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Attn: Mr. Takashi Chiyoda, General Manager

**Subject: Roof Tech RT-[E] Mount Mini – Structural Analysis**

SML Job No.: 471-13

Dear Mr. Chiyoda:

We have analyzed the Roof Tech RT-[E] Mount Mini photovoltaic (PV) panel roof mount system and determined that, for the configurations and criteria described below, it is in compliance with the applicable sections of the following Reference Documents:

- Codes: ASCE/SEI 7-10 Min. Design Loads for Buildings & Other Structures  
International Building Code 2015 Edition  
International Residential Building Code 2015 Edition
- Other: Aluminum Design Manual, 2015 Edition

The Roof Tech RT-[E] Mount Mini photovoltaic (PV) panel roof mount system is comprised of a 6000 series aluminum [E] Mount Mini base. An appropriately load rated 'L-Foot', by others, may be attached to the [E] Mount Mini base with a stainless steel SS304 8.0 mm bolt, and flange nut. An appropriately load rated rail, by others, may be attached to the 'L-Foot' per the rail manufacturer's installation instructions. The installation of the RT-[E] Mount Mini must be with the long direction parallel to the roof framing and in accordance with Roof Tech's Installation Manual. The system is attached to the roof wood substrate with SS304 5.0 mm x 60 mm wood screws.

Three wood substrates were tested with the fasteners also passing through two layers of composite asphalt roof shingles and 2 layers of building paper. The first tested wood substrate consisted of 7/16" thick sheathing over a 2x4 DF #2 rafter (2x truss top chord OK by inspection), the second tested wood substrate consisted of 7/16" thick OSB only, and the third tested wood substrate consisted of 15/32" thick plywood only. See Exhibit 'A' – attached. **Two wood screws are required at the rafter installations and five wood screws are required at the OSB and plywood only installations.**

The testing data provided by Institute of Building Technology (IBT) report no.: 2426-18005 project no.: 29702 dated March 21, 2018, shows that the critical failure occurs in one of three ways; pullout of the wood screws from the 2x rafter, yielding of the attached components in shear, or pullout of the nails attaching the OSB/Plywood to the 2x rafter. Maximum allowable values for these failure conditions were derived using a safety factor of 2.0 on the ultimate loads resulting in aluminum failure and a safety factor of 3.0 on the loads resulting in wood failure. The testing was performed in general accordance with IAPMO Uniform Evaluation Services *Evaluation Criteria for Joist Hangers and Miscellaneous Connectors*, EC002 adopted June 2007, revised January 2016 and ASTM D1761-2012, *Standard Test Methods for Mechanical Fasteners in Wood*.

Compression load capacity on the OSB and plywood installations were determined by testing conducted at Western Technologies Inc. (WT). The data is represented in job no. 2163XD260 event no. G260-3 (OSB) dated January 3, 2014 and job no. 2163XD260 event no. G260-6 (Plywood) dated May 30, 2014. The safety factor for downward compression on the sheathing is 2.0.

The results of the above testing are presented below:

The maximum allowable uplift and shear force for 7/16" thick sheathing over a 2x4 DF #2 rafter is 447 lb and 355 lb respectively. The maximum allowable uplift, down force, and shear force for 7/16" thick OSB only is 153 lb, 258 lb, and 192 lb respectively. The maximum allowable uplift, down force, and shear force for 15/32" thick plywood only is 180 lb, 556 lb, and 277 lb respectively.

The attached tables below show the maximum spacing of the RT [E] Mount Mini for the combined loading criteria of wind speed, roof slope, and snow loads which produce reaction loads less than the allowable loads listed above. The effect of seismic loads (for all design categories A-F) have been determined to be less than the effect due to wind loads in all load conditions and combinations. The assumed topography is flat with a  $K_{zt} = 1.0$ . Therefore, the maximum allowable spacing for common load cases due to dead, wind and snow loads are the controlling load cases.

**‘Rail Option’:**

The maximum height for the ‘Rail Option’ is measured from the bottom of the [E] Mount Mini base to the top of the rail. See Exhibit ‘A’ – attached, for the allowable ‘Rail Option’ PV panel layouts and ‘L-Foot’ and rail configuration. The maximum rail cantilever shall be limited to the smaller of 40% of the maximum rail span in the ‘Rail Option’ tables below and the rail manufacturer’s specified maximum cantilever. It is the responsibility of the contractor to verify that the ‘L-Foot’ and rails that are used have a span rating greater than that shown in the ‘Rail Option’ tables below. Provide thermal expansion splices along the rail at intervals not to exceed 14 feet and refer to the rail manufacturer’s thermal expansion splice detailing for proper installation.

| RT1       | RT-[E] Mount Mini Rafter Installations<br>(60 Cell PV Panels)<br>Maximum Mount Spacing in Feet |            |           |                           |     |     |     |     |     |     |     |     |   |
|-----------|--|------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|---|
|           | Portrait Orientation - ASCE 7-10   |            |           |                           |     |     |     |     |     |     |     |     |   |
| Snow Load | Exposure Category  | Roof Angle | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |   |
|           |  |            |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |   |
| 0 PSF     | B  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5 |
|           |  | Degrees    | 2         | 8                         | 8   | 7   | 6   | 5   | 4   | 3   | 3   | 3   | 3 |
|           |  | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6 |
|           |  | Degrees    | 2         | 8                         | 7   | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 3 |
|           | C  | 28 to 45   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5 |
|           |  | Degrees    | 2         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 4 |
|           |  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 6   | 5   | 4   | 3   | 2   | 2 |
|           |  | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   | 2 |
|           | D  | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 3   | 3 |
|           |  | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   | 2 |
|           |  | 28 to 45   | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 3   | 3   | 3 |
|           |  | Degrees    | 2         | 8                         | 7   | 6   | 5   | 4   | 3   | 3   | 2   | 2   | 2 |
| 1-10 PSF  | B  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5 |
|           |  | Degrees    | 2         | 8                         | 8   | 7   | 6   | 5   | 4   | 3   | 3   | 3   | 3 |
|           |  | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6 |
|           |  | Degrees    | 2         | 8                         | 7   | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 3 |
|           | C  | 28 to 45   | 1         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4 |
|           |  | Degrees    | 2         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 3   | 3 |
|           |  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 6   | 5   | 4   | 4   | 3   | 3 |
|           |  | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   | 2 |
|           | D  | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 4 |
|           |  | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   | 2 |
|           |  | 28 to 45   | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   | 3 |
|           |  | Degrees    | 2         | 8                         | 7   | 6   | 5   | 5   | 4   | 3   | 3   | 2   | 2 |
| 11-20 PSF | B  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5 |
|           |  | Degrees    | 2         | 8                         | 8   | 7   | 6   | 5   | 4   | 3   | 3   | 3   | 3 |
|           |  | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6 |
|           |  | Degrees    | 2         | 8                         | 7   | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 3 |
|           | C  | 28 to 45   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5 |
|           |  | Degrees    | 2         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 4 |
|           |  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 6   | 5   | 4   | 4   | 3   | 3 |
|           |  | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   | 2 |
|           | D  | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 4 |
|           |  | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   | 2 |
|           |  | 28 to 45   | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   | 3 |
|           |  | Degrees    | 2         | 8                         | 7   | 6   | 5   | 5   | 4   | 3   | 3   | 2   | 2 |
| 11-20 PSF | B  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5 |
|           |  | Degrees    | 2         | 8                         | 8   | 7   | 6   | 5   | 4   | 3   | 3   | 3   | 3 |
|           |  | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6 |
|           |  | Degrees    | 2         | 8                         | 7   | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 3 |
|           | C  | 28 to 45   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5 |
|           |  | Degrees    | 2         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 4 |
|           |  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 6   | 5   | 4   | 4   | 3   | 3 |
|           |  | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   | 2 |
|           | D  | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 4 |
|           |  | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   | 2 |
|           |  | 28 to 45   | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   | 3 |
|           |  | Degrees    | 2         | 8                         | 7   | 6   | 5   | 5   | 4   | 3   | 3   | 2   | 2 |

| RT1       | RT-[E] Mount Mini Rafter Installations<br>(60 Cell PV Panels)<br>Maximum Mount Spacing in Feet |            |           |                           |     |     |     |     |     |     |     |     |
|-----------|--|------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|           | Portrait Orientation - ASCE 7-10   |            |           |                           |     |     |     |     |     |     |     |     |
| Snow Load | Exposure Category  | Roof Angle | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |
|           |  |            |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| 21-30 PSF | B  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5   |
|           |  | Degrees    | 2         | 8                         | 8   | 7   | 6   | 5   | 4   | 3   | 3   | 3   |
|           |  | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6   |
|           |  | Degrees    | 2         | 8                         | 7   | 7   | 6   | 5   | 4   | 4   | 3   | 3   |
|           | C  | 28 to 45   | 1         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5   |
|           |  | Degrees    | 2         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   |
|           |  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 6   | 5   | 5   | 4   | 4   |
|           |  | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           | D  | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   |
|           |  | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |  | 28 to 45   | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   |
|           |  | Degrees    | 2         | 8                         | 7   | 6   | 5   | 4   | 3   | 3   | 3   | 3   |
| 31-40 PSF | B  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5   |
|           |  | Degrees    | 2         | 8                         | 8   | 7   | 6   | 5   | 4   | 3   | 3   | 3   |
|           |  | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6   |
|           |  | Degrees    | 2         | 8                         | 7   | 7   | 6   | 5   | 4   | 4   | 3   | 3   |
|           | C  | 28 to 45   | 1         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5   |
|           |  | Degrees    | 2         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   |
|           |  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 6   | 5   | 5   | 4   | 4   |
|           |  | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           | D  | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   |
|           |  | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |  | 28 to 45   | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   |
|           |  | Degrees    | 2         | 8                         | 7   | 6   | 5   | 5   | 4   | 3   | 3   | 3   |
| 41-50 PSF | B  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5   |
|           |  | Degrees    | 2         | 8                         | 8   | 7   | 6   | 5   | 4   | 3   | 3   | 3   |
|           |  | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6   |
|           |  | Degrees    | 2         | 8                         | 7   | 7   | 6   | 5   | 4   | 4   | 3   | 3   |
|           | C  | 28 to 45   | 1         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5   |
|           |  | Degrees    | 2         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   |
|           |  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 6   | 5   | 5   | 4   | 4   |
|           |  | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           | D  | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   |
|           |  | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |  | 28 to 45   | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   |
|           |  | Degrees    | 2         | 8                         | 7   | 6   | 5   | 5   | 4   | 3   | 3   | 3   |
| D         | 0 to 6   | 1          | 8         | 8                         | 8   | 6   | 5   | 4   | 4   | 3   | 3   |     |
|           | Degrees  | 2          | 5         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   |     |
|           | 7 to 27  | 1          | 8         | 8                         | 8   | 7   | 6   | 5   | 4   | 4   | 3   |     |
|           | Degrees  | 2          | 5         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   |     |
| D         | 28 to 45   | 1          | 8         | 7                         | 7   | 6   | 5   | 4   | 4   | 3   | 3   |     |
|           | Degrees  | 2          | 7         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   |     |

| RT1       | RT-[E] Mount Mini Rafter Installations<br>(60 Cell PV Panels)<br>Maximum Mount Spacing in Feet |                  |           |                           |     |     |     |     |     |     |     |     |
|-----------|--|------------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|           | Portrait Orientation - ASCE 7-10   |                  |           |                           |     |     |     |     |     |     |     |     |
| Snow Load | Exposure Category  | Roof Angle       | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |
|           |  |                  |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| 51-60 PSF | B  | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5   |
|           |  | 2                | 8         | 8                         | 7   | 6   | 5   | 4   | 3   | 3   | 3   |     |
|           |  | 7 to 27 Degrees  | 1         | 7                         | 7   | 7   | 7   | 7   | 7   | 7   | 6   | 6   |
|           |  | 2                | 7         | 7                         | 7   | 6   | 5   | 4   | 4   | 3   | 3   |     |
|           | C  | 28 to 45 Degrees | 1         | 7                         | 7   | 7   | 7   | 7   | 7   | 6   | 5   | 5   |
|           |  | 2                | 7         | 7                         | 7   | 7   | 7   | 6   | 5   | 4   | 4   |     |
|           |  | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 6   | 5   | 5   | 4   | 4   |
|           |  | 2                | 6         | 5                         | 5   | 4   | 3   | 3   | 2   | 2   | 2   |     |
|           | D  | 7 to 27 Degrees  | 1         | 7                         | 7   | 7   | 7   | 7   | 6   | 5   | 4   | 4   |
|           |  | 2                | 6         | 5                         | 5   | 4   | 3   | 3   | 2   | 2   | 2   |     |
|           |  | 28 to 45 Degrees | 1         | 7                         | 7   | 7   | 6   | 5   | 4   | 4   | 3   | 3   |
|           |  | 2                | 7         | 7                         | 6   | 5   | 4   | 3   | 3   | 3   | 3   |     |
| 61-70 PSF | B  | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5   |
|           |  | 2                | 8         | 8                         | 7   | 6   | 5   | 4   | 3   | 3   | 3   |     |
|           |  | 7 to 27 Degrees  | 1         | 6                         | 6   | 6   | 6   | 6   | 6   | 6   | 6   | 6   |
|           |  | 2                | 6         | 6                         | 6   | 6   | 5   | 4   | 4   | 3   | 3   |     |
|           | C  | 28 to 45 Degrees | 1         | 6                         | 6   | 6   | 6   | 6   | 6   | 6   | 5   | 5   |
|           |  | 2                | 6         | 6                         | 6   | 6   | 6   | 6   | 5   | 4   | 4   |     |
|           |  | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 6   | 5   | 4   | 4   | 3   | 3   |
|           |  | 2                | 6         | 5                         | 5   | 4   | 3   | 3   | 2   | 2   | 2   |     |
|           | D  | 7 to 27 Degrees  | 1         | 6                         | 6   | 6   | 6   | 6   | 6   | 5   | 4   | 4   |
|           |  | 2                | 6         | 5                         | 5   | 4   | 3   | 3   | 2   | 2   | 2   |     |
|           |  | 28 to 45 Degrees | 1         | 6                         | 6   | 6   | 6   | 6   | 5   | 4   | 4   | 3   |
|           |  | 2                | 6         | 6                         | 6   | 5   | 5   | 4   | 3   | 3   | 3   |     |
| D         | 0 to 6 Degrees   | 1                | 8         | 8                         | 8   | 6   | 5   | 4   | 4   | 3   | 3   |     |
|           | 2  | 5                | 4         | 4                         | 3   | 3   | 2   | 2   | 2   | 0   |     |     |
|           | 7 to 27 Degrees  | 1                | 6         | 6                         | 6   | 6   | 6   | 5   | 4   | 4   | 3   |     |
|           | 2  | 5                | 4         | 4                         | 3   | 3   | 2   | 2   | 2   | 0   |     |     |
| D         | 28 to 45 Degrees   | 1                | 6         | 6                         | 6   | 6   | 5   | 4   | 4   | 3   | 3   |     |
|           | 2  | 6                | 6         | 5                         | 5   | 4   | 3   | 3   | 2   | 2   |     |     |

| RT2       | RT-[E] Mount Mini Rafter Installations Cont.<br>(72 Cell PV Panels)<br>Maximum Mount Spacing in Feet |            |           |                           |     |     |     |     |     |     |     |     |   |
|-----------|--|------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|---|
|           | Portrait Orientation - ASCE 7-10   |            |           |                           |     |     |     |     |     |     |     |     |   |
| Snow Load | Exposure Category  | Roof Angle | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |   |
|           |  |            |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |   |
| 0 PSF     | B  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5   |   |
|           |  | Degrees    | 2         | 7                         | 7   | 6   | 5   | 4   | 3   | 3   | 3   | 2   |   |
|           |  | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6   | 5 |
|           |  | Degrees    | 2         | 7                         | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 3   | 2 |
|           | C  | 28 to 45   | 1         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5   | 4 |
|           |  | Degrees    | 2         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 4   | 3 |
|           |  | 0 to 6     | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 3   | 3   | 3 |
|           |  | Degrees    | 2         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 2   | 0 |
|           | D  | 7 to 27    | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 4   | 3 |
|           |  | Degrees    | 2         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 2   | 0 |
|           |  | 28 to 45   | 1         | 8                         | 7   | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 3 |
|           |  | Degrees    | 2         | 7                         | 6   | 6   | 5   | 4   | 3   | 3   | 3   | 3   | 2 |
| 1-10 PSF  | B  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5   |   |
|           |  | Degrees    | 2         | 7                         | 7   | 6   | 5   | 4   | 3   | 3   | 3   | 2   |   |
|           |  | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6   | 5 |
|           |  | Degrees    | 2         | 7                         | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 3   | 2 |
|           | C  | 28 to 45   | 1         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 4 |
|           |  | Degrees    | 2         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 4   | 3 |
|           |  | 0 to 6     | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 3   | 3   | 3 |
|           |  | Degrees    | 2         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 2   | 0 |
|           | D  | 7 to 27    | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 4   | 3 |
|           |  | Degrees    | 2         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 2   | 0 |
|           |  | 28 to 45   | 1         | 8                         | 7   | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 3 |
|           |  | Degrees    | 2         | 7                         | 6   | 6   | 5   | 4   | 3   | 3   | 3   | 3   | 2 |
| 11-20 PSF | B  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5   |   |
|           |  | Degrees    | 2         | 7                         | 7   | 6   | 5   | 4   | 3   | 3   | 3   | 2   |   |
|           |  | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6   | 5 |
|           |  | Degrees    | 2         | 7                         | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 3   | 2 |
|           | C  | 28 to 45   | 1         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 4 |
|           |  | Degrees    | 2         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 4   | 3 |
|           |  | 0 to 6     | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 3   | 3   | 3 |
|           |  | Degrees    | 2         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 2   | 0 |
|           | D  | 7 to 27    | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 4   | 3 |
|           |  | Degrees    | 2         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 2   | 0 |
|           |  | 28 to 45   | 1         | 8                         | 7   | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 3 |
|           |  | Degrees    | 2         | 7                         | 6   | 6   | 5   | 4   | 3   | 3   | 3   | 3   | 2 |
| D         | 0 to 6   | 1          | 8         | 7                         | 7   | 5   | 5   | 4   | 3   | 3   | 3   | 2   |   |
|           | Degrees  | 2          | 4         | 4                         | 3   | 3   | 2   | 2   | 2   | 2   | 0   | 0   |   |
|           | 7 to 27  | 1          | 8         | 8                         | 7   | 6   | 5   | 4   | 4   | 4   | 3   | 3   |   |
|           | Degrees  | 2          | 4         | 4                         | 3   | 3   | 2   | 2   | 2   | 2   | 0   | 0   |   |
|           | 28 to 45   | 1          | 7         | 6                         | 6   | 5   | 4   | 4   | 3   | 3   | 3   | 2   |   |
|           | Degrees  | 2          | 6         | 5                         | 5   | 4   | 3   | 3   | 2   | 2   | 2   | 2   |   |
|           | 0 to 6   | 1          | 8         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 5   | 5   |   |
|           | Degrees  | 2          | 7         | 7                         | 6   | 5   | 4   | 3   | 3   | 3   | 3   | 2   |   |

| RT2       | RT-[E] Mount Mini Rafter Installations Cont.<br>(72 Cell PV Panels)<br>Maximum Mount Spacing in Feet |            |           |                           |     |     |     |     |     |     |     |     |   |
|-----------|--|------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|---|
|           | Portrait Orientation - ASCE 7-10   |            |           |                           |     |     |     |     |     |     |     |     |   |
| Snow Load | Exposure Category  | Roof Angle | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |   |
|           |  |            |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |   |
| 21-30 PSF | B  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5   |   |
|           |  | Degrees    | 2         | 7                         | 7   | 6   | 5   | 4   | 3   | 3   | 3   | 2   |   |
|           |  | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6   | 5 |
|           |  | Degrees    | 2         | 7                         | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 3   | 2 |
|           | C  | 28 to 45   | 1         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5   | 4 |
|           |  | Degrees    | 2         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 4   | 3 |
|           |  | 0 to 6     | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   | 3 |
|           |  | Degrees    | 2         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 2   | 0 |
|           | D  | 7 to 27    | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 4   | 3 |
|           |  | Degrees    | 2         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 2   | 0 |
|           |  | 28 to 45   | 1         | 8                         | 7   | 7   | 6   | 5   | 4   | 4   | 4   | 3   | 3 |
|           |  | Degrees    | 2         | 7                         | 6   | 6   | 5   | 4   | 3   | 3   | 3   | 3   | 2 |
| 31-40 PSF | B  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5 |
|           |  | Degrees    | 2         | 7                         | 7   | 6   | 5   | 4   | 3   | 3   | 3   | 3   | 2 |
|           |  | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6   | 5 |
|           |  | Degrees    | 2         | 7                         | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 3   | 2 |
|           | C  | 28 to 45   | 1         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 5   | 5   | 4 |
|           |  | Degrees    | 2         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 4   | 3 |
|           |  | 0 to 6     | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   | 3 |
|           |  | Degrees    | 2         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 2   | 0 |
|           | D  | 7 to 27    | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 4   | 3 |
|           |  | Degrees    | 2         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 2   | 0   | 0 |
|           |  | 28 to 45   | 1         | 8                         | 7   | 7   | 6   | 5   | 4   | 4   | 4   | 3   | 3 |
|           |  | Degrees    | 2         | 7                         | 6   | 6   | 5   | 4   | 3   | 3   | 3   | 3   | 2 |
| 41-50 PSF | B  | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5 |
|           |  | Degrees    | 2         | 7                         | 7   | 6   | 5   | 4   | 3   | 3   | 3   | 3   | 2 |
|           |  | 7 to 27    | 1         | 7                         | 7   | 7   | 7   | 7   | 7   | 7   | 6   | 6   | 5 |
|           |  | Degrees    | 2         | 7                         | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 3   | 2 |
|           | C  | 28 to 45   | 1         | 7                         | 7   | 7   | 7   | 7   | 7   | 6   | 5   | 5   | 4 |
|           |  | Degrees    | 2         | 7                         | 7   | 7   | 7   | 6   | 5   | 4   | 4   | 4   | 3 |
|           |  | 0 to 6     | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   | 3 |
|           |  | Degrees    | 2         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 2   | 0 |
|           | D  | 7 to 27    | 1         | 7                         | 7   | 7   | 6   | 5   | 4   | 4   | 4   | 3   | 3 |
|           |  | Degrees    | 2         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 2   | 0 |
|           |  | 28 to 45   | 1         | 7                         | 7   | 7   | 6   | 5   | 4   | 4   | 4   | 3   | 3 |
|           |  | Degrees    | 2         | 7                         | 6   | 6   | 5   | 4   | 3   | 3   | 3   | 3   | 2 |
| 41-50 PSF | D  | 0 to 6     | 1         | 8                         | 7   | 7   | 5   | 5   | 4   | 3   | 3   | 2   |   |
|           |  | Degrees    | 2         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 2   | 0   | 0 |
|           |  | 7 to 27    | 1         | 7                         | 7   | 7   | 6   | 5   | 4   | 4   | 4   | 3   | 3 |
|           |  | Degrees    | 2         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 2   | 0   | 0 |
|           | 28 to 45   | Degrees    | 1         | 7                         | 6   | 6   | 5   | 4   | 4   | 3   | 3   | 3   | 2 |
|           |  | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   | 2 |

| RT2              | RT-[E] Mount Mini Rafter Installations Cont.<br>(72 Cell PV Panels)<br>Maximum Mount Spacing in Feet |                  |           |                           |     |     |     |     |     |     |     |     |   |
|------------------|--|------------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|---|
|                  | Portrait Orientation - ASCE 7-10   |                  |           |                           |     |     |     |     |     |     |     |     |   |
| Snow Load        | Exposure Category  | Roof Angle       | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |   |
|                  |  |                  |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |   |
| 51-60 PSF        | B  | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5   |   |
|                  |  |                  | 2         | 7                         | 7   | 6   | 5   | 4   | 3   | 3   | 2   |     |   |
|                  |  | 7 to 27 Degrees  | 1         | 6                         | 6   | 6   | 6   | 6   | 6   | 6   | 6   | 6   | 5 |
|                  |  |                  | 2         | 6                         | 6   | 6   | 5   | 4   | 4   | 3   | 3   | 2   |   |
|                  |  | 28 to 45 Degrees | 1         | 6                         | 6   | 6   | 6   | 6   | 6   | 6   | 5   | 5   | 4 |
|                  |  |                  | 2         | 6                         | 6   | 6   | 6   | 6   | 5   | 4   | 4   | 4   | 3 |
|                  | C  | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 3   | 3   |   |
|                  |  |                  | 2         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0   |   |
|                  |  | 7 to 27 Degrees  | 1         | 6                         | 6   | 6   | 6   | 6   | 5   | 4   | 4   | 4   | 3 |
|                  |  |                  | 2         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0   |   |
|                  |  | 28 to 45 Degrees | 1         | 6                         | 6   | 6   | 6   | 5   | 4   | 4   | 4   | 3   | 3 |
|                  |  |                  | 2         | 6                         | 6   | 6   | 5   | 4   | 3   | 3   | 3   | 3   | 2 |
|                  | D  | 0 to 6 Degrees   | 1         | 8                         | 7   | 7   | 5   | 6   | 4   | 3   | 3   | 2   |   |
|                  |  |                  | 2         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   | 0   |   |
|                  |  | 7 to 27 Degrees  | 1         | 6                         | 6   | 6   | 6   | 5   | 4   | 4   | 4   | 3   | 3 |
| 2                |  |                  | 4         | 4                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   |     |   |
| 28 to 45 Degrees |  | 1                | 6         | 6                         | 6   | 5   | 4   | 4   | 3   | 3   | 2   |     |   |
|                  |  | 2                | 6         | 5                         | 5   | 4   | 3   | 3   | 2   | 2   | 2   |     |   |
| 61-70 PSF        | B  | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5   |   |
|                  |  |                  | 2         | 7                         | 7   | 6   | 5   | 4   | 3   | 3   | 3   | 2   |   |
|                  |  | 7 to 27 Degrees  | 1         | 5                         | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5 |
|                  |  |                  | 2         | 5                         | 5   | 5   | 5   | 4   | 4   | 3   | 3   | 2   |   |
|                  |  | 28 to 45 Degrees | 1         | 5                         | 5   | 5   | 5   | 5   | 5   | 5   | 4   | 4   | 4 |
|                  |  |                  | 2         | 5                         | 5   | 5   | 5   | 5   | 5   | 4   | 4   | 4   | 3 |
|                  | C  | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 3   | 3   |   |
|                  |  |                  | 2         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0   |   |
|                  |  | 7 to 27 Degrees  | 1         | 5                         | 5   | 5   | 5   | 5   | 5   | 4   | 4   | 4   | 3 |
|                  |  |                  | 2         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0   |   |
|                  |  | 28 to 45 Degrees | 1         | 5                         | 5   | 5   | 5   | 5   | 4   | 4   | 4   | 3   | 3 |
|                  |  |                  | 2         | 5                         | 5   | 5   | 5   | 4   | 3   | 3   | 3   | 2   |   |
|                  | D  | 0 to 6 Degrees   | 1         | 8                         | 7   | 7   | 5   | 5   | 4   | 3   | 3   | 2   |   |
|                  |  |                  | 2         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   | 0   |   |
|                  |  | 7 to 27 Degrees  | 1         | 5                         | 5   | 5   | 5   | 5   | 4   | 4   | 4   | 3   | 3 |
| 2                |  |                  | 4         | 4                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   |     |   |
| 28 to 45 Degrees |  | 1                | 5         | 5                         | 5   | 5   | 4   | 4   | 3   | 3   | 2   |     |   |
|                  |  | 2                | 5         | 5                         | 5   | 4   | 3   | 3   | 2   | 2   | 2   |     |   |



| RT3       | RT-[E] Mount Rail Plywood Only Installations<br>(60 Cell PV Panels)<br>Maximum Mount Spacing in Feet |            |           |                           |     |     |     |     |     |     |     |     |
|-----------|--|------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|           | Portrait Orientation - ASCE 7-10   |            |           |                           |     |     |     |     |     |     |     |     |
| Snow Load | Exposure Category  | Roof Angle | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |
|           |  |            |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| 0 PSF     | B  | 0 to 6     | 1         | 7                         | 6   | 5   | 4   | 4   | 3   | 3   | 2   | 2   |
|           |  | Degrees    | 2         | 3                         | 3   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
|           |  | 7 to 27    | 1         | 7                         | 6   | 6   | 5   | 4   | 3   | 3   | 2   | 2   |
|           |  | Degrees    | 2         | 3                         | 3   | 3   | 2   | 2   | 0   | 0   | 0   | 0   |
|           | C  | 28 to 45   | 1         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |  | Degrees    | 2         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0   |
|           |  | 0 to 6     | 1         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   | 0   |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |
|           | D  | 7 to 27    | 1         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 0   | 0   |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 28 to 45   | 1         | 4                         | 3   | 3   | 3   | 2   | 2   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 3                         | 3   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
| 1-10 PSF  | B  | 0 to 6     | 1         | 7                         | 6   | 5   | 4   | 4   | 3   | 3   | 2   | 2   |
|           |  | Degrees    | 2         | 3                         | 3   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
|           |  | 7 to 27    | 1         | 7                         | 6   | 6   | 5   | 4   | 3   | 3   | 2   | 2   |
|           |  | Degrees    | 2         | 3                         | 3   | 3   | 2   | 2   | 0   | 0   | 0   | 0   |
|           | C  | 28 to 45   | 1         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |  | Degrees    | 2         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0   |
|           |  | 0 to 6     | 1         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   | 0   |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |
|           | D  | 7 to 27    | 1         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 0   | 0   |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 28 to 45   | 1         | 4                         | 3   | 3   | 3   | 2   | 2   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 3                         | 3   | 2   | 2   | 2   | 0   | 0   | 0   | 0   |
| 11-20 PSF | B  | 0 to 6     | 1         | 6                         | 6   | 5   | 4   | 4   | 3   | 3   | 2   | 2   |
|           |  | Degrees    | 2         | 3                         | 3   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
|           |  | 7 to 27    | 1         | 5                         | 5   | 5   | 5   | 4   | 3   | 3   | 2   | 2   |
|           |  | Degrees    | 2         | 3                         | 3   | 3   | 2   | 2   | 0   | 0   | 0   | 0   |
|           | C  | 28 to 45   | 1         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |  | Degrees    | 2         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0   |
|           |  | 0 to 6     | 1         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   | 0   |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |
|           | D  | 7 to 27    | 1         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 0   | 0   |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 28 to 45   | 1         | 4                         | 3   | 3   | 3   | 2   | 2   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 3                         | 3   | 2   | 2   | 2   | 0   | 0   | 0   | 0   |

| RT3       | RT-[E] Mount Rail Plywood Only Installations<br>(60 Cell PV Panels)<br>Maximum Mount Spacing in Feet |                  |           |                           |     |     |     |     |     |     |     |     |  |
|-----------|--|------------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|--|
|           | Portrait Orientation - ASCE 7-10   |                  |           |                           |     |     |     |     |     |     |     |     |  |
| Snow Load | Exposure Category  | Roof Angle       | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |  |
|           |  |                  |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |  |
| 21-30 PSF | B  | 0 to 6 Degrees   | 1         | 5                         | 5   | 5   | 4   | 4   | 3   | 3   | 2   | 2   |  |
|           |  | 2                | 3         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |  |
|           |  | 7 to 27 Degrees  | 1         | 4                         | 4   | 4   | 4   | 4   | 3   | 3   | 2   | 2   |  |
|           |  | 2                | 3         | 3                         | 3   | 2   | 2   | 0   | 0   | 0   | 0   |     |  |
|           | C  | 28 to 45 Degrees | 1         | 5                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |  |
|           |  | 2                | 5         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   |     |  |
|           |  | 0 to 6 Degrees   | 1         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   | 0   |  |
|           |  | 2                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   |     |  |
|           | D  | 7 to 27 Degrees  | 1         | 4                         | 4   | 4   | 3   | 3   | 2   | 2   | 0   | 0   |  |
|           |  | 2                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   |     |  |
|           |  | 28 to 45 Degrees | 1         | 4                         | 3   | 3   | 3   | 2   | 2   | 0   | 0   | 0   |  |
|           |  | 2                | 3         | 3                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |  |
| 31-40 PSF | B  | 0 to 6 Degrees   | 1         | 4                         | 4   | 4   | 4   | 4   | 3   | 3   | 2   | 2   |  |
|           |  | 2                | 3         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |  |
|           |  | 7 to 27 Degrees  | 1         | 3                         | 3   | 3   | 3   | 3   | 3   | 3   | 2   | 2   |  |
|           |  | 2                | 3         | 3                         | 3   | 2   | 2   | 0   | 0   | 0   | 0   |     |  |
|           | C  | 28 to 45 Degrees | 1         | 4                         | 4   | 4   | 4   | 3   | 3   | 2   | 2   | 2   |  |
|           |  | 2                | 4         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   |     |  |
|           |  | 0 to 6 Degrees   | 1         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   | 0   |  |
|           |  | 2                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   |     |  |
|           | D  | 7 to 27 Degrees  | 1         | 3                         | 3   | 3   | 3   | 3   | 2   | 2   | 0   | 0   |  |
|           |  | 2                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   |     |  |
|           |  | 28 to 45 Degrees | 1         | 4                         | 3   | 3   | 3   | 2   | 2   | 0   | 0   | 0   |  |
|           |  | 2                | 3         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |  |
| 41-50 PSF | B  | 0 to 6 Degrees   | 1         | 3                         | 3   | 3   | 3   | 3   | 3   | 3   | 2   | 2   |  |
|           |  | 2                | 3         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |  |
|           |  | 7 to 27 Degrees  | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   |  |
|           |  | 2                | 2         | 2                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |  |
|           | C  | 28 to 45 Degrees | 1         | 3                         | 3   | 3   | 3   | 3   | 3   | 2   | 2   | 2   |  |
|           |  | 2                | 3         | 3                         | 3   | 3   | 3   | 2   | 2   | 2   | 0   |     |  |
|           |  | 0 to 6 Degrees   | 1         | 3                         | 3   | 3   | 3   | 2   | 2   | 2   | 0   | 0   |  |
|           |  | 2                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   |     |  |
|           | D  | 7 to 27 Degrees  | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 0   | 0   |  |
|           |  | 2                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   |     |  |
|           |  | 28 to 45 Degrees | 1         | 3                         | 3   | 3   | 3   | 2   | 2   | 0   | 0   | 0   |  |
|           |  | 2                | 3         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |  |

| RT3       | RT-[E] Mount Rail Plywood Only Installations<br>(60 Cell PV Panels)<br>Maximum Mount Spacing in Feet |                  |           |                           |     |     |     |     |     |     |     |     |
|-----------|--|------------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|           | Portrait Orientation - ASCE 7-10   |                  |           |                           |     |     |     |     |     |     |     |     |
| Snow Load | Exposure Category  | Roof Angle       | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |
|           |  |                  |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| 51-60 PSF | B  | 0 to 6 Degrees   | 1         | 3                         | 3   | 3   | 3   | 3   | 3   | 3   | 2   | 2   |
|           |  | 2                | 3         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           |  | 7 to 27 Degrees  | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   |
|           |  | 2                | 2         | 2                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           |  | 28 to 45 Degrees | 1         | 3                         | 3   | 3   | 3   | 3   | 3   | 2   | 2   | 2   |
|           |  | 2                | 3         | 3                         | 3   | 3   | 3   | 2   | 2   | 2   | 0   |     |
|           | C  | 0 to 6 Degrees   | 1         | 3                         | 3   | 3   | 3   | 2   | 2   | 2   | 0   | 0   |
|           |  | 2                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 7 to 27 Degrees  | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 0   | 0   |
|           |  | 2                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 28 to 45 Degrees | 1         | 3                         | 3   | 3   | 3   | 2   | 2   | 0   | 0   | 0   |
|           |  | 2                | 3         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
| D         | 0 to 6 Degrees   | 1                | 3         | 3                         | 3   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           | 2  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
|           | 7 to 27 Degrees  | 1                | 2         | 2                         | 2   | 2   | 2   | 2   | 0   | 0   | 0   |     |
|           | 2  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
|           | 28 to 45 Degrees   | 1                | 3         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           | 2  | 2                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   |     |     |
| 61-70 PSF | B  | 0 to 6 Degrees   | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   |
|           |  | 2                | 2         | 2                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           |  | 7 to 27 Degrees  | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   |
|           |  | 2                | 2         | 2                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           |  | 28 to 45 Degrees | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   |
|           |  | 2                | 2         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   |     |
|           | C  | 0 to 6 Degrees   | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 0   | 0   |
|           |  | 2                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 7 to 27 Degrees  | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 0   | 0   |
|           |  | 2                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 28 to 45 Degrees | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 0   | 0   | 0   |
|           |  | 2                | 2         | 2                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
| D         | 0 to 6 Degrees   | 1                | 2         | 2                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           | 2  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
|           | 7 to 27 Degrees  | 1                | 2         | 2                         | 2   | 2   | 2   | 2   | 0   | 0   | 0   |     |
|           | 2  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
|           | 28 to 45 Degrees   | 1                | 2         | 2                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           | 2  | 2                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   |     |     |

| RT4       | RT-[E] Mount Mini Plywood Only Installations<br>(72 Cell PV Panels)<br>Maximum Mount Spacing in Feet |            |           |                           |     |     |     |     |     |     |     |     |
|-----------|--|------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|           | Portrait Orientation - ASCE 7-10   |            |           |                           |     |     |     |     |     |     |     |     |
| Snow Load | Exposure Category  | Roof Angle | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |
|           |  |            |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| 0 PSF     | B  | 0 to 6     | 1         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |  | Degrees    | 2         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
|           |  | 7 to 27    | 1         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |  | Degrees    | 2         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
|           |  | 28 to 45   | 1         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0   |
|           |  | Degrees    | 2         | 4                         | 3   | 3   | 3   | 2   | 2   | 2   | 0   | 0   |
|           | C  | 0 to 6     | 1         | 4                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 2                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 7 to 27    | 1         | 4                         | 4   | 3   | 3   | 2   | 2   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 28 to 45   | 1         | 3                         | 3   | 3   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
| D         | 0 to 6   | 1          | 3         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           | Degrees  | 2          | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | 7 to 27  | 1          | 3         | 3                         | 3   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           | Degrees  | 2          | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | 28 to 45   | 1          | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           | Degrees  | 2          | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   |     |
| 1-10 PSF  | B  | 0 to 6     | 1         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |  | Degrees    | 2         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
|           |  | 7 to 27    | 1         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |  | Degrees    | 2         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
|           |  | 28 to 45   | 1         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0   |
|           |  | Degrees    | 2         | 4                         | 3   | 3   | 3   | 2   | 2   | 2   | 0   | 0   |
|           | C  | 0 to 6     | 1         | 4                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 2                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 7 to 27    | 1         | 4                         | 4   | 3   | 3   | 2   | 2   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 28 to 45   | 1         | 3                         | 3   | 3   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
| D         | 0 to 6   | 1          | 3         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           | Degrees  | 2          | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | 7 to 27  | 1          | 3         | 3                         | 3   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           | Degrees  | 2          | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | 28 to 45   | 1          | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           | Degrees  | 2          | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   |     |
| 11-20 PSF | B  | 0 to 6     | 1         | 5                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |  | Degrees    | 2         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
|           |  | 7 to 27    | 1         | 4                         | 4   | 4   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |  | Degrees    | 2         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
|           |  | 28 to 45   | 1         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0   |
|           |  | Degrees    | 2         | 4                         | 3   | 3   | 3   | 2   | 2   | 2   | 0   | 0   |
|           | C  | 0 to 6     | 1         | 4                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 2                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 7 to 27    | 1         | 4                         | 4   | 3   | 3   | 2   | 2   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 28 to 45   | 1         | 3                         | 3   | 3   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
| D         | 0 to 6   | 1          | 3         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           | Degrees  | 2          | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | 7 to 27  | 1          | 3         | 3                         | 3   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           | Degrees  | 2          | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | 28 to 45   | 1          | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           | Degrees  | 2          | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   |     |

| RT4       | RT-[E] Mount Mini Plywood Only Installations<br>(72 Cell PV Panels)<br>Maximum Mount Spacing in Feet |                  |           |                           |     |     |     |     |     |     |     |     |
|-----------|--|------------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|           | Portrait Orientation - ASCE 7-10   |                  |           |                           |     |     |     |     |     |     |     |     |
| Snow Load | Exposure Category  | Roof Angle       | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |
|           |  |                  |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| 21-30 PSF | B  | 0 to 6 Degrees   | 1         | 5                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |  | 2                | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 7 to 27 Degrees  | 1         | 4                         | 4   | 4   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |  | 2                | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           | C  | 28 to 45 Degrees | 1         | 4                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0   |
|           |  | 2                | 4         | 3                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   |     |
|           |  | 0 to 6 Degrees   | 1         | 4                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   | 0   |
|           |  | 2                | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | D  | 7 to 27 Degrees  | 1         | 4                         | 4   | 3   | 3   | 2   | 2   | 0   | 0   | 0   |
|           |  | 2                | 2         | 2                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 28 to 45 Degrees | 1         | 3                         | 3   | 3   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | 2                | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
| 31-40 PSF | B  | 0 to 6 Degrees   | 1         | 3                         | 3   | 3   | 3   | 3   | 3   | 2   | 2   | 2   |
|           |  | 2                | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 7 to 27 Degrees  | 1         | 3                         | 3   | 3   | 3   | 3   | 3   | 2   | 2   | 2   |
|           |  | 2                | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           | C  | 28 to 45 Degrees | 1         | 3                         | 3   | 3   | 3   | 3   | 2   | 2   | 2   | 0   |
|           |  | 2                | 3         | 3                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   |     |
|           |  | 0 to 6 Degrees   | 1         | 3                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   | 0   |
|           |  | 2                | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | D  | 7 to 27 Degrees  | 1         | 3                         | 3   | 3   | 3   | 2   | 2   | 0   | 0   | 0   |
|           |  | 2                | 2         | 2                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 28 to 45 Degrees | 1         | 3                         | 3   | 3   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | 2                | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
| 41-50 PSF | B  | 0 to 6 Degrees   | 1         | 3                         | 3   | 3   | 3   | 3   | 3   | 2   | 2   | 2   |
|           |  | 2                | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 7 to 27 Degrees  | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   |
|           |  | 2                | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           | C  | 28 to 45 Degrees | 1         | 3                         | 3   | 3   | 3   | 3   | 2   | 2   | 2   | 0   |
|           |  | 2                | 3         | 3                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   |     |
|           |  | 0 to 6 Degrees   | 1         | 3                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   | 0   |
|           |  | 2                | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | D  | 7 to 27 Degrees  | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 0   | 0   | 0   |
|           |  | 2                | 2         | 2                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 28 to 45 Degrees | 1         | 3                         | 3   | 3   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | 2                | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
| D         | 0 to 6 Degrees   | 1                | 3         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           | 2  | 0                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
|           | 7 to 27 Degrees  | 1                | 2         | 2                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           | 2  | 0                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| D         | 28 to 45 Degrees   | 1                | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           | 2  | 2                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   |     |     |

| RT4       | RT-[E] Mount Mini Plywood Only Installations<br>(72 Cell PV Panels)<br>Maximum Mount Spacing in Feet |                  |           |                           |     |     |     |     |     |     |     |     |   |
|-----------|--|------------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|---|
|           | Portrait Orientation - ASCE 7-10   |                  |           |                           |     |     |     |     |     |     |     |     |   |
| Snow Load | Exposure Category  | Roof Angle       | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |   |
|           |  |                  |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |   |
| 51-60 PSF | B  | 0 to 6 Degrees   | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2 |
|           |  | 2                | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |   |
|           |  | 7 to 27 Degrees  | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2 |
|           |  | 2                | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |   |
|           | C  | 28 to 45 Degrees | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 0 |
|           |  | 2                | 2         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 0   | 0   |   |
|           |  | 0 to 6 Degrees   | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 0   | 0   | 0   |   |
|           |  | 2                | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |   |
|           | D  | 7 to 27 Degrees  | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0 |
|           |  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |   |
|           |  | 28 to 45 Degrees | 1         | 2                         | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0 |
|           |  | 2                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |   |
| 61-70 PSF | B  | 0 to 6 Degrees   | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2 |
|           |  | 2                | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |   |
|           |  | 7 to 27 Degrees  | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           |  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |   |
|           | C  | 28 to 45 Degrees | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 0 |
|           |  | 2                | 2         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 0   | 0   |   |
|           |  | 0 to 6 Degrees   | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 0   | 0   | 0   |   |
|           |  | 2                | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |   |
|           | D  | 7 to 27 Degrees  | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           |  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |   |
|           |  | 28 to 45 Degrees | 1         | 2                         | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0 |
|           |  | 2                | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |   |

| RT5       | RT-[E] Mount Mini OSB Only Installations<br>(60 Cell PV Panels)<br>Maximum Mount Spacing in Feet |                  |           |                           |     |     |     |     |     |     |     |     |
|-----------|--|------------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|           | Portrait Orientation - ASCE 7-10   |                  |           |                           |     |     |     |     |     |     |     |     |
| Snow Load | Exposure Category  | Roof Angle       | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |
|           |  |                  |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| 0 PSF     | B  | 0 to 6 Degrees   | 1         | 6                         | 5   | 4   | 4   | 3   | 2   | 2   | 2   | 0   |
|           |  | 2                | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 7 to 27 Degrees  | 1         | 5                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |  | 2                | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           | C  | 28 to 45 Degrees | 1         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0   |
|           |  | 2                | 4         | 3                         | 3   | 2   | 2   | 2   | 0   | 0   | 0   |     |
|           |  | 0 to 6 Degrees   | 1         | 4                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   | 0   |
|           |  | 2                | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | D  | 7 to 27 Degrees  | 1         | 4                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   | 0   |
|           |  | 2                | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 28 to 45 Degrees | 1         | 3                         | 3   | 2   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | 2                | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
| 1-10 PSF  | B  | 0 to 6 Degrees   | 1         | 3                         | 3   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
|           |  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 7 to 27 Degrees  | 1         | 3                         | 3   | 2   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | C  | 28 to 45 Degrees | 1         | 2                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
|           |  | 2                | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 0 to 6 Degrees   | 1         | 4                         | 4   | 4   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |  | 2                | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           | D  | 7 to 27 Degrees  | 1         | 4                         | 4   | 4   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |  | 2                | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 28 to 45 Degrees | 1         | 4                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0   |
|           |  | 2                | 4         | 3                         | 3   | 2   | 2   | 2   | 0   | 0   | 0   |     |
| 11-20 PSF | B  | 0 to 6 Degrees   | 1         | 4                         | 4   | 4   | 4   | 3   | 3   | 2   | 2   | 0   |
|           |  | 2                | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 7 to 27 Degrees  | 1         | 4                         | 4   | 4   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |  | 2                | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           | C  | 28 to 45 Degrees | 1         | 4                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0   |
|           |  | 2                | 4         | 3                         | 3   | 2   | 2   | 2   | 0   | 0   | 0   |     |
|           |  | 0 to 6 Degrees   | 1         | 4                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   | 0   |
|           |  | 2                | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | D  | 7 to 27 Degrees  | 1         | 4                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   | 0   |
|           |  | 2                | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 28 to 45 Degrees | 1         | 3                         | 3   | 2   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | 2                | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
| D         | 0 to 6 Degrees   | 1                | 3         | 3                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           | 2  | 0                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
|           | 7 to 27 Degrees  | 1                | 3         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           | 2  | 0                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
|           | 28 to 45 Degrees   | 1                | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           | 2  | 2                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   |     |     |
|           | 0 to 6 Degrees   | 1                | 3         | 3                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           | 2  | 0                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   |     |     |

| RT5       | RT-[E] Mount Mini OSB Only Installations<br>(60 Cell PV Panels)<br>Maximum Mount Spacing in Feet |            |           |                           |     |     |     |     |     |     |     |     |   |
|-----------|--|------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|---|
|           | Portrait Orientation - ASCE 7-10   |            |           |                           |     |     |     |     |     |     |     |     |   |
| Snow Load | Exposure Category  | Roof Angle | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |   |
|           |  |            |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |   |
| 21-30 PSF | B  | 0 to 6     | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 0 |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0 |
|           |  | 7 to 27    | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2 |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0 |
|           | C  | 28 to 45   | 1         | 3                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 0 |
|           |  | Degrees    | 2         | 3                         | 2   | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0 |
|           |  | 0 to 6     | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0 |
|           |  | Degrees    | 2         | 2                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           | D  | 7 to 27    | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0 |
|           |  | Degrees    | 2         | 2                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           |  | 28 to 45   | 1         | 2                         | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0 |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0 |
| 31-40 PSF | B  | 0 to 6     | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 0 |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0 |
|           |  | 7 to 27    | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           |  | Degrees    | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           | C  | 28 to 45   | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 0   | 0 |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0 |
|           |  | 0 to 6     | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0 |
|           |  | Degrees    | 2         | 2                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           | D  | 7 to 27    | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           |  | Degrees    | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           |  | 28 to 45   | 1         | 2                         | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0 |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
| 41-50 PSF | B  | 0 to 6     | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           |  | Degrees    | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           |  | 7 to 27    | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           |  | Degrees    | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           | C  | 28 to 45   | 1         | 2                         | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0 |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0 |
|           |  | 0 to 6     | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           |  | Degrees    | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           | D  | 7 to 27    | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           |  | Degrees    | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           |  | 28 to 45   | 1         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           |  | Degrees    | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |



| RT6       | RT-[E] Mount Mini OSB Only Installations<br>(72 Cell PV Panels)<br>Maximum Mount Spacing in Feet |            |           |                           |     |     |     |     |     |     |     |     |
|-----------|--|------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|           | Portrait Orientation - ASCE 7-10   |            |           |                           |     |     |     |     |     |     |     |     |
| Snow Load | Exposure Category  | Roof Angle | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |
|           |  |            |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| 0 PSF     | B  | 0 to 6     | 1         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 0   | 0   |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 7 to 27    | 1         | 5                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0   |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 3   |
|           | C  | 28 to 45   | 1         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   | 0   |
|           |  | Degrees    | 2         | 3                         | 3   | 3   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | 0 to 6     | 1         | 3                         | 3   | 2   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           | D  | 7 to 27    | 1         | 3                         | 3   | 3   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 28 to 45   | 1         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |
| 1-10 PSF  | B  | 0 to 6     | 1         | 3                         | 3   | 3   | 3   | 3   | 2   | 2   | 0   | 0   |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 7 to 27    | 1         | 3                         | 3   | 3   | 3   | 3   | 2   | 2   | 2   | 0   |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |
|           | C  | 28 to 45   | 1         | 3                         | 3   | 3   | 3   | 2   | 2   | 2   | 0   | 0   |
|           |  | Degrees    | 2         | 3                         | 3   | 3   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | 0 to 6     | 1         | 3                         | 3   | 2   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           | D  | 7 to 27    | 1         | 3                         | 3   | 3   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 28 to 45   | 1         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |
| 11-20 PSF | B  | 0 to 6     | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 0   | 0   |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 7 to 27    | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 0   |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |
|           | C  | 28 to 45   | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 0   | 0   |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | 0 to 6     | 1         | 2                         | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           | D  | 7 to 27    | 1         | 2                         | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 28 to 45   | 1         | 2                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
|           |  | Degrees    | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |

| RT6       | RT-[E] Mount Mini OSB Only Installations<br>(72 Cell PV Panels)<br>Maximum Mount Spacing in Feet |                  |           |                           |     |     |     |     |     |     |     |     |
|-----------|--|------------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|           | Portrait Orientation - ASCE 7-10   |                  |           |                           |     |     |     |     |     |     |     |     |
| Snow Load | Exposure Category  | Roof Angle       | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |
|           |  |                  |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| 21-30 PSF | B  | 0 to 6 Degrees   | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 0   | 0   |
|           |  | 2                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 7 to 27 Degrees  | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 0   |
|           |  | 2                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 28 to 45 Degrees | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 0   | 0   |
|           |  | 2                | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           | C  | 0 to 6 Degrees   | 1         | 2                         | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 7 to 27 Degrees  | 1         | 2                         | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0   |
|           |  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 28 to 45 Degrees | 1         | 2                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
|           |  | 2                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   |     |
| D         | 0 to 6 Degrees   | 1                | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           | 2  | 0                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | 7 to 27 Degrees  | 1                | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |
|           | 2  | 0                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | 28 to 45 Degrees   | 1                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | 2  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| 31-40 PSF | B  | 0 to 6 Degrees   | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 7 to 27 Degrees  | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 28 to 45 Degrees | 1         | 2                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |
|           |  | 2                | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | C  | 0 to 6 Degrees   | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 7 to 27 Degrees  | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 28 to 45 Degrees | 1         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 2                | 2         | 2                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
| D         | 0 to 6 Degrees   | 1                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | 2  | 0                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | 7 to 27 Degrees  | 1                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | 2  | 0                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | 28 to 45 Degrees   | 1                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | 2  | 0                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| 41-50 PSF | B  | 0 to 6 Degrees   | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 7 to 27 Degrees  | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           |  | 28 to 45 Degrees | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | C  | 0 to 6 Degrees   | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 7 to 27 Degrees  | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 28 to 45 Degrees | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
|           |  | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
| D         | 0 to 6 Degrees   | 1                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | 2  | 0                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | 7 to 27 Degrees  | 1                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | 2  | 0                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | 28 to 45 Degrees   | 1                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   |     |
|           | 2  | 0                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   |     |     |

| RT7       | RT-[E] Mount Mini Rafter Installations Cont.<br>Maximum Mount Spacing in Feet |                  |           |                           |     |     |     |     |     |     |     |     |   |
|-----------|---|------------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|---|
|           | Landscape Orientation - ASCE 7-10   |                  |           |                           |     |     |     |     |     |     |     |     |   |
| Snow Load | Exposure Category   | Roof Angle       | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |   |
|           |   |                  |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |   |
| 0 PSF     | B   | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   |   |
|           |   | 2                | 8         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 5   |     |   |
|           |   | 7 to 27 Degrees  | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   |   |
|           |   | 2                | 8         | 8                         | 8   | 8   | 8   | 7   | 6   | 6   | 5   |     |   |
|           | C   | 28 to 45 Degrees | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8 |
|           |   | 2                | 8         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7   |   |
|           |   | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6 |
|           |   | 2                | 8         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   |   |
|           | D   | 7 to 27 Degrees  | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7 |
|           |   | 2                | 8         | 8                         | 8   | 7   | 6   | 5   | 4   | 4   | 4   | 3   |   |
|           |   | 28 to 45 Degrees | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6 |
|           |   | 2                | 8         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 5   | 5   |   |
| 1-10 PSF  | B   | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   |   |
|           |   | 2                | 8         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 5   |     |   |
|           |   | 7 to 27 Degrees  | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   |   |
|           |   | 2                | 8         | 8                         | 8   | 8   | 8   | 7   | 6   | 6   | 5   |     |   |
|           | C   | 28 to 45 Degrees | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8 |
|           |   | 2                | 8         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7   |   |
|           |   | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6 |
|           |   | 2                | 8         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   |   |
|           | D   | 7 to 27 Degrees  | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7 |
|           |   | 2                | 8         | 8                         | 8   | 7   | 6   | 5   | 4   | 4   | 4   | 3   |   |
|           |   | 28 to 45 Degrees | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6   | 5 |
|           |   | 2                | 8         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 5   | 4   |   |
| 11-20 PSF | B   | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   |   |
|           |   | 2                | 8         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 5   |     |   |
|           |   | 7 to 27 Degrees  | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   |   |
|           |   | 2                | 8         | 8                         | 8   | 8   | 8   | 7   | 6   | 6   | 5   |     |   |
|           | C   | 28 to 45 Degrees | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8 |
|           |   | 2                | 8         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7   |   |
|           |   | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6 |
|           |   | 2                | 8         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   |   |
|           | D   | 7 to 27 Degrees  | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7 |
|           |   | 2                | 8         | 8                         | 8   | 7   | 6   | 5   | 4   | 4   | 4   | 3   |   |
|           |   | 28 to 45 Degrees | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6 |
|           |   | 2                | 8         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 5   | 5   |   |
| D         | 0 to 6 Degrees  | 1                | 8         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5   |   |
|           | 2   | 8                | 7         | 7                         | 6   | 5   | 4   | 3   | 3   | 3   | 3   |     |   |
|           | 7 to 27 Degrees   | 1                | 8         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6   |   |
|           | 2   | 8                | 8         | 7                         | 6   | 5   | 4   | 4   | 3   | 3   |     |     |   |
|           | 28 to 45 Degrees  | 1                | 8         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 6   | 5   |   |
|           | 2   | 8                | 8         | 8                         | 8   | 7   | 6   | 5   | 5   | 4   |     |     |   |

| RT7       | RT-[E] Mount Mini Rafter Installations Cont.<br>Maximum Mount Spacing in Feet |            |           |                           |     |     |     |     |     |     |     |     |   |
|-----------|---|------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|---|
|           | Landscape Orientation - ASCE 7-10   |            |           |                           |     |     |     |     |     |     |     |     |   |
| Snow Load | Exposure Category   | Roof Angle | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |   |
|           |   |            |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |   |
| 21-30 PSF | B   | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8 |
|           |   | Degrees    | 2         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5   |   |
|           |   | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8 |
|           |   | Degrees    | 2         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 6   | 5   |   |
|           |   | 28 to 45   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8 |
|           |   | Degrees    | 2         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7 |
|           | C   | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6 |
|           |   | Degrees    | 2         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   |   |
|           |   | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7 |
|           |   | Degrees    | 2         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   |   |
|           |   | 28 to 45   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6 |
|           |   | Degrees    | 2         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5   |   |
| D         | 0 to 6  | 1          | 8         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5   |   |
|           | Degrees   | 2          | 8         | 7                         | 7   | 6   | 5   | 4   | 3   | 3   | 3   |     |   |
|           | 7 to 27   | 1          | 8         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6   |   |
|           | Degrees   | 2          | 8         | 8                         | 7   | 6   | 5   | 4   | 4   | 3   | 3   |     |   |
|           | 28 to 45  | 1          | 8         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 6   | 5   |   |
|           | Degrees   | 2          | 8         | 8                         | 8   | 8   | 7   | 6   | 5   | 5   | 4   |     |   |
| 31-40 PSF | B   | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8 |
|           |   | Degrees    | 2         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5   |   |
|           |   | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8 |
|           |   | Degrees    | 2         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 6   | 5   |   |
|           |   | 28 to 45   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8 |
|           |   | Degrees    | 2         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7 |
|           | C   | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6 |
|           |   | Degrees    | 2         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   |   |
|           |   | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7 |
|           |   | Degrees    | 2         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   |   |
|           |   | 28 to 45   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6 |
|           |   | Degrees    | 2         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5   |   |
| D         | 0 to 6  | 1          | 8         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5   |   |
|           | Degrees   | 2          | 8         | 7                         | 7   | 6   | 5   | 4   | 3   | 3   | 3   |     |   |
|           | 7 to 27   | 1          | 8         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6   |   |
|           | Degrees   | 2          | 8         | 8                         | 7   | 6   | 5   | 4   | 4   | 3   | 3   |     |   |
|           | 28 to 45  | 1          | 8         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 6   | 5   |   |
|           | Degrees   | 2          | 8         | 8                         | 8   | 8   | 7   | 6   | 5   | 5   | 4   |     |   |
| 41-50 PSF | B   | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8 |
|           |   | Degrees    | 2         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5   |   |
|           |   | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8 |
|           |   | Degrees    | 2         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 6   | 5   |   |
|           |   | 28 to 45   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8 |
|           |   | Degrees    | 2         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7 |
|           | C   | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6 |
|           |   | Degrees    | 2         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   |   |
|           |   | 7 to 27    | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7 |
|           |   | Degrees    | 2         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   |   |
|           |   | 28 to 45   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6 |
|           |   | Degrees    | 2         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5   |   |
| D         | 0 to 6  | 1          | 8         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5   |   |
|           | Degrees   | 2          | 8         | 7                         | 7   | 6   | 5   | 4   | 3   | 3   | 3   |     |   |
|           | 7 to 27   | 1          | 8         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6   |   |
|           | Degrees   | 2          | 8         | 8                         | 7   | 6   | 5   | 4   | 4   | 3   | 3   |     |   |
|           | 28 to 45  | 1          | 8         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 6   | 5   |   |
|           | Degrees   | 2          | 8         | 8                         | 8   | 8   | 7   | 6   | 5   | 5   | 4   |     |   |

| RT7              | RT-[E] Mount Mini Rafter Installations Cont.<br>Maximum Mount Spacing in Feet |                  |           |                           |     |     |     |     |     |     |     |     |   |   |
|------------------|---|------------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|---|---|
|                  | Landscape Orientation - ASCE 7-10   |                  |           |                           |     |     |     |     |     |     |     |     |   |   |
| Snow Load        | Exposure Category   | Roof Angle       | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |   |   |
|                  |   |                  |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |   |   |
| 51-60 PSF        | B   | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8 |   |
|                  |   |                  | 2         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5   | 5 |   |
|                  |   | 7 to 27 Degrees  | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8 | 8 |
|                  |   |                  | 2         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6   | 5 | 5 |
|                  |   | 28 to 45 Degrees | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8 | 8 |
|                  |   |                  | 2         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8 | 7 |
|                  | C   | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6 |   |
|                  |   |                  | 2         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3 |   |
|                  |   | 7 to 27 Degrees  | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7 |   |
|                  |   |                  | 2         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3 |   |
|                  |   | 28 to 45 Degrees | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6 |   |
|                  |   |                  | 2         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5 |   |
|                  | D   | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5 |   |
|                  |   |                  | 2         | 8                         | 7   | 7   | 6   | 5   | 4   | 3   | 3   | 3   | 3 |   |
|                  |   | 7 to 27 Degrees  | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6 |   |
|                  |   | 2                | 8         | 8                         | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 3   |   |   |
| 28 to 45 Degrees |   | 1                | 8         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 6   | 5   |   |   |
|                  |   | 2                | 8         | 8                         | 8   | 8   | 7   | 6   | 5   | 5   | 5   | 4   |   |   |
| 61-70 PSF        | B   | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8 |   |
|                  |   |                  | 2         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5   | 5 |   |
|                  |   | 7 to 27 Degrees  | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8 |   |
|                  |   |                  | 2         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 6   | 5   | 5 |   |
|                  |   | 28 to 45 Degrees | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8 |   |
|                  |   |                  | 2         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7 |   |
|                  | C   | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6 |   |
|                  |   |                  | 2         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3 |   |
|                  |   | 7 to 27 Degrees  | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7 |   |
|                  |   |                  | 2         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3 |   |
|                  |   | 28 to 45 Degrees | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6 |   |
|                  |   |                  | 2         | 8                         | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5   | 5 |   |
|                  | D   | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 5 |   |
|                  |   |                  | 2         | 8                         | 7   | 7   | 6   | 5   | 4   | 3   | 3   | 3   | 3 |   |
|                  |   | 7 to 27 Degrees  | 1         | 8                         | 8   | 8   | 8   | 8   | 8   | 8   | 7   | 6   | 6 |   |
|                  |   | 2                | 8         | 8                         | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 3   |   |   |
| 28 to 45 Degrees |   | 1                | 8         | 8                         | 8   | 8   | 8   | 8   | 7   | 6   | 6   | 5   |   |   |
|                  |   | 2                | 8         | 8                         | 8   | 8   | 7   | 6   | 5   | 5   | 5   | 4   |   |   |

| RT8       | RT-[E] Mount Mini Plywood Only Installations<br>Maximum Mount Spacing in Feet |                  |           |                           |     |     |     |     |     |     |     |     |
|-----------|---|------------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|           | Landscape Orientation - ASCE 7-10   |                  |           |                           |     |     |     |     |     |     |     |     |
| Snow Load | Exposure Category   | Roof Angle       | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |
|           |   |                  |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| 0 PSF     | B   | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 6   | 5   | 5   | 4   | 3   |
|           |   | 2                | 6         | 5                         | 5   | 4   | 3   | 2   | 2   | 2   |     |     |
|           |   | 7 to 27 Degrees  | 1         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   |
|           |   | 2                | 6         | 5                         | 5   | 4   | 3   | 3   | 2   | 2   | 2   |     |
|           | C   | 28 to 45 Degrees | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   |
|           |   | 2                | 8         | 7                         | 7   | 6   | 5   | 4   | 3   | 3   | 3   |     |
|           |   | 0 to 6 Degrees   | 1         | 8                         | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 2   |
|           |   | 2                | 4         | 3                         | 3   | 2   | 2   | 2   | 0   | 0   | 0   |     |
|           | D   | 7 to 27 Degrees  | 1         | 8                         | 7   | 7   | 5   | 5   | 4   | 3   | 3   | 3   |
|           |   | 2                | 4         | 3                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   | 0   |
|           |   | 28 to 45 Degrees | 1         | 7                         | 6   | 6   | 5   | 4   | 3   | 3   | 2   | 2   |
|           |   | 2                | 6         | 5                         | 5   | 4   | 3   | 3   | 2   | 2   | 2   |     |
| 1-10 PSF  | B   | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 6   | 5   | 5   | 4   | 3   |
|           |   | 2                | 6         | 5                         | 5   | 4   | 3   | 3   | 2   | 2   | 2   |     |
|           |   | 7 to 27 Degrees  | 1         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   |
|           |   | 2                | 6         | 5                         | 5   | 4   | 3   | 3   | 2   | 2   | 2   |     |
|           | C   | 28 to 45 Degrees | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   |
|           |   | 2                | 8         | 7                         | 7   | 6   | 5   | 4   | 3   | 3   | 3   |     |
|           |   | 0 to 6 Degrees   | 1         | 8                         | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 2   |
|           |   | 2                | 4         | 3                         | 3   | 2   | 2   | 2   | 0   | 0   | 0   |     |
|           | D   | 7 to 27 Degrees  | 1         | 8                         | 7   | 7   | 5   | 5   | 4   | 3   | 3   | 3   |
|           |   | 2                | 4         | 3                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   | 0   |
|           |   | 28 to 45 Degrees | 1         | 7                         | 6   | 6   | 5   | 4   | 3   | 3   | 2   | 2   |
|           |   | 2                | 6         | 5                         | 5   | 4   | 3   | 3   | 2   | 2   | 2   |     |
| 11-20 PSF | B   | 0 to 6 Degrees   | 1         | 6                         | 6   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |   | 2                | 3         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           |   | 7 to 27 Degrees  | 1         | 7                         | 6   | 5   | 5   | 4   | 3   | 3   | 2   | 2   |
|           |   | 2                | 3         | 3                         | 3   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           | C   | 28 to 45 Degrees | 1         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |   | 2                | 5         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   |     |
|           |   | 0 to 6 Degrees   | 1         | 8                         | 8   | 8   | 8   | 6   | 5   | 5   | 4   | 3   |
|           |   | 2                | 6         | 5                         | 5   | 4   | 3   | 3   | 2   | 2   | 2   |     |
|           | D   | 7 to 27 Degrees  | 1         | 8                         | 8   | 8   | 8   | 7   | 6   | 5   | 4   | 4   |
|           |   | 2                | 6         | 5                         | 5   | 4   | 3   | 3   | 2   | 2   | 2   |     |
|           |   | 28 to 45 Degrees | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   |
|           |   | 2                | 8         | 7                         | 7   | 6   | 5   | 4   | 3   | 3   | 3   |     |
| 11-20 PSF | C   | 0 to 6 Degrees   | 1         | 8                         | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 2   |
|           |   | 2                | 4         | 3                         | 3   | 2   | 2   | 2   | 0   | 0   | 0   |     |
|           |   | 7 to 27 Degrees  | 1         | 8                         | 7   | 7   | 5   | 5   | 4   | 3   | 3   | 3   |
|           |   | 2                | 4         | 3                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   | 0   |
|           | D   | 28 to 45 Degrees | 1         | 7                         | 6   | 6   | 5   | 4   | 3   | 3   | 2   | 2   |
|           |   | 2                | 6         | 5                         | 5   | 4   | 3   | 3   | 2   | 2   | 2   |     |
|           |   | 0 to 6 Degrees   | 1         | 6                         | 6   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |   | 2                | 3         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
| D         | 7 to 27 Degrees   | 1                | 7         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   |     |
|           | 2   | 3                | 3         | 3                         | 2   | 2   | 0   | 0   | 0   | 0   |     |     |
|           | 28 to 45 Degrees  | 1                | 6         | 5                         | 5   | 4   | 3   | 3   | 2   | 2   | 2   |     |
|           | 2   | 5                | 4         | 4                         | 3   | 3   | 2   | 2   | 2   | 0   |     |     |

| RT8       | RT-[E] Mount Mini Plywood Only Installations<br>Maximum Mount Spacing in Feet |            |           |                           |     |     |     |     |     |     |     |     |
|-----------|---|------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|           | Landscape Orientation - ASCE 7-10   |            |           |                           |     |     |     |     |     |     |     |     |
| Snow Load | Exposure Category   | Roof Angle | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |
|           |   |            |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| 21-30 PSF | B   | 0 to 6     | 1         | 8                         | 8   | 8   | 8   | 6   | 5   | 5   | 4   | 3   |
|           |   | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |   | 7 to 27    | 1         | 7                         | 7   | 7   | 7   | 7   | 6   | 5   | 4   | 4   |
|           |   | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           | C   | 28 to 45   | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   |
|           |   | Degrees    | 2         | 8                         | 7   | 7   | 6   | 5   | 4   | 3   | 3   | 3   |
|           |   | 0 to 6     | 1         | 8                         | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 2   |
|           |   | Degrees    | 2         | 4                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   | 0   |
|           | D   | 7 to 27    | 1         | 7                         | 7   | 7   | 5   | 5   | 4   | 3   | 3   | 3   |
|           |   | Degrees    | 2         | 4                         | 3   | 3   | 3   | 2   | 2   | 0   | 0   | 0   |
|           |   | 28 to 45   | 1         | 7                         | 6   | 6   | 5   | 4   | 3   | 3   | 2   | 2   |
|           |   | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
| 31-40 PSF | B   | 0 to 6     | 1         | 7                         | 7   | 7   | 7   | 6   | 5   | 5   | 4   | 3   |
|           |   | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |   | 7 to 27    | 1         | 6                         | 6   | 6   | 6   | 6   | 6   | 5   | 4   | 4   |
|           |   | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           | C   | 28 to 45   | 1         | 7                         | 7   | 7   | 7   | 6   | 5   | 4   | 4   | 3   |
|           |   | Degrees    | 2         | 7                         | 7   | 7   | 6   | 5   | 4   | 3   | 3   | 3   |
|           |   | 0 to 6     | 1         | 7                         | 7   | 6   | 5   | 4   | 4   | 3   | 3   | 2   |
|           |   | Degrees    | 2         | 4                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   | 0   |
|           | D   | 7 to 27    | 1         | 6                         | 6   | 6   | 5   | 5   | 4   | 3   | 3   | 3   |
|           |   | Degrees    | 2         | 4                         | 3   | 3   | 3   | 2   | 2   | 0   | 0   | 0   |
|           |   | 28 to 45   | 1         | 7                         | 6   | 6   | 5   | 4   | 3   | 3   | 2   | 2   |
|           |   | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
| 41-50 PSF | B   | 0 to 6     | 1         | 6                         | 6   | 6   | 6   | 6   | 5   | 5   | 4   | 3   |
|           |   | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           |   | 7 to 27    | 1         | 5                         | 5   | 5   | 5   | 5   | 5   | 5   | 4   | 4   |
|           |   | Degrees    | 2         | 5                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|           | C   | 28 to 45   | 1         | 6                         | 6   | 6   | 6   | 6   | 5   | 4   | 4   | 3   |
|           |   | Degrees    | 2         | 6                         | 6   | 6   | 6   | 5   | 4   | 3   | 3   | 3   |
|           |   | 0 to 6     | 1         | 6                         | 6   | 6   | 5   | 4   | 4   | 3   | 3   | 2   |
|           |   | Degrees    | 2         | 4                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   | 0   |
|           | D   | 7 to 27    | 1         | 5                         | 5   | 5   | 5   | 5   | 4   | 3   | 3   | 3   |
|           |   | Degrees    | 2         | 4                         | 3   | 3   | 3   | 3   | 2   | 2   | 0   | 0   |
|           |   | 28 to 45   | 1         | 6                         | 6   | 6   | 5   | 4   | 3   | 3   | 2   | 2   |
|           |   | Degrees    | 2         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
| D         | 0 to 6  | 1          | 6         | 6                         | 5   | 4   | 3   | 3   | 2   | 2   | 2   |     |
|           | Degrees   | 2          | 3         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|           | 7 to 27   | 1          | 5         | 5                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   |     |
|           | Degrees   | 2          | 3         | 3                         | 3   | 2   | 2   | 0   | 0   | 0   | 0   |     |
| D         | 28 to 45  | 1          | 6         | 5                         | 5   | 4   | 3   | 3   | 2   | 2   | 2   |     |
|           | Degrees   | 2          | 5         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   |     |

| RT8                               |                   | RT-[E] Mount Mini Plywood Only Installations<br>Maximum Mount Spacing in Feet |           |                           |     |     |     |     |     |     |     |     |
|-----------------------------------|-------------------|---|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Landscape Orientation - ASCE 7-10 |                   |   |           |                           |     |     |     |     |     |     |     |     |
| Snow Load                         | Exposure Category | Roof Angle  | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |
|                                   |                   |   |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| 51-60 PSF                         | B                 | 0 to 6 Degrees  | 1         | 5                         | 5   | 5   | 5   | 5   | 5   | 5   | 4   | 3   |
|                                   |                   | 2   | 5         | 5                         | 5   | 4   | 3   | 2   | 2   | 2   |     |     |
|                                   |                   | 7 to 27 Degrees   | 1         | 4                         | 4   | 4   | 4   | 4   | 4   | 4   | 4   | 4   |
|                                   |                   | 2   | 4         | 4                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   |     |
|                                   | C                 | 28 to 45 Degrees  | 1         | 5                         | 5   | 5   | 5   | 5   | 5   | 4   | 4   | 3   |
|                                   |                   | 2   | 5         | 5                         | 5   | 5   | 5   | 4   | 3   | 3   | 3   |     |
|                                   |                   | 0 to 6 Degrees  | 1         | 5                         | 5   | 5   | 5   | 4   | 4   | 3   | 3   | 2   |
|                                   |                   | 2   | 4         | 3                         | 3   | 2   | 2   | 2   | 0   | 0   | 0   |     |
|                                   | D                 | 7 to 27 Degrees   | 1         | 4                         | 4   | 4   | 4   | 4   | 4   | 3   | 3   | 3   |
|                                   |                   | 2   | 4         | 3                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   | 0   |
|                                   |                   | 28 to 45 Degrees  | 1         | 5                         | 5   | 5   | 5   | 4   | 3   | 3   | 2   | 2   |
|                                   |                   | 2   | 5         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 2   | 0   |
| 61-70 PSF                         | B                 | 0 to 6 Degrees  | 1         | 4                         | 4   | 4   | 4   | 4   | 4   | 4   | 4   | 3   |
|                                   |                   | 2   | 4         | 4                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   |     |
|                                   |                   | 7 to 27 Degrees   | 1         | 3                         | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   |
|                                   |                   | 2   | 3         | 3                         | 3   | 3   | 3   | 3   | 2   | 2   | 2   |     |
|                                   | C                 | 28 to 45 Degrees  | 1         | 4                         | 4   | 4   | 4   | 4   | 4   | 4   | 4   | 3   |
|                                   |                   | 2   | 4         | 4                         | 4   | 4   | 4   | 4   | 3   | 3   | 2   | 2   |
|                                   |                   | 0 to 6 Degrees  | 1         | 4                         | 4   | 4   | 4   | 4   | 4   | 3   | 3   | 2   |
|                                   |                   | 2   | 4         | 3                         | 3   | 2   | 2   | 2   | 0   | 0   | 0   |     |
|                                   | D                 | 7 to 27 Degrees   | 1         | 3                         | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   |
|                                   |                   | 2   | 3         | 3                         | 3   | 3   | 2   | 2   | 0   | 0   | 0   |     |
|                                   |                   | 28 to 45 Degrees  | 1         | 4                         | 4   | 4   | 4   | 4   | 3   | 3   | 2   | 2   |
|                                   |                   | 2   | 4         | 4                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   |     |
| D                                 | 0 to 6 Degrees    | 1   | 4         | 4                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   |     |
|                                   | 2                 | 3   | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   |     |     |
|                                   | 7 to 27 Degrees   | 1   | 3         | 3                         | 3   | 3   | 3   | 3   | 3   | 2   | 2   |     |
|                                   | 2                 | 3   | 3         | 3                         | 2   | 2   | 0   | 0   | 0   | 0   |     |     |
| D                                 | 28 to 45 Degrees  | 1   | 4         | 4                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   |     |
|                                   | 2                 | 4   | 4         | 4                         | 3   | 3   | 2   | 2   | 2   | 2   | 0   |     |



| RT9                               |                   | RT-[E] Mount Mini OSB Only Installations Cont.<br>Maximum Mount Spacing in Feet |           |                           |     |     |     |     |     |     |     |     |
|-----------------------------------|-------------------|---|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Landscape Orientation - ASCE 7-10 |                   |   |           |                           |     |     |     |     |     |     |     |     |
| Snow Load                         | Exposure Category | Roof Angle  | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |
|                                   |                   |   |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| 0 PSF                             | B                 | 0 to 6 Degrees  | 1         | 8                         | 8   | 8   | 6   | 5   | 5   | 4   | 3   | 3   |
|                                   |                   | 2   | 5         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   |     |
|                                   |                   | 7 to 27 Degrees   | 1         | 8                         | 8   | 8   | 7   | 6   | 5   | 4   | 4   | 3   |
|                                   |                   | 2   | 5         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   |     |
|                                   | C                 | 28 to 45 Degrees  | 1         | 8                         | 7   | 7   | 6   | 5   | 4   | 3   | 3   | 3   |
|                                   |                   | 2   | 7         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   |     |
|                                   |                   | 0 to 6 Degrees  | 1         | 6                         | 6   | 5   | 4   | 4   | 3   | 3   | 2   | 2   |
|                                   |                   | 2   | 3         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|                                   | D                 | 7 to 27 Degrees   | 1         | 7                         | 6   | 5   | 5   | 4   | 3   | 3   | 2   | 2   |
|                                   |                   | 2   | 3         | 3                         | 3   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|                                   |                   | 28 to 45 Degrees  | 1         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|                                   |                   | 2   | 5         | 4                         | 4   | 3   | 2   | 2   | 2   | 2   | 0   |     |
| 1-10 PSF                          | B                 | 0 to 6 Degrees  | 1         | 7                         | 7   | 7   | 6   | 5   | 5   | 4   | 3   | 3   |
|                                   |                   | 2   | 5         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   |     |
|                                   |                   | 7 to 27 Degrees   | 1         | 7                         | 7   | 7   | 7   | 6   | 5   | 4   | 4   | 3   |
|                                   |                   | 2   | 5         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   |     |
|                                   | C                 | 28 to 45 Degrees  | 1         | 7                         | 7   | 7   | 6   | 5   | 4   | 3   | 3   | 3   |
|                                   |                   | 2   | 7         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   |     |
|                                   |                   | 0 to 6 Degrees  | 1         | 6                         | 6   | 5   | 4   | 4   | 3   | 3   | 2   | 2   |
|                                   |                   | 2   | 3         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|                                   | D                 | 7 to 27 Degrees   | 1         | 7                         | 6   | 5   | 5   | 4   | 3   | 3   | 2   | 2   |
|                                   |                   | 2   | 3         | 3                         | 3   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|                                   |                   | 28 to 45 Degrees  | 1         | 6                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   | 2   |
|                                   |                   | 2   | 5         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   |     |
| 11-20 PSF                         | B                 | 0 to 6 Degrees  | 1         | 5                         | 5   | 5   | 5   | 5   | 5   | 4   | 3   | 3   |
|                                   |                   | 2   | 5         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   |     |
|                                   |                   | 7 to 27 Degrees   | 1         | 4                         | 4   | 4   | 4   | 4   | 4   | 4   | 4   | 3   |
|                                   |                   | 2   | 4         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   |     |
|                                   | C                 | 28 to 45 Degrees  | 1         | 5                         | 5   | 5   | 5   | 4   | 4   | 3   | 3   | 3   |
|                                   |                   | 2   | 5         | 5                         | 5   | 5   | 4   | 3   | 3   | 2   | 2   |     |
|                                   |                   | 0 to 6 Degrees  | 1         | 5                         | 5   | 5   | 4   | 4   | 3   | 3   | 2   | 2   |
|                                   |                   | 2   | 3         | 3                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|                                   | D                 | 7 to 27 Degrees   | 1         | 4                         | 4   | 4   | 4   | 4   | 3   | 3   | 2   | 2   |
|                                   |                   | 2   | 3         | 3                         | 3   | 2   | 2   | 0   | 0   | 0   | 0   |     |
|                                   |                   | 28 to 45 Degrees  | 1         | 5                         | 5   | 4   | 4   | 3   | 3   | 2   | 2   | 2   |
|                                   |                   | 2   | 5         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   |     |
| D                                 | 0 to 6 Degrees    | 1   | 5         | 5                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   |     |
|                                   | 2                 | 2   | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   |     |     |
|                                   | 7 to 27 Degrees   | 1   | 4         | 4                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   |     |
|                                   | 2                 | 3   | 2         | 2                         | 2   | 0   | 0   | 0   | 0   | 0   |     |     |
| D                                 | 28 to 45 Degrees  | 1   | 4         | 4                         | 4   | 3   | 3   | 2   | 2   | 2   | 0   |     |
|                                   | 2                 | 4   | 3         | 3                         | 3   | 2   | 2   | 0   | 0   | 0   |     |     |

| RT9       | RT-[E] Mount Mini OSB Only Installations Cont.<br>Maximum Mount Spacing in Feet |            |           |                           |     |     |     |     |     |     |     |     |   |
|-----------|---|------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|---|
|           | Landscape Orientation - ASCE 7-10   |            |           |                           |     |     |     |     |     |     |     |     |   |
| Snow Load | Exposure Category   | Roof Angle | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |   |
|           |   |            |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |   |
| 21-30 PSF | B   | 0 to 6     | 1         | 4                         | 4   | 4   | 4   | 4   | 4   | 4   | 3   | 3   |   |
|           |   | Degrees    | 2         | 4                         | 4   | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0 |
|           |   | 7 to 27    | 1         | 4                         | 4   | 4   | 4   | 4   | 4   | 4   | 4   | 3   | 3 |
|           |   | Degrees    | 2         | 4                         | 4   | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0 |
|           |   | 28 to 45   | 1         | 5                         | 5   | 4   | 4   | 4   | 4   | 4   | 3   | 3   | 3 |
|           |   | Degrees    | 2         | 5                         | 5   | 4   | 4   | 4   | 4   | 3   | 3   | 2   | 2 |
|           | C   | 0 to 6     | 1         | 4                         | 4   | 4   | 4   | 4   | 4   | 3   | 3   | 2   | 2 |
|           |   | Degrees    | 2         | 3                         | 3   | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0 |
|           |   | 7 to 27    | 1         | 4                         | 4   | 4   | 4   | 4   | 4   | 3   | 3   | 2   | 2 |
|           |   | Degrees    | 2         | 3                         | 3   | 3   | 2   | 2   | 2   | 0   | 0   | 0   | 0 |
|           |   | 28 to 45   | 1         | 4                         | 4   | 4   | 4   | 4   | 3   | 3   | 2   | 2   | 2 |
|           |   | Degrees    | 2         | 4                         | 4   | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0 |
| D         | 0 to 6  | 1          | 4         | 4                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0   |   |
|           | Degrees   | 2          | 2         | 2                         | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0   |   |
|           | 7 to 27   | 1          | 4         | 4                         | 4   | 4   | 4   | 3   | 3   | 2   | 2   | 2   |   |
|           | Degrees   | 2          | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |   |
|           | 28 to 45  | 1          | 4         | 4                         | 4   | 4   | 3   | 3   | 2   | 2   | 2   | 0   |   |
|           | Degrees   | 2          | 4         | 3                         | 3   | 3   | 3   | 2   | 2   | 0   | 0   | 0   |   |
| 31-40 PSF | B   | 0 to 6     | 1         | 3                         | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   |   |
|           |   | Degrees    | 2         | 3                         | 3   | 3   | 3   | 3   | 3   | 2   | 2   | 2   | 0 |
|           |   | 7 to 27    | 1         | 3                         | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3 |
|           |   | Degrees    | 2         | 3                         | 3   | 3   | 3   | 3   | 2   | 2   | 2   | 0   |   |
|           |   | 28 to 45   | 1         | 4                         | 4   | 4   | 4   | 4   | 3   | 3   | 3   | 3   | 3 |
|           |   | Degrees    | 2         | 4                         | 4   | 4   | 4   | 3   | 3   | 3   | 3   | 2   | 2 |
|           | C   | 0 to 6     | 1         | 3                         | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 2   | 2 |
|           |   | Degrees    | 2         | 3                         | 3   | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0 |
|           |   | 7 to 27    | 1         | 3                         | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 2   | 2 |
|           |   | Degrees    | 2         | 3                         | 3   | 3   | 2   | 2   | 0   | 0   | 0   | 0   | 0 |
|           |   | 28 to 45   | 1         | 4                         | 3   | 3   | 3   | 3   | 3   | 3   | 2   | 2   | 2 |
|           |   | Degrees    | 2         | 4                         | 3   | 3   | 3   | 3   | 2   | 2   | 2   | 2   | 0 |
| D         | 0 to 6  | 1          | 3         | 3                         | 3   | 3   | 3   | 3   | 2   | 2   | 2   | 0   |   |
|           | Degrees   | 2          | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |   |
|           | 7 to 27   | 1          | 3         | 3                         | 3   | 3   | 3   | 3   | 3   | 2   | 2   | 2   |   |
|           | Degrees   | 2          | 3         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |   |
|           | 28 to 45  | 1          | 3         | 3                         | 3   | 3   | 3   | 3   | 2   | 2   | 2   | 0   |   |
|           | Degrees   | 2          | 3         | 3                         | 3   | 3   | 2   | 2   | 0   | 0   | 0   | 0   |   |
| 41-50 PSF | B   | 0 to 6     | 1         | 3                         | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   |   |
|           |   | Degrees    | 2         | 3                         | 3   | 3   | 3   | 3   | 2   | 2   | 2   | 0   |   |
|           |   | 7 to 27    | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   |   |
|           |   | Degrees    | 2         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 0   |   |
|           |   | 28 to 45   | 1         | 3                         | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   |   |
|           |   | Degrees    | 2         | 3                         | 3   | 3   | 3   | 3   | 3   | 3   | 2   | 2   |   |
|           | C   | 0 to 6     | 1         | 3                         | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 2   | 2 |
|           |   | Degrees    | 2         | 3                         | 3   | 2   | 2   | 2   | 0   | 0   | 0   | 0   | 0 |
|           |   | 7 to 27    | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   |   |
|           |   | Degrees    | 2         | 2                         | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0   |   |
|           |   | 28 to 45   | 1         | 3                         | 3   | 3   | 3   | 3   | 3   | 2   | 2   | 2   |   |
|           |   | Degrees    | 2         | 3                         | 3   | 3   | 3   | 3   | 2   | 2   | 2   | 2   | 0 |
| D         | 0 to 6  | 1          | 3         | 3                         | 3   | 3   | 3   | 3   | 2   | 2   | 2   | 0   |   |
|           | Degrees   | 2          | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   |   |
|           | 7 to 27   | 1          | 2         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   |     |   |
|           | Degrees   | 2          | 2         | 2                         | 2   | 2   | 0   | 0   | 0   | 0   | 0   |     |   |
|           | 28 to 45  | 1          | 3         | 3                         | 3   | 3   | 3   | 2   | 2   | 2   | 2   |     |   |
|           | Degrees   | 2          | 3         | 3                         | 3   | 3   | 2   | 2   | 0   | 0   | 0   |     |   |

| RT9       | RT-[E] Mount Mini OSB Only Installations Cont.<br>Maximum Mount Spacing in Feet |                  |           |                           |     |     |     |     |     |     |     |     |   |
|-----------|---|------------------|-----------|---------------------------|-----|-----|-----|-----|-----|-----|-----|-----|---|
|           | Landscape Orientation - ASCE 7-10   |                  |           |                           |     |     |     |     |     |     |     |     |   |
| Snow Load | Exposure Category   | Roof Angle       | Roof Zone | Basic Wind Speed, V (mph) |     |     |     |     |     |     |     |     |   |
|           |   |                  |           | 110                       | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |   |
| 51-60 PSF | B   | 0 to 6 Degrees   | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2 |
|           |   | 2                | 2         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 0   |   |
|           |   | 7 to 27 Degrees  | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2 |
|           |   | 2                | 2         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 0   |   |
|           | C   | 28 to 45 Degrees | 1         | 3                         | 3   | 3   | 3   | 3   | 3   | 2   | 2   | 2   | 2 |
|           |   | 2                | 3         | 3                         | 3   | 3   | 3   | 3   | 2   | 2   | 2   | 2   |   |
|           |   | 0 to 6 Degrees   | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2 |
|           |   | 2                | 2         | 2                         | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0   |   |
|           | D   | 7 to 27 Degrees  | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2 |
|           |   | 2                | 2         | 2                         | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0   |   |
|           |   | 28 to 45 Degrees | 1         | 3                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 0 |
|           |   | 2                | 3         | 2                         | 2   | 2   | 2   | 2   | 2   | 0   | 0   | 0   |   |
| 61-70 PSF | B   | 0 to 6 Degrees   | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2 |
|           |   | 2                | 2         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 0   |   |
|           |   | 7 to 27 Degrees  | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           |   | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |   |
|           | C   | 28 to 45 Degrees | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2 |
|           |   | 2                | 2         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 0   |   |
|           |   | 0 to 6 Degrees   | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2 |
|           |   | 2                | 2         | 2                         | 2   | 2   | 2   | 2   | 0   | 0   | 0   | 0   |   |
|           | D   | 7 to 27 Degrees  | 1         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0 |
|           |   | 2                | 0         | 0                         | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |   |
|           |   | 28 to 45 Degrees | 1         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 0 |
|           |   | 2                | 2         | 2                         | 2   | 2   | 2   | 2   | 2   | 2   | 0   | 0   |   |

Table Notes for Tables RT1 to RT9 – Tabulated values are based on the following criteria:

1. Building mean roof height = 30 ft maximum.
2. Risk Category = II.
3. Solar panel maximum width = 40 in for Landscape, 68 in for Portrait 60 Cell & 77.5 in for Portrait 72 Cell.
4. Solar panel & rail dead load = approximately 4.0 psf.
5. ASCE 7-10.
6. OSB shall be 24/16 APA rated sheathing minimum (7/16" thick).
7. Plywood shall be 32/16 APA rated sheathing minimum (15/32" thick).
8. Sheathing shall be free of defects including, but not limited to water damage and delamination.
9. Roof rafters or trusses spaced at 24" on center maximum.
10. PV panels must be supported per the manufacturer's required orientation, location and/or spacing.
11. Through a maximum of 2 layers of composite asphalt roof shingles or maximum 20 gage metal decking provided the metal is predrilled as wood screws are not designed to penetrate the metal decking. Not valid on concrete roof tile.
12. Maximum height from bottom of base mount to top of rail shall not exceed 5" for the OSB & Plywood only installation options and 7" for the rafter installation option. Ref. Exhibit 'A' detail 2.

Our analysis assumes that the connections and associated hardware are installed in a workmanlike manner in accordance with the RT-[E] Mount Mini Installation Manual and generally accepted standards of construction practice. It is the responsibility of the contractor to verify that the strength of the roof framing meets the minimum properties used in the tests and can safely support the maximum imposed loads stated within this document. Starling Madison Lofquist, Inc. and Roof Tech assume no liability beyond what is specifically shown in this letter. Additional information is available at the Roof Tech web site, <http://www.roof-tech.us/>.

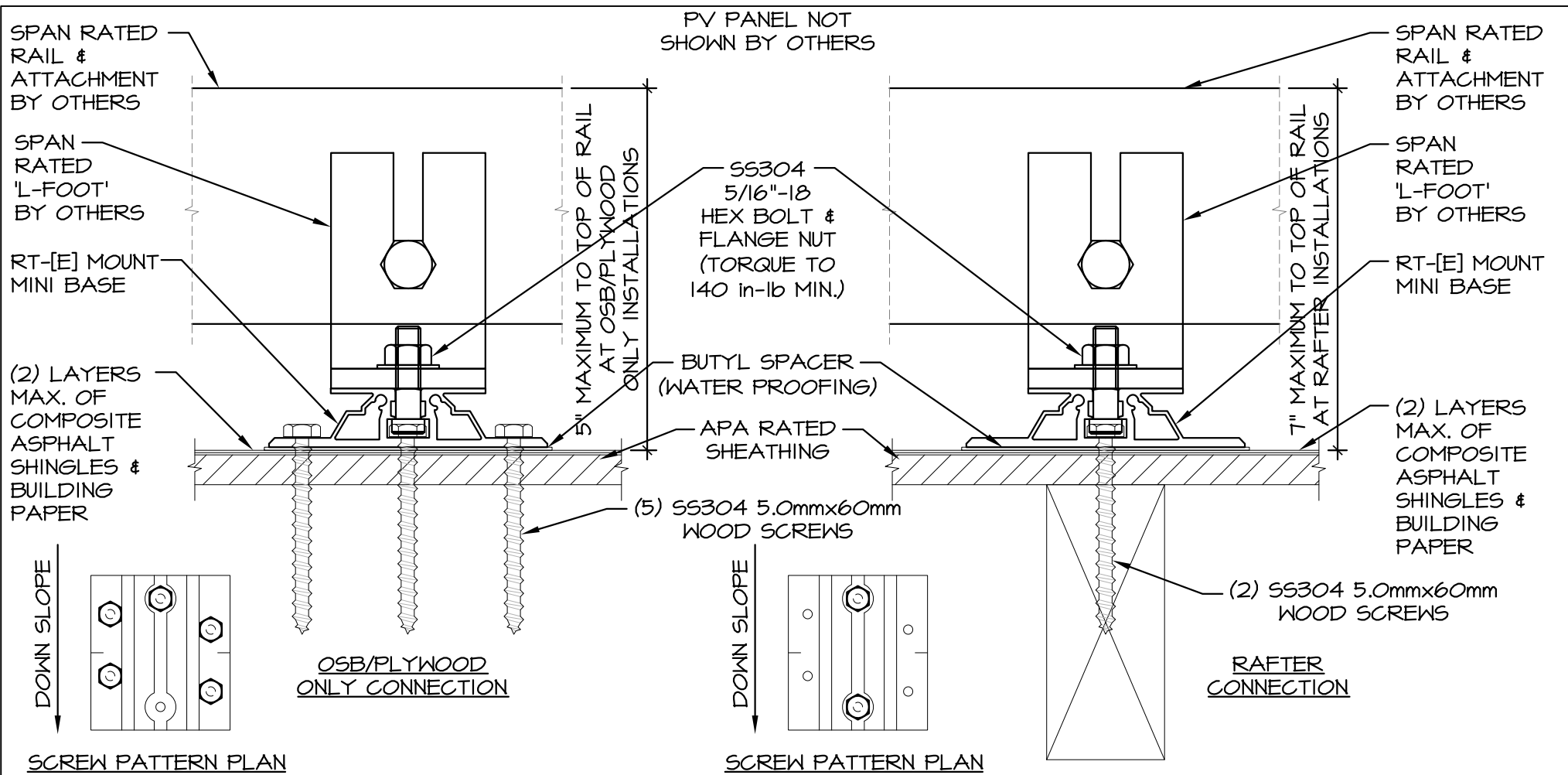
Please feel free to contact me at your convenience if you have any questions.

Respectfully yours,



Peter Lofquist, P.E.  
Principal

Jesse Light, P.E.  
Sr. Structural Engineer



1 'RAIL OPTION' - RAIL AND 'L-FOOT' ORIENTATION

SCALE: N.T.S.



Starling Madison Lofquist, Inc.

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 Phoenix, Arizona 85040  
 (602) 438-2500  
 fax. (602) 438-2505

Consulting Structural and Forensic Engineers

DRAWN BY:

J.S.

DATE:

7-3-18

DESIGNED BY:

D.H.

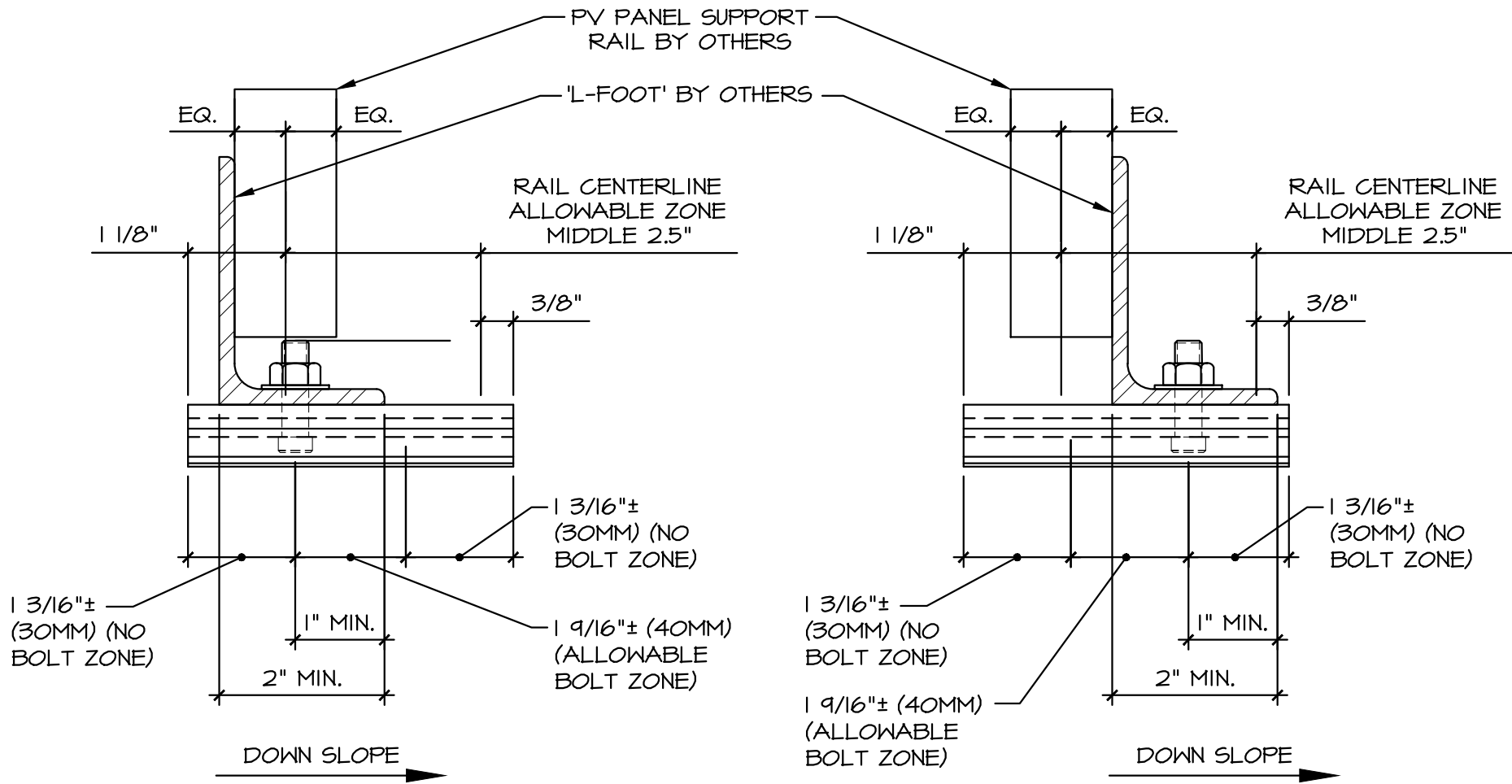
JOB NO:

471-13

ROOF TECH  
 RT-[E] MOUNT MINI + RAIL  
 STRUCTURAL ANALYSIS

ROOF TECH, INC.  
 333 H STREET, SUITE 5000  
 CHULA VISTA, CA 91910

EXHIBIT A  
 1 OF 4



2 'RAIL OPTION' - RAIL AND 'L-FOOT' ORIENTATION  
SCALE: N.T.S.



Consulting Structural and Forensic Engineers

Starling Madison Lofquist, Inc.

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Phoenix, Arizona 85040  
(602) 438-2500  
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DRAWN BY: J.S.  
DESIGNED BY: D.H.

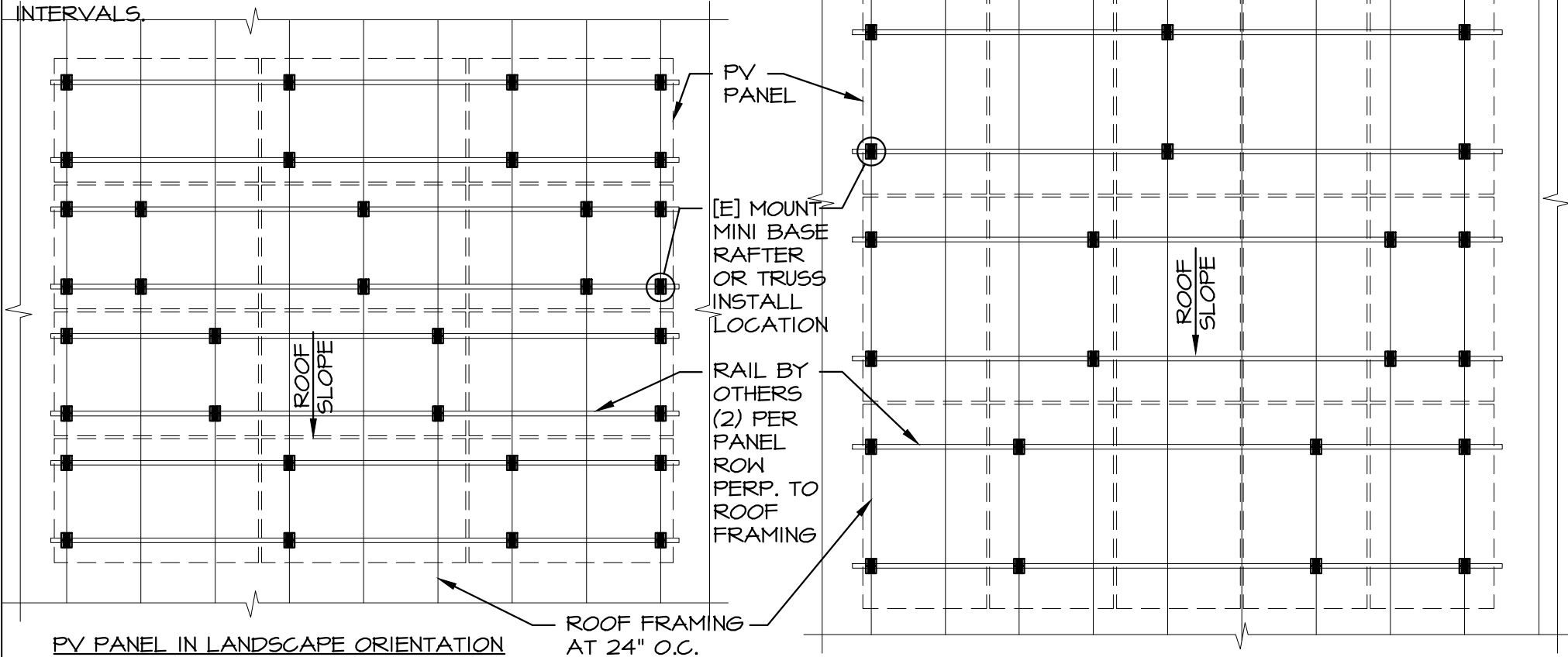
DATE: 7-3-18  
JOB NO: 471-13

ROOF TECH  
RT-[E] MOUNT MINI + RAIL  
STRUCTURAL ANALYSIS

ROOF TECH, INC.  
333 H STREET, SUITE 5000  
CHULA VISTA, CA 91910

EXHIBIT A  
2 OF 4

NOTE: [E] MOUNT MINI BASE TO BE ORIENTED WITH LONG DIRECTION DOWN ROOF SLOPE AS SHOWN. SKIP LOAD ROOF WHERE POSSIBLE TO EVENLY DISTRIBUTE LOAD TO ROOF FRAMING. THERMAL EXPANSION SPLICE RAILS AT 14 FOOT MAXIMUM INTERVALS.



**PARTIAL FRAMING PLAN  
(RAFTER INSTALLATION)**

3

SCALE: N.T.S.



Starling Madison Lofquist, Inc.

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Phoenix, Arizona 85040  
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Consulting Structural and Forensic Engineers

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DESIGNED BY: D.H.

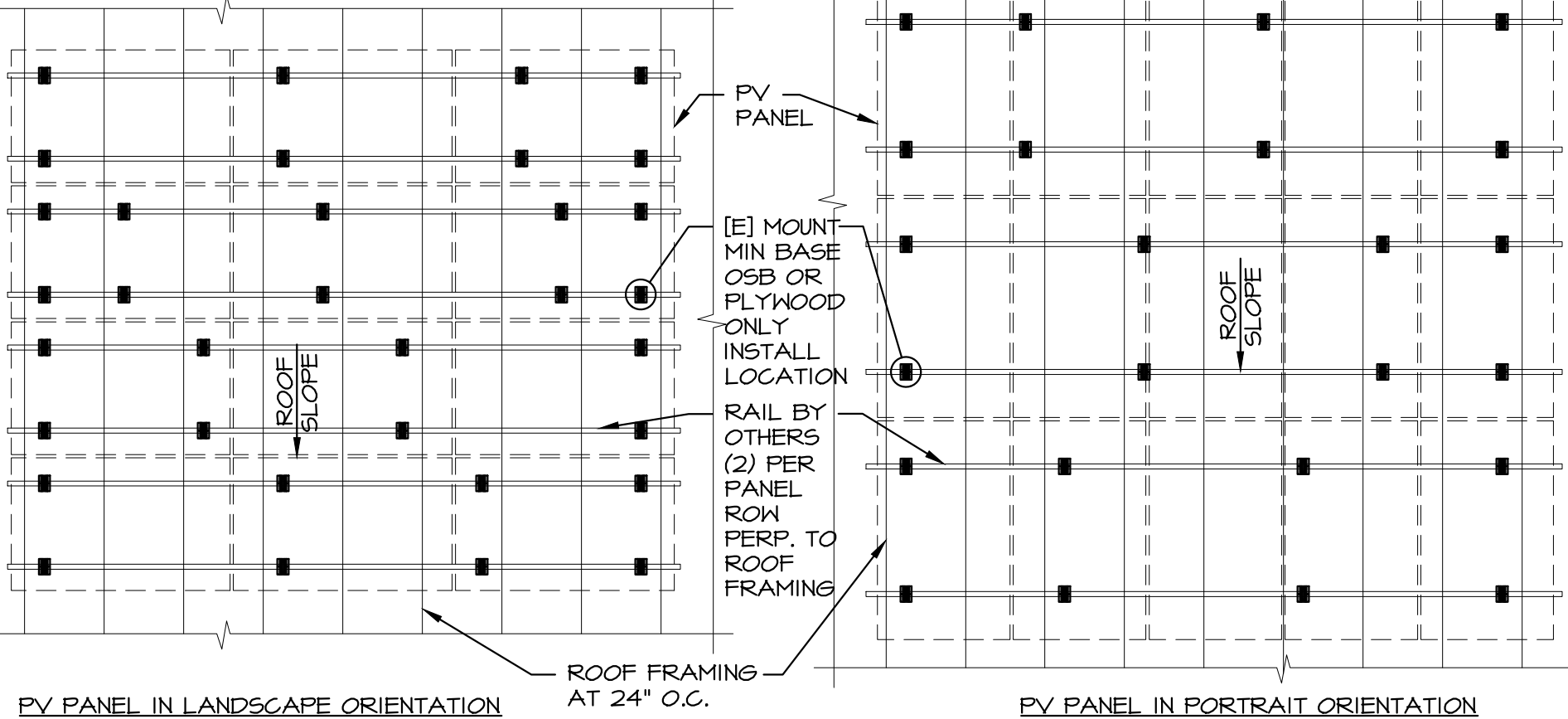
DATE: 7-3-18  
JOB NO: 471-13

ROOF TECH  
RT-[E] MOUNT MINI + RAIL  
STRUCTURAL ANALYSIS

ROOF TECH, INC.  
333 H STREET, SUITE 5000  
CHULA VISTA, CA 91910

EXHIBIT A  
3 OF 4

NOTE: [E] MOUNT MINI BASE TO BE ORIENTED WITH LONG DIRECTION DOWN ROOF SLOPE AS SHOWN. SKIP LOAD ROOF WHERE POSSIBLE TO EVENLY DISTRIBUTE LOAD TO ROOF FRAMING. THERMAL EXPANSION SPLICE RAILS AT 14 FOOT MAXIMUM INTERVALS.



PV PANEL IN LANDSCAPE ORIENTATION

PV PANEL IN PORTRAIT ORIENTATION

4

**PARTIAL FRAMING PLAN  
(OSB/PLYWOOD ONLY INSTALLATION)**

SCALE: N.T.S.



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|  |      |  |        |
|--|------|--|--------|
| DRAWN BY:  | J.S. | DATE:  | 7-3-18 |
| DESIGNED BY:   | D.H. | JOB NO:  | 471-13 |
| ROOF TECH<br>RT-[E] MOUNT MINI + RAIL<br>STRUCTURAL ANALYSIS |      | ROOF TECH, INC.<br>333 H STREET, SUITE 5000<br>CHULA VISTA, CA 91910 |        |

**EXHIBIT A  
4 OF 4**