

HISTORIC AND DESIGN REVIEW COMMISSION

August 03, 2016

Agenda Item No: 21

HDRC CASE NO: 2016-220
ADDRESS: 201 DELAWARE
LEGAL DESCRIPTION: NCB 3004 BLK 2 LOT 1
ZONING: R6 H
CITY COUNCIL DIST.: 1
DISTRICT: Lavaca Historic District
APPLICANT: Gustavo Mendoza/Smartworld Energy Inc
OWNER: Michael and Ariana Duffy
TYPE OF WORK: Installation of solar panels
REQUEST:

The applicant is requesting a Certificate of Appropriateness for approval to install 20 solar panels on the west and east slopes of the hipped roof.

APPLICABLE CITATIONS:

Historic Design Guidelines, Chapter 3, Guidelines for Additions

6. Designing for Energy Efficiency

C. SOLAR COLLECTORS

- i. Location*—Locate solar collectors on side or rear roof pitch of the primary historic structure to the maximum extent feasible to minimize visibility from the public right-of-way while maximizing solar access. Alternatively, locate solar collectors on a garage or outbuilding or consider a ground-mount system where solar access to the primary structure is limited.
- ii. Mounting (sloped roof surfaces)*—Mount solar collectors flush with the surface of a sloped roof. Select collectors that are similar in color to the roof surface to reduce visibility.
- iii. Mounting (flat roof surfaces)*—Mount solar collectors flush with the surface of a flat roof to the maximum extent feasible. Where solar access limitations preclude a flush mount, locate panels towards the rear of the roof where visibility from the public right-of-way will be minimized.

FINDINGS:

- a. The Lavaca Historic District was designated June 10th, 2004.
- b. The applicant submitted a request for solar panels at 201 Delaware, heard by the HDRC on April 20, 2016. The commission denied the request for 20 solar panels to be installed on the slope facing Staffel Street and four to be installed on the pitch facing the interior of the lot.
- c. The applicant submitted a request for solar panels at 201 Delaware, heard by the HDRC on June 15, 2016. The commission denied the request for 11 panels on the interior slope and 13 panels on the slope facing Staffel Street.
- d. The applicant is proposing to install 20 total solar panels on the standing seam metal roof of the primary structure. 11 panels will be installed on the slope facing the interior of the lot and 9 panels will be installed on the slope facing Staffel Street. According to the Guidelines for Additions 6.C., installations should be in locations that minimize visibility from the public right-of-way.
- e. Staff visited the site on July 22, 2016, and found that house is on a corner lot interior to the historic district and that the panels will be highly visible from the public right-of-way on the front and side. Staff also found that since the panels are mounted on a hipped roof, the solar panels are more visible than they might be on a different roof form. This is not consistent with the Guidelines.
- f. The current request has seven less panels facing the street than the first request, and four less panels than the second request. While the current proposal is more consistent with the Guidelines, the Guidelines are clear that panels should not negatively impact the right-of- way.
- g. The applicant is proposing to mount the panels flush with the pitched roof. This is consistent with Guidelines for

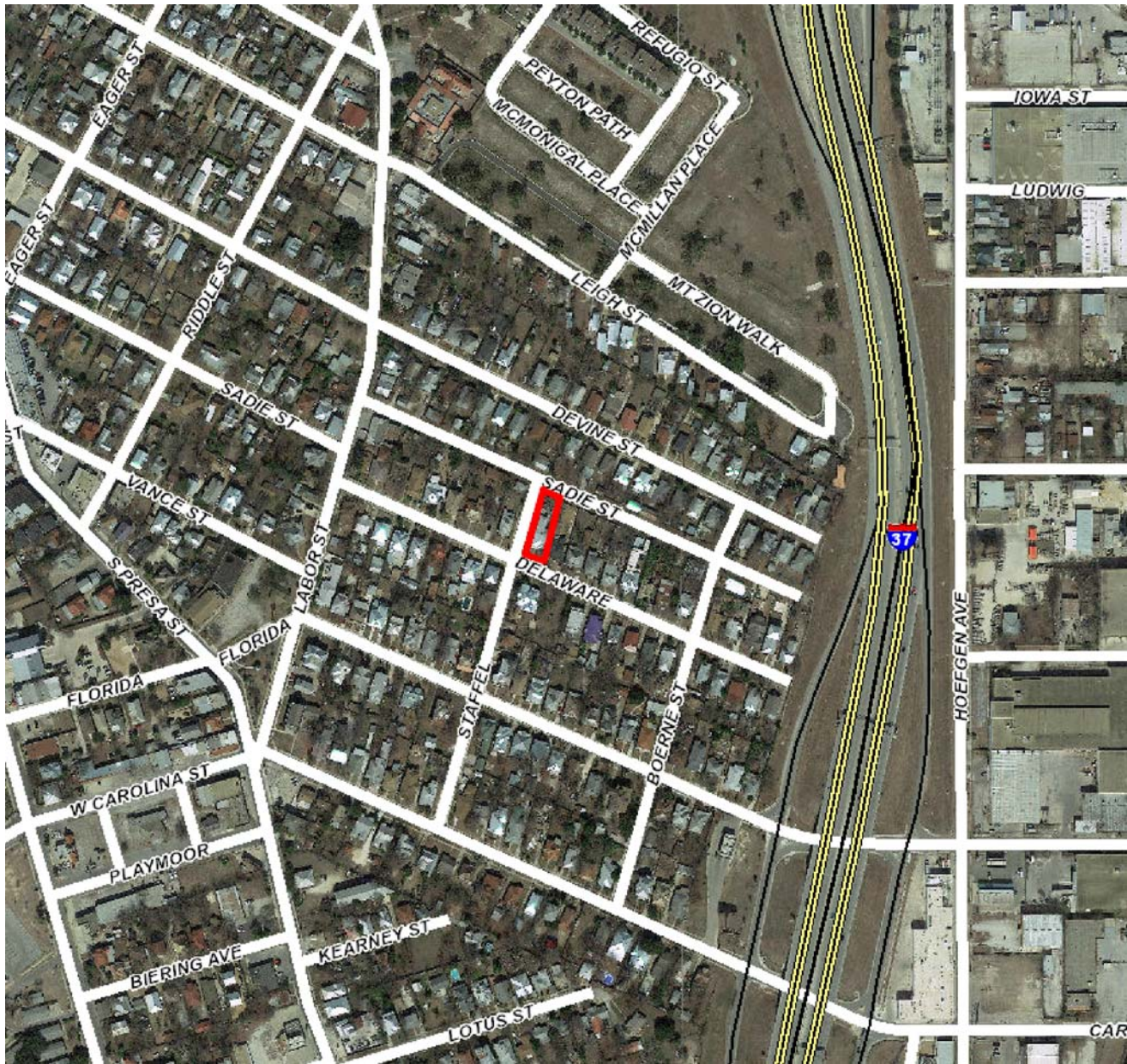
Additions 6.C.ii, which states solar collectors should be flush with the roof surface.

RECOMMENDATION:

Staff recommends denial based on findings a through f.

CASE MANAGER:

Lauren Sage



Flex Viewer

Powered by ArcGIS Server

Printed: Apr 13, 2016

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KEEP OFF GRASS
TRAFFIC & NO LOADING
UNLOADING & SERVICE
OUTSIDE OF LOT

NO LOADING UNLOADING
TRAFFIC & SERVICE
OUTSIDE OF LOT

NO LOADING UNLOADING
TRAFFIC & SERVICE
OUTSIDE OF LOT

NO LOADING UNLOADING
TRAFFIC & SERVICE
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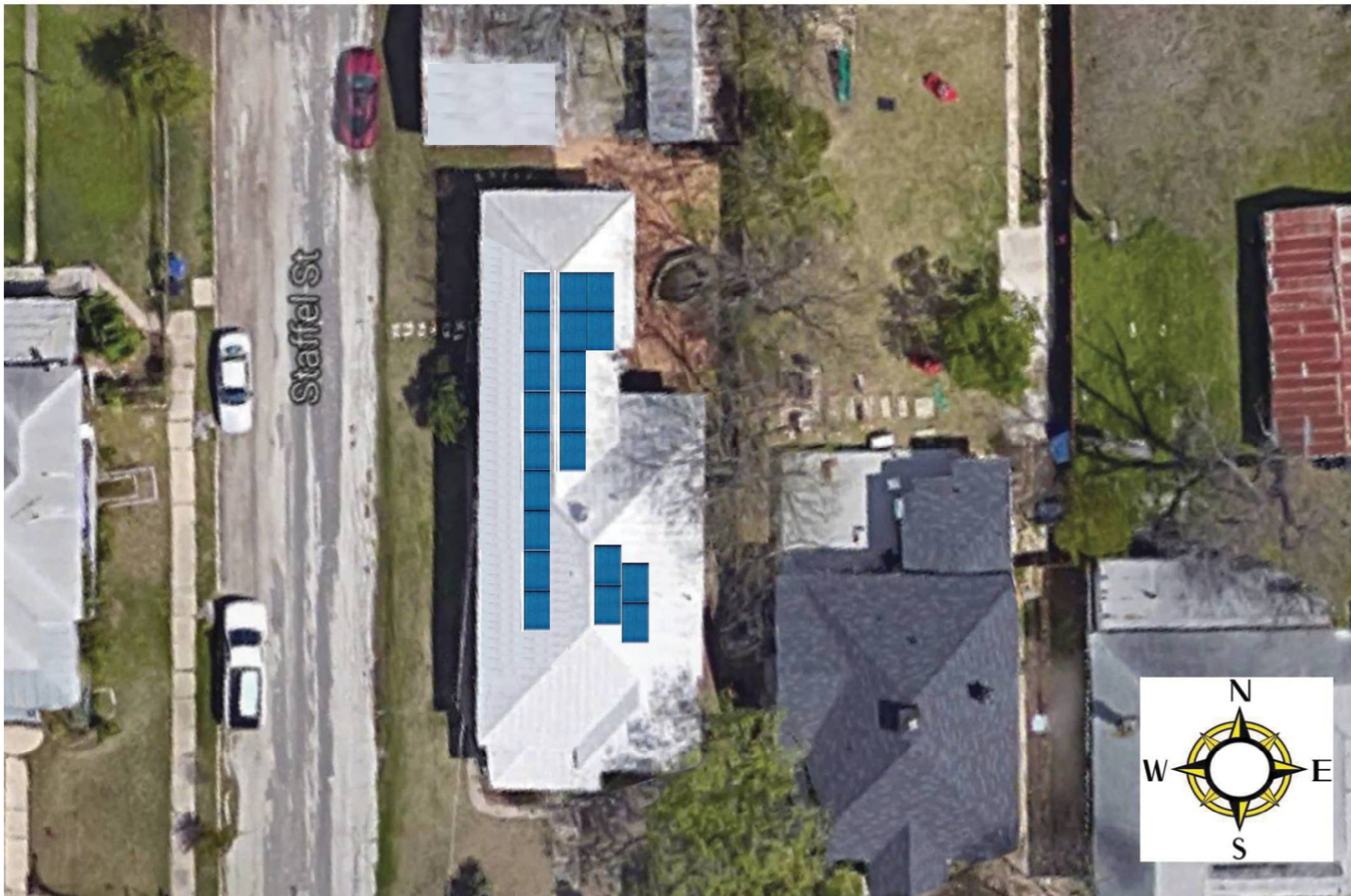
DELAWARE
100 200





**5.6 KW
20 Modules of 280W
Solar PV System**

**Michael and Ariana Duffey
201 Delaware St
San Antonio TX 78210**



**Michael Duffey
201 Delaware St
San Antonio TX 78210**

Solar PV Installation

Location of Solar PV Array.



**Michael Duffey
201 Delaware St
San Antonio TX 78210**

Solar PV Installation

**Elevations view
Modules are not visible.**



From SE of house



From Front of House



From rear of House

REC TWINPEAK BLK SERIES

PREMIUM SOLAR PANELS WITH SUPERIOR PERFORMANCE

REC TwinPeak BLK Series solar panels feature an innovative design with high panel efficiency and power output, enabling customers to get the most out of the space used for the installation.

Combined with industry-leading product quality and the reliability of a strong and established European brand, REC TwinPeak BLK panels are ideal for residential and commercial rooftops worldwide.



**MORE POWER
OUTPUT PER M²**



**HIGHER
ENERGY YIELD**

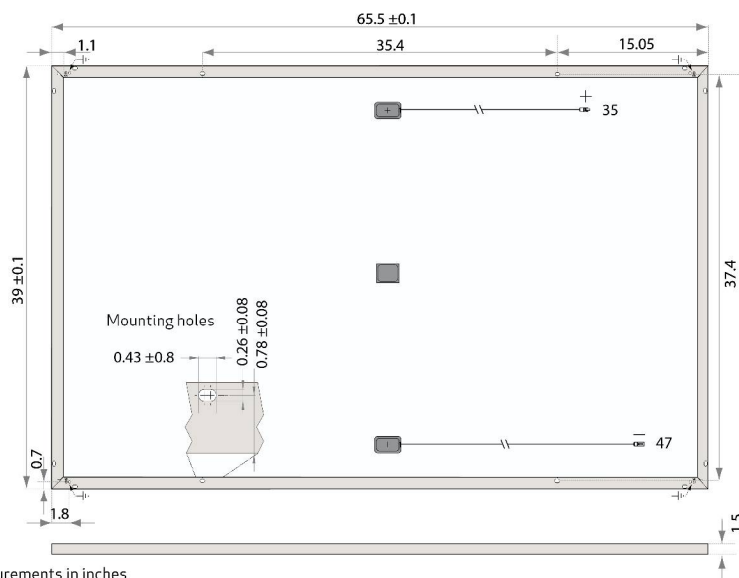


**100%
PID FREE**



**REDUCES BALANCE OF
SYSTEM COSTS**

REC TWINPEAK BLK SERIES



All measurements in inches

ELECTRICAL DATA @ STC	REC265TP	REC270TP	REC275TP	REC280TP
Nominal Power - P_{MPP} (Wp)	265	270	275	280
Watt Class Sorting - (W)	0/+5	0/+5	0/+5	0/+5
Nominal Power Voltage - V_{MPP} (V)	31.1	31.2	31.4	31.9
Nominal Power Current - I_{MPP} (A)	8.53	8.66	8.76	8.78
Open Circuit Voltage - V_{OC} (V)	38.3	38.6	38.8	39.2
Short Circuit Current - I_{SC} (A)	9.21	9.29	9.40	9.44
Panel Efficiency (%)	16.1	16.4	16.7	17.0

Analysed data demonstrates that 99.7% of panels produced have current and voltage tolerance of $\pm 3\%$ from nominal values. Values at standard test conditions STC (airmass AM1.5, irradiance 1000 W/m², cell temperature 25°C). At low irradiance of 200 W/m² (AM1.5 and cell temperature 25°C) at least 94% of the STC panel efficiency will be achieved.

ELECTRICAL DATA @ NOCT	REC265TP	REC270TP	REC275TP	REC280TP
Nominal Power - P_{MPP} (Wp)	195	198	202	205
Nominal Power Voltage - V_{MPP} (V)	28.75	28.85	29.03	29.49
Nominal Power Current - I_{MPP} (A)	6.77	6.87	6.95	6.97
Open Circuit Voltage - V_{OC} (V)	35.25	35.53	35.71	36.08
Short Circuit Current - I_{SC} (A)	7.32	7.38	7.47	7.50

Nominal operating cell temperature NOCT (800 W/m², AM 1.5, windspeed 1 m/s, ambient temperature 20°C).

CERTIFICATION



UL 1703, - Fire classification Type 2
IEC 61215, IEC 61730;
IEC 61701 (Salt Mist - severity levels 1 & 6)

WARRANTY

10 year product warranty.
25 year linear power output warranty
(max. degradation in performance of 0.7% p.a.).

17.0%

EFFICIENCY

10

YEAR PRODUCT WARRANTY

25

YEAR LINEAR POWER
OUTPUT WARRANTY

DUTY★FREE

US IMPORT DUTY FREE

TEMPERATURE RATINGS

Nominal Operating Cell Temperature (NOCT)	44.6°C ($\pm 2^\circ\text{C}$)
Temperature Coefficient of P_{MPP}	-0.39 %/°C
Temperature Coefficient of V_{OC}	-0.31 %/°C
Temperature Coefficient of I_{SC}	0.045 %/°C

GENERAL DATA

Cell type:	120 REC HC multi-crystalline 6 strings of 20 cells (6" x 3")
Glass:	1/8" solar glass with anti-reflective surface treatment
Back sheet:	Double layer highly resistant polyester (white)
Frame:	Anodized aluminum (black)
Junction box:	3-part with bypass diodes IP67 rated 4 mm ² solar cable, 35" + 47"
Connectors:	Multi-Contact MC4 (4 mm ²)
Origin:	Made in Singapore

MAXIMUM RATINGS

Operational Temperature:	-40 ... +85°C
Maximum System Voltage:	1000 V
Design Load*:	75.2 lbs/ft ² (3600 Pa) 33.4 lbs/ft ² (1600 Pa) *Refer to installation manual
Max Series Fuse Rating:	15 A
Max Reverse Current:	15 A

MECHANICAL DATA

Dimensions:	65 1/2 x 39 x 1 1/2 in
Area:	17 3/4 ft ²
Weight:	39 1/2 lbs

Note! All given specifications are subject to change without notice at any time.

REC is the largest European brand of solar panels, with more than 15 million high-quality panels produced at the end of 2014. With integrated manufacturing from polysilicon to wafers, cells, panels and turnkey solar solutions, REC strives to help meet the world's growing energy needs. In partnership with a sales channel of distributors, installers, and EPCs, REC panels are installed globally. Founded in 1996, REC is a Bluestar Elkem company with headquarters in Norway and operational headquarters in Singapore. REC's 1,800 employees worldwide generated revenues of USD 680 million in 2014.



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solar
energy



SOL ATTACH



