

ANN ARBOR HISTORIC DISTRICT COMMISSION

Staff Report

ADDRESS: 418 S First Street, Application Number HDC14-009

DISTRICT: Old West Side Historic District

REPORT DATE: February 13, 2014

REPORT PREPARED BY: Jill Thacher, Historic Preservation Coordinator

REVIEW COMMITTEE DATE: Monday, February 10, 2014

	OWNER	APPLICANT
Name:	Margaret Wong & Ralph Nelson	Same
Address:	418 S First Street Ann Arbor, MI 48103	
Phone:	(734) 998-2546	

BACKGROUND: This simple single-story cottage first appears in the 1928 Polk City Directory as the home of Gottlieb Weltz, a mason. It features a partial-width front porch and one-over-one double hung windows. The house has had at least two rear additions since 1965. The garage does not appear on the 1965 Sanborn map, and was either constructed after that date or moved to its current site.

The applicant received a Certificate of Appropriateness from the HDC in August 2011 to demolish the existing garage and construct a new two story tandem garage with a studio above it (HDC11-103).

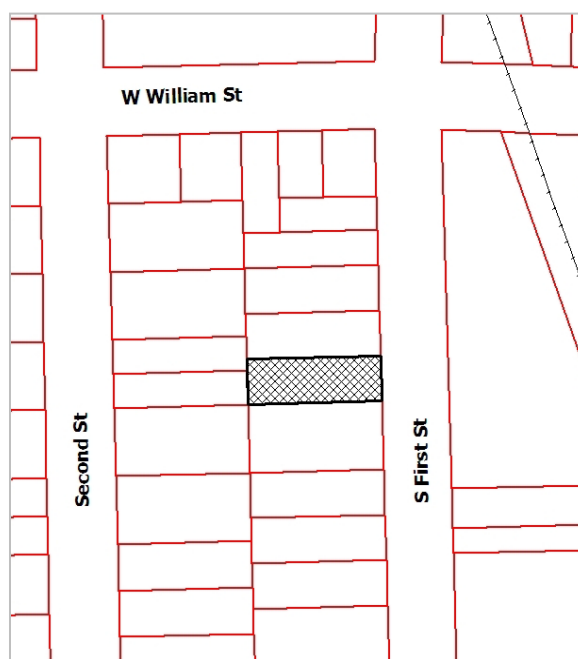
The applicant also received a Certificate of Appropriateness in July 2013 to modify the design of the garage/studio (HDC13-098).

LOCATION: The site is located on the west side of South First Street, south of West William and north of West Jefferson.

APPLICATION: This application seeks to modify the approved garage/studio design by removing the south-facing dormer and three small windows on the south elevation and installing 26 black-on-black solar panels that span the width of the roof.

APPLICABLE REGULATIONS:

From the Secretary of the Interior's Standards for Rehabilitation:



- (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.
- (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 shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
- (10) New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

From the Secretary of the Interior's Guidelines for Rehabilitating Historic Buildings:

Energy Efficiency

Recommended: Placing a new addition that may be necessary to increase energy efficiency on non-character-defining elevations.

Not Recommended: Designing a new addition which obscures, damages, or destroys character-defining features.

Mechanical Equipment

Recommended: Providing adequate structural support for new mechanical equipment.

From the Ann Arbor Historic District Design Guidelines (other Guidelines may apply):

Solar

Appropriate: Mounting solar panels at grade or on ground pole mountings. In the absence of an appropriate ground-based mounting location, panels should be mounted on side or rear facing roof surfaces.

Installing mechanical and service equipment on the roof related to the solar units and their related devices so that they are inconspicuous from the public right-of-way and do not damage or obscure character-defining features.

For sloped roof installations, mounting solar panels parallel to and within 8" of roof surface.

Not Appropriate: Mounting solar panels and their related devices on primary elevations or roofs that face the primary elevation or in planes that are highly visible from the street view. This location has the highest impact on the historic character of the historic building and all other options should be thoroughly explored.

STAFF FINDINGS

1. Each panel is 40" x 66", and just over an inch thick. The panels and their frames are black, and will cover the roof to within approximately a foot of the edges and ridge, per the supplied drawing. The applicant emailed that they haven't picked a roof color yet, but that it would be a medium to dark color. Since the panels are being installed on a new accessory structure, staff feels this is acceptable.
2. Removal of the south dormer and windows has no negative effect on the compatibility of the new garage/studio with surrounding resources.
3. Staff believes that the materials and design of the panels are compatible with the design of the new structure, neighboring contributing and non-contributing buildings, and the surrounding historic district, and meet both the Secretary of the Interior's Standards and the *Ann Arbor Historic District Design Guidelines*.

POSSIBLE MOTIONS: (Note that the motions are only a suggestion. The Review Committee, consisting of staff and at least two Commissioners, will meet with the applicant on site and then make a recommendation at the meeting.)

I move that the Commission issue a certificate of appropriateness for the application at 418 S First Street, a contributing property in the Old West Side Historic District, to remove a dormer and windows from the south elevation of the previously approved garage/studio, and add 26 photovoltaic solar panels, as proposed. The work is compatible in exterior design, arrangement, texture, material and relationship to the surrounding resources and meets the *Ann Arbor Historic District Guidelines for Solar*, and *The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*, in particular standards 2, 9 and 10, and the Guidelines for Energy Efficiency and Mechanical Equipment.

MOTION WORKSHEET:

I move that the Commission issue a Certificate of Appropriateness for the work at 418 S First Street in the Old West Side Historic District

_____ Provided the following condition(S) is (ARE) met: 1) STATE CONDITION(s)

The work is generally compatible with the size, scale, massing, and materials and meets the Secretary of the Interior's Standards for Rehabilitation, standard(S) number(S) (*circle all that apply*): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

ATTACHMENTS: application, drawings, photos.

418 S First (2007 photo)





**City of Ann Arbor
PLANNING & DEVELOPMENT SERVICES — PLANNING
SERVICES**

301 E. Huron Street | P.O. Box 8647 | Ann Arbor, Michigan 48107-8647
p. 734.794.6265 | f. 734.994.8312 | planning@a2gov.org

ANN ARBOR HISTORIC DISTRICT COMMISSION APPLICATION

Section 1: Property Being Reviewed and Ownership Information	
Address of Property:	<u>418 S. 1st Street</u>
Historic District:	<u>OLD WEST SIDE</u>
Name of Property Owner (If different than the applicant):	<u>SEE BELOW</u>
Address of Property Owner:	<u>418 S. 1st Street</u>
Daytime Phone and E-mail of Property Owner:	<u>(734) 998-2546</u> <u>margaretlwang@earthlink.net</u>
Signature of Property Owner:	<u>[Signature]</u> Date: <u>1/24/2014</u>
Section 2: Applicant Information	
Name of Applicant:	<u>Margaret Wang & Ralph Nelson</u>
Address of Applicant:	<u>418 S. 1st Street, Ann Arbor, MI, 48103</u>
Daytime Phone:	<u>(734) 998-2546</u> Fax: <u>() N/A</u>
E-mail:	<u>margaretlwang@earthlink.net</u>
Applicant's Relationship to Property:	<input checked="" type="checkbox"/> owner <input checked="" type="checkbox"/> architect <input type="checkbox"/> contractor <input type="checkbox"/> other
Signature of applicant:	<u>[Signature]</u> Date: <u>1/24/2014</u>
Section 3: Building Use (check all that apply)	
<input checked="" type="checkbox"/> Residential	<input checked="" type="checkbox"/> Single Family <input type="checkbox"/> Multiple Family <input type="checkbox"/> Rental
<input type="checkbox"/> Commercial	<input type="checkbox"/> Institutional <input checked="" type="checkbox"/> Residential garage use + home office for architect in studio space
Section 4: Stille-DeRossett-Hale Single State Construction Code Act (This item MUST BE INITIALED for your application to be PROCESSED)	
Public Act 169, Michigan's Local Historic Districts Act, was amended April 2004 to include the following language: "...the applicant has certified in the application that the property where the work will be undertaken has, or will have before the proposed completion date, a fire alarm or smoke alarm complying with the requirements of the Stille-DeRossett-Hale Single State Construction Code Act, 1972 PA 230, MCL 125.1501 to 125.1531."	
Please initial here:	<u>MLW</u>

Section 5: Description of Proposed Changes (attach additional sheets as necessary)

1. Provide a brief summary of proposed changes.

2. Provide a description of existing conditions.

3. What are the reasons for the proposed changes?

4. Attach any additional information that will further explain or clarify the proposal, and indicate these attachments here.

5. Attach photographs of the existing property, including at least one general photo and detailed photos of proposed work area.

PLEASE
SEE 2
ATTACHED
SHEETS
FOR
SECTION #5
RESPONSES

STAFF USE ONLY

Date Submitted: _____ Application to _____ Staff or _____ HDC

Project No.: _____ **HDC** _____ Fee Paid: _____

Pre-filing Staff Reviewer & Date: _____ Date of Public Hearing: _____

Application Filing Date: _____ Action: _____ HDC COA _____ HDC Denial

Staff signature: _____ _____ HDC NTP _____ Staff COA

Comments:

Ann Arbor Historic District Commission Application

Applicant: Margaret Wong & Ralph Nelson (property owner)

Address: 418 S. 1st St., Ann Arbor, MI, 48103; Old West Side Historic District

Project: Proposed Garage / Studio

Submittal Date: January 24, 2014

Section 5: Description of Proposed Changes (3 pages)

This January 24, 2014 application requests changes to a proposed garage / studio approved by the Historic District Commission (HDC) on August 11, 2011 (file #HDC11-103) and July 11, 2013 (file #HDC13-098).

1. Provide a brief summary of proposed changes.

Applicant's proposal to demolish an existing one-story wood framed 14.3' x 20.3' one-car garage and replace it with a two-level wood framed two-car tandem garage with a studio space above remains unchanged.

Applicant proposes the following changes to the scheme approved by the HDC on August 11, 2011 and July 11, 2013:

-- Install 26 photovoltaic solar panels on south half of roof. Panels to be SolarWorld "Sunmodule Plus SW 265" monocrystalline black panels with black frame, on Quick Mount PV "QBase Composition Mount" rack system. See attached product specifications.

-- Eliminate south shed dormer to create maximum efficient south roof area, simplify conditions for solar panel system installation, and optimize system performance. Removing this south dormer also reduces the mass of the building.

-- Eliminate three small windows at south wall of upper level.

2. Provide a description of existing conditions.

Applicant confirmed with City of Ann Arbor Historic Preservation Coordinator Jill Thacher in early April 2011 that the existing garage was not a contributing resource. Based on August 11, 2011 and July 11, 2013 HDC approvals of proposed garage / studio project, existing garage was demolished in August 2013. Garage / studio construction began November 2013.

3. What are the reasons for the proposed changes?

The proposed garage / studio is extremely well-suited for the installation of photovoltaic solar panels on its south roof area given the absence of taller structures or other features to the east and south. Advances in microinverter technology will optimize system performance given shade-producing features to

the southwest. Installing this system for generating clean renewable energy will benefit this specific property, contribute to the continued environmental viability of the Old West Side neighborhood and expand Ann Arbor's performance and identity as a Solar America City.

Three small windows at south wall of upper studio level are eliminated to accommodate design of studio interior space. Large banks of windows at east wall and north dormer provide abundant natural light to this area of studio.

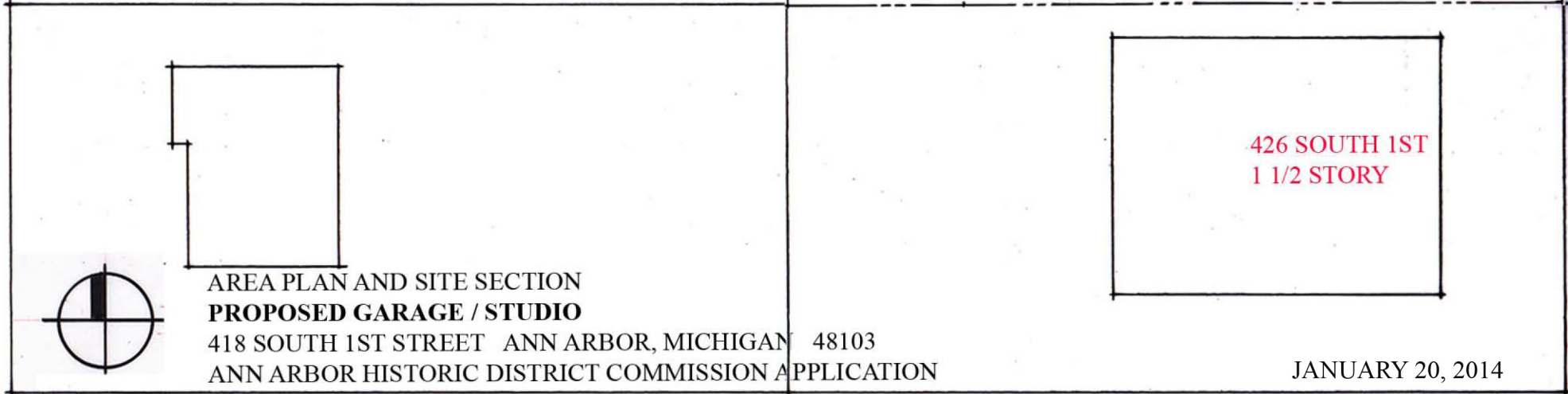
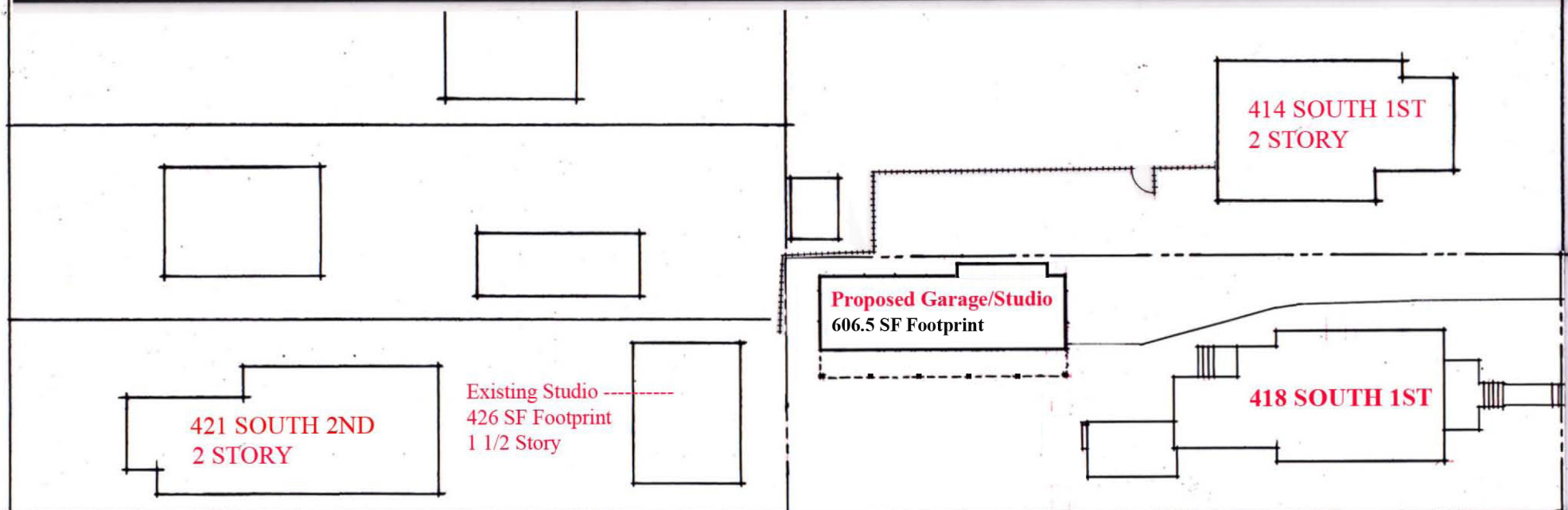
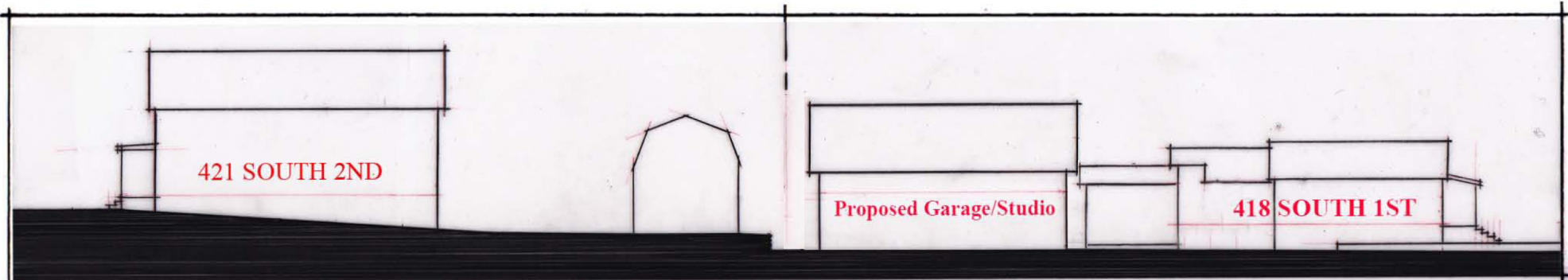
4. Attach any additional information that will further explain or clarify this proposal, and indicate these attachments here.

Only items #2, #7, #8, #9, #11 and #12 show proposed changes from approved July 11, 2013 HDC application. Items #13 and #14 present new information.

- 1) Proposed Area Plan and Site Section
- 2) Photo of backyard following demolition of existing garage building (prior to slab removal).
- 3) South 1st Street View of Former Garage
- 4) South 1st Street View of Proposed Garage / Studio
- 5) Proposed Site Plan
- 6) Proposed Garage Level Plan
- 7) Proposed Studio Level Plan
- 8) Proposed Building Section @ North Dormer
- 9) Proposed East Elevation
- 10) Proposed North Elevation
- 11) Proposed South Elevation
- 12) Proposed West Elevation
- 13) Specifications for SolarWorld "Sunmodule Plus SW 265" monocrystalline black panels with black frame.
- 14) Specifications for Quick Mount PV "QBase Composition Mount" (for new asphalt roof construction) panel rack.

5. Attach photographs of the existing property, including at least one general photo and detailed photos of proposed work area.

Please see items #2 (photo) and #5 (Proposed Site Plan).



AREA PLAN AND SITE SECTION
PROPOSED GARAGE / STUDIO
 418 SOUTH 1ST STREET ANN ARBOR, MICHIGAN 48103
 ANN ARBOR HISTORIC DISTRICT COMMISSION APPLICATION

JANUARY 20, 2014



VIEWS OF EXISTING GARAGE SLAB AND BACKYARD FOLLOWING DEMO OF GARAGE

PROPOSED GARAGE / STUDIO

418 SOUTH 1ST STREET ANN ARBOR, MICHIGAN 48103
ANN ARBOR HISTORIC DISTRICT COMMISSION APPLICATION

JANUARY 20, 2014



CURRENT SOUTH 1ST STREET VIEW OF FORMER GARAGE

PROPOSED GARAGE / STUDIO

418 SOUTH 1ST STREET ANN ARBOR, MICHIGAN 48103
ANN ARBOR HISTORIC DISTRICT COMMISSION APPLICATION

JANUARY 20, 2014

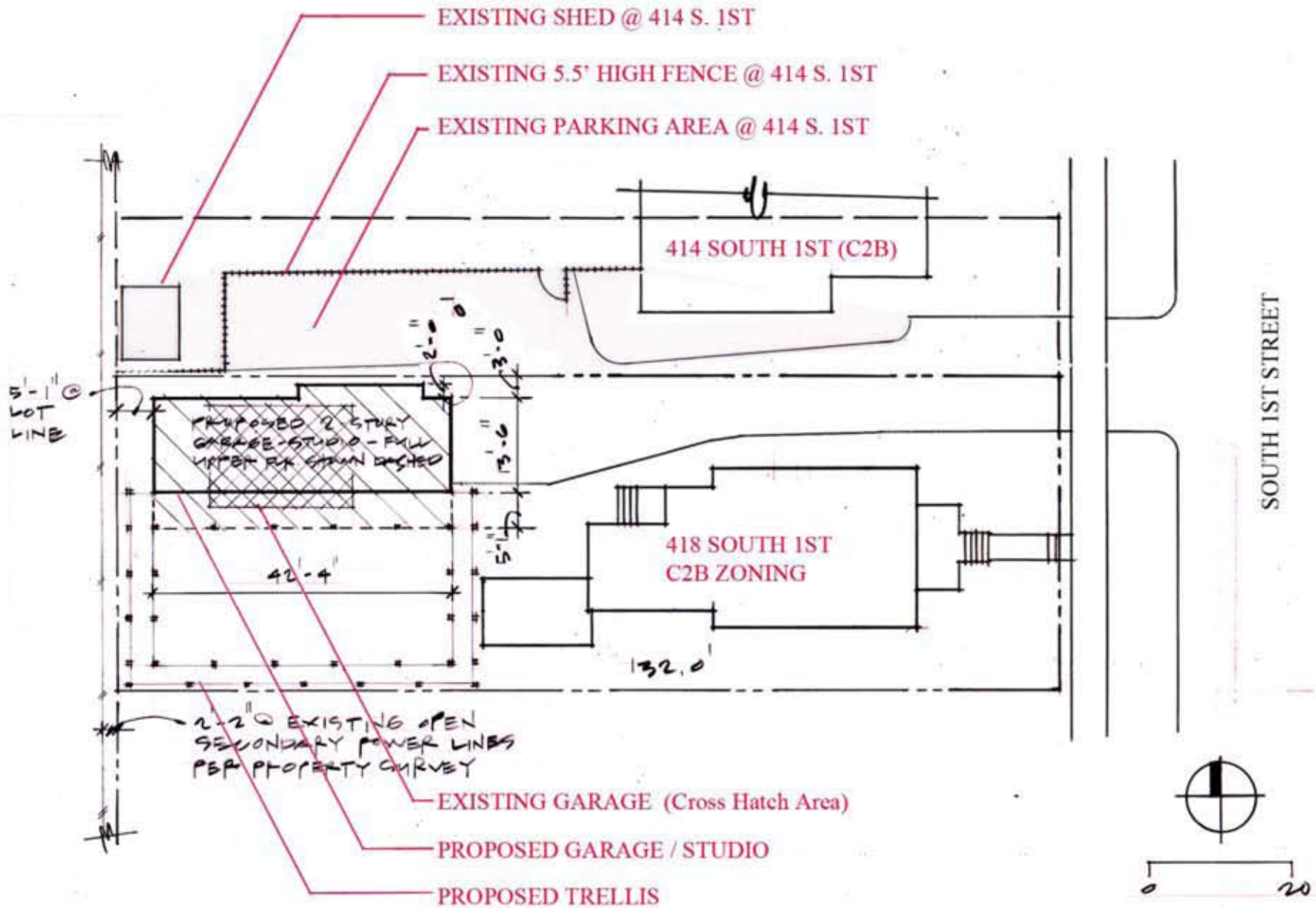


PROPOSED SOUTH 1ST STREET VIEW OF GARAGE / STUDIO

PROPOSED GARAGE / STUDIO

418 SOUTH 1ST STREET ANN ARBOR, MICHIGAN 48103
ANN ARBOR HISTORIC DISTRICT COMMISSION APPLICATION

JANUARY 20, 2014

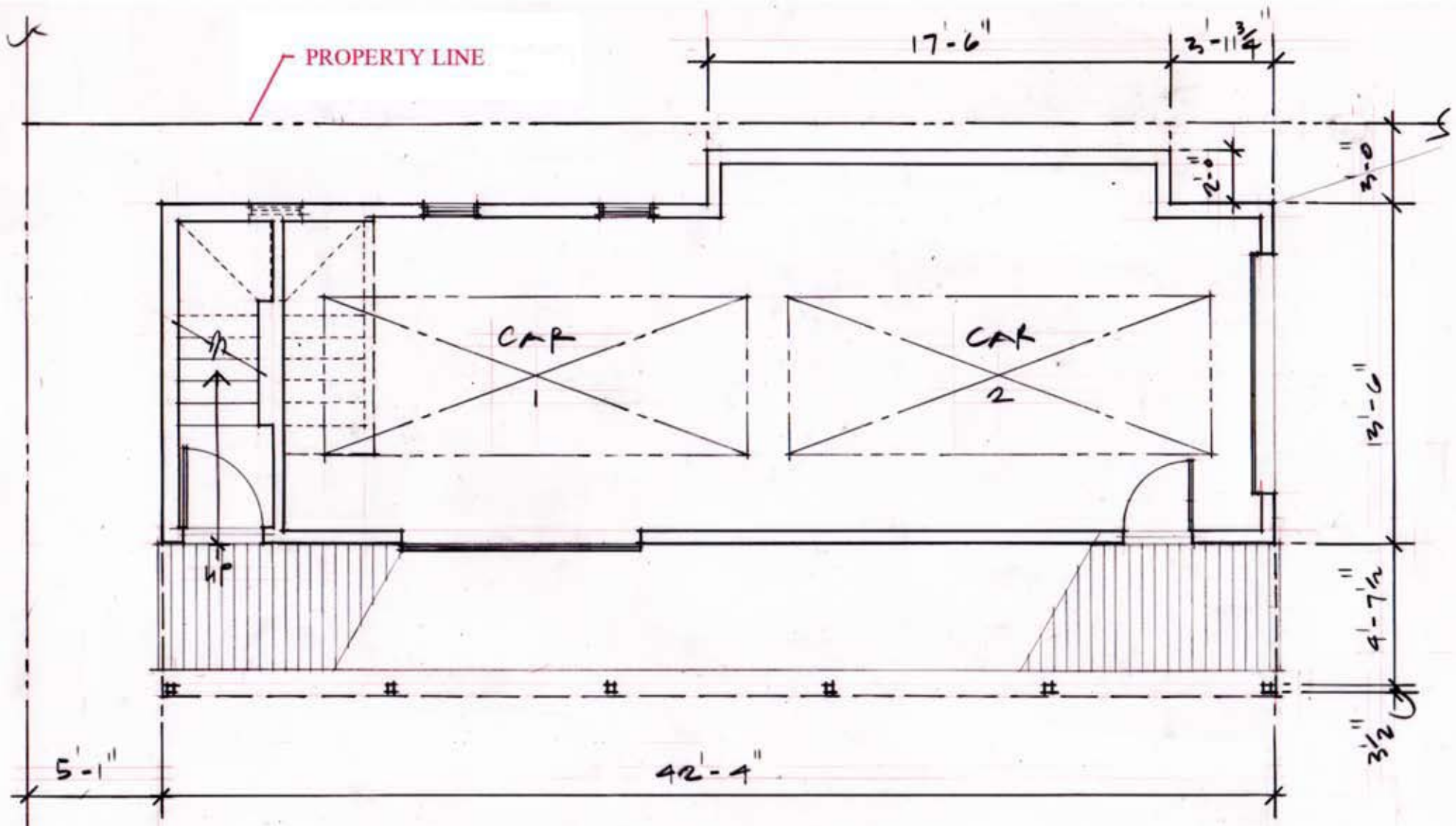


SITE PLAN

PROPOSED GARAGE / STUDIO

418 SOUTH 1ST STREET ANN ARBOR, MICHIGAN 48103
 ANN ARBOR HISTORIC DISTRICT COMMISSION APPLICATION

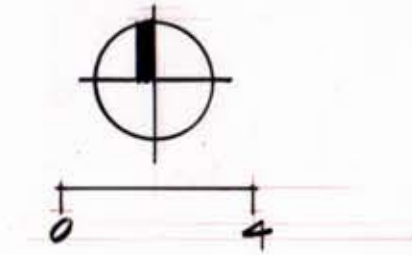
JANUARY 20, 2014



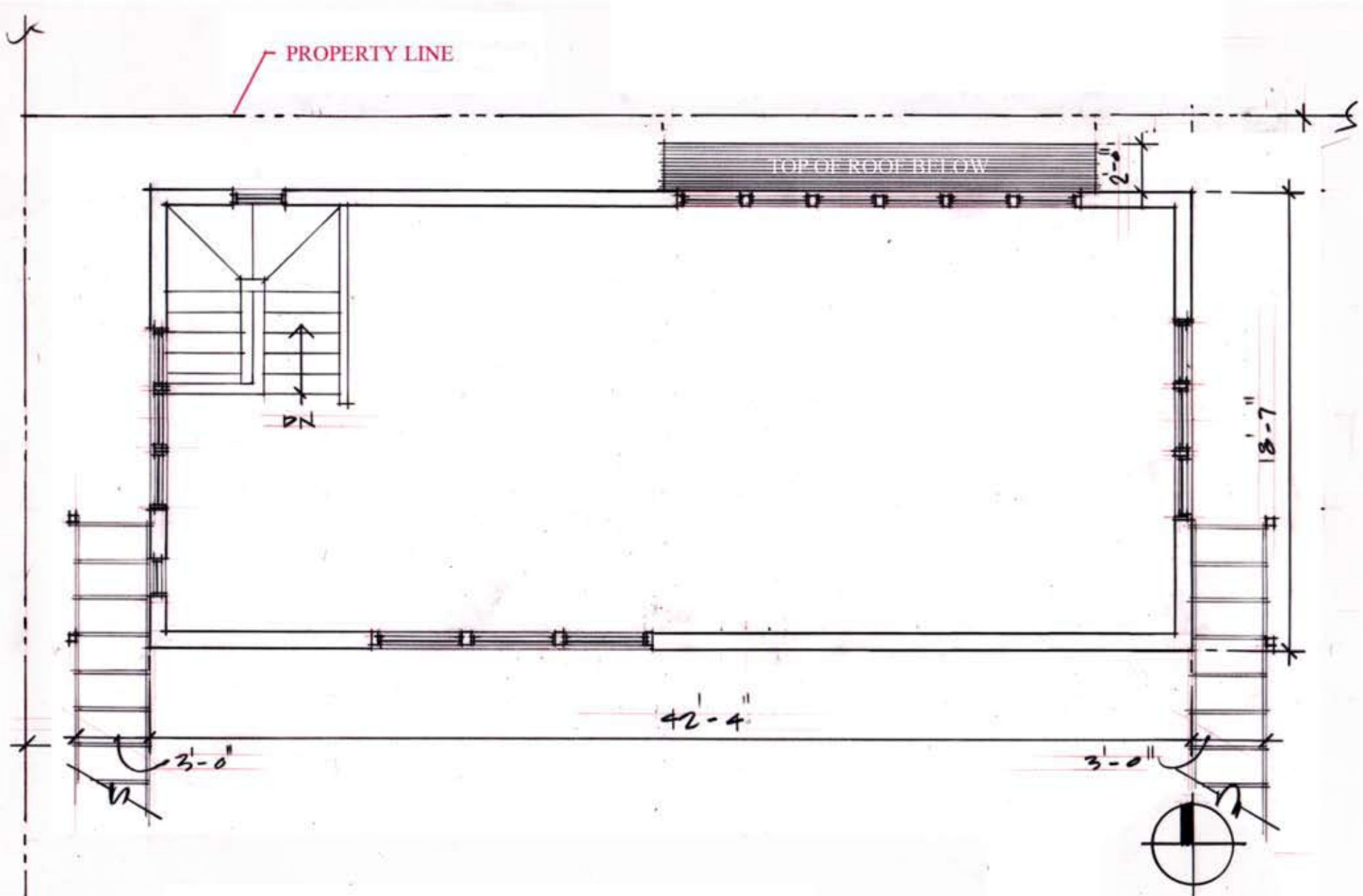
GARAGE LEVEL PLAN

PROPOSED GARAGE / STUDIO

418 SOUTH 1ST STREET ANN ARBOR, MICHIGAN 48103
 ANN ARBOR HISTORIC DISTRICT COMMISSION APPLICATION



JANUARY 20, 2014

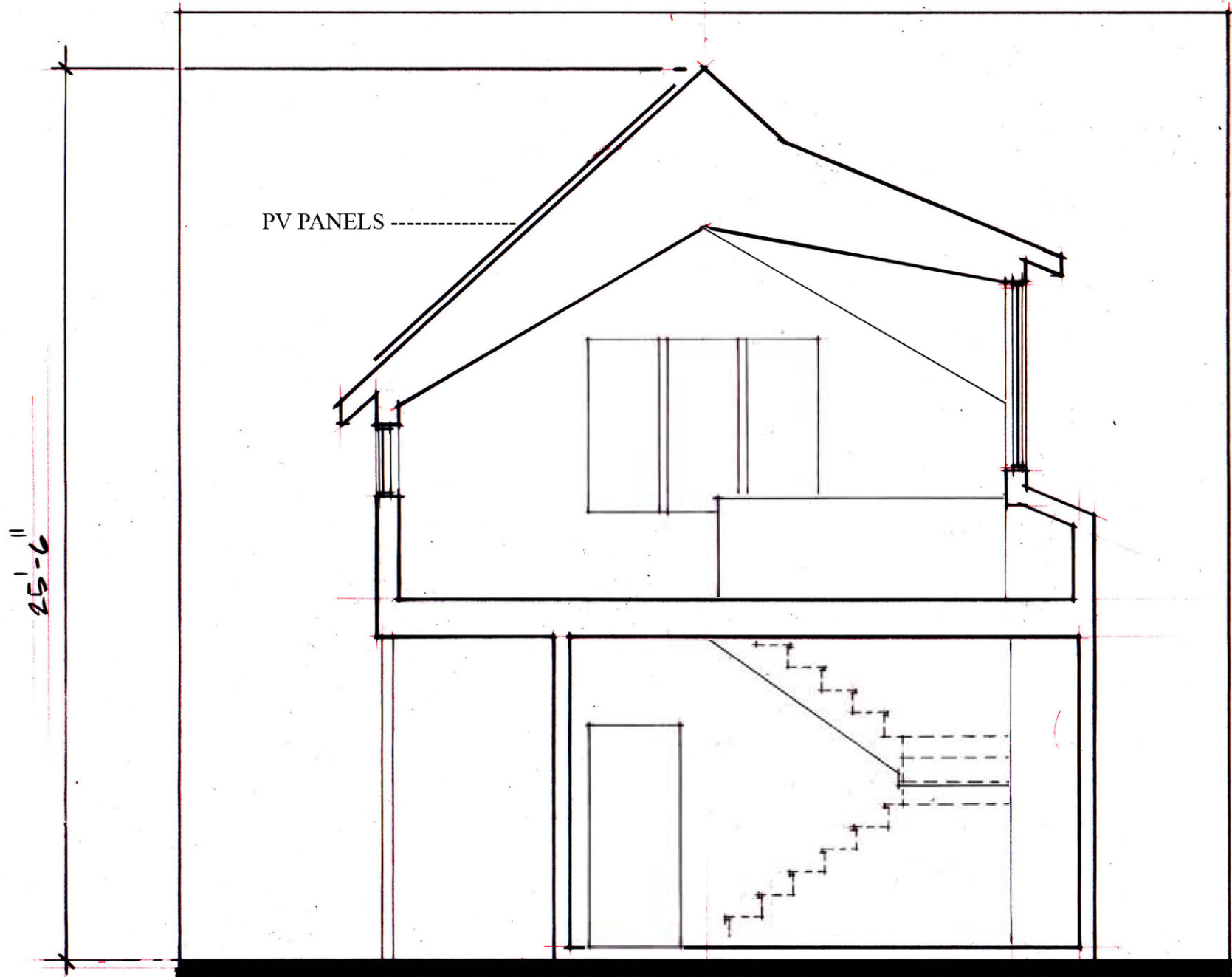


STUDIO LEVEL PLAN

PROPOSED GARAGE / STUDIO

418 SOUTH 1ST STREET ANN ARBOR, MICHIGAN 48103
 ANN ARBOR HISTORIC DISTRICT COMMISSION APPLICATION

JANUARY 20, 2014



BUILDING SECTION AT NORTH DORMER

PROPOSED GARAGE / STUDIO

418 SOUTH 1ST STREET ANN ARBOR, MICHIGAN 48103

ANN ARBOR HISTORIC DISTRICT COMMISSION APPLICATION

0 4
JANUARY 20, 2014

Cement Board Exterior Siding

Wood Trim and Doors

Aluminum Clad Wood Windows

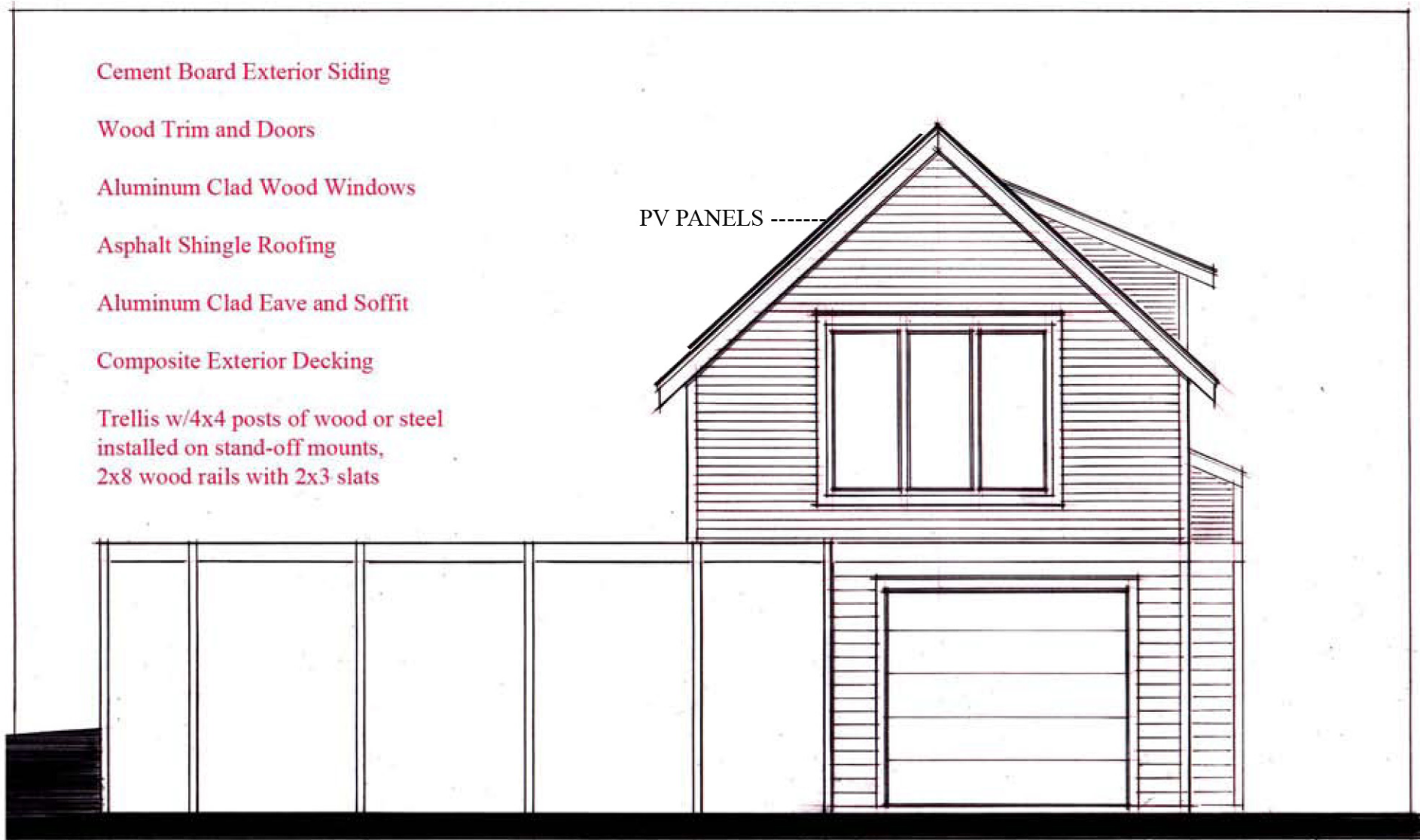
Asphalt Shingle Roofing

Aluminum Clad Eave and Soffit

Composite Exterior Decking

Trellis w/4x4 posts of wood or steel
installed on stand-off mounts,
2x8 wood rails with 2x3 slats

PV PANELS



EAST ELEVATION

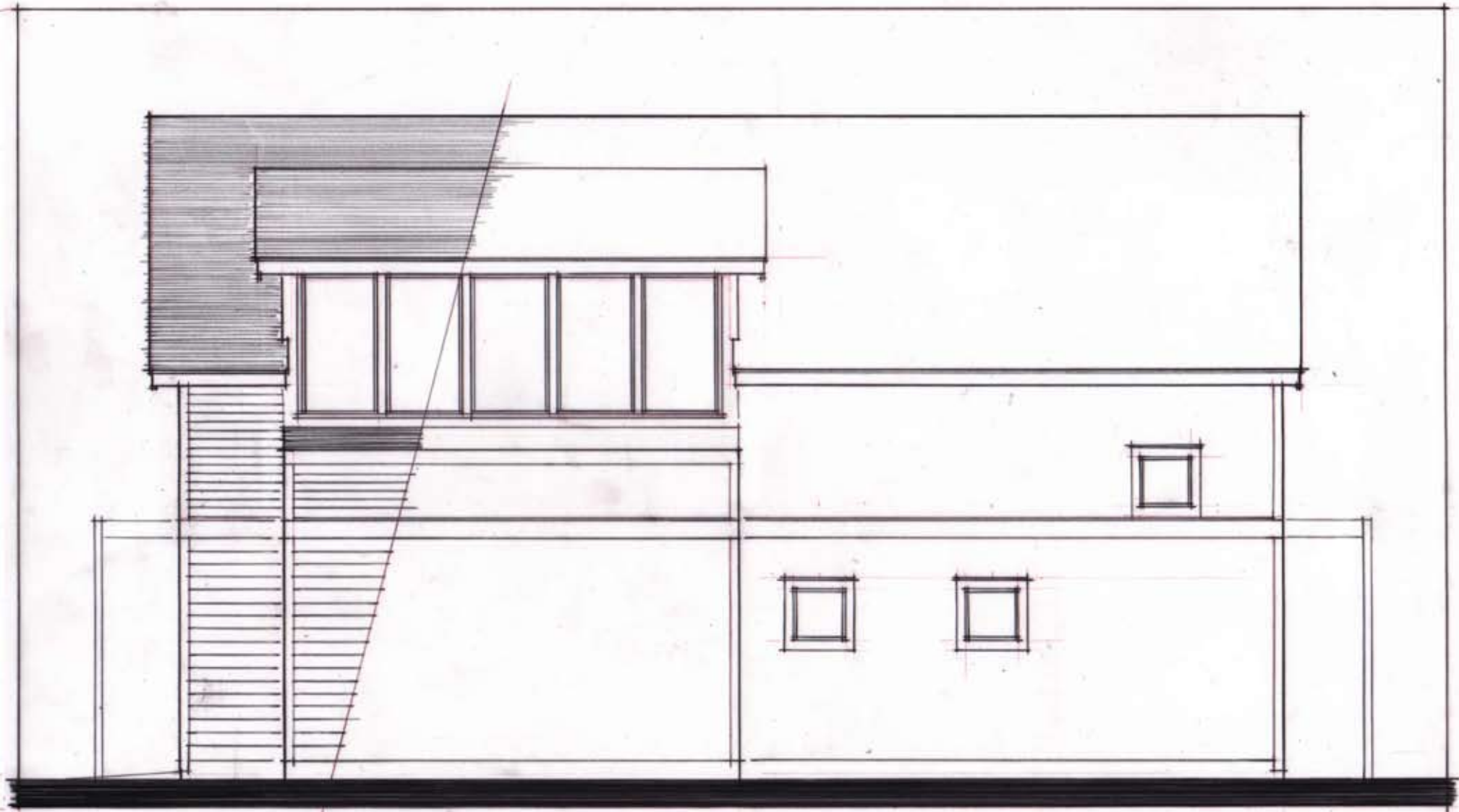
PROPOSED GARAGE / STUDIO

418 SOUTH 1ST STREET ANN ARBOR, MICHIGAN 48103

ANN ARBOR HISTORIC DISTRICT COMMISSION APPLICATION



JANUARY 20, 2014



NORTH ELEVATION

PROPOSED GARAGE / STUDIO

418 SOUTH 1ST STREET ANN ARBOR, MICHIGAN 48103

ANN ARBOR HISTORIC DISTRICT COMMISSION APPLICATION

JANUARY 20, 2014



PV PANELS

SOUTH ELEVATION

PROPOSED GARAGE / STUDIO

418 SOUTH 1ST STREET ANN ARBOR, MICHIGAN 48103

ANN ARBOR HISTORIC DISTRICT COMMISSION APPLICATION



JANUARY 20, 2014



WEST ELEVATION

PROPOSED GARAGE / STUDIO

418 SOUTH 1ST STREET ANN ARBOR, MICHIGAN 48103
ANN ARBOR HISTORIC DISTRICT COMMISSION APPLICATION



JANUARY 20, 2014

Sunmodule[®] Plus SW 265 mono black



TUV Power controlled:
Lowest measuring tolerance in industry



Every component is tested to meet
3 times IEC requirements



Designed to withstand heavy
accumulations of snow and ice



Sunmodule Plus:
Positive performance tolerance



25-year linear performance warranty and
10-year product warranty



World-class quality

Fully-automated production lines and seamless monitoring of the process and material ensure the quality that the company sets as its benchmark for its sites worldwide.

SolarWorld Plus-Sorting

Plus-Sorting guarantees highest system efficiency. SolarWorld only delivers modules that have greater than or equal to the nameplate rated power.

25 years linear performance guarantee and extension of product warranty to 10 years

SolarWorld guarantees a maximum performance depression of 0.7% p.a. in the course of 25 years, a significant added value compared to the two-phase warranties common in the industry. In addition, SolarWorld is offering a product warranty, which has been extended to 10 years.*

*in accordance with the applicable SolarWorld Limited Warranty at purchase.
www.solarworld.com/warranty



MADE IN USA

solarworld.com



• Qualified, IEC 61215
• Safety tested, IEC 61730
• Periodic inspection
• Blowing sand resistant



• Ammonia resistance tested
• Periodic inspection
• Power Controlled



We turn sunlight into power.

Sunmodule[®] Plus SW 265 mono black

PERFORMANCE UNDER STANDARD TEST CONDITIONS (STC)*

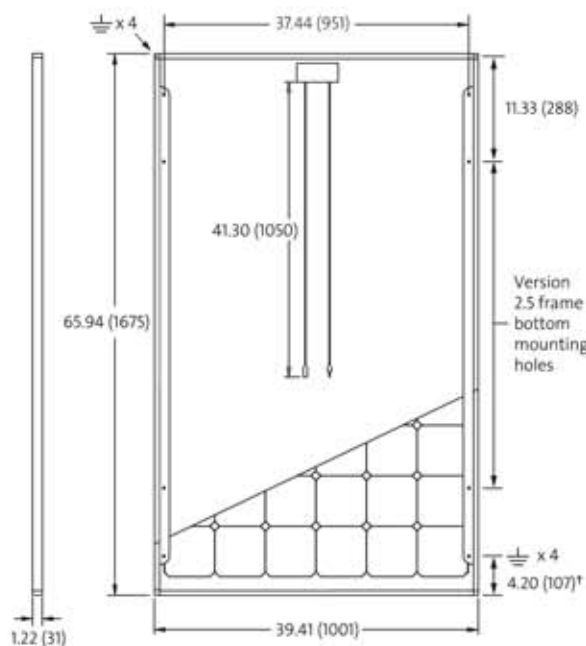
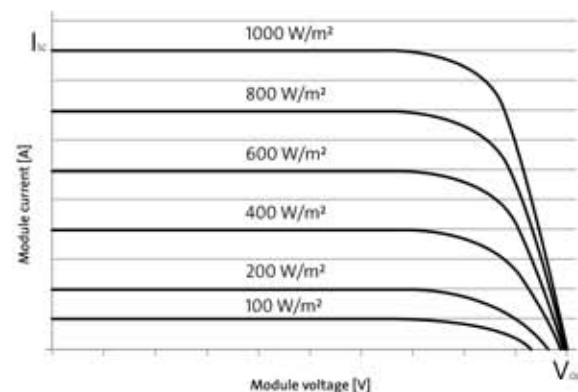
Maximum power	P_{max}	265 Wp
Open circuit voltage	V_{oc}	39.0 V
Maximum power point voltage	V_{mppt}	30.8 V
Short circuit current	I_{sc}	9.31 A
Maximum power point current	I_{mppt}	8.69 A

*STC: 1000 W/m², 25°C, AM 1.5

†) Measuring tolerance (P_{max}) traceable to TUV Rheinland: +/- 2% (TUV Power Controlled).

THERMAL CHARACTERISTICS

NOCT	48 °C
TC I_{sc}	0.004 %/K
TC V_{oc}	-0.30 %/K
TC P_{mppt}	-0.45 %/K
Operating temperature	-40°C to 85°C



PERFORMANCE AT 800 W/m², NOCT, AM 1.5

Maximum power	P_{max}	195.9 Wp
Open circuit voltage	V_{oc}	35.3 V
Maximum power point voltage	V_{mppt}	27.9 V
Short circuit current	I_{sc}	7.53 A
Maximum power point current	I_{mppt}	7.02 A

Minor reduction in efficiency under partial load conditions at 25°C: at 200 W/m², 100% (+/-2%) of the STC efficiency (1000 W/m²) is achieved.

COMPONENT MATERIALS

Cells per module	60
Cell type	Mono crystalline
Cell dimensions	6.14 in x 6.14 in (156 mm x 156 mm)
Front	Tempered glass (EN 12150)
Frame	Black anodized aluminum
Weight	46.7 lbs (21.2 kg)

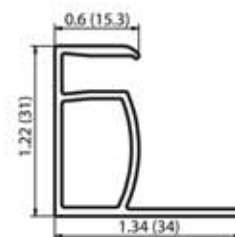
SYSTEM INTEGRATION PARAMETERS

Maximum system voltage SC II	1000 V	
Max. system voltage USA NEC	600 V	
Maximum reverse current	16 A	
Number of bypass diodes	3	
UL Design Loads*	Two rail system	113 psf downward 64 psf upward
UL Design Loads*	Three rail system	170 psf downward 64 psf upward
IEC Design Loads*	Two rail system	113 psf downward 50 psf upward

* Please refer to the Sunmodule installation instructions for the details associated with these load cases.

ADDITIONAL DATA

Power sorting†	-0 Wp / +5 Wp
J-Box	IP65
Connector	MC4
Module efficiency	15.81 %
Fire rating (UL 790)	Class C

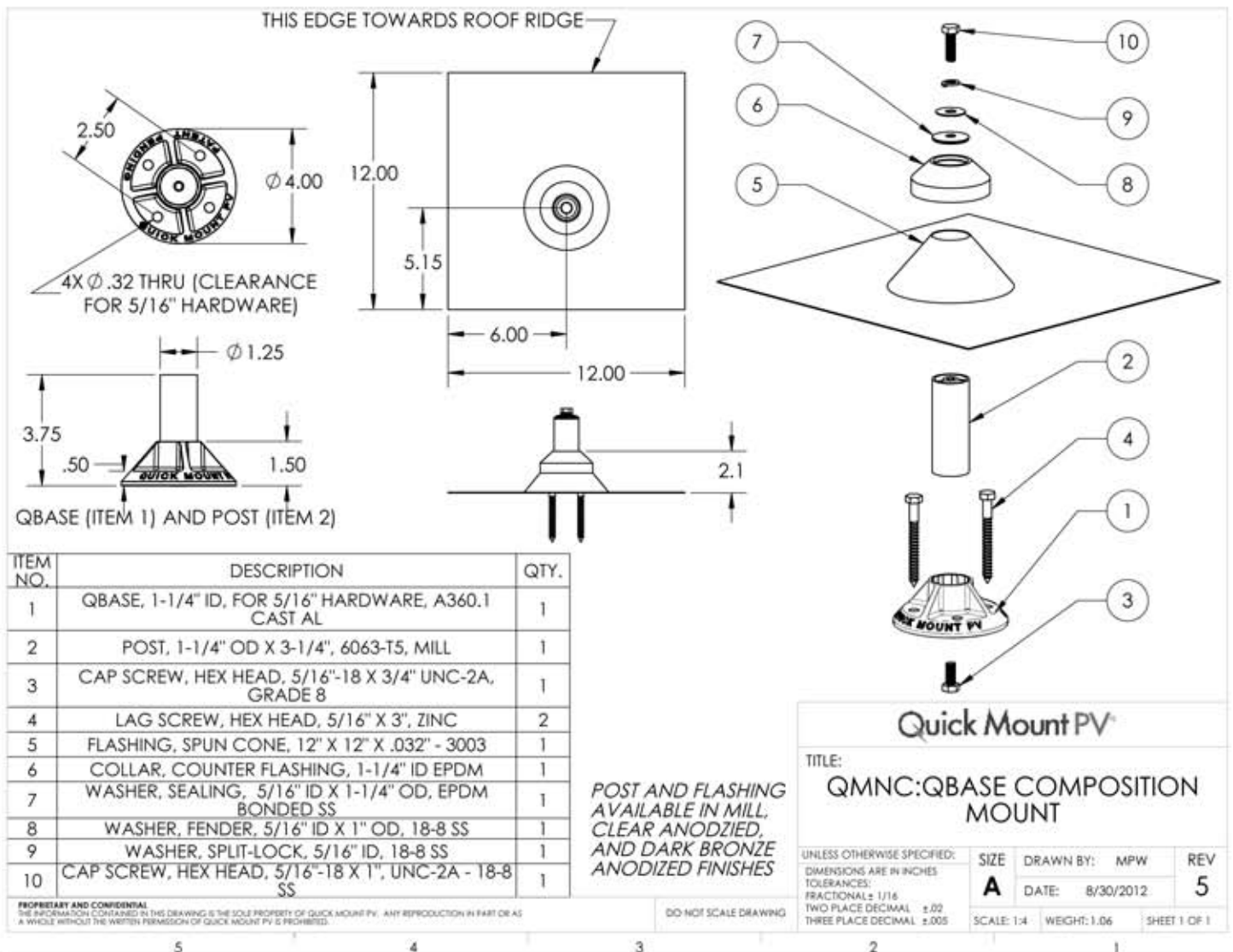


VERSION 2.5 FRAME

- Compatible with both "Top-Down" and "Bottom" mounting methods
- ⚡ Grounding Locations:
 - 4 corners of the frame
 - 4 locations along the length of the module in the extended flange†

QBase Composition Mount | QMNC

(formerly called New Roof Composition Mount)



ITEM NO.	DESCRIPTION	QTY.
1	QBASE, 1-1/4" ID, FOR 5/16" HARDWARE, A360.1 CAST AL	1
2	POST, 1-1/4" OD X 3-1/4", 6063-T5, MILL	1
3	CAP SCREW, HEX HEAD, 5/16"-18 X 3/4" UNC-2A, GRADE 8	1
4	LAG SCREW, HEX HEAD, 5/16" X 3", ZINC	2
5	FLASHING, SPUN CONE, 12" X 12" X .032" - 3003	1
6	COLLAR, COUNTER FLASHING, 1-1/4" ID EPDM	1
7	WASHER, SEALING, 5/16" ID X 1-1/4" OD, EPDM BONDED SS	1
8	WASHER, FENDER, 5/16" ID X 1" OD, 18-8 SS	1
9	WASHER, SPLIT-LOCK, 5/16" ID, 18-8 SS	1
10	CAP SCREW, HEX HEAD, 5/16"-18 X 1", UNC-2A - 18-8 SS	1

PROPRIETARY AND CONFIDENTIAL
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF QUICK MOUNT PV. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF QUICK MOUNT PV IS PROHIBITED.

Lag pull-out (withdrawal) capacities (lbs) in typical lumber:

	Lag Bolt Specifications		
	Specific Gravity	5/16" shaft per 3" thread depth	5/16" shaft per 1" thread depth
Douglas Fir, Larch	.50	1330	266
Douglas Fir, South	.46	1175	235
Engelmann Spruce, Lodgepole Pine (MSR 1650 f & higher)	.48	1175	235
Hem, Fir	.43	1060	212
Hem, Fir (North)	.46	1175	235
Southern Pine	.55	1535	307
Spruce, Pine, Fir	.42	1025	205
Spruce, Pine, Fir (E of 2 million psi and higher grades of MSR and MEL)	.50	1330	266

Sources: Uniform Building Code; American Wood Council, NDS 2005, Table 11.2 A, 11.3.2 A

Notes:

- 1) Thread must be embedded in a rafter or other structural roof member.
- 2) See IBC for required edge distances.

**Note: To maintain waterproofing it is important that the aluminum flashing is properly placed under one full course above the mounting block with at least some of the flashing extending up under the course above that as well. See instructions on back.

Quick Mount PV[®]

RESPECT THE ROOF[®]

QBase Composition Mount Installation Instructions

(formerly called New Roof Composition Mount)

Installation Tools Required: tape measure, roofing bar, chalk line, stud finder, caulking gun, one tube of sealant compatible with roofing material, drill with 7/32" bit, drill or impact gun with 1/2" deep socket.

WARNING: Quick Mount PV products are NOT designed for and should NOT be used to anchor fall protection equipment.



Layout your array out over the roofing paper using a chalk line to mark rafter centers and the rail location center.



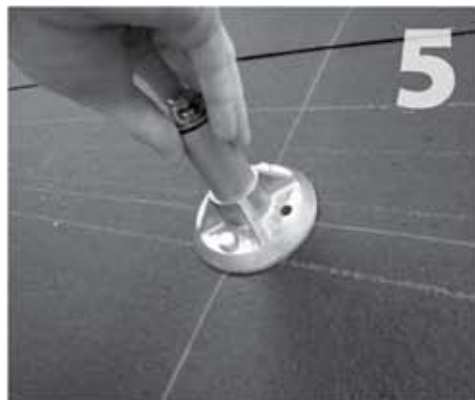
Align QBase vertical holes over center rafter mark and horizontal holes over snapped line. Mark holes for drilling.



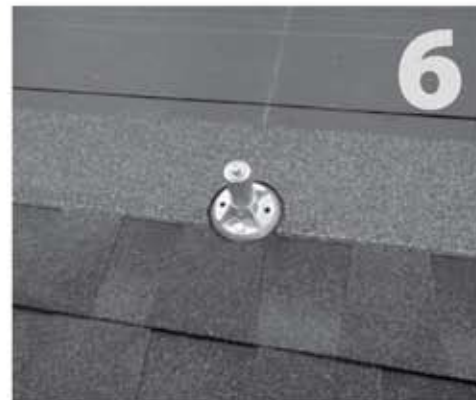
Remove QBase and drill 2 each 7/32" pilot holes into rafter. Hold drill square to rafter.



Fill pilot holes with sealant compatible with roofing material. Seat grade 8 cap screw (item 3) through bottom of QBase (item 1). Place QBase over drilled holes and secure lags (item 4) in place, to a solid, snug fit.



Secure post (item 2) to QBase turning post onto captive base plate bolt.



Allow roofing to proceed to the point that the flashing should be installed.



Install flashing (item 5) over mount.



Allow roofing to proceed to the next mount course.



Apply sealant where post and flashing meet. Install EPDM counter flashing collar (item 6). Seal post with hardware (item 7-10) if not installing racking right away.

Quick Mount PV®