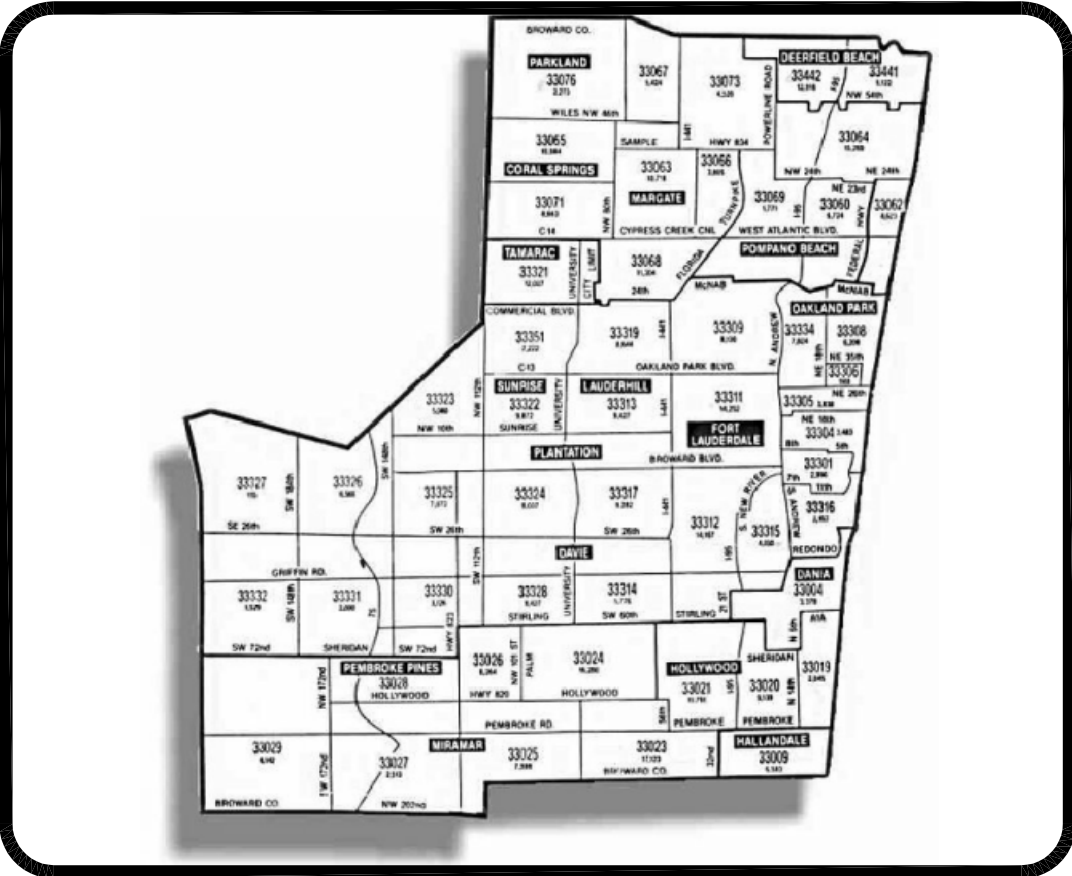


OWNER:  
JOHN DOE  
ANY STREET LOCATION IN BROWARD COUNTY, FL

THIS PLAN IS ONLINE FOR REVIEW @  
WWW.CADVICE.US/SW/G.PV.10\_BROWARD\_FL.PDF

NOTES FOR BROWARD COUNTY SUNSHOT/UNISTRUT GENERIC PV STRUCTURAL INSTALLATION PLAN:  
APPLICABLE CODES & DESIGN WIND SPEEDS: THIS PLAN WAS PREPARED AS FLORIDA TRANSITIONS FROM THE 2007/09 FBC (2007 FLORIDA BUILDING CODE WITH 2009 SUPPLEMENT) TO THE 2010 FBC. THERE IS MUCH APPREHENSION WITHIN THE DESIGN & BUILDING CODE ADMINISTRATION RANKS AS DESIGN WIND SPEEDS OF ASCE 7 (A REFERENCED DOCUMENT OF THE FBC) INCREASE BY AN AVERAGE OF 15 MPH NATION-WIDE. SEOR (SOLAR ENGINEER OF RECORD) HAS STUDIED THE NEW ASCE 7-10 CAREFULLY AND CONCLUDED THAT WHILE THE WIND SPEEDS ARE INCREASING, WIND FORCES DO NOT CHANGE SIGNIFICANTLY BECAUSE THE NEW ASCE 7-10 INTRODUCES REDUCTION FACTORS THAT "EVEN THINGS OUT". THE MATERIALS & METHODS SPECIFIED IN THIS PLAN ENSURE THAT PV MODULES INSTALLED IAW (IN ACCORDANCE WITH) WILL NOT SEPARATE FROM A ROOF - EVEN AT WINDSPEEDS OF 200-MPH, 60-FT ABOVE SURROUNDING GRADE, IN AN EXPOSURE D.  
SEOR AUTHORIZES THIS SEALED STRUCTURAL INSTALLATION PLAN TO BE PLACED AS PLANS ON FILE FOR THE PULLING OF MULTIPLE PERMITS BY MULTIPLE CONTRACTORS AND/OR DIY-OWNERS. THIS SEALED PLAN IS FOR THE STRUCTURAL ATTACHMENT OF ANY AND ALL FSEC APPROVED PV MODULES. THIS PLAN SHALL ONLY BE USED FOR PV INSTALLATIONS UTILIZING UNISTRUT P1000T CRS (CORROSION RESISTANT STEEL) CHANNELS. THIS PLAN SHALL ONLY BE USED FOR MOUNTING PV MODULES IN PZ1, PARALLEL WITH AND WITHIN A COUPLE OF INCHES OF THE ROOF COVERING OF ALL TYPES AND ALL SLOPES FROM FLAT THRU 12-IN-12 AT ROOF HEIGHTS OF 60-FT OR LESS WITHIN BROWARD COUNTY FLORIDA. PZ2 AND/OR TILT-UP INSTALLATIONS REQUIRE SITE-SPECIFIC ENGINEERING.  
THOSE DESIRING TILT-UP PLANS, OR PZ2 INSTALLATION, OR THAT SEOR PROVIDE ELECTRICAL DESIGN AS WELL, ARE REQUESTED TO CONTACT SEOR DIRECTLY SEOR CONTACT INFO-OFFICE: 813 909 1956, CELL: 813 650 7246, E-MAIL: ALLEN@GEZELMANPE.COM  
THE DETAILS SPECIFIED ON THIS "PAPER" PLAN ARE CONSIDERED TO BE THE MINIMUM NEEDED BY AHJ AND INSTALLERS. HYPERLINKS ARE PROVIDED HEREON TO SUPPLEMENTAL OEM, GOVERNMENTAL AND OTHER INFORMATION SOURCES IN ORDER TO PROVIDE COMPLETE, EASY INFORMATION AVAILABILITY. USERS ARE ENCOURAGED TO ACCESS AN EV (ELECTRONIC VERSION) OF THIS PLAN AT WWW.GEZELMANPE.COM/PV/. EV HYPERLINKS ARE ACTIVE AND WILL PROVIDE EASY ACCESS TO INFORMATION. EV ALSO ALLOWS VIEWER TO STUDY THE PLAN AT A MAGNIFICATION OF HIS CHOICE UP TO 600%. IF A CONFLICT SHOULD OCCUR BETWEEN THE SPECIFICATIONS HEREON AND AN OEM DETAIL, OEM SHALL PREVAIL.  
STRUCTURAL: CONTRACTOR/OWNER SHALL INSTALL IN PZ1 ONLY - WHICH IS THE INTERIOR PORTION OF ROOF AT LEAST 40% OF EAVE HEIGHT OR 10% OF LEAST PLAN DIMENSION OF BUILDING-WHICHEVER IS LESS.  
PZ2 MAY BE USED WITH SITE SPECIFIC ENGINEERING ONLY. PZ3 MAY NOT BE USED IN THE HVHZ.  
THERE SHALL BE TWO UNISTRUT P1000T CORROSION RESISTANT CHANNELS EQUALLY SPACED UNDER EVERY PV MODULE. PV MODULES MAY BE LANDSCAPE OR PORTRAIT. UNISTRUT CHANNELS SHALL RUN PERPENDICULAR TO ROOF FRAMING. UNISTRUT CHANNELS SHALL BE ATTACHED TO EVERY ROOF FRAMING MEMBER CROSSED BY A CRS 5/16" DIAMETER LAG 3" LONG THRU A 1" GALVANIZED FLOOR FLANGE FILLED WITH APPROVED POLYURETHANE ROOF SEALANT. IF GREATER ROOF CLEARANCE IS NEEDED (CONCRETE TILE FOR EXAMPLE), UTILIZE SCHEDULE 80 PVC PIPE NIPPLE OF APPROPRIATE LENGTH - NOT (NOT GREATER THAN) 4". IF GREATER ROOF CLEARANCE IS NEEDED, USE GALVANIZED STEEL 1" PIPE NIPPLE, DOUBLE FLOOR FLANGES, AND TWO LAGS PER ROOF/FLOOR FLANGE ATTACHMENT SEE DETAIL DRAWING THIS SHEET.  
PV MODULES SHALL ATTACH TO UNISTRUT CHANNELS AT EVERY CROSSING POINT WITH A GSAS MODULE CLAMP. ADDITIONAL MODULES MAY SHARE ATTACHMENT CLAMPS. ATTACHMENT CLAMPS SHALL ATTACH TO UNISTRUT P1000T CHANNEL USING UNISTRUT CORROSION RESISTANT CHANNEL NUTS. ELECTRICAL: BY OTHERS  
THOSE DESIRING ELECTRICAL DESIGN BY SEOR ARE REQUESTED TO CONTACT SEOR DIRECTLY SEOR CONTACT INFO-OFFICE: 813 909 1956, CELL: 813 650 7246, E-MAIL: ALLEN@GEZELMANPE.COM  
GENERAL:  
• PV-MODULES PRODUCE ELECTRICITY WHEN EXPOSED TO SUNLIGHT. USE COMMON-SENSE & CAUTION.  
• TWISTED (WIRE NUT) CONNECTIONS ARE NOT PERMITTED FOR DC WIRING. USE OEM PLUG CONNECTOR HARNESS BETWEEN PV MODULES.  
• MAKE SOLID MECHANICAL CONNECTIONS TO ENSURE ELECTRICAL CONDUCTIVITY BETWEEN ALL PV MODULE ENCLOSURES AND FRAMING MEMBERS WITH NO ELECTRICALLY ISOLATED COMPONENTS. USE #10 AWG BARE COPPER WITH SCREWED CONNECTIONS FOR BONDING JUMPERS AS NEEDED. OEM BONDING PLATES ARE AN ACCEPTABLE SUBSTITUTE.  
• DO NOT LEAVE LOOSE UNSCREWED WIRES/HARNESS BETWEEN PV-MODULES, TIE TO THE MOUNTING RAILS WITH UV RESISTANT ZIP TIES OR APPROVED WIRE CLIPS IN NEAT, PROFESSIONAL MANNER.  
• USE APPROVED MEANS AND METHODS PER 2008 NEC  
• ADHERE TO BEST PRACTICES/MEANS & METHODS OF FBC AND NRCA ROOFING & WATERPROOFING MANUAL TO ENSURE NO ROOF LEAKS.

ALL AFFIDAVITS, DESIGNS, OPINIONS, CALCULATIONS & OTHER ENGINEERING SERVICES PROVIDED BY ALLEN GEZELMAN PE AND HIS ASSOCIATES ON ANY AND ALL PROJECTS ARE SUBJECT TO THE PROVISIONS OF EICDC C-700 (ENGINEERS JOINT CONSTRUCTION DOCUMENT COMMITTEE - STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT) CURRENT AT THE TIME. THOSE OBJECTING TO SAID EICDC C-700 OR PROVISIONS THEREOF ARE DIRECTED NOT TO USE THE AFFIDAVIT, DESIGN, OPINION, CALCULATION OR OTHER ENGINEERING SERVICE OFFERED BY ALLEN GEZELMAN PE AND HIS ASSOCIATES ON THE PROJECT. EICDC C-700 MAY BE VIEWED AT: [HTTP://GEZELMANPE.COM/REFERENCE/AG/C-700.PDF](http://gezelmanpe.com/reference/AG/C-700.PDF)



## 01 BROWARD COUNTY, INSTALLATIONS

SCALE: N.T.S. INSTALL ANY LOCATION IN THIS JURISDICTION



## 02 SAMPLE INSTALLATION PHOTO

SCALE: N.T.S.

I CERTIFY THAT PV INSTALLATIONS MADE IAW THIS PLAN CAN RESIST POSITIVE & NEGATIVE WIND FORCES GREATER THAN 240\_PSF. THIS IS ATTESTED TO BY MY SIGNATURE AND SEAL ON THIS DRAWING AT THE UPPER RIGHT.

Design Bolt Torque:

BOLT SIZE	1/2"	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"
FOOT LBS.	6	11	19	50	100	125	
Nm	8	15	25	70	135	170	

CHANNEL NUT TORQUE

P1000T - 1-5/8" x 1-5/8", 12 Gage; Slotted

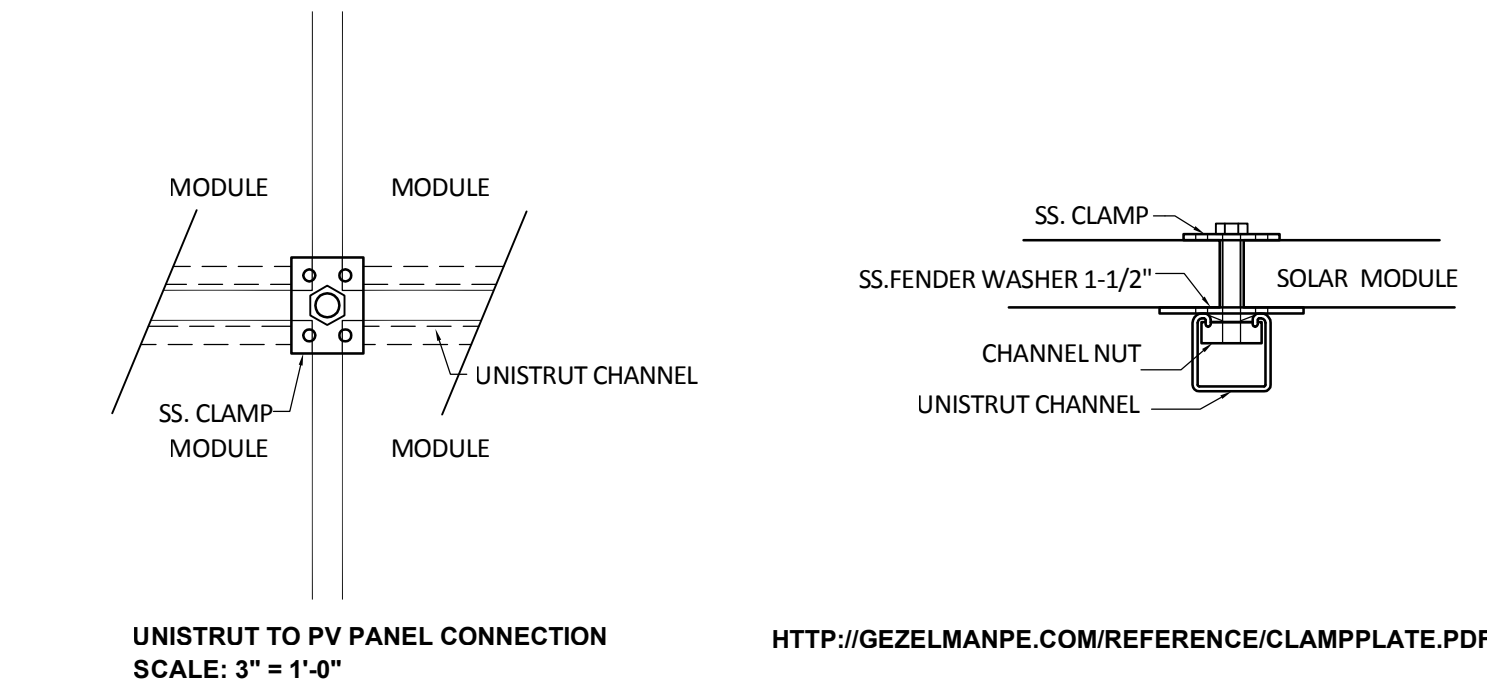
Use Unistrut P1000T (CORROSION RESISTANT)

## 03 UNISTRUT P 1000T PRODUCT SPECIFICATION

SCALE: N.T.S.

I CERTIFY THIS DESIGN & SPECIFICATIONS MEET 2010 FBC

ALLEN GEZELMAN  
16502 HANNA RD.  
LUTZ, FLORIDA 33549  
PH. 813 650 7246  
FX. 866 397 9050  
Allen@GezelmanPE.COM  
www.GezelmanPE.com  
PE. #59180



GSAS SOLAR END CLAMP - SAMPLE



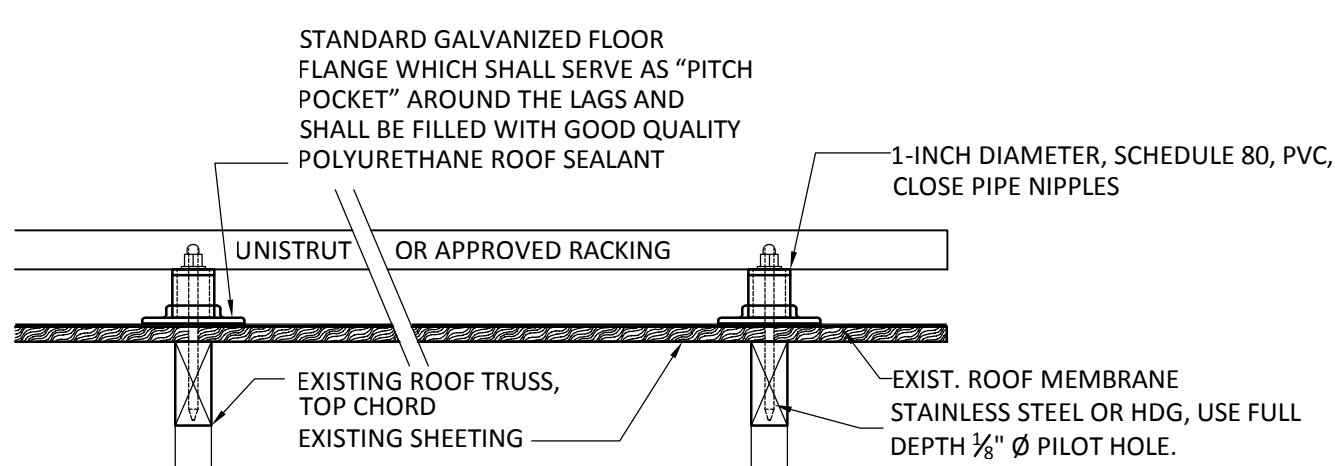
GSAS SOLAR END CLAMP - SAMPLE



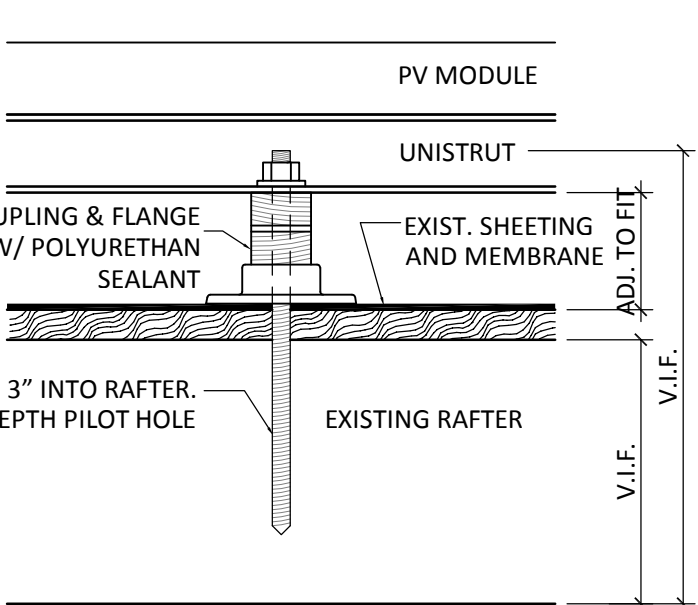
GSAS SOLAR END CLAMP - SAMPLE



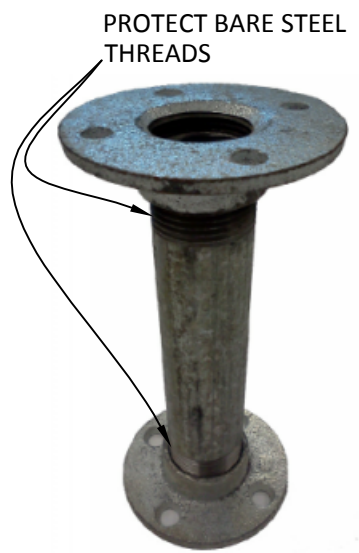
GSAS SOLAR MID CLAMP - SAMPLE



ONE-INCH PIPE NIPPLE AND GALVANIZED FLANGE SERVE DUAL-PURPOSE AS BOTH STRUCTURAL SUPPORT AND ROOF SEALANT FILLED PITCH-POCKET. CONTRACTOR SHALL FILL NIPPLE WITH PL1 OR EQUAL POLYURETHANE ROOF SEALANT AS SHOWN IN ADJACENT PHOTOS.



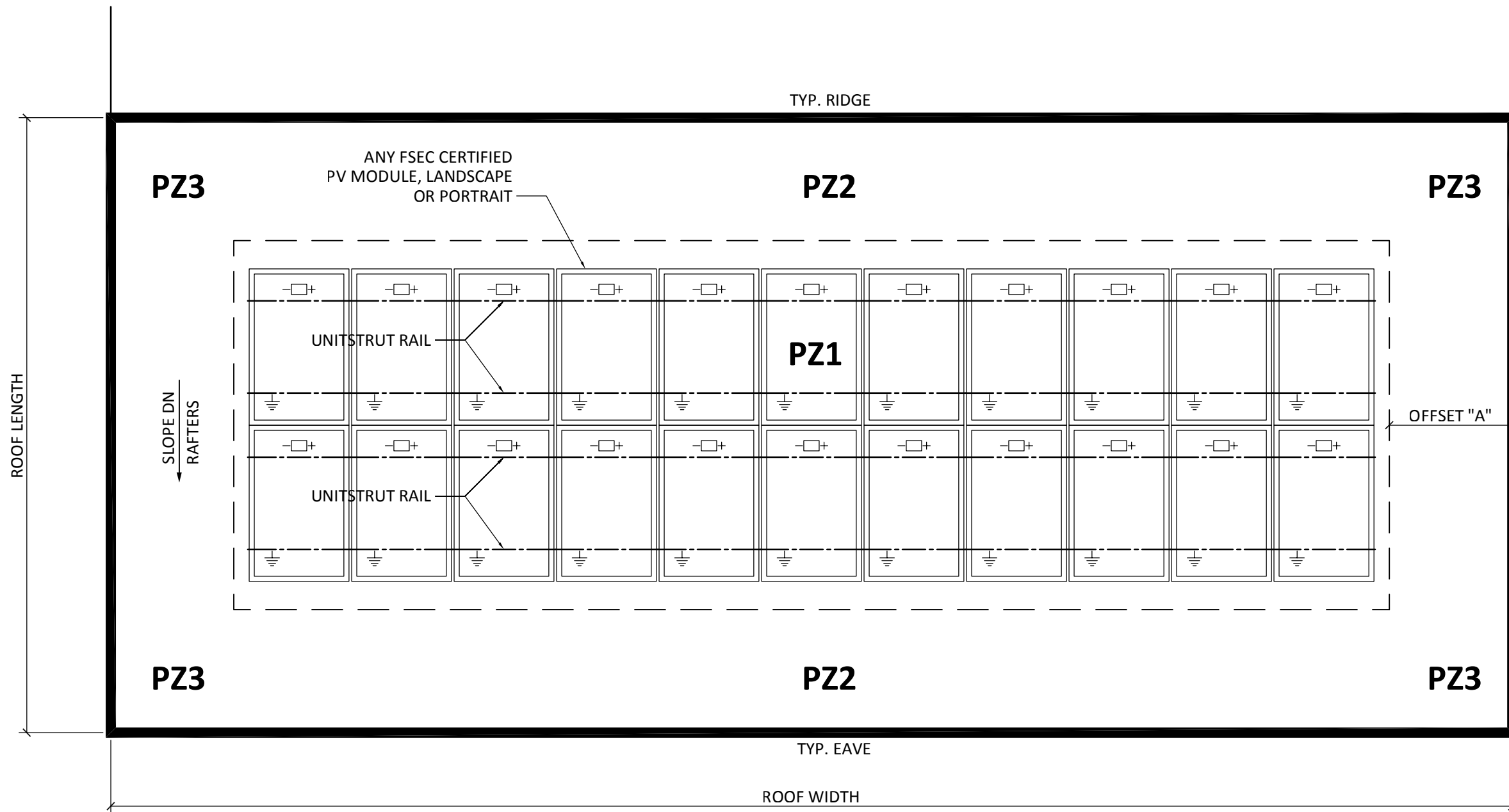
SAMPLE PHOTO : GALV. FLANGE W/ PVC SCHED 80 NIPPLE



CENTER FLOOR FLANGE DIRECTLY ABOVE ROOF FRAMING MEMBER. SET FLANGE IN GENEROUS BED OF APPROVED ROOF SEALANT. USE 1/8" PILOT HOLES. INSTALL TWO-5/16"-DIAMETER BY 3" LONG CRS LAGS INTO ROOF FRAMING



SAMPLE PHOTO : GALV. FLANGE W/ UNISTRUT P1000T



## 04 MOUNTING SYSTEM, UNISTRUT WITH (GSAS) GEZELMAN SOLAR ANCHOR SYSTEM

SCALE: N.T.S. WWW.UNIRAC.COM/TECHNICAL-SUPPORT/SOLARMOUNT/INSTALL.PHP

## 05 GENERIC ROOF LAYOUT - OTHER ROOF SHAPES SUCH AS FLAT, HIP AND GABLE APPROVED

SCALE: 1/4" = 1'-0"

INSTALLATION OF A ROOF MOUNT  
**RENEWABLE ENERGY SYSTEM**  
ANY LOCATION WITHIN BROWARD COUNTY FLORIDA

DRAWN @ ARCH D (24"x36")

SYSTEM:  
GRAYBAR  
4010 WEST OSBORNE AVE.  
TAMPA, FL 33614  
PH. 813 253 8881

PUBLISHED: 2/7/2012 6:04:22 AM  
REVISIONS: DATE  
SHEET NAME:  
**PERMIT SET**  
THIS IS SHEET 1 OF 1  
DRAWN: SB CHECKED: AG  
SHEET NO:  
**G.PV.1**  
G.PV.10\_BROWARD\_FL.dwg