MONTGOMERY COUNTY HISTORIC PRESERVATION COMMISSION
STAFF REPORT

Address:	32 Hickory Ave., Takoma Park	**Meeting Date:**	11/13/2019
Resource:	Contributing Resource **Takoma Park Historic District**	**Report Date:**	11/6/2019
Applicant:	Daryl Braithwaite	**Public Notice:**	10/30/2019
Review:	HAWP	**Tax Credit:**	n/a
Case Number:	37/03-19BBB	**Staff:**	Dan Bruechert
PROPOSAL:	Solar Panel Installation		

RECOMMENDATION

Staff recommends the HPC **approve** the HAWP application:

ARCHITECTURAL DESCRIPTION

SIGNIFICANCE: Contributing Resource within the Takoma Park Historic District
STYLE: Craftsman
DATE: 1878

Figure 1: 32 Hickory Avenue.

PROPOSAL

The applicant proposes to install 40 (forty) roof-mounted solar panels.

APPLICABLE GUIDELINES

When reviewing alterations and additions for new construction to Contributing Resources within the Takoma Park Historic District, decisions are guided by the Takoma Park Historic District Design Guidelines (*Guidelines*) and Montgomery County Code Chapter 24A (*Chapter 24A*), and the Secretary of the Interior's Standards for Rehabilitation (*Standards*).

Takoma Park Historic District Design Guidelines
There are two very general, broad planning and design concepts which apply to all categories. These are:

> The design review emphasis will be restricted to changes that are at all visible from the public right-of-way, irrespective of landscaping or vegetation (it is expected that the majority of new additions will be reviewed for their impact on the overall district), and,
>
> The importance of assuring that additions and other changes to existing structures act to reinforce and continue existing streetscape, landscape, and building patterns rather than to impair the character of the district.

Contributing Resources should receive a more lenient review than those structures that have been classified as Outstanding. This design review should emphasize the importance of the resource to the overall streetscape and its compatibility with existing patterns rather than focusing on a close scrutiny of architectural detailing. In general, however, changes to Contributing Resources should respect the predominant architectural style of the resource. As stated above, the design review emphasis will be restricted to changes that are *at all visible from the public right-of-way*, irrespective of landscaping or vegetation.

Some of the factors to be considered in reviewing HAWPs on Contributing Resources include:

> All exterior alterations, including those to architectural features and details, should be generally consistent with the predominant architectural style and period of the resource and should preserve the predominant architectural features of the resource; exact replication of existing details and features is, however, not required
>
> Minor alterations to areas that do not directly front on a public right-of-way such as vents, metal stovepipes, air conditioners, fences, skylights, etc. – should be allowed as a matter of course; alterations to areas that do not directly front on a public way-of-way which involve the replacement of or damaged to original ornamental or architectural features are discouraged, but may be considered and approved on a case-by-case basis
>
> Major additions should, where feasible, be placed to the rear of existing structures so that they are less visible from the public right-of-way; additions and alterations to the first floor at the front of a structure are discouraged, but not automatically prohibited
>
> While additions should be compatible, they are not required to be replicative of earlier architectural styles
>
> Some non-original building materials may be acceptable on a case-by-case basis; artificial siding

on areas visible to the public right-of-way is discouraged where such materials would replace or damage original building materials that are in good condition

Alterations to features that are not visible from the public right-of-way should be allowed as a matter of course

All changes and additions should respect existing environmental settings, landscaping, and patterns of open space.

Montgomery County Code, Chapter 24A Historic Resources Preservation

(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

(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.

(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

2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, space and spatial relationships that characterize a property will be avoided.
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 proportions, 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

The subject property is a two-story Craftsman house with a gable-L roof, with a small two-story rear gable projection. The roof is covered in 3-tab asphalt shingles. The applicant proposes to install 40 (forty) roof-mounted solar panels. The panels will be installed on all sides of the roof, except for the northeast roof slope of the small rear-facing gable. In total, the 40 panels will be installed in six arrays.

Working from the rear of the house forward, there are three arrays planned for the rear of the gable-L and the south side of the rear-facing gable. These sections of the roof are not visible from the public right-of-way and based on the *Design Guidelines* should be approved as a matter of course.

The other three arrays will be installed on the west (front) facing slope of the gable-L and on the north and south sides of the principal gable. These roof elevations are visible from the public right-of-way and there will be a total of 33 solar panels installed on these three roof surfaces. The solar panels will be black, installed on a SnapNrack system. In the past, Staff has recommended that solar panels on gable roofs be limited to rear elevations on Contributing Resources. For Contributing Resources with front gable roofs, Staff has recommended that the solar panels be set back from the front of the house to minimize its visual impact on the surrounding district. This has been Staff's interpretation of Chapter 24A and the *Design Guidelines*, however, this determination has not created precedent, and even if it did, the HPC is not bound by any of their previous decisions.

Staff supports the approval of this project for several reasons. First, as a contributing resource, Staff finds that the general welfare of the County and Takoma Park Historic District is better served by approving this HAWP under 24A-8(b)(6). Climate change is a crisis that requires a global response and this solar installation will produce carbon-free electricity for the house and, if it generates sufficient power, it will add power back to the grid. There is also a social awareness benefit to the solar panels by being visible. The solar panels will draw attention to the larger issue of climate change and interventions individuals can make to address the problem. Second, Staff finds that the proposed solar arrays are installed in a generally compact configuration, which will better blend in with the existing roof planes. As this is a Contributing Resource, the primary evaluation for the proposal is the impact on the surrounding streetscape. As stated in the introduction to Contributing Resources, the requirement is for the resource to respect the predominant architectural style. Installing the solar panels will not impact the architectural elements that classify this house as Craftsman (i.e. exposed rafter tails, battered columns, etc.), however, Staff acknowledges that this will alter the roof planes by installing the panels above the existing roof. Staff further supports approval of the proposal under the general requirements for evaluating work to Contributing Resources outlined in the *Design Guidelines*, requiring the evaluation to consider the impact the work will have on the streetscape rather than a close inspection of the architectural elements. Finally, Staff finds additional support for the proposal in the *Standards*. Standards 9 and 10 outline how to review new work and the introduction of new materials in a historic resource. The new work needs to be compatible with the historic but also differentiated from the old. Staff finds the compact configuration of the solar arrays creates a compatible configuration that no one will mistake for a historic feature (Standard 9). Additionally, Standard 10 requires that the work undertaken will not damage the historic fabric and is reversible. Because only the feet of the attachment system will be installed on the roof, the removal of the system would only require minimal repair work to return the roof's appearance to the pre-installation appearance. Staff supports approval under 24A-8(b)(2), the *Design Guidelines*, and Standards 9 and 10.

STAFF RECOMMENDATION

Staff recommends that the Commission **approve** the HAWP under the Criteria for Issuance in *Chapter 24A-8(b)(1), (2),* and *(6)* having found that the proposal will not substantially alter the exterior features of the historic resource and is compatible in character with the district, the *Takoma Park Historic District Guidelines,* and the purposes of *Chapter 24A*;
and with the *Secretary of the Interior's Standards for Rehabilitation #2, #9, and #10*,

and with the general condition that the applicant shall present the **3 permit sets of drawings, if applicable, 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 final project design details, not specifically delineated by the Commission, shall be approved by HPC staff or brought back to the Commission as a revised HAWP application at staff's discretion;

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 dan.bruechert@montgomeryplanning.org to schedule a follow-up site visit.

[redacted]

DPS - #8

HISTORIC PRESERVATION COMMISSION
301/563-3400

APPLICATION FOR HISTORIC AREA WORK PERMIT

Contact Email: daryl@takomaparkmd.gov Contact Person: DARYL BRAITHWAITE
Daytime Phone No.: 301-674-8229

Tax Account No.: _____

Name of Property Owner: Daryl Braithwaite Daytime Phone No.: 301-674-8229

Address: 32 HICKORY AVE TAKOMA PARK MD 20912
Street Number / City / State / Zip Code

Contractor: Solar Energy World Phone No.: 410-440-5987

Contractor Registration No.: _____

Agent for Owner: N/A Daytime Phone No.: X

LOCATION OF BUILDING/PREMISE

House Number: 32 Street: Hickory Ave

Town/City: Takoma Park Nearest Cross Street: Elm Avenue

Lot: 19 Block: 20 Subdivision: BF Gilbert

Liber: ~~JA 3~~ 20156 Folio: ~~479~~ 0609 Parcel: 10601617

PART ONE: TYPE OF PERMIT ACTION AND USE

1A. CHECK ALL APPLICABLE:

☐ Construct ☐ Extend ☐ Alter/Renovate
☐ Move ☑ Install ☐ Wreck/Raze
☐ Revision ☐ Repair ☐ Revocable

CHECK ALL APPLICABLE:

☐ A/C ☐ Slab ☐ Room Addition ☐ Porch ☐ Deck ☐ Shed
☑ Solar ☐ Fireplace ☐ Woodburning Stove ☐ Single Family
☐ Fence/Wall (complete Section 4) ☐ Other: _____

1B. Construction cost estimate: $ 34,000

1C. If this is a revision of a previously approved active permit, see Permit #: _____

PART TWO: COMPLETE FOR NEW CONSTRUCTION AND EXTEND/ADDITIONS

2A. Type of sewage disposal: 01 ☑ WSSC 02 ☐ Septic 03 ☐ Other: _____

2B. Type of water supply: 01 ☑ WSSC 02 ☐ Well 03 ☐ Other: _____

PART THREE: COMPLETE ONLY FOR FENCE/RETAINING WALL

3A. Height _____ feet _____ inches N/A

3B. Indicate whether the fence or retaining wall is to be constructed on one of the following locations:

☐ On party line/property line ☐ Entirely on land of owner ☐ On public right of way/easement

I hereby certify that I have the authority to make the foregoing application, that the application is correct, and that the construction will comply with plans approved by all agencies listed and I hereby acknowledge and accept this to be a condition for the issuance of this permit.

Daryl Braithwaite 10/26/19
Signature of owner or authorized agent *Date*

Approved: _____ *For Chairperson, Historic Preservation Commission*

Disapproved: _____ Signature: _____ Date: _____

Application/Permit No.: _____ Date Filed: _____ Date Issued: _____

Edit 6/21/99

SEE REVERSE SIDE FOR INSTRUCTIONS

~~6938~~ 66

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:

   Existing structure is a single family property, in good condition. The roof was recently replaced.

   b. General description of project and its effect on the historic resource(s), the environmental setting, and, where applicable, the historic district:

   The project would install solar panels on the roof of the structure. the intention is to install them on all roof surfaces.

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** NO TREES IMPACTED

   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.

PLEASE PRINT (IN BLUE OR BLACK INK) OR TYPE THIS INFORMATION ON THE FOLLOWING PAGE.
PLEASE STAY WITHIN THE GUIDES OF THE TEMPLATE, AS THIS WILL BE PHOTOCOPIED DIRECTLY ONTO MAILING LABELS.

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
32 Hickory Ave Takoma Park, MD	
Adjacent and confronting Property Owners mailing addresses	
Bonnie Jones 30 Hickory Ave Takoma Park MD 20912	7006 Poplar Ave Takoma Park MD 20912
Patrick Plunkett & Jennifer Cuttings 34 Hickory Ave Takoma Park, MD 20912	
Elizabeth Pavlofski 33 Hickory Ave Takoma Park, MD 20912	

Existing Property Condition Photographs (duplicate as needed)

Detail: Front view from street

Detail: Right Side view from 34 Hickory Ave

Applicant: Brathwaite
32 Hickory

Page:

Existing Property Condition Photographs (duplicate as needed)

Detail:

Detail: Left side view from 30 Hickory

Applicant: Braithwaite
32 Hickory Ave

Page:

HOUSE LOCATION

LOT 19 BLOCK 20

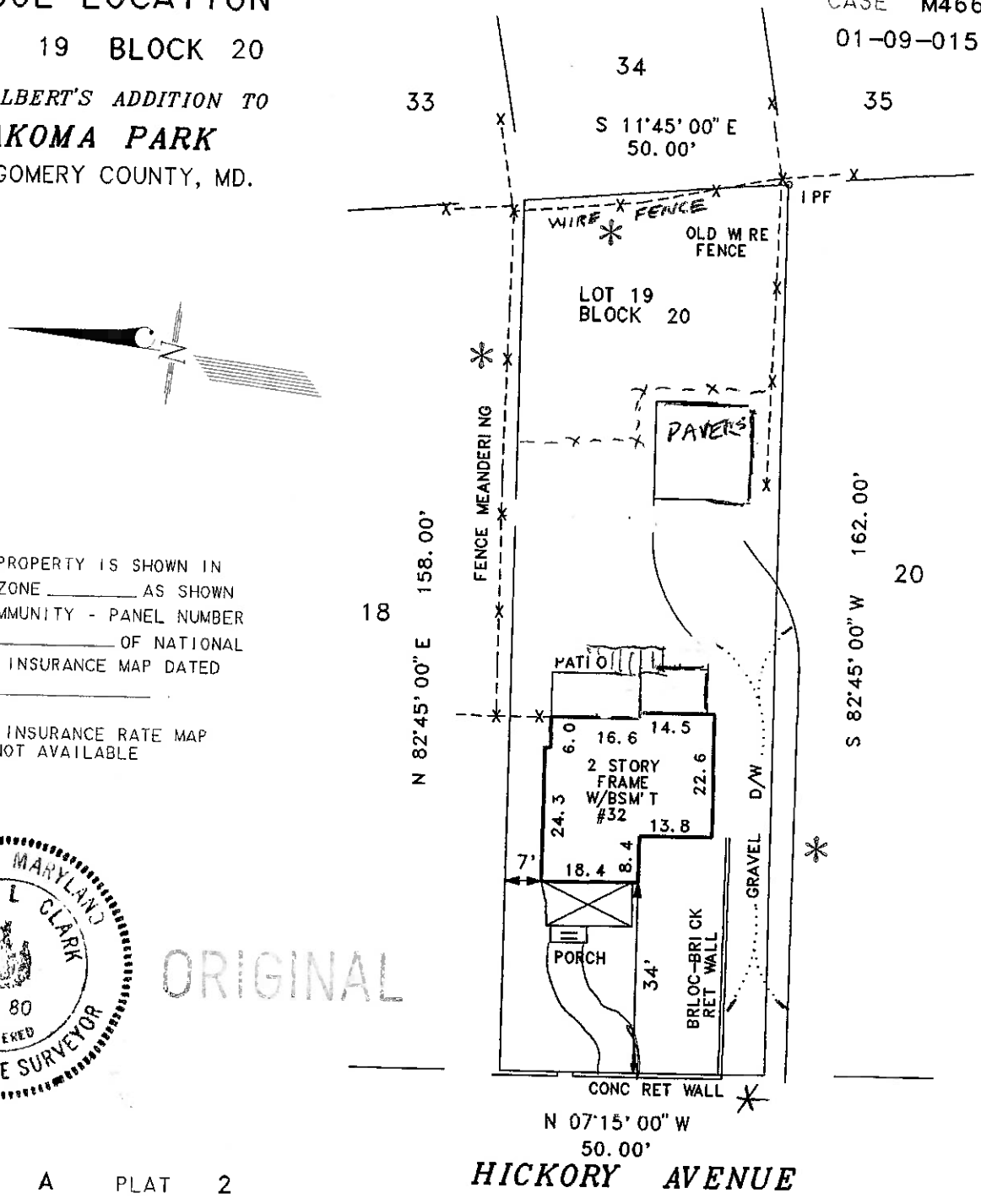
B.F. GILBERT'S ADDITION TO

TAKOMA PARK

MONTGOMERY COUNTY, MD.

CASE M46676

01-09-0155R



THIS PROPERTY IS SHOWN IN FIRM ZONE _____ AS SHOWN ON COMMUNITY - PANEL NUMBER _____ OF NATIONAL FLOOD INSURANCE MAP DATED _____

FLOOD INSURANCE RATE MAP NOT AVAILABLE

STATE OF MARYLAND
WILLIAM L CLARK
NO. 80
REGISTERED
PROPERTY LINE SURVEYOR

ORIGINAL

PLAT BOOK A PLAT 2

ATTENTION USER: *SURVEY ORDER FORM* MUST BE ON FILE WITH BELTWAY SURVEYS *BEFORE* THIS DOCUMENT CAN BE USED.

I HEREBY CERTIFY THAT THE LOCATION OF THE SIGNIFICANT IMPROVEMENTS ON THE ABOVE DESCRIBED PROPERTY ARE AS SHOWN. THIS HOUSE LOCATION IS NOT TO BE USED OR RELIED UPON FOR THE ESTABLISHMENT OF ANY FENCE, GARAGE, BUILDING, OR OTHER EXISTING OR FUTURE IMPROVEMENTS. THIS PLAT DOES NOT PROVIDE FOR THE ACCURATE IDENTIFICATION OF PROPERTY BOUNDARY LINES, BUT SUCH IDENTIFICATION MAY NOT BE REQUIRED FOR THE TRANSFER OF TITLE OR SECURING FINANCING OR REFINANCING. THIS LOCATION IS OF BENEFIT TO A CONSUMER ONLY INSOFAR AS IT IS REQUIRED BY A LENDER OR A TITLE INSURANCE COMPANY OR ITS AGENT IN CONNECTION WITH CONTEMPLATED TRANSFER, FINANCING OR REFINANCING.

10/8/01 William L Clark

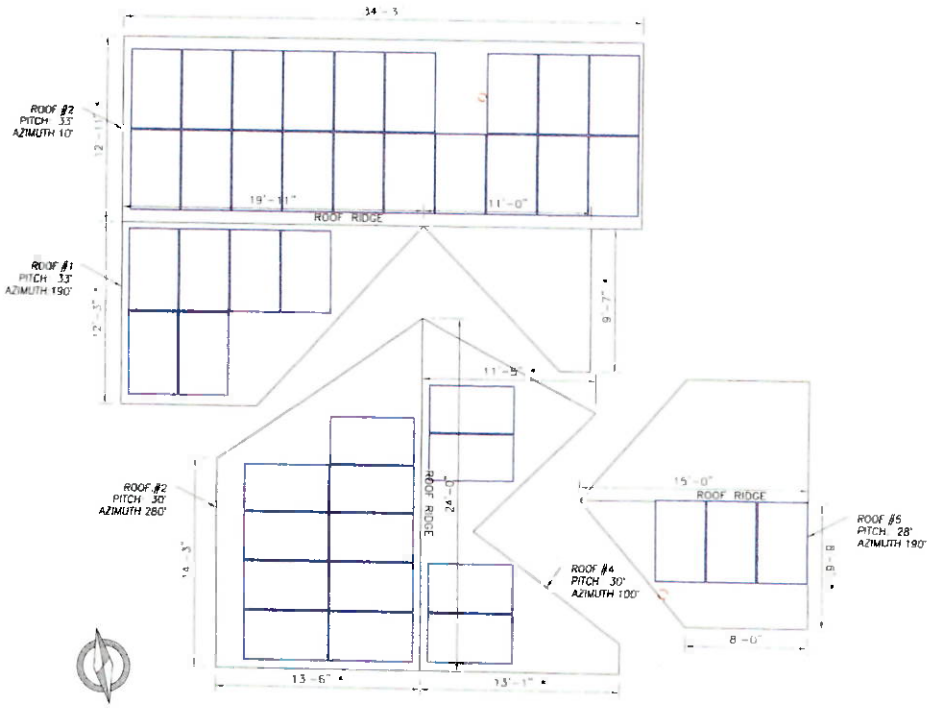
SCALE: 1" = 30' DATE: 10/08/2001 DRAWN DEB

BELTWAY SURVEYS

ENGINEERS PLANNERS SURVEYORS
5627 ALLENTOWN ROAD
CAMP SPRINGS, MARYLAND 20746
SUITE 104 (301)899-3440

NOTES

ACCURACY OF SURVEY +\- 3'
NO TITLE REPORT WAS FURNISHED
PROPERTY CORNERS WERE NOT SET
FENCES SHOWN MAY MEANDER
PROPERTY CORNERS NEED TO BE SET TO
* DETERMINE EXACT LOCATION OF FENCES AND DRIVEWAY, RET. WALL



SOLAR PANEL LAYOUT

Scale 1/8" = 1'-0"

NOTES

1. THE SYSTEM SHALL INCLUDE (41) LONGi Green Energy Technology Co. Ltd. LR6 60-HPB-310M.
2. SNAPNRACK SOLAR MOUNT RAIL WILL BE INSTALLED IN ACCORDANCE WITH SNAPNRACK INSTALLATION MANUAL.
3. DIMENSIONS MARKED (*) ARE ALONG ROOF SLOPE.
4. REFER TO STRUCTURAL DRAWING FOR SECTIONS MARKED AND ADDATIONAL NOTES.

PROPOSED PV ARRAY LOCATION

SolarEnergyWorld
Because Tomorrow Matters
Solar Energy World LLC
5681 Main Street
Elkridge, MD 21075
(888) 497-3233

Stamp

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND LICENSE NO. 31585, EXPIRATION DATE JULY 8, 2021.
STAMPED AND SIGNED FOR STRUCTURE ONLY.

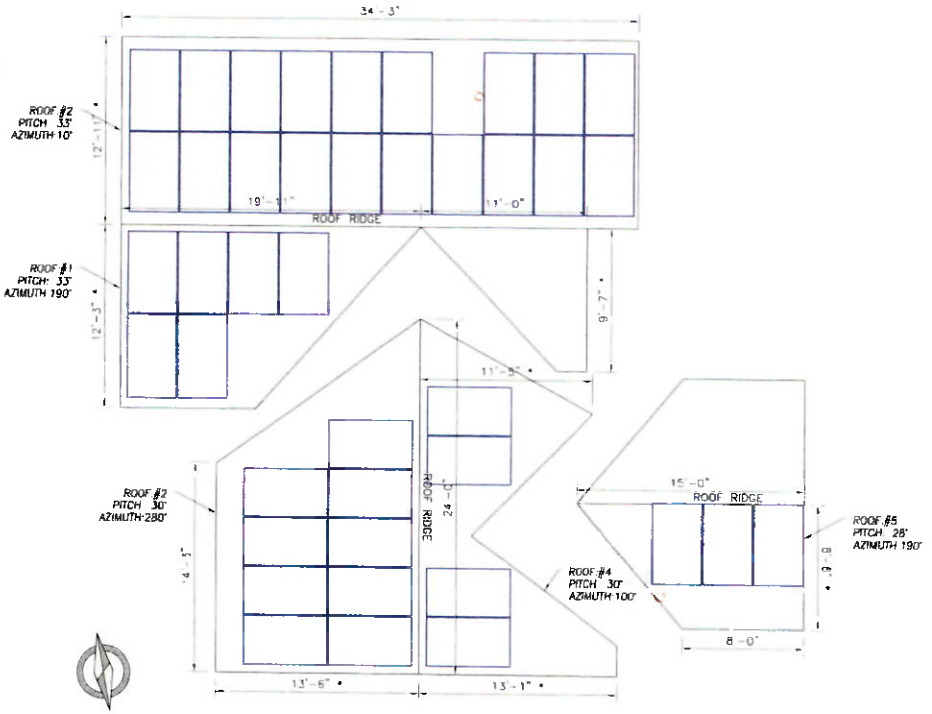
Revisions

REV	DESCRIPTIONS	BY	DATE
01			

Project Name and Address

Daryl Braithwaite
32 Hickory Ave.
Takoma Park, MD 20912
12.71 kW

Drawn By: DTK	Sheet: A001
Date: 17-OCT-2019	
Scale: AS NOTED	



SOLAR PANEL LAYOUT

Scale: 1/8" =1'-0"

NOTES:

1. THE SYSTEM SHALL INCLUDE [41] LONGi Green Energy Technology Co Ltd LR6-60HPB-310M
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3. DIMENSIONS MARKED (*) ARE ALONG ROOF SLOPE
4. REFER TO STRUCTURAL DRAWING FOR SECTIONS MARKED AND ADDITIONAL NOTES

SolarEnergyWorld
Because Tomorrow Matters
Solar Energy World LLC
5681 Main Street
Elkridge, MD 21075
(888) 497-3233

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31583, EXPIRATION DATE JULY 1, 2021.
"NOT APPROVED AND SIGNED FOR STRUCTURES ONLY"

NO.	DESCRIPTIONS	BY	DATE
01			

Project Name and Address

Daryl Braithwaite
32 Hickory Ave,
Takoma Park, MD 20912
12.71 kW

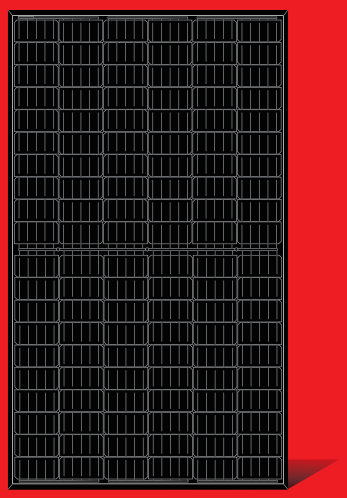
Drawn by: DTK
Date: 17-OCT-2019
Scale: AS NOTED
Sheet: A001

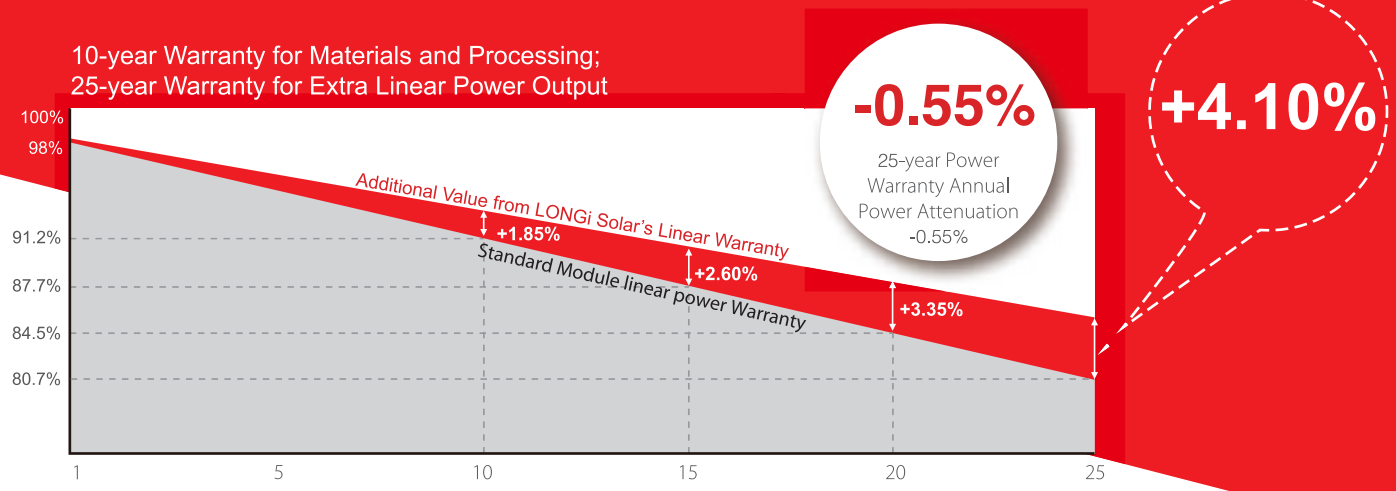
LR6-60HPB

300~320M

Hi-MO 3m (Black)

High Efficiency Low LID Mono PERC with Half-cut Technology





Complete System and Product Certifications

IEC 61215, IEC61730, UL1703

ISO 9001:2008: ISO Quality Management System

ISO 14001: 2004: ISO Environment Management System

TS62941: Guideline for module design qualification and type approval

OHSAS 18001: 2007 Occupational Health and Safety

* Specifications subject to technical changes and tests. LONGi Solar reserves the right of interpretation.

Positive power tolerance (0 ~ +5W) guaranteed

High module conversion efficiency (up to 19.1 %)

Slower power degradation enabled by Low LID Mono PERC technology: first year <2%, 0.55% year 2-25

Solid PID resistance ensured by solar cell process optimization and careful module BOM selection

Reduced resistive loss with lower operating current

Higher energy yield with lower operating temperature

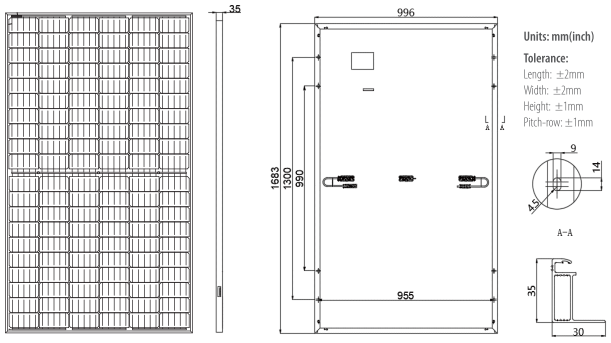
Reduced hot spot risk with optimized electrical design and lower operating current

LONGi

Room 801, Tower 3, Lujiazui Financial Plaza, No.826 Century Avenue, Pudong Shanghai, 200120, China
Tel: +86-21-80162606 E-mail: module@longi-silicon.com Facebook: www.facebook.com/LONGi Solar

LR6-60HPB 300~320M

Design （mm）



Mechanical Parameters

Cell Orientation: 120（6×20）

Junction Box: IP67, three diodes

Output Cable: 4mm², 300mm in length
length can be customized

Glass: Single glass
3.2mm coated tempered glass

Frame: Anodized aluminum alloy frame

Weight: 18.9kg

Dimension: 1683×996×35mm

Packaging: 30pcs per pallet
180pcs per 20'GP
780pcs per 40'HC

Operating Parameters

Operational Temperature: -40℃ ~ +85℃

Power Output Tolerance: 0 ~ +5 W

Voc and Isc Tolerance: ±3%

Maximum System Voltage: DC1000V (IEC / UL)

Maximum Series Fuse Rating: 20A

Nominal Operating Cell Temperature: 45±2℃

Safety Class: Class II

Fire Rating: UL type 1 or type 2

Electrical Characteristics

Test uncertainty for Pmax: ±3%

Model Number	LR6-60HPB-300M		LR6-60HPB-305M		LR6-60HPB-310M		LR6-60HPB-315M		LR6-60HPB-320M	
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	300	222.2	305	225.9	310	229.6	315	233.4	320	237.1
Open Circuit Voltage (Voc/V)	39.8	37.1	40.1	37.4	40.3	37.7	40.6	37.9	40.9	38.2
Short Circuit Current (Isc/A)	9.70	7.82	9.78	7.88	9.86	7.94	9.94	8.01	10.02	8.08
Voltage at Maximum Power (Vmp/V)	32.9	30.4	33.1	30.6	33.3	30.8	33.7	31.1	33.9	31.3
Current at Maximum Power (Imp/A)	9.13	7.32	9.21	7.38	9.30	7.46	9.36	7.50	9.43	7.56
Module Efficiency(%)	17.9		18.2		18.5		18.8		19.1	

STC (Standard Testing Conditions): Irradiance 1000W/m², Cell Temperature 25℃, Spectra at AM1.5

NOCT (Nominal Operating Cell Temperature): Irradiance 800W/m², Ambient Temperature 20℃, Spectra at AM1.5, Wind at 1m/S

Temperature Ratings（STC）

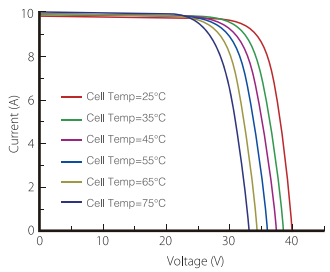
Temperature Coefficient of Isc	+0.057%/℃
Temperature Coefficient of Voc	-0.286%/℃
Temperature Coefficient of Pmax	-0.370%/℃

Mechanical Loading

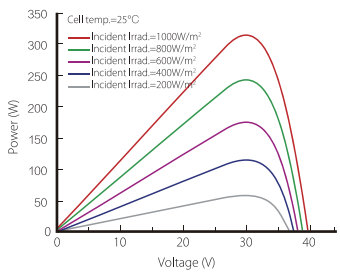
Front Side Maximum Static Loading	5400Pa
Rear Side Maximum Static Loading	2400Pa
Hailstone Test	25mm Hailstone at the speed of 23m/s

I-V Curve

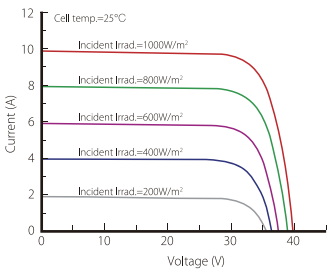
Current-Voltage Curve (LR6-60HPB-310M)



Power-Voltage Curve (LR6-60HPB-310M)



Current-Voltage Curve (LR6-60HPB-310M)



LONGi

Room 801, Tower 3, Lujiazui Financial Plaza, No.826 Century Avenue, Pudong Shanghai, 200120, China
Tel: +86-21-80162606 E-mail: module@longi-silicon.com Facebook: www.facebook.com/LONGi Solar

SNAPNRACK UR-40 RACKING SYSTEM SHOWN MOUNTED ON ULTRA FOOT WITH UNIVERSAL END CLAMPS. FOR TILE ROOFING USE SNAPNRACK TILE REPLACEMENT, UNIVERSAL TILE HOOK, OR FLAT TILE HOOK SYSTEMS.

STANDARD LAG SCREW SPEC ASSUMES $\frac{5}{16}$"Ø

LAG SCREW WITH 2$\frac{1}{2}$" MIN. EMBEDMENT INTO STRUCTURAL MEMBER.

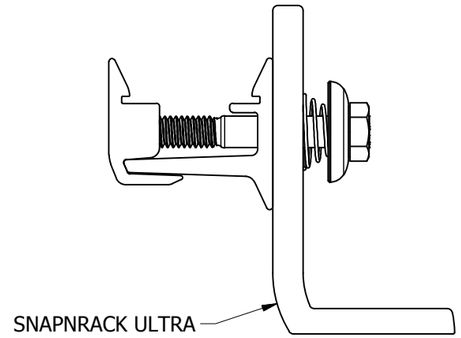
TORQUE ALL FASTENERS TO 10-16 FT-LBS

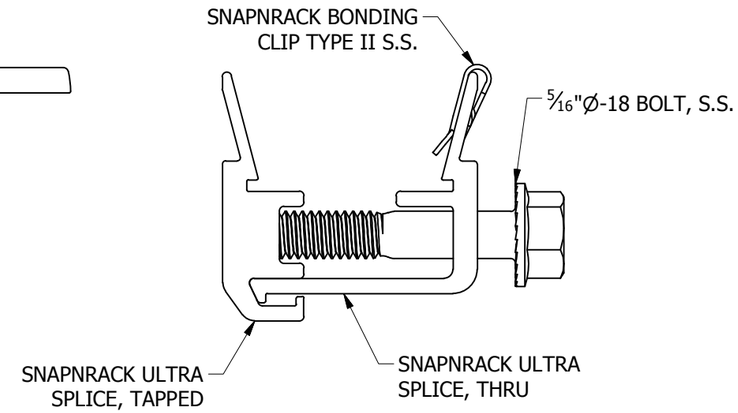
RAILS CAN BE MOUNTED ON EITHER SIDE OF ULTRA FOOT: UPSLOPE OR DOWNSLOPE.

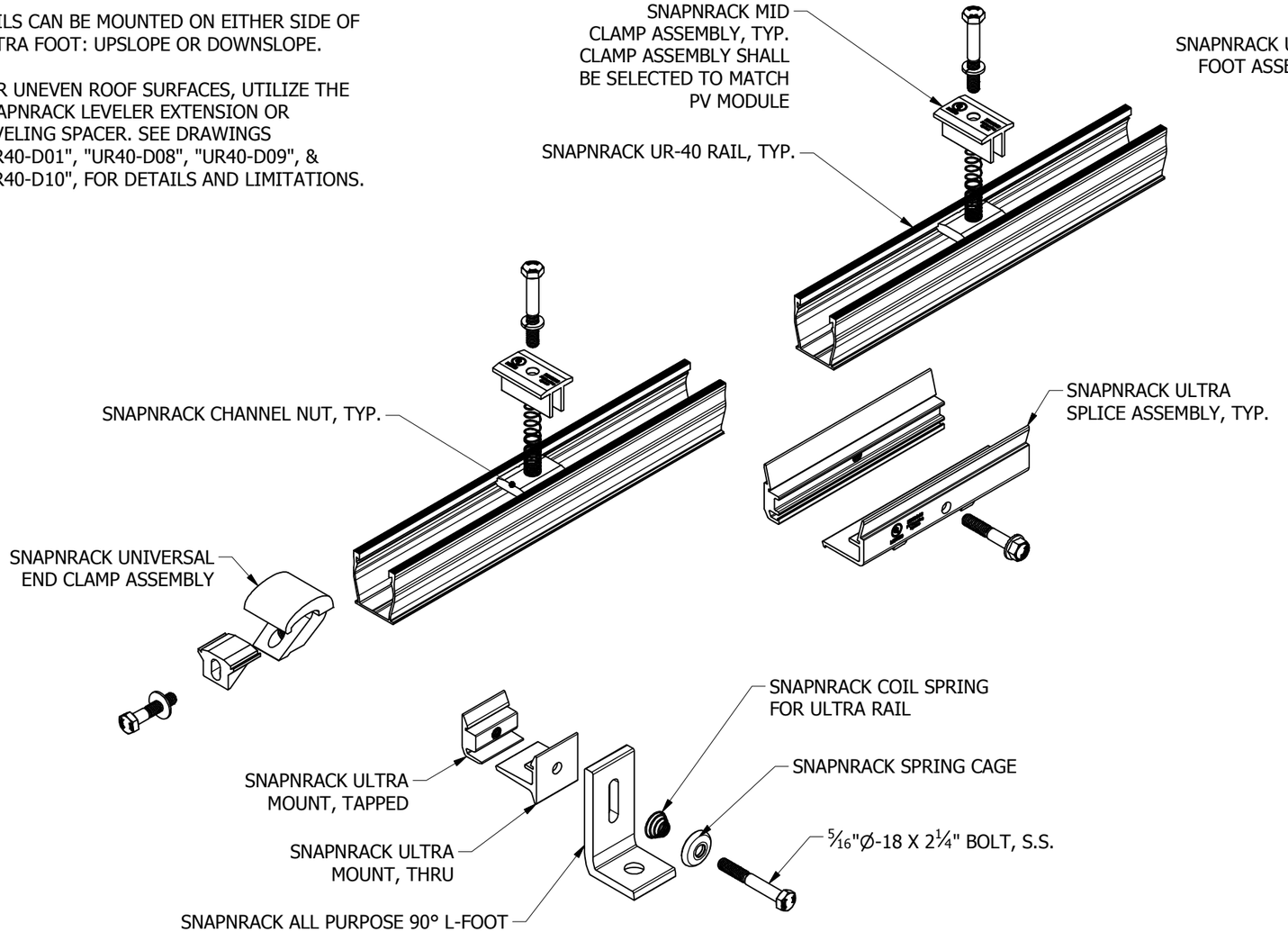
FOR UNEVEN ROOF SURFACES, UTILIZE THE SNAPNRACK LEVELER EXTENSION OR LEVELING SPACER. SEE DRAWINGS "UR40-D01", "UR40-D08", "UR40-D09", & "UR40-D10", FOR DETAILS AND LIMITATIONS.

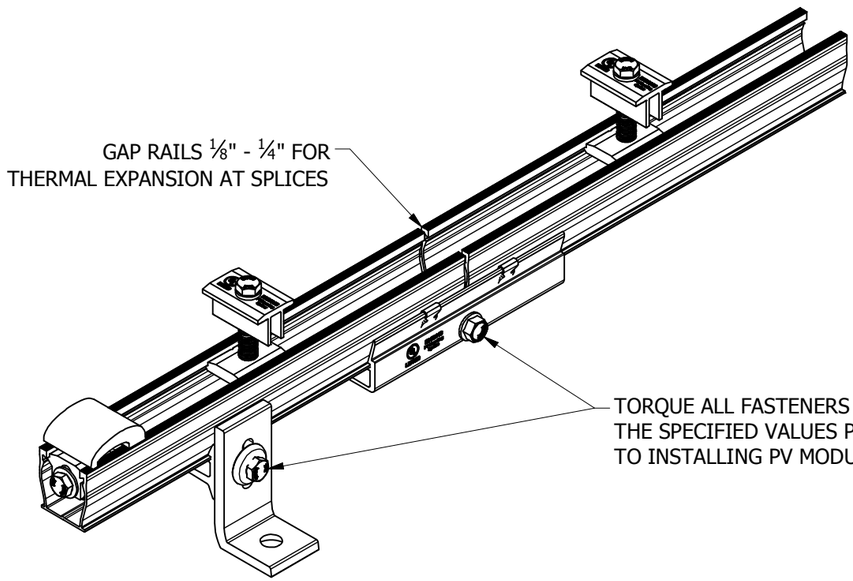
REVISION:

A	11/30/2017	NEW DETAIL	MA







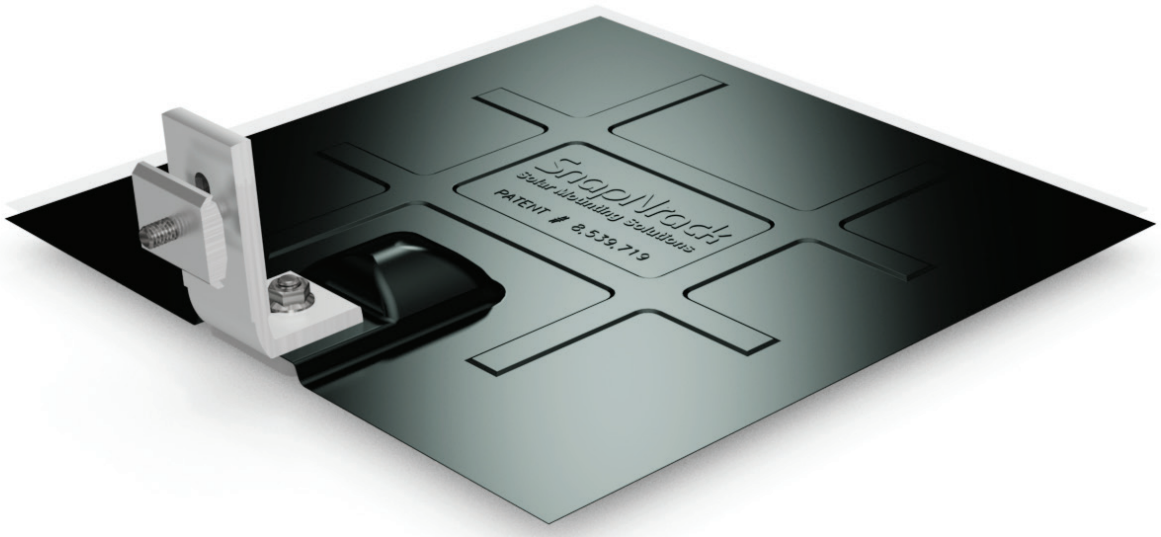


SnapNrack™ Solar Mounting Solutions

Sunrun South LLC
595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA
PHONE (415) 580-6900 • FAX (415) 580-6902

DESIGNER: M.Affentrager DRAFTER: M.Affentrager APPROVED BY: G.McPheeters	SCALE: DNS DATE: 11/30/2017	PART NUMBER: UR40-D04	DESCRIPTION: UR-40 ASSEMBLY DETAILS UEC	REV A 16

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

Start Installing the Flashed L Foot Today

RESOURCES	snapnrack.com/resources
DESIGN	snapnrack.com/configurator
WHERE TO BUY	snapnrack.com/where-to-buy

SnapNrack Series 100 Flashed L Foot Kit

is an industry-leading, weatherproof solution for attaching to composition shingle roofs. The Flashed L Foot provides a fully flashed method for mounting the SnapNrack Series 100 system. The combination of Series 100 and the Flashed L foot is guaranteed to improve labor times and ensure the highest quality install possible.

Flashing

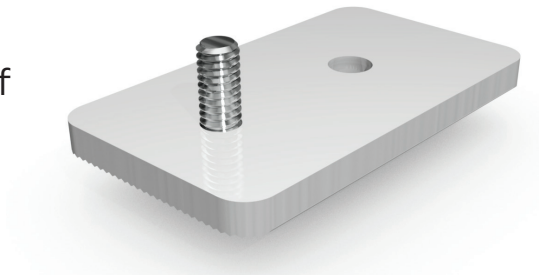
- Available in black galvanized steel or aluminum for enhanced corrosion resistance
- L Foot is attaches to bottom edge of flashing, removing the need for shingle cutting
- Innovative stamped features provide increased rigidity

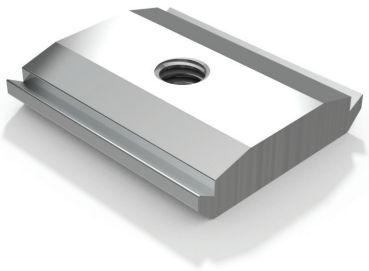
L Foot

- Engineered for maximum adjustability with the ability to orient in any direction
- Vertical adjustability up to 3” using available spacers

L Foot Base

- Provides a long lasting watertight seal over the life of the system that does not rely on rubber (elastomeric seals) that will degrade over time
- Easily installs with off-the-shelf lag screws





Channel Nut

- Provides snap-in installation to the rail channel with no drilling required
- Wide range of adjustability due to sliding ability in rail prior to final tightening

Quality. Performance. Innovation.

SnapNrack solutions are focused on simplifying the installation experience through intuitive products and the best wire management in the industry.

SnapNrack™
Solar Mounting Solutions

877-732-2860 www.snapnrack.com contact@snapnrack.com

SNAPNRACK UR-40 PENETRATION DETAIL
FOR COMP FLASHED L-FOOT ON BASE

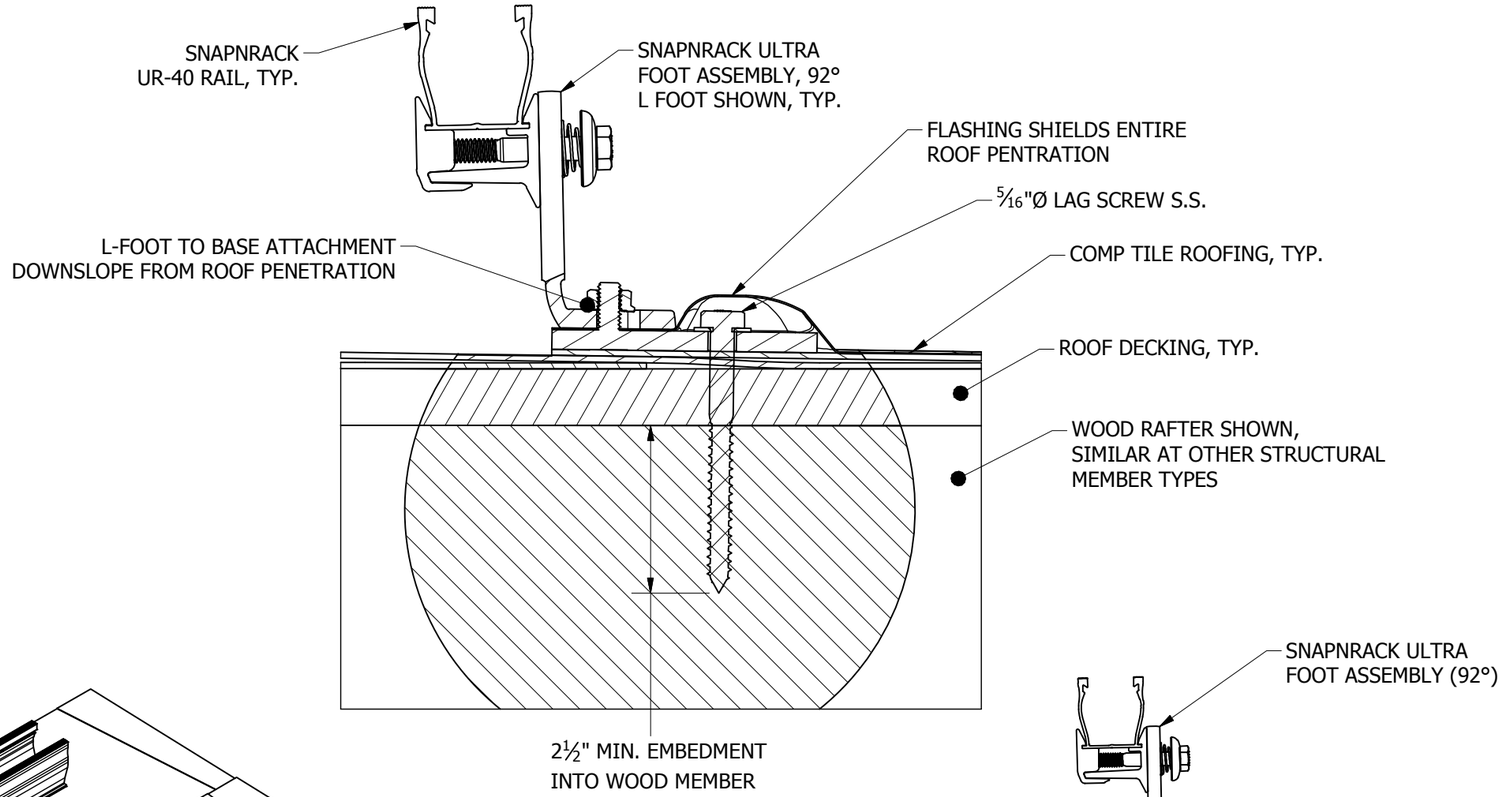
5/16"Ø LAG SCREW MUST EMBED A MINIMUM

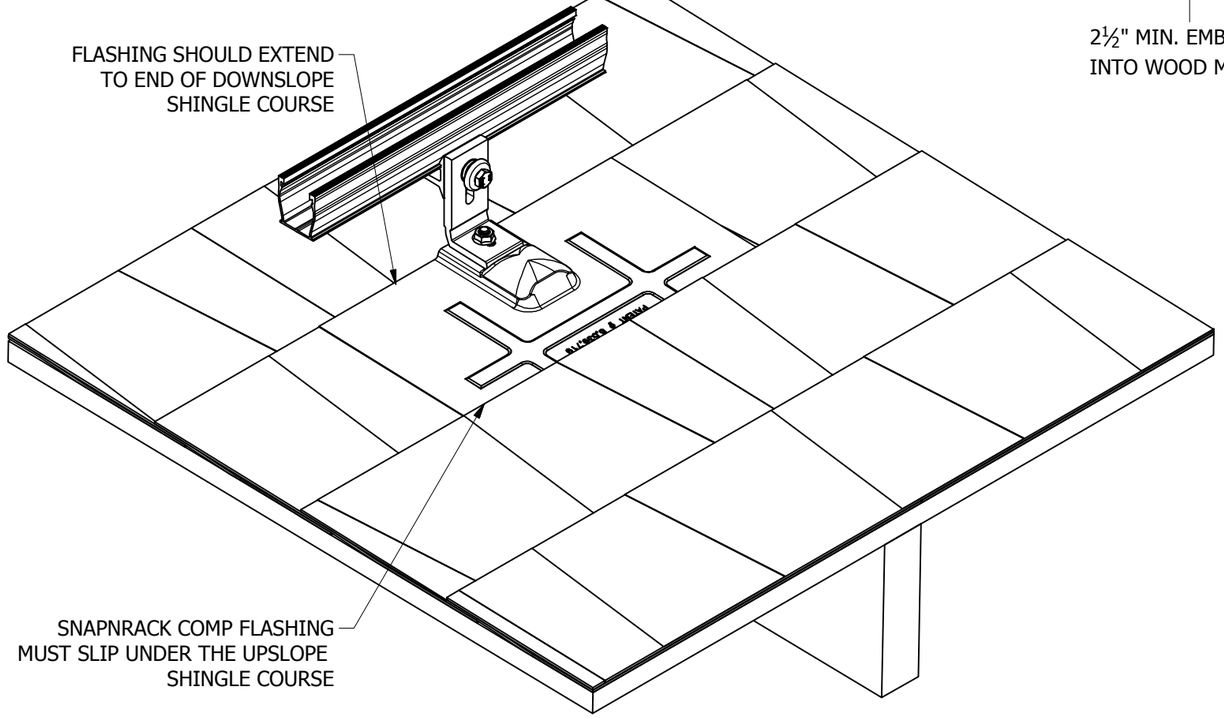
OF 2½" INTO THE ROOF STRUCTURAL MEMBER.

FOR LEVELING DETAILS, PLEASE SEE SNAPNRACK
DETAIL DRAWING "UR40-D01, L-FOOT LEVELING"

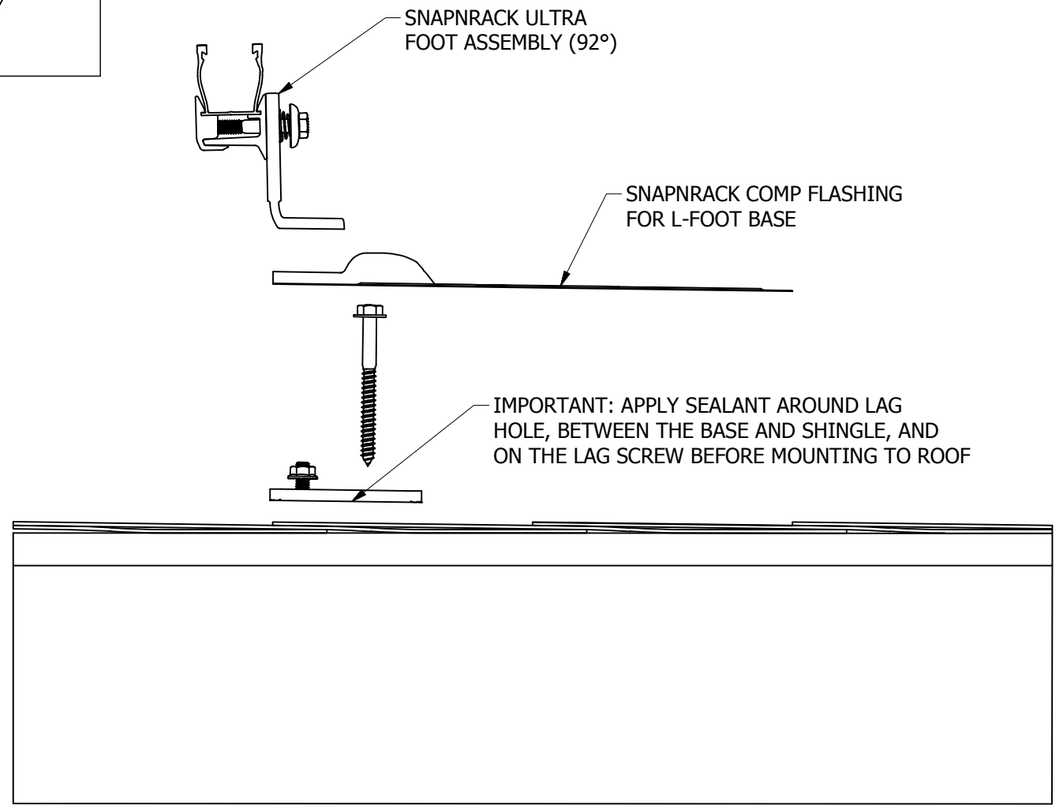
REVISION:

A	11/30/2017	NEW DETAIL	MA





INSTALLED VIEW



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PHONE (415) 580-6900 • FAX (415) 580-6902

DESIGNER: G.McPheeters	SCALE: DNS	PART NUMBER: UR40-PEN-D02	DESCRIPTION: UR-40 PENETRATION DETAIL, FLASHED L-FOOT	REV A	
DRAFTER: M.Affentranger					
APPROVED BY: G.McPheeters	DATE: 11/30/2017				19

City of Takoma Park

Housing and Community Development Department

Main Office 301-891-7119
Fax 301-270-4568
www.takomaparkmd.gov

7500 Maple Avenue
Takoma Park, MD 20912

MUNICIPALITY LETTER
October 22, 2019

To: Property Owner: **Daryl Braithwaite, darylb@takomaparkmd.gov**

To: Department of Permitting Services
255 Rockville Pike, 2nd Floor
Rockville, Maryland 20850-4166 Fax 240-777-6398; 240-777-6262; 240-777-6223

From: Planning and Development Services Division

THIS IS NOT A PERMIT – For Informational Purposes Only

VALID FOR ONE YEAR FROM DATE OF ISSUE

The property owner is responsible for obtaining all required permits from Montgomery County and the City of Takoma Park. If this property is in the **Takoma Park Historic District,** it is subject to Montgomery County Historic Preservation requirements.

Representative/email:	dchildress@solarenergyworld.com, Solar Energy World
Location of Project:	32 Hickory Avenue, Takoma Park MD 20912
Proposed Scope of Work:	Solar Panel Installation (41 Panels, 12.71 kW)

The purpose of this municipality letter is to inform you that the City of Takoma Park has regulations and city permit requirements that may apply to your project. This municipality letter serves as notification that, in addition to all Montgomery County requirements, you are required to comply with all City permitting requirements, including:

- Tree Impact Assessment/Tree Protection Plan
- Stormwater management
- City Right of Way

Failure to comply with these requirements could result in the issuance of a Stop Work Order and other administrative actions within the provisions of the law. Details of Takoma Park's permit requirements are attached on page 2.

The issuance of this letter does not indicate approval of the project nor does it authorize the property owner to proceed with the project. The City retains the right to review and comment on project plans during the Montgomery County review process.