



Scott E. Wyssling, PE
Jon P. Ward, SE, PE
Gregory T. Elvestad, PE

76 North Meadowbrook Drive
Alpine, UT 84004
office (201) 874-3483
swyssling@wysslingconsulting.com

July 10, 2022

Posigen Solar
1600 Olden Avenue, Unit 10
Ewing, NJ 08638

Re: Engineering Services
Washington Residence
4566 Hickerson Drive, New Orleans LA
10.440 kW System

To Whom It May Concern:

We have received information regarding solar panel installation on the roof of the above referenced structure. Our evaluation of the structure is to verify the existing capacity of the roof system and its ability to support the additional loads imposed by the proposed solar system.

A. Site Assessment Information

1. Site visit documentation identifying attic information including size and spacing of rafters for the existing roof structure.
2. Design drawings of the proposed system including a site plan, roof plan and connection details for the solar panels. This information will be utilized for approval and construction of the proposed system.
3. The addition of solar panels will not exceed the height of the existing building
4. The outermost part of the solar panels will be less than 6 inches off the existing slope of the existing roof.

B. Description of Structure:

Roof Framing: 2 x 6 dimensional lumber spaced at 16" on center.
Roof Material: Composite Asphalt Shingles
Roof Slope: 24 degrees
Attic Access: Accessible
Foundation: Permanent

C. Loading Criteria Used

- **Dead Load**
 - Existing Roofing and framing = 7 psf
 - New Solar Panels and Racking = 3 psf
 - TOTAL = 10 PSF
- **Live Load** = 20 psf (reducible) – 0 psf at locations of solar panels
- **Ground Snow Load** = 0 psf
- **Wind Load** based on ASCE 7-16
 - Ultimate Wind Speed = 144 mph (based on Risk Category II)
 - Exposure Category C

Analysis performed of the existing roof structure utilizing the above loading criteria is in accordance with the 2018 International Residential Code, including provisions allowing existing structures to not require strengthening if the new loads do not exceed existing design loads by 105% for gravity elements and 110% for seismic elements. This analysis indicates that the existing rafters will support the additional panel loading without damage, if installed correctly.

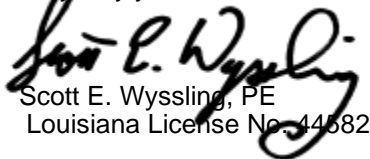
D. Solar Panel Anchorage

1. The solar panels shall be mounted in accordance with the most recent "SnapNrack Installation Manual", which can be found on the SnapNrack website (<http://SnapNrack.com/>). If during solar panel installation, the roof framing members appear unstable or deflect non-uniformly, our office should be notified before proceeding with the installation.
2. The maximum allowable withdrawal force for a $5/16$ " lag screw is 235 lbs per inch of penetration as identified in the National Design Standards (NDS) of timber construction specifications. Based on a minimum penetration depth of $2\frac{1}{2}$ ", the allowable capacity per connection is greater than the design withdrawal force (demand). Considering the variable factors for the existing roof framing and installation tolerances, the connection using one $5/16$ " diameter lag screw with a minimum of $2\frac{1}{2}$ " embedment will be adequate and will include a sufficient factor of safety.
3. Considering the wind speed, roof slopes, size and spacing of rafters, and condition of the roof, the panel supports shall be placed no greater than 48" on centers.
4. Panel supports connections shall be staggered to distribute load to adjacent rafters.

Based on the above evaluation, this office certifies that with the racking and mounting specified, the existing roof system will adequately support the additional loading imposed by the solar system. This evaluation is in conformance with the 2018 IRC, current industry standards, and is based on information supplied to us at the time of this report.

Should you have any questions regarding the above or if you require further information do not hesitate to contact me.

Very truly yours,


Scott E. Wyssling, PE
Louisiana License No. 44582



Date Signed 7/10/22

10.44 kW DC PV SYSTEM
Opp ID #170038
4566 Hickerson St
New Orleans, LA 70127

Manufacturer	Model	Quantity
GAF Energy	Timberline Solar 45w	232
Delta	M8-TL-US (240V)	2
Delta	M4-TL-US (240V)	1

Array Information

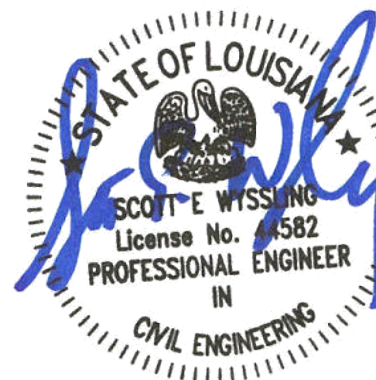
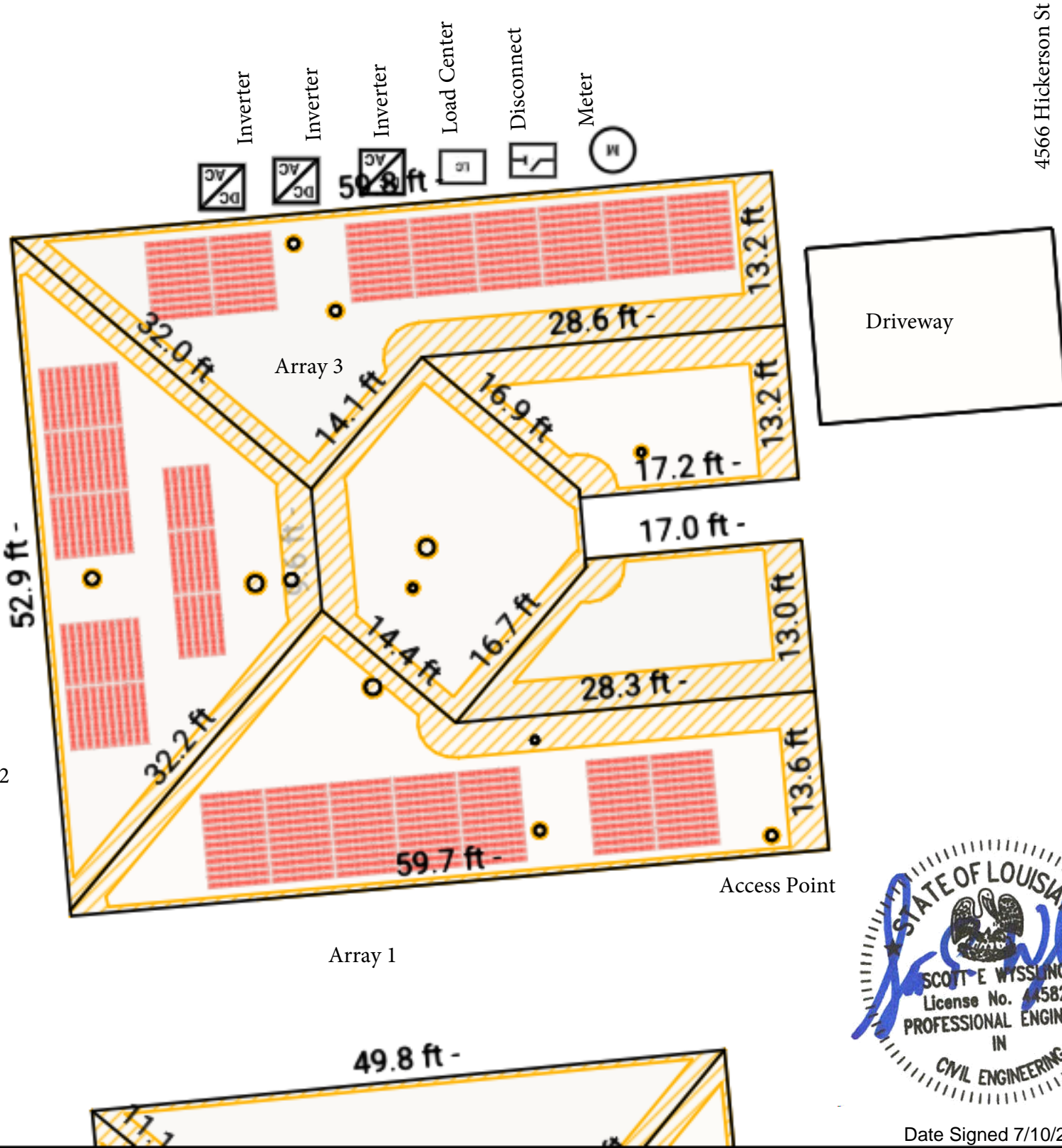
Array	Modules	Tilt	Azimuth
1	84	24	175
2	68	24	265
3	80	24	355

Date Drawn: July 8th, 2022
Drawn By: Atticus Ory
Revision Number :

Setbacks Applied

Ridge: 36"
Rake: 36"
Valley: 18"
Hip: 18"
Eave: 6"

Contractor is responsible for verifying all on-site conditions and measurements, complying with local and national code requirements and manufacturers' manuals.



Date Signed 7/10/22

53	54
55	56
58	59
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71	73

137	138	139	180	181	218
140	141	167	188	191	192
142	169	170	182	183	219
143	171	184	185	193	194
144	147	186	195	196	220
146	145	148	197	221	222
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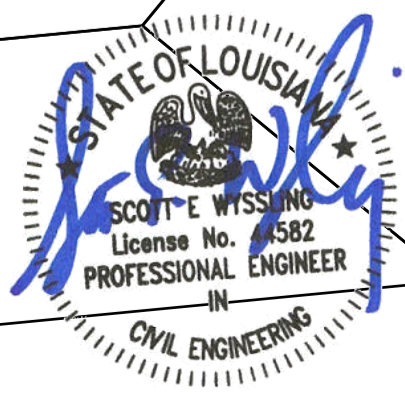
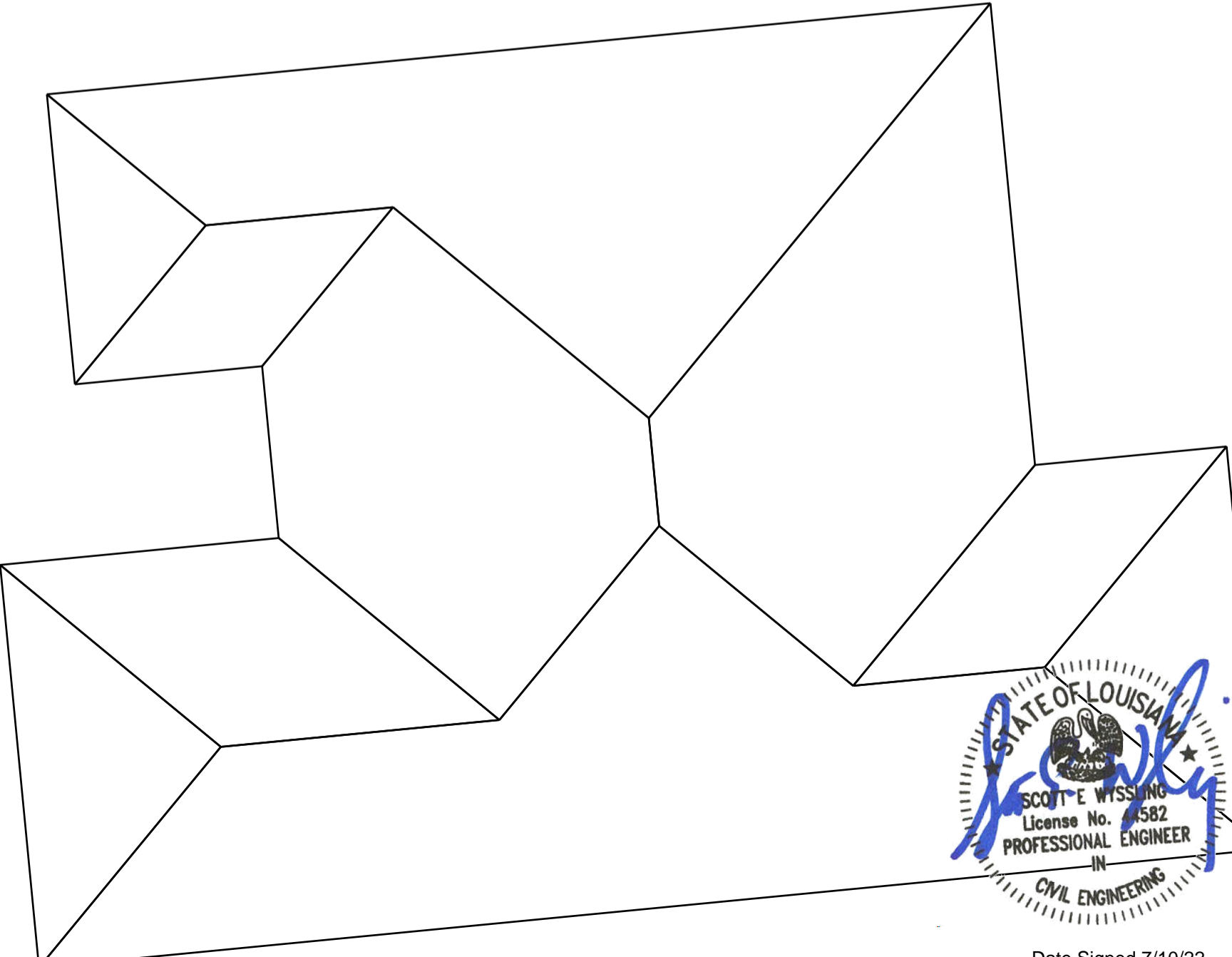
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89	92	116	117	59
93	118	95	127	28
96	218	119	120	77
97	21	129	130	31
98	22	132	133	100
99	100	134	161	102
101	102	134	163	178
104	105	123	24	179
106	107	108	104	185
109	110	135	136	186

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