Address:	7305 Takoma Avenue, Takoma Park	Meeting Date:	6/14/2023
Resource:	Contributing Resource Takoma Park Historic District	Report Date:	6/7/2023
	Takoma Fark Historic District	Public Notice:	5/31/2023
Applicant:	Richard Henrich	Tax Credit:	N/A
Review:	HAWP		
Permit Number	: 1033753	Staff:	John Liebertz
PROPOSAL:	Installation of solar panels		

MONTGOMERY COUNTY HISTORIC PRESERVATION COMMISSION STAFF REPORT

STAFF RECOMMENDATION

Staff recommends that the Historic Preservation Commission (HPC) **approve with (2) conditions** the HAWP application with final approval of all details delegated to staff:

- 1. The applicant shall submit justification for the exterior conduit (instead of an interior placement) and an elevation/annotated photograph that illustrates the location of the exterior conduit if required
- 2. The applicant shall submit specification sheets for all exterior inverters, combiners, etc. and an annotated photograph that illustrates their approximate location adjacent to the existing utility meters.

ARCHITECTURAL DESCRIPTION

SIGNIFICANCE:Contributing Resource within the Takoma Park Historic DistrictSTYLE:Craftsman-styled BungalowDATE:1923



Figure 1: The subject property at 7305 Takoma Avenue (noted with the yellow star).

The applicant proposes to install thirteen (13) roof-mounted solar panels in three arrays. Two of the arrays are located on the historic house. These arrays on the eastern and western roof slopes consist of six (6) and four (4) panels, respectively. A third array consisting of three (3) panels is located on the northern slope of the rear shed dormer on the non-historic addition.

APPLICABLE GUIDELINES

The Historic Preservation Office and Historic Preservation Commission (HPC) consult several documents when reviewing alterations and new construction within the Takoma Park Historic District. These documents include the historic preservation review guidelines in the approved and adopted amendment for the *Takoma Park Historic District (Guidelines), Montgomery County Code Chapter 24A (Chapter 24A)*, and *the Secretary of the Interior's Standards for Rehabilitation (Standards)*, and the HPC's *Policy No. 20-01 ADDRESSING EMERGENCY CLIMATE MOBILIZATION THROUGH THE INSTALLATION OF ROOF-MOUNTED SOLAR PANELS*. The pertinent information in these four documents is outlined below.

Takoma Park Historic District Guidelines

There are two broad planning and design concepts which apply to all categories. These are:

- The design review emphasis will be restricted to changes that are all visible from the public rightof-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 historic district.

A majority of the buildings in the Takoma Park Historic District have been assessed as being "Contributing Resources." While these buildings may not have the same level of architectural or historical significance as Outstanding Resources or may have lost some degree of integrity, collectively, they are the basic building blocks of the Takoma Park district. They are important to the overall character of the district and the streetscape due to their size, scale, and architectural qualities, rather than for their particular architectural features.

Contributing Resources should receive a more lenient level of design 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.

The following guidance which pertains to this project are as follows:

- 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.

- 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-8

The following guidance which pertains to this project are as follows:

- (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 ensure 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;

Secretary of the Interior's Standards for Rehabilitation

The Secretary of the Interior defines rehabilitation as "the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features, which convey its historical, cultural, or architectural values." The applicable *Standards* are as follows:

- 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.

Historic Preservation Commission Policy No. 20-01: Addressing Emergency Climate Mobilization Through The Installation of Roof-Mounted Solar Panels

Now, THEREFORE:

WHEREAS, Historic Area Work Permit decisions are guided by the criteria in Section 24A, The Secretary of the Interior's Standards for Rehabilitation, and pertinent guidance from applicable master plan amendments and/or site or district-specific studies;

WHEREAS, The Secretary of the Interior's Standards for Rehabilitation as interpreted by the National Park Service limit the placement of rooftop solar panels under Standards 2, 9, and 10 to less conspicuous locations;

WHEREAS, the County Council has established a Climate Emergency;

WHEREAS, the Historic Preservation is a body established by the County Executive and County Council;

WHEREAS, Section 24-8(b)(6) states, "In balancing the interest 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;"

WHEREAS, the widespread use of solar panels, both for hot water and for electricity production, will reduce greenhouse gases in the county, in accordance with the aims of the Emergency Climate Mobilization resolution (Resolution No.: 18-974), it shall be the policy of the Historic Preservation Commission that:

- 1. The preferred locations for solar panel installation(s) on a designated historic site or an historic resource located within an historic district is a) on the rear of the property, b) on non-historic building additions, c) on accessory structures, or d) in ground-mounted arrays;
- 2. If it is not feasible to install solar panels in one of the identified preferred locations due to resource orientation or other site limitations; and,
- 3. The roof is determined to be neither architecturally significant, nor a character-defining feature of the resource, nor is it a slate or tile roof, that unless it can be demonstrated that the solar array will be installed without damaging the historic character of the resource or historic fabric; then
- 4. The public welfare is better served by approving a Historic Area Work Permit for solar panels on all visible side or front roof slopes under Section 24A-8(b)(6).
- 5. A Historic Area Work Permit (HAWP) is required for all work referenced in this policy.

STAFF DISCUSSION

The subject property is a Contributing Resource to the Takoma Park Historic District and features a onestory, Craftsman-influenced house constructed in 1923. The house has undergone numerous alterations since its construction. In 2008, the current property owners started a rehabilitation and restoration of the house which had been significantly altered in the 1960s. The following year, the Historic Preservation Commission approved HAWP#37/3-09M that allowed for the construction of the rear two-story addition and resulted in the present-day building form.¹



Figure 2: View of the subject property at 7305 Takoma Avenue, 2008 and 2014. Source: Montgomery Planning and Microsoft Bing Maps.



Figure 3: Aerial view, 2022. The red arrow points to the locations of the three proposed arrays. Source: ConnectExplorer.

¹ For more information, <u>https://mcatlas.org/filetransfer/HistoricPreservation/Temp%20Files/I.G%20-%207305%20Takoma%20Avenue,%20Takoma%20Park.PDF.</u>

The applicant proposes to install thirteen (13) roof-mounted solar panels in three arrays. Two of the arrays are located on the historic house. These arrays on the eastern and western roof slopes consist of six (6) and four (4) panels, respectively. A third array consisting of three (3) panels is located on the northern slope of the rear shed dormer on the non-historic addition. The utility disconnect and AC combiner would be installed on the northwest corner of the building (towards to the front porch) at the location of the existing utility meter.

Staff finds that the proposed placement of the solar arrays meet the applicable guidelines and recommends approval. The HPC and staff utilize *Policy Guidance #20-01: Solar Technology (2021)* as the baseline for their review and to articulate their findings in the review of solar technology. The policy outlines the most to least preferred locations for solar arrays. The most preferred location for solar systems is a freestanding array in the rear yard, but this location is not feasible at the subject property due to the size of the lot and existing tree canopy. The second preferred location is a roof-mounted array on an accessory or non-historic building. There is no secondary resource on the property. The third preferred location is a roof-mounted array on a non-historic addition of the main house. The applicant proposed the smallest array—the three panel array—on the rear, non-historic addition. These panels would not be visible from the public rights-of-way and the array matches the slope of the roof. Therefore, staff recommends approval of these three (3) panels as they would not adversely affect the character of the historic house or streetscape and complies with *Policy Guidance #20-01: Solar Technology (2021)*.

The least preferred location for a roof-mounted solar array is on the historic house. The applicant proposes to install two arrays of six (6) and four (4) panels on the eastern and western slopes of the front gable roof, respectively. The roof is visible from Takoma Avenue, but neither the roof nor the asphalt shingle material are character defining features of the dwelling. Therefore, the HPC should approve solar arrays on this roof slope in accordance with the installation guidance described in *Policy Guidance #20-01: Solar Technology (2021)*.

Relevant guidance includes that traditional roof-mounted solar panels should: 1) have a low-profile and be mounted less than or equal to six inches above the surface of the roof (to the face of the panel); 2) be consistent with the existing slope of the supporting roof; 3) be setback from the edges and ridge of the roof; and 4) be arranged in an organized configuration and avoid disjointed or multi-roof solutions. The solar arrays—in particular the arrays visible on the original section of the house—have a low-profile, are consistent with the slope of the roof, and arranged in an organized configuration. The two arrays are setback 18-inches from the ridge of the gable roof. Therefore, the HPC should approve the proposal at it meets the general guidance described in *Policy Guidance #20-01: Solar Technology (2021)*.

Overall, staff finds that the panels will not adversely affect the character defining streetscape of the historic district and recommends approval. There are no Outstanding Resources with views of the subject property. In addition, the surrounding houses at 7303 Takoma Avenue (to the east), 7310 Piney Branch Road (to the northeast), and 7305 Baltimore Avenue (to the northwest) are non-contributing resources to the historic district. The property owner (current or future) could remove the proposed solar panels at a later date without impairing the integrity of the historic house or district.

Staff recommends approval for the placement of exterior conduit wire with a condition. *Policy Guidance* #20-01: Solar Technology (2021) states that all conduits for connections to electrical meters should be placed on the inside of the building or on a secondary elevation. The proposal includes conduit wire running along the ridge of the rear addition to the west elevation (Figure 4). This conduit should be placed within the building to the greatest extent possible or tucked under the overhanging eave on the west elevation to reduce visibility from the public rights-of-way. Staff requests the applicant submit justification for the exterior conduit and a drawing/annotated photograph that illustrates the location of the exterior conduit (if required).



Figure 4: Th proposed solar arrays and exterior conduit (red line) at 7305 Takoma Avenue. Source: Applicant.

Staff recommends approval for the placement of the all exterior disconnects and combiners for the solar array with a condition. While this equipment is placed within view of the public right-of-way on the west elevation (towards the front porch), it is adjacent to an existing utility meter and would not further diminish the integrity of the resource. The applicant should submit specification sheets for all exterior hardware and an annotated photograph that illustrates its approximate location on the elevation.

After full and fair consideration of the applicant's submission, staff finds the proposal, as modified by the condition, consistent with the Criteria for Issuance in Chapter 24A-8(b), (1), (2), and (d), having found the proposal is consistent with the *Secretary of the Interior's Standards for Rehabilitation #2, #9*, and *#10*, and *Takoma Park Historic District Guidelines*, and the HPC's Policy No. 20-01 as outlined above.

STAFF RECOMMENDATION

Staff recommends that the Commission <u>approve with two (2) conditions</u> the HAWP application with final approval delegated to staff:

- 1. The applicant shall submit justification for the exterior conduit (instead of an interior placement) and an elevation/annotated photograph that illustrates the location of the exterior conduit if required
- 2. The applicant shall submit specification sheets for all exterior inverters, combiners, etc. and an annotated photograph that illustrates their approximate location adjacent to the existing utility meters.

under the Criteria for Issuance in Chapter 24A-8(b), (1), (2), and (d), having found that the proposal, as modified by the condition, is consistent with the *Takoma Park Historic District Guidelines*, and therefore will not substantially alter the exterior features of the historic resource and is compatible in character with the district and the purposes of Chapter 24A;

and in conformance with HPC Policy No.20-01;

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 an electronic set 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 john.liebertz@montgomeryplanning.org to schedule a follow-up site visit.

	For Staff only: HAWP# 1028895
A DDL ICATIO	
APPLICATIO HISTORIC AREA W HISTORIC PRESERVATION 301.563.340	
APPLICANT:	
Name: <u>Richard Henrich</u>	E-mail: <u>rhenrich@erols.com</u>
Address: 7305 Takoma Avenue	City: <u>Takoma Park</u> Zip: <u>20912</u>
Daytime Phone: 2024410832	Tax Account No.: 01073568
AGENT/CONTACT (if applicable):	
Name: Fusion Solar Services/ Ola Carew	E-mail: <u>permits@fusionss.net</u>
Address: 3600 Commerice Drive Ste 601	City: <u>Halethorpe</u> Zip: 21227
Daytime Phone: <u>4434253023</u>	Contractor Registration No.: MHIC 30991
LOCATION OF BUILDING/PREMISE: MIHP # of Histori	c Property
Is the Property Located within an Historic District?	/es/District Name <u>Takoma Park</u> lo/Individual Site Name
Is there an Historic Preservation/Land Trust/Environme map of the easement, and documentation from the Easement	ental Easement on the Property? If YES, include a
Are other Planning and/or Hearing Examiner Approvals (Conditional Use, Variance, Record Plat, etc.?) If YES, in supplemental information.	
Building Number: Street:	
Town/City: Nearest Cros	s Street:
Lot: Block: Subdivision:	Parcel:
TYPE OF WORK PROPOSED: See the checklist on P for proposed work are submitted with this applica	tion. Incomplete Applications will not
be accepted for review. Check all that apply:	Shed/Garage/Accessory Structure
New Construction Deck/Porch Addition Fence	Tree removal/planting
Demolition Hardscape/Lands	
Grading/Excavation Roof	Other:
I hereby certify that I have the authority to make the fo	
and accurate and that the construction will comply with	· · · · · · · · · · · · · · · · · ·
agencies and hereby acknowledge and accept this to l	

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					
7305 Takoma Avenue Takoma Park MD 20912	3600 Commerce Drive Ste 601 Baltimore Md 21227					
Adjacent and confronting	Property Owners mailing addresses					
Jeff Luker 7307 Takoma Ave Takoma Park Md 20912	Remington Stone 1703 Takoma Ave Takoma Park Md 20912					
7301 Takoma Avenue, Takoma Park 20912						
7305 Takoma Avenue, Takoma Park 20912						
7310 Piney Branch Road, Takoma Park 20912						
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Description of Property: Please describe the building and surrounding environment. Include information on significant structures, landscape features, or other significant features of the property:

Home is in great shape and does require any additional work to allow solar panels installation.

Description of Work Proposed: Please give an overview of the work to be undertaken:

Install 13 Roof Mounted Solar Panels on both the front and rare portions of the roof.

Work Item 1:					
Description of Current Condition:	Proposed Work:				
Good Condition	Install 13 Roof Mounted Solar Panels on both the front and rare portions of the roof.				
Work Item 2:					
Description of Current Condition:	Proposed Work:				

Work Item 3:	
Description of Current Condition:	Proposed Work:

HISTORIC AREA WORK PERMIT CHECKLIST OF APPLICATION REQUIREMENTS

	Required Attachments						
Proposed Work	I. Written Description	2. Site Plan	3. Plans/ Elevations	4. Material Specifications	5. Photographs	6. Tree Survey	7. Property Owner Addresses
New Construction	*	*	*	*	*	*	*
Additions/ Alterations	*	*	*	*	*	*	*
Demolition	*	*	*		*		*
Deck/Porch	*	*	*	*	*	*	*
Fence/Wall	*	*	*	*	*	*	*
Driveway/ Parking Area	*	*		*	*	*	*
Grading/Exc avation/Land scaing	*	*		*	*	*	*
Tree Removal	*	*		*	*	*	*
Siding/ Roof Changes	*	*	*	*	*		*
Window/ Door Changes	*	*	*	*	*		*
Masonry Repair/ Repoint	*	*	*	*	*		*
Signs	*	*	*	*	*		*

	_	<u>SOLAR PV SYSTEM: 5.265 kW</u>			
		HENRICH RESIDENCE			
PROJECT INFORM	ATION	7305 TAKOMA AVENUE TAKOMA PARK MD			
OWNER: ADDRESS:	RICHARD HENRICH 7305 TAKOMA AVENUE TAKOMA PARK MD UNITED STATES 20912	UNITED STATES 20912			
AHJ:	MONTGOMERY COUNTY (MD)			FOR PERMITTING	
	2425 REEDIE DRIVE WHEATON-GLENMONT, MARYLAND 20902		(13) REC PURE 405W ALL	S THE INSTALLATION OF BLACK SOLAR MODULES.	
	RESIDENTIAL IBC 2018		PRE-ENGINEERED RA RACKED MODULES V	VILL BE RACKED USING A CKING SYSTEM. THE VILL BE ELECTRICALLY PHASE DC TO AC POWER	CH CH MD UNIT MD UNIT
ELECTRICAL CODE: ASCE VERSION:	NEC 2017 ASCE 7-16		INVERTERS, AND INTE	RULES ENFORCED BY THE	RICHARD HENRICH TAKOMA AVE NA PARK MD U
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WIND EXPOSURE:	В	" tent			CONTRACTOR INFO
	5.265 kW	s of the second s	2		CONTRACTOR INFO
	3.77 kW UNIRAC SM LIGHT RAIL	Brujos del Amor, Amarres de Amor.		OF PAGES	
MODULE: INVERTER:	(13) REC405AA (13) IQ8PLUS-72-2-US	Give Ba	indation 1		\sim
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		Upper Portal Park	S001 ASSEMBLY &		
	Fern Pl f	W Ether O Movement Laborato	E001 ELECTRICAL - E002 ELECTRICAL -	LINE DIAGRAM WIRE CALCS	3600 COMMERCE DF SUITE 601
		Q Q Ave		NDUIT LAYOUT GS & SIGNAGE	BALTIMORE, MD 2122
	BlaitRe	Forum For Youth Boathouse Ar			(443) 955-0779
DocuSigned by:	Re	GENERAL NOTES	Q me		LICENSE NUMBER
	DocuSigned by:	1) THIS PHOTOVOLTAIC (PV) SYSTEM SHALL COMPLY	3) PV SYSTEM CIRCUITS INSTALLED O		MHIC-30991
UNITE OF MARY	SCOTT KI RBY CAD180010D814CD	WITH THE NATIONAL ELECTRIC CODE (NEC) ARTICLE 690, ALL MANUFACTURERS'S LISTING AND	BUILDINGS SHALL INCLUDE A RAPID S FUNCTION TO REDUCE SHOCK HAZAF		REV DATE
S L	4/22/2023	INSTALLATION INSTRUCTIONS, AND THE RELEVANT	EMERGENCY RESPONDERS		IFC 4/18/202
DOSS A 1308	Professional Certification: I hereby certify that these documents were prepared or	CODES AS SPECIFIED BY THE AUTHORITY HAVING JURISDICTION (AHJ).	4) THIS SYSTEM IS A UTILITY INTERAC AND THE PV MODULES ARE CONSIDE COMBUSTIBLE.		COVER
SIONAL ENGINE	approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland. License No: 41308 Exp. Date: 01-06-24	2) ALL SIGNAGE TO BE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE AND AS REQUIRED BY THE NEC AND AHJ.			Z001
FOR ENG	NEERING USE ONLY				·







	ROOF LABEL:	Α	В	С
ES	MATERIAL:	Architectural Comp Shingle	Architectural Comp Shingle	Architectural Comp Shingle
ST	PITCH:	16°	33°	33°
μ	AZIMUTH:	31°	301°	121º
PROPERTIES	PRIMARY SUPPORT:	2x10 RAFTERS	2x6 RAFTERS	2x6 RAFTERS
	PRIMARY SUPPORT SPACING:	16"	24"	24"
ROOF	SPAN (EAVE TO RIDGE):	7'	12'	12'
Ŏ	MEAN HEIGHT:	25'	25'	25'
L L L	RACKING:	UNIRAC SM LIGHT RAIL	UNIRAC SM LIGHT RAIL	UNIRAC SM LIGHT RAIL
	STANDOFF:	QUICKBOLT	QUICKBOLT	QUICKBOLT
	NUMBER OF MODULES:	3	4	6
٩ ٩	MODULE WEIGHT (LBS):	135.00	180.00	270.00
S S	M.L.E. WEIGHT (LBS):	7.14	9.52	14.28
트은	RACKING WEIGHT (LBS):	29.04	38.72	58.08
	STANDOFF WEIGHT (LBS):	4.50	6.00	9.00
A IJ	ARRAY WEIGHT (LBS):	175.68	234.24	351.36
AD & POINT LO	ARRAY AREA (SQ.FT.):	59.75	79.67	119.50
DEAD CAI	DISTRIBUTED LOAD (PSF):	2.94	2.94	2.94
	APPROX. NUMBER OF STANDOFFS:	8	10	15
	POINT LOAD (LBS/STANDOFF): DocuSigned by:	21.96	23.42	23.42
	- Docusigned by:			



DocuSigned by: SCOTT KIRBY -CAD180010D814CD...

4/22/2023

FOR ENGINEERING USE ONLY

Professional Certification: 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: 41308 Exp. Date: 01-06-24

INSTALLATION NOTES

 ALL RACKING SHALL BE INSTALLED PER MANUFACTURER SPECIFICATIONS
 M.L.E.'S = MODULE LEVEL ELECTRONICS (IE, POWER OPTIMIZERS, MICRO-INVERTERS, CABLES, ETC)

3) USE 5/16" X 4"HEX HEAD STAINLESS STEEL LAG SCREWS

MOUNTING SYSTEM PR			
RACKING	UNIRAC		
STANDOFF	QUICI		
MAX. RAIL SPAN (IN)			
MIN. FASTENER DEPTH (IN)			
MAX. RAIL CANTILEVER (IN)			
MAX. ARRAY HEIGHT (IN)			



DocuSign Envelope ID: 9FF99792-7C86-431D-BE62-F8B5EA174FD6

CONDU	CONDUCTOR AND CONDUIT SCHEDULE					EQUIPMENT SCHEDULE				
TAG	WIRE SIZE	GROUND SIZE		DESCRIPTION		CONDUIT TYPE	LENGTH	TAG	EQUIPMENT DETAILS	MOUNTING LOCATION
SEU	#4/0 AL	N/A	SEU	(2) PHASE CONDUCTORS & (1) NEUTAL	N/A	N/A	5'	ТАР	200 AMP EATON CH MAIN SERVICE PANEL WITH 200 AMP	
A	#12 AWG	#6 AWG	Q-CABLE	(2) PHASE CONDUCTORS & (1) BARE COPPER IN FREE AIR	N/A	N/A	77' (MAX)		MAIN BREAKER (200 AMP SERVICE)	OPPOSITE UTILITY METER
В	#10 AWG	#8 AWG	THWN-2	(2) PHASE CONDUCTORS & (1) GROUND	0 <u>.</u> 75"	EMT	35'	1	ENPHASE COMBINER (MODEL #X-IQ-AM1-240-4)	MOUNTED ADJACENT TO UTILITY
С	#10 AWG	#8 AWG	THWN-2	(2) PHASE CONDUCTORS & (1) NEUTRAL & (1) GROUND	1"	EMT	5'	1	WITH CIRCUITS AS LISTED IN TABLE	METER
D	#10 AWG	#8 AWG	THWN-2	(2) PHASE CONDUCTORS & (1) NEUTRAL & (1) GROUND	1"	EMT	5'	2	30 AMP NEMA3R NON-FUSED DISCO (MODEL	MOUNTED ADJACENT TO UTILITY
								2	#DU221RB)	METER
								3	,	BREAKER TAP IN MAIN SERVICE PANEL



E			
		PROJECT	ADDRESS:
			JE TED
			/ENL UNI
		ARI RICI	IA A\ < MD 209
		RICHARD HENRICH	5 TAKOMA AVEN MA PARK MD UI STATES 20912
			5 TA MA F STA
			7305 TAKOMA AVENUE TAKOMA PARK MD UNITED STATES 20912
		CONTRAC	
		X	X
		FUS Solar Se	
		3600 COMI SUIT	MERCE DR
		BALTIMORE	
		(443) 95	55-0779
GE CALCULATION 1 x 125% = 19.66 A	BREAKER SIZE20 AMP (CB1)	LICENSE	NUMBER:
		мніс-	30991
		REV	DATE
		IFC	4/18/2023
ENVOY BREAKER	15 AMP (EB1)	ELECTI LINE DI	RICAL - Agram
MC MAY BE USED F EMT CONDUIT		E0	01

ARRAY TO COMBINER WIRE LENGTH

35 FT

CALCULATION FOR PV BREAKER								
SYSTEM CURRENT	1.21	х	13	=	15.73 A			
DESIGN AMPERAGE (FLA)	15.73 x 125% = 19.6625 A							
MAIN BUSS RATING	200 x 120% = 240 A							
EXISTING MAIN BREAKER	200 A							
MAX SOLAR BREAKER	AX SOLAR BREAKER 240 - 200 = 40 A							

		3311	WIRE LENGTH		
		#10 AWG	WIRE SIZE		
		S	SYSTEM PROPERTIES		
		15.73	FULL LOAD AMPERAGE		
N	INTERCONNECTION	240	SOURCE VOLTAGE		
BREAKER TAP	METHOD	35	LENGTH OF RUN (FT)		
#10 AWG	WIRE SIZE	CONTINUOUS	LOAD DUTY		
ËS	SYSTEM PROPERTIE	THWN-2	CONDUCTOR TYPE		
15.73	FULL LOAD AMPERAGE	COPPER	CONDUCTOR MATERIAL		
240	SOURCE VOLTAGE	DRY OR WET	CONDUCTOR LOCATION		
) 15	LENGTH OF RUN (FT)	75°C	CONDUCTOR INSULATION TEMP		
CONTINUOUS	LOAD DUTY	1/2 to 3-1/2in.	DISTANCE ABOVE ROOF		
THWN-2	CONDUCTOR TYPE	94	AVERAGE OUTSIDE TEMP (°F)		
COPPER	CONDUCTOR MATERIAL	40	TEMP ADDER (°F)		
DRY OR WET	CONDUCTOR LOCATION	134	ADJUSTED AMBIENT TEMP (°F)		
2 75°C	CONDUCTOR INSULATION TEMP	75°C	TERMINAL TEMP RATING		
26-30°C	AMBIENT TEMP	SINGLE PHASE 2-WIRE	CIRCUIT TYPE		
6 75°C	TERMINAL TEMP RATING	2	QTY. OF CURRENT-CARRYING CONDUCTORS		
SINGLE PHASE 3-WIRE	CIRCUIT TYPE		ADDITIONAL CURRENT-CARRYING CONDUCTORS		
6 2	QTY. OF CURRENT-CARRYING CONDUCTORS	2	TOTAL # OF CURRENT-CARRYING CONDUCTORS		
S OF USE	CONDUCTOR CONDITIONS	CONDUCTOR CONDITIONS OF USE			
5 15.73	FULL LOAD AMPS	15.73	LARGEST CIRCUIT FULL LOAD AMPS		
1.25	LOAD DUTY MULTIPLIER	1.25	LOAD DUTY MULTIPLIER		
۲ 1.00	AMBIENT TEMP FACTOR	0.58	AMBIENT TEMP FACTOR		
٦.00	QTY. CONDUCTORS IN CONDUIT FACTOR	1.00	QTY. CONDUCTORS IN CONDUIT FACTOR		
TION	CONDUCTOR SELECTION		CONDUCTOR SELECTION		
19.66	MINIMUM REQUIRED CONDUCTOR AMPACITY	33.90	MINIMUM REQUIRED CONDUCTOR AMPACITY		
35.00	SELECTED CONDUCTOR AMPACITY	35.00	SELECTED CONDUCTOR AMPACITY		
) 10	SELECTED CONDUCTOR SIZE (AWG)	10	SELECTED CONDUCTOR SIZE (AWG)		
NENT	TERMINAL REQUIREME	INT	TERMINAL REQUIREME		
5 15.73	FULL LOAD AMPS	15.73	LARGEST CIRCUIT FULL LOAD AMPS		
1.25	LOAD DUTY MULTIPLIER	1.25	LOAD DUTY MULTIPLIER		
19.66	REQUIRED TERMINAL AMPACITY	19.66	REQUIRED TERMINAL AMPACITY		
•	VOLTAGE DROP		VOLTAGE DROP		
Г 1.240	OHMS/MILFT	1.240	OHMS/MILFT		
) 15	LENGTH OF RUN (FT)	35	LENGTH OF RUN (FT)		
Г 15.73	LOAD CURRENT	15.73	LOAD CURRENT		
0.59	VOLTAGE DROP	1.37	VOLTAGE DROP		
- 239.41	VOLTS AT LOAD TERMINAL	238.63	VOLTS AT LOAD TERMINAL		
0.24%	PERCENT VOLTAGE DROP	0.57%	PERCENT VOLTAGE DROP		

ELECTRICAL NOTES

1) ALL CONDUCTORS SHALL BE COPPER, RATED FOR 75°C AND WET ENVIRONMENT, UNLESS OTHERWISE NOTED.

2) ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.

3) MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER MANUFACTURER'S INSTRUCTION.



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LEGE	ND	-			
	JUNCTION BOX		COLOR	CIRCUIT	MODULE COUNT
				#1	13
	SOLADECK				
	END CAP				
-					
	EXTERIOR CONDUIT				
	INTERIOR CONDUIT				
	BASEMENT CONDUIT				
	TRUNK CABLE				





DocuSign Envelope ID: 9FF99792-7C86-431D-BE62-F8B5EA174FD6

SOLAR MODULE RATINGS	1	
REC Pure 405w All Bl	ack Specifi	<u>cations</u>
Length:	71.7	in
Width:	40	in
Thickness:	1.2	in
Weight:	45.00	lbs
Imp:	9.56	А
Vmp:	42.4	V
Voc:	48.9	V
lsc:	10.14	А
OCPD:	25	А
Pmax:	405	W
Vmax:	1000	V
Temp. Coefficient:	-0.24	%Voc/ºC

INVERTER 1 RATINGS		
Enphase IQ8+ Specifi		
Max # Per String:	13	
lmax (ac):	1.21	А
Vmax (dc):	60	V
Pmax:	290	W
Nom. AC Voltage:	240	V
OCPD:	20	А
Weight (Optimizer):	2.38	lbs
Imax (Input):	15	А
Pmax (dc) Input:	440	V

WARNING: PHOTOVOLTAIC POWER SOURCE

LABEL TO BE INSTALLED AT EXPOSED RACEWAYS, CABLE TRAYS, AND OTHER WIRING METHODS; SPACED AT MAXIMUM 10FT SECTION OR WHERE SEPARATED BY ENCLOSURES, WALLS, PARTITIONS, CEILINGS, OR FLOORS.

LETTERS AT LEAST 3/8 INCH; WHITE ON RED BACKGROUND; REFLECTIVE

PHOTOVOLTAIC DC DISCONNECT

LABEL TO BE INSTALLED AT EACH DC DISCONNECTING MEANS

PHOTOVOLTAIC AC DISCONNECT

LABEL TO BE INSTALLED AT EACH AC DISCONNECTING MEANS

PHOTOVOLTAIC SYSTEM EQUIPPED WITH RAPID SHUTDOWN

LABEL TO BE INSTALLED AT RAPID SHUTDOWN SWITCH

LETTERS AT LEAST 3/8 INCH; WHITE ON RED BACKGROUND; REFLECTIVE

SOLAR PV SYSTEM DISCONNECT RATED AC OUTPUT CURRENT: 15.73 A NOMINAL OPERATING AC VOLTAGE: 240 V

LABEL TO BE INSTALLED AT AN ACCESSIBLE LOCATION AT THE DISCONNECTING MEANS AS A POWER SOURCE



LABEL TO BE INSTALLED ON NO MORE THAN 3FT FROM THE SERVICE DISCONNECTING MEANS

WARNING

ELECTRICAL SHOCK HAZARD

DO NOT TOUCH TERMINALS! TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

LABEL TO BE INSTALLED AT EACH DISCONNECTING MEANS FOR PHOTOVOLTAIC EQUIPMENT

WARNING

ELECTRICAL SHOCK HAZARD

IF GROUND FAULT IS INDICATED NORMALLY GROUNDED CONDUCTORS MAY BE UNGROUNDED AND ENERGIZED

LABEL TO BE INSTALLED AT EACH DISCONNECTING MEANS FOR PHOTOVOLTAIC EQUIPMENT

RAPID SHUTDOWN SWITCH FOR

SOLAR PV SYSTEM

LABEL TO BE INSTALLED ON OR NO MORE THAN 3FT FROM THE RAPID SHUTDOWN

SWITCH

WARNING

DUAL POWER SOURCE SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

LABEL TO BE INSTALLED ON EXTERIOR OF MAIN ELECTRICAL PANEL

WARNING

INVERTER OUTPUT CONNECTION, DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL TO BE APPLIED TO THE DISTRIBUTION EQUIPMENT

INTERACTIVE PHOTOVOLTAIC SYSTEM CONNECTED

LABEL TO BE INSTALLED AT UTILITY METER

SOLAR PV LOAD

240 VOLT AC S

INSTALLED COMP (13) REC Pure 405w All Bl

(13) Enphase I

CIRCUIT CALCULA

13

SYSTEM CURRENT:1.21DESIGN AMPERAGE:15.73

CIRCUIT #1 =

SIGNAGE NOTES

1) ALL PLAQUES AND LABELS SHAL SHOWN HERE)

2) ALL LETTERING SHALL BE WHITE (OR AS SHOWN HERE)

3) FONT SHALL BE ARIAL (OR SIMI CAPITALIZED

4) ALL PLAQUES AND LABELS SHALL ENVIRONMENT INSTALLED

FOR PERMITTI		
	PROJECT ADDRES	
DCENTER AR ARRAY SYSTEM ONENTS lackW Modules Q8+ TIONS 13 = 15.73 A 125% = 19.6625 A 15.73 19.66	CONTRACTOR INF UNITE OU SOLAR SERVICES 3600 COMMERCE I SUITE 601 BALTIMORE, MD 212 (443) 955-0779	<u>0:</u> DR 227
	MHIC-30991	
	REV DATE	Ξ
LL HAVE A RED BACKGROUND (OR	R AS IFC 4/18/20	23
E AND HAVE A MINIMUM HEIGHT OF 11LAR) AND ALL LETTERING SHALL	EQUIP. RATING	S







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

To: Richard Henrich 7305 Takoma Ave rhenrich@erols.com

202-441-0832

ocarew@luminasolar.com

4434253023

To: Department of Permitting Services 2425 Reedie Drive, 7th floor Wheaton, Maryland 20902

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 Name: Ola CarewLocation of Project:7305 Takoma AvenueProposed Scope of Work: Install 13 Roof Mounted Solar Panels

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.

City Of Takoma Park

The City of Takoma Park permits for the following issues:

Tree Impact Assessment/Tree Protection Plan/Tree Removal Application:

Construction activities that occur within 50 feet of any urban forest tree (7 and 5/8" in trunk diameter or greater), located on the project property or on an adjacent property, may require a Tree Impact Assessment and possibly a Tree Protection Plan Permit. Make sure to submit a request for a Tree Impact Assessment and schedule a site visit with the City's Urban Forest Manager if any urban forest tree is in the vicinity of proposed construction activities. See the Tree Permits section of the City website for the specific conditions in which a Tree Impact Assessment is required. Depending on the Urban Forest Manager's conclusion following the Tree Impact Assessment, you may need to prepare a full Tree Protection Plan and apply for a Tree Protection Plan Permit as well. Separately, the removal of any urban forest tree will require a Tree Removal Permit application. The tree ordinance is detailed in the City Code, section 12.12. For permit information check: https://takomaparkmd.gov/services/permits/tree-The Urban Forest Manager be reached at 301-891-7612 permits. City's can or urbanforestmanager@takomaparkmd.gov.

Stormwater Management:

If you plan to develop or redevelop property, you may be required to provide appropriate stormwater management measures to control or manage runoff, as detailed in City Code section 16.04. All commercial or institutional development in the city must apply for a Stormwater Management Permit regardless of the size of the land disturbance. Additions or modifications to existing detached single-family residential properties do not require a Stormwater Management permit if the project does not disturb more than 5,000 square feet of land area. For more information visit: <u>https://takomaparkmd.gov/government/public-works/stormwater-management-program/</u>. The City Engineer should be contacted to determine if a City permit is required. The City Engineer can be reached at 301-891-7620.

City Right of Way:

- To place a **construction dumpster or storage container** temporarily on a City right of way (usually an adjacent road), you will need to obtain a permit. A permit is not required if the dumpster is placed in a privately-owned driveway or parking lot.
- If you plan to install a new **driveway apron**, or enlarge or replace an existing driveway apron, you need a Driveway Apron Permit.
- If you plan to construct a **fence** in the City right of way, you need to request a Fence Agreement. If approved, the Agreement will be recorded in the Land Records of Montgomery County.

For more information and applications for City permits, see: <u>https://takomaparkmd.gov/services/permits/</u> or contact the Department of Public Works at 301-891-7633.

Failure to comply with the City's permitting requirements could result in the issuance of a Stop Work Order and other administrative actions within the provisions of the law.

Ola Carew Key: 38bf2056622713c0bf979ea7ee94776a

Ola Carew

04-25-2023



Fwd: Solar Panels - Historical Area Work Permit

6 messages

Steven Coffman <scoffman@luminasolar.com> To: Olajumoke Carew <ocarew@luminasolar.com> Mon, May 8, 2023 at 6:33 PM

------ Forwarded message ------From: Jeffrey Luker <jeffrey.luker@quinnevans.com> Date: Mon, May 8, 2023, 9:26 AM Subject: RE: Solar Panels - Historical Area Work Permit To: scoffman@luminasolar.com <scoffman@luminasolar.com> Cc: Remington Stone <remstone@yahoo.com>, Richard Henrich <rhenrich@erols.com>

Hi Steve,

We are Richard Henrich's immediate neighbor and located at 7307 Takoma Ave, Takoma Park Maryland. We are aware of the proposed solar panel installation, and we have no objection to the project.

We look forward to seeing the project proceed and would like to talk about similar work at our house.

Sincerely,

Jeffrey Luker, AIA, LEED AP

202 591 2509 direct

Principal

From: Richard Henrich <rhenrich@erols.com> Sent: Monday, May 8, 2023 8:58 AM To: Jeffrey Luker <jeffrey.luker@quinnevans.com>; 'Remington Stone' <remstone@yahoo.com> Cc: scoffman@luminasolar.com Subject: Solar Panels - Historical Area Work Permit

Hi Jeff, Hi Remington!

You can see from the email below from Lumina Solar that we are seeking an Historical Area Work Permit for the solar panel installation on my house. I will be very grateful if you can email a reply to Steve Coffman (below) indicating you are aware of the project and you have no objection.

Please let me know if you would like more info – I now have detailed plans and specs for the panel installation.

Steve also reminded me that Lumina is offering a \$1,500 bonus to anyone who makes a referral that ultimately leads to a new installation for Lumina – I gather this is true even if you do not retain Lumina for an installation yourself. What a deal!

All the best,

--Richard

202-441-0832

To: Richard Henrich <<u>rhenrich@erols.com</u>> Subject: Historical Area Work Permit

Hello Mr. Henrich,

Hope all is well with you! Good news,

We are ready to move forward with the Historic Area Work Permit. We do need to get approval from 2 of your neighbors to proceed. You can forward this email letting each know that you are planning to have solar panels installed. All they have to do is reply saying they do not object. Please include me in the reply or forward the email back to me.

Let me know if you have any questions. I will reach out to you by phone as well.

Best regards,



Steve Coffman

Solar Consultant

301.509.4376 luminasolar.com

3600 Commerce Dr., Ste 601 Baltimore, MD 21227

Leave us a Review!

Google - Lumina Solar

SolarReviews - Lumina Solar

Facebook - Lumina Solar

Energysage - Lumina Solar

Home Advisor - Lumina Solar

2 attachments



Steven Coffman <scoffman@luminasolar.com> To: Olajumoke Carew <ocarew@luminasolar.com>

------ Forwarded message ------From: **Remington Stone** <remstone@yahoo.com> Date: Mon, May 8, 2023, 9:04 AM Subject: Re: Solar Panels - Historical Area Work Permit To: Luker, Jeff <jluker@quinnevans.com>, Richard Henrich <rhenrich@erols.com> Cc: scoffman@luminasolar.com <scoffman@luminasolar.com>

Hello Richard and Steve-

We are aware of the project and fully supportive, no objections here!

[Quoted text hidden]

Mon, May 8, 2023 at 6:33 PM

To: Steven Coffman <scoffman@luminasolar.com>

Thanks Steven, can you please send me the neighbors addresses. I will submit once I have that information.

Ola

[Quoted text hidden]

Steven Coffman <scoffman@luminasolar.com> To: Olajumoke Carew <ocarew@luminasolar.com>

7307 Takoma Ave, Takoma Park Maryland for Mr. Luker 7303 for Stone



Steve Coffman

Solar Consultant 301.509.4376 luminasolar.com

3600 Commerce Dr., Ste 601 Baltimore, MD 21227

Leave us a Review!

Google - Lumina Solar SolarReviews - Lumina Solar Facebook - Lumina Solar Energysage - Lumina Solar Home Advisor - Lumina Solar

[Quoted text hidden]

Olajumoke Carew <ocarew@luminasolar.com> To: Steven Coffman <scoffman@luminasolar.com>

Thank you! [Quoted text hidden]

Steven Coffman <scoffman@luminasolar.com> To: Olajumoke Carew <ocarew@luminasolar.com>

Welcome! [Quoted text hidden]

Wed, May 10, 2023 at 9:20 AM

Wed, May 10, 2023 at 9:22 AM

Tue, May 9, 2023 at 8:52 AM