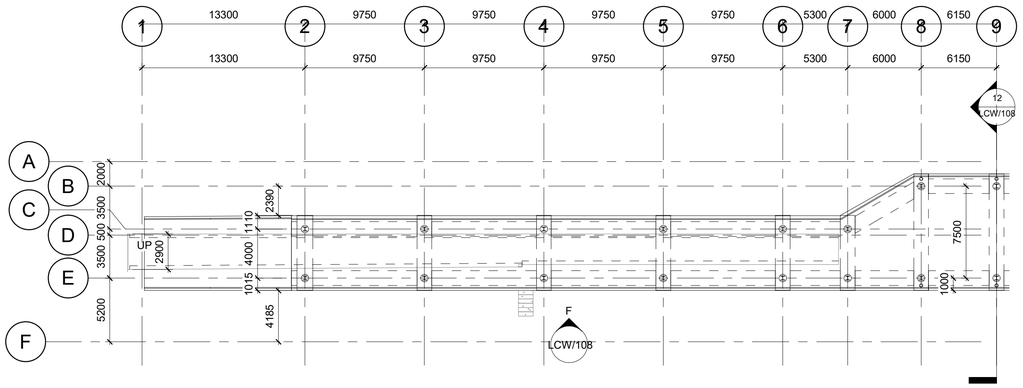
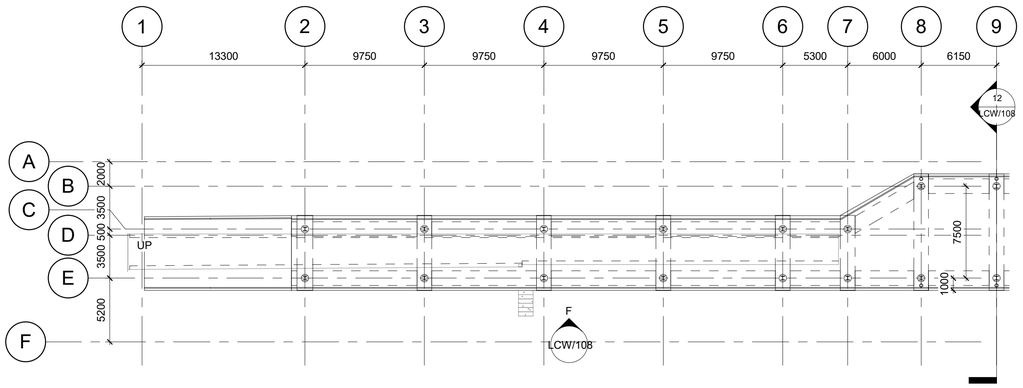
Filename:



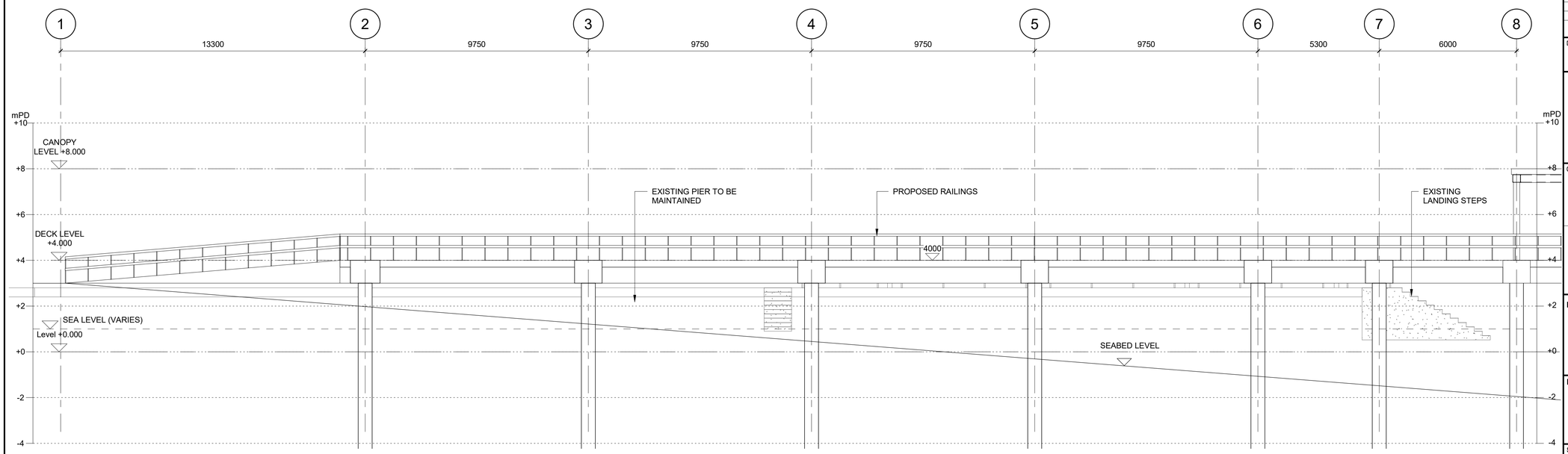
DECK LEVEL +4.000 - CATWALK_GA

1 : 250

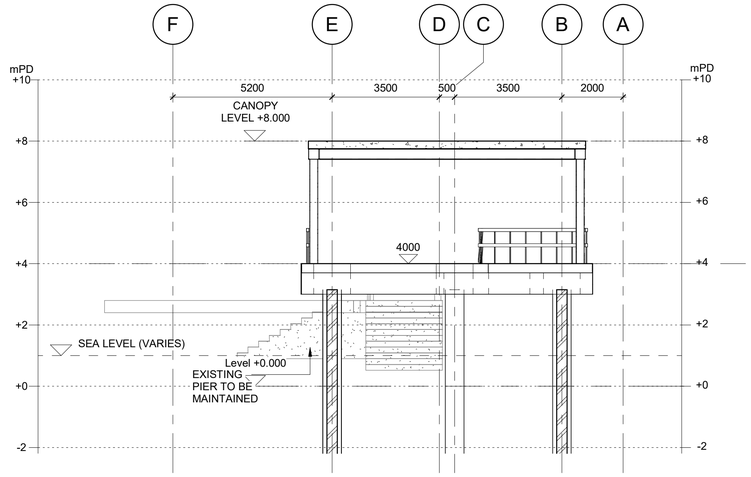


DECK LEVEL +4.000 - CATWALK_STR

1 : 250



F LCW/108 ELEVATION
SCALE 1 : 100



12 LCW/108 SECTION 12 - CATWALK
SCALE 1 : 100

LEGEND:

- SOCKETED STEEL H-PILE
- PROPOSED GUIDE PILES

Rev.	Date	Description	By	Ch'k'd	App'd
A	17/12/2	FIRST ISSUE	EY	JC	SW
	1				

Drawing Status

Suitability

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Client

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

土木工程處
CIVIL ENGINEERING OFFICE

Project Title
Agreement No. CE 32/2021 (CE)
IMPROVEMENT WORKS AT LAI CHI WO PIER AND TUNG PING CHAU PUBLIC PIER
- DESIGN AND CONSTRUCTION

Drawing Title
PIER IMPROVEMENT AT LAI CHI WO PIER
CATWALK

Scale	Designed	Drawn	Checked	Authorised
As indicated	EY	CS	JC	SW
Original A1	Date 17/12/21	Date 17/12/21	Date 17/12/21	Date 17/12/21

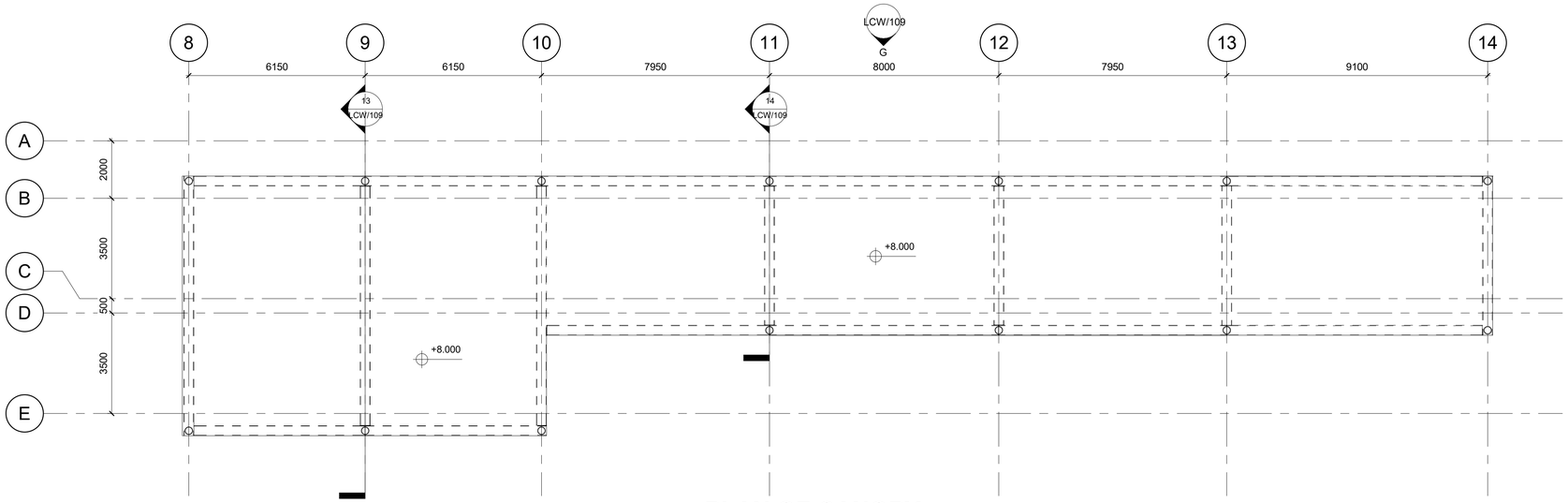
Drawing Number
LCW/108

Revision
A

Millimetres 0 10 100

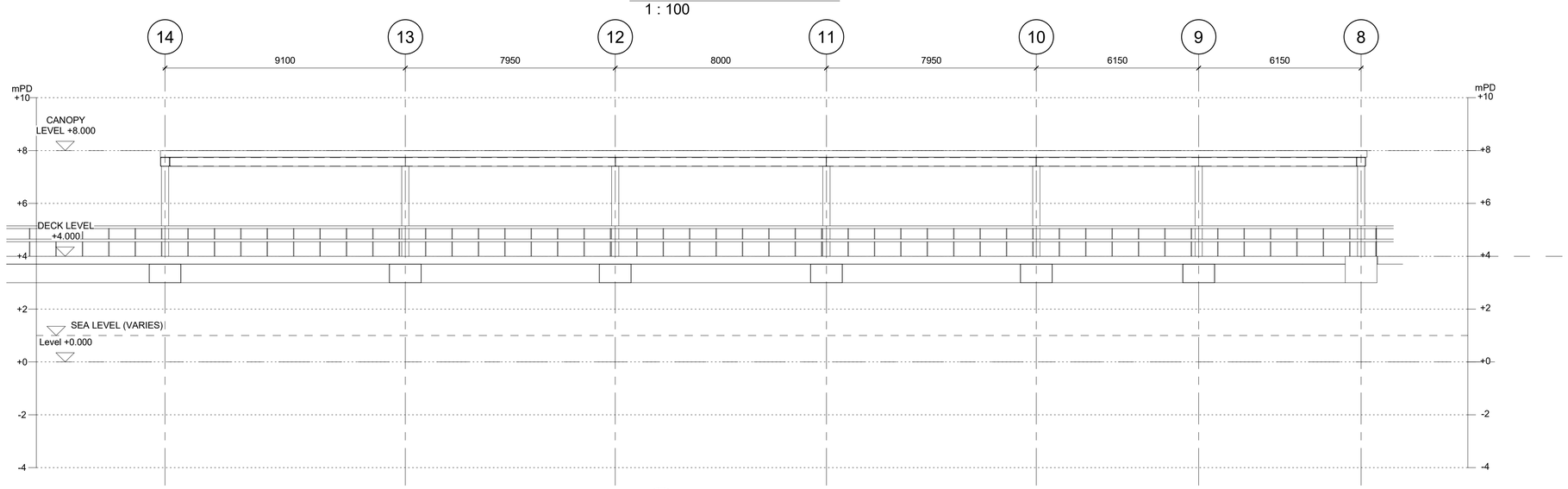
Date: 13/2022 5:01:39 PM

User name: CS
Filename:



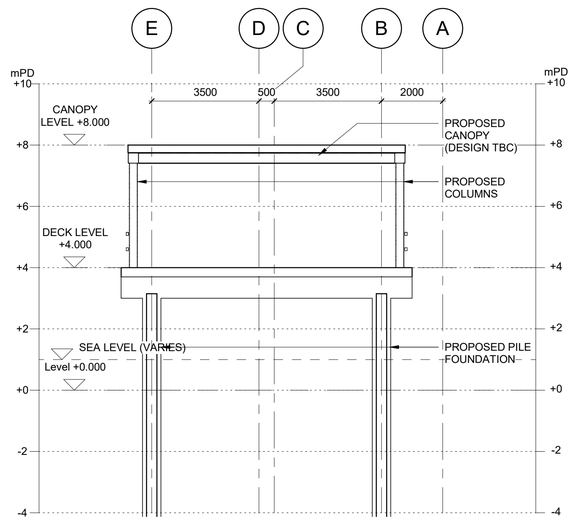
PLAN OF CANOPY

1 : 100



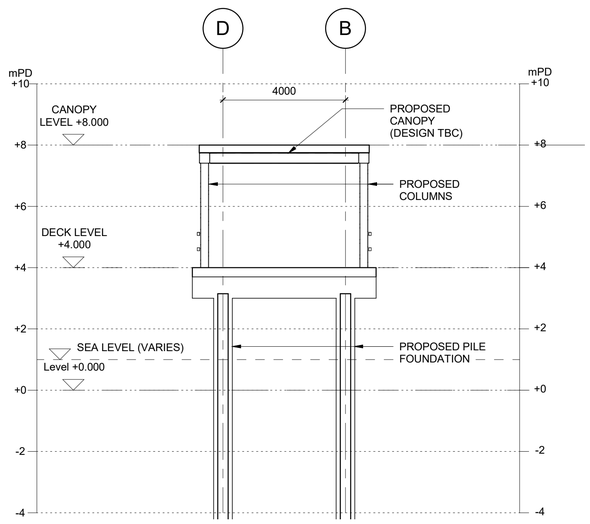
G LCW/109 ELEVATION

SCALE 1 : 100



13 LCW/109 SECTION

SCALE 1 : 100



14 LCW/109 SECTION

SCALE 1 : 100

Rev.	Date	Description	By	Chk'd	App'd
A	17/12/2	FIRST ISSUE	EY	JC	SW
1					

Drawing Status

Suitability

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土木工程處 CIVIL ENGINEERING OFFICE

Project Title

Agreement No. CE 32/2021 (CE)
IMPROVEMENT WORKS AT LAI CHI WO PIER AND TUNG PING CHAU PUBLIC PIER - DESIGN AND CONSTRUCTION

Drawing Title

PIER IMPROVEMENT AT LAI CHI WO PIER CANOPY

Scale	Designed	Drawn	Checked	Authorised
1 : 100	EY	CS	JC	SW
Original Size: A1	Date: 17/12/21	Date: 17/12/21	Date: 17/12/21	Date: 17/12/21

Drawing Number: LCW/109

Revision: A

Millimetres 0 10 100

Date: 1/3/2022 5:01:39 PM

User name: CS

Filename:

Sean WONG
阿特金斯顧問有限公司 Atkins China Limited
13/F Wharf T&T Centre
Harbour City
Tsim Sha Tsui
Kowloon
Hong Kong

Tel: +852 2972 1000
Fax: +852 2890 6343
Sean.Wong@atkinsglobal.com

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Member of the SNC-Lavalin Group

Our ref	5207869/18.30/OC093/AL/DL/SW/IW/JC/fl
Title:	Submission of Pier Design Plan for Lai Chi Wo Pier - Part 1 (Rev.3)
Date	11 February 2022

Attachment 2

–

ET Certification and IEC Verification Letters

ATKINS
Member of the SNC-Lavalin Group

阿特金斯
ATKINS
香港九龍尖沙咀海港城
九倉電訊中心十三樓
13/F Wharf T&T Centre
Harbour City Tsim Sha Tsui
Kowloon Hong Kong

Telephone (852) 2972 1000
Facsimile (852) 2890 6343

www.atkinsglobal.com

Your ref. -
Our ref 5207869/18.30/OC092/AL/DL/SW/IW/AL/fl

Date 11 February 2022

By Post and By Email
Civil Engineering and Development Department
Civil Engineering Office
Pier Improvement Unit
Projects Section 3
4/F, Civil Engineering and Development Building
101 Princess Margaret Road
Homantin, Kowloon

Attn: Mr. LEE Man Chow, Francis
Project Team Leader

Dear Sirs,

Agreement No. CE 32/2021 (CE)
Improvement Works at Lai Chi Wo Pier and Tung Ping Chau Public Pier – Design and Construction
Certification of Pier Design Plan for Lai Chi Wo Pier - Part 1 (Rev.3)

Pursuant to Condition 2.11 of the Environmental Permit No. EP-586/2021, I hereby certify the Pier Design Plan for Lai Chi Wo Pier - Part 1 (Rev.3) for the captioned Project. It is noted that the Pier Design Plan will be further updated based on the detailed design. Part 2 of Pier Design Plan (i.e. a complete plan with specification of the use of locally manufactured/recycled eco-materials, such as eco-tiles and eco-concrete in the design and construction of the pier with a view to enhancing ecological functions of the pier and minimizing the carbon footprint of the Project, etc.) will be submitted for EPD's approval. The tentative submission schedule of the Plan is May 2023.

Should you have any queries regarding the above, please feel free to contact us by telephone number 2972 1360.

Yours faithfully,
For and on behalf of
Atkins China Ltd

Arthur Hong Nam Lo
Environmental Team Leader

cc EPD - Ms. LAU Tai, Trista (Env Protection Offr (Strategic Assessment) 61)
Wilson Acoustic limited - Mr. Morgan Cheng (IEC)

Wilson Acoustics Limited

Unit 601, Block A, Shatin Industrial Centre,
5 - 7 Yuen Shun Circuit, Shatin, NT
Tel: (852) 3188-1170, Fax: (852) 3422-8117
E-mail: who@wal.hk
Web: www.wal.hk

Our Ref: 21411-18

By Email & Fax

14 February 2022

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

Attention: Mr. LEE Man-chow

Subject: **Agreement No. PI 2/2021 Independent Environmental Checker Services for Improvement Works at Lai Chi Wo Pier and Improvement Works at Tung Ping Chau Public Pier**
Verification of Pier Design Plan – Part 1 (Rev3)

Dear Mr Lee,

We refer to the email on 11 February 2022 from Atkins China Limited about Pier Design Plan (Rev1) for improvement works at Lai Chi Wo Pier.

We have no comment in this stage for site investigation works and hereby verify Pier Design Plan for site investigation works as required under Condition 2.11 of the Environmental Permit (EP-586/2021).

The Part 2 of Pier Design Plan shall be included a complete plan with specification of the use of locally manufactured/recycled eco-materials, such as eco-tiles and eco-concrete in the design and construction of the pier with a view to enhancing ecological functions of the pier and minimizing the carbon footprint of the Project, etc. and submitted for EPD's approval before commencement of the construction of the LCW Pier.

Should you have any queries, please feel free to contact us by telephone number 2637-0623 or fax 3422-8117.

Yours sincerely

Morgan Cheng
Independent Environmental Checker, Wilson Acoustics Limited

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Encl.

c.c. Civil Engineering and Development Department (Attn.: Mr. YUNG Chung Bun, Thomas)
Environmental Protection Department (Attn.: Ms. LAU Tai, Trista)
Atkins China Limited (Attn.: Mr. Sean Wong)