14 High Strut, Brookeville HPC Case # 23/65-09 F] Brookeville Historic District



### HISTORIC PRESERVATION COMMISSION

Isiah Leggett County Executive

David Rotenstein Chairperson

Date: August 13, 2009

### **MEMORANDUM**

TO:

Carla Reid, Director

Department of Permitting Services

FROM:

Josh Silver, Senior Planner

Historic Preservation Section

Maryland-National Capital Park & Planning Commission

SUBJECT:

Historic Area Work Permit #516968, solar panel installation

The Montgomery County Historic Preservation Commission (HPC) has reviewed the attached application for a Historic Area Work Permit (HAWP). This application was **approved** at the August 12, 2009 meeting.

The HPC staff has reviewed and stamped the attached construction drawings.

THE BUILDING PERMIT FOR THIS PROJECT SHALL BE ISSUED CONDITIONAL UPON ADHERENCE TO THE ABOVE APPROVED HAWP CONDITIONS AND MAY REQUIRE APPROVAL BY DPS OR ANOTHER LOCAL OFFICE BEFORE WORK CAN BEGIN.

Applicant:

Andrew Spagnolo

Address:

14 High Street, Brookeville

This HAWP approval is subject to the general condition that the applicant will obtain all other applicable Montgomery County or local government agency permits. After the issuance of these permits, the applicant must contact this Historic Preservation Office if any changes to the approved plan are made. Once the work is complete the applicant will contact the staff person assigned to this application at 301-563-3400 or joshua.silver@mncppcmc.org to schedule a follow-up site visit.





ETURN TO: DEPARTMENT OF PERMITTING SERVICES
255 ROCKVILLE PIKE, 2nd FLOOR, ROCKVILLE, MD 20850
240/777-6370

HISTORIC PRESERVATION COMMISSION 301/563-3400

# APPLICATION FOR HISTORIC AREA WORK PERMIT

	Contact Person: TOM SHEA
	Daytime Phone No.: 301-944-5137
x Account No.: 08-00731962	
eme of Property Owner: ANDREW SPAGNOLO	Daytime Phone No.: 301-518-3838
ddress: 14 HIGH STREET BROKEY! Street Number City	LLE MD 20833
ontractor: STANDARD SOLAR, INC	
ontractor Registration No.:	
gent for Owner: Tom SHEA	
	RECEIVE
OCATION OF BUILDING/PREMISE	MECEIVE
	treet HIGH  JUL 2 2 2009
own/City: BROOKEVILLE Nearest Cross St	
ot: Block: Subdivision:	Dept. of Permitting Service
ber: 23569 Folio: 630 Parcer P636	Dept. of Permitting Service  Cascwork Management
ART ONE: TYPE OF PERMIT ACTION AND USE	
A. CHECK ALL APPLICABLE: CHECK	K ALL APPLICABLE:
□ Construct □ Extend □ Alter/Renovate □ A/C	C 🗆 Slab 🖂 Room Addition 🖂 Porch 🗀 Deck 🗀 Shed
☐ Move ☑ Install ☐ Wreck/Raze ☑ Sol	ar 🗍 Fireplace 🗍 Woodburning Stove 🔲 Single Family
•	nce/Wall (complete Section 4) Other:
B. Construction cost estimate: \$ 13510	
C. If this is a revision of a previously approved active permit, see Permit #	V/A
ART TWO: COMPLETE FOR NEW CONSTRUCTION AND EXTEND/AD	DOTTIONS
A. Type of sewage disposal: 01 🗹 WSSC 02 🗆 Septic	03 🗆 Other:
B. Type of water supply: 01 ☑ WSSC 02 ☐ Well	03 🗆 Other:
ART THREE: COMPLETE ONLY FOR FENCE/RETAINING WALL  A. Height feet inches	
A. Heightinches	
The disease without an the force on manifeles well in the her announced an arm of	fall a fall acciona banatiana.
B. Indicate whether the fence or retaining wall is to be constructed on one of  On party line/property line  Entirely on land of owner	f the following locations:  ☐ On public right of way/easement

**SEE REVERSE SIDE FOR INSTRUCTIONS** 

# THE FOLLOWING ITEMS MUST BE COMPLETED AND THE REQUIRED DOCUMENTS MUST ACCOMPANY THIS APPLICATION.

# 1. WRITTEN DESCRIPTION OF PROJECT a. Description of existing structure(s) and environmental setting, including their historical features and significance: THIS PROPERTY IS LOCATED IN TOROKVILLE, AN AREM IDENTIFIED AS HISTORIC IN THE MONTGOMERY COUNTY MINISTER PLAN. b. General description of project and its effect on the historic resource(s), the environmental setting, and, where applicable, the historic district INSTALL I. 225 KW ROOF TOP SOLAR SYSTEM CONSISTING OF 13 SOLAR MODULES, INVERTERS AND MONITORING SYSTEM.

### 2. SITE PLAN

Site and environmental setting, drawn to scale. You may use your plat. Your site plan must include:

- a. the scale, north arrow, and date;
- b. dimensions of all existing and proposed structures; and
- c. site features such as walkways, driveways, fences, ponds, streams, trash dumpsters, mechanical equipment, and landscaping.

### 3. PLANS AND ELEVATIONS

You must submit 2 copies of plans and elevations in a format no larger than 11" x 17". Plans on 8 1/2" x 11" paper are preferred.

- a. Schematic construction plans, with marked dimensions, indicating location, size and general type of walls, window and door openings, and other fixed features of both the existing resource(s) and the proposed work.
- b. Elevations (facades), with marked dimensions, clearly indicating proposed work in relation to existing construction and, when appropriate, context. All materials and fixtures proposed for the exterior must be noted on the elevations drawings. An existing and a proposed elevation drawing of each facade affected by the proposed work is required.

### 4. MATERIALS SPECIFICATIONS

General description of materials and manufactured items proposed for incorporation in the work of the project. This information may be included on your design drawings.

### 5. PHOTOGRAPHS

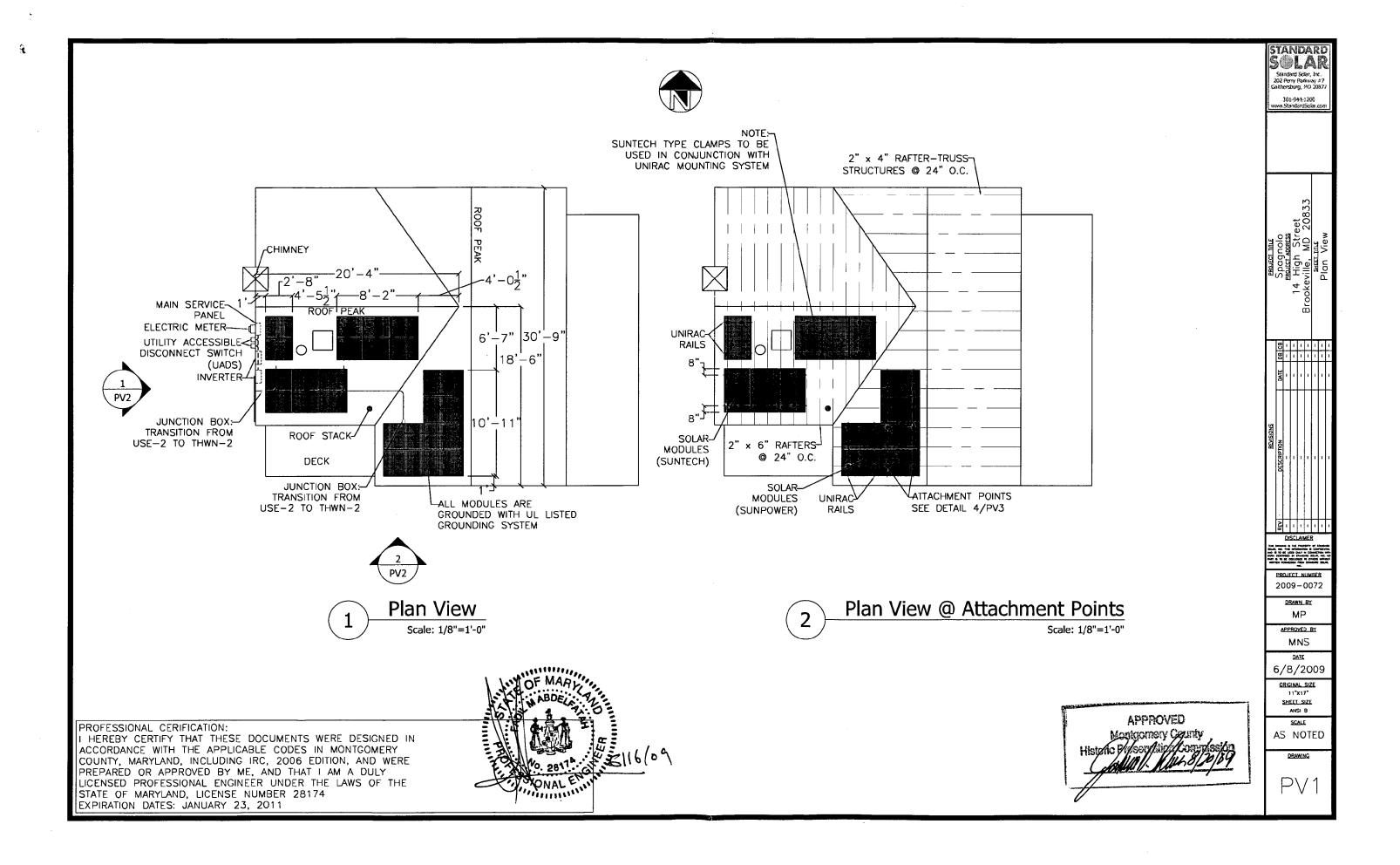
- a. Clearly labeled photographic prints of each facade of existing resource, including details of the affected portions. All labels should be placed on the front of photographs.
- b. Clearly label photographic prints of the resource as viewed from the public right-of-way and of the adjoining properties. All labels should be placed on the front of photographs.

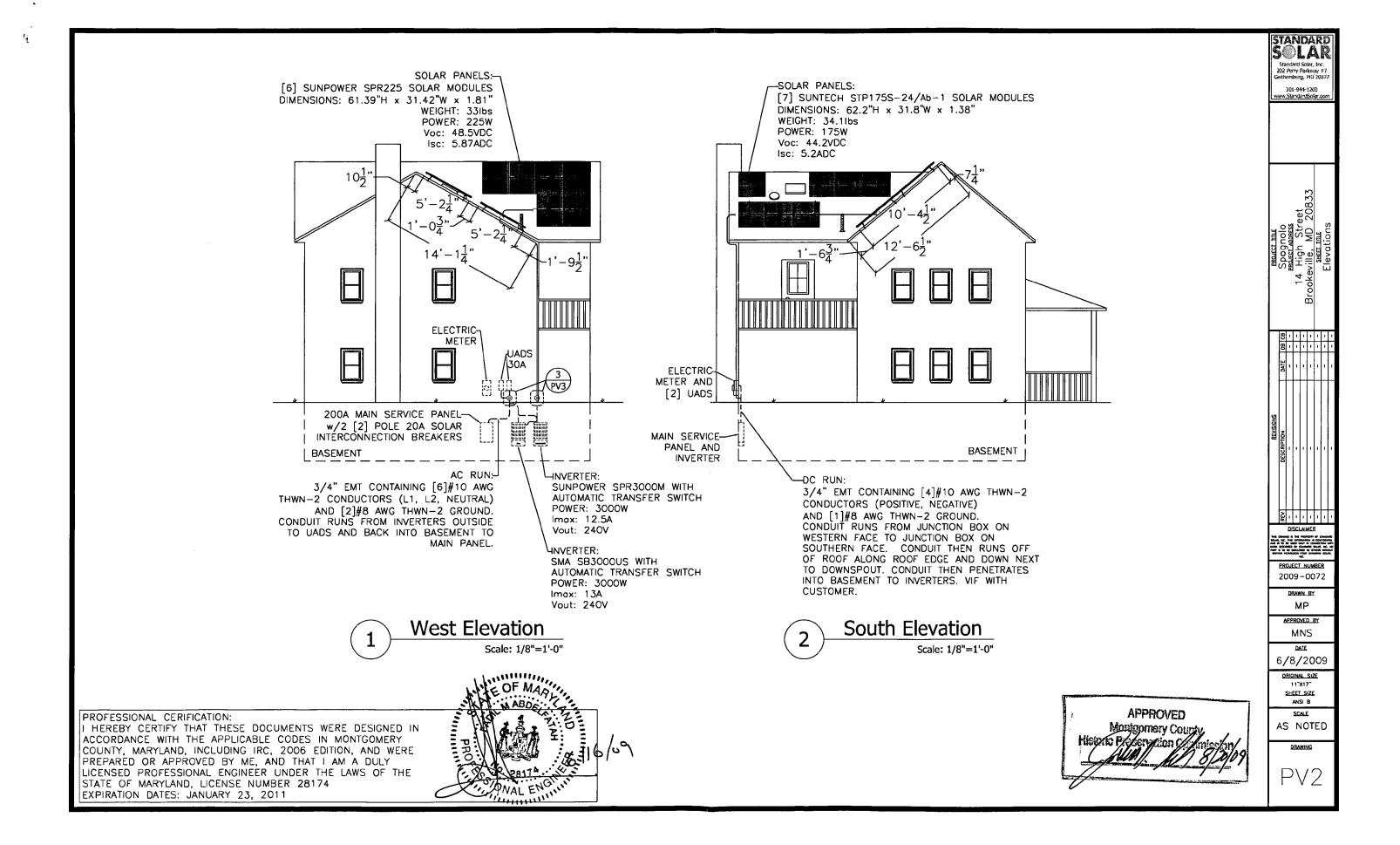
### 6. TREE SURVEY

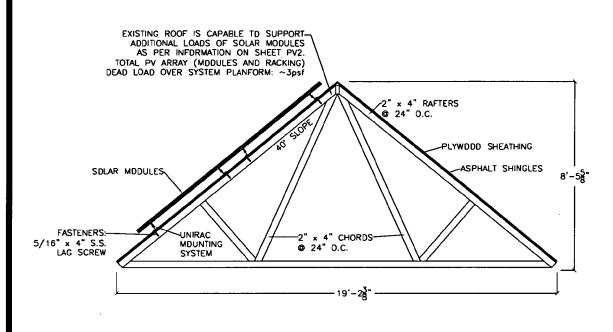
If you are proposing construction adjacent to or within the dripline of any tree 6" or larger in diameter (at approximately 4 feet above the ground), you must file an accurate tree survey identifying the size, location, and species of each tree of at least that dimension.

### 7. ADDRESSES OF ADJACENT AND CONFRONTING PROPERTY OWNERS

For ALL projects, provide an accurate list of adjacent and confronting property owners (not tenants), including names, addresses, and zip codes. This list should include the owners of all lots or parcels which adjoin the parcel in question, as well as the owner(s) of lot(s) or parcel(s) which lie directly across the street/highway from the parcel in question. You can obtain this information from the Department of Assessments and Taxation, 51 Monroe Street, Rockville, (301/279-1355).

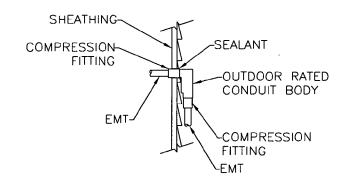






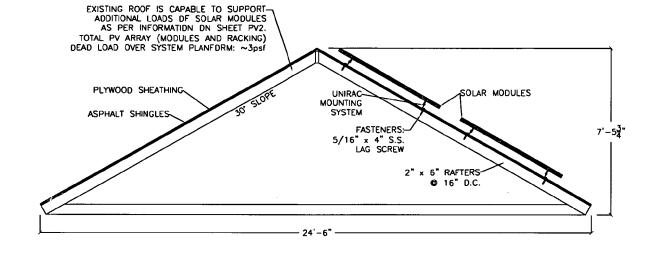
Roof Detail: Western Face

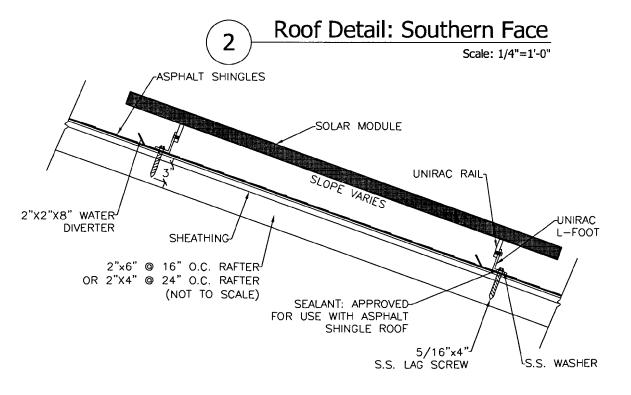
Scale: 1/4"=1'-0"



Wall Penetration Detail.,, Scale: (本文字 E の F

PROFESSIONAL CERIFICATION:
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE DESIGNED IN ACCORDANCE WITH THE APPLICABLE CODES IN MONTGOMERY COUNTY, MARYLAND, INCLUDING IRC, 2006 EDITION, AND WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 28174 EXPIRATION DATES: JANUARY 23, 2011





4 Attachment Detail
Scale: 1"=1'-0"

APPROVED

Mantgomeny County

Historic Proservition/ Landission/

MIM . M.C. 8 2009

STANDARD SOLAR Sandard Soler, Inc. 202 Perry Parkway 107, Geithersburg, MO 20877 301-944-1206 www.standardSoler.com

Spagnolo Processor 14 High Street Srookeville, MD 20833 Suremer Detail Views



PROJECT NUMBER
2009 - 0072

MP

MNS

6/8/2009 ORIGINAL SIZE

SHEET SIZE ANSI B

AS NOTED

PV3

### MONTGOMERY COUNTY HISTORIC PRESERVATION COMMISSION STAFF REPORT

Address:

14 High Street, Brookeville

**Meeting Date:** 

8/12/2009

Resource:

Outstanding Resource

Report Date:

8/5/2009

Applicant:

**Brookeville Historic District** 

**Public Notice:** 

7/29/2009

Andrew Spagnolo

Tax Credit:

No

Review:

**HAWP** 

Staff:

Josh Silver

Case Number:

23/65-09F

**PROPOSAL:** 

Solar panel installation

### STAFF RECOMMENDATION

Staff recommends that the HPC approve this HAWP application.

### **ARCHITECTURAL DESCRIPTION**

SIGNIFICANCE: Outstanding Resource within the Brookeville Historic District

STYLE:

Vernacular

DATE:

1900

### **PROPOSAL**

The applicant is proposing to install thirteen solar module panels on the southern facing (rear) roof planes of the subject house. Six solar panels will be installed on southern end of the rear roof pitch below the existing ridge and seven panels will be installed on the southern facing roof pitch of a rear cross gable. All panels will be flushed mounted to the extent feasible to reduce visibility from the public right-of-way.

### APPLICABLE GUIDELINES

When reviewing alterations and new construction within the Brookeville Historic District several documents are to be utilized as guidelines to assist the Commission in developing their decision. These documents include Montgomery County Code Chapter 24A (Chapter 24A), and the Secretary of the Interior's Standards for Rehabilitation (Standards). The pertinent information in these documents is outlined below.

### Montgomery County Code; Chapter 24A

The commission shall instruct the director to deny a permit if it finds, based on the evidence and information presented to or before the commission that the alteration for which the permit is sought would be inappropriate, inconsistent with or detrimental to the preservation, enhancement or ultimate protection of the historic site or historic resource within an historic district, and to the purposes of this chapter.

- (b) The commission shall instruct the director to issue a permit, or issue a permit subject to such conditions as are found to be necessary to insure conformity with the purposes and requirements of this chapter, if it finds that:
  - (1) The proposal will not substantially alter the exterior features of an historic site or historic resource within an historic district; or
  - (2) The proposal is compatible in character and nature with the historical, archeological, architectural or cultural features of the historic site or the historic district in which an historic resource is located and would not be detrimental thereto or to the achievement of the purposes of this chapter; or
  - (3) The proposal would enhance or aid in the protection, preservation and public or private utilization of the historic site or historic resource located within an historic district in a manner compatible with the historical, archeological, architectural or cultural value of the historic site or historic district in which an historic resource is located; or
  - (4) The proposal is necessary in order that unsafe conditions or health hazards be remedied; or
  - (5) The proposal is necessary in order that the owner of the subject property not be deprived of reasonable use of the property or suffer undue hardship; or
  - (6) In balancing the interests of the public in preserving the historic site or historic resource located within an historic district, with the interests of the public from the use and benefit of the alternative proposal, the general public welfare is better served by granting the permit.
    - (c) It is not the intent of this chapter to limit new construction, alteration or repairs to any 1 period or architectural style.
    - (d) In the case of an application for work on an historic resource located within an historic district, the commission shall be lenient in its judgment of plans for structures of little historical or design significance or for plans involving new construction, unless such plans would seriously impair the historic or architectural value of surrounding historic resources or would impair the character of the historic district. (Ord. No. 9-4, § 1; Ord. No. 11-59.)

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

- #9 New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
- #10 New additions and adjacent or related new construction will 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.

### **STAFF DISCUSSION**

Staff supports the proposed solar panel installation project at the subject property. The panels will not adversely affect the historic character of the structure. The proposed locations for the panels on the rear roof pitch behind the ridge and on the southern facing roof pitch of the rear cross gable mitigate the impact new solar panels will have on the streetscape of the historic district. The adjacent properties to the south and west where visibility is feasible are non-contributing resources.

The proposed work is in keeping with the design objective for the installation of new solar panels found in *Design Guidelines for Historic Sites and Districts in Montgomery County, Maryland*, which recommends:

- 9.1 Reduce the visual impacts of solar panels as seen from the public right-of-way.
  - Locate the solar panels away from the public view when feasible
  - Locate an attached solar panel in a manner such that it does not affect the primary roof façade elevations
  - Location on a primary or street facing roof plane is generally inappropriate
  - Where roof mounted, solar panels should be flush to the extent feasible

Staff recommends that the HPC approve this HAWP application.

### STAFF RECOMMENDATION

Staff recommends that the Commission approve the HAWP application as being consistent with Chapter 24A-8(b) (1) & (2);

- (1) The proposal will not substantially alter the exterior features of an historic site or historic resource within an historic district; or
- (2) The proposal is compatible in character and nature with the historical, archeological, architectural or cultural features of the historic site or the historic district in which an historic resource is located and would not be detrimental thereto or to the achievement of the purposes of this chapter; or

and with the Secretary of the Interior's Standards for Rehabilitation;

and with the general condition that the applicant shall present the 3 permit sets of drawings to Historic Preservation Commission (HPC) staff for review and stamping prior to submission for the Montgomery County Department of Permitting Services (DPS) building permits;

and with the general condition that the applicant shall notify the Historic Preservation Staff if they propose to make any alterations to the approved plans. Once the work is completed the applicant will contact the staff person assigned to this application at 301.563.3400 or joshua.silver@mncppc-mc.org to schedule a follow-up site visit.





DPS - #8

# HISTORIC PRESERVATION COMMISSION 301/563-3400

# APPLICATION FOR HISTORIC AREA WORK PERMIT

			Contact Person: 🚺	OM SHE	A
			Daytime Phone No.:	301-944	-5137
ax Account No.: 08-0073	31962				
ame of Property Owner: ANDRE	J SPAGNOLO	<b>.</b>	Daytime Phone No.:	301-518	3838
ddress: 14 HIGH STR Street Number	EET BRAD	KEYILL	E Mo	<u> </u>	20833
ontractorr: STANDARD					
ontractor Registration No					
gent for Dwner: Tom SH	EA		Daytime Phone No.:	301-944	- DETE
OCATION OF BUILDING/PREMISE		·· <del></del>			-CCE
		Street	HIGH		JUL 22
own/City: BROOKEVIL					
ot: Block:					Dept. of Permittin
ber: 23569 Folio: 6		658			
ART ONE: TYPE OF PERMIT ACTIO A. CHECK ALL APPLICABLE:	M MILL USE	CHECK ALL	APPLICABLE:		
<del>-</del>	Alter/Renovate	□ A/C [	<del></del>	Addition	☐ 0eck ☐ Shed
	Wreck/Raze	Solar □	☐ Fireplace ☐ Woodb	ourning Stove	☐ Single Family
☐ Revision ☐ Repair ☐	] Revocable		all (complete Section 4)		
B. Construction cost estimate: \$	3510				
C. If this is a revision of a previously app	proved active permit, see Pe	rmit # <u>N / A</u>	<b>.</b>		
ART TWO: COMPLETE FOR NEW C	CONSTRUCTION AND EX	TENO/AOOITIC	ONS		
A. Type of sewage disposal: 01			<del></del>		
		☐ Well			
ART THREE: COMPLETE ONLY FOR	ECMPE/PETAINING WA	11			
A. Height feet		<u>LL</u>			
B. Indicate whether the fence or retain	<del></del>	d on one of the fo	llowing locations:		
	☐ Entirely on land of		On public right of	way/easement	
<del></del>	·	······		·	
ereby certify that I have the authority to					vill comply with plans
L	_1				
Jan Il. S	Shea			7.20.0	9
Cianature of gumer o	r authorized agent			<del></del>	ste
				·	
		For Chairne	erson, Historic Preservat	tion Commission	
pproved:			erson, Historic Preservat		

**SEE REVERSE SIDE FOR INSTRUCTIONS** 

(4)

# THE FOLLOWING ITEMS MUST BE COMPLETED AND THE REQUIRED DOCUMENTS MUST ACCOMPANY THIS APPLICATION.

1.

2.

3.

5.

6.

W	RITTEN DESCRIPTION OF PROJECT
a.	Description of existing structure(s) and environmental setting, including their historical features and significance:
	THIS PROPERTY IS LOCATED IN BROOKVILLE, AN AREA
	IDENTIFIED AS HISTORIC IN THE MONTGOMERY COUNTY MASTER PLAN.
b.	General description of project and its effect on the historic resource(s), the environmental setting, and, where applicable, the historic district  INSTALL J. 225 KW ROOF TOP SOLAR SYSTEM CONSISTING OF
	13 SOLAR MODULES, INVERTERS AND MONITORING
	SYSTEM.
<u>SI1</u>	E PLAN
Sit	e and environmental setting, drawn to scale. You may use your plat. Your site plan must include:
a.	the scale, north arrow, and date;
ь.	dimensions of all existing and proposed structures; and
C.	site features such as walkways, driveways, fences, ponds, streams, trash dumpsters, mechanical equipment, and landscaping.
<u>PL</u>	ANS AND ELEVATIONS
You	must submit 2 copies of plans and elevations in a format no larger than 11" x 17". Plans on 8 1/2" x 11" paper are preferred.
a.	Schemetic construction plans, with marked dimensions, indicating location, size and general type of walls, window and door openings, and other fixed features of both the existing resource(s) and the proposed work.
ь.	Elevations (facades), with marked dimensions, clearly indicating proposed work in relation to existing construction and, when appropriate, context.  All materials and fixtures proposed for the exterior must be noted on the elevations drawings. An existing and a proposed elevation drawing of each facade affected by the proposed work is required.
M	ATERIALS SPECIFICATIONS
	neral description of materials and manufactured items proposed for incorporation in the work of the project. This information may be included on your sign drawings.
PH	OTOGRAPHS
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Ь.	Clearly label photographic prints of the resource as viewed from the public right-of-way and of the adjoining properties. All labels should be placed on the front of photographs.
<u>tr</u>	<u>EE SURVEY</u>

### 7. ADDRESSES OF ADJACENT AND CONFRONTING PROPERTY OWNERS

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If you are proposing construction adjacent to or within the dripline of any tree 6" or larger in diameter (at approximately 4 feet above the ground), you

must file an accurate tree survey identifying the size, location, and species of each tree of at least that dimension.

### HAWP APPLICATION: MAILING ADDRESSES FOR NOTIFING

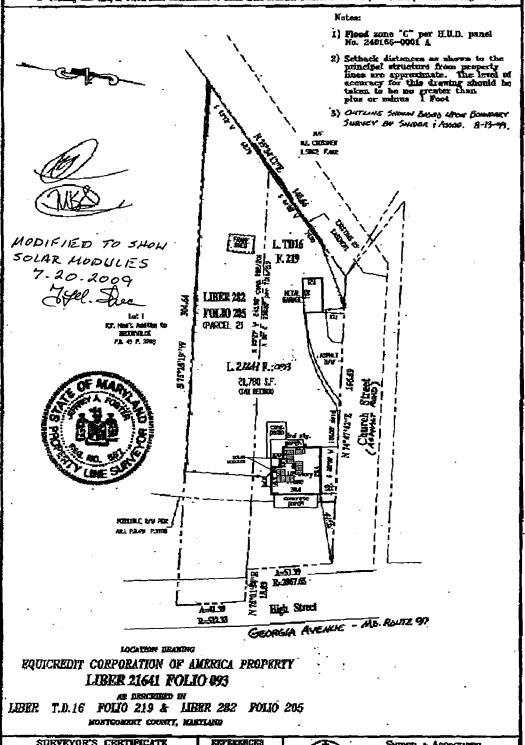
[Owner, Owner's Agent, Adjacent and Confronting Property Owners]

Owner's mailing address	Owner's Agent's mailing address		
Andrew and Mary Spagnolo	STANDARD SOLAR INC.		
14 High Street	202 Perry Parkway #7 Gaithersburg, MD 20877		
Brookeville, MD 20833			
Adjacent and confronti	ng Property Owners mailing addresses		
Salem United Methodist Church	Jerry Hildago		
Sue Shorb-Sterling, Pastor	1 Church Street		
8 High Street	Brookeville, MD 20833		
Brookeville, MD 20833			
Michael Murphy and Loretta Trittipoe	Dan and Lori Laughlin		
9 High Street	16 High Street		
Brookeville, MD 20833	Brookeville, MD 20833		

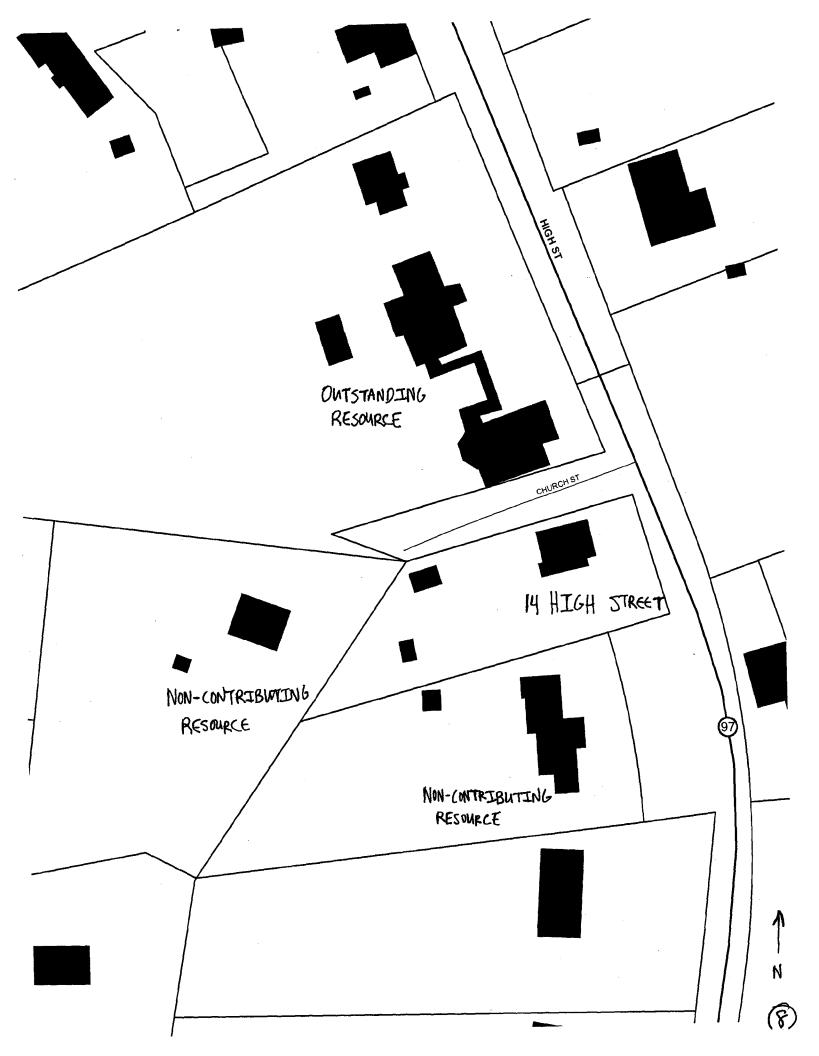


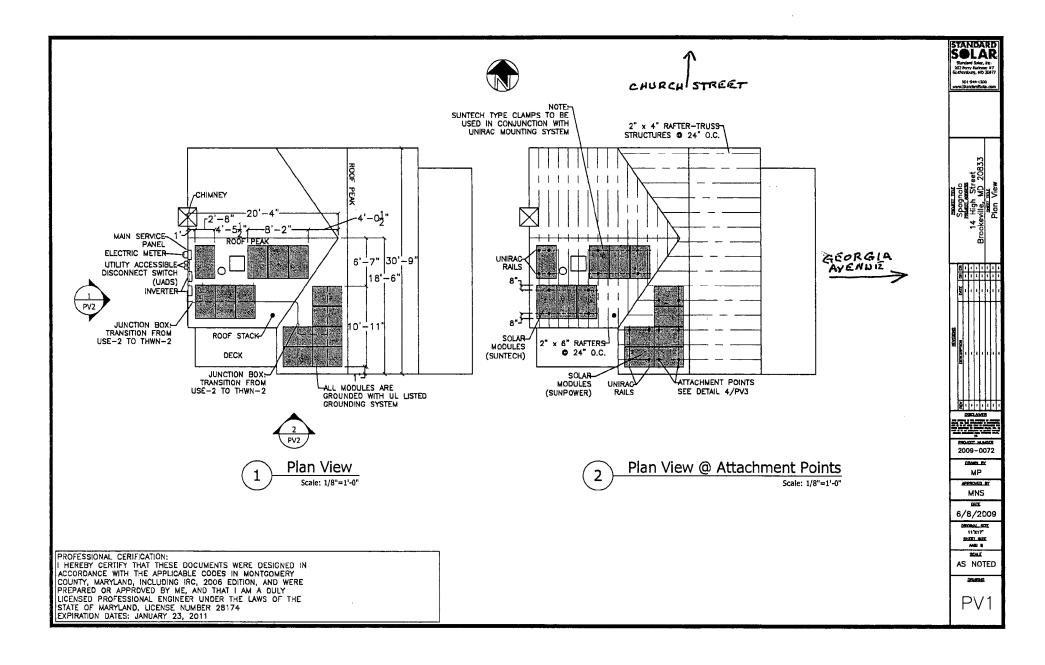
### CONSUMER INFORMATION NOTES:

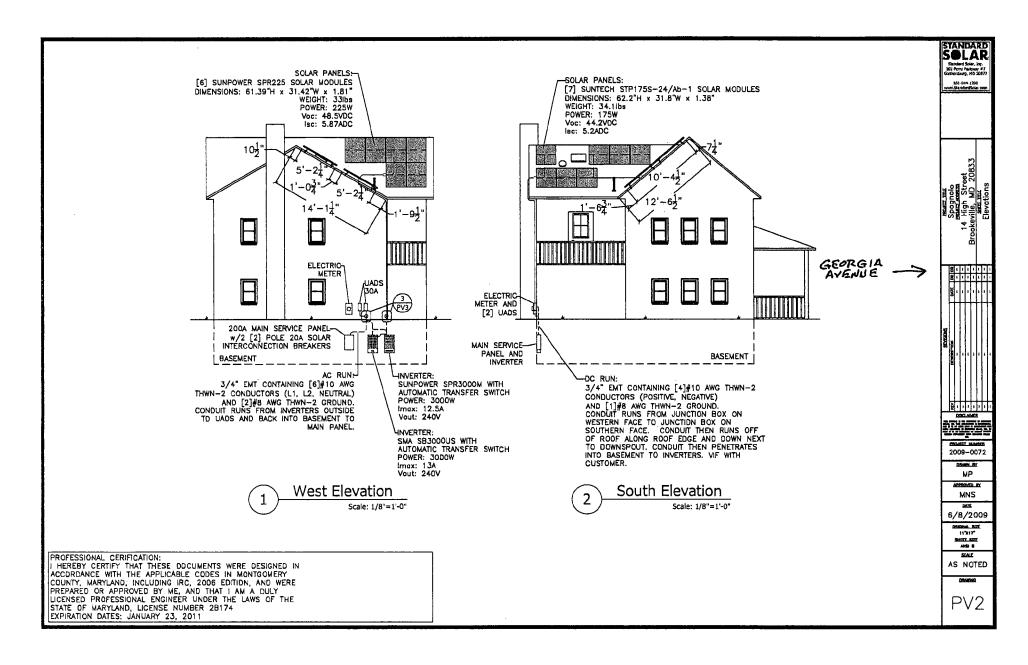
- This plan is a beneal; to a communer insofar or R is required by a lander or a bits insurance company or its agent in connection with contemplated hearsfor; financing or re-financing.
- 2. This plan is not to be rolled upon for the establishment or location of fences, paragos, buildings, or other existing or fatore improvements.
- This plan does not provide for the securate identification of property boundary lines, but such identification may not be required for the templer of title or securing finencing or re-financing.
   Building line and/or Flood Zone information is taken from swifable sources and is subject to interpretation of originates



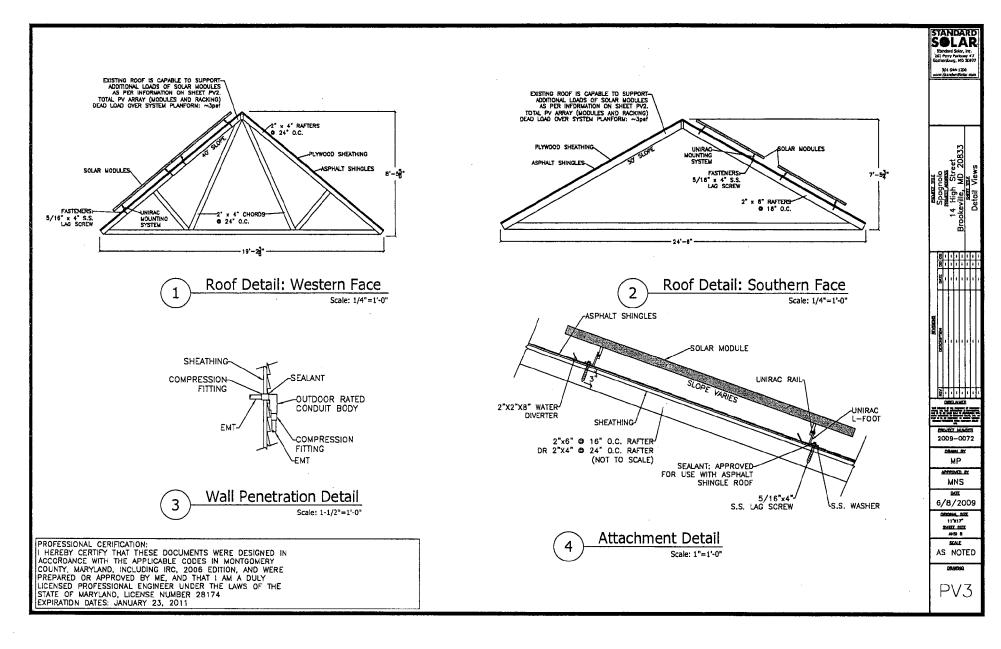
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LAND PLANNING CONSCILLANT
2 Professional Drive, Soile 215 PLAT BK. Calthersburg, Maryle 301/948-6100, Fax 80 4 20679 DATE OF LOCATIONS SCALE Laber 21841 hey A. Forter CELTS ST. RUG regitt link sometok use no. 267 FOUIG CSIS. HEE. LOC.: 03-8-05 . JOH NO.: 96-257 ---9031-80 97-1930













# SUNPOWER

### BENEFITS

### Highest Efficiency =

Panel efficiency of 18.1% is the highest commercially available for residential applications

### Attractive Design

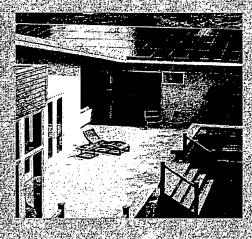
Unique design combines high efficiency and an elegant, all black appearance

### More Power 💎 🗀

Delivers up to 50% more power per unit area than conventional solar panels

### Reliable and Robust Design

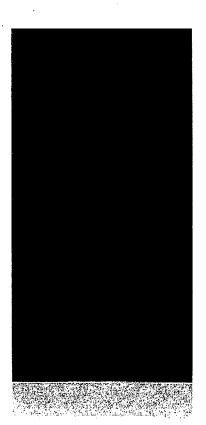
Proven materials, tempered front glass, and a sturdy anodized frame allow panel to operate reliably in multiple, mounting configurations



SPR-225-BLK

## **225 SOLAR PANEL**

**EXCEPTIONAL EFFICIENCY AND APPEARANCE** 



The SunPower 225 Solar Panel provides a revolutionary combination of high efficiency and attractive, uniform appearance. Utilizing 72 next generation SunPower all-back contact solar cells and an all-black backsheet, the SunPower 225 elegantly delivers an unprecedented total panel conversion efficiency of 18.1%. The panel's reduced voltage-temperature coefficient and exceptional low-light performance attributes provide far higher energy delivery per peak power than conventional panels.

### SunPower's High Efficiency Advantage - up to 50% More Power

Comparable systems covering 25 m	² / 270 ft²
Conventional	SunPower
Watts / Panel 165	225
Efficiency 12.0%	181%
kWs 3.0	<b>45</b> 6 6 6 7







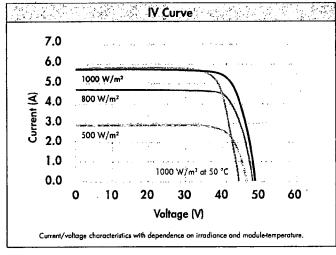
# SUNPOWER

# 225 SOLAR PANEL

### **EXCEPTIONAL EFFICIENCY AND APPEARANCE**

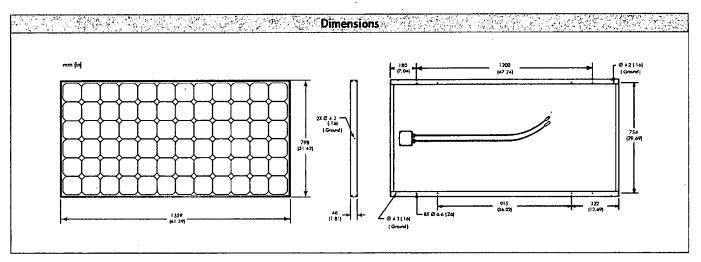
Elec	trical Data	
Measured at Standard Test Canditions (STC): in	radiance of 1000/m², oir	mass 1.5g, and cell remperature 25°, C
Peak Power (+/-5%)	Pmax	225 W
Rated Voltage	Vmp	41.0 V
Rated Current	lmp	5.49 A
Open Circuit Voltage	Voc	48.5 V
Short Circuit Current	lsc	5.87 A
Maximum System Voltage	IEC, UL	1000 V, 600 V
Temperature Coefficients		. Kaupini
	Power	-0.38% /°C
	Voltage (Voc)	–132.5 mV/°C
	Current (Isc)	3.5 mA/°C
Series Fuse Rating		20 A
Peak Power per Unit Area	trada de la composición dela composición de la composición de la composición de la composición de la composición dela composición dela composición dela composición de la composición dela composición de la composición dela composición de	181 W/m², 16.8 W/ft²
CEC PTC Rating		207.1 W

Mechanical Data	
Solar Cells 72 SunPower all-back contact monocrysta	lline
Front Glass 3.2 mm (1/8 in) tempered	
Junction Box IP-65 rated with 3 bypass diodes	
Output Cables 900mm length cable / MultiContact conn	ectors
Frame Anadized aluminum alloy type 6063	
Weight 15 kg, 33 lbs	10.00 MA



	Tested Operating Conditions
Temperature	-40° C to +90° C (-40°F to +194°F)
Max load	50 psf (2400 pascals) front and back
Impact Resistan	ce Hail =25mm (1 in) at 23 m/s (52 mph)

	Warranty and Certifications
```	Warranty 25 year limited power warranty
	10 year limited product warranty
(	Certifications : IEC 61215, Safety tested IEC 61730
13.	UL listed (UL 1703); Closs C Fire Rating



CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT. Go to www.sunpowercorp.com/panels for details

### **About SunPower**

SunPower designs, manufactures and delivers high-performance solar electric technology worldwide. Our high-efficiency solar cells generate up to 50 percent more power than conventional solar cells. Our high-performance solar panels, roof tiles and trackers deliver significantly more energy than competing systems.

October 2007 SunPower Corporation. All rights reserved. Specifications included in this datasheet are subject to change without notice

Document #001-42188 Re

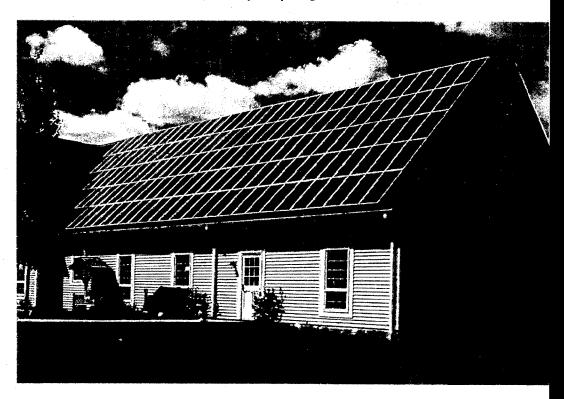


Printed on recycled paper

# SOLARMOUNT

# Code-Compliant Installation Manual 227

U.S. Des. Patent No. D496,248S, D496,249S. Other patents pending.



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i. Installer's Responsibilities	2
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THE STANDARD IN PV MOUNTING STRUCTURES™

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### [3.2.4] Installing SolarMount rails

Keep rail slots free of roofing grit or other debris. Foreign matter will cause bolts to bind as they slide in the slots.

Installing Splices. If your installation uses SolarMount splice bars, attach the rails together (Fig. 13) before mounting the rails to the footings. Use splice bars only with flush installations or those that use low-profile tilt legs.

If using more than one splice per rail, contact UniRac concerning thermal expansion issues.

Mounting Rails on Footings. Rails may be attached to either of two mounting holes in the L-feet (Fig. 14). Mount in the lower hole for a low profile, more aesthetically pleasing installation. Mount in the upper hole for a higher profile, which will maximize airflow under the modules. This will cool them more and may enhance performance in hotter climates.

Slide the %-inch mounting bolts into the footing bolt slots. Loosely attach the rails to the footings with the flange nuts.

Ensure that the rails are oriented to the footings as shown in Figure 8, 9, 11, or 12, whichever is appropriate.

Aligning the Rail Ends. Align one pair of rail ends to the edge of the installation area (Fig. 15 or Fig. 16).

The opposite pair of rail ends will overhang the side of the installation area. Do not trim them off until the installation is complete.

If the rails are perpendicular to the rafters (Fig. 15), either end of the rails can be aligned, but the first module must be installed at the aligned end.

If the rails are parallel to the rafters (Fig. 16), the aligned end of the rails must face the lower edge of the roof. Securely tighten all hardware after alignment is complete (28-32 ft lbs).

Mount modules to the rails as soon as possible. Large temperature changes may bow the rails within a few hours if module placement is delayed.

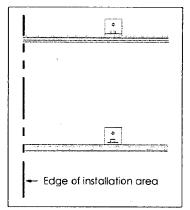


Figure 15. Rails perpendicular to the rafters.

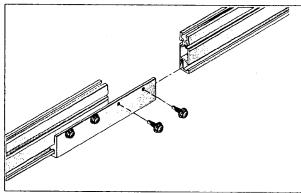


Figure 13. Splice bars slide into the footing bolt slots of SolarMount rail sections.

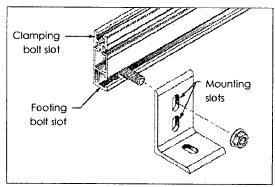


Figure 14. Foot-to-rail splice attachment

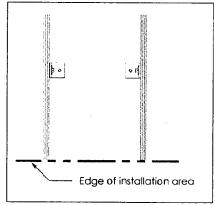


Figure 16. Rails parallel to the rafters.

### [3.2.5] Installing the modules

**Pre-wiring Modules.** If modules are the Plug and Play type, no pre-wiring is required, and you can proceed directly to "Installing the First Module" below.

If modules have standard J-boxes, each module should be pre-wired with one end of the intermodule cable for ease of installation. For safety reasons, module pre-wiring should not be performed on the roof.

Leave covers off J-boxes. They will be installed when the modules are installed on the rails.

**Installing the First Module.** In high-profile installations, the safety bolt and flange nut must be fastened to the module bolt slot at the aligned (lower) end of each rail. It will prevent the lower end clamps and clamping bolts from sliding out of the rail slot during installation.

If there is a return cable to the inverter, connect it to the first module. Close the J-box cover. Secure the first module with T-bolts and end clamps at the aligned end of each rail. Allow half an inch between the rail ends and the end clamps (Fig.18). Finger tighten flange nuts, center and align the module as needed, and securely tighten the flange nuts (15 ft lbs).

Installing the Other Modules. Lay the second module face down (glass to glass) on the first module. Connect intermodule cable to the second module and close the J-box cover. Turn the second module face up (Fig. 17). With T-bolts, mid-clamps and flange nuts, secure the adjacent sides of the first and second modules. Align the second module and securely tighten the flange nuts (Fig. 19).

For a neat installation, fasten wire management devices to rails with self-drilling screws.

Repeat the procedure until all modules are installed. Attach the outside edge of the last module to the rail with end clamps.

Trim off any excess rail, being careful not to cut into the roof. Allow half an inch between the end clamp and the end of the rail (Fig. 18).

Check that all flange nuts on T-bolts are torqued to 15 ft lbs.

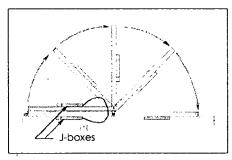


Figure 17

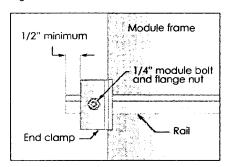


Figure 18

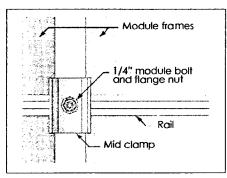


Figure 19

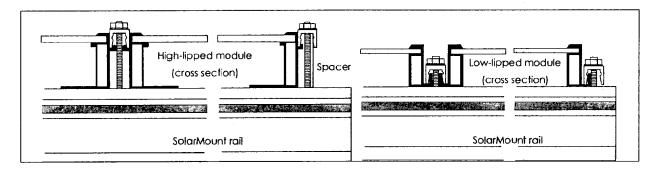


Figure 20. Mid clamps and end clamps for lipped-frame modules are identical. A spacer for the end clamps is necessary only if the lips are located high on the module frame.





### [3.3] Installing SolarMount with bottom mounting clips

This section covers SolarMount rack assembly where the installer has elected to use bottom mounting clamps to secure modules to the rails. It details the procedure for flush mounting SolarMount systems to a pitched roof.

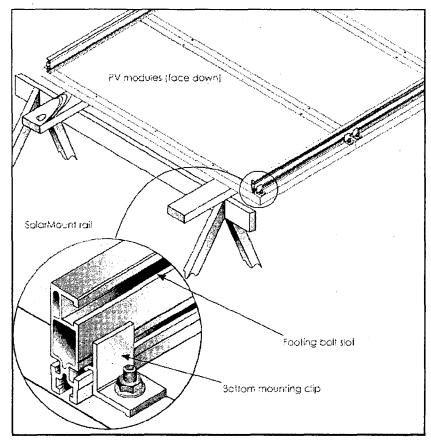


Figure 21. SMR and CB components

Table 16. Wrenches and torque

	Wrench size	Recommended torque (ft-lbs)
¼" hardware	7/16"	15
%" hardware	%6"	30

Note: Torque specifications do not apply to lag bolt connections.



Stainless steel hardware can seize up, a process called galling. To significantly reduce its likelihood, (1) apply lubricant to bolts, preferably an anti-seize lubricant, available at auto parts stores, (2) shade hardware prior to installation, and (3) avoid spinning on nuts at high speed. See Installation Supplement 910, Galling and Its Prevention, at www.unirac.com.

### [3.3.1] Planning the installation area

Decide on an arrangement for clips, rails, and L-feet (Fig. 22).

Use Arrangement A if the full width of the rails contacts the module. Otherwise use Arrangement B.

Caution: If you choose Arrangement B, either (1) use the upper mounting holes of the L-feet or (2) be certain that the L-feet and clip positions don't conflict.

If rails must be parallel to the rafters, it is unlikely that they can be spaced to match rafters. In that case, add structural supports – either sleepers over the roof or mounting blocks beneath it. These additional members must meet code; if in doubt, consult a professional engineer.

Never secure the footings to the roof decking alone. Such an arrangement will not meet code and leaves the installation and the roof itself vulnerable to severe damage from wind.

Leave enough room to safely move around the array during installation. The width of a rail-module assembly equals the length of one module. Note that L-feet may extend beyond the width of the assembly by as much as 2 inches on each side. The length of the assembly equals the total width of the modules.

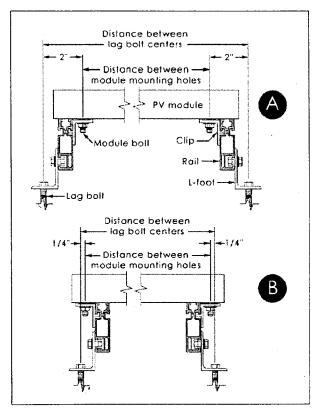
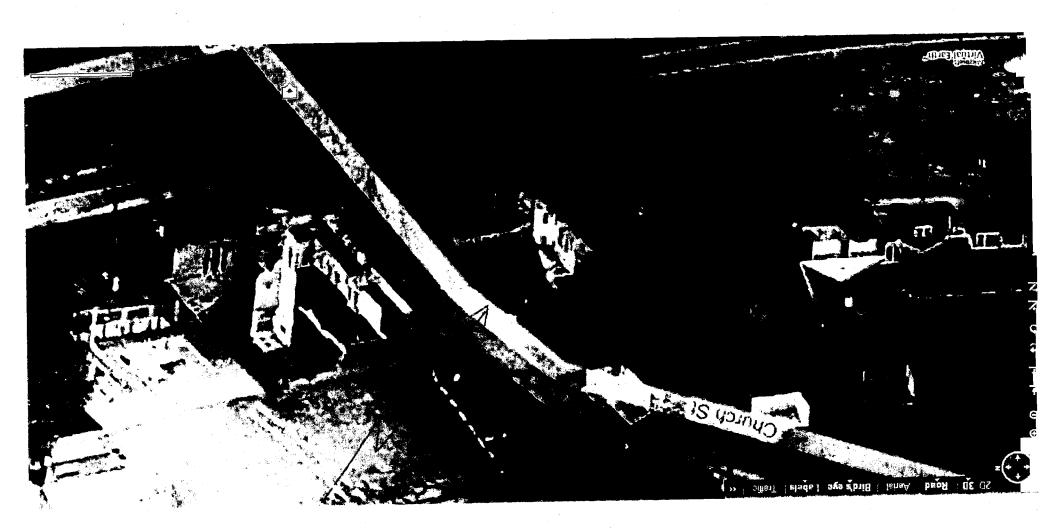


Figure 22. Clip Arrangements A and B







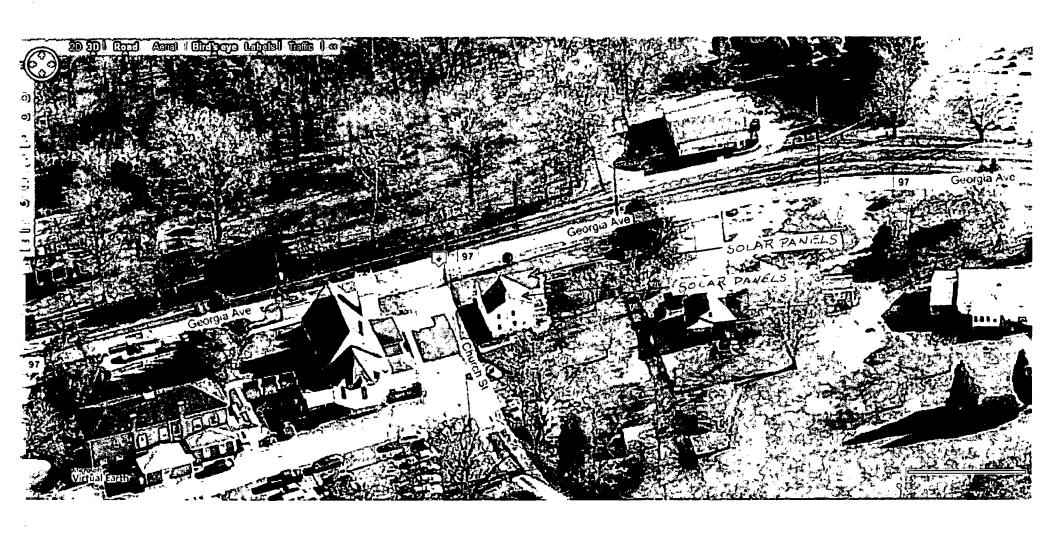


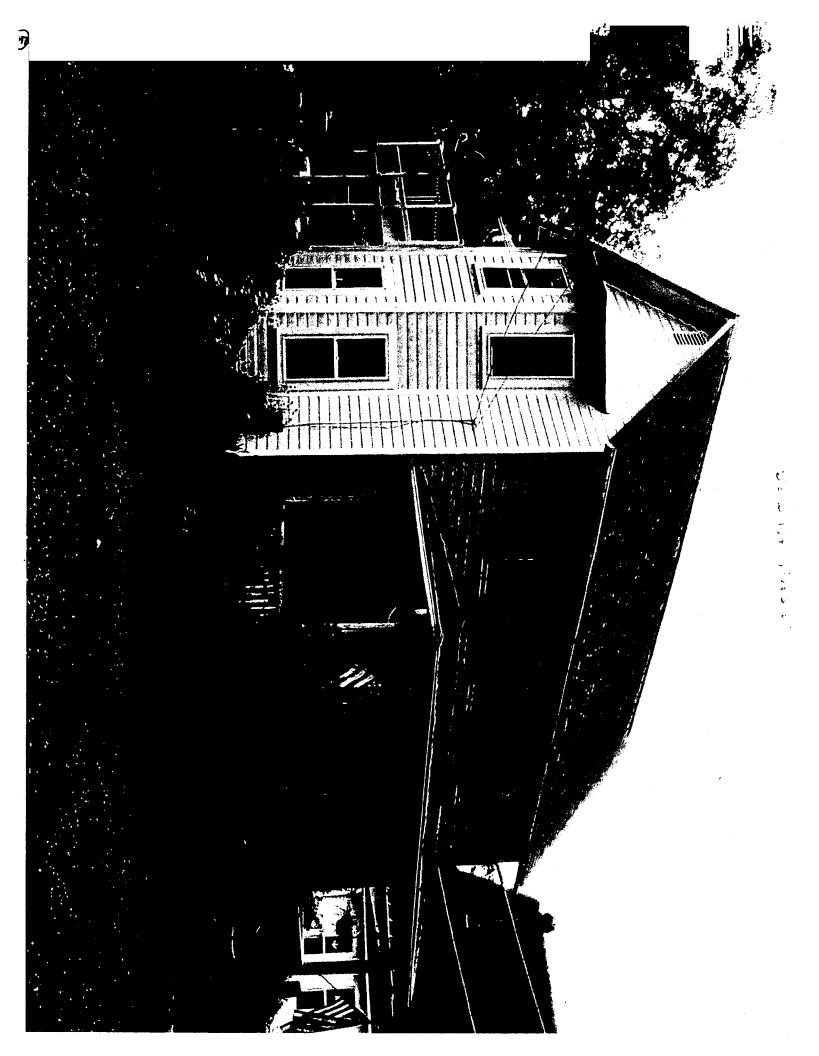
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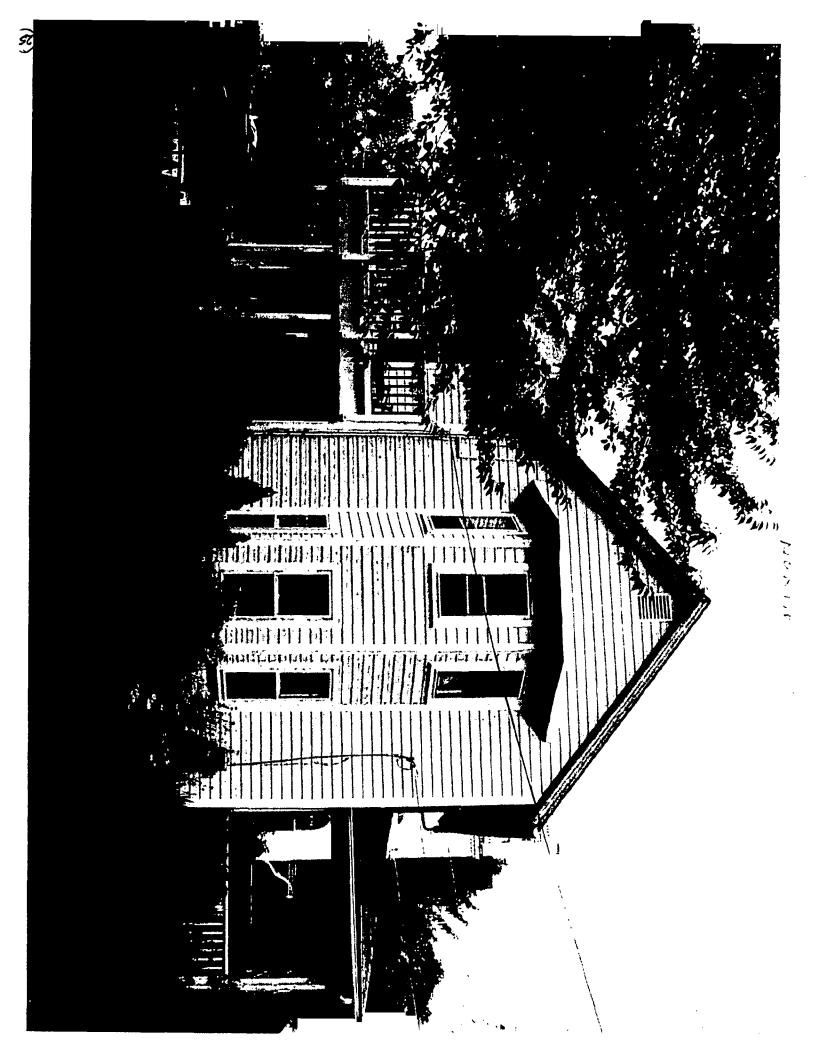
















Standard Solar, Inc. 202 Perry Parkway #7 Gaithersburg, MD 20877

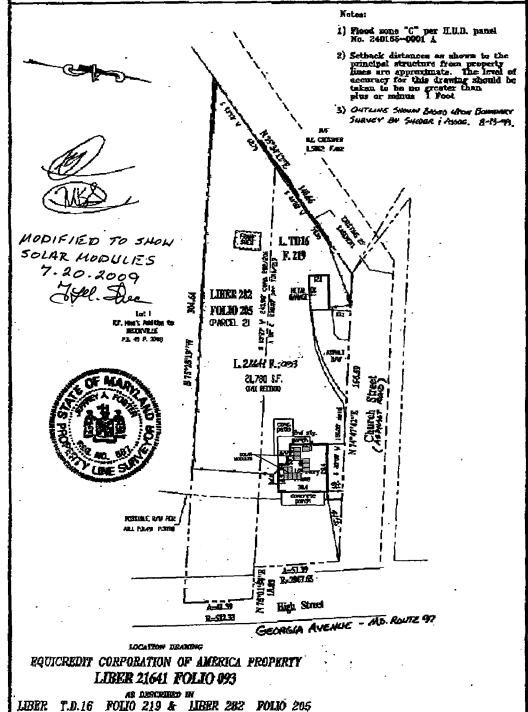
Tom Shea Permitting Specialist I tomshea@standardsolar.com t 301.944.1200 x1038 f 301.944.1202 www.standardsolar.com

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2 Protestical Drive 3025 255
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S01/848-5100, Fax 301/948-1286

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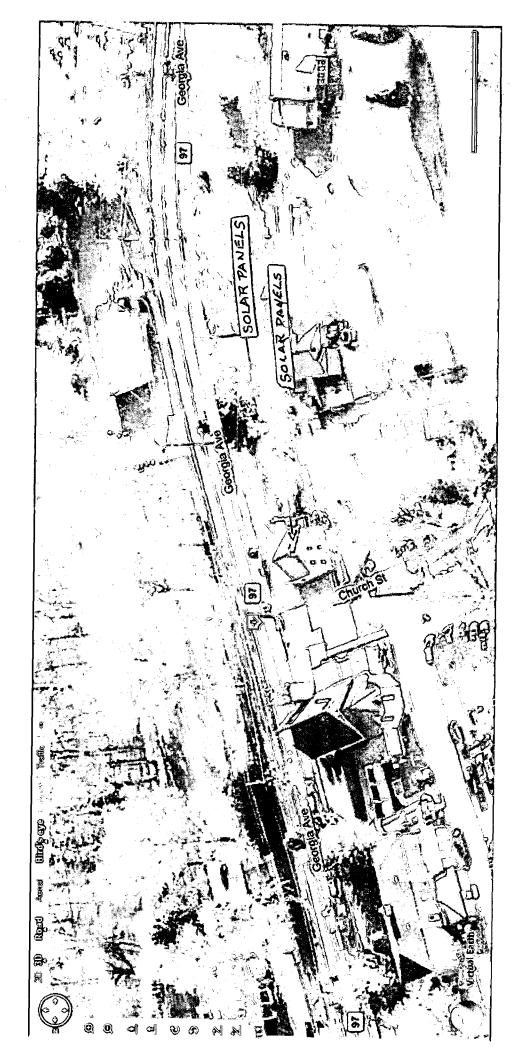
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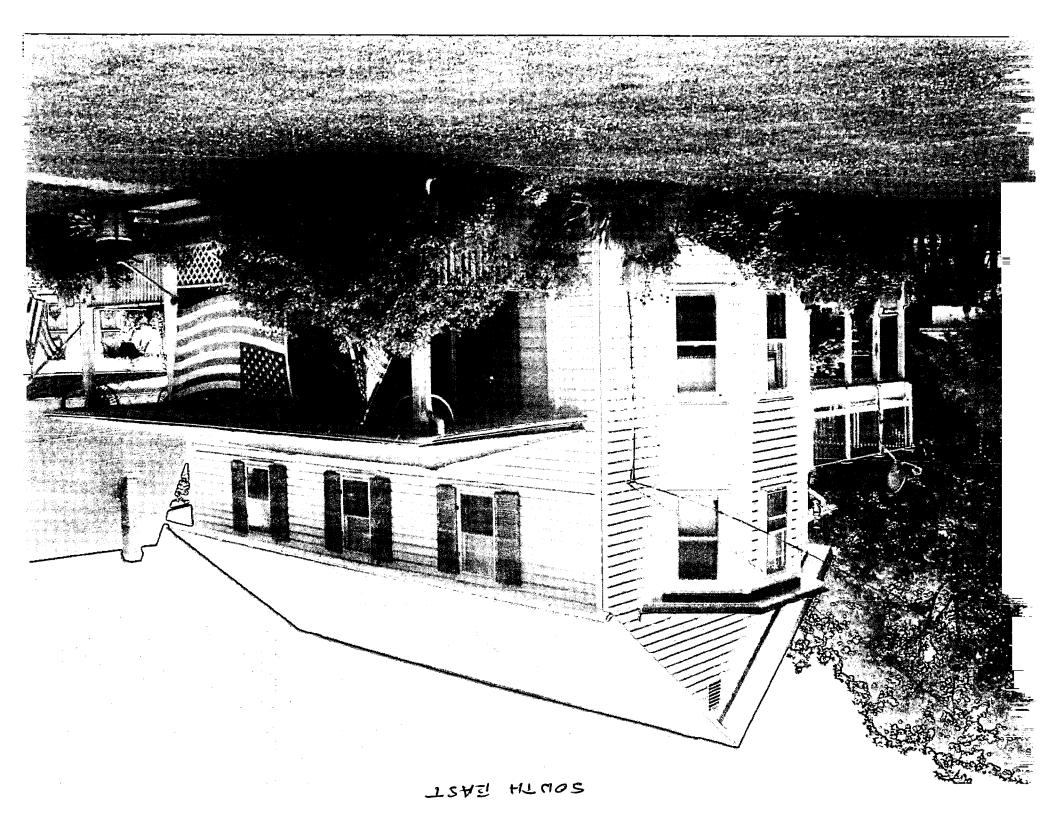


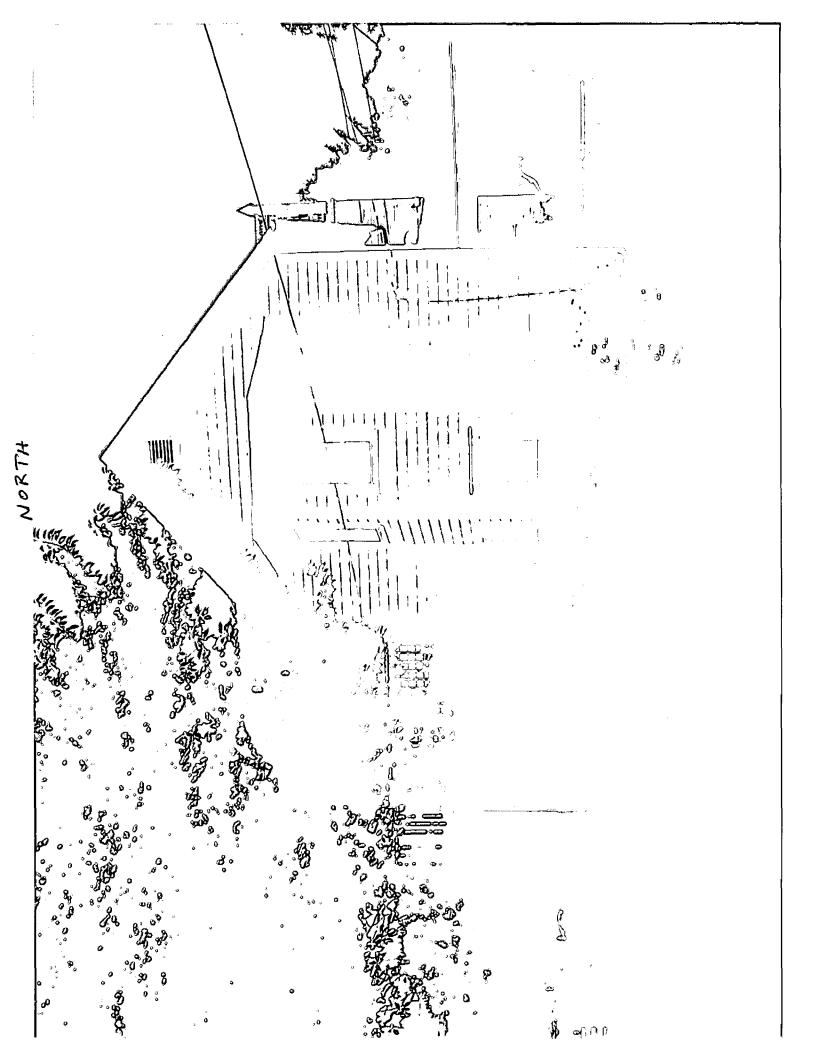
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## HAWP APPLICATION: MAILING ADDRESSES FOR NOTIFING

[Owner, Owner's Agent, Adjacent and Confronting Property Owners]

Owner's mailing address	Owner's Agent's mailing address		
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		Adjacent and confrontin	ng Property Owners mailing addresses
		Salem United Methodist Church	Jerry Hildago
Sue Shorb-Sterling, Pastor	1 Church Street		
8 High Street	Brookeville, MD 20833		
Brookeville, MD 20833			
Michael Murphy and Loretta Trittipoe	Dan and Lori Laughlin		
9 High Street	16 High Street		
Brookeville, MD 20833	Brookeville, MD 20833		











