

CERTIFICATE OF APPROPRIATENESS APPLICATION FORM



**PLANNING &
DEVELOPMENT
DEPARTMENT**

PROPERTY

Address 1512 Allston St. Houston, TX 77008
 Historic District / Landmark Houston Heights HCAD # 6201380000015
 Subdivision Houston Heights Lot 15 Block 142

DESIGNATION TYPE

- Landmark
- Protected Landmark
- Archaeological Site
- Contributing
- Noncontributing
- Vacant

PROPOSED ACTION

- Alteration or Addition
- Restoration
- New Construction
- Relocation
- Demolition
- Excavation

DOCUMENTS

Application checklist for each proposed action and all applicable documentation listed within are attached

OWNER

Name Thomas & Lesley Dibello
 Company _____
 Mailing Address 403 Timber Grove Pl.
Friendswood, TX 77546
 Phone 281-413-0925
 Email [REDACTED]
 Signature [Signature]
 Date 4-7-15

APPLICANT (if other than owner)

Name Amanda Simoes
 Company Texas Solar Outfitters
 Mailing Address 705 Shepherd Dr.
Houston, TX 77007
 Phone 713-802-0273
 Email [REDACTED]
 Signature [Signature]
 Date 4-7-15

ACKNOWLEDGEMENT OF RESPONSIBILITY

Requirements: A complete application includes all applicable information requested on checklists to provide a complete and accurate description of existing and proposed conditions. Preliminary review meeting or site visit with staff may be necessary to process the application. Owner contact information and signature is required. Late or incomplete applications will not be considered.

Deed Restrictions: You have verified that the work does not violate applicable deed restrictions.

Public Records: If attached materials are protected by copyright law, you grant the City of Houston, its officers, agencies, departments, and employees, non-exclusive rights to reproduce, distribute and publish copyrighted materials before the Houston Archaeological and Historical Commission, the Planning Commission, City Council, and other City of Houston commissions, agencies, and departments, on a City of Houston website, or other public forum for the purposes of application for a Certificate of Appropriateness or building permit, and other educational and not for profit purposes. You hereby represent that you possess the requisite permission or rights being conveyed here to the City.

Compliance: If granted, you agree to comply with all conditions of the COA. Revisions to approved work require staff review and may require a new application and HAHC approval. Failure to comply with the COA may result in project delays, fines or other penalties.

Planner: _____ Application received: ___/___/___ Application complete: ___/___/___

CERTIFICATE OF APPROPRIATENESS ALTERATION & ADDITON CHECKLIST



PLANNING &
DEVELOPMENT
DEPARTMENT

Well in advance of the COA application deadline contact staff to discuss your project and, if necessary, to make an appointment to meet with staff for a project consultation.

Complete all applicable items and submit with the COA application form. Staff can assist you in determining what items are required for your scope of work. An incomplete application may cause delays in processing or may be deferred to the next agenda. Application materials must clearly represent current and proposed conditions. Refer to Houston Code of Ordinances, Ch. 33 VII, Sec. 33-241 for approval criteria for alteration, rehabilitation, restoration and additions.

PROPERTY ADDRESS: 1512 Allston St. Houston, Tx 77008

BUILDING TYPE

- | | |
|---|--|
| <input checked="" type="checkbox"/> single-family residence | <input type="checkbox"/> garage |
| <input type="checkbox"/> multi-family residence | <input type="checkbox"/> carport |
| <input type="checkbox"/> commercial building | <input type="checkbox"/> accessory structure |
| <input type="checkbox"/> mixed use building | <input type="checkbox"/> other |
| <input type="checkbox"/> institutional building | |

ALTERATION TYPE

- | | |
|--|---|
| <input checked="" type="checkbox"/> addition | <input checked="" type="checkbox"/> roof |
| <input type="checkbox"/> foundation | <input type="checkbox"/> awning or canopy |
| <input type="checkbox"/> wall siding or cladding | <input type="checkbox"/> commercial sign |
| <input type="checkbox"/> windows or doors | <input type="checkbox"/> ramp or lift |
| <input type="checkbox"/> porch or balcony | <input type="checkbox"/> other |

WRITTEN DESCRIPTION

- property description, current conditions and any prior alterations or additions
- proposed work; plans to change any exterior features, and/or addition description
- current building material conditions and originality of any materials proposed to be repaired or replaced
- proposed new materials description; attach specification sheets if necessary

PHOTOGRAPHS

 label photos with description and location

- elevations of all sides
- detail photos of exterior elements subject to proposed work
- historical photos as evidence for restoration work

DRAWINGS

 scale like drawings the same; include all dimensions and drawing scale; label with cardinal directions

- | | |
|--|---|
| <input type="checkbox"/> current site plan | <input type="checkbox"/> demolition plan |
| <input checked="" type="checkbox"/> proposed site plan | <input type="checkbox"/> current roof plan |
| <input type="checkbox"/> current floor plans | <input checked="" type="checkbox"/> proposed roof plan |
| <input type="checkbox"/> proposed floor plans | <input type="checkbox"/> current elevations (all sides) |
| <input type="checkbox"/> current window and door schedule | <input type="checkbox"/> proposed elevations (all sides) |
| <input type="checkbox"/> proposed window and door schedule | <input type="checkbox"/> perspective and/or line of sight |

Written Description:

Property description: The property, 1512 Allston St Houston, TX 77008, is owned by Thomas and Lesley Dibello. HCAD: 0201380000015, the property was rebuilt in 2014.

We request approval of a Certificate of Appropriateness to allow the addition of a south-facing roof-mount solar system. The surface area of the system faces away from the street and public view. We feel that the system proposed will not hinder the historical integrity of the neighborhood as it is not visible from the roofline.

As the contractors we would like to install 31 Kyocera 255W modules. The system size will be 7.905kW and offset the owner's electric expenses with a generous amount of renewable energy.

I am submitting for your consideration proposed plans from the designer which have been approved by a structural engineer and a master electrician.

Enphase® M250



The **Enphase Energy Microinverter System** improves energy harvest, increases reliability, and dramatically simplifies design, installation, and management of solar power systems.

The Enphase System includes the microinverter, the Envoy Communications Gateway,[™] and Enlighten,[®] Enphase's monitoring and analysis software.

PRODUCTIVE

- Optimised for higher-power modules
- Maximises energy production
- Minimises impact of shading, dust, and debris

RELIABLE

- 4th-generation product
- More than one million hours of testing
- System availability greater than 99.8%

SMART

- Quick and simple design, installation, and management
- 24/7 monitoring and analysis

SAFE

- Extra low-voltage DC reduces fire risk
- No single point of system failure
- Easy installation with Engage Cable

INPUT DATA (DC)	M250-60-230-S22
Recommended input power (STC)	210 - 310 W
Maximum input DC voltage	48 V
Peak power tracking voltage	27 V - 39 V
Operating range	16 V - 48 V
Min/Max start voltage	22 V / 48 V
Max DC short circuit current	15 A
Max input current	10 A
OUTPUT DATA (AC)	
Peak output power	258 W
Rated output power	250 W
Rated output current	1.09 A
Nominal voltage	230 V
Nominal frequency	50.0 Hz
Power factor	>0.95
Maximum units per 20 A branch circuit	14 (Ph + N), 42 (3Ph + N)
Maximum units per cable section	14 (Ph + N), 24 (3Ph + N)
EFFICIENCY	
EN 50530 (EU) efficiency	95.7%
Static MPPT efficiency (weighted, reference EN50530)	99.6%
Dynamic MPPT efficiency (fast irradiation changes, reference EN50530)	99.3%
Night time power consumption	0.055 W
MECHANICAL DATA	
External operating temperature range (ambient)	-40°C to +65°C
Internal operating temperature range	-40°C to +85°C
Enclosure environmental rating	Outdoor - IP67
Connector type	MC4
Dimensions (WxHxD)	179 mm x 217 mm x 28 mm (with bracket)
Weight	1.66 kg
Cooling	Natural convection - No fans
FEATURES	
Compatibility	Compatible with 60-cell PV modules.
Communication	Power line
Monitoring	Enlighten Manager and MyEnlighten monitoring options
Transformer design	High frequency transformers, galvanically isolated
Compliance	AS4777, C10/11, CEI_0-21, EN50438, EN62109-1, EN62109-2, ERDF-NOI-RES_13E_V5, G59/2, G83/2, VDE-0126-1-1 + A1, VDE AR-N 4105

To learn more about Enphase microinverter technology, visit enphase.com/au.

SILVANTIS™ F265 MODULE



SunEdison is a recognized authority on silicon technology and manufacturing processes developed through more than 50 years of experience. With our vertically-integrated business model, SunEdison delivers best-in-class solar modules by continuously leveraging new technology and manufacturing techniques that maximize efficiency, minimize cost, and extend product lifetime. Our solar module factory is ISO 14001 certified, and our products undergo rigorous inspection to ensure the highest possible quality.

SunEdison Silvantis solar module family continues our tradition of excellence by delivering the highest levels of performance worldwide. SunEdison is dedicated to providing local, responsive customer service.



HIGH EFFICIENCY

SunEdison modules are designed to the highest industry standards of efficiency.



QUALITY

Manufactured in highly automated, state-of-the-art facilities certified to ISO9001 and ISO14001.



MONO-CRYSTALLINE DESIGN

Mono-crystalline wafers provide high efficiency and consistent high quality.

KEY FEATURES

- SolaiCX® CCz p-type mono-crystalline cells for higher conversion efficiency
- Tempered glass with Anti-Reflective Coating (ARC) for higher energy production
- Positive power tolerance provides increased power output
- Withstands loads up to 5400 Pa as tested to IEC standards
- Non-corroding anodized aluminum frame for ruggedness with black anodized aluminum.
- Modules with a range of power output available
- All black version with anodized black frame and black back sheet

QUALITY & SAFETY

- IEC61215 certified by TÜV SÜD to ensure long-term operation in a variety of climates
- IEC61730 certified by TÜV SÜD to ensure electrical safety
- MCS certified by BABT for the UK (pending)
- Stringent outgoing quality acceptance criteria benchmarked to industry standards
- UL1703 listed by CSA for Canada and US

WARRANTY INFORMATION

- 10-year limited warranty for materials and workmanship
- 25-year linear power warranty with coverage for power loss greater than 3.5% in the first year and 0.7% degradation per year thereafter
- Backed by SunEdison Products Singapore

MODULE FAMILY

Original version:

F250CyC F255CyC F270CyC
F260CyC F265CyC

All black version:

F250KyC F255KyC
F260KyC F265KyC





F265 SOLAR MODULE

PHYSICAL PARAMETERS

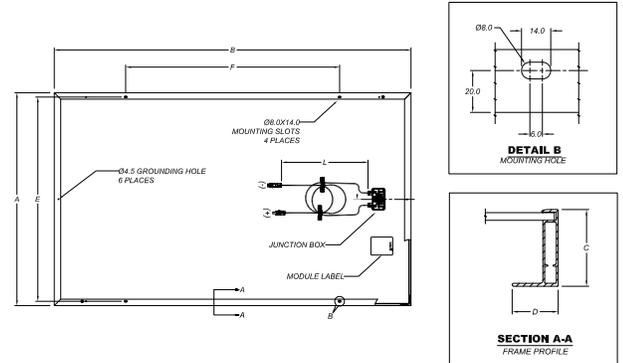
Module Dimensions (mm)	1,658 x 990 x 50
Module Weight (kg)	19.3
Cell-Type	Mono-crystalline
Number of Cells	60
Frame Material	Black Anodized Aluminum
Glass (mm)	3.2 Tempered ARC glass

TEMPERATURE COEFFICIENTS AND PARAMETERS*

Nominal Operating Cell Temperature (NOCT) (°C)	46 ± 2 (CyC)
Nominal Operating Cell Temperature (NOCT) (°C) All Black Model	48 ± 2 (KyC)
Temperature Coefficient of Pmax (%/°C)	-0.45
Temperature Coefficient of Pmax (%/°C) All Black Model	-0.48
Temperature Coefficient of Voc (%/°C)	-0.34
Temperature Coefficient of Isc (%/°C)	+0.05
Maximum System Voltage (V)	1000 (UL) & 1000 (IEC)
Maximum System Voltage (V) All Black Model	600 (UL) & 1000 (IEC)
Limiting Reverse Current (A)	8.40
Maximum Series Fuse Rating (A)	15

*Temperature coefficients may vary by ±10%

F265 SOLAR MODULE DIMENSIONS mm[inch]



Module Dimensions

A – 990 [39.0] B – 1,658 [65.3] C – 50 [2.0] D – 30 [1.18]

Mounting Hole Spacing

E – 950 [37.4] F – 994 [39.1]

Cable Length

L – 1,000 [39.4]

ELECTRICAL CHARACTERISTICS*

Model #	F250CyC	F255CyC	F260CyC	F265CyC	F270CyC	F250KyC	F255KyC	F260KyC	F265KyC
Tolerance	-0+5 W	-0+5 W	-0+5 W	-0+5 W	-0+5W	-0+5 W	-0+5 W	-0+5 W	-0+5W
Rated Maximum Power Pmax (W)	250	255	260	265	270	250	255	260	265
Open-Circuit Voltage Voc (V)	38.2	38.3	38.4	38.5	38.6	38.2	38.3	38.4	38.5
Short Circuit Current Isc (A)	8.82	8.84	8.87	9.00	9.10	8.82	8.84	8.87	9.00
Module Efficiency (%)	15.2%	15.5%	15.8%	16.1%	16.4%	15.2%	15.5%	15.8%	16.1%
Maximum Power Point Voltage Vmpp (V)	30.7	30.8	31.0	31.5	31.7	30.7	30.8	31.0	31.5
Maximum Power Point Current Imp (A)	8.15	8.27	8.40	8.42	8.52	8.15	8.27	8.40	8.42
Frame Color	Black								
Back Sheet Color	White	White	White	White	White	Black	Black	Black	Black

All electrical data at standard test conditions (STC): 1000W/m², AM1.5, 25°C
Electrical characteristics may vary by ±5% and power by -0/+5W

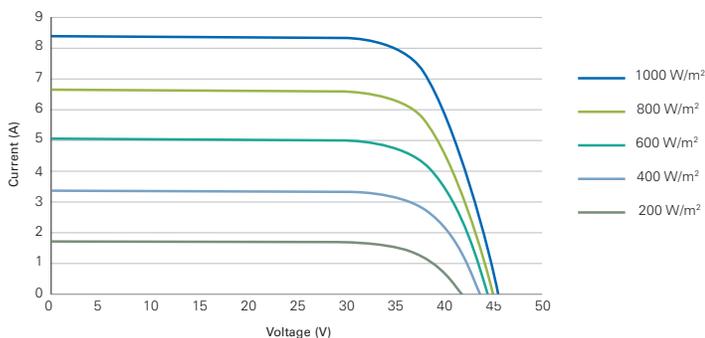
y indicates manufacturing location:

M = Malaysia, C = Canada, D = Europe,

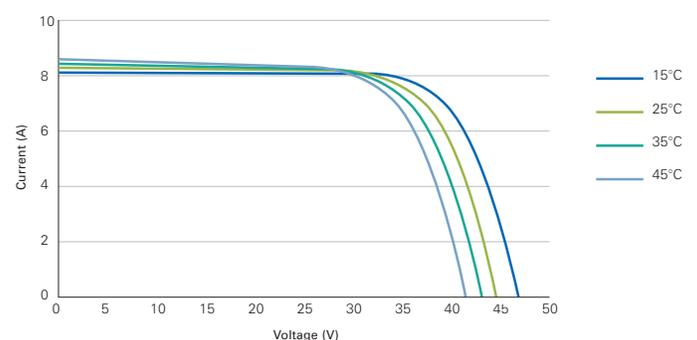
X = Mexico, P = PRC, T = Taiwan

* Listed specifications are subject to change without prior notice.

IV CURVES AT MULTIPLE IRRADIANCES* [25°C]



IV CURVES AT MULTIPLE TEMPERATURES* [1000 W/M2]

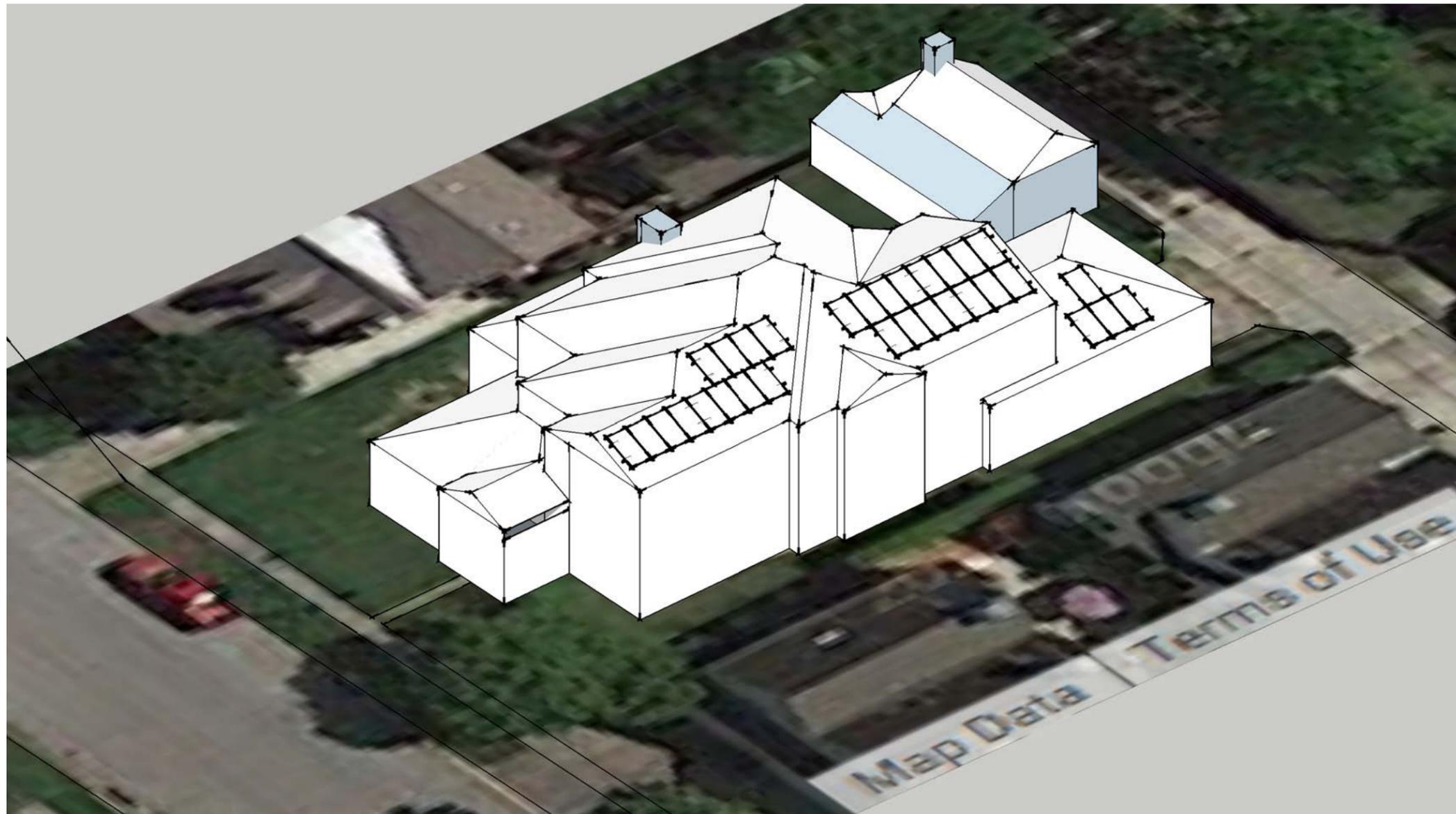


For more information about SunEdison Silvantis Modules, please visit www.SunEdisonSilicon.com



TEXAS SOLAR OUTFITTERS
COVER SHEET

1512 Allston St
Houston TX 77008



Dibello Residence

1512 Allston St
Houston TX 77008

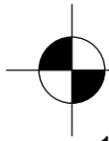
7.905kW ROOF MOUNT

DRAWING INDEX	NOTES
C.S Coversheet A.1 Site Plan E.1 One Line Diagram E.2 Three Line Diagram E.3 Stringing Layout S.1 Rails Layout S.2 Wind Calcs	1. IN COMPLIANCE WITH NEC ARTICLE 110.2 FOR EQUIPMENT TO BE APPROVED, IDENTIFIED LABELED AND LISTED



705 SHEPHERD DR.
HOUSTON, TEXAS 77007
713-802-0223

COVER SHEET				SCALE
				NTS
				PROJECT NO.
				15005
				SHEET NO.
				CS
REVISIONS	MM/DD/YY	DESIGN:	CHECK:	COMMENTS:
	1/27/2015	DG		ISSUE FOR REVIEW
	1/28/2015	DG		ISSUE FOR CONSTRUCTION

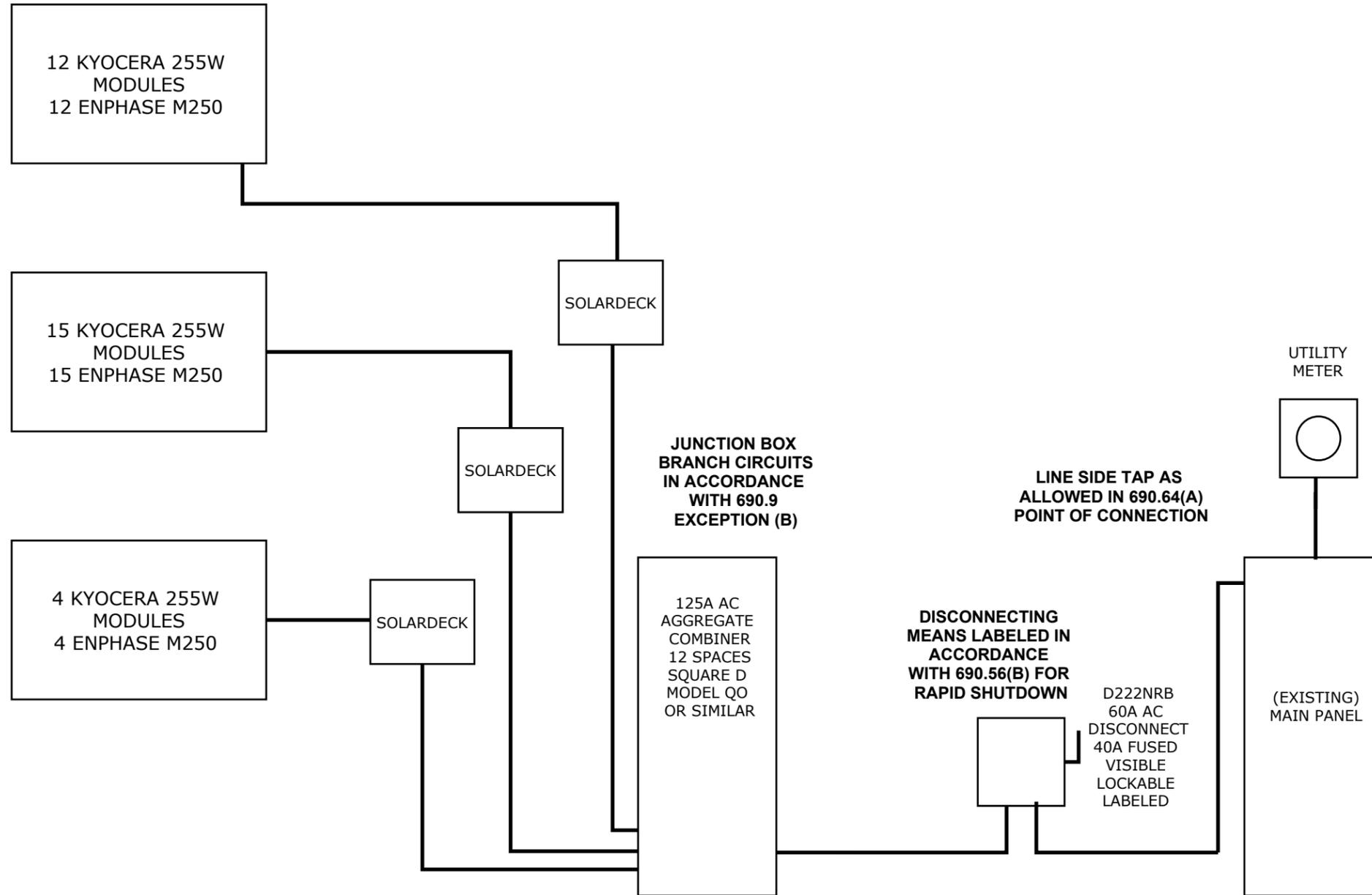


**TEXAS SOLAR OUTFITTERS
ELECTRICAL ONE LINE**

1512 Allston St
Houston TX 77008

INSTALLATION TO BE IN COMPLIANCE WITH
NEC 2014 AND ARTICLE 690

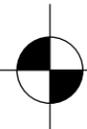
Timothy Coats
Master Electrician # 290268



IN COMPLIANCE WITH
NEC ARTICLE 100
FOR EQUIPMENT
TO BE APPROVED,
IDENTIFIED AND LISTED

ELECTRICAL ONE LINE				SCALE
				NTS
				PROJECT NO.
				15005
				SHEET NO.
				E.1

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TEXAS SOLAR OUTFITTERS PV THREE-LINE DIAGRAM

1512 Allston St
Houston TX 77008

INSTALLATION TO BE IN COMPLIANCE WITH
NEC 2014 AND ARTICLE 690

Timothy Coats
Master Electrician # 290268

System Information
7.905kW STC DC
(31) KYOCERA 255W Modules
Enphase M250 Inverters

For Each Module:
Maximum PP voltage: 31.6 V (Vmp)
Maximum PP current: 9.09 A (Imp)
Short Circuit Current: 9.68 A (Isc)
Open Circuit Voltage: 39.0 V (Voc)
Outer Dimensions: 64.57" x 39.37" x 1.38"
Weight: 36.96 lbs

Equipment Label Information

AC Disconnect:
Operating Voltage: 240VAC
Max Current: 35A AC

Service Panel:
Must include notification that there are two sources of power. Interactive Photovoltaic System Do not relocate or remove.

Utility Meter:
Must include notification that there is a Solar PV System and the location of the AC Disconnect per NEC 705.

PV System AC/Utility Disconnect

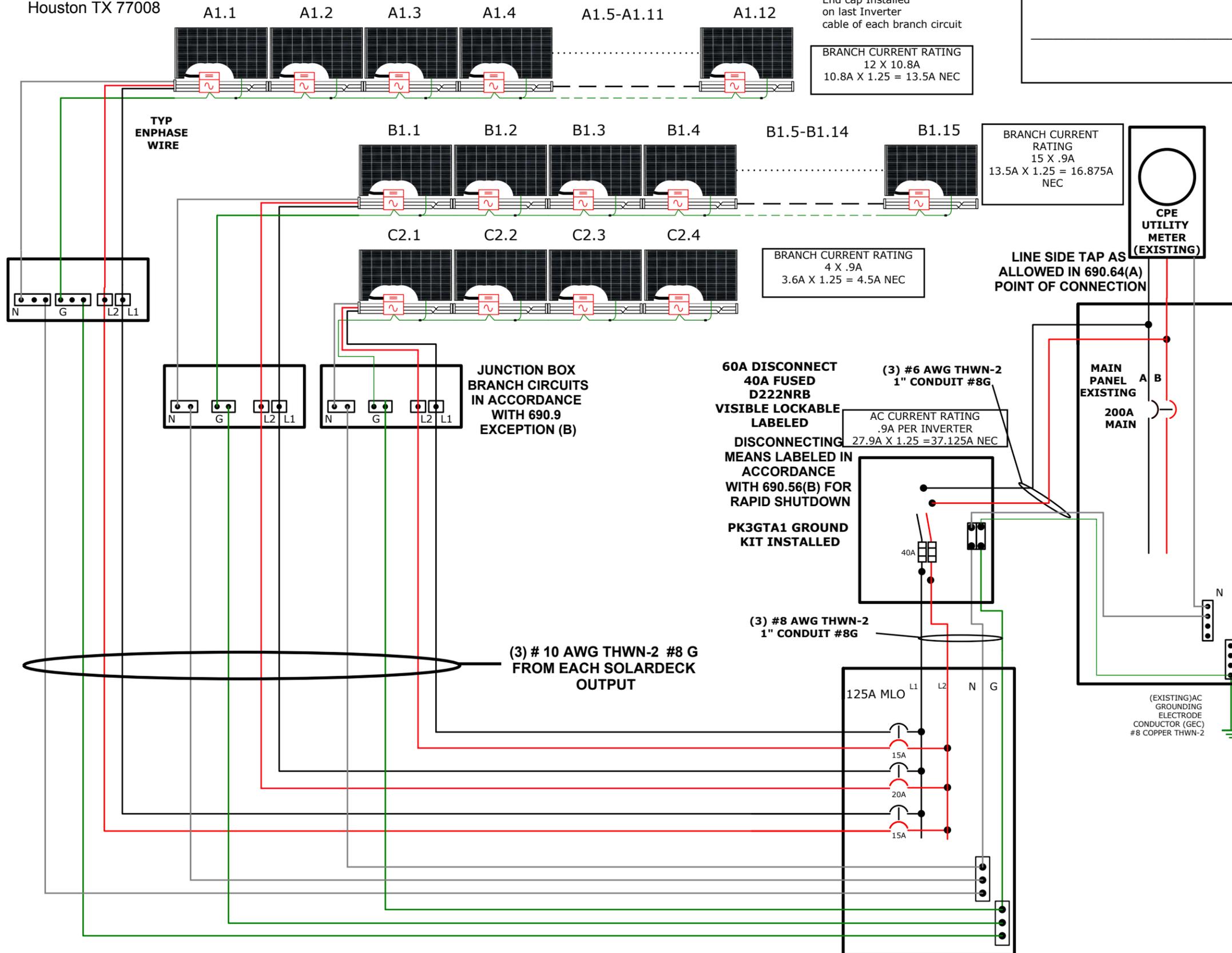
- Located within 10' and clearly visible of Utility Meter
- Accessible, Lockable, Visible Break
- Lever type Disconnect with NEMA 3R rating
- Labeled "Photovoltaic Disconnect"
- Square D model or equivalent
- In accordance with 650.56(B) Rapid Shutdown

NEC 2014: 690

The applied solar not to exceed 120% of the power panel bus bar rating. Solar breaker must be located at farthest distance from main breaker and labeled: **"Solar Breaker Do not move"**

AC Wire Insulation Colors

- Black - AC L1
- Red - AC L2
- White - AC Neutral
- Green - Ground



PV THREE-LINE DIAGRAM				SCALE
				NTS
				PROJECT NO.
				15005
				SHEET NO.
				E.2
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TEXAS SOLAR OUTFITTERS STRINGING LAYOUT

1512 Allston St
Houston TX 77008

Notes on Module Grounding:

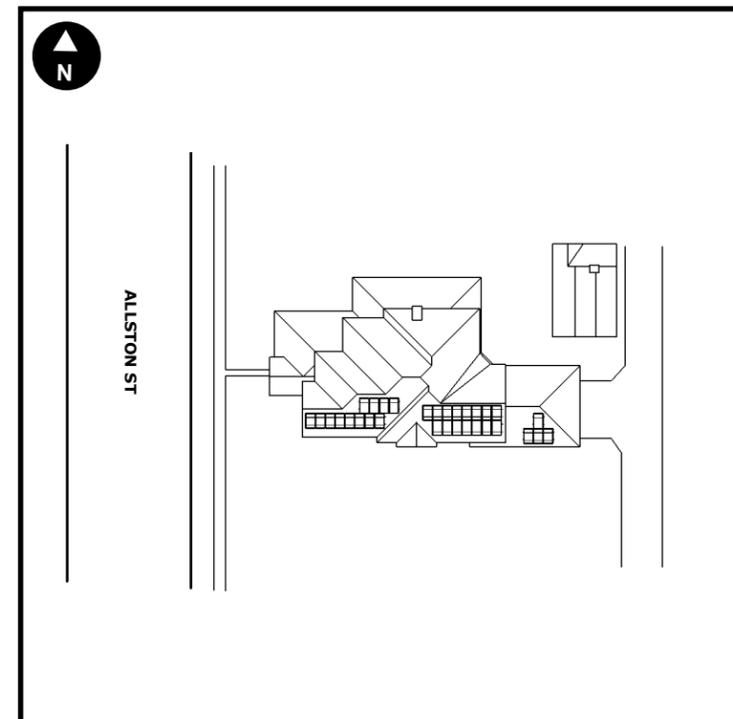
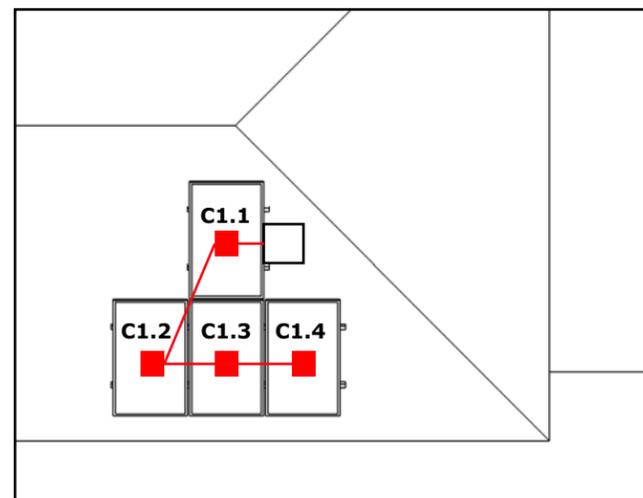
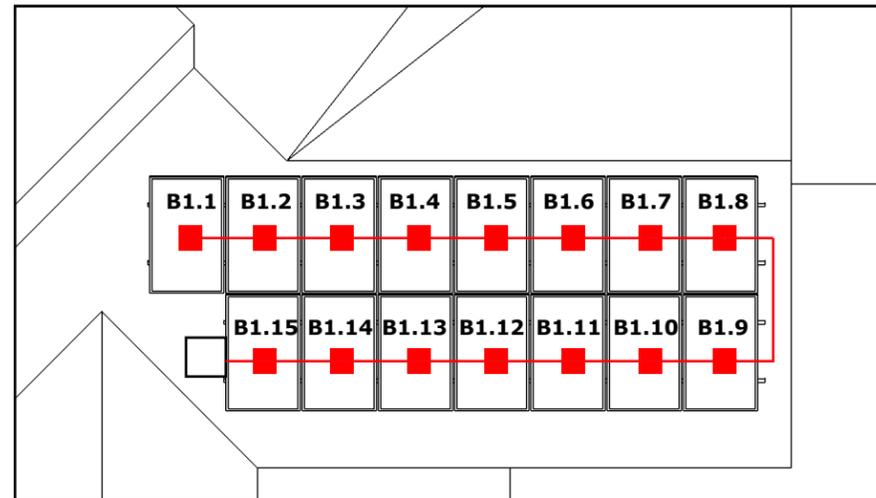
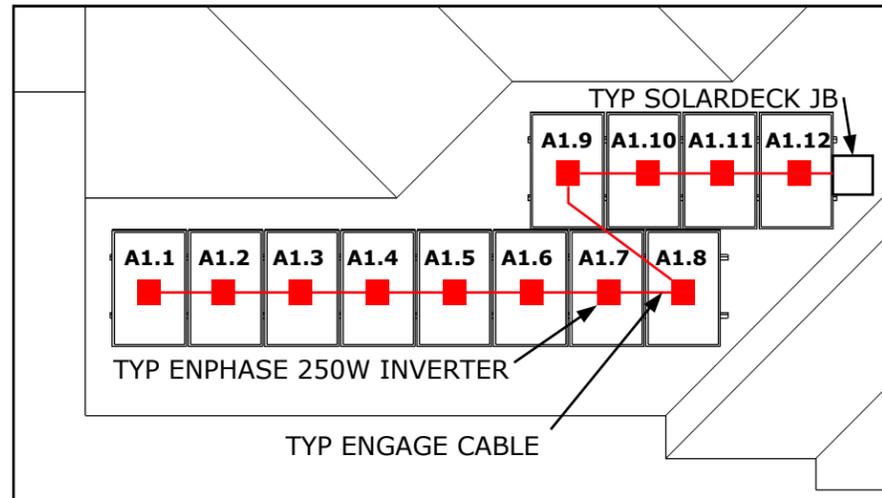
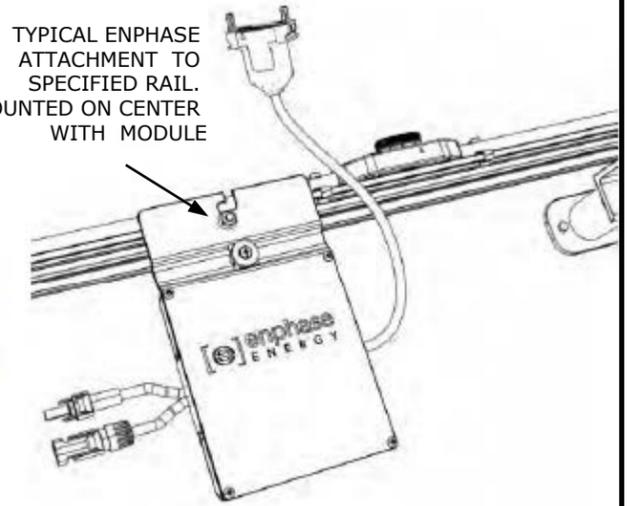
- 1) Modules are grounded to each rail with a WEEB Clip
- 2) Rail Splices have a ground bridge lugged
- 3) Ground wire is lugged to each rail end

Schedule of Components

- ✕ Wiley WEEB Grounding Clip
- ▣ Mid-Clamps
- End-Clamps

Timothy Coats
Master Electrician # 290268

TYPICAL ENPHASE
ATTACHMENT TO
SPECIFIED RAIL.
MOUNTED ON CENTER
WITH MODULE



705 SHEPHERD DR.
HOUSTON, TEXAS 77007
713-802-0223

STRINGING LAYOUT

SCALE
1/8"=1'0"

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PROJECT NO.
15005
SHEET NO.
E.3



TEXAS SOLAR OUTFITTERS WIND CALCULATIONS

1512 Allston St
Houston TX 77008



Windloadcalc.com®
Your Window to Success

ASCE 7-05
Design: www.windloadcalc.com

Version 1
2009 ©

**Solar Panel
Wind Load Program**

SOLAR PANEL INFORMATION	
Wind Velocity (mph)	110
Solar Panel Category	IV Hurricane
Importance Factor	1.15
Exposure	B
Height above ground (z) -(ft)	28.0
Distance to bottom edge Height ->	20.0
Mean Solar Panel Height (h) - (ft)	24.0
Solar Panel Width (ft)	3.3
Solar Panel Length (ft)	5.4
Solar Panel Slope (x:12)	6.0
Solar Panel Angle (degrees)	26.57
(a) Edge Strip (ft)	3.00
End Zone (ft)	6.00

JOB INFORMATION	
Job Number	DIBELLO
Client's Name	15005
Company	Texas Solar Outfitters
Address	
Preparer	David Gill

TOPOGRAPHIC FACTOR	
Hill Shape	Flat - No Hill
H, (ft)	0.0
Lh, (ft)	0.0
x, (ft)	0.0
z, (ft)	0.0

WIND LOAD DESIGN INFORMATION

INFO.	APPLYING WINDLOAD FOR:	ZONE	WIDTH (feet)	LENGTH (feet)	EFFECTIVE WIND AREA (sqft)	MAXIMUM POSITIVE PRESSURE (psf) [Windward / Uplift]	MAXIMUM NEGATIVE PRESSURE (psf) [Leeward / Down Force]	MAXIMUM POSITIVE PRESSURE (lbs) [Windward / Uplift]	MAXIMUM NEGATIVE PRESSURE (lbs) [Leeward / Down Force]	MANUFACTURER	MODEL NUMBER
SOLAR PANEL INFORMATION	Hip	1-Hip	3.3	5.4	18	9.4	-16.4	167	-292	KYOCERA	255W
ON											



**TEXAS
SOLAR
OUTFITTERS**

705 SHEPHERD DR.
HOUSTON, TEXAS 77007
713-802-0223

WIND CALCULATIONS					SCALE
					NTS
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					S.2