

PV-ezRack[®] Girder Extension for SolarTerrace-A

Code-Compliant Planning and Installation Guide V1.0
Complying with AS/NZS1170.2-2011 AMDT 2-2016



1. Introduction

PV-ezRack® Girder Extension for SolarTerrace-A is an optional accessory that special designed for Clenergy SolarTerrace III-A and SolarTerrace II-A. For the case using 72-cell PV modules that more than 2000mm, Girder Extension could provide flexible installation and ease warehouse management.

Please review this manual thoroughly before installing your PV-ezRack® Girder Extension for SolarTerrace-A. This manual provides (1) simple introduction of installation relating to Girder Extension, and (2) planning and installation instructions for Girder Extension.

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The PV-ezRack® SolarTerrace™ parts, when installed in accordance with this guide, will be structurally sound and will meet the AS/NZS1170.2:2011 Amdt 2- 2016 standard. During installation, and especially when working on the roof, please comply with the

SolarTerrace-A™ parts, when installed in accordance with this guide, will be structurally adequate and will meet the AS/NZS 1170 standards. During the installation and especially when working on the roof inform yourself about the appropriate safety regulations, and please also pay attention to the relevant regulations of your local region. Please check that you are using the current version of the installation manual by contacting Clenergy Australia by email on tech@clenergy.com.au, or your local representative.

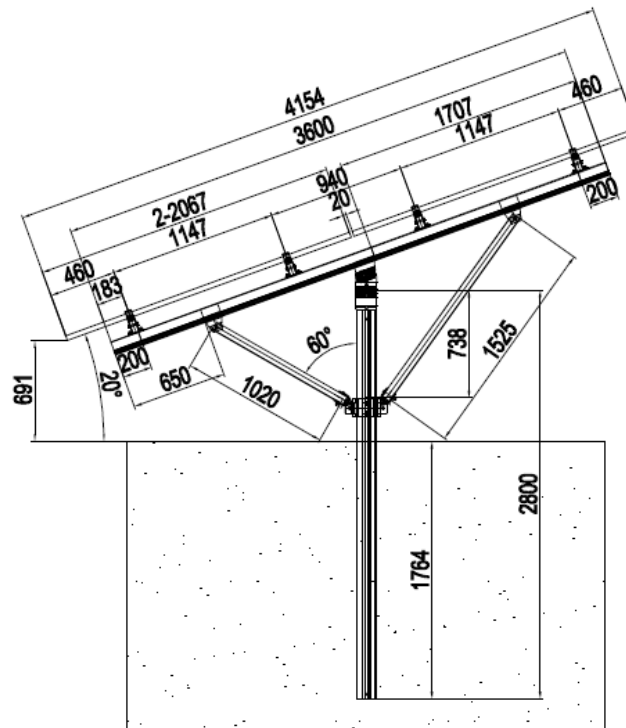
The installer is solely responsible for:

- Complying with all applicable local or national building codes, including any that may supersede this manual;
- Ensuring that PV-ezRack and other products are appropriate for the particular installation and the installation environment;
- Using only PV-ezRack parts and installer-supplied parts as specified by PV-ezRack (substitution of parts may void the warranty and invalidate the letter of certification on page 2);
- How to recycle: according to the local relative statute.
- How to disassemble: Reverse installation process.
- Ensure that there are no less than two professionals working on panel installation.
- Ensure the installation of relative electrical equipment is performed by professional electrician.
- Ensuring safe installation of all electrical aspects of the PV array.

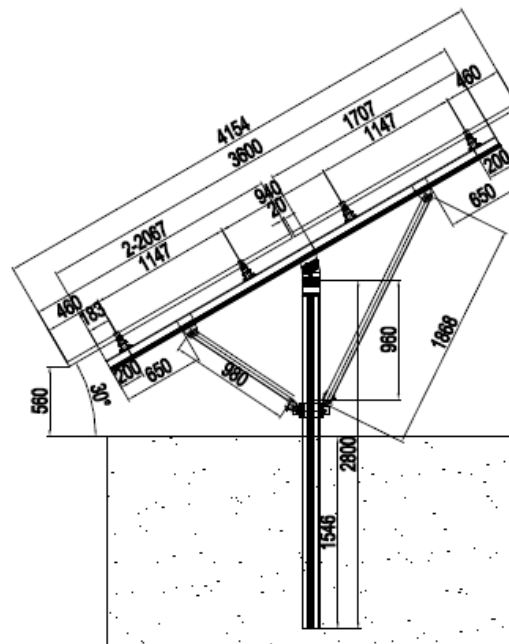
2. Planning

2.1 Side View of SolarTerrace II-A

Below is the side view drawing of STII-A with Girder Extension for 72-cell panels (using 2067 x 1050 mm as the example) at 20° tilt angle.

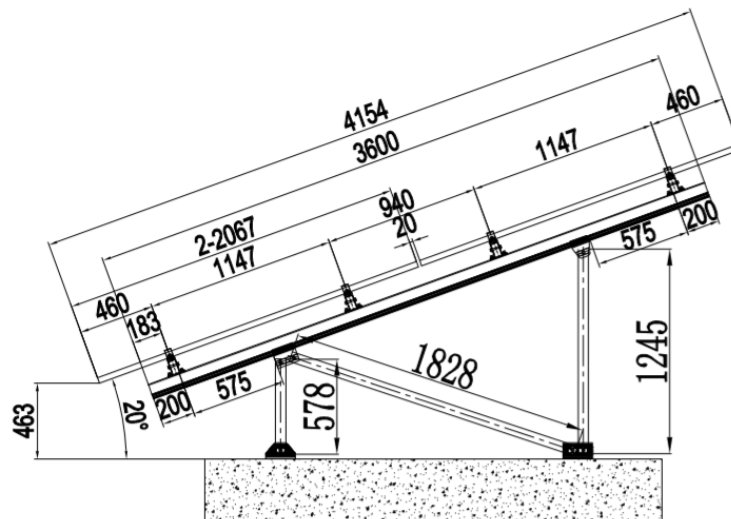


Below is the side view drawing of STII-A with Girder Extension for 72-cell panels (using 2067 x 1050 mm as the example) at 30° tilt angle.

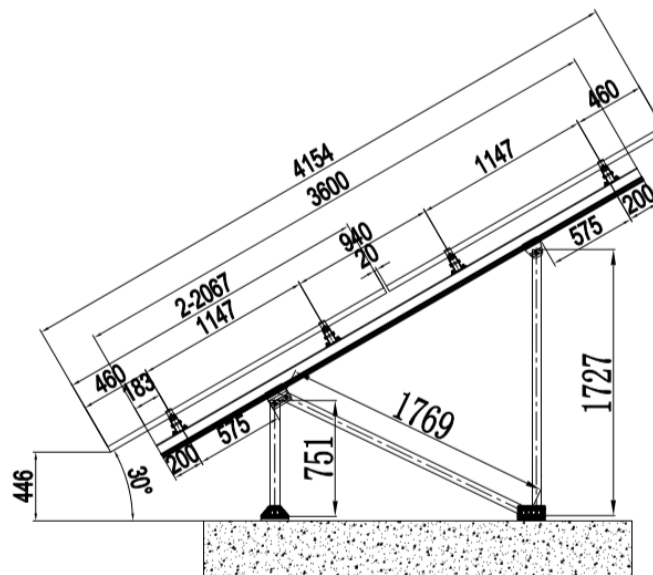


- Side View of SolarTerrace III-A

Below is the side view drawing of STIII-A with Girder Extension for 72-cell panels (using 2067 x 1050 mm as the example) at 20° tilt angle.



Below is the side view drawing of STIII-A with Girder Extension for 72-cell panels (using 2 067 x 1050 mm as the example) at 30° tilt angle.



2.2 Installation Spacing and Footing Options

Please refer to “Certification Letter of Spacing and Footing of Solar Terrace II-A with Girder Extension” on page 8 and “Certification Letter of Spacing and Footing of Solar Terrace III-A with Girder Extension” on page 15. Please note the engineering certificates of girder extension (for panel dimension from 2000 to 2200 mm) use the tables with factors, which are based on the spacing and footing options for 72 cell panel dimensions up to 2000 mm long.

3. Tools and Components

3.1 Tools

Tools



Screw Driver
(for M8 Hexagon Socket Screw)



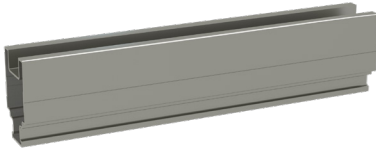
5m Tape



Mark Pen

3.2 Components

Component list



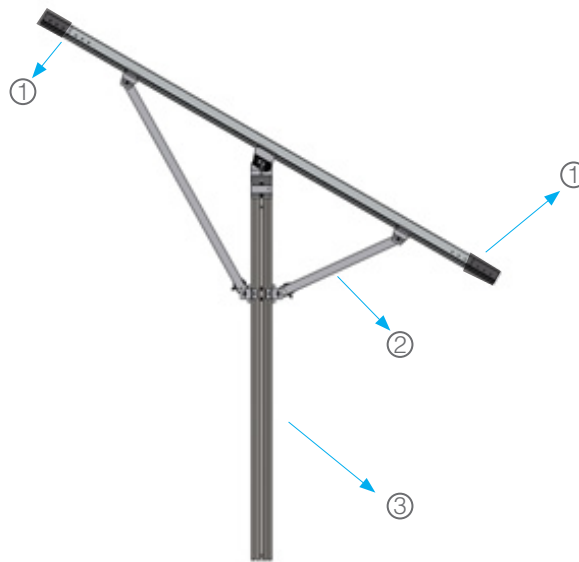
Splice for Tri-Groove
Square Girder



Tri-Groove Square Girder
200mm

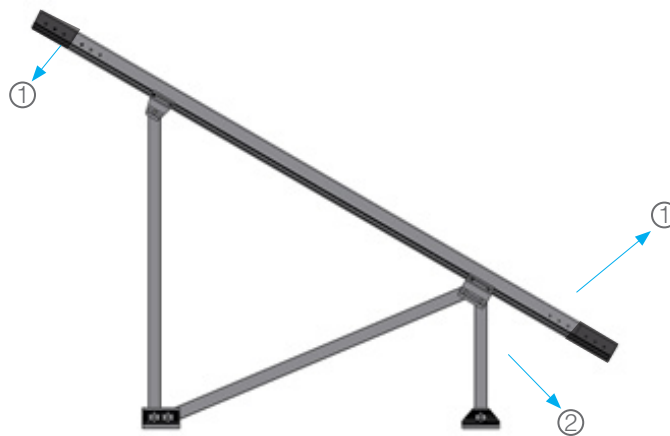
System Overview

- STII-A with Girder Extension



① Girder Extention ② Pre-assembled Support ③ C-post

- STIII-A with Girder Extension

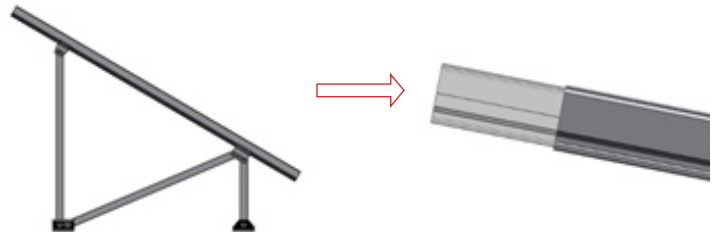


① Girder Extention ② Pre-assembled Support

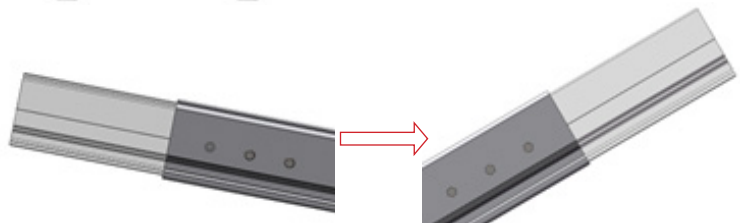
Installation Instruction

The installation instruction of solar terrace support and other components can be found at both "Installation Guide-PV ezRack STII-A - V2.0" and "Installation Guide-PV ezRack STIII-A - V2.0". The installation instruction below specifies the instruction for girder extension only.

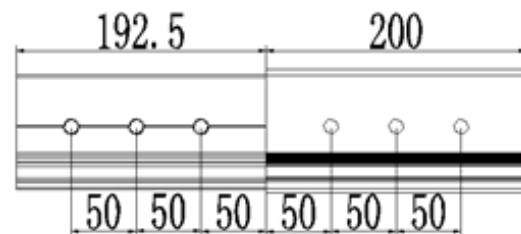
4.1 Insert half of the Splice for Tri-Groove Square Girder into one end of the Girder on the pre-assembled support.



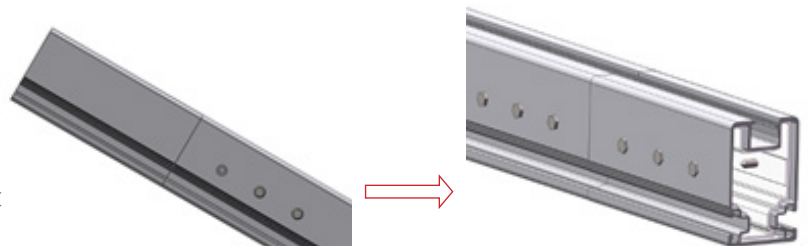
4.2 Apply 6 sets of self-drilling screws ST6.3*22 in the connection position on both sides, the screws have to be fixed according to the figure with dimension on the right. Fasten the screws until their rubber pads are slightly flattened.



Recommended torque for self-tapping screw ST6.3*22 is 12 N•m.



4.3 Insert a 200mm long Tri-Groove Square Girder into Splice and ensure that it will be orientated in the same direction as the existing Tri-Groove Square Girder. Now apply 6 sets of self-tapping screws in the connection positions on both sides. Repeat step 2.2 to fix the self-tapping screws.

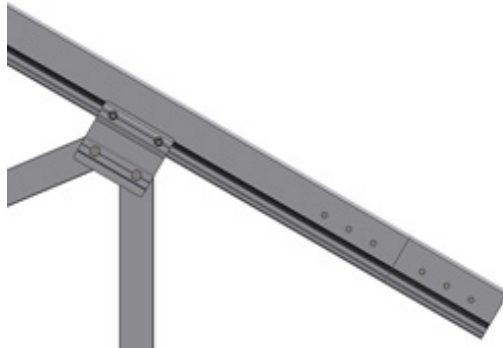


The assembled Splice and Girder is shown on the right.



Installation Instruction

4.4 Fix the Splice for Tri-Groove Square Girder at the other side of the Girder on the pre-assembled support according to the steps above.



4.5 The Girder Extension installation on the pre-assembled support of PV-ezRack SolarTerrace III-A is completed as shown on the right.



4.6 Use the same way in 4.1~4.5 to fix the Splice for Tri-Groove Square Girder on the pre-assembled support of PV-ezRack SolarTerrace II-A.



Certification Letter of Spacing and Footing of Solar Terrace II-A with Girder Extension

Our Ref: 7375-1 / LvS
 14 October 2019

Clenergy Australia
 1/10 Duerdin Street
 Clayton, VIC 3168

Tables with factors related to the letter 6396-2

RE: SolarTerrace II-A with panels 2001-2200mm long for Installation in Australia and New Zealand

Gamcorp (Melbourne) Pty Ltd, being Structural Engineers within the meaning of Australian and NZ Building Regulations, have carried out a structural design check of the PV-ezRack SolarTerrace II-A with Girder Extension (part number: GE-STA/200) with panels 2001-2200mm long for Installation in Australia and New Zealand. The design check has been based on the information in the PV-ezRack SolarTerrace II-A and its Girder Extension Planning and Installation Guide, and schematic drawings of the system components, provided by Clenergy Australia.

panel dimensions 1100x		weight up to 15kg/m ²	wind A 20 degree	wind A 30 degree	wind B 20 degree	wind B 30 degree	wind C 20 degree	wind D 20 degree
Reduction factor for frame spacing	2001-2050		1.00	1.00	1.00	0.97	0.91	0.87
	2051-2100		1.00	1.00	1.00	0.93	0.91	0.85
	2101-2150		1.00	1.00	1.00	0.90	0.77	0.74
	2151-2200		1.00	1.00	0.94	0.88	0.72	0.69
Increasing factor for minimum post embedment ramming depth*	2001-2050	Compact sand	1.02	1.02	1.02	N/A	1.03	N/A
	2051-2100		1.04	1.04	1.04	N/A	1.03	N/A
	2101-2150		1.06	1.06	1.07	N/A	0.96	N/A
	2151-2200		1.07	1.07	1.04	N/A	0.93	N/A
Increasing factor for minimum concrete pier depth*	2001-2050	Compact sand	1.00	1.05	1.00	1.09	1.00	1.00
		Medium dense sand	1.09	1.08	1.04	1.03	1.00	1.00
		Very Stiff to Hard clays	1.06	1.05	1.10	1.04	1.00	1.00
		Firm to Stiff Clays	1.04	1.07	1.00	1.03	0.94	0.94
	2051-2100	Compact sand	1.00	1.05	1.00	1.09	1.00	1.00
		Medium dense sand	1.09	1.08	1.04	1.03	1.00	1.00
		Very Stiff to Hard clays	1.06	1.05	1.10	1.04	1.00	1.00
		Firm to Stiff Clays	1.04	1.07	1.00	1.03	0.94	0.94
	2101-2150	Compact sand	1.00	1.05	1.00	1.09	1.00	1.00
		Medium dense sand	1.09	1.08	1.04	1.03	1.00	1.00
		Very Stiff to Hard clays	1.06	1.05	1.10	1.04	1.00	1.00
		Firm to Stiff Clays	1.04	1.07	1.00	1.03	0.94	0.94
	2151-2200	Compact sand	1.00	1.05	1.00	1.09	1.00	1.00
		Medium dense sand	1.09	1.08	1.04	1.03	1.00	1.00
		Very Stiff to Hard clays	1.06	1.05	1.10	1.04	1.00	1.00
		Firm to Stiff Clays	1.04	1.07	1.00	1.03	0.94	0.94

*In some cases the footing depth is decreased as result of the smaller spacing

Refer to the letter 6396-2 for ground clearance and other notes and conditions.



Relationships built on trust

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Suite 4, 346 Ferntree Gully Rd, Notting Hill VIC 3168
Tel: 03 9543 2211



Construction is to be carried out strictly on accordance with the instruction manual. This work was designed in accordance with the provisions of Australian Building Regulations and in accordance with sound, widely accepted engineering principles. This certification is valid till 14 October 2021.

Yours faithfully,
Gamcorp (Melbourne) Pty Ltd

A handwritten signature in black ink, appearing to read "L. Van Spaandonk".

L. Van Spaandonk

Principal Engineer

FIEAust CPEng NER

Our Ref: 6396-2 / LvS
 18 April 2019

Clenergy Australia
 1/10 Duerdin Street
 Clayton, VIC 3168

Array Frame Engineering Certificate

RE: SolarTerrace II-A (double support) Installation in Australia and New Zealand

Gamcorp (Melbourne) Pty Ltd, being Structural Engineers within the meaning of Australian and NZ Building Regulations, have carried out a structural design check of the PV-ezRack SolarTerrace II-A within Australia and New Zealand. The design check has been based on the information in the *PV-ezRack SolarTerrace II-A Planning and Installation Guide* and schematic drawings of the system components, provided by Clenergy Australia.

Component Description	Part No
T-Rail 110	ER-R-T110/XXXX
PV-ezRack SolarTerrace II-A, Double Support (Pre-assembled) adjustable 20°, with 3200mm Girder	ER-S-STIIA/D20
PV-ezRack SolarTerrace II-A, Double Support (Pre-assembled) adjustable 30°, with 3200mm Girder	ER-S-STIIA/D30
PV-ezRack SolarTerrace II-A, C-Post	ER-CP-XXXX/A
Splice for T-Rail 110	ER-SP-T110
PV-ezRack SolarTerrace II-A, Post Head for C-post	ER-PH-CP/A, ER-PH-CP/A/G
PV-ezRack SolarTerrace II-A, Post Brace for C-Post on Double Support	ER-PB-CP/D/A, ER-PB-CP/D/A/G
PV-ezRack Inter Clamp	ER-IC-STXX
PV-ezRack End Clamp	ER-EC-STXX
PV-ezRack Universal Clamp for Frame Height 30-46mm with Grounding Clip	C-U/30/46-G
PV-ezRack Universal Clamp for Frame Height 30-46mm	C-U/30/46
PV-ezRack T-Rail Clamp with Grounding	ER-RC-T/G
East/West Adjustable - Bracket for T-Rail 110	BR-R110/EW, BR-R110/EW/G

We find the SolarTerrace II-A to be structurally sufficient for Australian and New Zealand use, based on the following conditions:

- Wind Loads to AS/NZ1170.2-2011(R2016);
 - Wind Terrain Category 2;
 - Wind average recurrence interval of **100 years** (ultimate);
 - Wind region A, B, C & D;
 - Wind pressure coefficients according Wind Tunnel Test Report RWDI #1101970, by Rowan Williams Davies & Irwin Inc. (Canada), dated 7/6/2012;
- Solar Panel **length (Lp) 2.0m, width 1.1m, mass 33kg**;
- Materials Yield strength:
 - steel 400MPa,
 - aluminium 240MPa;
- Maximum frame spacing (S) and footing options: [refer table(s) on page 2].

ISO 9001:2008 Registered Firm
 Certificate No: AU1222

Table 1. Maximum Frame Spacing (S) and Footing Options

Wind Region	Region A		Region B		Region C	Region D
Panels tilt angle, degrees	20	30	20	30	20	20
Wind speed, m/s	41		48		59	73
Panel clearance (Cp), mm, max/min	691 / 554	560 / 445	691 / 554	560 / 445	691 / 554	691 / 554
Max/Min post height above the ground, mm, from Clenergy	1000 / 863	1200 / 1085	1000 / 863	1200 / 1085	1000 / 863	1000 / 863
Spacing (S), m	3.30	3.20	3.20	2.95 (2.85*)	2.85	1.95 (1.90*)
Max Vertical Uplift Reaction, kN	6.7	7.8	9.7	10.6	14.0	15.3
Max Vertical Down Reaction, kN	14.6	15.6	18.4	18.7	23.5	23.7
Max Horizontal Reaction, kN	4.3	7.3	5.7	9.2	7.7	8.0
Max Moment at GL, kNm	8.2	12.3	10.9	15.4	14.5	15.2
Soil Class	Driven post minimum embedment depth (D), m					
Compact sand	1.34	1.61	1.51	N/A	1.71	N/A
Medium dense sand	1.76	N/A	N/A	N/A	N/A	N/A
Very Stiff to Hard clays	1.38	1.67	1.56	N/A	1.78	N/A
Firm to Stiff Clays	N/A	N/A	N/A	N/A	N/A	N/A
Driven post maximum embedment depth based on standard 2800 mm long post (m), from Clenergy	1.937	1.715	1.937	1.715	1.937	1.715
Soil Class	Post embedded in concrete pier: 300 mm diameter concrete piers minimum depth (D), m					
Compact sand	0.90	1.05	1.00	1.10	1.10	1.10
Medium dense sand	1.10	1.30	1.25	1.45	1.40	1.40
Very Stiff to Hard clays	0.85	1.05	1.00	1.15	1.10	1.10
Firm to Stiff Clays	1.25	1.50	1.40	1.65	1.60	1.60

Notes.

- This certification is applicable only for Standard STII-A (double support) with dimensions as shown in the Figures 1-4 and the panel clearance above the ground (Cp) as mentioned in the Table 1. Contact Gamcorp for customised STII-A or if the site conditions are not covered by the soil classes considered in this assessment.
- For concrete piers foundation we recommend to use 25 MPa strength concrete. Other pier sizes possible, contact Gamcorp. The minimum post embedment depth in the pier shall be approximately 0.9 of the pier depth.
- (*): when using Clenergy East-West adaptor (if different to the spacing without adaptor);
- T-Rails overhang: 0.4*S maximum.

Table 2. Assumed capacity for adopted soil classes

	ABC (Allowable Bearing Capacity), kPa
Compact sand	≥ 300
Medium dense sand	150 – 300
Very Stiff to Hard clays	300 – 600
Firm to Stiff Clays	100 – 150

The maximum frame spacing is based on the structural capacity of the frame in the perimeter zone of an array. We recommend to perform tests on site for the geotechnical capacity of the driven post. The spacing may need to be decreased to achieve the available geotechnical capacity of the driven post following from the test results.

Construction is to be carried out strictly in accordance with the instruction manual. This work was designed in accordance with the provisions of Australian Building Regulations and in accordance with sound, widely accepted engineering principles. This assessment excludes solar panels themselves. This certification is valid till 18 April 2022.

Yours faithfully,
Gamcorp (Melbourne) Pty Ltd



L. van Spaandonk

Principal Engineer

MScEng MIEAust NER

NT Registration: 244137ES

QLD Registration: 18703

VIC Registration: EC 45972

TAS Registration: CC7366



Certification Letter of Spacing and Footing of Solar Terrace III-A with Girder Extension

Our Ref: 7375-2 / LvS
14 October 2019

Clenergy Australia
1/10 Duerdin Street
Clayton, VIC 3168

Table with factors related to the letter 5510 (dd 11 Oct 2019)

RE: SolarTerrace III-A with panels 2001-2200mm long for Installation in Australia and New Zealand

Gamcorp (Melbourne) Pty Ltd, being Structural Engineers within the meaning of Australian and NZ Building Regulations, have carried out a structural design check of the PV-ezRack SolarTerrace III-A with Girder Extension (part number: GE-STA/200) with panels 1000mm wide, 2001-2200mm long for Installation in Australia and New Zealand. The design check has been based on the information in the PV-ezRack SolarTerrace III-A and its Girder Extension Planning and Installation Guide, and schematic drawings of the system components, provided by Clenergy Australia.

See the Table on page 2 of this letter.

Construction is to be carried out strictly on accordance with the instruction manual. This work was designed in accordance with the provisions of Australian Building Regulations and in accordance with sound, widely accepted engineering principles.
This certification is valid till 14 October 2021.

Yours faithfully,
Gamcorp (Melbourne) Pty Ltd



L. Van Spaandonk

Principal Engineer

FIEAust CPEng NER

Panel dimensions 1100x		Weight up to 15kg/m ²	wind A 20 degree	wind A 30 degree	wind B 20 degree	wind B 30 degree	wind C 20 degree	wind D 20 degree
Reduction factor for frame spacing	2001 - 2050		0.97	0.95	0.97	0.85	0.87	0.83
	2051 - 2100		0.97	0.95	0.96	0.80	0.82	0.78
	2101 - 2150		0.97	0.89	0.96	0.75	0.77	0.73
	2151 - 2200		0.97	0.74	0.96	0.69	0.72	0.68
Increasing factor for concrete footing depth*	2001-2050	Continuous Paving Slab, Thickness (T), m	1.00	1.00	1.00	1.20	1.00	1.17
		Continuous Strip Footing, Depth (D), m	1.00	1.09	1.00	1.08	1.00	1.00
		Individual Pad footing per leg, Depth (X), m	1.00	1.00	1.00	1.00	0.93	0.87
		Transverse Strip Footing, Depth (D), m	1.00	1.00	1.00	0.88	0.94	0.81
	2051-2100	Continuous Paving Slab, Thickness (T), m	1.00	1.00	1.00	1.20	1.00	1.17
		Continuous Strip Footing, Depth (D), m	1.00	1.09	1.00	1.08	1.00	1.00
		Individual Pad footing per leg, Depth (X), m	1.00	1.00	1.00	1.00	0.93	0.87
		Transverse Strip Footing, Depth (D), m	1.00	1.06	1.07	0.81	0.94	0.81
	2101-2150	Continuous Paving Slab, Thickness (T), m	1.00	1.25	1.00	1.20	1.00	1.17
		Continuous Strip Footing, Depth (D), m	1.00	1.09	1.00	1.08	1.00	1.08
		Individual Pad footing per leg, Depth (X), m	1.00	1.00	1.00	1.00	0.93	0.87
		Transverse Strip Footing, Depth (D), m	1.00	1.00	1.07	0.81	0.88	0.81
	2151-2200	Continuous Paving Slab, Thickness (T), m	1.00	1.25	1.00	1.20	1.00	1.17
		Continuous Strip Footing, Depth (D), m	1.00	1.09	1.00	1.08	1.09	1.08
		Individual Pad footing per leg, Depth (X), m	1.08	1.00	1.00	1.00	0.87	0.87
		Transverse Strip Footing, Depth (D), m	1.00	0.88	1.14	0.75	0.81	0.75

*In some cases the footing depth is decreased as a result of the smaller spacing
 Refer to the letter 5510 for footing length, footing width, footing height above ground level, clearance between the panel and ground, and any other notes and conditions.

Clenergy Australia
1/10 Duerdin Street
Clayton, VIC 3168

Array Frame Engineering Certificate

RE: SolarTerrace III-A with panels 2000×1100mm Installation

Gamcorp (Melbourne) Pty Ltd, being Structural Engineers within the meaning of Australian and NZ Building Regulations, have carried out a structural design check of the PV-ezRack SolarTerrace III-A with panels 2000mm × 1100mm within Australia and New Zealand. The design check has been based on the information in the *PV-ezRack SolarTerrace III-A Planning and Installation Guide v1* and schematic drawings of the system components, provided by Clenergy Australia.

Component Description	Part Number
T-Rail 110	ER-R-T110/XX
PV-ezRack SolarTerrace III-A, Double Support (Pre-assembled) 20°, with 3200 mm Girder	ER-S-STIIIA/D20
PV-ezRack SolarTerrace III-A, Double Support (Pre-assembled) 30°, with 3200 mm Girder	ER-S-STIIIA/D30
Splice for T-Rail 110	ER-SP-T110
PV-ezRack Inter Clamp	ER-IC-STXX
PV-ezRack End Clamp	ER-EC-STXX
PV-ezRack Universal Clamp for Frame Height 30-46mm with Grounding Clip	C-U/30/46-G
PV-ezRack Universal Clamp for Frame Height 30-46mm	C-U/30/46
PV-ezRack T-Rail Clamp with Grounding	ER-RC-T/G
East/West Adjustable - Bracket for T-Rail 110	BR-R110/EW

We find the SolarTerrace III-A to be structurally sufficient for Australian and New Zealand use, based on the following conditions:

- Wind Loads to AS/NZS1170.2:2011 (R2016);
 - Wind Terrain Category 2;
 - Wind average recurrence interval of 100 years (ultimate);
 - Wind region A, B, C & D;
 - No shielding considered ($M_s=1$)
- Soils classification and properties to AS/NZS 4676-2000 and AS4678-2002;
- Solar Panel size **2.0 m × 1.1 m**, weight approx **15kg/m²**;
- Maximum support(frame) spacing and footing options at the edge zone: refer following pages.
- For ground screws option see Gamcorp letter 6292



Relationships built on trust

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 Tel: 03 9543 2211

Maximum Support Frame Spacing and Footing Options

Wind region	A								B								C						D			
Regional wind speed (VR, m/s)	41								48								59						73			
Panels Tilt angle	20°				30°				20°				30				20°						20°			
	Front Leg	Rear Leg	Cl(mm)	h(mm)	Front Leg	Rear Leg	Cl(mm)	h(mm)	Front Leg	Rear Leg	Cl(mm)	h(mm)	Front Leg	Rear Leg	Cl(mm)	h(mm)	Front Leg	Rear Leg	Cl(mm)	h(mm)	Front Leg	Rear Leg	Cl(mm)	h(mm)		
Maximum spacing (S, m)	3.60				3.10				3.50				2.95				3.00				2.00 (1.90*)					
Uplift (kN)	0.1	10.7			0.1	16.0			0.5	15.0			0.0	22.3			1.1	20.3			1.5	21.5				
Down Force (kN)	6.2	5.8			5.0	8.4			7.5	8.1			6.8	11.5			9.1	10.2			8.8	10.4				
Total horizontal force at leg base (kN)	4.5				8.6				6.0				11.2				7.7				7.9					
Footing Type	Concrete Footing Options								Concrete Footing Options								Concrete Footing Options						Concrete Footing Options			
Wind region	A								B								C						D			
Continuous Paving Slab, Length x Thickness (L x T)- m	2.30 x 0.15		500	0	2.3 x 0.20		500	0	2.30 x 0.20		500	0	2.40 x 0.25		500	0	2.40 x 0.25		500	0	2.65 x 0.30		500	0		
Adopt reo	N8@125 both ways (bw) or SL-81								N8@125 both ways (bw) or SL-81								N8@125 both ways (bw) or SL-81						N8@125 both ways (bw) or SL-81			
Continuous Strip Footing, Width x Depth (W x D)- m	0.30x 0.40	0.35x 0.40	700	200	0.35 x 0.55	0.55 x 0.55	700	200	0.35 x 0.45	0.45 x 0.45	700	200	0.55 x 0.65	0.65 x 0.65	700	200	0.50 x 0.55	0.55 x 0.55	700	200	0.55 x 0.60	0.70 x 0.60	600	100		
Adopt reo	SL-81								SL-81								SL-81						SL-81			
Individual Pad footing per leg, Length (=Width) x Depth (B x C x X)	0.50 x 0.50 x 0.60	0.70 x 0.70 x 0.60	700	200	0.85 x 0.85 x 0.9	0.95 x 0.95 x 0.9	900	400	0.55x 0.55 x 0.75	0.75 x 0.75 x 0.75	800	300	0.95 x 0.95 x 0.9	1.05 x 1.05 x 0.9	900	400	0.60x 0.60x 0.75	0.75 x 0.75 x 0.75	700	200	0.70 x 0.70 x 0.75	0.80 x 0.80 x 0.75	700	200		
Adopt reo	SL-81								SL-81								SL-81						SL-81			
Transverse Strip Footing, Length x Width x Depth (L x A x D)	2.30 x 0.75 x 0.60		600	100	2.50 x 0.80 x 0.80		700	200	2.50 x 0.75 x 0.70		600	100	2.85 x 0.85 x 0.80		600	100	2.70 x 0.85 x 0.80		900	400	2.90 x 0.80 x 0.80		1000	500		
Adopt reo	SL-81								SL-81								SL-81						SL-81			

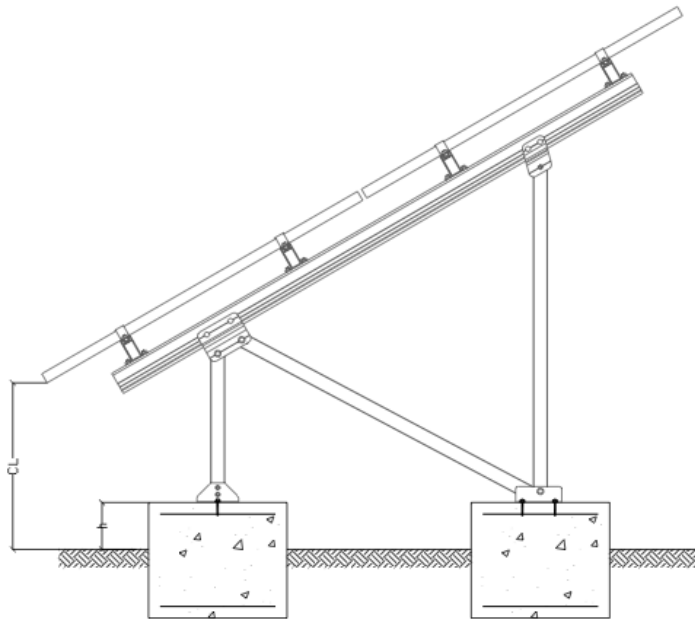
Note(*): when using east west adaptor

ISO 9001:2008 Registered Firm
 Certificate No: AU1222

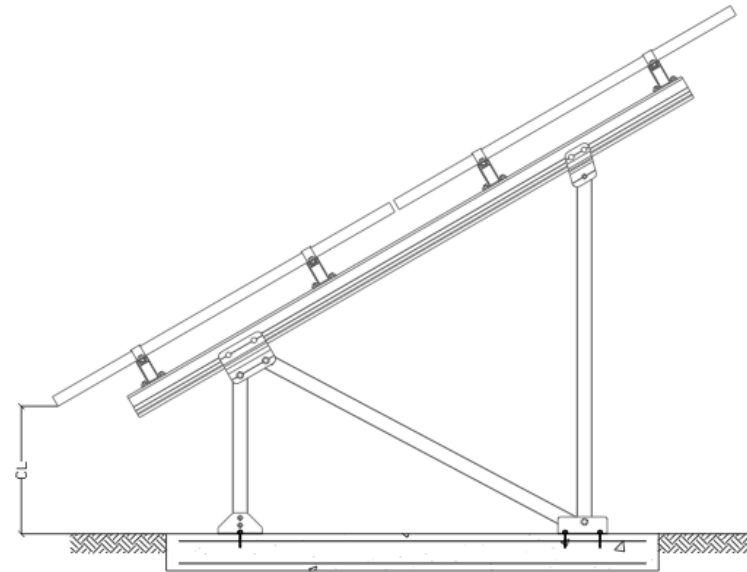


Relationships built on trust

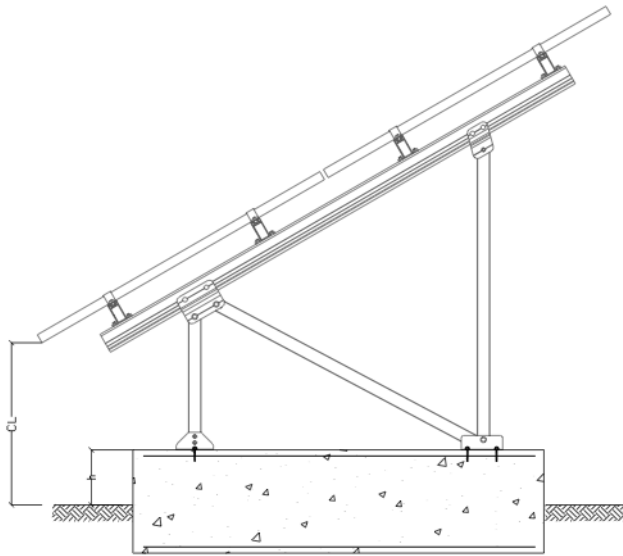
Gamcorp (Melbourne) Pty Ltd A.C.N 141 076 904 A.B.N 73 015 060 240
www.gamcorp.com.au melbourne@gamcorp.com.au
Suite 4, 346 Ferntree Gully Rd, Notting Hill VIC 3168
Tel: 03 9543 2211



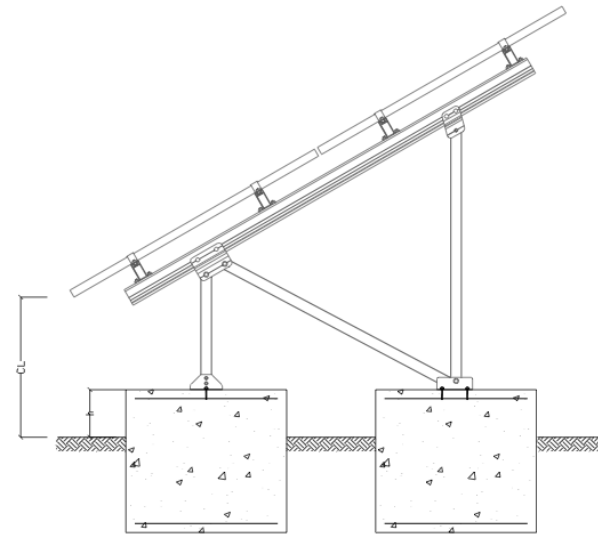
Continuous Strip Footing



Continuous Paving Slab



Transverse Strip Footing



Individual Pad footing

Notes:

1. The footing examples shown, recommended for 'Firm' soils with allowable end bearing capacity of 100 kPa minimum (damp clays, sandy clays, damp sands). Contact Gamcorp for site specific conditions (to find out whether more cost effective solution is possible).
2. Concrete grade: N25 minimum, cover: 50mm (Contact Gamcorp to find out whether more cost effective solution is possible, based on site specific conditions).
3. For the fixing of STIII-A to the concrete footing we recommend using M16 (Grade 5.8 Carbon Steel anchor studs or similar). Adopt minimum anchor embedment depth according the anchors manufacturer's manual. Clenergy STIII-A has 6 anchors per frame, 2 at front and 4 at rear.
4. Other footing options are possible – contact Gamcorp.

Construction is to be carried out strictly on accordance with the instruction manual. This work was designed in accordance with the provisions of Australian Building Regulations and in accordance with sound, widely accepted engineering principles. This certification is valid till 28 October 2021.

Yours faithfully,
Gamcorp (Melbourne) Pty Ltd

A handwritten signature in black ink, appearing to read 'L. Van Spaandonk'.

L. Van Spaandonk

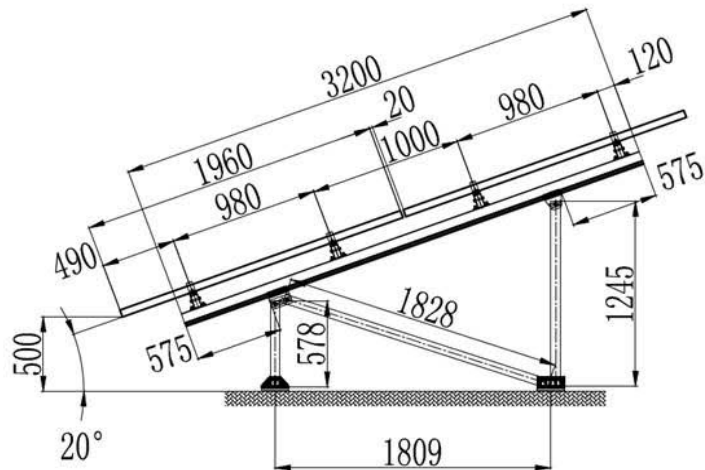
Principal Engineer

FIEAust CPEng NER

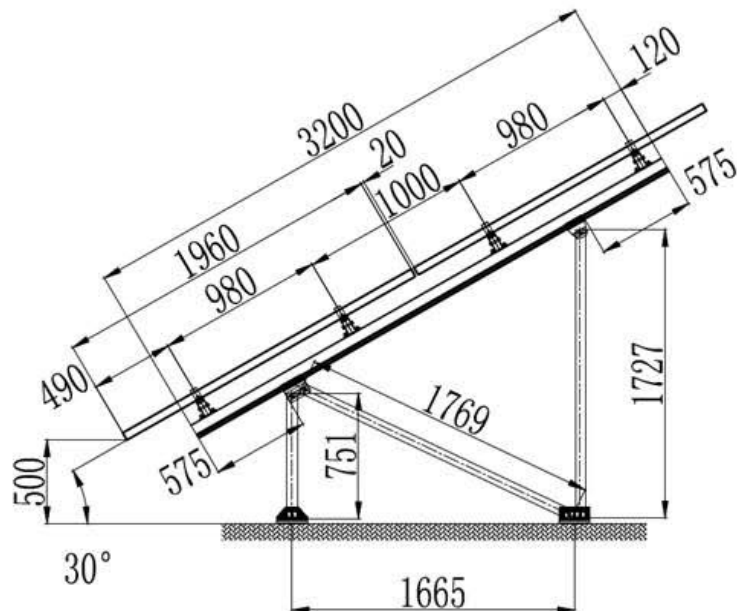
Attachments

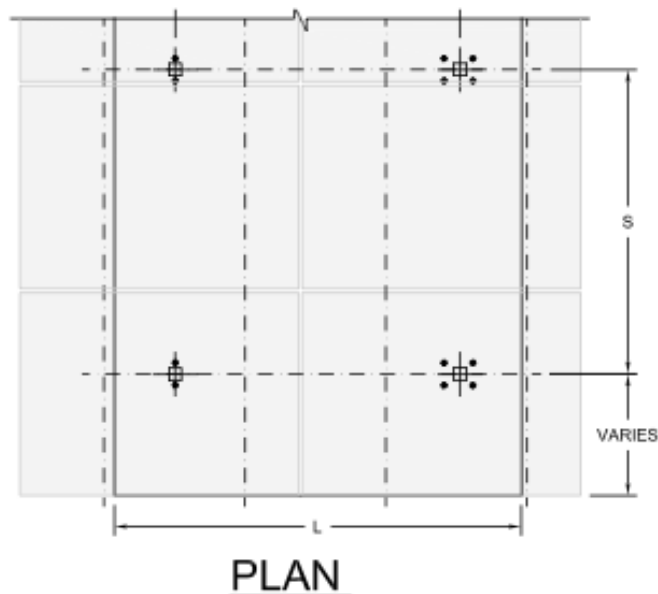
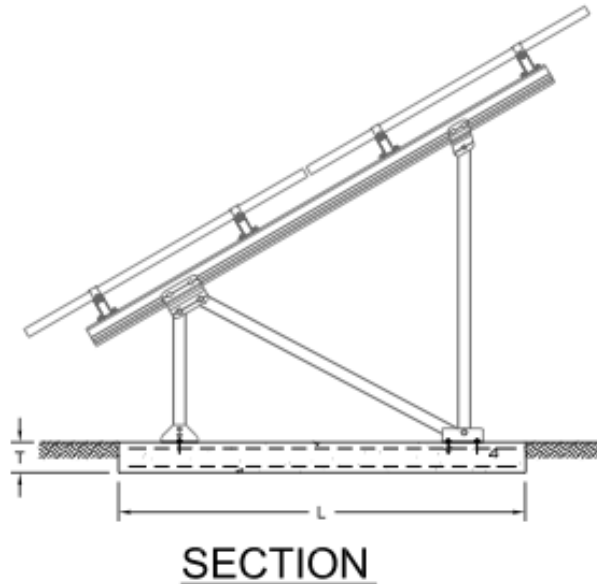
- Frames pictures by Clenergy
- Footing drawings by Gamcorp (S01-S04)

Part Number: ER-S-STIIIA/D20

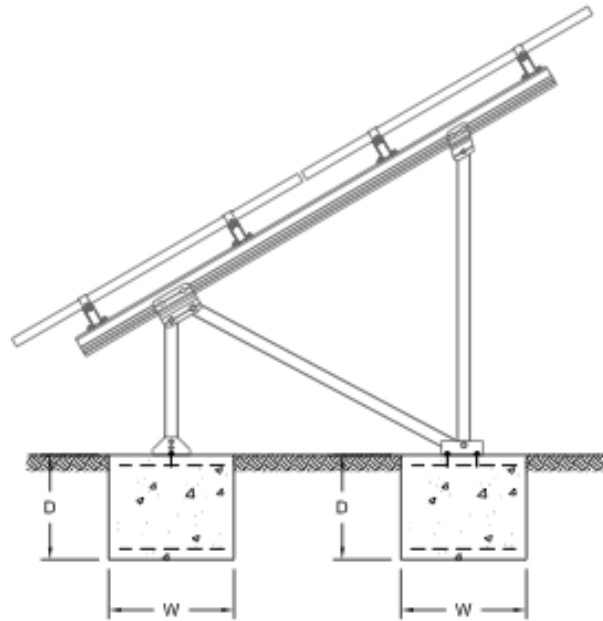


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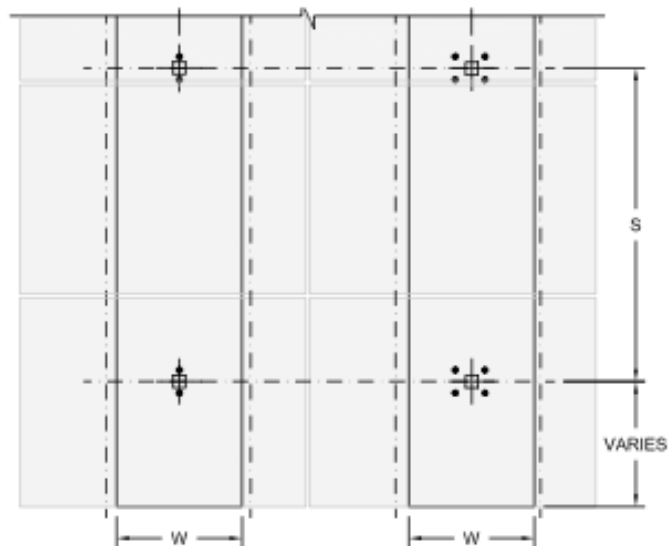




S01. Continuous Paving Slab

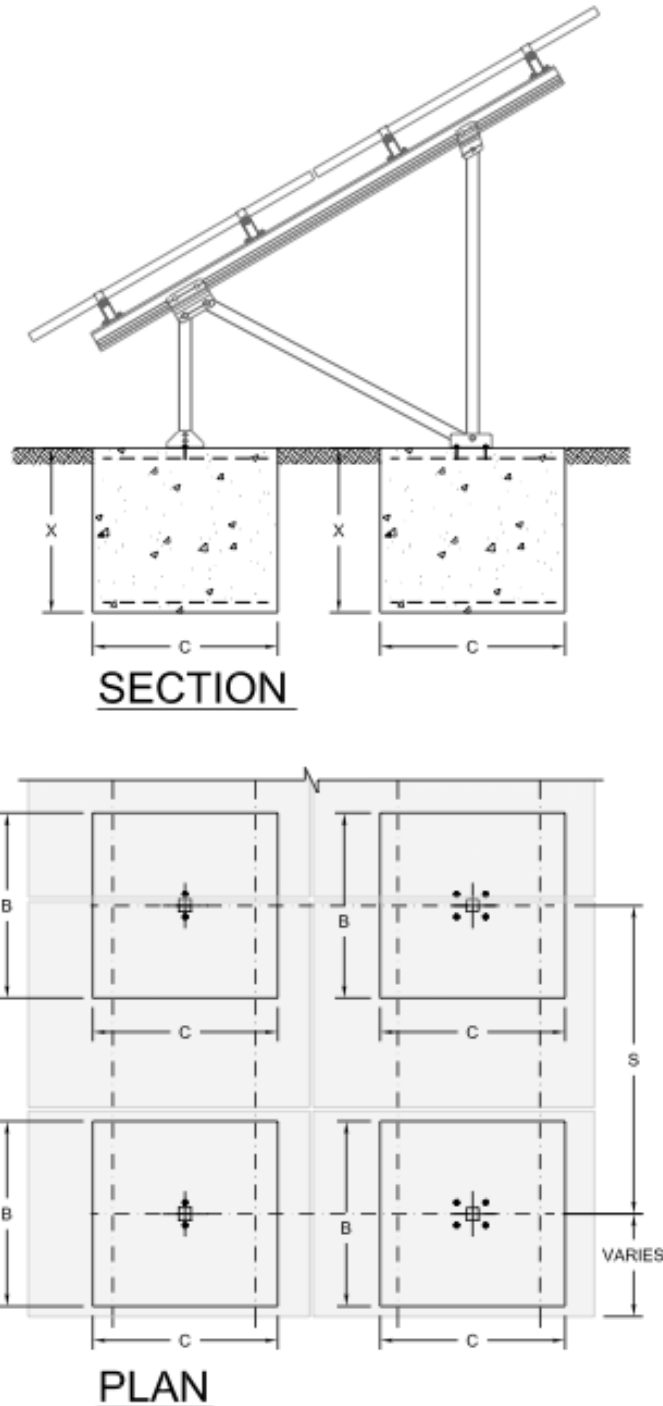


SECTION

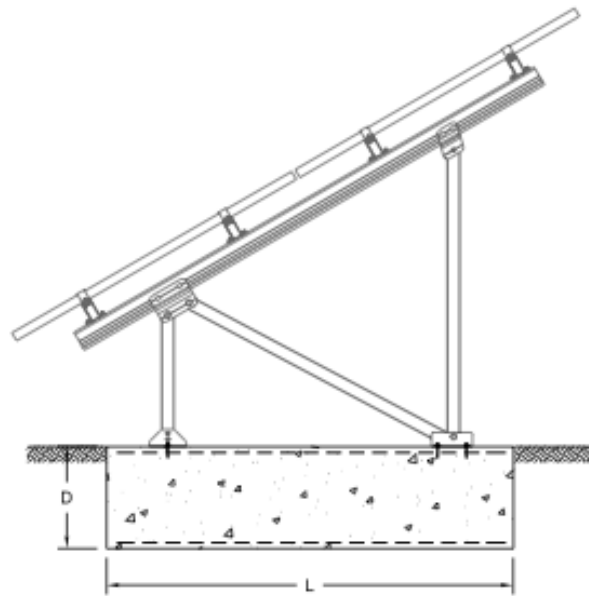


PLAN

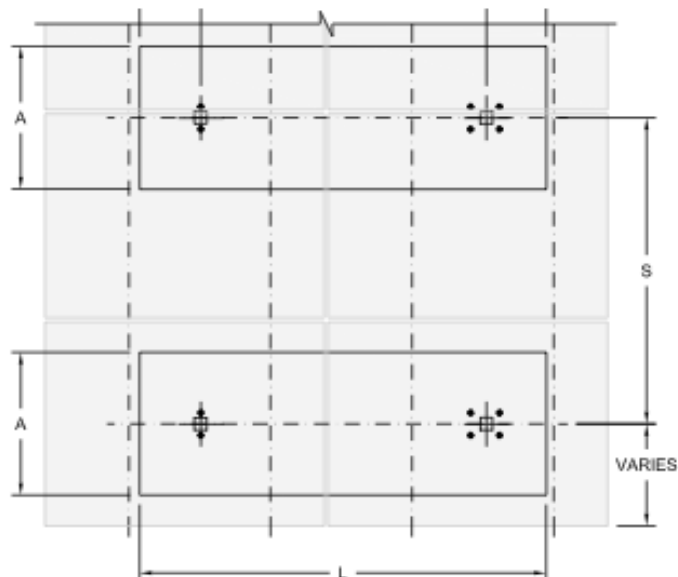
S02. Continuous Strip Footing



S03. Individual Pad footing per leg



SECTION



PLAN

S04. Transverse Strip Footing



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