
HISTORIC DISTRICT COMMISSION

APRIL 8, 2025

Rooftop
Solar Panel Installation

Gurlitz Residence
208 Spring Lane
Chapel Hill, NC 27514

208 SPRING LANE

Location Map

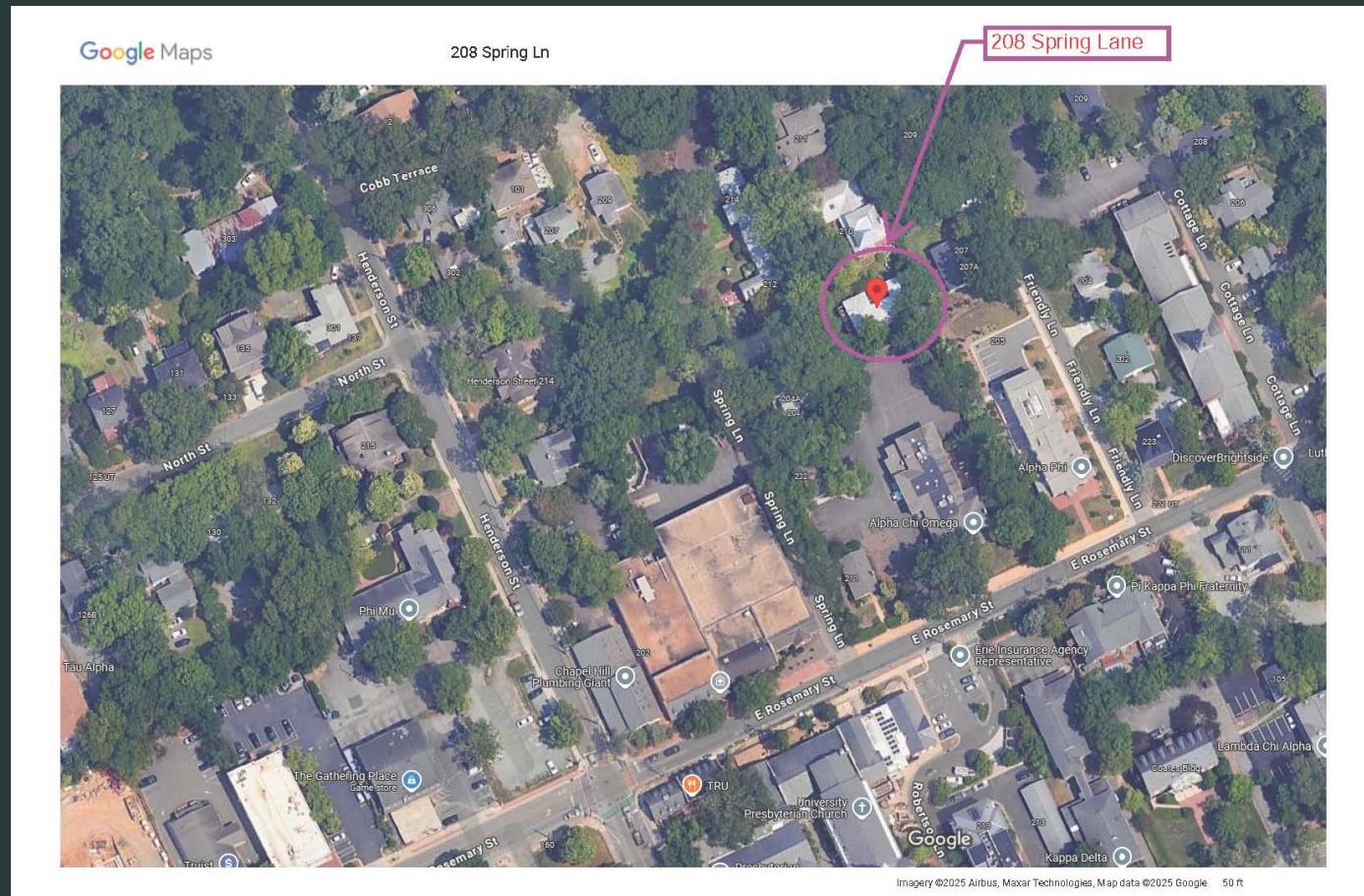


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Location Photo



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Rear Elevation



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Front Elevation



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Rooftop Panel Location Plan

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PV MATERIAL SUMMARY: DISTRIBUTOR

REC460AA PURE-RX	27
MCL-1-2	14
Tesla PW3 1707000-xx-y	1
Tesla GW3 1841000-01-y	1
XR-10-1688	4
XR-10-2048	10
XR10-BOSS-01-M1	8
UFO-CL-01-B1	44
UFO-END-01-B1	20
XR-LUG-03-A1	7
SOLARFOOT	158
TYPE 17-AB, SCREW (2.5")	632
LFT-03-M1	158
QM-JBX-RL02-B1	2
SOLAR MESH-P-8	2
SNRAC 242-04105	75

NC SOLAR NOW

CLIENT INFO
JOSH GURLITZ
208 SPRING LN
CHAPEL HILL, NC 27514

PROJECT INFO
DC INPUT: 12.420 kW
AC OUTPUT: 11.800 kW
DOI INSP. METHOD: OPTION 2

Model Energy
300 Fayetteville St.
#1430
Raleigh, NC 27602
919-274-9905
ModelEnergy.com
P1194

NC SOLAR NOW
PROFESSIONAL
SEAL
035689
ANDREW W. KING
01/01/2024

CODE REFERENCES
NATION ELECTRICAL CODE v.2017
INC FIRE PROTECTION CODE v. 2018
INC BUILDING CODE v. 2018
INC RESIDENTIAL CODE v. 2018
ACSE v.7-10

SITE CONDITIONS
WIND SPEED: 120 MPH
BLIZZARD CATEGORY: 1
EXPOSURE: B
SNOW: 15 PSF

SCHEMATIC INDEX
PV-1: COVER SHEET
PV-2: PV STRUCTURAL
PV-3: PV ELECTRICAL
PV-4: EQUIPMENT LABELS
PV-5: PV INSTALL GUIDE

VERSIONS
TOP DESIGNER: DATE:
CONSTRUCTION: MCP 1/8/2025

PV SYSTEM COVER PAGE

PV-1.1

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Solar Panel Detailing

STATEMENT OF STRUCTURAL COMPLIANCE

THE EXISTING ROOF STRUCTURE HAS BEEN DESIGNED TO SUPPORT THE ADDITIONAL LOADS OF THE PROPOSED PV SYSTEM. IN ADDITION, THE RACKING AND FASTENING SYSTEM SHALL BE DESIGNED TO SUPPORT THE PROPOSED PV SYSTEM STRUCTURE UNDER DESIGN CONDITIONS WHEN INSTALLED PROPERLY AND IN ACCORDANCE WITH THE RACKING AND FASTENING ARRANGEMENT DETAILED WITHIN THESE DRAWINGS.

NAME: ANDREW W. KING, PE
SIGNED: 

PV MODULES

NAME	REC
MODEL	REC-400-100W-4X
WIDTH	48.0 IN
LENGTH	60.0 IN
THICKNESS	30.0 MM
WEIGHT	5.17 LBS
ARRAY AREA	522 SQFT
ARRAY WEIGHT	1306 LBS

ROOF SUMMARY

STRUCTURE	TRUSSES
TYPE	SOUTHERN LINE #2
SIZE	2X 4
SPACING	24 IN O.C.
ALLOWABLE SPAN	88.0 IN
TYPE	872
DENSITY	30 LBS/CU.FT.
DECKING	PLYWOOD
MATERIAL	COMPOSITE
THICKNESS	7/8 IN
WEIGHT	1.47 LBS/SQFT
ROOFING	IRON
TYPE	EXPOSED FASTENER METAL
MATERIAL	METAL
WEIGHT	1.301 LBS/SQFT

ROOF MOUNT SUMMARY

MAXIMUM IN-PLANE SPACING	RAIL CLEATHING
WIND ZONE 1	30 IN
WIND ZONE 2	29 IN
WIND ZONE 3	28 IN
WIND ZONE 4	26 IN
WIND ZONE 5	20 IN
	8 IN

ROOF LOADING

GROUND SNOW LOAD	15 LBS/SQFT
UP/LOAD	20 LBS/SQFT
DOWN/LOAD	20 LBS/SQFT
ROOF ROLL	3.0 LBS/SQFT
PV ARRAY	2.5 LBS/SQFT
TOTAL	6.4 LBS/SQFT
WIND LOAD	
UP/LOAD	-244.05 SQFT
UP/LOAD ZONE 1	-260 LBS/SQFT
UP/LOAD ZONE 2	-260 LBS/SQFT
UP/LOAD ZONE 3	-260 LBS/SQFT
DOWN/LOAD	210 LBS/SQFT
FAVORITE LOAD	
UP/LOAD ZONE 1	-171 LBS
UP/LOAD ZONE 2	-166 LBS
UP/LOAD ZONE 3	-136 LBS
DOWN/LOAD	162 LBS

CODE REFERENCES

NATIONAL ELECTRICAL CODE v. 2017
NATIONAL FIRE PROTECTION CODE v. 2018
NATIONAL BUILDING CODE v. 2018
NATIONAL RESIDENTIAL CODE v. 2018
ASCE v. 7-16

SITE CONDITIONS

WIND SPEED	120 MPH
RISK CATEGORY	II
TOPography	0
SNOW	15 SQFT

ROOF MOUNT & FASTENER

ROOF MOUNT	S-5!
MODEL	SOLARFOOT
MATERIAL	ALUMINUM / BUTYL
FASTENER	
MAKE	S-5!
MODEL	TYPE 17-AB, SCREW (2.5")
MATERIAL	ZINC / ALUMINUM CAP
SIZE	0.47" X 1.24" X 0.08" HEAD
GENERAL	0.17 LBS
FASTENERS PER MOUNT	4
MAX. PULL-OUT FORCE	396.0 LBS
SAFETY FACTOR	1.75
DESIGN PULL-OUT FORCE	178.0 LBS

MOUNTING RAILS

MAKE	IRONBRIDGE
MODEL	XTR
MATERIAL	ALUMINUM
WEIGHT	0.025 LBS/IN
SPACING	34 IN

VERSIONS

TYPE	DESIGNER	DATE
CONSTRUCTION	MCP	1/8/2025

PV SYSTEM STRUCTURAL

PV-2.1

NC SOLAR NOW
CLIENT INFO
JOSH GURLITZ
208 SPRING LN
CHAPEL HILL NC 27514

PROJECT INFO
DC INPUT: 12.03 kW
AC OUTPUT: 11.300 kW
DC INSP. METHODS: OPTION 2

Model Energy
300 Fayetteville St.
#1430
Raleigh, NC 27602
919-274-9905
ModelEnergy.com

NORTH CAROLINA
PROFESSIONAL
ENGINEER
ANDREW W. KING
P.E. #35569
12/4/2024

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1 ROOF FASTENER DETAIL
NOT TO SCALE

2 ROOF A ARRAY LAYOUT
1/8" = 1'-0"

15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0

24" O.C.
24" O.C.

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