

ATTN: Blikir, Inc.

RE: Blikir RCP-2 Solar Carport

This letter addresses the structural performance of the Blikir, Inc. RCP-2 Solar Carport (henceforth “Carport” or “RCP-2”). The Carport is a proprietary carport kit consisting of galvanized steel posts, beams, and connections, supporting solar panels. Post connections to concrete footings are included, but the footings themselves are to be supplied by the purchaser, according to the guidelines provided in the attachment.

Solar panels are supported by IronRidge XR-100 aluminum rails and secured to the rails with IronRidge CAMO-01-M1 Hidden End Clamps. The XR-100 rails are bolted to IronRidge LFT-03 Slotted L-Foot brackets with IronRidge BHW-TB-02-A1 T-Bolts. The L-Foot Brackets are bolted to the top of the carport framing members with 3/8” diameter bolts. Loads on connections and rails are within the allowable limits set forth by the manufacturer for spans of 6’. Refer to manufacturer’s tables for more information. Use of alternative rails or connections must be approved by a licensed engineer.

The carport framing is designed and certified to resist the following maximum loads:

| Kit Type   | Load Type   | STD Base | HD Base | EX-HD Base |
|--|-------------|----------|---------|------------|
| Standard Kit   | Vert. (psf) | 24       | 24      | 24         |
|  | Lat. (kips) | 0.9      | 2.0     | 5.5        |
| High Snow Kit  | Vert. (psf) | 54       | 54      | --         |
|  | Lat. (kips) | 0.9      | 2.7     | --         |
| Tandem Kit   | Vert. (psf) | 26       | 26      | 26         |
|  | Lat. (kips) | 1.7      | 3.9     | 11.2       |
| *Maximum loads listed are unfactored and applied non-concurrently. |             |          |         |            |
| **Lateral loads are max allowable per column                       |             |          |         |            |

The vertical and lateral capacities above adequately satisfy the structural design requirements outlined in the following building codes:

- 2012 International Building Code
- 2015 International Building Code
- 2018 International Building Code
- 2021 International Building Code

This carport framing system has been analyzed and found to be adequate under the ASCE 7 standards for wind and snow using the following parameters and conditions:

**General conditions:**

- Risk Category I

**Snow conditions:**

- Maximum Ground Snow Load ( $p_s$ )
  - Standard Kit: 35 psf
  - High Snow Kit: 65 psf

**Building Conditions:**

|                |                            |
|----------------|----------------------------|
| Enclosure      | Open                       |
| Roof type      | Monoslope free roof        |
| Roof pitch     | <7.5 degrees               |
| Wind direction | Any                        |
| Wind flow      | Either clear or obstructed |

**Wind Speed:**

| Exposure  | Maximum Basic Wind Speed<br>ASCE 7-10 & ASCE 7-16 |
|---|---|
| B   | 205 mph   |
| C   | 175 mph   |
| D   | 155 mph   |
| *Adequate combination of base kit and footer required |   |



**NOTES**

**GENERAL:** CENTER ALL FOOTINGS UNDER COLUMNS ABOVE. CONTRACTOR SHALL LOCATE ALL BURIED UTILITIES PRIOR TO EXCAVATION.

**FOUNDATIONS:** FOOTINGS ARE DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 1,500 PSF.

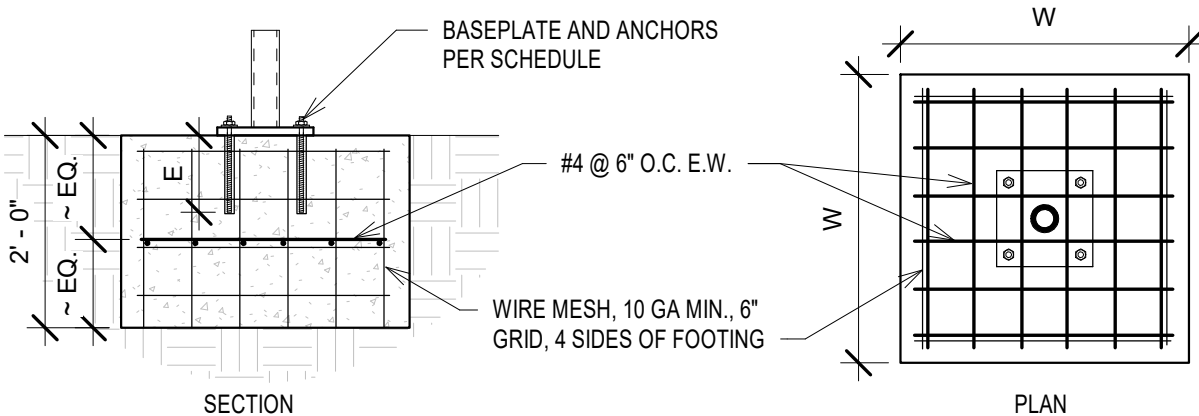
**CONCRETE:** CONCRETE STRENGTH SHALL BE AS FOLLOWS:

|          |       |                   |                           |              |
|----------|-------|-------------------|---------------------------|--------------|
| $F'_c$   | $W/C$ | <u>MIN CEMENT</u> | <u>MAX AGGREGATE SIZE</u> | <u>SLUMP</u> |
| 3000 PSI | 0.58  | 470 LBS           | 1"                        | 4" (+/-) 1"  |

CEMENT SHALL CONFORM TO ASTM C150, TYPE 1. FLY ASH CONFORMING TO ASTM C618, TYPE F OR TYPE C, MAY BE USED TO REPLACE UP TO 20% OF THE CEMENT CONTENT. AGGREGATE SHALL CONFORM TO ASTM C33. CONCRETE SHALL BE CURED IMMEDIATELY AFTER FINISHING OPERATIONS.

**REINFORCING STEEL:** REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, AND SHALL BE SECURELY TIED IN PLACE WITH #16 ANNEALED IRON WIRE. REQUIRED CLEAR CONCRETE COVER: 3" BOTTOM AND SIDES, 2" TOP.

ALL DETAILING AND ACCESSORIES SHALL CONFORM TO ACI DETAILING MANUAL SP-66. PROVIDE CHAIRS, SPACERS, BOLSTERS, AND ITEMS IN CONTACT WITH FORMS WITH HOT-DIP GALVANIZED LEGS OR PLASTIC LEGS. ACCURATELY POSITION, SUPPORT, AND SECURE REINFORCEMENT AGAINST DISPLACEMENT BY FORMWORK CONSTRUCTION OR CONCRETE PLACEMENT OPERATIONS.



**FOOTING SCHEDULE**

| SEISMIC DESIGN CATEGORY | MAX WIND SPEED EXP. (B, C, D) RISK CAT. I | W       | BASE PLATE TYPE | ANCHOR TYPE AND SIZE               | E, MIN. |
|-------------------------|---|---------|-----------------|------------------------------------|---------|
| A, B, C                 | (134, 90, 74) MPH                         | 2' - 9" | STANDARD        | (4) HILTI 3/4" DIA. KWIK-BOLT T22  | 4 3/4"  |
|                         | (164, 110, 90) MPH                        | 3' - 2" | STANDARD        | (4) HILTI 3/4" DIA. KWIK-BOLT T22  | 4 3/4"  |
|                         | (193, 130, 107) MPH                       | 3' - 7" | STANDARD        | (4) HILTI 3/4" DIA. KWIK-BOLT T22  | 4 3/4"  |
|                         | (205, 150, 123) MPH                       | 4' - 1" | HD              | (4) HILTI 3/4" DIA. HAS-V-36 ROD   | 9"      |
|                         | (205, 175, 155) MPH                       | 4' - 6" | HD              | (4) HILTI 3/4" DIA. HAS-V-36 ROD   | 10"     |
| D                       | (205, 175, 155) MPH                       | 5' - 3" | HD              | (4) HILTI 3/4" DIA. HAS-E-55 ROD   | 12"     |
| E                       | (205, 175, 155) MPH                       | 8' - 3" | EX-HD           | (4) HILTI 1 1/4" DIA. HAS-E-55 ROD | 14"     |

THE FOOTINGS AND ANCHORS SPECIFIED ABOVE WERE DESIGNED USING AN R VALUE OF 3.0 FOR DESIGN CATEGORIES A/B/C AND AN R VALUE OF 1.25 FOR DESIGN CATEGORIES D/E. THE SITE CLASS FOR ALL DESIGN CATEGORIES WAS ASSUMED TO BE D (STIFF SOIL).

ALL FOOTERS AND ANCHORS SPECIFIED FOR SEISMIC DESIGN CATEGORIES C, D, AND E ARE INTENDED AS A GUIDE ONLY. THEY DO NOT GUARANTEE PERFORMANCE ON ANY SPECIFIC SITE. SITE-SPECIFIC CERTIFICATIONS MAY REQUIRE ADDITIONAL ANALYSIS BY A LICENSED STRUCTURAL ENGINEER.



**BLIKIR RCP-2 SOLAR CARPORT  
BASIC KIT**

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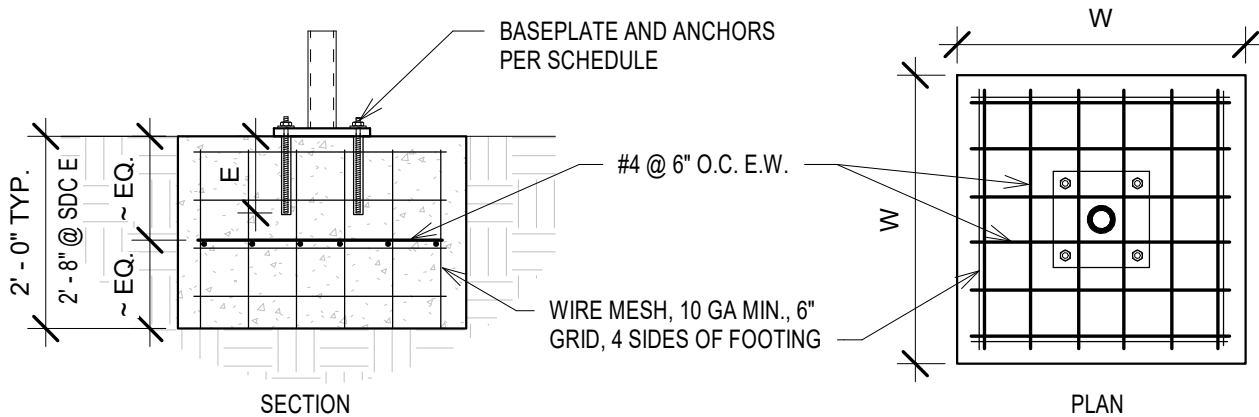
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| 3000 PSI | 0.58  | 470 LBS           | 1"                        | 4" (+/-) 1"  |

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**INTERIOR FOOTING SCHEDULE**

| SEISMIC DESIGN CATEGORY | MAX WIND SPEED EXP. (B, C, D) RISK CAT. I | W       | BASE PLATE TYPE | ANCHOR TYPE AND SIZE                | E, MIN. |
|-------------------------|---|---------|-----------------|-------------------------------------|---------|
| A, B, C                 | (134, 90, 74) MPH                         | 3' - 0" | STANDARD TANDEM | (4) HILTI 3/4" DIA. HAS-V-36 ROD    | 6"      |
|                         | (164, 110, 90) MPH                        | 3' - 9" | STANDARD TANDEM | (4) HILTI 3/4" DIA. HAS-V-36 ROD    | 7"      |
|                         | (193, 130, 107) MPH                       | 4' - 6" | STANDARD TANDEM | (4) HILTI 3/4" DIA. HAS-V-36 ROD    | 8"      |
|                         | (205, 150, 123) MPH                       | 5' - 2" | HD TANDEM       | (4) HILTI 3/4" DIA. HAS-V-36 ROD    | 10"     |
|                         | (205, 175, 155) MPH                       | 6' - 1" | HD TANDEM       | (4) HILTI 3/4" DIA. HAS-E-55 ROD    | 14"     |
| D                       | (205, 175, 155) MPH                       | 6' - 3" | HD TANDEM       | (4) HILTI 3/4" DIA. HAS-E-55 ROD    | 18"     |
| E                       | (205, 175, 155) MPH                       | 8' - 6" | EX-HD TANDEM    | (8) HILTI 1 1/4" DIA. HAS-B-105 ROD | 24"     |

THE FOOTINGS AND ANCHORS SPECIFIED ABOVE WERE DESIGNED USING AN R VALUE OF 3.0 FOR DESIGN CATEGORIES A/B/C AND AN R VALUE OF 1.25 FOR DESIGN CATEGORIES D/E. THE SITE CLASS FOR ALL DESIGN CATEGORIES WAS ASSUMED TO BE D (STIFF SOIL).

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**BLIKIR RCP-2 SOLAR CARPORT  
TANDEM KIT**