

# Large Residential

Single Family Homes over 3,000 sq.ft.

## Ford Residence

Panelwrights LLC

Al Cobb

808 French Road

Shenandoah Junction, WV 25442

Phone: 304-876-0265

Email Address: [annie@panelwrights.com](mailto:annie@panelwrights.com)

Website: [www.panelwrights.com](http://www.panelwrights.com)



**Structural Insulated  
Panel Association**

## 2019

High Performance Winner



**PanelWrights**

**Al Cobb**

**Ford Residence**

**Hedgesville, WV.**



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SIP wall thickness: 6.5" EPS  
SIP roof thickness: 12.5" EPS

HERS Index: 48

Blower door: 1.0 ACH50



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### Project information

Ford Residence  
Hedgesville, WV 25427

**Date Completed:** February 2018

### Dimensions of building:

67' x 51' (First Floor)  
67' x 34' (Second Floor)

**Total sq. ft. of conditioned space:** 3052 sq. ft

### Built By:

Panelwrights LLC  
Al Cobb  
808 French Road  
Shenandoah Junction, WV 25442

**Panels Manufactured By:** Insulspan

### Designed By:

Natural Elements Homes  
Panelwrights LLC  
808 French Road  
Shenandoah Junction, WV 25442

**Describe the end use of the building:** Private Residence with Home Office, Workshop, Exercise Room, and extensive entertaining area, located on historic Back Creek in the Eastern Panhandle of West Virginia.

The homeowners' ultimate goal was to be energy independent. They contacted Panelwrights because of our reputation of building low energy and off-grid structures. The homeowners were familiar with SIP construction and wanted to work with an experienced SIP contractor. Achieved a certified ENERGY STAR building.



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### **Describe the benefits of using SIPs on this project.**

SIPs were used for maximum energy efficiency and the SIP design met the structural needs of the hybrid timber frame structure. Using SIPs yielded high performance and reduced energy costs on this home. The final HERs score allowed the homeowner to enjoy a tax credit on the home.

### **Describe any innovative design elements or structural engineering involved:**

- A Frost Protected Shallow Foundation vastly improved performance as the entire slab (exposed as finished floor) was insulated from ground contact.
- Perimeter of slab was insulated with Nailbase Panels using cementitious skin as part of the FPSF.
- Passive Solar Design by Panelwrights to maximize solar gain with southern exposure and solar shading with properly sized overhands.
- Back Ventilated Exterior Cladding using woven polypropylene matting to improve performance and durability.

Describe the HVAC system used on the project: \* 4 zoned mini split with SEER-21

\* 3 zoned radiant floor - electric to be compatible with solar.

\* Whole house ventilation using ERV

\* Soap Stone wood oven/stove

Describe any other energy-saving materials used in the building envelope other than SIPs. List U-values of windows used and the U or R-value of any insulation materials. (judged only for High Performance Category) R-50 Frost Protected Shallow Foundation using EPS high density foam with perimeter nailbase and zero contact with ground due to foam detail (see attached)

Please list any energy-efficient products or design features, such as lighting, hot water heating, appliances, passive solar (judged only for High Performance Category): Passive solar design by Panelwrights to maximize solar gain with southern exposure and solar shading with properly sized and located overhands.



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### Additionally:

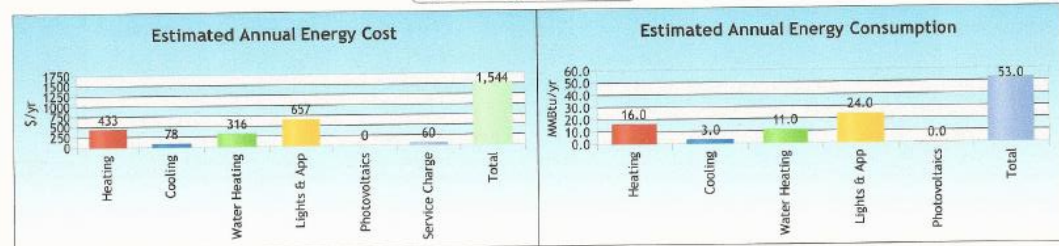
Solar currently being installed to allow net-zero operations by end of 2019

- All interior finishes are low or no VOC.
- Substantial amount of trim details were from locally harvested wood.
- Landscaping includes edible fruit and nut trees native to the area.

### HERS PERFORMANCE



### ENERGY RATING CERTIFICATE



House Type Single-family detached  
Cond. Area 3052 sq. ft.  
Rating No. HESr-0052  
Issue Date December 15, 2016  
Certification Verified

Annual Estimates\*  
Electric(kWh): 15632  
CO2 emissions(Tons): 16  
Annual Savings\*\*: \$2064

\* Based on standard operating conditions

\*\* Based on a HERS 130 Index Home

TITLE  
Company  
Address  
Certified Rater Randy Swartz  
Rater ID 3413864  
Registry ID 262702814  
Rating Date 12/8/2016  
Signature

REM/Rate - Residential Energy Analysis and Rating Software v14.6.4

This information does not constitute any warranty of energy cost or savings. © 1985-2016 Noresco, Boulder, Colorado.  
The Home Energy Rating Standard Disclosure for this home is available from the rating provider.



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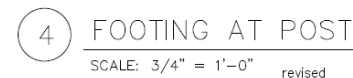
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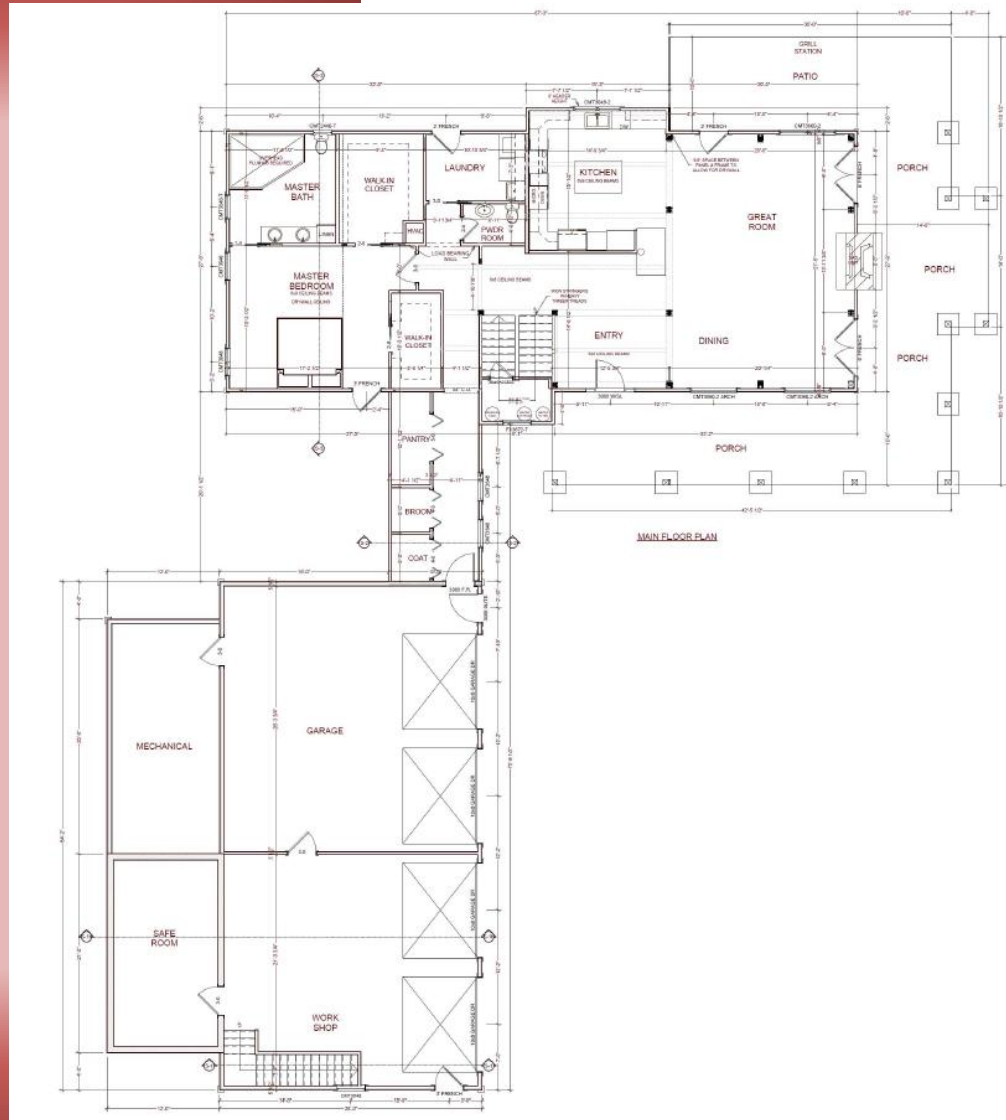
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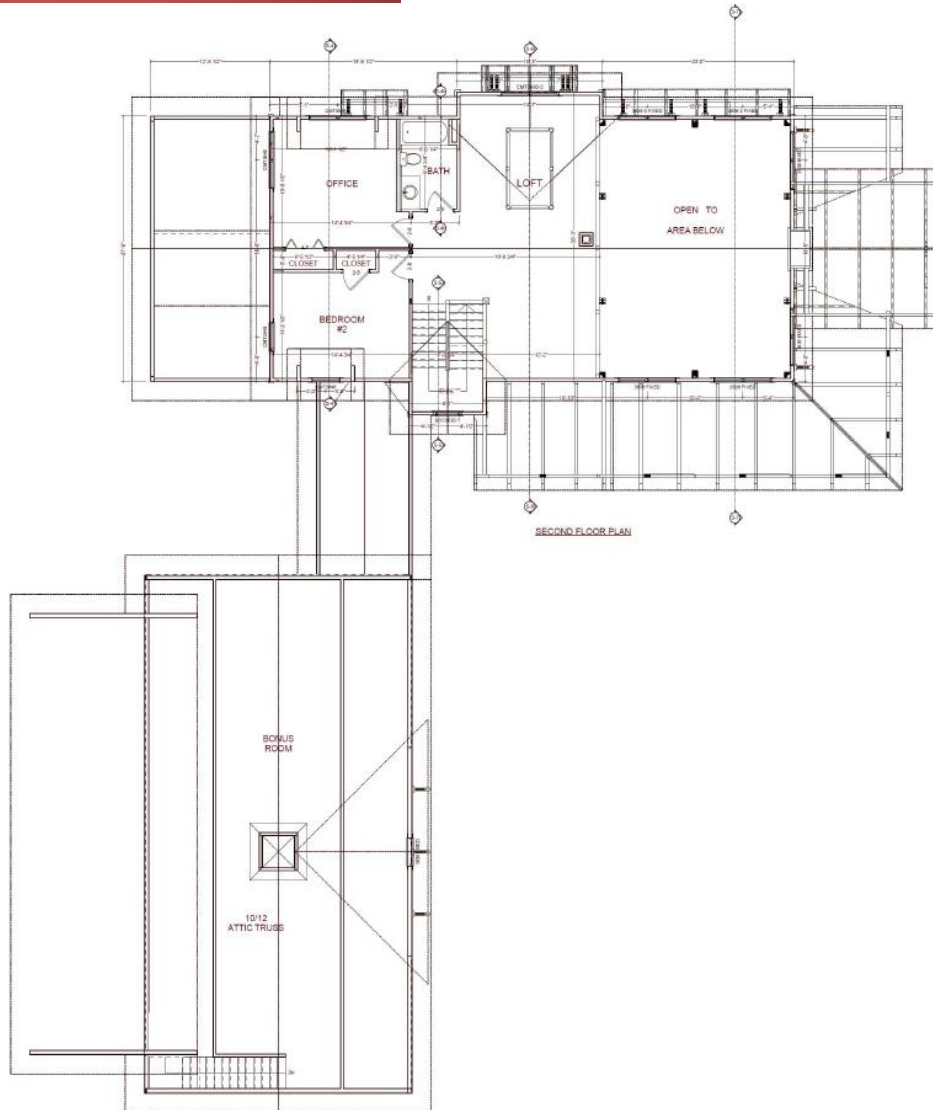
First Floor Plan



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Second Floor Plan