

## Evaluation Report

### **“Solar Attic Fans” Self-Flashing Series with Low Profile Remote Mounted Solar Panel**

#### **Manufacturer**

#### **Attic Breeze, LLC.**

1370 FM 116  
Gatesville, Texas 76528  
(877) 288-4234  
*for*

#### **Florida Product Approval**

#### **# FL 13339.4 R1**

#### **Florida Building Code 2010**

#### **Per Rule 9N-3**

**Method:** 2 - B

**Category:** Roofing

**Sub - Category:** Roofing Accessories that are an Integral Part of the Roofing System

**Product:** *Solar Attic Fans*

**Product Description:** *Self-Flashing Series  
with Low Profile Remote Mounted Solar Panel*

#### **Prepared by:**

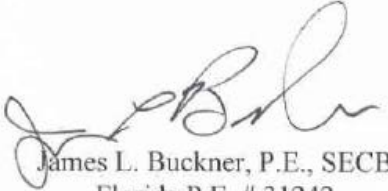
James L. Buckner, P.E., SECB  
Florida Professional Engineer # 31242  
Florida Evaluation ANE ID: 1916  
Project Manager: Youry Demosthenes  
Report No. 11-195- SPAF-RemLP-S4W-ER  
Date: 3 / 15 / 12

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#### **CBUCK, Inc.**

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Florida P.E. # 31242  
4/2/12

<b>Manufacturer:</b>	<b>Attic Breeze, LLC.</b>						
<b>Product Name:</b>	<b>Solar Attic Fans</b>						
<b>Product Category:</b>	Roofing						
<b>Product Sub-Category</b>	Roofing Accessories that are an Integral part of the Roofing System						
<b>Compliance Method:</b>	State Product Approval Rule 9N-3.005 (2) (b)						
<b>Product Description:</b>	The Solar Attic Fan are roof mounted systems powered by one or two solar panels. Each unit consists of a 14 inch diameter fan, enclosed in a self-flashing fan house base vent, with corrosion resistant zincalume alloy steel housing, including a thermal switch, and a rodent guard. solar panel is remotely attached from the fan house unit shroud/dome.						
<b>Product Assembly as Evaluated:</b>	Self-flashing solar attic fan with low profile remote mounted solar panel <ul style="list-style-type: none"><li>- Fan house base unit component mechanically attached to deck</li><li>- Solar panel remotely attached to four (4) low profile mounting brackets with machine bolts</li><li>- Low profile mounting brackets attached to roof deck with screws</li></ul>						
<b>Models:</b>	<table><thead><tr><th><u>Name</u></th><th><u>Number/Designation</u></th></tr></thead><tbody><tr><td>Grande™ SFD Model</td><td>AB-601</td></tr><tr><td>Grande™ SFD Model</td><td>AB-602</td></tr></tbody></table>	<u>Name</u>	<u>Number/Designation</u>	Grande™ SFD Model	AB-601	Grande™ SFD Model	AB-602
<u>Name</u>	<u>Number/Designation</u>						
Grande™ SFD Model	AB-601						
Grande™ SFD Model	AB-602						
<b>Fan Unit Base Support:</b>	<b>Type:</b> Wood Deck (Design of support system is outside the scope of this evaluation)  <b>Description:</b> <ul style="list-style-type: none"><li>• 15/32" or greater Plywood , or</li><li>• Wood plank deck (based on minimum density/specific gravity of 0.42)</li></ul>						
<b>Solar Panel Bracket Support:</b>	Two Brackets to Roof Rafter/Truss Top Chord Type: Dimensional Lumber (Designed by Others) Density/Specific Gravity: 0.42 Minimum Nominal Size: 2 × 4 Minimum  Other two Brackets to Plywood Deck with Backer Wood Blocking (Wood Backing) <ul style="list-style-type: none"><li>- Plywood Deck: Refer to Fan Unit Base Support for Description</li><li>- Backer Wood Backing: Dimensional Lumber 2" × 4" × 4ft Long Minimum</li></ul>						
<b>Roof Slope:</b>	Slope shall be in compliance with FBC 2010, Chapter 15 based on the type of roof covering.						
<b>Performance:</b>	Wind Resistance: <ul style="list-style-type: none"><li>• Positive Design Pressure: <b>+ 115 PSF</b></li><li>• Negative Design Pressure: <b>- 115 PSF</b></li></ul>						

**Performance Standards:** Test protocol, **ASTM E330-02** – *Standard Test Method for Structural Performance by Uniform Static Air Pressure Difference* was performed to demonstrate compliance with the intent of the code as this product is not addressed specifically in the code.

**Code Compliance:** The product described herein has demonstrated compliance with the Florida Building Code 2010, Section 1714.2.

**Evaluation Report Scope:** This product evaluation demonstrates compliance of this product with the structural wind load requirements of the Florida Building Code, as related to Florida Product Approval Rule 9N-3.001.

- Limits of Use:**
- The Solar Attic Fans including solar panel and electrical wiring shall be installed in compliance with Attic Breeze’s installation instructions and in accordance with applicable Building Codes
  - Scope of “Limitations and Conditions of Use” for this evaluation:  
This evaluation report for “Optional Statewide Approval” contains technical documentation, specifications and installation method(s) which include “Limitations and Conditions of Use” throughout the report in accordance with Rule 9N-3.005. Per Rule 9N-3.004, the Florida Building Commission is the authority to approve products under “Optional Statewide Approval”.
  - Option for application outside “Limitations and Conditions of Use”  
Rule 9N-3.005(1)(e) allows engineering analysis for “project specific approval by the local authorities having jurisdiction in accordance with the alternate methods and materials authorized in the Code”. Any modification of the product as evaluated in this report and approved by the Florida Building Commission is outside the scope of this evaluation and will be the responsibility of others.
  - Fire Classification is outside the scope of Rule 9N-3, and is therefore not included in this evaluation.
  - This evaluation report does not evaluate the use of this product for use in the High Velocity Hurricane Zone code section. (Dade & Broward Counties)

**Quality Assurance:** The manufacturer has demonstrated compliance of roof panel products in accordance with the Florida Building Code and Rule 9N-3.0005 (3) for manufacturing under a quality assurance program audited by an approved quality assurance entity through **Keystone Certification, Inc.** (FBC Organization #: QUA 1824)

**Component(s)**

**Material Standards:**

**Fan Unit**

- Nominal Dimensions

Fan House Base: 28" × 28"  
Fan House Shroud/ Dome: 21-1/2" × 21-1/2"  
Overall Height: 10-3/4"

- Fan House Base & Shroud/Dome Material:

Type: Steel  
Thickness: 24 ga.  
Yield Strength: 33 ksi Minimum  
Corrosion Resistance: Material shall comply with the Florida Building Code (FBC), 2010 Section 1507.4.3.

**Solar Panel**

Nominal Dimension: 36-1/4" Long × 20-1/8" Wide × 1" High  
Frame Material: Aluminum  
Frame Alloy: 5052-H32

**Low Profile Mounting Bracket** (*Four per Panel*)

Material: Aluminum  
Alloy: 5052-H32  
Thickness: 0.125 in

**Fastener (A)** (*Fan House Base to Roof Deck*)

Type: Pancake Head Wood Screw  
Size: #10 × 1 in. Minimum  
Standard: Per ANSI/ASME B18.6.1  
Corrosion Resistance: Per FBC Section 1506.6

**Fastener (B)** (*Panel to Bracket*)

Type: Hex-Head Machine Bolts and Nuts  
Size: 1/4 in. – 20 × 3/4 in. Minimum  
Washer: 1/4 in. Flat Washer & Lock Washer  
Material: 18-8 Stainless Steel

**Fastener (C)** (*Mounting Bracket to Dimensional Lumber*)

Type: Hex-Head Lag Screw  
Size: 1/4 in.  
Embedment: 1-1/2 in. Minimum Through Dimensional Lumber  
Standard: Per ANSI/ASME B18.6.1  
Corrosion Resistance: Per FBC Section 1506.6 AND 1507.4.4

**Installation:**

**Installation Method:**

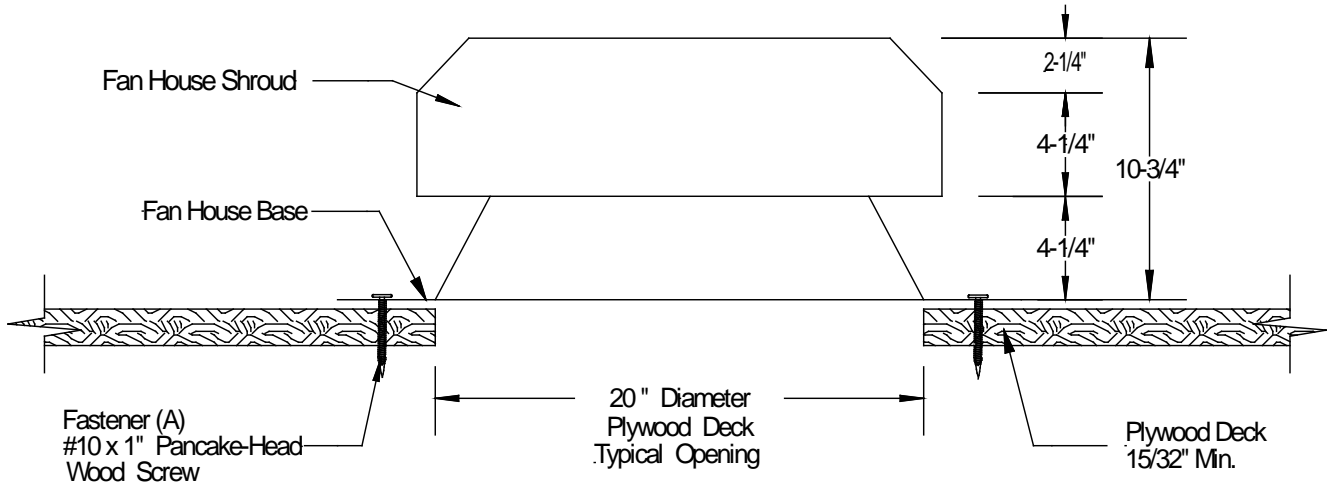
(Refer to Pages 6 through 9 of this evaluation report.)

“The Solar Attic Fans” shall be installed in compliance with the installation method listed in this report. The installation method described herein is in accordance with the scope of this evaluation report. Refer to manufacturer’s installation instructions as a supplemental guide for attachment.

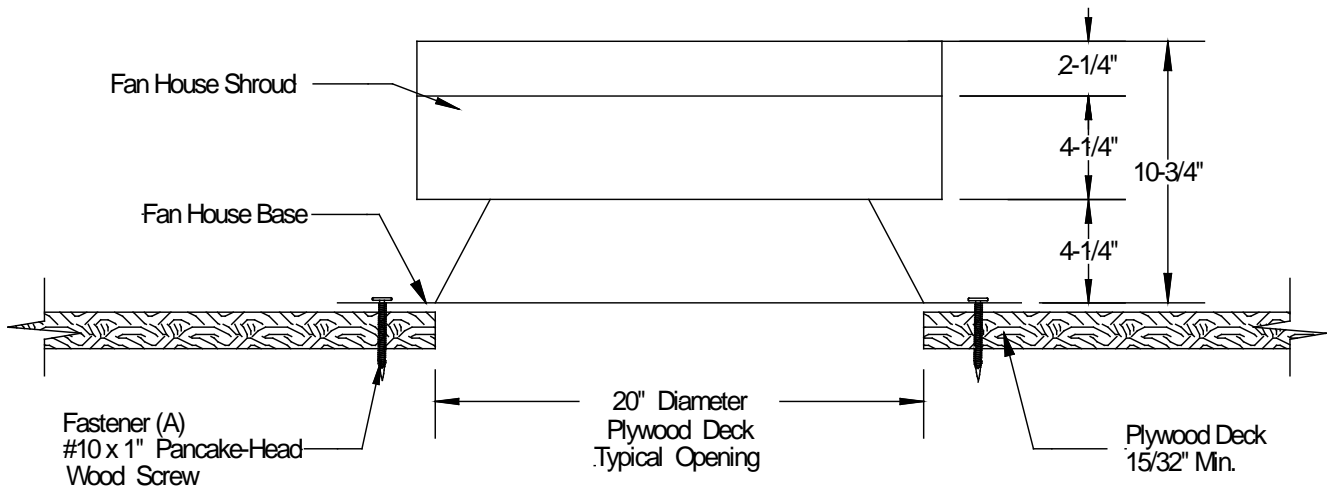
**Evaluated Referenced Data:**

1. ASTM E330-02 Uniform Static Air Pressure Difference Test  
By Certified Testing Laboratories, Inc. (FBC Organization ID# TST 1577)  
Project #: CTLA 2002W, Dated: 11 / 20 / 09
2. Quality Assurance  
By Keystone Certification, Inc. (FBC Organization ID# QUA 1824)  
Attic Breeze, LLC. Licensee #740
3. Certification of Independence  
By James L. Buckner, P.E. @ CBUCK Engineering  
(FBC Organization # ANE 1916)
4. Engineering Analysis  
By CBUCK Engineering  
Report #C11-195, Dated: 3 / 19 / 12

## Installation Method Attic Breeze, LLC. Solar Attic Fan Attachment Assembly

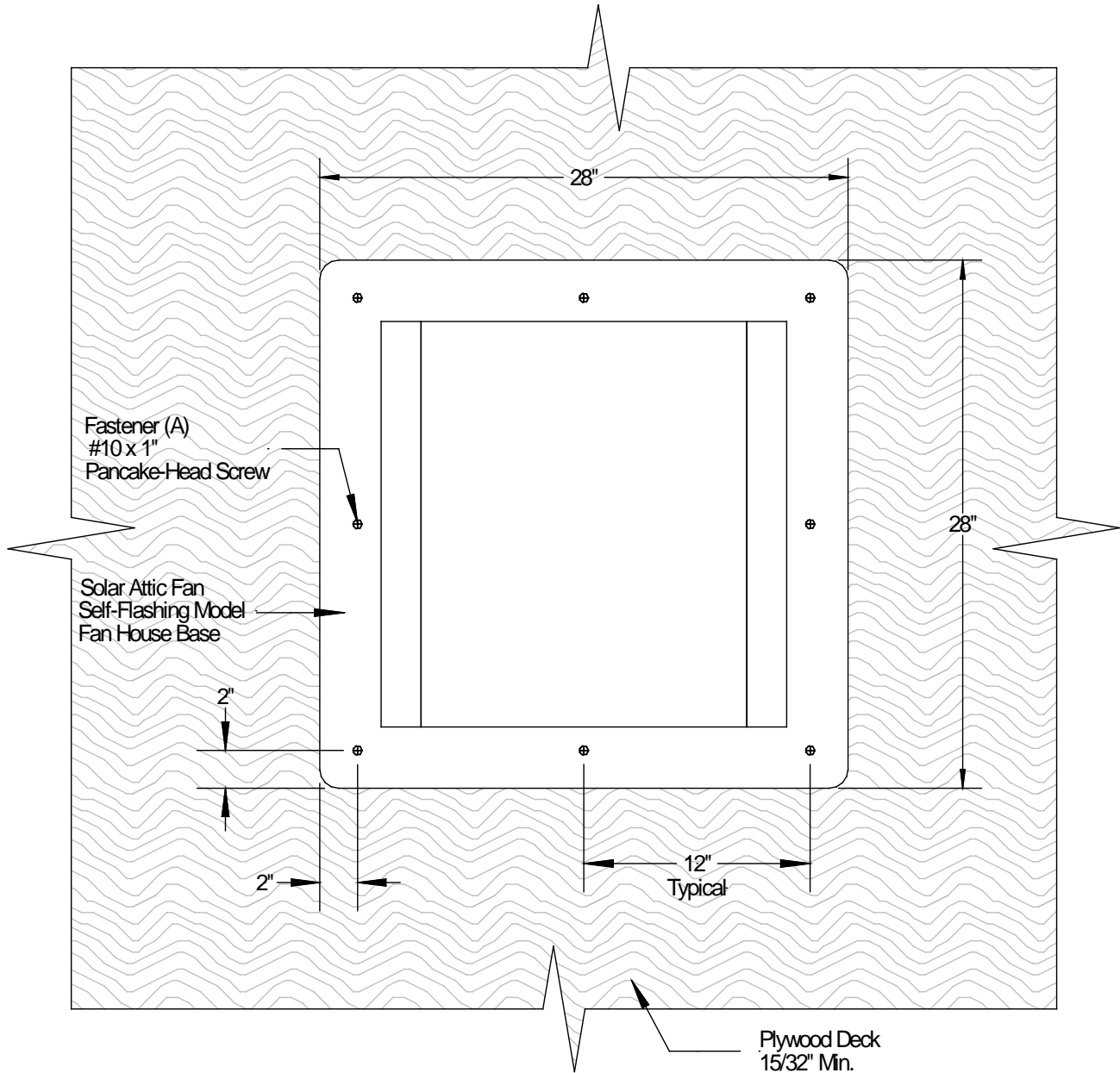


Assembly Front Section View



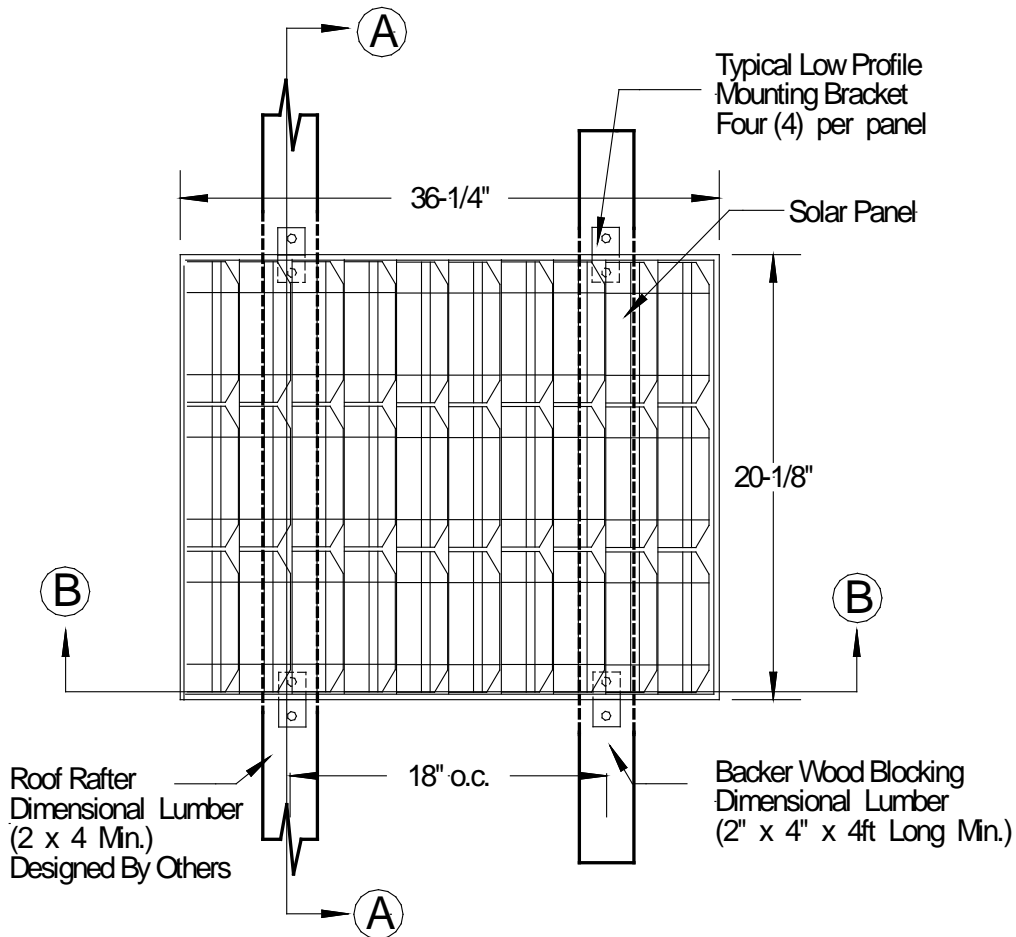
Assembly Side Section View

## Installation Method Attic Breeze, LLC. Solar Attic Fan Attachment Assembly



Assembly Top Plan View

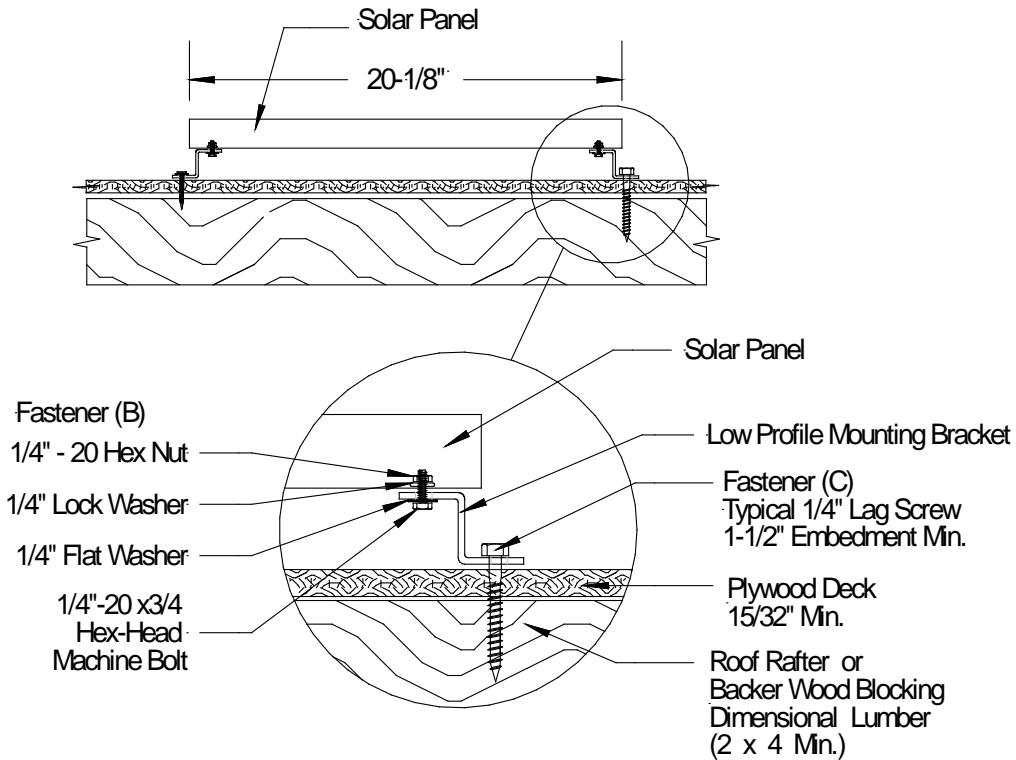
## Installation Method Attic Breeze, LLC. Remote Mounted Solar Panel Attached Assembly



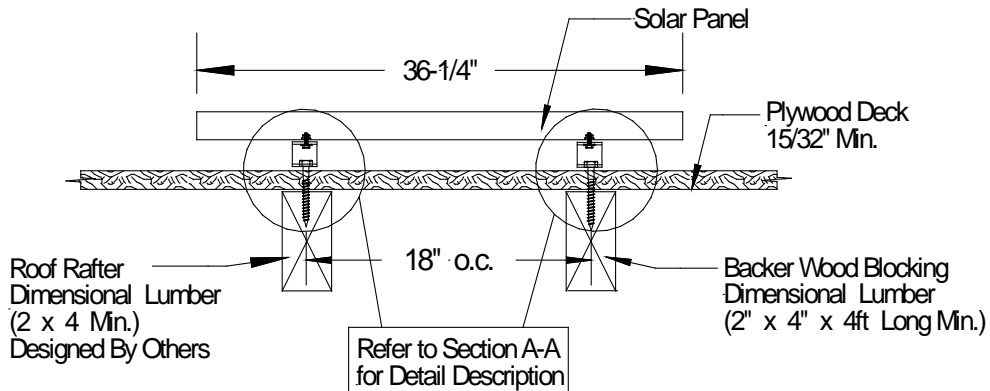
Solar Panel Assembly  
Plan View



## Installation Method Attic Breeze, LLC. Remote Mounted Solar Panel Attached Assembly



**Solar Panel Assembly  
A-A Section View & Attachment Detail**



**Solar Panel Assembly  
B-B Section View & Attachment Detail**