Wyssling Consulting
76 N. Meadowbrook Drive
Alpine, UT 84004

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Gravity Loads

Altmyer Residence
7422 Camporee Lane
Houston, TX

Existing

Roof Dead Load

2 psf	Composite Shingle
1 psf	7/16" Plywood Sheathing
2 psf	2x8 @ 25 in. o.c.
0 psf	Ceiling, Mechanical, Electrical
0 psf	Miscellaneous
5 psf	**TOTAL**

Second Floor Dead Load

0 psf	Floor Finishes
0 psf	1 1/8" Subfloor Sheathing
0 psf	Joists @ 16' o.c.
0 psf	Partitions
0 psf	Ceiling, Mechanical, Electrical
0 psf	Miscellaneous
0 psf	TOTAL

Roof Live Load
20 psf

Floor Live Load
0 psf

Roof Snow Load
Ground SnowLoad= 0 psf (to be divided by cosine of roof angle for horizontal projection ASCE 7 Sec. 7.4)

$p_f = 0.7\, C_e\, C_t\, I\, p_g =$ 0 psf $C_e = 1$, $C_t = 1.1$ Flat Roof Snow Load (ASCE 7-10 Eq. 7.3-1)

$C_s =$ **0.73** ASCE 7-10 Figure 7.4-1

Additional

Roof Dead Load - New Solar Panels
3 psf

Roof Live Load at Solar Panels
0 psf

Roof Snow Load at Solar Panels
0 psf Sloped Roof Snow Load (ASCE 7-10 Eq. 7.4-1)

Total

Total Existing Roof Load = $(DL_{ROOF} + \text{Max}(LL_{ROOF} \text{ or } S))\, Area_{ROOF}$
62578 lbs

Total New Roof Load = $(DL_{ROOF} + DL_{ADD} + \text{Max}(LL_{ROOF} \text{ or } S))\, Area_{ROOF}$
55389 lbs

Change in Demand = (Total New Roof Load - Existing Roof Load) / Existing Roof Load
-11.49%

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SCOTT E. WYSSLING
122669
LICENSED
PROFESSIONAL ENGINEER
Wyssling Consulting, PLLC
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Texas Firm # 20109
Signed 5/16/2022

Total New Gravity Loads are less than Existing Loads. OK

2015 IEBC Section 807.4 states:
"Existing structural elements supporting any additional gravity loads as a result of the alterations, including the effects of snow drift , shall comply with the International Building Code. EXCEPTION: 1. Structural elements whose stress is not increased by more than 5%."

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Wind Uplift

Simplified Procedure for Components and Cladding
ASCE 7-10, Section 30.5

Altmyer Residence
7422 Camporee Lane
Houston, TX

V =	134	Basic Wind Speed
Exposure	C	ASCE 7-10, Section 26.7
I =	1.21	Adjustment Factor for building height, ASCE 7-10, Figure 30.5-1
K_{zt} =	1	Topographic Factor, ASCE 7-10, Section 26.8.2
Roof angle =	30	deg
s_{anchor} =	48 in	Horizontal spacing of roof anchors
A_{trib} =	11.52 sf	Panel Area tributary to each roof anchor

p_{net30} — Net Wind Design Pressure, ASCE 7-10, Figure 30.5-1

Roof Zone	Zone 1	Zone 2	Zone 3	As shown in ASCE 7-10, Figure 30.5-1
	33.5 psf	39.4 psf	39.4 psf	

$p_{net} = IK_{zt}p_{net30}$ = Design Wind Uplift Pressure, ASCE 7-10, Equation 30.5-1

Roof Zone	Zone 1	Zone 2	Zone 3
	41 psf	48 psf	48 psf

p_{net} = 16 psf — Minimum Design Wind Pressure, ASCE 7-10, Section 30.2.2

Use 41 psf **Use 48 psf** **Use 48 psf**

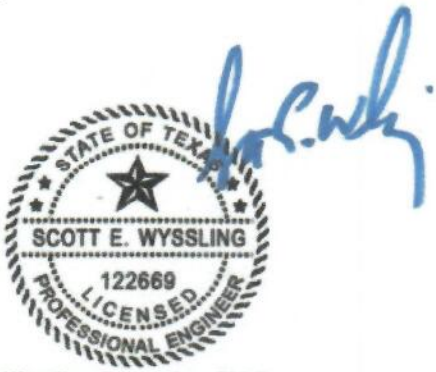
Connection to Existing Roof Framing

F.S. =	1	Additional Factor of Safety applied to withdrawl force, if desired
A_{trib} =	11.5	ft^2
DL_{panel} =	3 psf	

	Zone 1	Zone 2	Zone 3
W_{uplift} =	41 psf	48 psf	48 psf

P_{lag} = F.S. x A_{trib} x (0.6D - 0.6W) = **Withdrawl force for each roof anchor**

Zone 1	Zone 2	Zone 3
-262.5 lbs	**-155.9 lbs**	**-78.0 lbs**



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Connection Capacity

d_b =	5/16 in	Lag Screw diameter
Dpen =	2.00 in	Lag Screw penetration into existing framing member
No. of Screws	2	Screws per Connection
		Douglas Fir-Larch Species of wood framing
C_D =	1.6	Load Duration Factor for Wind Loading, NDS Table 2.3.2
C_t =	0.7	Temperature Factor, NDS Table 10.3.4
W =	266 lb/in	Withdrawl Capacity, NDS Equation 11.2-1
W' = C_D x C_t x W =	298 lb/in	Adjusted withdrawl value

$P_{allow} = D_{pen}$ x W' = **1192 lbs** **(Using (2) screws per connection)**

	Zone 1	Zone 2	Zone 3
DEMAND =	**262 lbs**	**156 lbs**	**78 lbs**
CAPACITY =	**1192 lbs**	**1192 lbs**	**1192 lbs**

This analysis calculates the capacity of the lag screws only. For capacity of the complete mounting system, please see

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Existing Rafter Analysis
Roof Section 1

Existing Rafter Properties

Altmyer Residence
7422 Camporee Lane
Houston, TX

Lumber = Douglas Fir-Larch
Grade = No. 2 E = 1600000 psi
Nominal size = 2x8 A = 10.88 in2 S = 13.14 in3 I = 47.63 in4
Rafter Spacing = 25 in o.c.
Max Span = 15.85 ft Between supports
Roof Slope = 30 °

Loading of Existing Rafter

Roof Dead Load

2 psf Composite Shingle
1 psf 7/16" Plywood Sheathing
2 psf 2x8 @ 25 in. o.c.
0 psf Ceiling, Mechanical, Electrical
0 psf Miscellaneous
5 psf TOTAL

Roof Live Load
20 psf

Ground Snow Load
0 psf

w_{DL} = DL x spacing = 10.5 plf Uniform Dead Load of Existing Structure
w_{DL} = DL x spacing = 5.3 plf Partially distributed Dead Load of Panels
w_{LR} = L_R x spacing = 30.8 plf Partially distributed uniform Roof Live Load
p_f = 0.7 x C_e x C_t x I x p_g = 0 psf Flat Roof Snow Load (ASCE 7 Eq. 7.3-1)
C_s = 0.727 Roof Slope Factor (ASCE 7 Fig. 7-2b)
p_s = C_s x p_f = 0.0 psf Sloped Roof Snow Load (ASCE 7 Eq. 7.4-1)
w_S = S x spacing = 0.0 plf Partially distributed uniform Roof Snow Load

w_{DL} = DL x spacing = 10.48 plf Uniform Dead Load of Existing Structure
w_{LL} = LL x spacing = 41.67 plf Partially distributed uniform Live Load

Beginning and ending locations of Live or Snow Load along rafter span

x_{start1} = 0.00 ft x_{start2} = 31.19 ft
x_{end1} = 15.00 ft x_{end2} = 33.19 ft

P_{lagDL} = A_{trib} x DL_{lag} = 29.3 lbs Downward Dead Load of solar panels at roof connections
P_{lagSL} = A_{trib} x SL_{lag} = 0.0 lbs Downward Snow Load on solar panels at roof connections
P_{lag2} = A_{trib} x (0.6D - 0.6W) = -262.5 lbs Upward Wind load on each roof connection

Point Load locations along rafter span (from left end)

Upper Connections		Lower Connections	
$x_{p1\ upper}$ =	16.33 ft	$x_{p1\ lower}$ =	19.06 ft
$x_{p2\ upper}$ =	21.73 ft	$x_{p2\ lower}$ =	24.46 ft
$x_{p3\ upper}$ =	27.13 ft	$x_{p3\ lower}$ =	29.86 ft
$x_{p4\ upper}$ =		$x_{p4\ lower}$ =	
$x_{p5\ upper}$ =		$x_{p5\ lower}$ =	
$x_{p6\ upper}$ =		$x_{p6\ lower}$ =	

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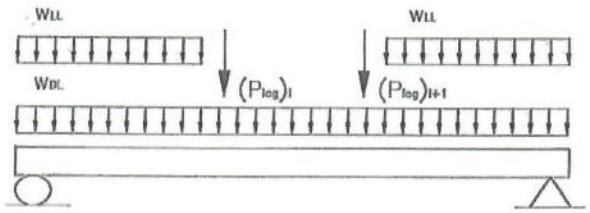
Loading Diagram



Results

Load Combination	V	M	D	D
DL + LL	359.75	919.0	0.195	**L / 974**
DL + S (upper)	164.03	417.85	0.195	**L / 974**
DL + S (lower)	149.43	426.33	0.195	**L / 974**
0.6DL - 0.6W	-622.62	1869.29	0.117	**L / 1623**

Capacity of Wood Rafter

Adjustment Factors

	Shear	Moment	
C_D =	1.00	1.00	Load Duration Factor, NDS Table 2.3.2
C_M =	1	1	Wet Service Factor, NDS Table 4A
C_t =	0.7	0.7	Temperature Factor, NDS Table 10.3.4
C_L =		1	Beam Stability Factor, NDS Section 3.3.3
C_F =		1.2	Size Factor, NDS Table 4A
C_{fu} =		1	Flat Use Factor, NDS Table 4A
C_i =	1	1	Incising Factor, NDS Section 4.3.8
C_r =		1.15	Repetetive Member Factor, NDS Table 4A

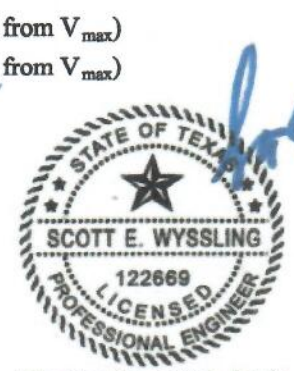
F_b = 900 psi Reference Design Allowable Bending Stress, NDS Table 4A
F_v = 180 psi Reference Design Allowable Shear Stress, NDS Table 4A

$F'_b = F_b$ x Adjustment Factors = **869 psi** (allowable bending stress)
$f_{b\ upper} = M/S$ = **839 psi** (actual bending stress determined from M_{max})
$f_{b\ lower} = M/S$ = **839 psi** (actual bending stress determined from M_{max})

OK IN BENDING

$F'_v = F_v$ x Adjustment Factors = **126 psi** (allowable shear stress)
$f_{v\ upper} = 3V/2bd$ = **50 psi** (actual shear stress determined from V_{max})
$f_{v\ lower} = 3V/2bd$ = **50 psi** (actual shear stress determined from V_{max})

OK IN SHEAR



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CITY OF HOUSTON

Building Code Enforcement

22055948

COH Project Number

APPROVED
FOR BUILDING PERMIT ONLY
CITY OF HOUSTON
CODE ENFORCEMENT DIVISION

The owner is responsible for compliance with the Building Code. Such approved plans and specifications shall not be changed, modified or altered without authorization from the building official, and all work shall be done in accordance with the approved plans.

Emanuela Luca 6/10/2022

Structural

APPROVED
ELECTRICAL PLAN

Plans and specifications to be in accordance with current national Electric Code and City Building Code. This plan shall be kept on job for Inspectors. Seperate Permit for Electrical required.

Terrance Barnes 6/22/2022

Electrical

Mechanical

Plumbing

Storm

Traffic

Planning

Utility Analysis

Airport (HAS)

Flood

Health

Health/Pools

Fire Marshal

High Pile/HazMat

LPG Tank

Sprinkler

Hazards by Location

Search Information

Address: 7422 CamporeeLane, Houston, TX

Coordinates: 29.697252, -95.617314

Elevation: 81 ft

Timestamp: 2022-05-16T14:40:02.033Z

Hazard Type: Wind

ASCE 7-16

MRI 10-Year	76 mph
MRI 25-Year	90 mph
MRI 50-Year	103 mph
MRI 100-Year	113 mph
Risk Category I	126 mph
Risk Category II	⚠ 134 mph

You are in a wind-borne debris region if you are also within 1 mile of the coastal mean high water line.

Risk Category III	⚠ 144 mph

If the structure under consideration is a healthcare facility and you are also within 1 mile of the coastal mean high water line, you are in a wind-borne debris region. If other occupancy, use the Risk Category II basic wind speed contours to determine if you are in a wind-borne debris region.

Risk Category IV	⚠ 148 mph

You are in a wind-borne debris region.

ASCE 7-10

MRI 10-Year	76 mph
MRI 25-Year	92 mph
MRI 50-Year	103 mph
MRI 100-Year	113 mph
Risk Category I	126 mph
Risk Category II	⚠ 134 mph

You are in a wind-borne debris region if you are also within 1 mile of the coastal mean high water line.

Risk Category III-IV	⚠ 144 mph

If the structure under consideration is a healthcare facility and you are also within 1 mile of the coastal mean high water line, you are in a wind-borne debris region. If other occupancy, use the Risk Category II basic wind speed contours to determine if you are in a wind-borne debris region.

ASCE 7-05

ASCE 7-05 Wind Speed	106 mph

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The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Disclaimer

Hazard loads are interpolated from data provided in ASCE 7 and rounded up to the nearest whole integer. Per ASCE 7, islands and coastal

HARRIS COUNTY APPRAISAL DISTRICT
REAL PROPERTY ACCOUNT INFORMATION
1123890000052

Tax Year: 2022

Print

Owner and Property Information								
Owner Name & Mailing Address: **ALTMYER DUSTIN & SARAH 7422 CAMPOREE LN HOUSTON TX 77083-4833**				Legal Description: **LT 52 BLK 3 CATALINA VILLAGE** Property Address: **7422 CAMPOREE LN HOUSTON TX 77083**				
State Class Code	Land Use Code	Land Area	Total Living Area	Neighborhood	Neighborhood Group	Market Area	Map Facet	Key Map®
A1 -- Real, Residential, Single-Family	1001 -- Residential Improved	4,250 SF	1,523 SF	669.03	8021	270 -- ISD 08 - Alief General	4854A	528L

Value Status Information

Value Status	Notice Date	Shared CAD
Noticed	03/31/2022	No

Exemptions and Jurisdictions

Exemption Type	Districts	Jurisdictions	Exemption Value	ARB Status	2021 Rate	2022 Rate
None	008	ALIEF ISD		Not Certified	1.204800	
	040	HARRIS COUNTY		Not Certified	0.376930	
	041	HARRIS CO FLOOD CNTRL		Not Certified	0.033490	
	042	PORT OF HOUSTON AUTHY		Not Certified	0.008720	
	043	HARRIS CO HOSP DIST		Not Certified	0.162210	
	044	HARRIS CO EDUC DEPT		Not Certified	0.004990	
	048	HOU COMMUNITY COLLEGE		Not Certified	0.099092	
	061	CITY OF HOUSTON		Not Certified	0.550830	
	931	INTERNATIONAL MANAGEMENT DISTRICT		Not Certified		

Texas law prohibits us from displaying residential photographs, sketches, floor plans, or information indicating the age of a property owner on our website. You can inspect this information or get a copy at **HCAD's information center at 13013 NW Freeway.**

Valuations

Value as of January 1, 2021			Value as of January 1, 2022		
	Market	Appraised		Market	Appraised
Land	31,769		Land	41,544	
Improvement	115,540		Improvement	110,082	
Total	147,309	147,309	Total	151,626	151,626

Land

Market Value Land												
Line	Description	Site Code	Unit Type	Units	Size Factor	Site Factor	Appr O/R Factor	Appr O/R Reason	Total Adj	Unit Price	Adj Unit Price	Value
1	1001 -- Res Improved Table Value	SF1	SF	4,250	1.15	1.00	1.00	--	1.15	8.50	9.78	41,544.00

Building

Building	Year Built	Type	Style	Quality	Impr Sq Ft	Building Details
1	1983	Residential Single Family	Residential 1 Family	Average	1,523 *	Displayed

* All HCAD residential building measurements are done from the exterior, with individual measurements rounded to the closest foot. This measurement includes all closet space, hallways, and interior staircases. Attached garages are not included in the square footage of living area, but valued separately. Living area above *attached* garages is included in the square footage living area of the dwelling. Living area above *detached* garages is not included in the square footage living area of the dwelling but is valued separately. This method is used on all residential properties in Harris County to ensure the uniformity of square footage of living area measurements district-wide. There can be a reasonable variance between the HCAD square footage and your square footage measurement, especially if your square footage measurement was an interior measurement or an exterior measurement to the inch.

Building Details (1)

Building Data	
Element	Detail
Cond / Desir / Util	Average
Foundation Type	Slab
Grade Adjustment	C
Heating / AC	Central Heat/AC
Physical Condition	Average
Exterior Wall	Frame / Concrete Blk
Exterior Wall	Brick / Masonry
Element	Units
Room: Total	6
Room: Full Bath	2
Room: Bedroom	3
Fireplace: Metal Prefab	1

Building Areas	
Description	Area
MAS/BRK GARAGE PRI	400
BASE AREA PRI	1,523

areas outside the last contour should use the last wind speed contour of the coastal area – in some cases, this website will extrapol the last wind speed contour and therefore, provide a wind speed that is slightly higher. NOTE: For queries near wind-borne debris reg boundaries, the resulting determination is sensitive to rounding which may affect whether or not it is considered to be within a wind-borne debris region.

Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions.

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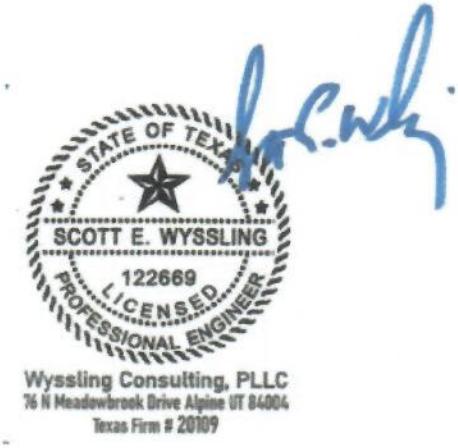

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CONSTRUCTION SUMMARY
FLUSH MOUNTED ROOF ARRAY, COMP SHINGLE ROOFING
ROOF/ARRAY #1 - 30° PITCH, 270° AZIMUTH - (3)
ROOF/ARRAY #2 - 30° PITCH, 180° AZIMUTH - (18)

UNKNOWN SYP 2X8 RAFTERS @ 25" O.C. SPACING SUPPORTING COMPOSITE SHINGLE ROOFING

BUILDING IMPORTANCE CATEGORY II
WIND EXPOSURE CATEGORY C

THIS PROJECT IS BASED ON 2015 IRC, DESIGN WINDSPEED 134MPH, 3 SECOND GUST

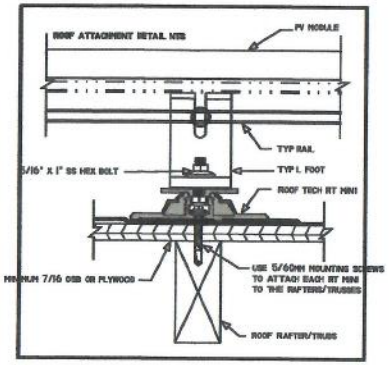
BUILDING RIDGE ELEVATION: 13'

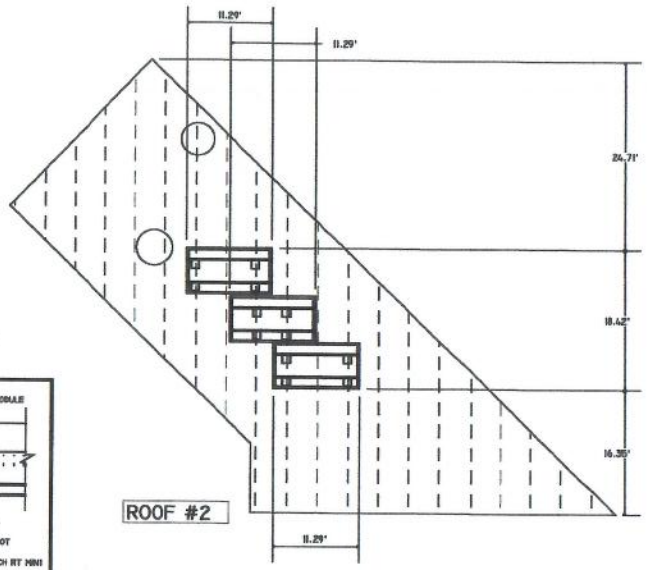
RT-MINI ATTACHMENT POINTS ATTACHED IN TO RAFTERS

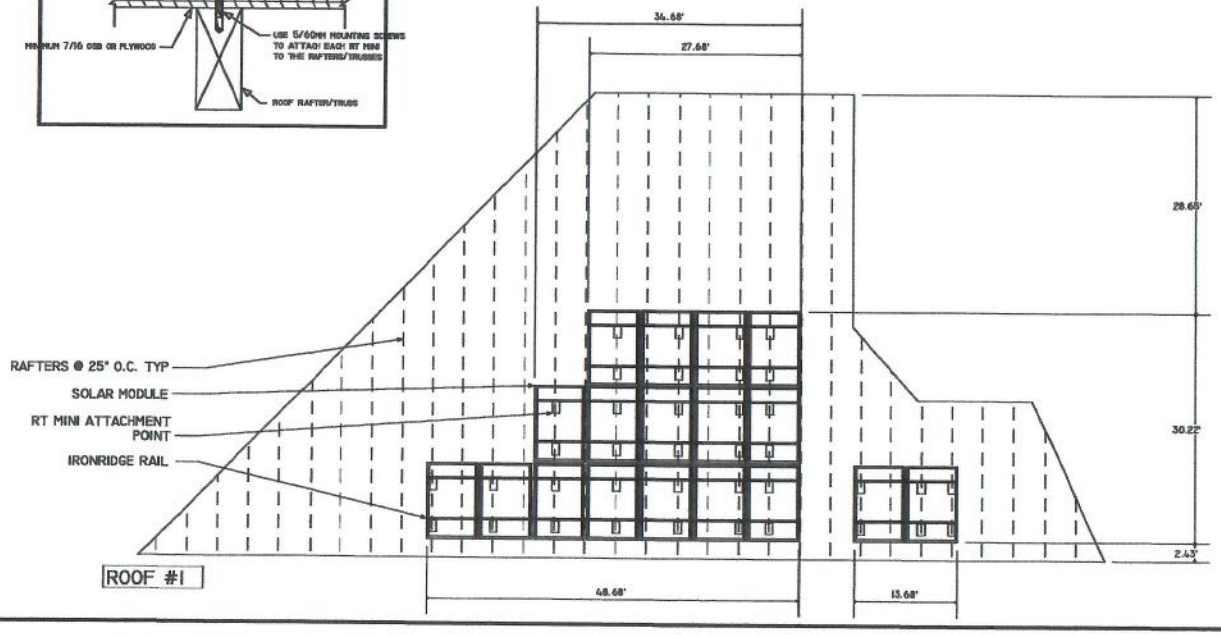
IRONRIDGE XR10 RAIL
MAX SPAN: 48"
MAX CANTILEVER: 12"

NO ENCROACHMENT INTO EASEMENTS BY NEW SCOPE OF WORK (SOLAR PANELS, RACK/RAIL SYSTEMS & EQUIPMENT)

DRAWING SCALE
1/8" = 1'-0"







LOAD CALCULATIONS #	1		LOAD CALCULATIONS #	2	
TOTAL MODULES	3		TOTAL MODULES	18	
TOTAL STANDOFFS	12		TOTAL STANDOFFS	38	
LINEAR FT OF RAIL	93.35	FT	LINEAR FT OF RAIL	172.34	FT
MODULE WEIGHT	44	LBS	MODULE WEIGHT	44	LBS
STANDOFF WEIGHT	2	LBS	STANDOFF WEIGHT	2	LBS
RAIL WEIGHT LBS / FT	0.9	LBS	RAIL WEIGHT LBS / FT	0.9	LBS
TOTAL MODULE WEIGHT	132	LBS	TOTAL MODULE WEIGH	T792	LBS
TOTAL STANDOFF WEIGHT	24	LBS	TOTAL STANDOFF WEIGHT	76	LBS
TOTAL RAIL WEIGHT	84.02	LBS	TOTAL RAIL WEIGHT	155.11	LBS
TOTAL ARRAY WEIGHT	240.02	LBS	TOTAL ARRAY WEIGHT	1023.11	LBS
TOTAL ARRAY AREA	54	SQFT	TOTAL ARRAY AREA	324	SQFT
POINT LOAD	20.00	lbs	POINT LOAD	26.92	lbs
DEAD LOAD	4.44	LBS/FT²	DEAD LOAD	3.16	LBS/F

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ALTMYER_PV
7422 CAMPOREE LANE
HOUSTON, TX 77083
7.665KW PV ROOF MOUNT

DESIGN AND DRAFTING BY : DAVID GIL

REVISIONS

REV	DATE	DESCRIPTION
	5/13/2022	ISSUE FOR REVIEW

GreenLight SOLAR SYSTEMS

SHEET SIZE:
11" X 17"

SHEET NAME:
ROOF LAYOUTS

SHEET NUMBER:
S-1

Power Optimizer

For North America

S440, S500

POWER OPTIMIZER

PV power optimization at the module level

- Specifically designed to work with SolarEdge residential inverters
- Detects abnormal PV connector behavior, preventing potential safety issues*
- Module-level voltage shutdown for installer and firefighter safety
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch loss, from manufacturing tolerance to partial shading
- Faster installations with simplified cable management and easy assembly using a single bolt
- Flexible system design for maximum space utilization
- Compatible with bifacial PV modules
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)

* Expected availability in 2022

solaredge.com

solaredge

/ Power Optimizer

For North America

S440, S500

	S440	S500	Unit
INPUT			
Rated Input DC Power(1)	440	500	W
Absolute Maximum Input Voltage (Voc)	60		Vdc
MPPT Operating Range	8 - 60		Vdc
Maximum Short Circuit Current (Isc) of Connected PV Module	14	15	Adc
Maximum Efficiency	99.5		%
Weighted Efficiency	98.8		%
Overvoltage Category	II		
OUTPUT DURING OPERATION			
Maximum Output Current	15		Adc
Maximum Output Voltage	60		Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM INVERTER OR INVERTER OFF)			
Safety Output Voltage per Power Optimizer	1 ± 0.1		Vdc
STANDARD COMPLIANCE			
Photovoltaic Rapid Shutdown System	NEC 2014, 2017 & 2020		
EMC	FCC Part 15 Class B, IEC 61000-6-2, IEC 61000-6-3		
Safety	IEC62109-1 (class II safety), UL1741		
Material	UL94 V-0, UV Resistant		
RoHS	Yes		
Fire Safety	VDE-AR-E 2100-712:2013-05		
INSTALLATION SPECIFICATIONS			
Maximum Allowed System Voltage	1000		Vdc
Dimensions (W x L x H)	129 x 153 x 30 / 5.07 x 6.02 x 1.18		mm / in
Weight (including cables)	655 / 1.5		gr / lb
Input Connector	MC4(2)		
Input Wire Length	0.1 / 0.32		m / ft
Output Connector	MC4		
Output Wire Length	(+) 2.5 / 8.2 / (-) 0.9 / 2.95		m / ft
Operating Temperature Range(3)	-40 to +85		°C
Protection Rating	IP68 / Type6B		
Relative Humidity	0 - 100		%

(1) Rated power of the module at STC will not exceed the power optimizer Rated Input DC Power. Modules with up to +5% power tolerance are allowed

(2) For other connector types please contact SolarEdge

(3) For ambient temperature above +70°C / +158°F power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details.

PV System Design Using a SolarEdge Inverter		Single Phase HD-Wave	Three Phase for 208V grid	Three Phase for 277/480V grid	
Minimum String Length (Power Optimizers)	S440, S500	8	14	18	
Maximum String Length (Power Optimizers)		25		50	
Maximum Nominal Power per String		5700 (6000 with SE7600-US/SE10000-US)	12000	25000	W
Maximum Allowed Connected Power per String * (Stronger modules where the difference in connected power between strings is 1,000W or less)		Refer to Footnote 5	One String: 15000W Two strings or more: 19000W	35,000W	
Parallel Strings of Different Lengths or Orientations			**		

(4) A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement

(5) If the inverter rated AC power x maximum nominal power per string than the maximum power per string will be able to reach up to the inverter's maximum input DC power. Refer to: https://www.solaredge.com/sites/default/files/se-power-optimizer-single-string-design-application-note.pdf

(6) It is not allowed to mix S-series and P-series Power Optimizers in new installations

ETL Intertek

RoHS

City of Houston

APPROVED FOR CODE COMPLIANCE

Performance of this work is not within the responsibility of review and is subject to applicable code requirements

ALTMYER_PV
7422 CAMPOREE LANE
HOUSTON, TX 77083
7.665kW PV ROOF MOUNT

DESIGN AND DRAFTING BY : DAVID GILL

REVISIONS

REV	DATE	DESCRIPTION
	5/13/2022	ISSUE FOR REVIEW

GreenLight SOLAR SYSTEMS

SHEET SIZE:
11" X 17"

SHEET NAME:
SPEC SHEETS

SHEET NUMBER:
PV-5

Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US /
SE7600H-US / SE10000H-US / SE11400H-US

INVERTERS

Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking 99% weighted efficiency
- Quick and easy inverter commissioning directly from a smartphone using the SolarEdge SetApp
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014, NEC 2017 and NEC 2020 per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Small, lightweight, and easy to install both outdoors or indoors
- Built-in module-level monitoring
- Optional: Faster installations with built-in consumption metering (1% accuracy) and production revenue grade metering (0.5% accuracy, ANSI C12.20)

solaredge.com

solaredge

Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/
SE7600H-US / SE10000H-US / SE11400H-US

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
APPLICABLE TO INVERTERS WITH PART NUMBER	SE3000H-XXXXXBX4							
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3800 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3800 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5[1]							Hz
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A
Power Factor	1 Adjustable - 0.85 to 0.85							
GFDI Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							Vdc
Nominal DC Input Voltage	380					400		Vdc
Maximum Input Current @240V[2]	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V[2]	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse Polarity Protection	Yes							
Ground-Fault Isolation Detection	600kΩ Sensitivity							
Maximum Inverter Efficiency	99	99.2						%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W

(1) For other regional settings please contact SolarEdge support
(2) A higher current source may be used; the inverter will limit its input current to the values stated

ALTMYER_PV
7422 CAMPOREE LANE
HOUSTON, TX 77083
7.665KW PV ROOF MOUNT

DESIGN AND DRAFTING BY : DAVID GILL

REVISIONS

REV	DATE	DESCRIPTION
	5/13/2022	ISSUE FOR REVIEW

GreenLight
SOLAR SYSTEMS

SHEET SIZE:
11" X 17"

SHEET NAME:
SPEC SHEETS

SHEET NUMBER:
PV-4

msolar

120BB 365W HC Series

mSolar 9BB Half-Cell Black Monocrystalline PERC PV Module

Excellent efficiency
9 busbar technology increases power by decreasing the distance between busbars and the finger grid line

Improved weak illumination response
More power output even in lower light conditions such as overcast days or off-peak sunlight hours

Anti PID
Panels rigorously tested to limit power degradation caused by 'stray' currents

High wind and snow resistance
5,400Pa Snow Load
2,400Pa Wind Load

25-year warranty
M Solar modules are guaranteed to retain at least 84.3% of the initial power output

Appealing Aesthetics
Fully black module creates a sleek, uniform array

25-year product warranty, 25-year output warranty

0.5% annual degradation over 25 years

www.msolarenergy.us

120BB 365W HC Series | msolar 9BB Half-Cell mBlack Monocrystalline PERC PV Module

Electrical Characteristics | STC*

Module Type	TXS6-36512088	TXS6-37012088	TXS6-37512088
Nominal Power Watt Pmax(W)*	365	370	375
Power Output Tolerance Pmax(%)	0~+3	0~+3	0~+3
Maximum Power Voltage Vmp(V)	34.0	34.20	34.40
Maximum Power Current Imp(A)	10.74	10.82	10.91
Open Circuit Voltage Voc(V)	40.8	41.00	41.20
Short Circuit Current Isc(A)	11.33	11.42	11.51
Module Efficiency (%)	20.04	20.31	20.59

Electrical Characteristics | NMOT*

Maximum Power Pmax(Wp)	272.10	275.80	279.80
Maximum Power Voltage Vmpp(V)	31.60	31.70	31.90
Maximum Power Current Impp(A)	8.62	8.69	8.76
Open Circuit Voltage Voc(V)	38.00	38.20	38.40
Short Circuit Current Isc(A)	9.15	9.22	9.29

Mechanical Data

Solar cells	Mono PERC
Cells orientation	120 (6×20)
Module dimension	1755×1038×35 mm(With Frame)
Weight	20.5 kg
Glass	3.2mm, High Transmission, AR Coated Tempered Glass
Junction box	IP 68, 3 diodes
Cables	4 mm², 350 mm
Connectors	MC4-compatible

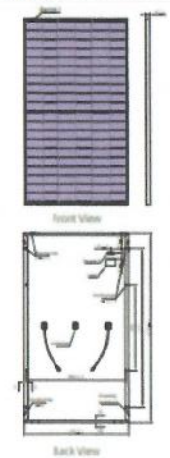
Temperature Ratings / Working Conditions

Temperature Ratings		Working Conditions	
NMOT	44°C ±2°C	Maximum system voltage	1500 V DC
Temperature coefficient of Pmax	-0.36%/°C	Operating temperature	-40°C~+85°C
Temperature coefficient of Voc	-0.29%/°C	Maximum series fuse	20 A
Temperature coefficient of Isc	0.05%/°C	Maximum load(snow/wind)	5400 Pa / 2400 Pa

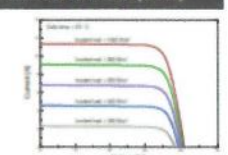
Packaging Details

30 Panels per pallet	Pallet Weight 1,430 lbs. (649 kg)	Truck Weight 37,180 lbs. (16,865 kg)
26 Pallets per truck		

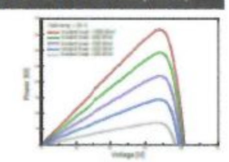
Dimensions (MM)



I-V Curves of PV Module (365W)



P-V Curves of PV Module (365W)



ALTMYER_PV
7422 CAMPOREE LANE
HOUSTON, TX 77083
7.665KW PV ROOF MOUNT
DESIGN AND DRAFTING BY : DAVID GIL

REVISIONS		
REV	DATE	DESCRIPTION
	5/13/2022	ISSUE FOR REVIEW

GreenLight SOLAR SYSTEMS

SHEET SIZE: 11" X 17"

SHEET NAME: SPEC SHEETS

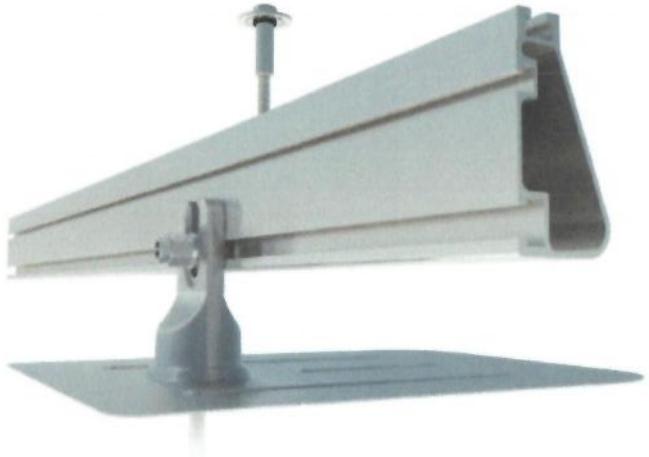
SHEET NUMBER: PV-3

City of Houston
REVIEWED FOR CODE COMPLIANCE

Datasheet

IRONRIDGE

Flush Mount System



Built for solar's toughest roofs.

IronRidge builds the strongest mounting system for pitched roofs in solar. Our components have been tested to the limit and proven in extreme environments, including Florida's high-velocity hurricane zones.

Our rigorous approach has led to unique structural features, such as curved rails and reinforced flashings, and is also why our products are fully certified, code compliant and backed by a 25-year warranty.

Strength Tested
All components evaluated for superior structural performance.

PE Certified
Pre-stamped engineering letters available in most states.

Class A Fire Rating
Certified to maintain the fire resistance rating of the existing roof.

Design Assistant
Online software makes it simple to create, share, and price projects.

UL 2703 Listed System
Entire system and components meet newest effective UL 2703 standard.

25-Year Warranty
Products guaranteed to be free of impairing defects.

Datasheet

XR Rails

XR10 Rail

A low-profile mounting rail for regions with light snow.
- 6' spanning capability
- Moderate load capability
- Clear and black finish

XR100 Rail

The ultimate residential solar mounting rail.
- 8' spanning capability
- Heavy load capability
- Clear and black finish

XR1000 Rail

A heavyweight mounting rail for commercial projects.
- 12' spanning capability
- Extreme load capability
- Clear anodized finish

BOSS™ Bonded Splices

Bonded Structural Splices connect XR Rails together.
- Integrated bonding
- No tools or hardware
- Self-centering stop tab

Clamps & Grounding

UFO™

Universal Fastening Objects bond modules to rails.
- Fully assembled & lubed
- Single, universal size
- Clear and black finish

Stopper Sleeves

Snap onto the UFO to turn into a bonded end clamp.
- Bonds modules to rails
- Sized to match modules
- Clear and black finish

CAMO™

Bond modules to rails while staying completely hidden.
- Universal end-cam clamp
- Tool-less installation
- Fully assembled

Bonding Hardware

Bond and attach XR Rails to roof attachments.
- T & Square Bolt options
- Nut uses 7/16" socket
- Assembled and lubricated

Attachments

FlashFoot2™

Flash and mount XR Rails with superior waterproofing.
- Twist-on Cap eases install
- Wind-driven rain tested
- Mill and black finish

FlashVue™

Flash and mount conduit, strut, or junction boxes.
- Twist-on Cap eases install
- Wind-driven rain tested
- Secures " or 1" conduit

Knockout Tile

Replace tiles and ensure superior waterproofing.
- Flat, S, & W tile profiles
- Form-fit compression seal
- Single-leg universal base

All Tile Hook

Mount on tile roofs with a simple, adjustable hook.
- Works on flat, S, & W tiles
- Single-socket installation
- Optional deck flashing

Resources

Design Assistant
Go from rough layout to fully engineered system. For free.
Go to IronRidge.com/design

Endorsed by FL Building Commission
Flush Mount is the first mounting system to receive Florida Product approval for 2017 Florida Building Code compliance.
Learn More at bit.ly/floridacert

City of Houston

REVIEWED FOR CODE COMPLIANCE

Performance of this system is the responsibility of the owner, engineer of record and installing contractor. Determination of the suitability of this system for the structure and its application is the responsibility of the owner and/or engineer of record.

STATE OF TEXAS
SCOTT E. WYSSLING
122669
LICENSED
PROFESSIONAL ENGINEER

Wyssling Consulting, PLLC
76 N Meadowbrook Drive Alpine UT 84004
Texas Firm # 20109

Signed 5/16/2022

ALTMYER_PV
7422 CAMPOREE LANE
HOUSTON, TX 77083
7.665kW PV ROOF MOUNT

DESIGN AND DRAFTING BY : DAVID GILL

REVISIONS

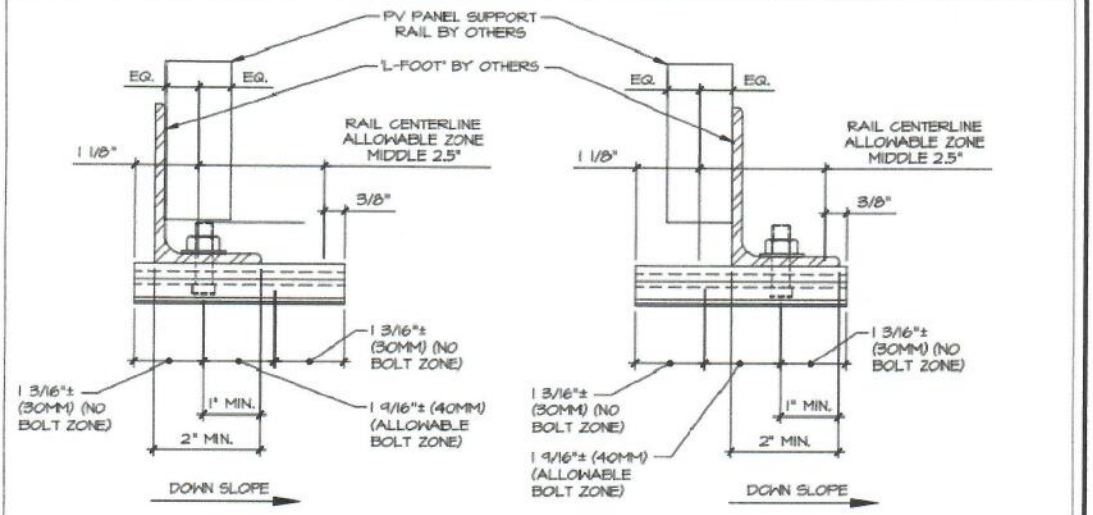
REV	DATE	DESCRIPTION
	5/13/2022	ISSUE FOR REVIEW

GreenLight SOLAR SYSTEMS

SHEET SIZE:
11" X 17"

SHEET NAME:
MOUNTING DETAIL

SHEET NUMBER:
PV-2



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

SCALE: N.T.S.

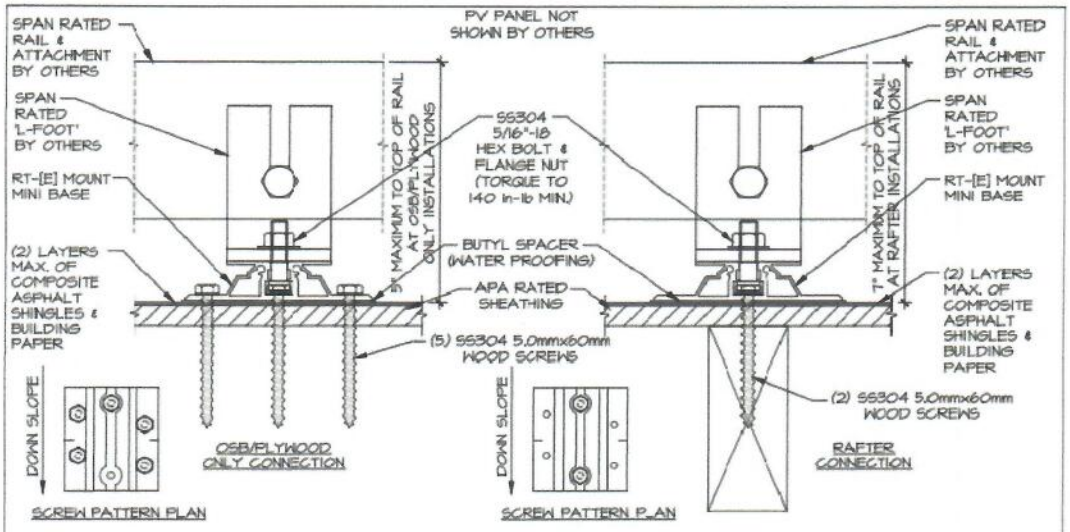
Starling Madison Lofquist, Inc.
5224 S. 39th Street
Phoenix, Arizona 85040
(602) 438-2500
fax. (602) 438-2505
Consulting Structural and Forensic Engineers

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.
10620 TREENA ST., SUITE 230
SAN DIEGO, CA 92131

EXHIBIT A
2 OF 4



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

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

ROOF TECH, INC.
10620 TREENA ST., SUITE 230
SAN DIEGO, CA 92131

EXHIBIT A
1 OF 4

SHEET NUMBER: PV-2.2

SHEET NAME: MOUNTING DETAIL

SHEET SIZE: 11" X 17"

GreenLight SOLAR SYSTEMS

REV	DATE	DESCRIPTION
	5/13/2022	ISSUE FOR REVIEW

REVISIONS

DESIGN AND DRAFTING BY: DAVID GILL

ALTMYER_PV
74.22 CAMPOREE LANE
HOUSTON, TX 77083
7.665kW PV ROOF MOUNT

Wyssling Consulting, PLLC
16 N Meadowbrook Drive Alpine UT 84004
Texas Firm # 20169

STATE OF TEXAS
SCOTT E. WYSSLING
122869
LICENSED
PROFESSIONAL ENGINEER

Signed 5/16/2022

City of Houston

RT-MINI

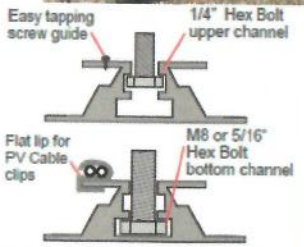
Self-flashing base for asphalt & metal roof-top PV mounting systems

RT-MINI is suitable for mounting any rail system with a conventional L-Foot.

Dual bolt design: M8 or 5/16" for L-Foot & 1/4" for EMC

ICC ES

ICC ESR 3575



Call Now for more details
858-935-6064

Roof Tech

Smarter PV mounting solutions from top of roof to bottom line®

www.roof-tech.us info@roof-tech.us

RT-MINI

Flexible Flashing certified by the International Code Council (ICC)

Engineered to ASTM D 1761 (Standard Test Methods for Mechanical Fasteners in Wood)

Components

RT2-00-MINIBK

PAT : PENDING

MINI base : 20 ea.
Screw : 40 ea.
Extra RT-Butyl : 10 ea.

Optional Item

5 x 60mm Mounting screw (RT2-04-SD5-60) : 100 ea./Bag

5/16" Hex bolt, washer & nut set (RT-04-BN305L-US) : 100 ea./Bag

RT-Butyl (RT2-04-BUTYLT) : 10 ea./Box

RT-Butyl is Roof Tech's flexible flashing used in 700,000 residential PV systems for the last 24 years. It is the first PV mounting system with Flexible Flashing certified by the ICC.

Metal Flashing Retrofit

Flexible Flashing

Shedding water?

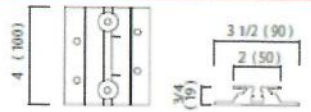
100% Waterproof

ICC ESR-3575

ASTM2140 testing

UV testing (7500 hrs.)

Dimensions in (mm)



Rafter installation

Deck installation

P.E. Stamped Letters available at www.roof-tech.us/support

Roof Tech Inc.
www.roof-tech.us info@roof-tech.us
10620 Treena Street, Suite 230, San Diego, CA 92131
858.935.6064

25 YEARS

City of Houston

STATE OF TEXAS
SCOTT E. WYSSLING
122669
LICENSED
PROFESSIONAL ENGINEER

Wyssling Consulting, PLLC
76 N Meadowbrook Drive Alpine UT 84004
Texas Firm # 20109

Signed 5/16/2022

ALTMYER_PV
7422 CAMPOREE LANE
HOUSTON, TX 77083
7.665kW PV ROOF MOUNT

DESIGN AND DRAFTING BY : DAVID GLL

REVISIONS

REV	DATE	DESCRIPTION
	5/15/2022	ISSUE FOR REVIEW

GreenLight SOLAR SYSTEMS

SHEET SIZE:
11" X 17"

SHEET NAME:
MOUNTING DETAIL

SHEET NUMBER:
PV-2.1

City of Houston

SITE PLAN
(21) MSOLAR TX56-365120BB 365W MODULES TOTAL, 7.665kW DC STC

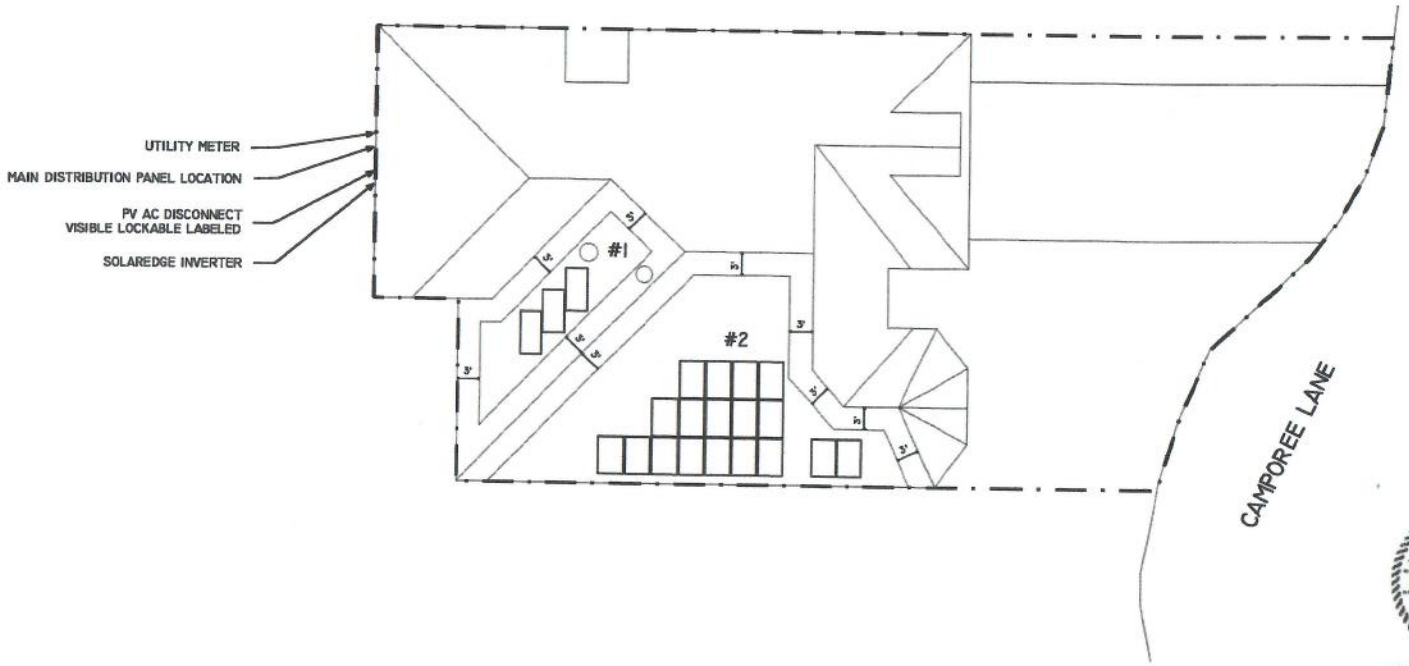
(21) SOLAREDGE S440 OPTIMIZERS
(1) SOLAREDGE 7600H-US INVERTER 7.6KW AC

SINGLE STORY ACCESS

METER# 89533480
ESID: 10089010171902547431OO

NO ENCROACHMENT INTO EASEMENTS BY NEW SCOPE OF WORK
(SOLAR PANELS, RACK/RAIL SYSTEMS & EQUIPMENT)

FLUSH MOUNTED ROOF ARRAY, COMP SHINGLE ROOFING
ROOF/ARRAY #1 - 30° PITCH, 270° AZIMUTH - (3)
ROOF/ARRAY #2 - 30° PITCH, 180° AZIMUTH - (18)



STATE OF TEXAS
SCOTT E. WYSSLING
122669
LICENSED
PROFESSIONAL ENGINEER

Wyssling Consulting, PLLC
76 N Meadowbrook Drive Alpine UT 84004
Texas Firm # 20189

Signed 5/16/2022

Anthony Duplantis
Master Electrician #400326

DRAWING SCALE: 1/16" = 1'-0"

ALTMYER_PV
7422 CAMPOREE LANE
HOUSTON, TX 77083
7.665kW PV ROOF MOUNT

DESIGN AND DRAFTING BY : DAVID GILL

REVISIONS

REV	DATE	DESCRIPTION
	5/13/2022	ISSUE FOR REVIEW

GreenLight SOLAR SYSTEMS

SHEET SIZE:
11" X 17"

SHEET NAME:
SITE PLAN

SHEET NUMBER:
PV-1

Purchase & Installation Agreement

Photovoltaic Solar Panels & Accessories

This Purchase & Installation Agreement is hereby entered into between:

Contractor

Green Light Solar		
5750 N Sam Houston Pkwy E #810		
Houston	**TX**	**77032**

Purchaser

Name Sarah Altmyer		
Address 7422 Camporee Lane,		
City Houston	State TX	ZIP 77083

Terms

Subject to the terms and provisionsof this Contract, Green Light Solar LLC agrees to provideto Purchaser the following system/components:

labor and ancillary components to complete installation.
Total Cost: $15,330 Billing schedule: 50% due at signing, 50% due after completion

Included in this scopeof work are included of the following items, as applicable:

- Design and engineering necessary to install and operatesystem in compliancewith local code and/or industry best practices
- Municipal permitsas applicable
- Homeowners Association approvalas applicable
- Utility approvaland interconnection
- All electrical and structural work necessary to interconnect system to powergrid

Green Light Solar LLC and Purchaser agree to the following supplementaryterms:

- Green Light Solar is responsiblefor any damage to the purchaser's roof, plumbing, electrical, or any underground equipment that may occur during the installation processdue to negligence or error on behalf of Green Light Solar technicians.
- Panel layout or electrical configuration and equipment may be adjusted following a physical site survey. Any adjustment to design by Green Light Solar LLC will require purchaserapprovalprior to installation.
- If conditions at the job site are (1) materially different from the conditions identified in this Contract, or (2) unusual or unknown conditions that are materially different than conditions typically encountered in the work providedfor in this Contract, Green Light Solar LLC shall pause work and notify purchaserof said condition. Purchaser and Green Light Solar LLC will then reach a mutual agreement on a written change order before work will resume.

- Green Light Solar will not perform any additional work requested by purchaser or third parties except upon written change orders describing the scope of work and the adjustment in the contract price.

Disputes

- The parties shall endeavor to resolve their claims by mediation as a condition preceding arbitration by either party. If mediation should fail, the parties agree to submit the controversy to arbitration which shall be in accordance with the Revised Uniform Arbitration Act and any other procedural rules agreed upon by the parties or mandated by the arbitrator.
- Green Light Solar has the right to cancel this Contract if unsuitable conditions are encountered due to unforeseeable reasons at any point in the future.
- All correspondence concerning disputes related to this contract should be mailed to Green Light Solar's address as detailed on this document.

Warranty

Green Light Solar LLC provides warranty on work described by this contract exclusively to purchaser in accordance with the following conditions:

- The system installed pursuant to this Contract shall be free from defects in workmanship for a period of 10 years from date of completion of installation. Warranty beyond the standard 10-year period will apply if specified in writing within this document. Warranty details can be found on the accompanying warranty document.
- Manufacturer warranties provide for additional coverage for defects with materials and equipment. Manufacturer warranties will be made available to purchaser at time of completion.
- Repair or replacement of system is the exclusive remedy of purchaser and is subject to the following conditions:
    - Purchaser notifies Green Light Solar LLC of a warranty claim in writing within thirty (30) days of the discovery thereof.
    - No attempted alteration or repair of the system or its installation has occurred, except by Green Light Solar technicians.
    - The system or installation thereof is not subjected to misuse, negligence, accident or use contrary to the instructions of Green Light Solar or the manufacturer of the equipment.
    - Roof penetrations are guaranteed for a period of 10 years from completion of installation, unless inadequate condition of existing roof is outlined in this contract.
    - Warranty is transferable with written notification to and approval from Green Light Solar LLC.

City of Houston Floodplain Management Office
Project Cost Estimate Worksheet

Property Address/Zip: 7422 Camporee Lane, Houston, TX 77083

Property Owner Name: Sarah Altmyer

Description and price breakdown of improvements (use back if necessary):

Improvement Description	Material Qty.	Material Unit Cost	Material Total Cost	Labor Quantity	Labor Unit Cost	Labor Total Cost	Total Labor & Material	Receipt Attached
Solar Panels	21	$250	$5,250	1	$1,260	$1,260	$6,510	☐
Racking/Railing	21	$100	$2,100	1	$1,260	$1,260	$3,360	☐
Elect Components	21	$200	$4,200	1	$1,260	$1,260	$5,460	☐
Batteries	0							☐
								☐
								☐
								☐
								☐
Total			$11,550				$15,330	☐

Structure Value = $ 110,082 (Check one: HCAD X Appraisal ____)
Total Project Cost = $ 15,330 Percentage of Structure Value = 13.9 %

OWNER IS DOING WORK WITHOUT CONTRACTOR

I/we certify that the attached cost estimate is an accurate and complete description of the improvements and associated costs scheduled for the property listed above.

Owner Signature Date

Owner Printed Name

Texas Driver's License or ID Number

Sworn to and subscribed before me, the undersigned authority on the ____day of _____, _____. To certify which witness my hand and seal of office.

NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS MY COMMISION EXPIRES

City of Houston Floodplain Management Office
Project Cost Estimate Worksheet

OWNER HAS HIRED/WILL HIRE CONTRACTOR

I/we certify that the attached cost estimate is an accurate and complete description of the improvements and associated costs scheduled for the property listed above.

Owner Signature Date	Contractor Signature Date
Owner Printed Name	Contractor Printed Name
Texas Driver's License or ID Number	Texas Driver's License or ID Number

Notary for Owner Signature
Sworn to and subscribed before me, the undersigned authority on the _____day of _____, _____. To certify which witness my hand and seal of office.

NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS MY COMMISION EXPIRES

Notary for Contractor Signature
Sworn to and subscribed before me, the undersigned authority on the _____day of _____, _____. To certify which witness my hand and seal of office.

NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS MY COMMISION EXPIRES

ENGINEER OR ARCHITECT CERTIFIES COST ESTIMATE

Engineer/ Architect Signature

512 785 4179
Office Telephone Number

5/26/2022
Seal & Date

PLAINVIEW ENGINEERING LLC
TX FIRM# 20680

PV SYSTEM AC DISCONNECT

RATED AC OUTPUT CURRENT : XXA
NOMINAL OPERATING AC VOLTAGE : 240V

REQ'D BY: NEC 690.54 — 1
APPLY TO:
PV AC DISCONNECT

⚠ WARNING
THIS PREMISE IS SUPPLIED BY MORE THAN ONE SOURCE OF ELECTRIC POWER (UTILITY, SOLAR PV)

REQ'D BY: NEC 705.10 — 2
APPLY TO:
MAIN SERVICE PANEL/
POINT OF CONNECTION

CAUTION MULTIPLE SOURCES OF POWER

UTILITY AND PHOTOVOLTAIC

REQ'D BY: NEC 705.10 — 3
APPLY TO:
METER AND DISCONNECT

WARNING - ELECTRIC SHOCK HAZARD

TERMINALS ON BOTH LINE AND LOAD SIZES MAY BE ENERGIZED IN THE OPEN POSITION

DC VOLTAGE IS ALWAYS PRESENT WHEN SOLAR MODULES ARE EXPOSED TO SUNLIGHT

REQ'D BY: NEC 690.13(B) AND 690.15 — 4
APPLY TO:
DISCONNECTS

WARNING
THE DISCONNECTION OF THE GROUNDED CONDUCTORS MAY RESULT IN OVERVOLTAGE OF THE EQUIPMENT

REQ'D BY: NEC 690.31(I) — 5
APPLY TO: N/A
BIPOLAR PV SYSTEM

PV SYSTEM DISCONNECT
MAXIMUM VOLTAGE : N/A V DC
MAXIMUM CIRCUIT CURRENT : N/A ADC
MAX RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER OR DC TO DC CONVERTER: N/A A

REQ'D BY: NEC 690.53 — 6
APPLY TO: INVERTER INTEGRATED
DC DISCONNECT

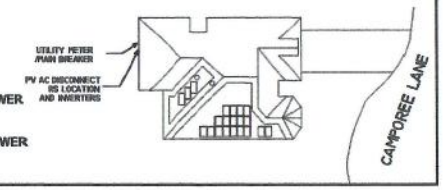
WARNING - ELECTRIC SHOCK HAZARD

TERMINALS ON BOTH LINE AND LOAD SIZES MAY BE ENERGIZED IN THE OPEN POSITION

REQ'D BY: NEC 690.13 — 7
APPLY TO: AC DISCONNECT

WARNING!

N



CAUTION! MULTUIPLE SOURCES OF POWER
UTILITY AND PHOTOVOLTAIC

THIS METER HAS TWO SOURCES OF POWER
1. SOLAR POWER
2. UTILITY SERVICE

REQ'D BY: NEC 690.56 — 8
APPLY TO:
METER

APPROVED
ELECTRICAL PLAN

Plans and specifications to be in accordance with current national Electric Code and City Building Code. This plan shall be kept on job for inspectors. Seperate Permit for Electrical required.

Terrance Barnes 06/22/22

RAPID SHUTDOWN PV ARRAY

REQ'D BY: NEC 690.12(B)(2) — 9
APPLY TO: SOLAR CONDUIT
INSIDE ARRAY BOUNDARY

WARNING - PHOTOVOLTAIC POWER SOURCE

REQ'D BY: NEC 690.31(G)(3) — 10
APPLY TO: SOLAR CONDUIT

WARNING - DO NOT DISCONNECT UNDER LOAD

REQ'D BY: NEC 690.15(C) — 11
APPLY TO: REVENUE METER

RAPID SHUTDOWN SWITCH
FOR SOLAR PV SYSTEM

REQ'D BY: NEC 690.56(C)(3) — 12
APPLY TO: PV AC DISCONNECT

⚠ WARNING

PHOTOVOLTAIC SYSTEM EQUIPPED WITH RAPID SHUTDOWN

SOLAR PV SYSTEM IS EQUIPPED WITH RAPID SHUTDOWN. TURN RAPID SHUTDOWN SWITCH TO THE OFF POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN ARRAY

REQ'D BY: NEC 690.56(C) — 13

BLACK ON YELLOW BACKGROUND
APPLY TO: PV AC DISCONNECT

STATE OF TEXAS
SCOTT E. WYSSLING
122669
LICENSED
PROFESSIONAL ENGINEER

Wyssling Consulting, PLLC
16 N Meadowbrook Drive Alpine UT 84004
Texas Firm # 20169

Signed 5/16/2022

SIGNAGE REQUIREMENTS

RED BACKGROUND
WHITE LETTERING
MIN. 3/8" LETTER HEIGHT
ALL CAPITAL LETTERS
ARIAL OR SIMILAR FONT
REFLECTIVE ,
WEATHER RESISTANT
MATERIAL UL 969

City of Houston
REVIEWED FOR CODE COMPLIANCE

Anthony Duplantis
Master Electrician #400326

ALTMYER_PV
7422 CAMPOREE LANE
HOUSTON, TX 77083
7.665kW PV ROOF MOUNT

DESIGN AND DRAFTING BY : DAVID GILL

REVISIONS

REV	DATE	DESCRIPTION
	5/15/2022	ISSUE FOR REVIEW

GreenLight SOLAR SYSTEMS

SHEET SIZE:
11" X 17"

SHEET NAME:
SYSTEM LABELING DETAIL

SHEET NUMBER:
E-2

CABLE SCHEDULE AND CALCS

CIRCUIT ID #	SERVICE	QTY	CONDUCTOR SIZE	CONDUCTOR AMPACITY	CONDUCTOR MATERIAL	LONGEST LENGTH (FT)	CONDUCTOR INSULATION (90°C)	GROUND SIZE	GROUND QTY	GROUND INSULATION	CONDUIT TYPE	CONDUIT FILL DERATE	CONDUIT SIZE	TEMP DERATE	DERATED AMPACITY	MAX CIRCUIT CURRENT
1	AC	2	AWG #12	30	CU	20	Q-CABLE	AWG #8	1	BARE	FREE AIR OR EMT	1	N/A	.71	21.3A	15A
2	AC	4	AWG #10	40A	CU	80	THWN-2	AWG #8	1	THWN-2	EMT	0.8	3/4"	.71	22.72A	15A
3	AC	3	AWG #6	75A	CU	20	THWN-2	AWG #8	1	THWN-2	EMT	1	3/4"	.87	65.25A	40A

(21) mSOLAR TX56-365120BB 365W MODULES
TOTAL, 7.665kW DC STC

(21) SOLAREDGE S440 OPTIMIZERS
(1) SOLAREDGE 7600H-US INVERTER 7.6KW AC

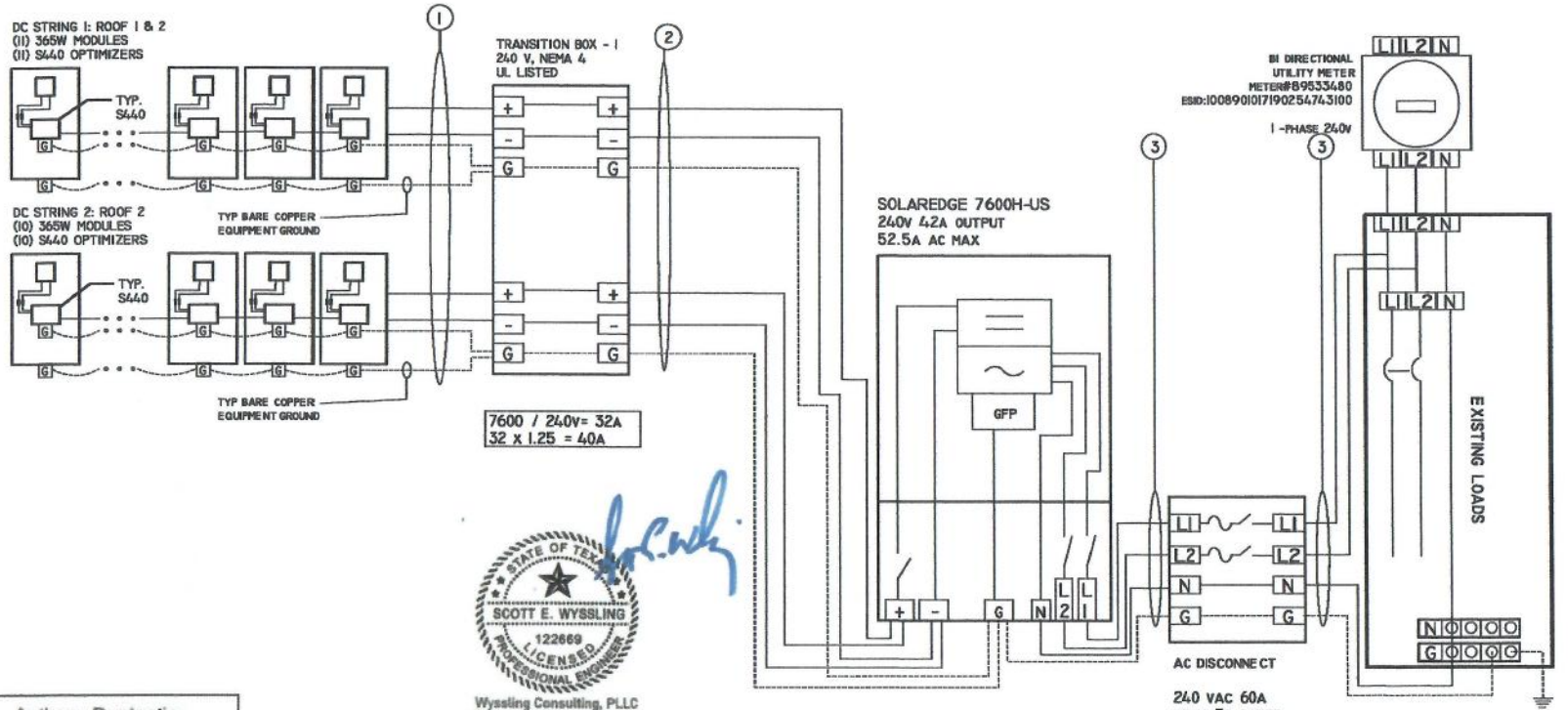
SINGLE STORY ACCESS

METER# 89533480
ESID: 10089010171902547431OO

NO ENCROACHMENT INTO EASEMENTS BY NEW SCOPE OF WORK
(SOLAR PANELS, RACK/RAIL SYSTEMS & EQUIPMENT)

City of Houston
2305010-68
FOR CODE COMPLIANCE ONLY
Performance of this system is subject to the applicable codes and regulations

GENERAL NOTES:
1. INSTALLATION SHALL BE ACCORDING TO THE NATIONAL ELECTRIC CODE 2020 AND ALL STATE AND LOCAL STANDARDS AND CODES.
2. INSTALL LABELS ON ALL ENCLOSURES, INVERTERS, SWITCHES, LOAD CENTERS AS PER NEC
3. AC DISCONNECT SHALL BE EXTERNALLY OPERATED KNIFE BLADE TYPE AND LOCKABLE IN BOTH THE ON AND OFF POSITIONS AND DIRECTLY ACCESIBLE TO THE UTILITY
4. ALL ELECTRICAL WORK WILL COMPLY AND BE INSPECTED BY A LICENSED MASTER ELECTRICIAN AND ALL LOCAL CODE AUTHORITIES
5. CONTRACTOR IS RESPONSIBLE FOR ENSURING INSTALLATION IS PER NEC & MANUFACTURERS DESIGN SPECIFICATIONS
6. ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600V AND 90°C AND RUN IN CONDUIT
7. CONTINUOUS GROUND IS REQUIRED. IRREVERSIBLE COMPRESSION CLAMPS REQUIRED FOR ALL GROUND SPLICES
8. ENPHASE MICROINVERTERS COMPLY WITH RAPID SHUTDOWN PER 2020 NEC.
RAPID SHUTDOWN SIGNAGE SHALL BE INSTALLED PER NEC 2020, SEE SHEET E2



MAIN SERVICE PANEL
LOAD CENTER
1-PH, 3-W
240VAC
100A BUS (MIN),
100A MAIN BREAKER

SUPPLY SIDE INTERCONNECTION

ALTMYER_PV
7422 CAMPOREE LANE
HOUSTON, TX 77083
7.665kW PV ROOF MOUNT

DESIGN AND DRAFTING BY : DAVID GILL

REVISIONS

REV	DATE	DESCRIPTION
	5/13/2022	ISSUE FOR REVIEW

GreenLight SOLAR SYSTEMS

SHEET SIZE:
11" X 17"

SHEET NAME:
ELECTRICAL DIAGRAM

SHEET NUMBER:
E-1

STATE OF TEXAS
SCOTT E. WYSSLING
122669
LICENSED
PROFESSIONAL ENGINEER

Wyssling Consulting, PLLC
76 N Meadowbrook Drive Alpine UT 84004
Texas Firm # 20109

Signed 5/16/2022

Anthony Duplantis
Master Electrician #400326

APPROVED ELECTRICAL PLAN

Plans and specifications to be in accordance with current national Electric Code and City Building Code. This plan shall be kept on job for inspectors. Seperate Permit for Electrical required.

Terrance Barnes 06/22/22

SYSTEM RATING

TOTAL - 7.665KW STC DC

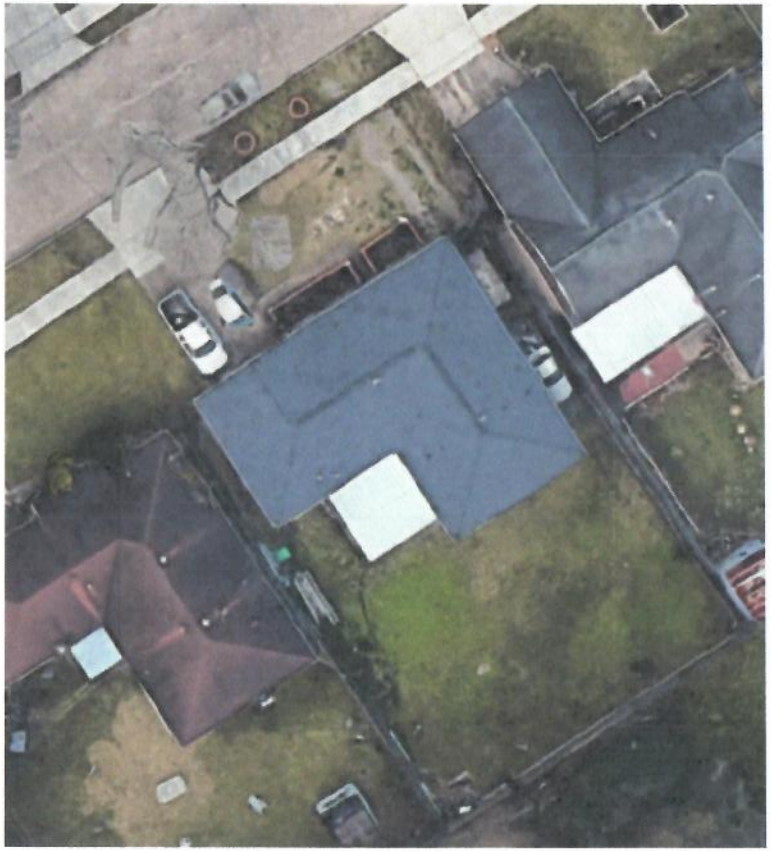
EQUIPMENT SUMMARY

(21) MSOLAR 365W MODULES
(21) SOLAREDGE S440 OPTIMIZERS
(1) SOLAREDGE 7600H-US INVERTER 7.6KW AC

PAGE SUMMARY

CS - COVER SHEET
PV1 - SITE PLAN
S1 - ROOF LAYOUT
E1 - ELECTRICAL DIAGRAM
E2 - SYSTEM LABELING DETAILS
PV2 - MOUNTING DETAILS
PV2.1 - MOUNTING DETAILS
PV2.2 - MOUNTING DETAILS
PV3 - SPEC SHEETS
PV4 - SPEC SHEETS
PV5 - SPEC SHEETS

Anthony Duplantis
Master Electrician #400326



AERIAL VIEW

GOVERNING CODES

2020 NATIONAL ELECTRICAL CODE
UNDERWRITERS LABORATOREIES (UL) STANDARDS
1741 FOR INVERTERS, 1703 FOR MODULES
2015 IRC, 134 MPH 3-SECOND GUST
2015 IFC
2015 IECC
2015 UMC
2015 UPC

STATE OF TEXAS
SCOTT E. WYSSLING
122669
LICENSED
PROFESSIONAL ENGINEER

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SHEET SIZE:
11" X 17"

SHEET NAME:
COVER SHEET

SHEET NUMBER:
CS

HARRIS COUNTY APPRAISAL DISTRICT
REAL PROPERTY ACCOUNT INFORMATION
1123890000052

Tax Year: 2022

Print

Owner and Property Information			
Owner Name & Mailing Address:	**ALTMYER DUSTIN & SARAH** **7422 CAMPOREE LN** **HOUSTON TX 77083-4833**	Legal Description: Property Address:	**LT 52 BLK 3 CATALINA VILLAGE** **7422 CAMPOREE LN HOUSTON TX 77083**

State Class Code	Land Use Code	Land Area	Total Living Area	Neighborhood	Neighborhood Group	Market Area	Map Facet	Key Map®
A1 -- Real, Residential, Single-Family	1001 -- Residential Improved	4,250 SF	1,523 SF	669.03	8021	270 -- ISD 08 - Alief General	4854A	528L

Value Status Information

Value Status	Notice Date	Shared CAD
Noticed	03/31/2022	No

Exemptions and Jurisdictions

Exemption Type	Districts	Jurisdictions	Exemption Value	ARB Status	2021 Rate	2022 Rate
None	008	ALIEF ISD		Not Certified	1.204800	
	040	HARRIS COUNTY		Not Certified	0.376930	
	041	HARRIS CO FLOOD CNTRL		Not Certified	0.033490	
	042	PORT OF HOUSTON AUTHY		Not Certified	0.008720	
	043	HARRIS CO HOSP DIST		Not Certified	0.162210	
	044	HARRIS CO EDUC DEPT		Not Certified	0.004990	
	048	HOU COMMUNITY COLLEGE		Not Certified	0.099092	
	061	CITY OF HOUSTON		Not Certified	0.550830	
	931	INTERNATIONAL MANAGEMENT DISTRICT		Not Certified		

Texas law prohibits us from displaying residential photographs, sketches, floor plans, or information indicating the age of a property owner on our website. You can inspect this information or get a copy at **HCAD's information center at 13013 NW Freeway**.

Valuations

Value as of January 1, 2021			Value as of January 1, 2022		
	Market	Appraised		Market	Appraised
Land	31,769		Land	41,544	
Improvement	115,540		Improvement	110,082	
Total	147,309	147,309	Total	151,626	151,626

Land

Market Value Land												
Line	Description	Site Code	Unit Type	Units	Size Factor	Site Factor	Appr O/R Factor	Appr O/R Reason	Total Adj	Unit Price	Adj Unit Price	Value
1	1001 -- Res Improved Table Value	SF1	SF	4,250	1.15	1.00	1.00	--	1.15	8.50	9.78	41,544.00

Building

Building	Year Built	Type	Style	Quality	Impr Sq Ft	Building Details
1	1983	Residential Single Family	Residential 1 Family	Average	1,523 *	Displayed

* All HCAD residential building measurements are done from the exterior, with individual measurements rounded to the closest foot. This measurement includes all closet space, hallways, and interior staircases. Attached garages are not included in the square footage of living area, but valued separately. Living area above *attached* garages is included in the square footage living area of the dwelling. Living area above *detached* garages is not included in the square footage living area of the dwelling but is valued separately. This method is used on all residential properties in Harris County to ensure the uniformity of square footage of living area measurements district-wide. There can be a reasonable variance between the HCAD square footage and your square footage measurement, especially if your square footage measurement was an interior measurement or an exterior measurement to the inch.

Building Details (1)

Building Data	
Element	Detail
Cond / Desir / Util	Average
Foundation Type	Slab
Grade Adjustment	C
Heating / AC	Central Heat/AC
Physical Condition	Average
Exterior Wall	Frame / Concrete Blk
Exterior Wall	Brick / Masonry
Element	Units
Room: Total	6
Room: Full Bath	2
Room: Bedroom	3
Fireplace: Metal Prefab	1

Building Areas	
Description	Area
MAS/BRK GARAGE PRI	400
BASE AREA PRI	1,523

HOUSTON PUBLIC WORKS

BUILDING CODE ENFORCEMENT
DECLARATION IN SUPPORT OF APPLICATION FOR CITY OF HOUSTON BUILDING PERMIT
(For Individual Owners)

IPERMITS APPLICATION # _____

STATE OF TEXAS §
§
COUNTY OF HARRIS §

"My name is **Sarah Altmyer** (first, middle, and last name), my date of birth is _____, and my address is **7422 Camporee Lane, Houston TX 77083** (street, city, state, zip code) and _____(country). I am over the age of eighteen and legally competent to make this Declaration. This Declaration will be submitted to the City of Houston, Texas (the "City") as part of the Application for a Building Permit for a project (the "Project") located or to be located in the **CATALINA VILLAGE** Subdivision, Tract or Reserve _____, Block No. **3**, Lot No. **52** (the "Land"). The physical address of the Land is **7422 Camporee Lane** (Street Address) **HOUSTON** (City), Texas **77083** (Zip Code).

I am an OWNER of the Land. I am personally familiar with any deed restrictions associated with the Land. I UNDERSTAND, for the purposes of my Application, the term 'Deed Restriction' means any and every restriction or covenant contained in (or incorporated by reference into) a plan, plat, replat, deed, or any other publicly recorded document that limits or affects the use of the Land in any way. I UNDERSTAND copies of the Deed Restrictions, if any, are available for review at the office of the Clerk of the County in which the Land is located. I have reviewed the Deed Restrictions and **the Project does not violate the Deed Restrictions, if any, that apply to the Land.**

I have personal knowledge of the statements made in the Application and every fact stated herein. None of the statements in the Application are misleading or false and every fact stated herein is true and correct. I acknowledge that issuance of the license, permit or certificate does not excuse or approve any violation of deed restrictions or city, state, or federal laws or regulations.

I UNDERSTAND AND AGREE that, if any fact stated in this Declaration is false, the City may void any permit(s) issued by the City for the Project, and the City may order me and any other Owner to remove all or part of the Project at my or our own expense.

I declare under penalty of perjury that the foregoing is true and correct."

Executed in **HARRIS** County, State of Texas, on the **6th** day of **May** (month), **2022** (year).

_____

Declarant

HOUSTON PUBLIC WORKS

BUILDING CODE ENFORCEMENT
DECLARATION IN SUPPORT OF APPLICATION FOR CITY OF HOUSTON BUILDING PERMIT
(For Individual Owners)

IPERMITS APPLICATION # _____

STATE OF TEXAS §
§
COUNTY OF HARRIS §

"My name is Sarah Altmyer (first, middle, and last name), my date of birth is 12/17/1983, and my address is 7422 Camporee Lane, Houston TX 77083 (street, city, state, zip code) and _____(country). I am over the age of eighteen and legally competent to make this Declaration. This Declaration will be submitted to the City of Houston, Texas (the "City") as part of the Application for a Building Permit for a project (the "Project") located or to be located in the CATALINA VILLAGE Subdivision, Tract or Reserve _____, Block No. 3, Lot No. 52 (the "Land"). The physical address of the Land is 7422 Camporee Lane (Street Address) HOUSTON (City), Texas 77083 (Zip Code).

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DocuSigned by:
Sarah Altmyer
D86AA67FD1054D8...
Declarant