HISTORIC AND DESIGN REVIEW COMMISSION

April 20, 2016

Agenda Item No: 26

HDRC CASE NO:	**2016-139**
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 Eneergy
OWNER:	Michael & Ariana Duffey
TYPE OF WORK:	Installation of solar panels

REQUEST:

The applicant is requesting a Certificate of Appropriateness for approval to install 24 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 applicant has proposed to install 24 solar panels on the standing seam metal roof of the primary structure. Four panels will be installed on the slop facing east, and 20 panels will be installed on the slop 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.
b. Staff visited the site on April 13, 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 highly visible than they might be on a different roof form. This is not consistent with the Guidelines.
c. The home at 201 Delaware is in the Lavaca Historic District and is viewable from surrounding historic structures.
d. 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 does not recommend approval based on findings a through c.

CASE MANAGER:

Lauren Sage

N

Flex Viewer

Powered by ArcGIS Server

Printed:Apr 13, 2016

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

Michael Duffey
201 Delaware St
San Antonio TX 78210

Solar PV Installation

Location of Solar PV Array.

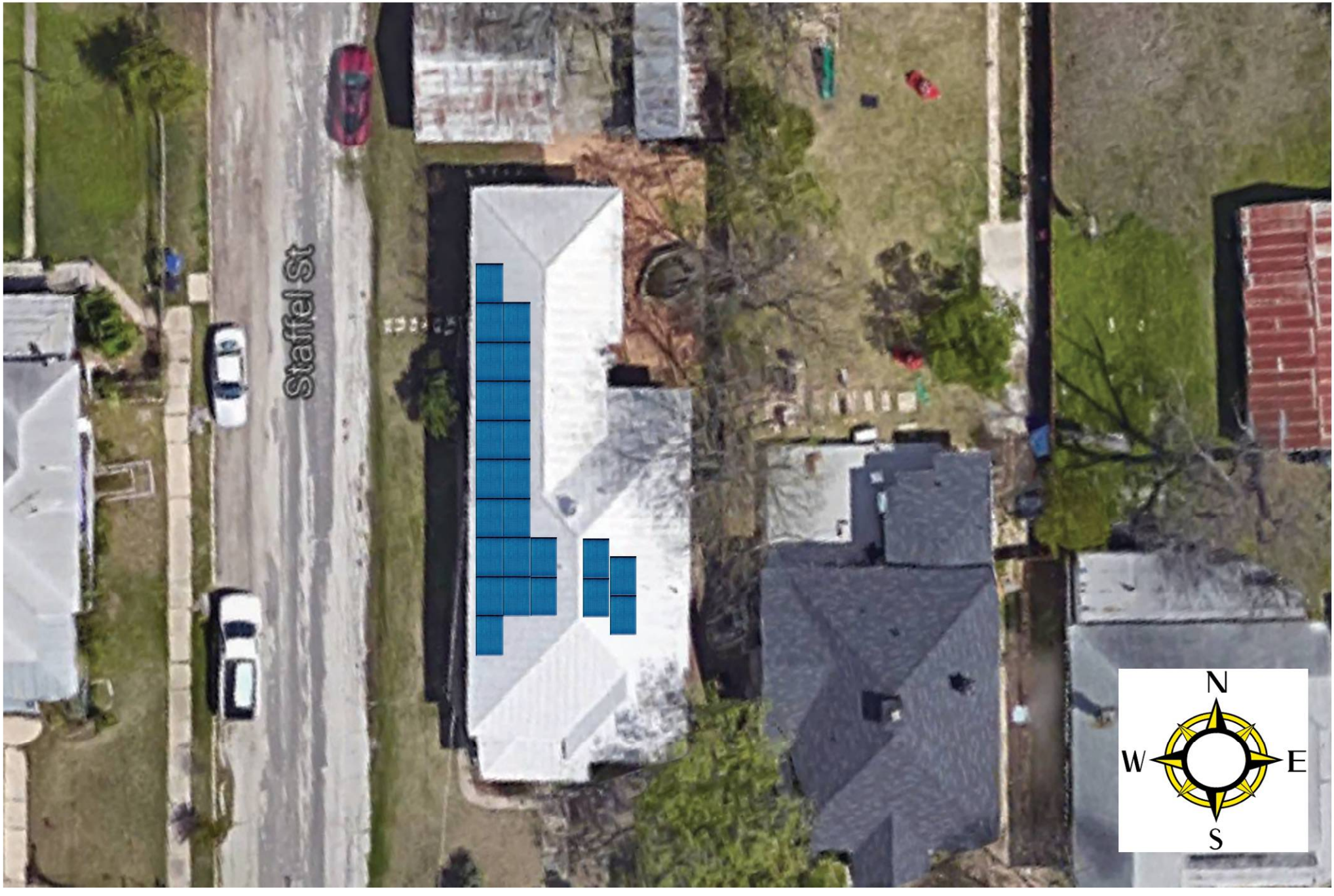
smartworld ENERGY INC.

Smart People...Smart Ideas...SmartWorld

www.smartworldenergy.com

6.24 KW
Solar PV System

Michael and Ariana Duffey
201 Delaware St
San Antonio TX 78210



NEW

CanadianSolar

ELPS Module

CS6P-255/260/265MM

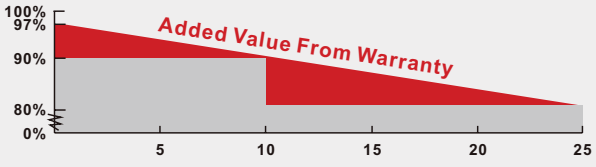
ELPS Cell Technology

Highest cell efficiency up to **21.1%**

Our new breakthrough ELPS technology enables solar cells to collect more light resulting in 21.1% cell efficiency. These new cells feature a metal wrap through (MWT) design which moves the front busbars to the back of the cells allowing for 3% more light absorption per cell. As a result these modules deliver 10% more electricity than conventional solar modules.

ELPS Technology Highlights

- **Delivers More Electricity**
  Delivers up to 10% more electricity than conventional solar modules
- **Highest Efficiency Module (P-type)**
  The metal wrap through (MWT) design increases light absorption up to 3% for more power output than conventional cells and modules
- **Best Power Tolerance**
  Industry leading plus-only power tolerance gives you up to 5 watts extra
- **Excellent Low Light Performance**
  Excellent performance in low light conditions (mornings, evenings and cloudy days)
- **Reduces Balance of System Cost**
  Get more watts in less space for savings on ground and rooftop, installation time, mounting systems and cables
- **Backed By Our New 10/25 Linear Power Warranty**
  Plus our added 25 year insurance coverage



- 10 year product warranty on materials and workmanship
- 25 year linear power output warranty

Best Quality

- 235 quality control points in module production
- EL screening to eliminate product defects
- Current binning to improve system performance

Best Warranty Insurance

- 25 years worldwide coverage
- 100% warranty term coverage
- Providing third party bankruptcy rights
- Non-cancellable
- Immediate coverage
- Insured by 3 world top insurance companies

Comprehensive Certificates

- IEC 61215, IEC 61730, UL 1703, CEC Listed, CSA, MCS, CE
- ISO9001: 2008: Quality Management System
- ISO/TS16949:2009: The automotive quality management system
- ISO14001:2004: Standards for Environmental management system
- QC080000 HSPM: The Certification for Hazardous Substances Regulations
- OHSAS 18001:2007 International standards for occupational health and safety

www.canadiansolar.com

ELPS Module

CS6P-255/260/265MM

Electrical Data

STC	CS6P-255MM	CS6P-260MM	CS6P-265MM
Nominal Maximum Power (Pmax)	255W	260W	265W
Optimum Operating Voltage (Vmp)	30.5V	30.7V	30.9V
Optimum Operating Current (Imp)	8.35A	8.48A	8.61A
Open Circuit Voltage (Voc)	37.7V	37.8V	37.9V
Short Circuit Current (Isc)	8.87A	8.99A	9.11A
Module Efficiency	15.85%	16.16%	16.47%
Operating Temperature	-40℃~+85℃		
Maximum System Voltage	1000V (IEC) /600V (UL)		
Maximum Series Fuse Rating	15A		
Application Classification	Class A		
Power Tolerance	0 ~ +5W		

Under Standard Test Conditions (STC) of irradiance of 1000W/m^2, spectrum AM 1.5 and cell temperature of 25℃

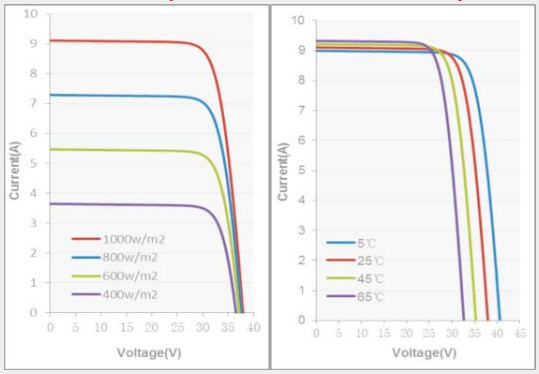
NOCT	CS6P-255MM	CS6P-260MM	CS6P-265MM
Nominal Maximum Power (Pmax)	184W	188W	191W
Optimum Operating Voltage (Vmp)	27.8V	28.0V	28.2V
Optimum Operating Current (Imp)	6.62A	6.70A	6.79A
Open Circuit Voltage (Voc)	34.6V	34.7V	34.8V
Short Circuit Current (Isc)	7.18A	7.28A	7.37A

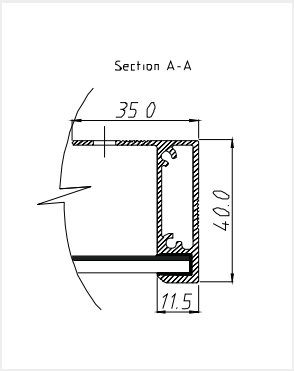
Under Normal Operating Cell Temperature, Irradiance of 800 W/m^2, spectrum AM 1.5, ambient temperature 20℃, wind speed 1 m/s

Mechanical Data

Cell Type	ELPS Mono Cell 156 x 156mm
Cell Arrangement	60 (6 x 10)
Dimensions	1638 x 982 x 40mm (64.5 x 38.7 x 1.57in)
Weight	19.5kg (43.0 lbs)
Front Cover	3.2mm Tempered glass
Frame Material	Anodized aluminium alloy
J-BOX	IP65, 3 diodes
Cable	4mm^2(IEC)/12AWG(UL), 1000mm
Connectors	MC4 or MC4 Comparable
Standard Packaging (Modules per Pallet)	24pcs
Module Pieces per container (40 ft . Container)	672pcs (40'HQ)

I-V Curves (ELPS CS6P-255MM)





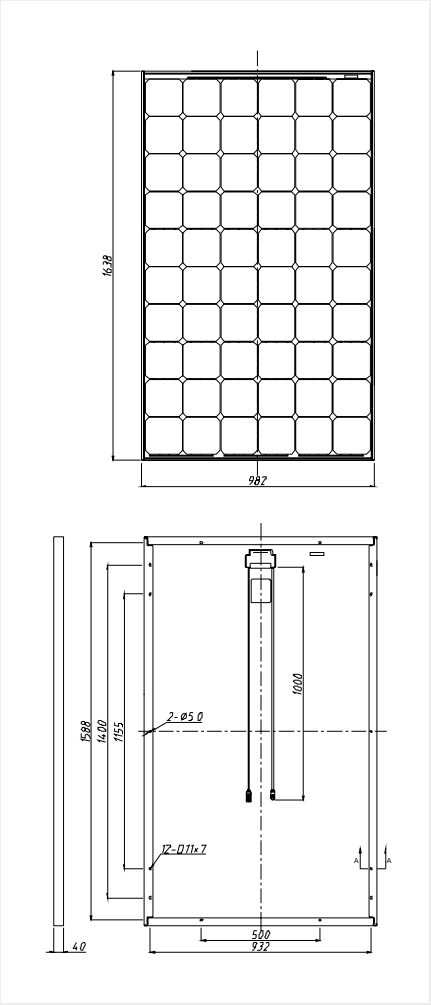
Temperature Characteristics

Temperature Coefficient	Pmax	-0.45%/℃
	Voc	-0.35 %/℃
	Isc	0.060 %/℃
Normal Operating Cell Temperature		45±2℃

Performance at Low Irradiance

Industry leading performance at low irradiation environment, +95.5% module efficiency from an irradiance of 1000w/m^2 to 200w/m^2 (AM 1.5, 25 ℃)

Engineering Drawings



*Specifications included in this datasheet are subject to change without prior notice.

About Canadian Solar

Canadian Solar Inc. is one of the world's largest solar companies. As a leading vertically-integrated manufacturer of ingots, wafers, cells, solar modules and solar systems, Canadian Solar delivers solar power products of uncompromising quality to worldwide customers. Canadian Solar's world class team of professionals works closely with our customers to provide them with solutions for all their solar needs.

Canadian Solar was founded in Canada in 2001 and was successfully listed on NASDAQ Exchange (symbol: CSIQ) in November 2006. Canadian Solar has module manufacturing capacity of 2.05GW and cell manufacturing capacity of 1.3GW.

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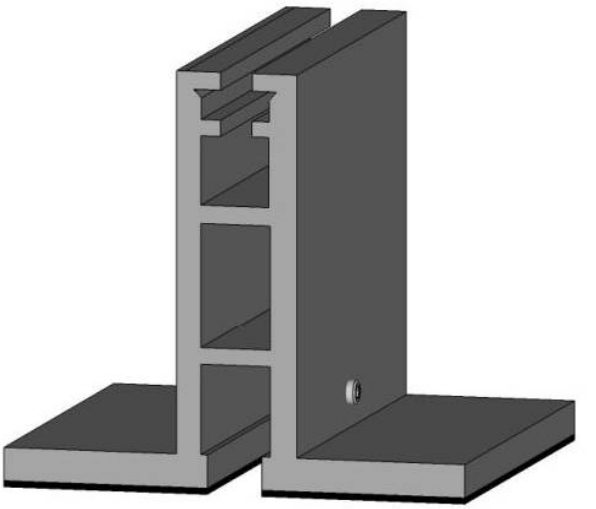
Sol Attach, LLC

Standing seam mounting foot

Extrusions made of 6061-T6 alloy

Patent Pending



Front View