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Version #98.7 - 1
PIL
NAS

August 12, 2025

Certification Letter

Project/Job # 283732	
Project Address:	Fitts Residence 72 Rush Ln Cameron, NC 28326
AHJ	Moore County
Tesla Operations Center	Raleigh NC

Design Criteria:

- Applicable Codes = Structure: 2018 NCEBC (IEBC 2015); PV: 2018 NCRC/NCBC (IRC/IBC 2015), ASCE 7-10, and 2015 NDS
- Risk Category = II
- Wind Speed = 115 mph (3-s Gust - Vult), Exposure Category C, Envelope Procedure for C&C
- Ground Snow Load = 10 psf
- MP4: RDL = 9.5 psf, RLL = 16.5 psf, PVSL = 4.4 psf
- MP1: RDL = 9.5 psf, RLL = 16.5 psf, PVSL = 4.4 psf
- MP3: RDL = 9.5 psf, RLL = 16.5 psf, PVSL = 4.4 psf
- MP2: RDL = 9.5 psf, RLL = 13.5 psf, PVSL = 3.4 psf

Note: Per IBC 1613.1; Seismic check is not required because Ss = 0.209 < 0.4g and Seismic Design Category (SDC) = C < D

To Whom It May Concern,

A structural evaluation of loading was conducted for the above address based on the design criteria listed above.

Based on this evaluation, I certify that the alteration to the existing structure by installation of the PV system meets the prescriptive compliance requirements of the applicable building provisions referenced above.

Additionally, I certify that the PV module assembly including all standoffs supporting it have been reviewed to be in accordance with the manufacturer's specifications and to meet and/or exceed all requirements set forth by the referenced codes for loading.

The PV assembly hardware specifications are contained in the plans/docs submitted for approval.

Installer shall verify existing roof framing is in suitable condition and does not exhibit any signs of structural damage which may diminish the capacity of its members or connections prior to commencement of PV installation. Installer verification of the mounting planes noted above is required because some or all of the framing was not observed prior to the structural evaluation performed for this report.

Digitally signed by
Henry Zhu
Date: 2025-08-27
11:54:14 -07:00

STRUCTURAL EVALUATION & HARDWARE DESIGN RESULTS SUMMARY TABLES

Jobsite Specific Design Criteria			
Design Standard		ASCE 7-10	
Risk Category		II	
Ultimate Wind Speed	V-Ult	115 mph	Fig. 1609A
Exposure Category		C	Section 26.7
Ground Snow Load	pg	10.0 psf	Table 7-1

MP Specific Design Information								
	MP Name	**MP4**	**MP1**	**MP3**	**MP2**			
Design Info	**Roofing**	**Comp Roof**	**Comp Roof**	**Comp Roof**	**Comp Roof**			
	Standoff	**ZS Comp V4 with Flashing Insert**	**ZS Comp V4 with Flashing Insert**	**ZS Comp V4 with Flashing Insert**	**ZS Comp V4 with Flashing Insert**			
	Pitch	**32°**	**32°**	**32°**	**41°**			
	SL/RLL: PV	**4.4 psf**	**4.4 psf**	**4.4 psf**	**3.4 psf**			
	SL/RLL: Non-PV	**16.5 psf**	**16.5 psf**	**16.5 psf**	**13.5 psf**			
	Edge Zone Width	**4.2 ft**	**4.2 ft**	**4.2 ft**	**4.2 ft**			

Standoff Spacing and Layout								
	MP Name	**MP4**	**MP1**	**MP3**	**MP2**			
	Applied Wind Zone	**WZ1**	**WZ1**	**WZ1**	**WZ1**			
	Wind Pressure	-15.8 psf	-15.8 psf	-15.8 psf	-15.8 psf			
Landscape	**X-Spacing**	72"	72"	72"	72"			
	X-Cantilever	24"	24"	24"	24"			
	Y-Spacing	41"	41"	41"	41"			
	Y-Cantilever	NA	NA	NA	NA			
	Uplift DCR	64.5%	64.5%	64.5%	65.3%			
Portrait	**X-Spacing**	48"	48"	48"	48"			
	X-Cantilever	16"	16"	16"	16"			
	Y-Spacing	74"	74"	74"	74"			
	Y-Cantilever	NA	NA	NA	NA			
	Uplift DCR	77.7%	77.7%	77.7%	78.6%			
	Layout	Staggered	Staggered	Staggered	Staggered			
	Applied Wind Zone	**WZ2**	**WZ2**	**WZ2**	**WZ2**			
	Wind Pressure	-19.2 psf	-19.2 psf	-19.2 psf	-19.2 psf			
Landscape	**X-Spacing**	72"	72"	72"	72"			
	X-Cantilever	24"	24"	24"	24"			
	Y-Spacing	41"	41"	41"	41"			
	Y-Cantilever	NA	NA	NA	NA			
	Uplift DCR	79.8%	79.8%	79.8%	80.6%			
Portrait	**X-Spacing**	48"	48"	48"	48"			
	X-Cantilever	16"	16"	16"	16"			
	Y-Spacing	74"	74"	74"	74"			
	Y-Cantilever	NA	NA	NA	NA			
	Uplift DCR	96.1%	96.1%	96.1%	97.0%			
	Layout	Staggered	Staggered	Staggered	Staggered			
	Applied Wind Zone	**WZ3**	**WZ3**	**WZ3**	**WZ3**			
	Wind Pressure	-19.2 psf	-19.2 psf	-19.2 psf	-19.2 psf			
Landscape	**X-Spacing**	72"	72"	72"	72"			
	X-Cantilever	24"	24"	24"	24"			
	Y-Spacing	41"	41"	41"	41"			
	Y-Cantilever	NA	NA	NA	NA			
	Uplift DCR	79.8%	79.8%	79.8%	80.6%			
Portrait	**X-Spacing**	48"	48"	48"	48"			
	X-Cantilever	16"	16"	16"	16"			
	Y-Spacing	74"	74"	74"	74"			
	Y-Cantilever	NA	NA	NA	NA			
	Uplift DCR	96.1%	96.1%	96.1%	97.0%			
	Layout	Staggered	Staggered	Staggered	Staggered			

1. X and Y are maximums that are always relative to the structure framing that supports the PV. X is across framing members and Y is along framing members.
2. Where present, the green and red hatching in Applied Wind Zone rows corresponds to hatching on the Site Plan page of the plan set.

Structure Qualification Results								
	MP Name	**MP4**	**MP1**	**MP3**	**MP2**			
	Member Evaluation Results	Member Impact Check OK	Member Impact Check OK	Member Impact Check OK	Member Impact Check OK			