



**EBULEN CONSULT**

# **STRUCTURAL DESIGN CERTIFICATION**

**FOR CLENERGY SOLAR TERRACE II-A RACKING SYSTEM**

**16295 TOURIST DRIVE 354, MARDIE WA 6714**

Prepared for:

**Clenergy**

3/10 Duerdin St

Clayton VIC 3168

March 17, 2025

Ref: E25032653-Rev.1

## OVERVIEW

This assessment certificate is issued for the structural design of the proposed Clenergy PV-ezRacking Ground-mount SolarTerrace II-A racking system at 16295 Tourist Drive 354, Mardie WA 6714 based on information provided by Clenergy. The assessment is carried out using sound engineering methodologies. Assessment conditions and findings are given in the following sections.

## AUSTRALIAN STANDARDS

- AS/NZS 1170.0:2002 – Structural design actions, Part 0: General principles
- AS/NZS 1170.1:2002 (R2016) – Structural design actions, Part 1: Permanent, imposed and other actions
- AS/NZS 1170.2:2021 – Structural design actions, Part 2: Wind actions
- AS/NZS 1664:1997 – Aluminum Structures
- AS 4100:2020 – Steel structures
- AS 2159-2009 – Piling – Design and installation

## DESIGNED ITEMS

The following items are designed in compliance with relevant Australian Standards based on specified conditions.

Certified Items	Description
SolarTerrace II-A racking system	<ul style="list-style-type: none"><li>• ER-R-T110 Rail</li><li>• SolarTerrace II - A Single Support – 20 - degree tilt</li></ul>
Post Footing (Refer to figure in Appendix A)	<ul style="list-style-type: none"><li>• 250mm Dia x minimum 1300mm depth plain concrete pile footing; Min. 32MPa concrete</li></ul>

## DESIGN CONDITIONS AND KEY ASSUMPTIONS

- Design life of 25 years.
- Wind region D.
- Terrain category 1.5 – 2.0.
- Ultimate wind recurrence interval of 100 years.
- The average height of the SolarTerrace II-A system is taken as 1.2m.
- The maximum PV panel size is 1762mm x 1134mm.
- The strength and the structural performance of the SolarTerrace II-A system have been considered as per certificate No.6396-2/LvS+NK by Gamcorp, dated 04/05/2022.
- The geotechnical information is taken as per the investigation report No. LG2812023GI Rev\_0 by Local Geotechnics dated 20/09/2023.
- It's been assumed there is no aggressive soil onsite.
- Soil parameters taken: Sandy Gravel with minimum soil weight of 19kN/m<sup>3</sup> and internal friction angle of 40 degrees.



**Figure 1:** Proposed Ground Mount Solar Location  
(16295 Tourist Drive 354, Mardie WA 6714)

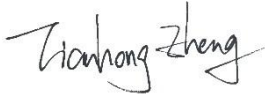
## IMPORTANT NOTES

- *This is a structural engineering certificate for the proposed Ground-mount Solar PV installation that covers the PV panel mounting frame system only. It does not cover the PV panels and other structures/connections.*
- *The geotechnical design parameters were taken as per the nominated geotechnical investigation report. Please contact the geotechnical engineer for any unexpected geotechnical issues encountered on site, such as shallow water table and deeper uncontrolled fill soil.*
- *The installation of the ground-mount solar PV system shall follow the supplier's installation guidelines.*

## CONCLUSION

Based on the above-mentioned geotechnical conditions provided by the client, the SolarTerrace II-A racking system has been provided for the proposed solar PV installation at 16295 Tourist Drive 354, Mardie WA 6714 in accordance with the relevant Australian Standards and generally accepted engineering methodologies. Please refer to the appendix section for further design details. The structural engineer must be notified should the above-listed conditions cannot be met.

Certified by:



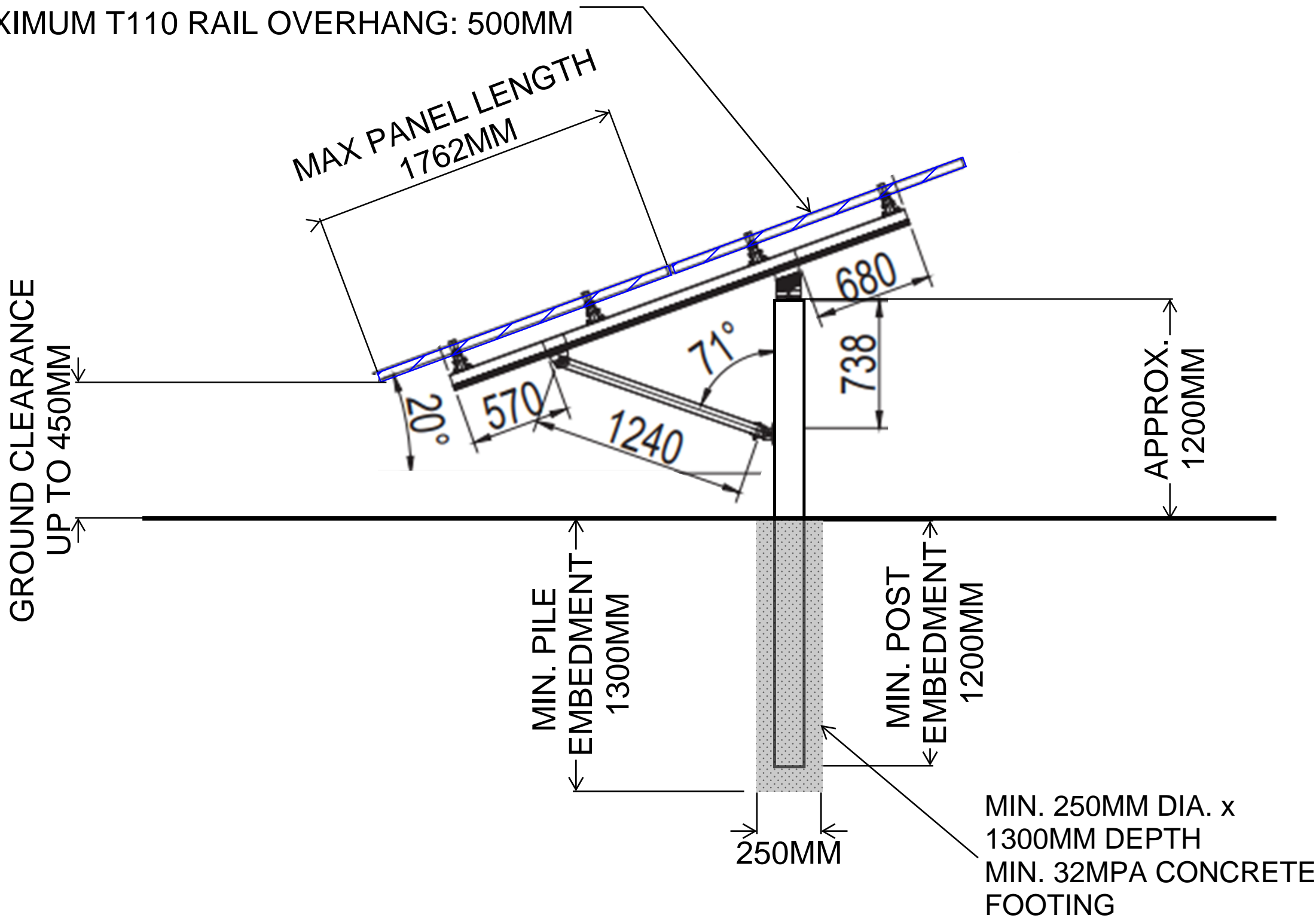
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## APPENDIX A: GROUND RACKING DETAIL

MAXIMUM FRAME SPACING: 1500MM  
MAXIMUM T110 RAIL OVERHANG: 500MM



REV	DESCRIPTION	BY	DATE
01	CERTIFIED DESIGN	W.X.	14/03/2025
02	CERTIFIED DESIGN	W.X.	17/03/2025

SCALE INDICATED FOR REFERENCE ONLY. DO NOT SCALE DRAWING.

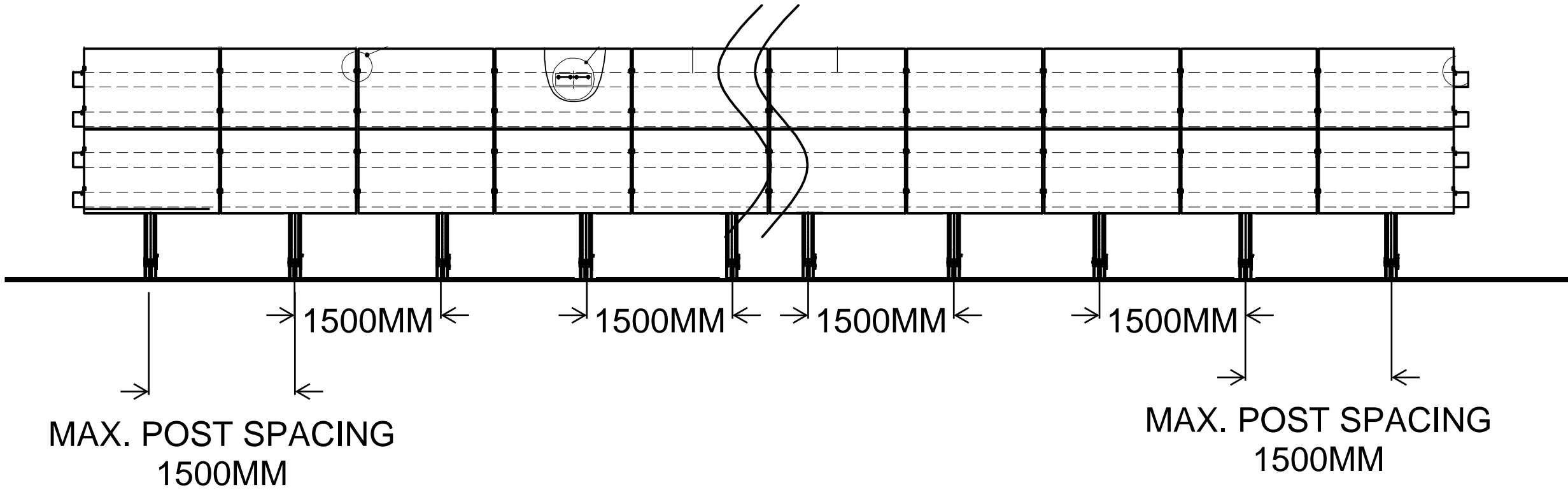
CLIENT:			
CLENERGY			
PROJECT NAME:			
16295 TOURIST DRIVE 354, MARDIE WA 6714			
TITLE:			
GROUND RACKING FRAME AND FOOTING SPECIFICATIONS			
DATE:	SCALE AT A3:		
17/03/2025			
DESIGNER:	DRAWN:		
W.X.	W.X.		
CHECKED:	APPROVED:		
S.Z.	S.Z.		
PROJECT NUMBER:	DRAWING No:	REVISION	
E25032653	S01	02	

SOLARTERRACE II-A SYSTEM  
WITH FOOTING DESIGN

**GENERAL NOTE:**  
ALL SURFACE PROTECTION MEASURES FOR FRAME MEMBERS  
REFER TO CLENERGY  
INSTALLATION-GUIDE\_PV-EARACK\_SOLARTERRACE-II-A\_V3.0

REV	DESCRIPTION	BY	DATE
01	CERTIFIED DESIGN	W.X.	14/03/2025
02	CERTIFIED DESIGN	W.X.	17/03/2025

SCALE INDICATED FOR REFERENCE ONLY. DO NOT SCALE DRAWING.



# SOLARTERRACE II-A SYSTEM ELEVATION & POST SPACING

## GENERAL NOTE:

ALL SURFACE PROTECTION MEASURES FOR FRAME MEMBERS  
REFER TO CLENERGY  
INSTALLATION-GUIDE\_PV-EARACK\_SOLARTERRACE-II-A\_V3.0

CLIENT:		
CLENERGY		
PROJECT NAME:		
16295 TOURIST DRIVE 354, MARDIE WA 6714		
TITLE:		
ELEVATION VIEW & POST SPACING		
DATE: 17/03/2025	SCALE AT A3:	
DESIGNER: W.X	DRAWN: W.X	
CHECKED: S.Z.	APPROVED: S.Z.	
PROJECT NUMBER: E25032653	DRAWING No: S02	
		REVISION 02