



Staff Report

PLANNING DIVISION
COMMUNITY & NEIGHBORHOOD DEVELOPMENT

To: Salt Lake City Historic Landmark Commission
From: Michael Maloy, AICP, Senior Planner, michael.maloy@slcgov.com
Brittney Topel, Planning Intern, brittney.topel@slcgov.com
Date: November 3, 2016
Re: PLNHLC2016-00735 – Solar Panels at 175 E 4th Avenue

MINOR ALTERATIONS

PROPERTY ADDRESS: 175 E 4th Avenue

PARCEL ID: 09-31-333-022-0000

HISTORIC DISTRICT: Avenues Local Historic District

ZONING DISTRICT: SR-1A Special Development Pattern Residential, and H Historic Preservation Overlay District

MASTER PLAN: Low Density Residential (4 - 8 dwelling units per acre), Avenues Community Master Plan (1987)

REQUEST: Sela Kanuch, Zing Solar, on behalf of Dane Traeden, property owner, requests approval to locate solar panels on the front roof plane of a residence at 175 E 4th Avenue (see Attachment A – Vicinity Map), which is in the Avenues Local Historic District (see Attachment B – Historic District Map). This type of project must be reviewed as a Minor Alteration by the Historic Landmark Commission.

RECOMMENDATION: As outlined in the analysis and findings in this staff report, Planning Staff recommends the Historic Landmark Commission approve the petition with conditions (see Attachment H – Motions).

MOTION (consistent with Staff Recommendation):

Based on the analysis and findings listed in the staff report, testimony received, and proposal presented, I move that the Commission approve Petition PLNHLC2016-00735 for Minor Alteration to install a small solar energy collection system at 175 E 4th Avenue with the following condition, which is based upon compliance with the applicable standards of review:

1. All solar panels on the front roof plane, oriented toward 4th Avenue, shall be removed. Solar panels may be relocated to other permissible sites described in City Code 21A.40.190.B.3 subparagraphs a through e.

ATTACHMENTS:

- A. Vicinity Map
- B. Historic District Map
- C. Property Photographs
- D. Applicant Narrative
- E. Analysis of Standards
- F. Applicable Design Guidelines
- G. Public Process and Comments
- H. Motions

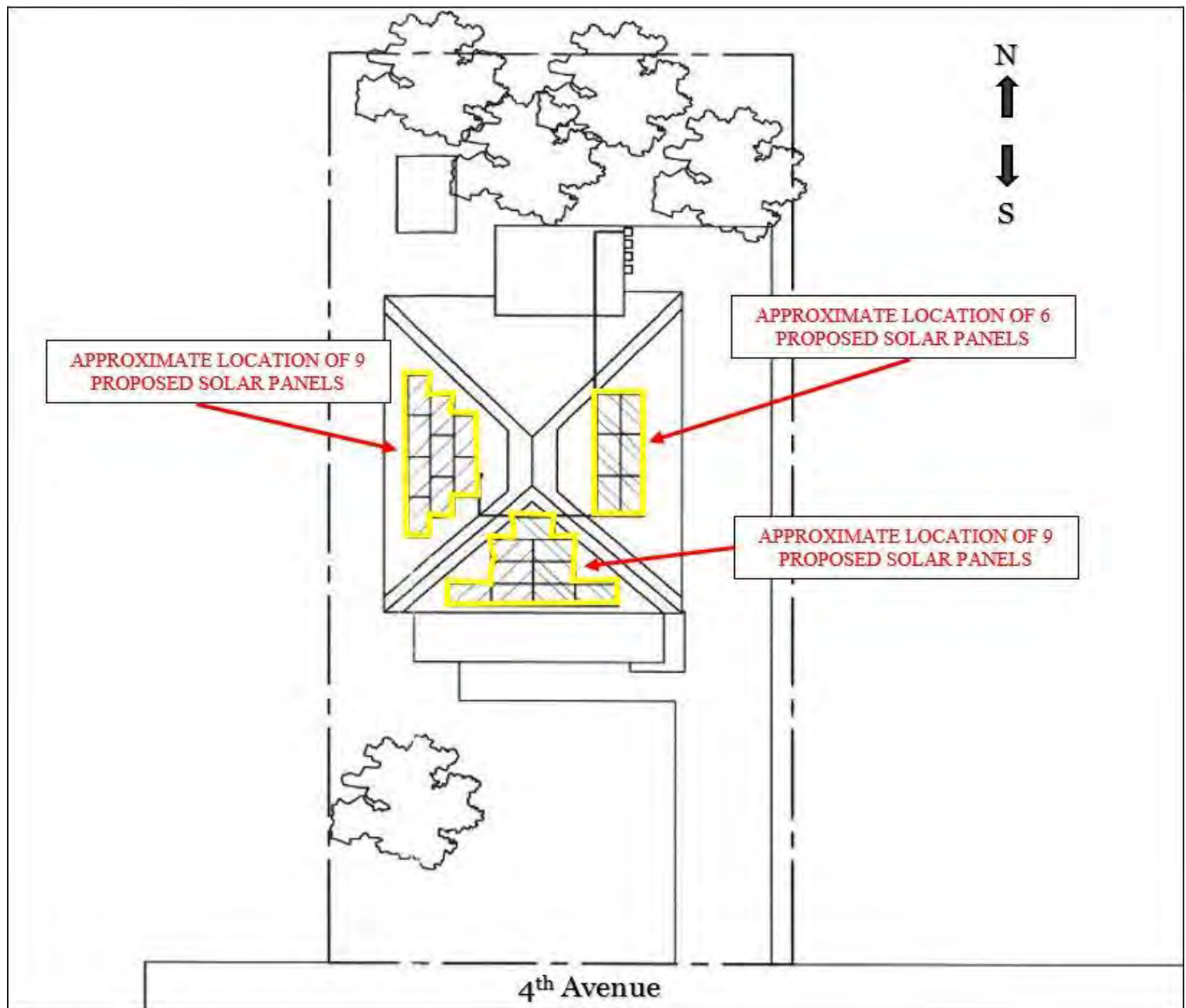
BACKGROUND AND PROJECT DESCRIPTION:

The subject property, which is located at approximately 175 E 4th Avenue, contains a residential structure that is used as a duplex, and has a large accessory structure within the rear yard, which is also used a duplex. The principal structure, which is a Foursquare (Box) built in 1909, is in the Avenues Historic District. In the 2007-2008 reconnaissance level survey, the house is classified as a **“contributing structure” and is rated a “B”** (see Attachment C – Property Photographs). However, the accessory structure, which is not visible from the public right-of-way, is not rated. Although the following site plan does not show the location of the accessory structure, it is visible in Attachment A – Vicinity Map.

The request is to install a 24-panel solar energy collection system on the roof of the structure. Section 21A.40.190.B identifies priority locations where small energy collection systems can be located that may be reviewed administratively. Based on these locations, 15 of the 24 solar panels may be reviewed administratively: 9 solar panels are proposed on the west roof plane of the structure, and 6 are proposed on the east. However, 9 solar panels are proposed for the front roof plane, which is visible from the public right of way. In accordance with Section 21A.40.190.B, these 9 solar panels must be reviewed by the Historic Landmark Commission.

The proposed location of the solar panels was chosen to maximize sun exposure for the small solar energy collection system. Staff discussed removing the solar panels on the front façade, but the applicant stated that the south roof plane was the most effective area for the small solar energy collection system. The applicant also claimed that there are limited roof sections available and the proposed locations are the most productive sections that provide the best **energy “offset” for the property owner. However, staff questions if the rear yard accessory structure—the duplex—**might also be a suitable location.

Each solar panel measures approximately 5.4 feet long by 3.2 feet wide, or 17-¼ square feet. The total area of all 24 solar panels is approximately 414 square feet. The panels will be supported by mounting brackets and will project above the roof approximately 3 inches. To comply with fire code, all solar panels will be located at least 3 feet from all roof ridges and roof edges (see Attachment D – Applicant Materials).



KEY ISSUES:

As described previously, staff is concerned with the proposed location of solar panels on the front façade, which is visible from the public right-of-way (see Attachment E – Analysis of Standards and Attachment F – Applicable **Design Guidelines**). **In response to staff's recommendation to relocate the solar panels, the applicant prepared and submitted a report that states the anticipated energy production and cost savings for the following scenarios (see Attachment D – Applicant Materials):**

1. South Facing Rooftop System. Preferred plan with 9 solar panels on front roof plane, and
2. North Facing Rooftop System. Alternate plan with 0 solar panels on front roof plane. It should be noted that the alternate plan has a reduced number of panels from 24 to 20.

Issue 1 – Energy Comparison. **The “designed offset” of the preferred plan**—which is based on energy consumption records for the subject property—is 71.74%, which means the proposal will generate 28.26% less power than anticipated demand. The designed offset of the alternate plan is 46.70%, which is 25.04% less than the preferred plan and 53.30% percent less than anticipated demand.

Issue 2 – Cost Comparison. The preferred plan is expected to save the homeowner \$30,981 over the span of twenty-five years. If the 9 south facing solar panels were removed, and 5 were relocated to other permissible locations, the total projected savings of the alternate plan over the same twenty-five year span would be \$18,894—a difference of \$12,087, which is a 39.01% reduction from the preferred plan.

NEXT STEPS:

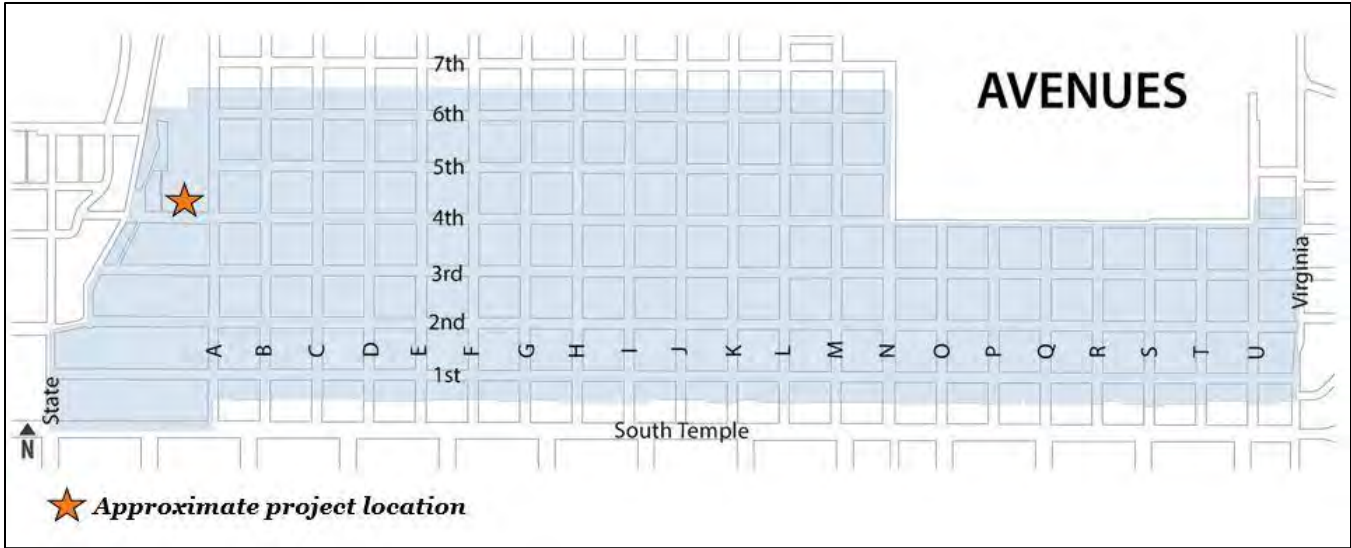
If the petition is approved by the Historic Landmark Commission, the applicant would need to apply for a building permit. If the petition is denied, the applicant would need to modify plans for reconsideration or file an appeal within 10 days following publication of the record of decision.

ATTACHMENT A: VICINITY MAP

175 E 4th Avenue



ATTACHMENT B: HISTORIC DISTRICT MAP

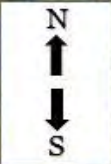


ATTACHMENT C: PROPERTY PHOTOGRAPHS



ACCESSORY STRUCTURE ROOF

APPROXIMATE
LOCATION OF 9
PROPOSED SOLAR
PANELS
(HLC Review)



175 E 4th Ave

ATTACHMENT D: APPLICANT MATERIALS

October 27, 2016

Michael and Brittney,

With the address on **175 E 4th Avenue (Dane Traeden)**, we have tried all possibilities and options for panel location. The best location in order to provide the most effective results to save energy and to be cost effective is to have the layout that is presented.

Moving panels located on the South facing roof to the North facing, will cause a drastic reduction in production. Going from 71.74% to 46.70 % offset, also causing a drastic change in the money saved over a 25 year savings span, going from \$30,981 to \$18,894.

The North facing roof is full of obstructions and the East and West facing roof locations are maxed out with panels. Moving panels to the North facing roof instead of the South facing roof that they are placed on, will result in less panels. Changing the panel amount from 24 to 20.

The accessory structures are not acceptable. It will cause more problems and construction costs to put panels on the structure than to not.

Please let me know if there is more that is needed.

Thank you!

Sela Kanuch
Zing Solar
skanuch@zingsolar.com



South Facing Rooftop System Simulation

DESIGNED OFFSET 71.74%

Customer Information		Green Sky Email Details						
Customer Name:	Dane Traeden	Year 1	Year 2	Year 5	Year 12	Year 25		
Customer Address:	175 E 4th Ave	GreenSky Plan 3215 NINP 12mo 20year	5.99%	5.99%	5.99%	5.99%	5.99%	
Customer City:	Salt Lake City	Loan Payment of Full Amount	\$0.00	\$137.96	\$137.96	\$137.96	\$0.00	
State, Zip:	UT, 84103	Loan Payment with Zing Alliance Participation	\$0.00	\$123.26	\$123.26	\$123.26	\$0.00	
Customer Email Address:	0	Payment With Utility Company	\$130.42	\$135.63	\$152.57	\$200.77	\$334.30	
Customer Phone Number:	(801) 808-5051							
Yearly Usage	12044							
Loan Details		Solar Engine Email Details						
Total Cost:	\$ 30,389	Year 1	Year 2	Year 5	Year 12	Year 25		
Utah State Tax Credit:	\$ (2,000)	Solar Engine 20 Year Loan	4.99%	4.99%	4.99%	4.99%	4.99%	
Federal Tax Credit:	\$ (9,117)	Loan Payment of Full Amount	\$126.37	\$134.14	\$134.14	\$134.14	\$0.00	
Net Cost With All Incentives Applied:	\$ 19,272	Loan Payment with Zing Alliance Participation	\$114.17	\$119.87	\$119.87	\$119.87	\$0.00	
Expected Savings Breakdown		Year 1	Year 2	Year 5	Year 12	Year 25		
25 Year Cost With Current Utility:	\$ 65,176	Solar Engine 12 Year Loan	3.99%	3.99%	3.99%	3.99%	3.99%	
Net Cost of Solar:	\$ 19,272	Loan Payment of Full Amount	\$101.04	\$187.06	\$187.06	\$187.06	\$0.00	
Remaining Utility Cost:	\$ 14,923	Loan Payment with Zing Alliance Participation	\$91.29	\$167.15	\$167.15	\$167.15	\$0.00	
Total Savings Over 25 Years	\$ 30,981	Payment With Utility Company	\$130.42	\$135.63	\$152.57	\$200.77	\$334.30	
		Year 1	Year 2	Year 5	Year 12	Year 25		
		Number Of Panels:	24	System Size:	6.24 kW			
		Estimated 1st Year Production:	8640 kWh	Estimated Offset:	72%			
		Solar Panel Type:	Trina TSM-PD260.05.08					
		Solar Inverter Type:	Enphase M215 Micro Inverters					

South facing panels save the customer more money per month and more money over time with a savings of \$30,981 over the span of twenty-five years.

Aurora Shade Report

Customer Dane Traeden	Designer Cash Mills	Organization Zing Solar
Address 175 E 4th Ave Salt Lake City, Utah 84103, United States	Coordinates (40.8, -111.9)	Date 25 October 2016

Annual irradiance



Summary

Array	Panel Count	Azimuth (deg.)	Pitch (deg.)	Annual TOF (%)	Annual Solar Access (%)	Annual TSRF (%)
1	9	89	22	85	100	85
2	5	269	22	84	99	83
3	10	179	22	98	100	98
Weighted average by panel count	-	-	-	-	99.7	89.9

Monthly solar access (%) across arrays

Array	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	100	100	100	100	100	100	100	100	100	100	100	100
2	96	98	99	99	99	100	100	100	100	98	96	94
3	100	100	100	100	100	100	100	100	100	100	100	100

Customer

Dane Traeden

Designer

Cash Mills

Organization

Zing Solar

Address

175 E 4th Ave
Salt Lake City, Utah
84103, United States

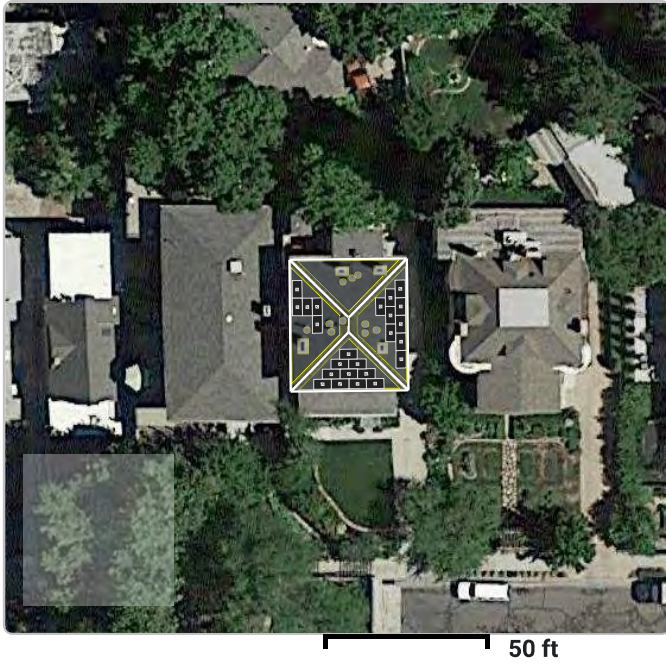
Coordinates

(40.8, -111.9)

Date

25 October 2016

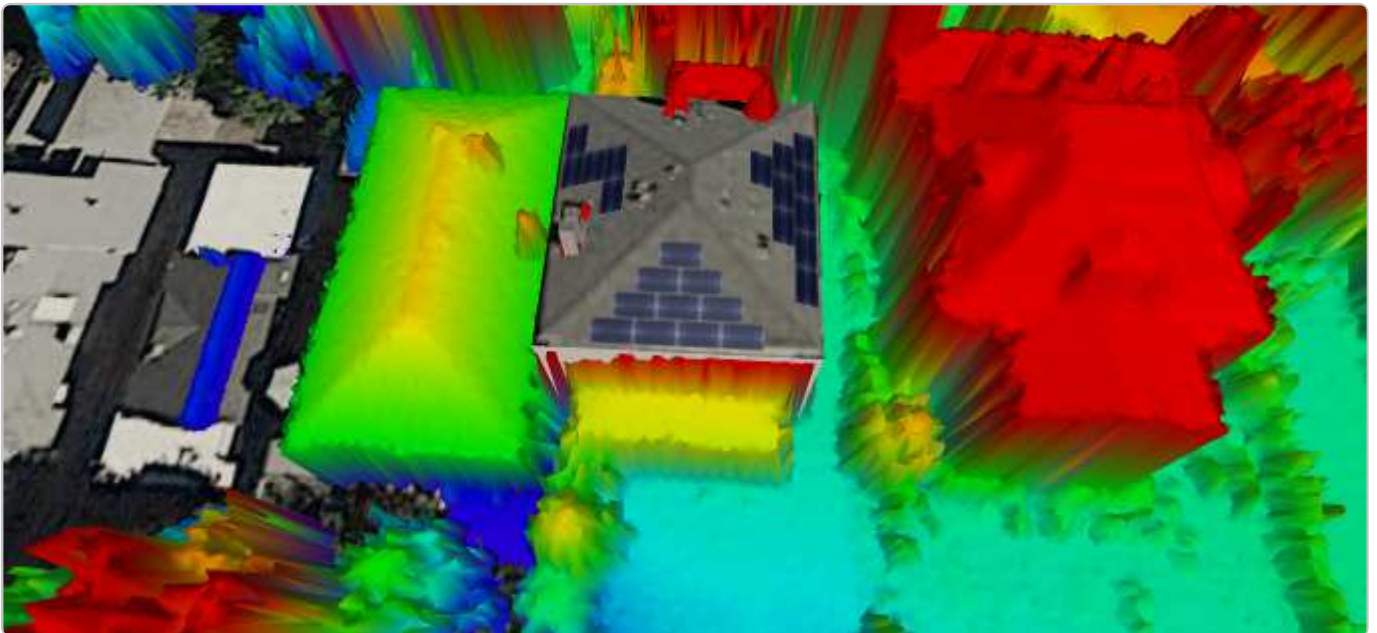
Zoomed out satellite view



3D model



3D model with LIDAR overlay



Customer

Dane Traeden

Designer

Cash Mills

Organization

Zing Solar

Address

175 E 4th Ave
Salt Lake City, Utah
84103, United States

Coordinates

(40.8, -111.9)

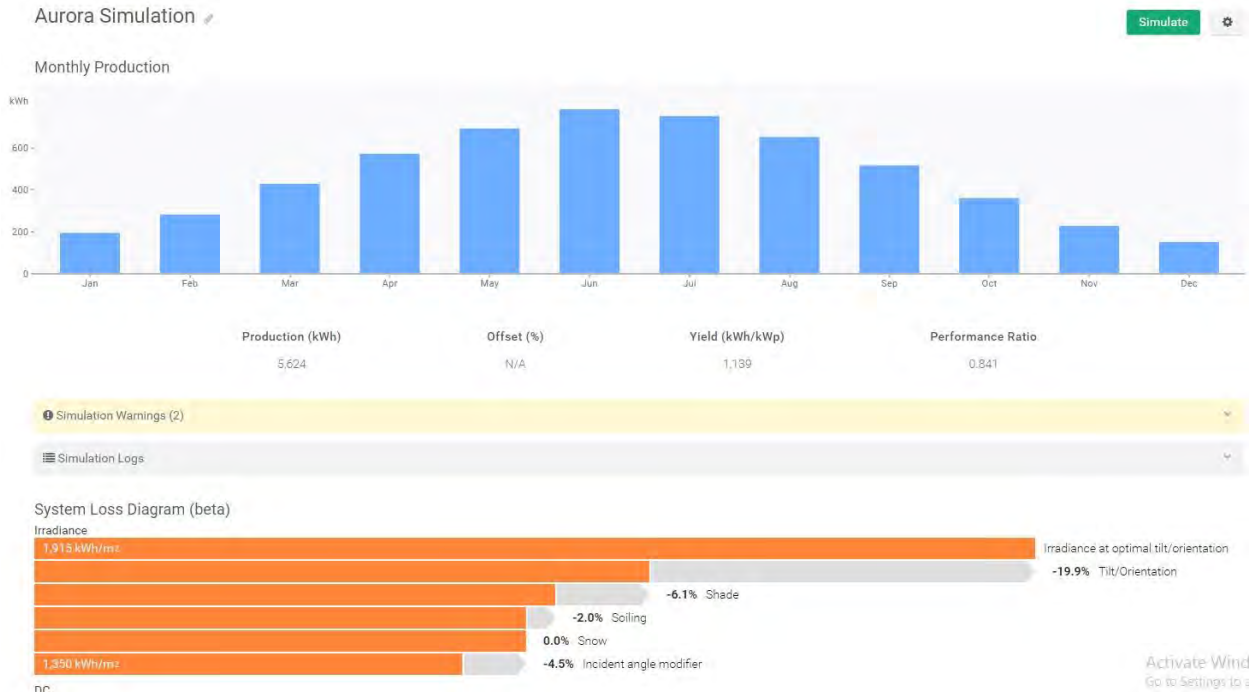
Date

25 October 2016

Street view and corresponding 3D model



I, **Cash Mills**, certify that I have generated this shading report to the best of my abilities, and I believe its contents to be accurate.



North Facing Rooftop System Simulation

DESIGNED OFFSET	46.70%
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Customer Information		Green Sky Email Details					
Customer Name:	Dane Traeden	Year 1	Year 2	Year 5	Year 12	Year 25	
Customer Address:	175 E 4th Ave	GreenSky Plan 3215 NINP 12mo 20year	5.99%	5.99%	5.99%	5.99%	5.99%
Customer City:	Salt Lake City	Loan Payment of Full Amount	\$0.00	\$112.58	\$112.58	\$112.58	\$0.00
State, Zip:	UT, 84103	Loan Payment with Zing Alliance Participation	\$0.00	\$100.33	\$100.33	\$100.33	\$0.00
Customer Email Address:	0	Payment With Utility Company	\$130.42	\$135.63	\$152.57	\$200.77	\$334.30
Customer Phone Number:	(801) 808-5051						
Yearly Usage	12044						

Loan Details		Solar Engine Email Details					
Total Cost:	\$ 25,324	Year 1	Year 2	Year 5	Year 12	Year 25	
Utah State Tax Credit:	\$ (2,000)	Solar Engine 20 Year Loan	4.99%	4.99%	4.99%	4.99%	4.99%
Federal Tax Credit:	\$ (7,597)	Loan Payment of Full Amount	\$105.31	\$109.49	\$109.49	\$109.49	\$0.00
Net Cost With All Incentives Applied:	\$ 15,727	Loan Payment with Zing Alliance Participation	\$95.14	\$97.60	\$97.60	\$97.60	\$0.00
Expected Savings Breakdown		Year 1	Year 2	Year 5	Year 12	Year 25	
25 Year Cost With Current Utility:	\$ 65,176	Solar Engine 12 Year Loan	3.99%	3.99%	3.99%	3.99%	3.99%
Net Cost of Solar:	\$ 15,727	Loan Payment of Full Amount	\$84.20	\$152.68	\$152.68	\$152.68	\$0.00
Remaining Utility Cost:	\$ 30,555	Loan Payment with Zing Alliance Participation	\$76.08	\$136.09	\$136.09	\$136.09	\$0.00
Total Savings Over 25 Years	\$ 18,894	Payment With Utility Company	\$130.42	\$135.63	\$152.57	\$200.77	\$334.30

Number Of Panels:	20	System Size:	5.2 kW
Estimated 1st Year Production:	5624 kWh	Estimated Offset:	47%
Solar Panel Type:	Trina TSM-PD260.05.08		
Solar Inverter Type:	Enphase M215 Micro Inverters		

Production in Kilowatts per hour dropped because of tilt/orientation of panels and because of reduction in number of panels. This in turn affects the customer in their yearly savings and over a twenty-five year span saves them only \$18,894

Aurora Shade Report

Customer Dane Traeden	Designer Cash Mills	Organization Zing Solar
Address 175 E 4th Ave Salt Lake City, Utah 84103, United States	Coordinates (40.8, -111.9)	Date 25 October 2016

Annual irradiance



Summary

Array	Panel Count	Azimuth (deg.)	Pitch (deg.)	Annual TOF (%)	Annual Solar Access (%)	Annual TSRF (%)
1	9	89	22	85	100	85
2	5	269	22	84	99	83
3	5	359	22	54	80	54
Weighted average by panel count	-	-	-	-	94.3	76.3

Monthly solar access (%) across arrays

Array	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	100	100	100	100	100	100	100	100	100	100	100	100
2	96	98	99	99	99	100	100	100	100	98	96	94
3	80	80	80	80	80	80	80	80	80	80	80	80

Customer
Dane Traeden

Designer
Cash Mills

Organization
Zing Solar

Address
175 E 4th Ave
Salt Lake City, Utah
84103, United States

Coordinates
(40.8, -111.9)

Date
25 October 2016

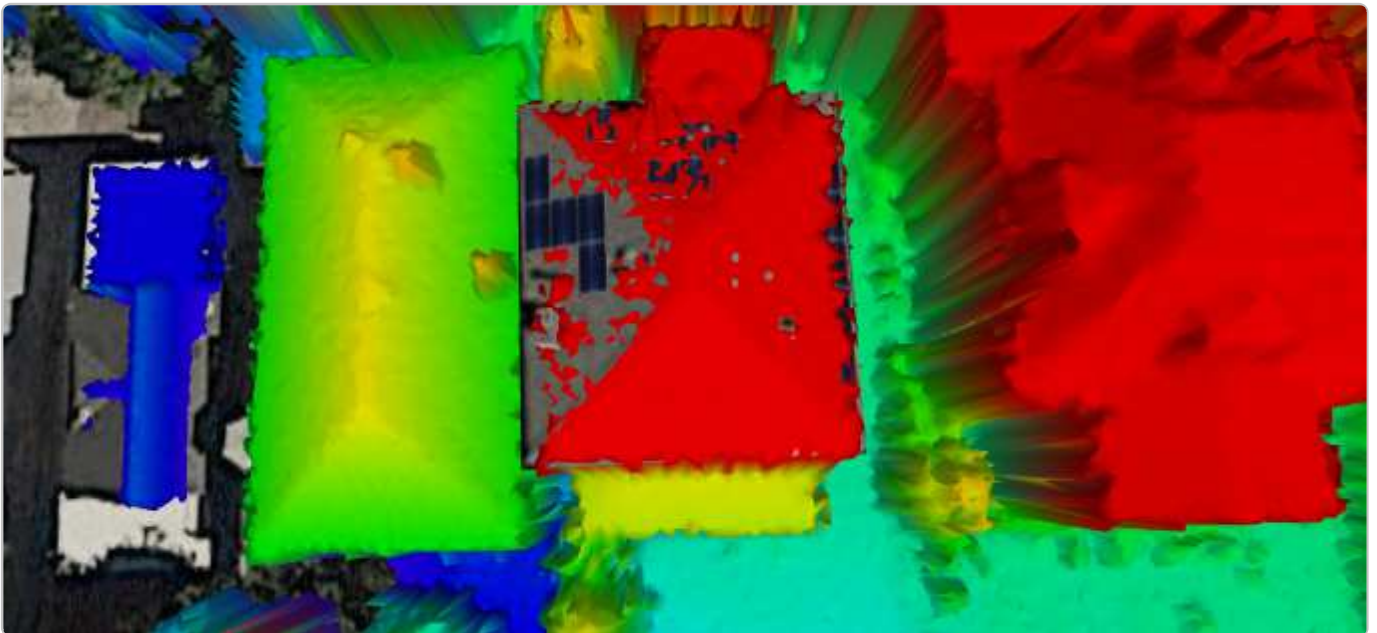
Zoomed out satellite view



3D model



3D model with LIDAR overlay



Customer
Dane Traeden

Designer
Cash Mills

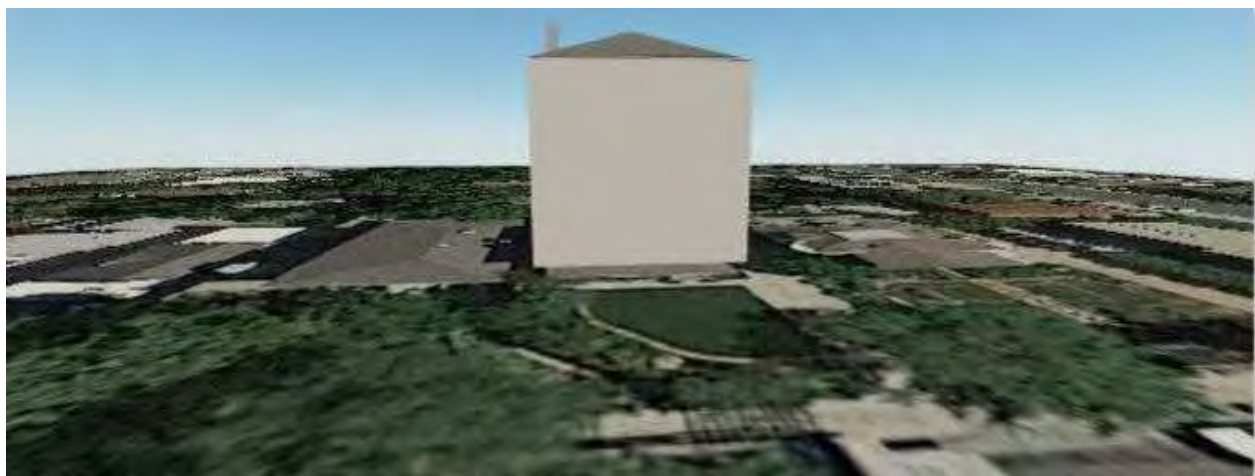
Organization
Zing Solar

Address
175 E 4th Ave
Salt Lake City, UT
84103, United States

Coordinates
(40.8,-111.9)

Date
25 October 2016

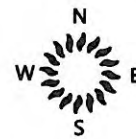
Street view and corresponding 3D model



I, Cash Mills, certify that I have generated this shading report to the best of my abilities, and I believe its contents to be accurate.



MAP OF LOCATION

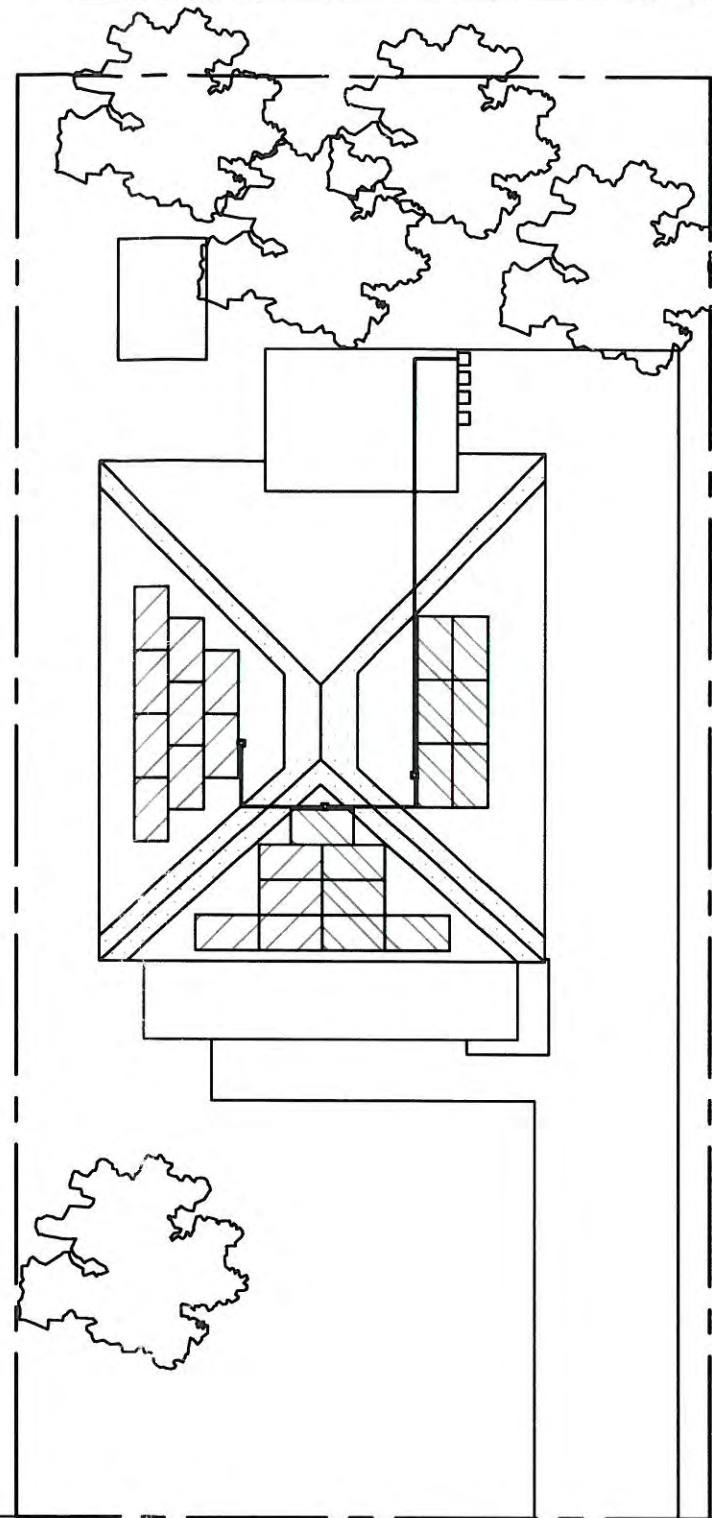


STRUCTURAL ONLY
VECTOR
 ENGINEERS

9138 S. STATE STREET, SUITE 101 (801) 990-1775
 SANDY, UTAH 84070 (801) 990-1776 FAX



08/30/2016



SYSTEM SIZE:
6.24 kW DC

DATE:
8/24/2016

DESIGNER:
JPL

Dane Traeden

175 E 4th Ave
 Salt Lake City, UT 84103

zingsolar

826 E STATE ROAD, SUITE 270,
 AMERICAN FORK, UT 84003
 (888) 244-0231

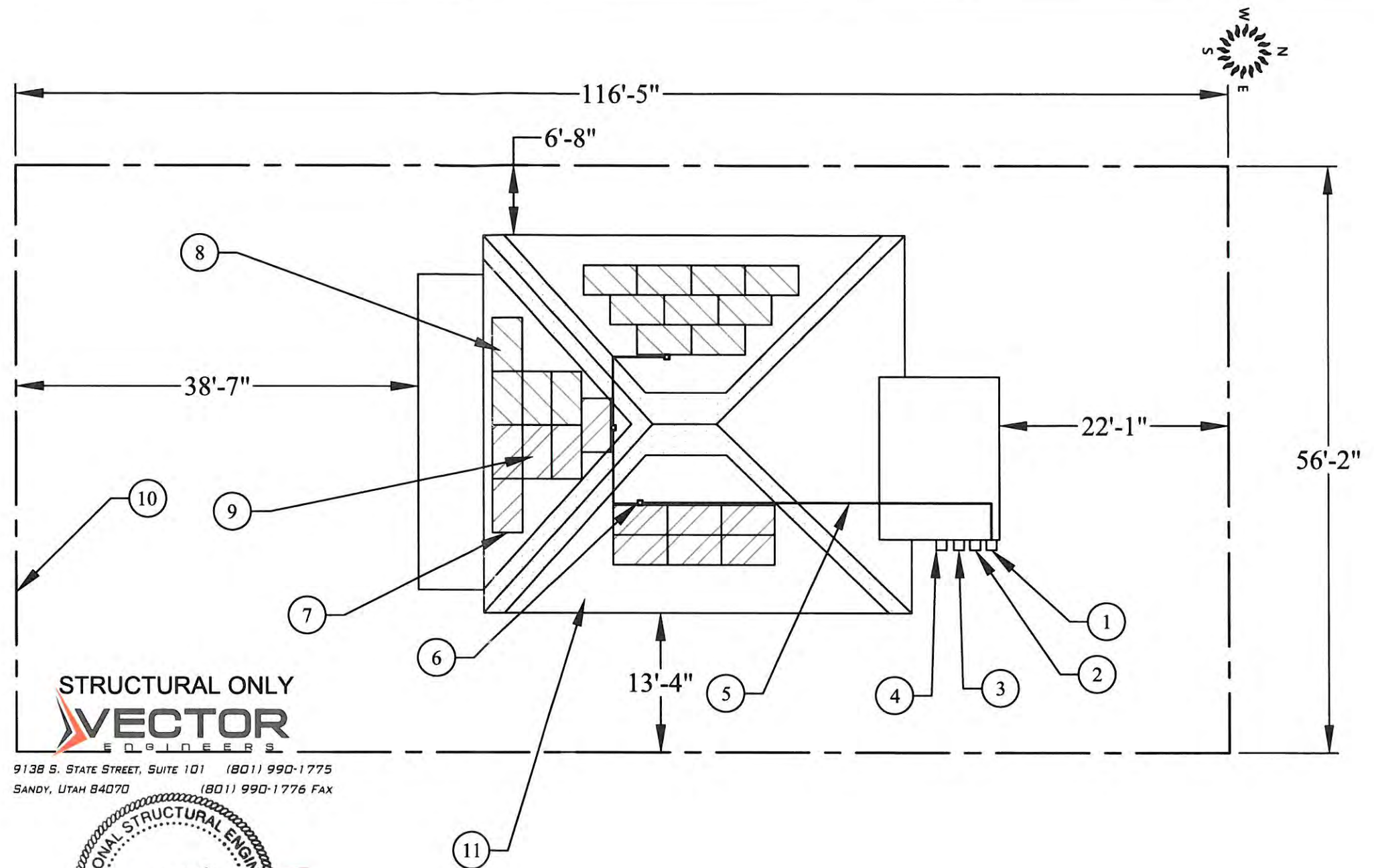
SHEET NAME:

COVER

SHEET NUMBER:

PV 1.0

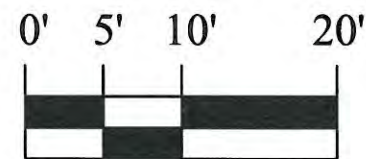
1. MAIN SERVICE LOCATION/
POINT OF INTERCONNECTION
2. UTILITY METER LOCATION
3. AC DISCONNECT SWITCH
4. COMBINER PANEL
5. 80' OF 1" EMT CONDUIT (OR
ROMEX WITH #8 GROUND RUN
THROUGH ATTIC WHERE
FEASIBLE) FROM JUNCTION
BOX TO ELECTRICAL PANEL
6. JUNCTION BOX ATTACHED TO
ARRAY USING RACKING
EQUIPMENT TO KEEP JUNCTION
BOX OFF OF ROOF
7. (24) PV MODULES AND
MICRO-INVERTERS
8. PV CIRCUIT 1
9. PV CIRCUIT 2
10. PROPERTY LINE
11. FIRE CODE ACCESS POINTS
AND OFFSETS



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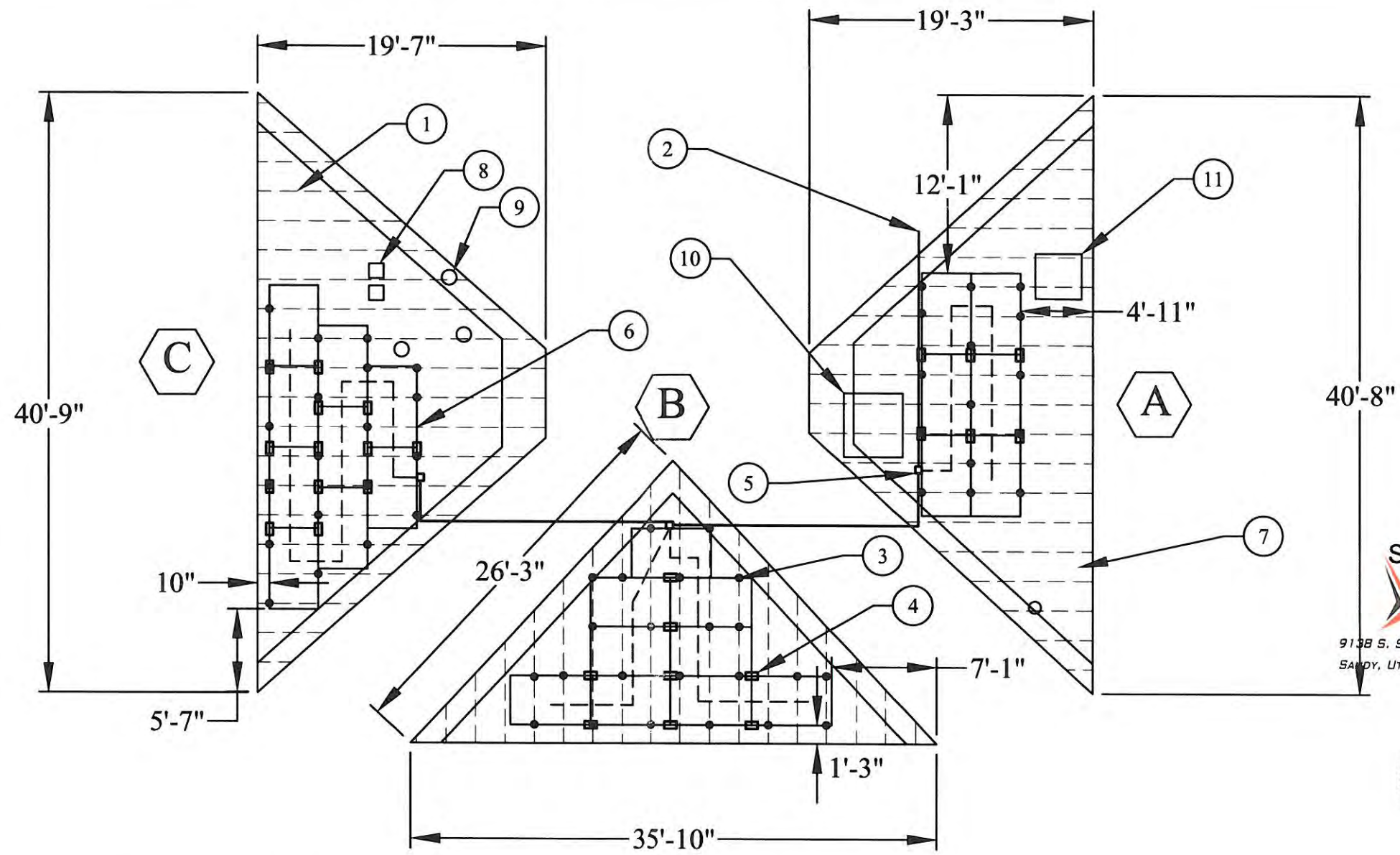


08/30/2016



	SYSTEM SIZE: 6.24 kW DC	Dane Traeden 175 E 4th Ave Salt Lake City, UT 84103	zingsolar 826 E STATE ROAD, SUITE 270, AMERICAN FORK, UT 84003 (888) 244-0231	SHEET NAME: SITE PLAN
	DATE: 8/24/2016			SHEET NUMBER: PV 2.0
	DESIGNER: JPL			

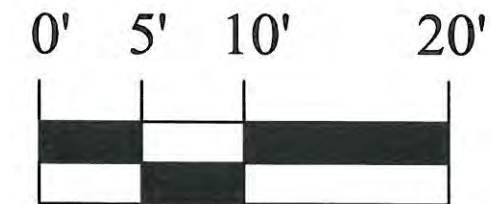
1. 2" X 4" RAFTERS 24" ON CENTER
2. TIE INTO METER #51157600
3. ECOFASTEN ROCK-IT COMPOSITION MOUNT LAGGED INTO RAFTERS (58 PLACES WITH A MAX OF 4' SPACING BETWEEN)
4. ECOFASTEN ROCK-IT COUPLINGS (27 PLACES) IN BETWEEN EACH PANEL
5. JUNCTION BOX ATTACHED TO ARRAY USING RACKING EQUIPMENT TO KEEP JUNCTION BOX OFF OF ROOF
6. PV MODULES AND MICRO-INVERTERS
7. FIRE CODE ACCESS POINTS AND OFFSETS
8. ROOF VENT(S)
9. PLUMBING VENT(S)
10. MULTIPLE OBSTRUCTIONS
11. CHIMNEY



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08/30/2016



ROOF SECTION DATA						
ROOF SECTION	A	B	C			
MODULES	6	9	9			
TILT	21	21	21			
AZIMUTH	90	180	270			
SOLAR ACCESS AVG.	100%	100%	100%			

SYSTEM SIZE:
6.24 kW DC

DATE:
8/24/2016

DESIGNER:
JPL

Dane Traeden
 175 E 4th Ave
 Salt Lake City, UT 84103

zingsolar
 826 E STATE ROAD, SUITE 270,
 AMERICAN FORK, UT 84003
 (888) 244-0231

SHEET NAME:
ROOF PLAN

SHEET NUMBER:
PV 3.0

WEATHER DATA

WEATHER STATION:	(SALT LAKE CITY INT'L ARPT WEATHER STATION)
HIGH TEMP, 2% AVG.	36 °C
MIN DESIGN TEMP	-16 °C
GROUND SNOW LOAD	43 psf
WIND SPEED	115 psf

1. HIGH TEMPERATURE 2% AVERAGE BASED ON ASHRAE HIGHEST MONTH 2% DRY BULB TEMPERATURE FOR ASHRAE LOCATION MOST SIMILAR TO INSTALLATION LOCATION
2. MINIMUM DESIGN TEMPERATURE BASED ON ASHRAE MINIMUM MEAN EXTREME DRY BULB TEMPERATURE FOR ASHRAE LOCATION MOST SIMILAR TO INSTALLATION LOCATION
3. ALTERNATE POWER SOURCE PLACARD SHALL BE PERMANENTLY ATTACHED TO A/C DISCONNECT
4. ELECTRICAL INSTALL SHALL COMPLY WITH 2014 NATIONAL ELECTRICAL CODE
5. ALL SOLAR MODULES, EQUIPMENT, AND METALLIC COMPONENTS SHALL BE BONDED
6. IF THE EXISTING MAIN SERVICE DOES NOT HAVE VERIFIABLE GROUNDING ELECTRODE, IT IS THE PV CONTRACTOR'S RESPONSIBILITY TO INSTALL A SUPPLEMENTAL GROUNDING ELECTRODE
7. EACH MODULE SHALL BE GROUNDED PER MANUFACTURER INSTRUCTIONS AND APPROVED METHODS

8. PV INSTALLATION SHALL NOT OBSTRUCT ANY PLUMBING, MECHANICAL OR BUILDING ROOF VENTS
9. CONNECTORS THAT ARE NOT READILY ACCESSIBLE AND THAT ARE USED IN THE CIRCUITS OPERATING AT OR OVER 30V AC OR DC SHALL REQUIRE A TOOL FOR OPERATING AND ARE REQUIRED TO BE MARKED "DO NOT DISCONNECT UNDER LOAD" OR "NOT FOR CURRENT INTERRUPTING"
10. THIS SYSTEM IS IN FULL COMPLIANCE WITH THE UTAH FIRE CODE FOR PHOTOVOLTAIC INSTALLATION AND ARTICLE 690 OF THE NATIONAL ELECTRIC CODE (NEC NFPA 70)
11. BUILDING CONSTRUCTION TYPE: TYPE V
12. BUILDING OCCUPANCY TYPE: R3

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 SANDY, UTAH 84070 (801) 990-1776 FAX



08/30/2016

	SYSTEM SIZE: 6.24 kW DC	Dane Traeden 175 E 4th Ave Salt Lake City, UT 84103	zingsolar 826 E STATE ROAD, SUITE 270, AMERICAN FORK, UT 84003 (888) 244-0231	SHEET NAME: LOCATION NOTES
	DATE: 8/24/2016			SHEET NUMBER: PV 4.0
	DESIGNER: JPL			

BRACKET SPACING

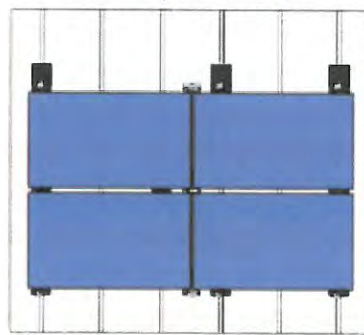
Portrait Orientation



Maximum bracket spacing in portrait orientation is 48" OC.

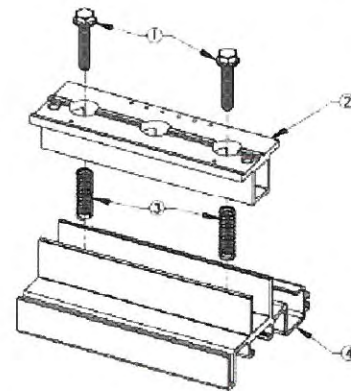
Spacing may vary depending upon project specific structural requirements, i.e. high snow and wind load areas may require lesser spacing I-W than the maximum.

Landscape Orientation



Maximum bracket spacing in landscape orientation is 72" OC.

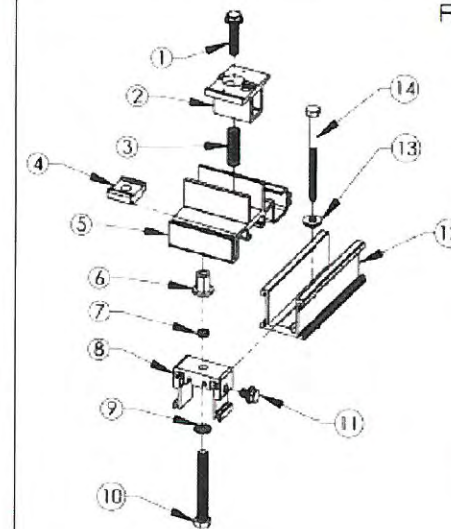
ROCK-IT COUPLING ASSEMBLY



NOTE: ITEMS 1-4 SHIP ASSEMBLED

- 1 5/16"-18 x 1.5" Hex Flange Bolt 300 Series SS
- 2 Rock-It Coupling Mid Clamp 6005A-T5 AL
- 3 Compression Spring 300 Series SS
- 4 Rock-It Coupling Shelf 6005A-T5 AL

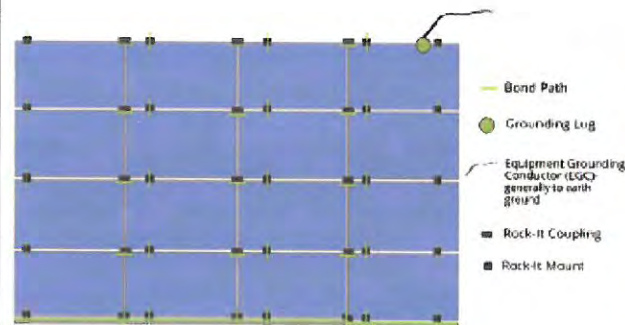
ROCK-IT MOUNT ASSEMBLY



NOTE: ITEMS 1-11 SHIP ASSEMBLED

- 1 5/16"-18 x 1.5" Hex Flange Bolt 300 Series SS
- 2 Rock-It Mid-Clamp 6005A-T5
- 3 Compression Spring 300 Series SS
- 4 Tie Plate 6005A-T5 AL
- 5 Rock-It Shelf 6005A-T5 AL
- 6 Flange Level Nut 300 Series SS
- 7 Packaging O-Ring (Remove Prior to Installation)
- 8 Rock-It Pedestal 6005A-T5 AL
- 9 3/8" ID Star Lock Washer 300 Series SS
- 10 3/8"-16 Hex Tap Bolt 300 Series SS
- 11 5/16"-18 x .375" Hex Flange Bolt 300 Series SS
- 12 Rock-It-Slide 6005A-T5 AL
- 13 5/16" ID EPDM Bonded Washer 300 Series SS
- 14 5/16" x 4" Hex Lag Screw or 5/16"-18 x 1.50" Hex Bolt 300 Series SS

BONDING ASSEMBLY AND BONDING PATH



- Bond Path
- Grounding Lug
- Equipment Grounding Conductor (EGC) generally to north ground
- Rock-It Coupling
- Rock-It Mount



Integrated Bonding

GROUNDING LUG INSTALL



- Necessary Components:
- Bundy CL50-1TN Ground Lug (UL Listing #KDER 89999)
 - 14 AWG - 4 AWG Copper Ground Wire
 - 8-32 x 0.5" Serrated Flange Head Bolt (300 Series SS)
 - 8-32 Serrated Flange Nut (300 Series SS)
 - 11/32" and 1/4" wrenches or ratchets/socket

- 1 The Ground Lug is installed into the T slot on the Rock-It Mount.
- 2 Slide the Flange Head Bolt on the Ground Lug into T slot on Rock-It Mount.
- 3 Tighten Flange Nut/Bolt.
- 4 Place wire in Ground Lug channel and tighten set screw to complete assembly.

ROCK-IT SYSTEM

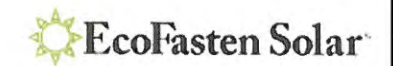
- Fastest, easiest to level system on the market
- ETL listed to UL 583 2703
- Class A Fire rating with Type 1 modules
- Integrated electrical bonding
- SIMPLE - only 3 components
- Fixed wire management tray
- North-South adjustability of up to 4"
- Only one tool required (1/2" deep well socket)

Max No. of Panels	300 Modules per ground lug	Materials	300 Series Stainless, 6000 Series Aluminum
Max System Voltage	1000VDC	Coating	Black Anodization/ME Finish
Class A Fire Rating	With UL 1703 Type 1 Rated Modules	Lug Specifications	Bundy CL50-1TN Ground Lug (UL Listing #KDER 89999)
Leveling Range	3-4"	Ground Wire Per above Lug spec.	14 AWG - 4 AWG Copper Ground Wire
Rock-It Slide Range	4"	Max Module Size	62.98(1600mm) x 39.05(990mm) x 275(69mm)
Min/Max Roof Slope	1/2" to 12/12	Max Downforce/Uplift Rating	45 PSF
Max Anchor Spacing	72"	Rock-It Mount Load Rating	547lbs with Single 5/16" Lag 3.0 Safety Factor
Skirt Box QTY	6 units	Slide Fastening Hole	5/16" diameter
Mount Box QTY	12 units	Module Cantilever	1/2" of 2 1/8" Width, or Module Installation Manual
Rock-It Slide Box QTY	50 units	Warranty	10 Year Material And Workmanship
Coupling Box QTY	12 units		

Codes: National Electric Code, ANSI/NFPA 70, NEC 250, NEC 690, IRC, IBC 2015
Standards: UL 2703, UL 1703



www.ecofastensolar.com



info@ecofastensolar.com

877-859-3947

SYSTEM SIZE:
6.24 kW DC

DATE:
8/24/2016

DESIGNER:
JPL

Dane Traeden

175 E 4th Ave
Salt Lake City, UT 84103

zingsolar


826 E STATE ROAD, SUITE 270,
AMERICAN FORK, UT 84003
(888) 244-0231

SHEET NAME:
MOUNTING DETAILS

SHEET NUMBER:
PV 5.0

THIS PV SYSTEM WILL HAVE THE FOLLOWING MARKINGS:

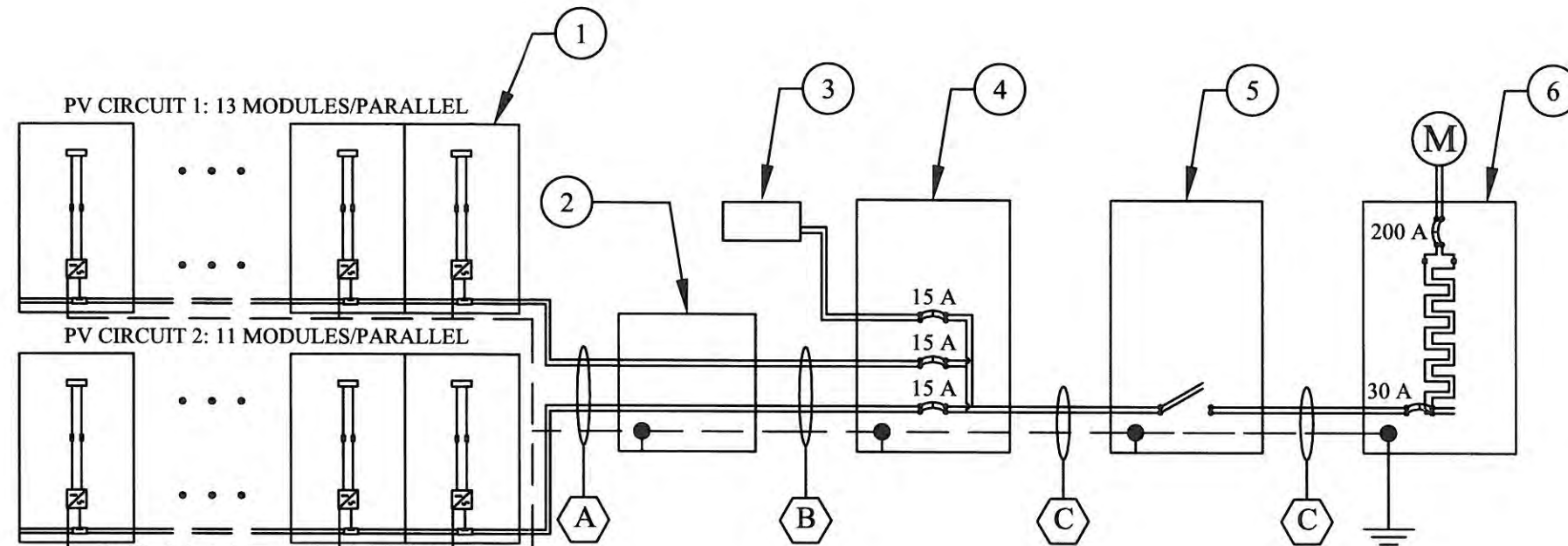
- 1 -- MATERIALS USED FOR MARKINGS WILL BE WEATHER RESISTANT. THE UNDERWRITERS LABORATORIES MARKING AND LABELING SYSTEM 969 (UL969) WILL BE USED AS STANDARD TO DETERMINE WEATHER RATING.
- 2 -- MARKING STATING “CAUTION: SOLAR ELECTRIC SYSTEM CONNECTED” WILL BE PLACED AT THE MAIN SERVICE DISCONNECT.
- 3 -- MARKING STATING “WARNING: PHOTOVOLTAIC POWER SOURCE” WILL BE PLACED ALONG DIRECT CURRENT CONDUIT, RACEWAYS, ENCLOSURES, CABLE ASSEMBLIES, AND JUNCTION BOXES.
- 4 -- THE MARKING WILL BE MADE TO THE FOLLOWING SPECIFICATIONS:
 - RED BACKGROUND
 - WHITE LETTERING
 - MINIMUM 3/8” LETTER HEIGHT
 - ALL CAPITAL LETTERS
 - ARIAL OR SIMILAR FONT, NON-BOLD
 - REFLECTIVE, WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT (DURABLE ADHESIVE MATERIALS MAY MEET THIS REQUIREMENT)
- 5 -- MARKING WILL BE PLACED ON ALL INTERIOR AND EXTERIOR CONDUIT, RACEWAYS, ENCLOSURES, CABLE ASSEMBLIES, AND JUNCTION BOXES TO ALERT THE FIRE SERVICE TO AVOID CUTTING THEM. MARKINGS WILL BE PLACED ON ALL EXTERIOR DC CONDUIT, RACEWAYS, ENCLOSURES, AND CABLE ASSEMBLIES EVERY 10 FEET, AT TURNS AND ABOVE AND/OR BELOW PENETRATIONS AND ALL DC COMBINER AND JUNCTION BOXES.

	SYSTEM SIZE: 6.24 kW DC	Dane Traeden 175 E 4th Ave Salt Lake City, UT 84103	 826 E STATE ROAD, SUITE 270, AMERICAN FORK, UT 84003 (888) 244-0231	SHEET NAME: SYSTEM MARKINGS
	DATE: 8/24/2016			SHEET NUMBER: PV 6.0
	DESIGNER: JPL			

1. PV MODULE WITH INVERTER ATTACHED
2. JUNCTION BOX. ALL WIRES TO BE PROVIDED WITH STRAIN RELIEF AT ALL ENTRY TO JUNCTION BOXES AS REQUIRED BY THE BOX LISTING
3. ENVOY S (DRAWS 0.22 AMPS)
4. COMBINER PANEL 125A/240V
5. VISIBLE LOCKABLE "KNIFE" A/C DISCONNECT 30A/240V
6. EXISTING 240V/200A BUS RATED LOAD-CENTER (NON-CENTER FED PANEL) BREAKER WILL BE FURTHEST POSITION AWAY FROM DISCONNECT. BACK-FED CIRCUIT BREAKER SHALL COMPLY WITH 2014 NEC ARTICLES 690.10(E) AND 408.36(D)

PV MODULE SPECIFICATIONS		
MODULE MAKE AND MODEL	TRINA TSM-260PD.05.08	
MAXIMUM POWER (DC)	260	WATTS
MAX POWER-POINT VOLTAGE (VMPP)	30.6	VOLTS
MAX POWER-POINT CURRENT (IMPP)	8.50	AMPS
OPEN CIRCUIT VOLTAGE (VOC)	38.2	VOLTS
SHORT CIRCUIT CURRENT (ISC)	9	AMPS
TEMPERATURE COEFFICIENT VOC	-0.32	%/°C
MAXIMUM SYSTEM VOLTAGE	1000V DC (UL)	

INVERTER SPECIFICATIONS		
INVERTER MAKE AND MODEL	ENPHASE M215-60-2LL-S22	
RATED OUTPUT POWER (AC)	215	WATTS
NOMINAL OUTPUT VOLTAGE (AC)	240	VOLTS
MAX OUTPUT CURRENT (AC)	0.9	AMPS
MAX INPUT VOLTAGE (DC)	45	VOLTS
MAX INPUT CURRENT (DC)	15	AMPS
MAX OCPD RATING (AC)	20	AMPS
MAX NUMBER OF PANELS PER CIRCUIT	17	



AC PHOTOVOLTAIC SYSTEM RATINGS		
MAX AC OPERATING CURRENT	21.6	AMPS
MAX AC OPERATING VOLTAGE	240	VOLTS

* ROMEX WILL BE RAN THROUGH THE ATTIC WHERE POSSIBLE

RACEWAY AND CONDUCTOR SCHEDULE					
TAG	CONDUCTOR TYPE	MINIMUM WIRE SIZE	# OF CONDUCTORS	RACEWAY / CABLE TYPE	MINIMUM CONDUIT SIZE
A	ENPHASE ENGAGE CABLE (USE-2)	12	3	USE-2 / FREE AIR	N/A
	BARE COPPER (EGC/GEC)	6	1	BARE / FREE AIR	
B	THWN-2 OR NM (ROMEX) *	10	6	EMT / ROMEX	3/4"
	THWN-2 OR NM (ROMEX) (EGC/GEC)	10	1		
C	THWN-2 OR NM (ROMEX) *	10	3	EMT / ROMEX	1/2"
	THWN-2 OR NM (ROMEX) (EGC/GEC)	10	1		

SYSTEM SIZE:
6.24 kW DC

DATE:
8/24/2016

DESIGNER:
JPL

Dane Traeden

175 E 4th Ave
Salt Lake City, UT 84103

zingsolar

826 E STATE ROAD, SUITE 270,
AMERICAN FORK, UT 84003
(888) 244-0231


SHEET NAME:
ELECTRICAL

SHEET NUMBER:
EL 1.0

1. THE ENPHASE M250, M215 (M215-60-2LL-SXX-IG), AND C250 FOURTH GENERATION MICROINVERTERS MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE ARTICLE 690.35 FOR UNGROUNDED PHOTOVOLTAIC POWER SYSTEMS. NEC 690.35 ALLOWS FOR PHOTOVOLTAIC POWER SYSTEMS TO BE INSTALLED WITH UNGROUNDED PHOTOVOLTAIC SOURCE AND OUTPUT CIRCUITS. SYSTEMS THAT MEET THE REQUIREMENTS OF NEC 690.35 ARE EXEMPT FROM THE SYSTEM GROUNDING REQUIREMENTS OF NEC 690.41 SYSTEM GROUNDING.
2. NEC ARTICLE 690.43 EQUIPMENT GROUNDING SPECIFIES THAT ALL EXPOSED NON-CURRENT-CARRYING METAL PARTS OF PV MODULE FRAMES, ELECTRICAL EQUIPMENT, AND CONDUCTOR ENCLOSURES SHALL BE PROVIDED WITH EQUIPMENT GROUNDING. 690.43(C) STRUCTURE AS EQUIPMENT

GROUNDING CONDUCTOR ALLOWS FOR EQUIPMENT TO BE USED AS THE EQUIPMENT GROUNDING CONDUCTOR IN A PHOTOVOLTAIC SYSTEM. SPECIFICALLY, "DEVICES LISTED AND IDENTIFIED FOR GROUNDING THE METALLIC FRAMES OF PV MODULES OR OTHER EQUIPMENT SHALL BE PERMITTED TO BOND THE EXPOSED METAL SURFACES OR OTHER EQUIPMENT TO MOUNTING SURFACES." THE DEVICES LISTED AND IDENTIFIED FOR GROUNDING THE EQUIPMENT MAY BE STAND-ALONE GROUNDING COMPONENTS OR UL-2703 LISTED MOUNTING HARDWARE. IN AN ENPHASE MICROINVERTER SYSTEM, IF THE MICROINVERTERS AND MODULES ARE BONDED TO THE RACKING ASSEMBLIES WITH THE USE OF LISTED AND APPROVED GROUNDING CLIPS OR GROUNDING COMPONENTS, THE EQUIPMENT GROUNDING CONDUCTOR PROVIDED TO THE MICROINVERTERS THROUGH THE ENPHASE ENGAGE CABLE MAY ALSO BE

- USED TO GROUND THE OTHER PHOTOVOLTAIC SYSTEM COMPONENTS.
3. POSTED ON SITE TO COMPLY WITH NEC 690.54: SOLAR PHOTOVOLTAIC GENERATION POWER SOURCE UTILITY DISCONNECT SWITCH AC OUTPUT CURRENT: (WILL BE ENTERED SPECIFIC TO THE JOB). OPERATING AC VOLTAGE (WILL BE ENTERED).
4. ALL ILLEGAL WIRE-TAP SITUATIONS WILL BE CORRECTED PRIOR TO INSTALL.

	SYSTEM SIZE: 6.24 kW DC	Dane Traeden 175 E 4th Ave Salt Lake City, UT 84103	 826 E STATE ROAD, SUITE 270, AMERICAN FORK, UT 84003 (888) 244-0231	SHEET NAME: ELECTRICAL
	DATE: 8/24/2016			SHEET NUMBER: EL 2.0
	DESIGNER: JPL			

ATTACHMENT E: ANALYSIS OF STANDARDS

21A.40.190 Small Solar Energy Collection Systems

- A. Standards: All small solar energy collection systems shall comply with the following requirements except as provided in section 21A.40.190.B relating to small solar energy collection systems in the historic preservation overlay districts. Per section 21A.34.020 of this title the historic landmark commission or staff have authority to modify the setbacks, location and height to ensure compliance with the overlay district regulations. Excluding subsection B of this section, if there is any conflict between the provisions of this subsection and any other requirements of the zoning, site development, and subdivision ordinances, the zoning administrator shall determine which requirements apply to the project in order to achieve the highest level of neighborhood compatibility.

Standard	Finding	Rationale
<p>Standard 1: Setbacks, Location and Height:</p> <ul style="list-style-type: none"> a. A freestanding small solar energy collection system shall be located a minimum of six feet (6') from all property lines and other structures, except the structure on which it is mounted. b. A small solar energy collection system may be located on a principal or accessory structure, including legal principal or accessory structures located less than the required minimum setback for the zoning districts. c. A small solar energy collection system shall not exceed by more than three feet (3') the maximum building height (based on the type of building - principal or accessory - the system is located on) permitted in the zoning district in which it is located or shall not extend more than twelve feet (12') above the roofline of the structure upon which it is mounted, whichever is less. d. A development proposed to have a small solar energy collection system located on the roof or attached to a structure, or an application to establish a system on an existing structure, shall provide a structural certification as part of the building permit application. 	Complies	<ul style="list-style-type: none"> a. The proposed small solar energy collection system is proposed to be located on the roof of the existing residence. The location of the system will not overhang the roof and will not encroach into any front, side or rear lot area. As long as the system is mounted on the main structure, it is allowed to be less than 6 feet from the property if it is determined by the Historic Landmark Commission to meet all other standards of the ordinance. b. The proposed small solar energy collection is located on the primary structure. However, the subject property does have a large accessory structure located where a small solar energy collection system (or portion of) could be located. c. The proposed small solar energy collection system is proposed to be mounted as flush with the roof as possible, parallel to the roof plane, below the ridge of the roofline. The solar panels themselves will project approximately 3 inches above the roof, but not above the roof ridge. d. If the solar panels are approved, the applicant will need to submit all necessary documentation for the installation and structural details for the proposed small solar energy collection system when a building permit is applied for.
<p>Standard 2: Coverage: A small solar energy collection system mounted to the roof of a building shall not exceed ninety percent (90%) of the total roof area of the building upon which it is installed. A system constructed as a separate accessory structure on the ground shall count toward the total building and yard coverage limits for the lot on which it is located.</p>	Complies	<p>The proposed small solar energy collection system is proposed to be mounted on the main residence and not on an accessory structure. The proposed size of the solar energy collection system is approximately 414 square feet.</p>
<p>Standard 3: Code Compliance: Small solar energy collection systems shall comply with all applicable building and electrical codes contained in the international building code adopted by Salt Lake City.</p>	Complies	<p>Should the proposed small solar energy collection system be approved, it will need to comply with all applicable codes adopted by Salt Lake City. This standard will need to be met should the proposal be approved and a building permit is applied for.</p>
<p>Standard 4: Solar Easements: A property owner who has installed or intends to install a small solar energy collection system shall be responsible for negotiating with other property owners in the vicinity for any desired solar easement to protect solar access for the system and shall record the easement with the Salt Lake County recorder.</p>	Complies	<p>The applicant will be responsible for negotiating with other property owners for any desired solar easements. This standard is not applicable to the approval of this project.</p>
<p>Standard 5: Off Street Parking and Loading Requirements: Small solar energy collection systems shall not remove or encroach upon required parking or loading areas for other uses on the site or access to such parking or loading areas.</p>	Complies	<p>The proposed small solar energy collection system is located on the main residence and is not located upon any required parking area.</p>

21A.34.020.G H Historic Preservation Overlay District – Standards for Certificate of Appropriateness for Altering of a Landmark Site or Contributing Structure

In considering an application for a certificate of appropriateness for alteration of a landmark site or contributing structure, the historic landmark commission, or the planning director, for administrative decisions, shall find that the project substantially complies with all of the following general standards that pertain to the application and that the decision is in the best interest of the city:

Standard	Finding	Rationale
Standard 1: A property shall be used for its historic purpose or be used for a purpose that requires minimal change to the defining characteristics of the building and its site and environment;	Does not comply	The building was constructed in 1909 as a single family home. No change of use is proposed, however, significant changes in character will be made to the front façade with the presence of the solar panels.
Standard 2: The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided;	Does not comply	No historic building materials will be removed, however the character of the front roof plane will be altered.
Standard 3: All sites, structure and objects shall be recognized as products of their own time. Alterations that have no historical basis and which seek to create a false sense of history or architecture are not allowed.	Complies	The small solar energy collection system is a utility feature and is not being installed in a manner to create a false sense of history or architecture. This standard is met.
Standard 4: Alterations or additions that have acquired historic significance in their own right shall be retained and preserved.	Complies	No significant historic features will be lost. The proposal complies with this standard.
Standard 5: Distinctive features, finishes and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.	Does not comply	The historic roof of this property is a prominent feature. The distinctive color of the solar panels against the color of the shingles on the roof may have a negative impact on the overall historic character of the property.
Standard 6: Deteriorated architectural features shall be repaired rather than replaced wherever feasible. In the event replacement is necessary, the new material should match the material being replaced in composition, design, texture and other visual qualities. Repair or replacement of missing architectural features should be based on accurate duplications of features, substantiated by historic, physical or pictorial evidence rather than on conjectural designs or the availability of different architectural elements from other structures or objects.	Not Applicable	The subject proposal does not include repair or replacement of deteriorated architectural features. This standard does not relate to the proposal.
Standard 7: Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.	Not applicable	The proposed work does not include any treatments of historic materials. This standard is not applicable to the request.
Standard 8: Contemporary designs for alterations and additions to existing properties shall not be discouraged when such alterations and additions do not destroy significant cultural, historical, architectural or archaeological material, and such design is compatible with the size, scale, color, material and character of the property, neighborhood or environment.	Does not comply	Because the color of the proposed solar panels are black and the roof is grey, staff finds the color contrast (and use of modern materials) on the front roof plane will not be compatible with the color, material, and character of the property or historic neighborhood.
Standard 9: Additions or alterations to structures and objects shall be done in such a manner that if such additions or alteration were to be removed in the future, the essential form and integrity of the structure would be unimpaired. The new work shall be differentiate from the old and shall be compatible in massing, size, scale and architectural features to protect the historic integrity of the property and its environment.	Complies	The proposed small solar energy collection system can be easily removed without impairing any form and integrity of the structure other than minimal damage to the asphalt shingle roof. This standard is met.

Standard 10: Certain building materials are prohibited including the following: vinyl, asbestos, or aluminum cladding when applied directly to an original or historic material.	Not applicable	Small solar energy collection systems are considered accessory to the building and no original material will be affected.
Standard 11: Any new sign and any change in the appearance of any existing sign located on a landmark site or within the H historic preservation overlay district, which is visible from any public way or open space shall be consistent with the historic character of the landmark site or H historic preservation overlay district and shall comply with the standards outlined in part IV, Chapter 21A.46 of this title.	Not applicable	No signs are proposed. This standard is not applicable.

21A.40.190 Small Solar Energy Collection Systems

B. Small Solar Energy Collection Systems and Historic Preservation Overlay Districts or Landmark Sites

Regulation	Finding	Rationale
<p>3. Small Solar Energy Collection System Location Priorities: In approving appropriate locations and manner of installation, consideration shall include the following locations in the priority order they are set forth below. The method of installation approved shall be the least visible from a public right of way, not including alleys, and most compatible with the character defining features of the historic building, structure, or site. Systems proposed for locations in subsections B3a through B3e of this section, may be reviewed administratively as set forth in subsection 21A.34.020F1, "Administrative Decision", of this title. Systems proposed for locations in subsection B3f of this section, shall be reviewed by the historic landmark commission in accordance with the procedures set forth in subsection 21A.34.020F2, "Historic Landmark Commission", of this title.</p> <p>a. Rear yard in a location not readily visible from a public right of way.</p> <p>b. On accessory buildings or structures in a location not readily visible from a public right of way.</p> <p>c. In a side yard in a location not readily visible from a public right of way.</p> <p>d. On the principal building in a location not readily visible from a public right of way.</p> <p>e. On the principal building in a location that may be visible from a public right of way, but not on the structure's front facade.</p> <p>f. On the front facade of the principal building in a location most compatible with the character defining features of the structure.</p>	Does not comply	<p>a. According to the applicant, the rear yard is not an option for installation as the yard area would not be large enough to place the system and also conform to all setbacks and distance requirements.</p> <p>b. There is an accessory structure—a duplex—within the rear yard of the subject property, which may be eligible for solar panel placement, <i>however this option has not been addressed by the applicant.</i></p> <p>c. The existing property has mature vegetation, which would likely impede installation of a solar energy collection system within a side yard.</p> <p>d. Based on the shape and size of the roof on the principal structure, there is no other location where the panels could be located to meet the sun exposure requirements and not be visible from the public right-of-way. The only portion of the roof that faces north is on the rear side of the residence and that location is not suitable for solar panels. According to the applicant, there would be minimal solar exposure for the system at that location.</p> <p>e. There are a total of 24 solar panels proposed. 9 on the south side of the roof, 9 on the west side, and 6 on the east. There is not adequate roof space on west and south sides of the property to accommodate more solar panels than what is already proposed for those areas.</p> <p>f. If approved, the applicant will place 9 of the proposed 24 panels on the front façade of the principal building. Although, staff finds that the proposal will alter a character defining feature of the structure and will not be compatible, staff received one comment in support of the request (see Attachment G – Public Process and Comments).</p>

ATTACHMENT F: APPLICABLE DESIGN GUIDELINES

The following are applicable historic design guidelines related to this request. On the left are the applicable design guidelines and on the right, a list of the corresponding Zoning Ordinance standards for which the design guidelines are applicable. The following applicable design guidelines can be found in *Design Guidelines for Commercial Properties and Districts in Salt Lake City*.

Applicable Design Guidelines	Corresponding Standards for a Certificate of Appropriateness
<p>Design Objective 7.6 – The visual impact of skylights and other rooftop devices should be minimized.</p> <ul style="list-style-type: none"> • Skylights or solar panels should be installed to reflect the plane of the historic roof. • Flat skylights and solar panels that are parallel with the roof plane may be appropriate on the rear and sides of the roof. • Avoid locating a skylight or solar panel on a front roof plane wherever possible. 	<p>Standards 2, 5, 8 and 9</p>

ATTACHMENT G: PUBLIC PROCESS AND COMMENTS

Public Notice, Meetings and Comments

The following is a list of public meetings that have been held, and other public input opportunities, related to the proposed project.

Notice of Public Hearing:

- Public hearing notice mailed on October 20, 2016
- Public hearing notice posted on subject property on October 20, 2016
- Public meeting agenda posted on the Salt Lake City Planning Division and Utah Public Meeting Notice websites on October 20, 2016

Public Comment:

Prior to publication, staff had not received any public comment for or against this petition.

Department Comment:

Staff received the following Department Comment related to this project:

October 20, 2016

Hi Michael,

Please be sure to tell the (Historic Landmark Commission) about how we worked closely with stakeholders and **the Historical folks on this a few years ago, and this was a great compromise so that homeowners who couldn't** put solar panels anywhere else could use the front face of their roof.

Vicki Bennett
Sustainability Environment Director

ATTACHMENT H: MOTIONS

Consistent with Staff Recommendation:

Based on the analysis and findings listed in the staff report, testimony received, and proposal presented, I move that the Commission approve Petition PLNHLC2016-00735 for Minor Alteration to install a small solar energy collection system at 175 E 4th Avenue with the following condition:

1. All solar panels on the front roof plane, oriented toward 4th Avenue, shall be removed. Solar panels may be relocated to other permissible sites described in City Code 21A.40.190.B.3 subparagraphs a through e.

This motion is based upon compliance with the following applicable standards of review (Commissioner then states Standard 2 to support the motion):

1. A property shall be used for its historic purpose or be used for a purpose that requires minimal change to the defining characteristics of the building and its site and environment;
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided;
3. All sites, structures and objects shall be recognized as products of their own time. Alterations that have no historical basis and which seek to create a false sense of history or architecture are not allowed;
4. Alterations or additions that have acquired historic significance in their own right shall be retained and preserved;
5. Distinctive features, finishes and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved;
6. Deteriorated architectural features shall be repaired rather than replaced wherever feasible. In the event replacement is necessary, the new material should match the material being replaced in composition, design, texture and other visual qualities. Repair or replacement of missing architectural features should be based on accurate duplications of features, substantiated by historic, physical or pictorial evidence rather than on conjectural designs or the availability of different architectural elements from other structures or objects;
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible;
8. Contemporary design for alterations and additions to existing properties shall not be discouraged when such alterations and additions do not destroy significant cultural, historical, architectural or archaeological material, and such design is compatible with the size, scale, color, material and character of the property, neighborhood or environment;
9. Additions or alterations to structures and objects shall be done in such a manner that if such additions or alterations were to be removed in the future, the essential form and integrity of the structure would be unimpaired. The new work shall be differentiated from the old and shall be compatible in massing, size, scale and architectural features to protect the historic integrity of the property and its environment;
10. Certain building materials are prohibited including the following:
 - a. Aluminum, asbestos, or vinyl cladding when applied directly to an original or historic material.
11. Any new sign and any change in the appearance of any existing sign located on a landmark site or within the H historic preservation overlay district, which is visible from any public way or open space shall be consistent with the historic character of the landmark site or H historic preservation overlay district and shall comply with the standards outlined in chapter 21A.46 of this title.

Not Consistent with Staff Recommendation:

Based on information contained within the staff report, testimony received, and proposal presented, I move that the Commission deny Petition PLNHLC2016-00735 for Minor Alteration to install a small solar energy collection system at 175 E 4th Avenue. (Commissioner then states findings based on the above standards to support the motion.)