



TOWN OF JEROME

Post Office Box 335, Jerome, Arizona 86331
(928) 634-7943

Zoning Administrator Analysis Design Review Board Tuesday, June 27, 2023

Item :

Location: 723 Clark Street
Applicant/Owner: Jacqueline & Richard Sorrells
Zone: R1-5
APN: 401-06-026N
Prepared by: Will Blodgett, Zoning Administrator
Recommendation: Approval

Project Background and Summary: Installation of a photovoltaic (Solar) system on the house at 723 Clark Street, known locally as the "Eagles Nest".

Building Background and History: Yavapai County lists this home as being constructed in 1950. The 2007 Historic Properties survey does not list a date of initial construction, so at this time the only construction date listed is 1950. The 2007 survey does list this home as contributing to the NHL (National Historic Landmark) designation, and the survey is reproduced at the end of this review.

Property Standards: The purpose of design review is to enable the Design Review Board to review the exterior design of proposed new buildings and structures, proposed alterations of buildings and structures, proposed signs, and proposed demolition of structures within the Historic Overlay District. Section 304.B.2 requires exterior modifications to a building or structure to undergo review by the Design Review Board.

In 2015 the Town of Jerome adopted a set of Solar Energy System Design Guidelines that mirror the best practices established by the Secretary of the Interior's Standards. To this point there are two (2) primary design considerations,

- 1- (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 should be avoided."*
- 2- (Standard 9) *"New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and be compatible with massing, size, scale and architectural features to protect the Historic integrity of the property and its environment."*

Review Criteria: Section 304.H.2 lists the review criteria for alterations, additions, or reconstructions to existing buildings or structures. Subsection b, "Roofs" states that; *"Original roof shape, design, and material shall be preserved and retained where feasible. Where contemporary roofing material is used, it should be as near as possible to the appearance of the original roofing material."*

Response: The proposed project adheres to all of the best industry practices available for this type of installation. The project will not require the removal of any historic defining features of the home and due to the unique location of the home, most if not all, of the photovoltaics will be unseen from the surrounding properties.





LEGEND:

MSP	(N) 225A MAIN SERVICE PANEL	1
UM	UTILITY REVENUE METER	2
INV	(N) SE7600H-US (240V) INVERTER	3
PNL	(N) SOLAR PANEL: HYUNDAI HIS-S400YH(BK)	4
AC DISC	(N) 60AMP UTILITY DISCONNECT SWITCH	5
PVM	(N) UNI-DIRECTIONAL METER	6
PL	PROPERTY LINES	7
FL	FENCE LINE	8

DESIGN NOTE:
ALL DIM-L ARE EXPRESSED IN 2D UNLESS NOTED OTHERWISE

TOTAL ROOF AREA CALCS:

TOTAL ROOF AREA:	1,180.00 SQ.FT.
SINGLE MODULE AREA:	21.50 SQ.FT.
TOTAL NUMBER OF MODULES:	15 PNL
TOTAL AREA OF MODULES:	322.49 SQ.FT.
ROOF COVERAGE:	27.33%
FIRE SPRINKLERS:	N/A

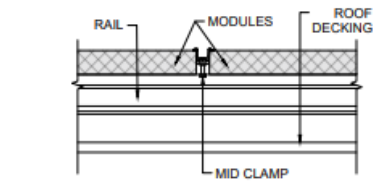
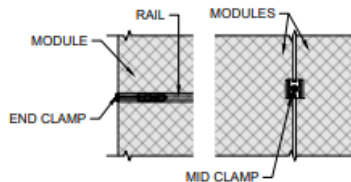
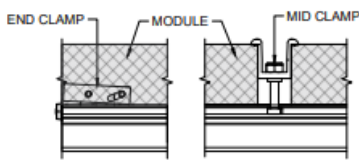
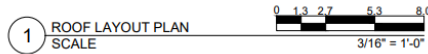
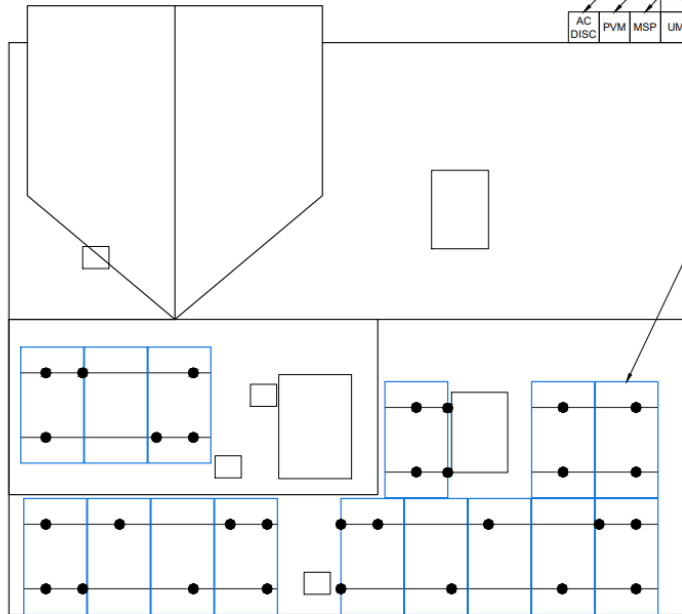
-  - FIRE ACCESS (3' WIDTH TYPICAL)
-  - STANCHION PENETRATION POINT QUANTITY: 31
-  - 24" O.C. RAFTER
-  - HYUNDAI HIS-S400YH(BK), 400W MODULE DIMENSIONS (INCHES): 40.87W x 75.75L

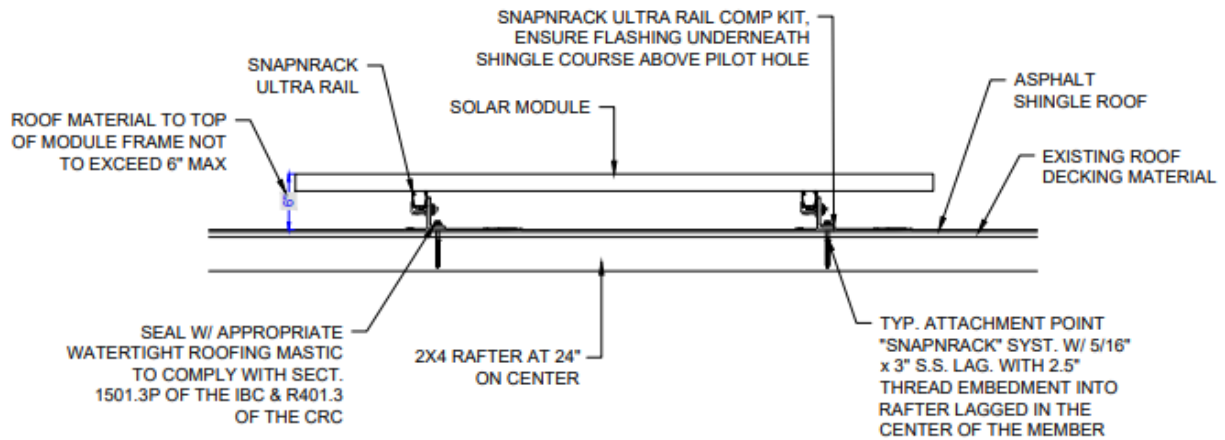
ROOF LAYOUT NOTES:

- ALL ROOF STANCHIONS WILL BE INSTALLED AND SEALED BY A LICENSED CONTRACTOR
- RACEWAYS AND CABLES EXPOSED TO SUNLIGHT ON ROOFTOPS SHALL BE LOCATED NOT LESS THAN 3.5' ABOVE THE ROOF SURFACE AND CONFORM TO NEC 310.15(B).
- GROUND TO ROOF FIRE ACCESS SHALL CONFORM TO 2018 IFC 1204

ARRAY RACKING NOTES:

- ARRAY WEIGHT DOES NOT EXCEED 5 LBS PER SQUARE FOOT AND DOES NOT EXCEED A POINT LOAD OF 40 LBS.
- SNR WITH INTEGRATED BONDING
- STANCHIONS SPACED AT 6' INTERVALS
- MAXIMUM RAIL CANTILEVER: 24"
- ROOF MATERIALS: ASPHALT SHINGLE
- RACKING: SNR UR-40 RAIL
- STANCHION: SNR ULTRA COMP KIT

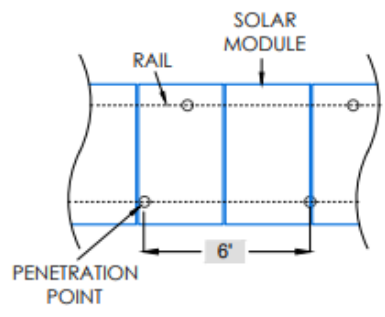




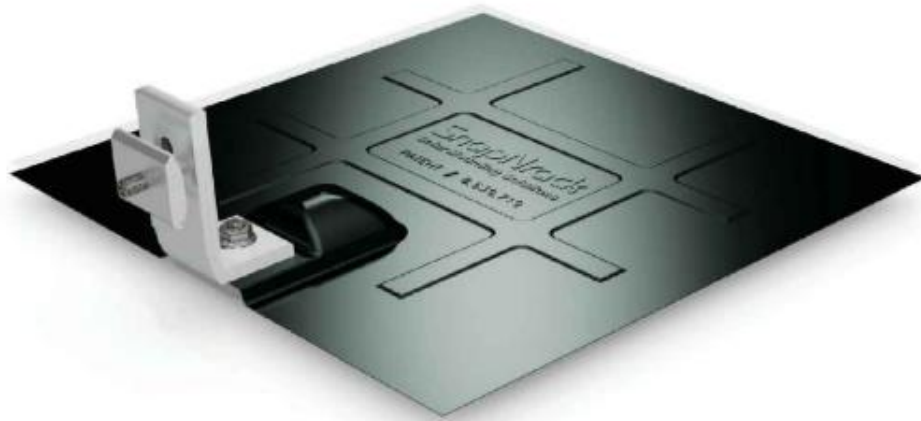
1 ROOF SUPPORT SECTIONAL DETAILS
SCALE

NTS

- RACKING INFORMATION - (1)**
- SNR RACKING WITH INTEGRATED BONDING
 - SNR ULTRA COMP KIT
 - MAX. CANTILEVER = 24" PER MANUF.
 - RAFTER SPACING = 24" O.C.
 - PENETRATION POINTS = 6' SPACING - STAGGERED



Flashed L Foot



Reliable & Weatherproof Roof Attachment



Cutting of shingles not required



Preassembled, snap-in hardware reduces installation time



Single tool installation, using a standard 1/2" socket



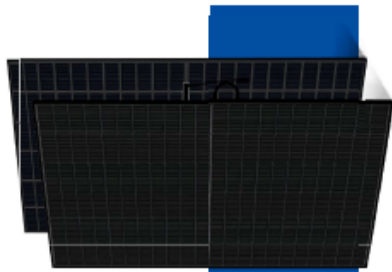
Included in Series 100 UL 2703 Listing

HYUNDAI SOLAR MODULE



Dual Black Max

HIS-S385YH(BK) HIS-S390YH(BK) HIS-S395YH(BK)
 HIS-S400YH(BK) HIS-S405YH(BK) HIS-S410YH(BK)



Bifacial Cells
132

MORE POWER
 GENERATION
 IN LOW LIGHT

UL 1,500V
 IEC 550°C
 SAVED BOS COSTS

All Black Module
 Full Back Design
 100% Coverage
 (Back Sheet)



Increased total power output through capturing light from both the front and back of bifacial solar modules. Back side power gain up to 25% of the front output depending on PV system design.



Improved current flow with half-cut technology and 3-in wiring technology allows high module efficiency of up to 20.5%. It also reduces power generation loss due to microcracks.



Both LID(Light Induced Degradation) and PID(Potential Induced Degradation) are significantly reduced to ensure higher actual yield during lifetime.



Tempered glass and reinforced frame design withstand rigorous weather conditions such as heavy snow(5,400Pa) and strong wind(6,000Pa).



Hyundai's R&D center is an accredited test laboratory of both UL and VDE.



Global brand with powerful financial strength provide reliable 25-year warranty.



25 Year Product Warranty

Materials and workmanship



25 Year Performance Warranty

Initial year* 18.0%
 Linear warranty after second year
 with 0.54% annual degradation,
 18.0% is guaranteed up to 25 years

Certification



*18.0% is guaranteed for UL Type IIIa and IIIc class A1

Printed Date: 03/02/2018

www.hyundaienergy.com



Electrical Characteristics

	Mono-Crystalline Type(HIS-...YH(BK))				
	385	390	395	400	410
Rated Output Power	385	390	395	400	410
Open Circuit Voltage (V _{OC})	44.5	44.8	45.0	45.3	45.8
Short Circuit Current (I _{SC})	11.04	11.11	11.18	11.25	11.40
Voltage at Power (V _{MPP})	37.1	37.3	37.5	37.9	38.1
Current at Power (I _{MPP})	10.40	10.47	10.54	10.61	10.76
Module Efficiency	19.3	19.5	19.8	20.0	20.5
Cell Type	Mono-crystalline Silicon				
Maximum System Voltage	1,500				
Temperature Coefficient of Power	-0.347				
Temperature Coefficient of Voc	-0.288				
Temperature Coefficient of Isc	+0.032				

*All data at STC (Measurement of Irradiance: 1000 W/m², Air Mass 1.5). Above data may be changed without prior notice.

Additional Power Gain from rear side	385					390					395					400					410				
	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W						
5%	399	404	410	415	425	431	436	441	446	451	456	461	466	471	476	481	486	491	496						
15%	437	443	449	454	468	472	477	482	487	491	496	500	505	509	514	518	523	527	531						
25%	475	482	488	494	508	512	517	522	527	531	536	540	545	549	554	558	563	567	571						

Mechanical Characteristics

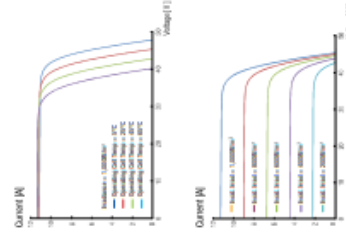
Dimensions	1,038 mm (W) x 1,824 mm (L) x 35 mm(H)
Weight	Approx. 21.1 kg
Solar Cells	132 half-cut bifacial cells (2 parallel x 66 half cells in series)
Output Cables	Cable: 1,200mm / 4mm ²
Junction Box	IP68, waterproof, IEC certified (UL listed)
Bypass Diodes	3 bypass diodes to prevent power decrease by partial shade
Construction	Front: 3.2mm, High Transmission, AR Coated Tempered Glass Encapsulant: EVA (Back Sheet: Black Meshed Transparent Backsheet)
Frame	Anodized aluminum alloy type 6063

Installation Safety Guide

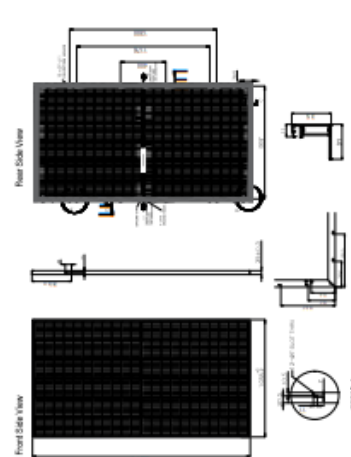
- Only qualified personnel should install or perform maintenance.
- Do not touch the high DC voltage.
- Do not damage or scratch the rear surface of the module.
- Do not handle or install modules when they are wet.

Rated Operating Cell Temperature	45.5°C ± 2
Operating Temperature	-40°C ~ +85°C
Maximum Voltage	DC 1,500V
Maximum Current	20A
Maximum Test Load	Front: 5,400 Pa (17.3psf) Rear: 4,000 Pa (14psf)


I-V Curves



Module Diagram



Application & Related Information



JEROME
ARIZONA

2007 Town of Jerome Arizona

HISTORIC PROPERTIES SUMMARY SURVEY

PROPERTY IDENTIFICATION

For properties identified through survey: Site No. **034** Survey Area

Historic Name(s)
 (Enter the name(s). If any, that best reflects the property's historic importance.)
 Address **723 Clark Street**

City or Town **Jerome** vicinity County **Yavapai** Tax Parcel No. **401-08-15B**

Township **16** Range **2E** Section **23** Quarters _____ Acreage _____
 Block _____ Lot(s) _____ Plat (Addition) _____ Year of plat (addition) _____
 UTM reference: Zone _____ Easting _____ Northing _____
 USGS 7.5' quadrangle map: _____

ARCHITECT not determined known Source _____
 BUILDER not determined known Source _____
 CONSTRUCTION DATE known estimated Source _____

STRUCTURAL CONDITION

Good (well maintained; no serious problems apparent)

Fair (some problems apparent) Describe: _____

Poor (major problems; imminent threat) Describe: _____

Ruin/Uninhabitable

*Major Renovation
 1996 -
 Stair + Addition
 Approved by DRB*


USES/FUNCTIONS
 Describe how the property has been used over time, beginning with the original use.

Sources

PHOTO INFORMATION
 Date of photo **2007**
 View Direction (looking towards)
South West
 Negative No. **723 Clark Street**



*ASV
 2015*



2007 Town of Jerome Arizona

HISTORIC PROPERTIES SUMMARY SURVEY

A. HISTORIC EVENTS/TRENDS. *Describe any historic events/trends associated with the property.*

B. PERSONS. *List and describe persons with an important association with the building.*

C. ARCHITECTURE. Style Vernacular no style

Stories 3 w/, Attic Basement Roof form Side Gabled

Describe other character-defining features of its massing, size, and scale Three Flights of Stairs leading from SR 89A to Residence.

INTEGRITY

To be eligible for the National Register, a property must have integrity, i.e., it must be able to visually convey its importance. The outline below lists some important aspects of integrity. Fill in the blanks with as detailed a description of the property as possible.

LOCATION. Original Site Moved: date original site

DESIGN. *Describe alterations from the original design, including dates.*

MATERIALS. *Describe the materials used in the following elements of the property.*

Walls (structure) Wood Walls (sheathing) Rough Sawn Plank
 Windows Alum Describe window structure Casement. Fixed at attic gable end
 Roof Comp Shingles Foundation Conc. Wood Timbers

SETTING. *Describe the natural and/or built environment around the property.* Perched on Steep Hill Side

How has the environment changed since the property was constructed?

WORKMANSHIP. *Describe the distinctive elements, if any, of craftsmanship or method of construction.*

NATIONAL REGISTER STATUS (if listed, check the appropriate box)

Individually Listed; Contributor Noncontributor to Historic District
 Date Listed Determined eligible by Keeper of National Register (date)

RECOMMENDATIONS ON NATIONAL REGISTER ELIGIBILITY (opinion of SHPO staff or survey consultant)

Property is is not eligible individually.
 Property is is not eligible as a contributor to a listed or potential historic district.
 More information is needed to evaluate.
 If not considered eligible, state reason:

FORM COMPLETED BY Gregory C. Hunt
 Name and Affiliation: D.A.P.A. Studio
 Mailing Address: P.O. Box 8 Cottonwood, AZ. 86326

Date: 2007
 Phone #: 928-646-9205