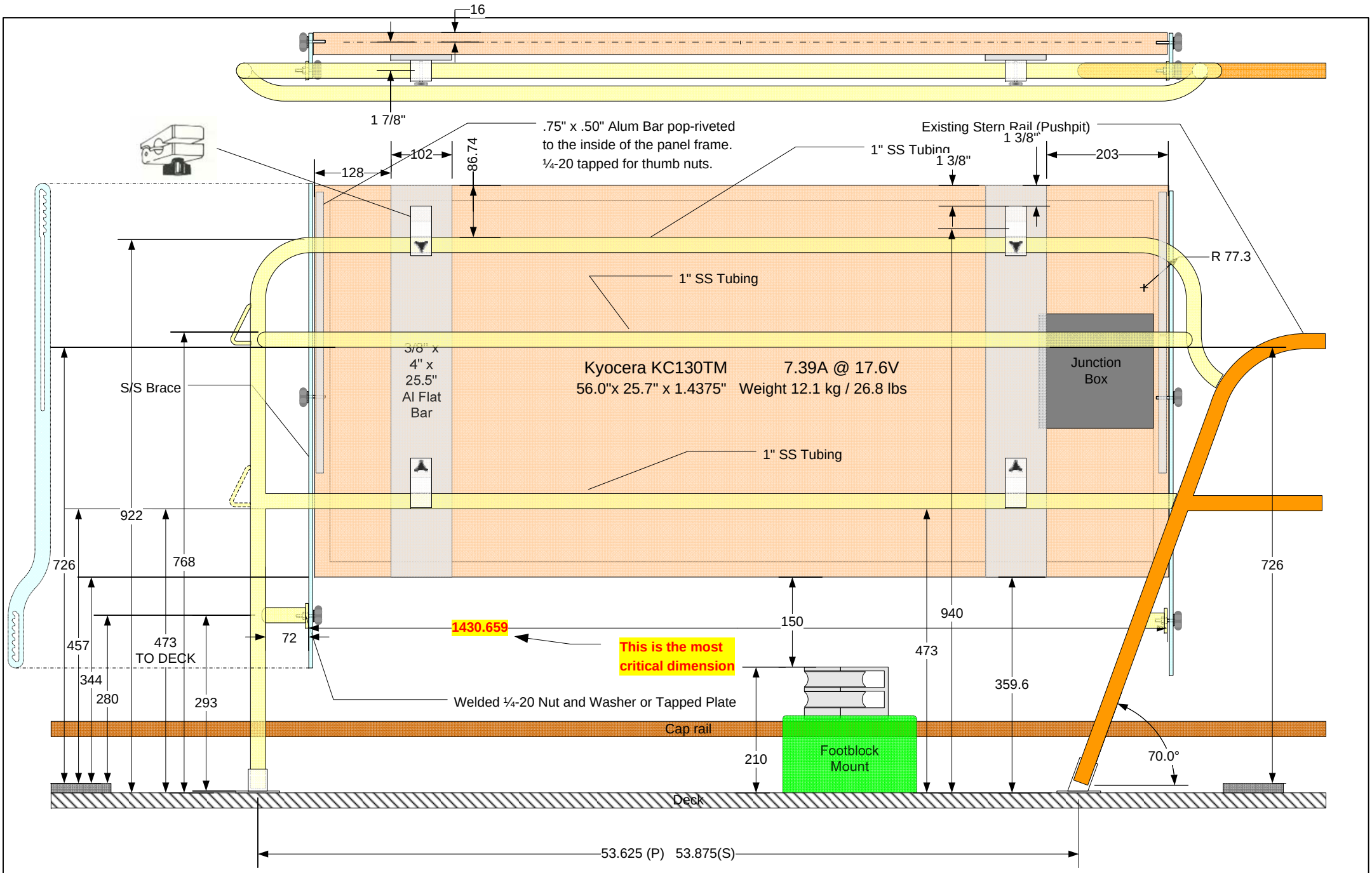
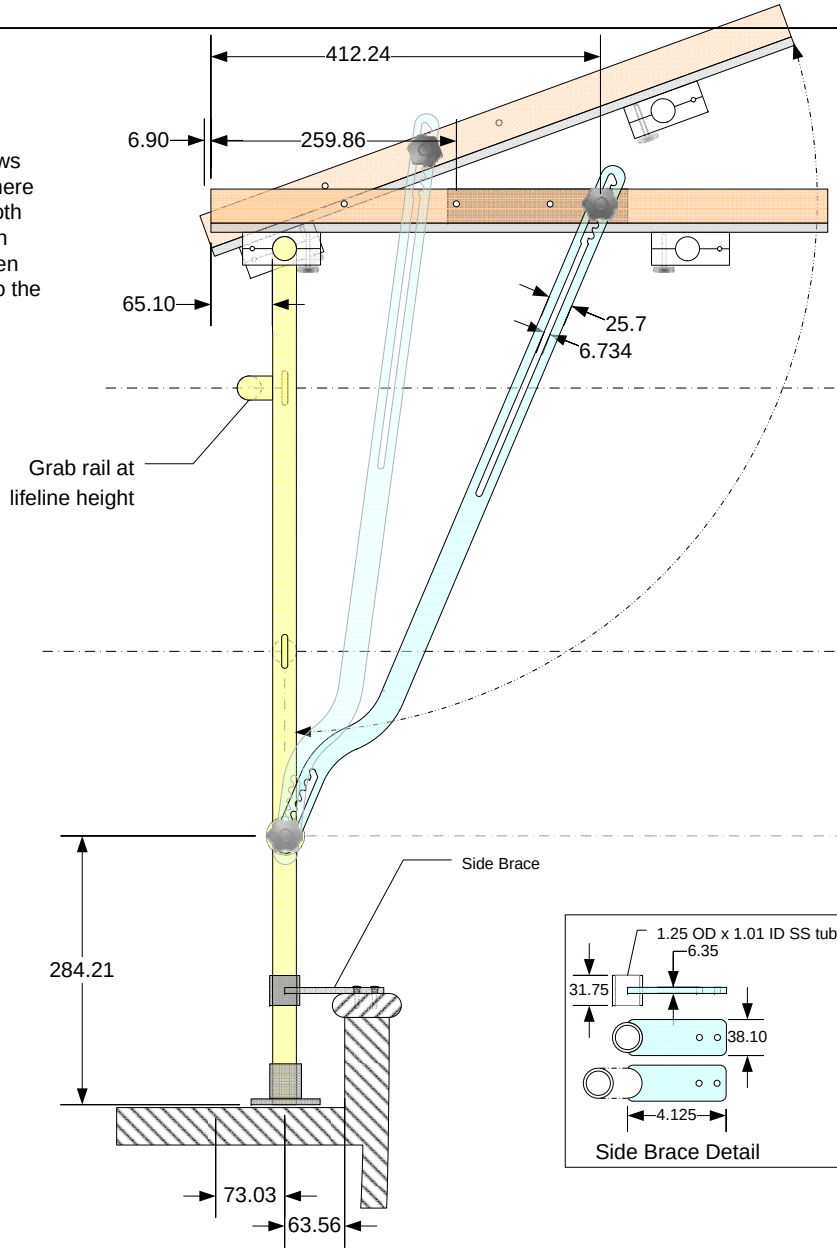
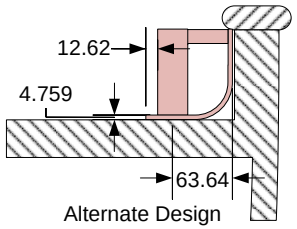


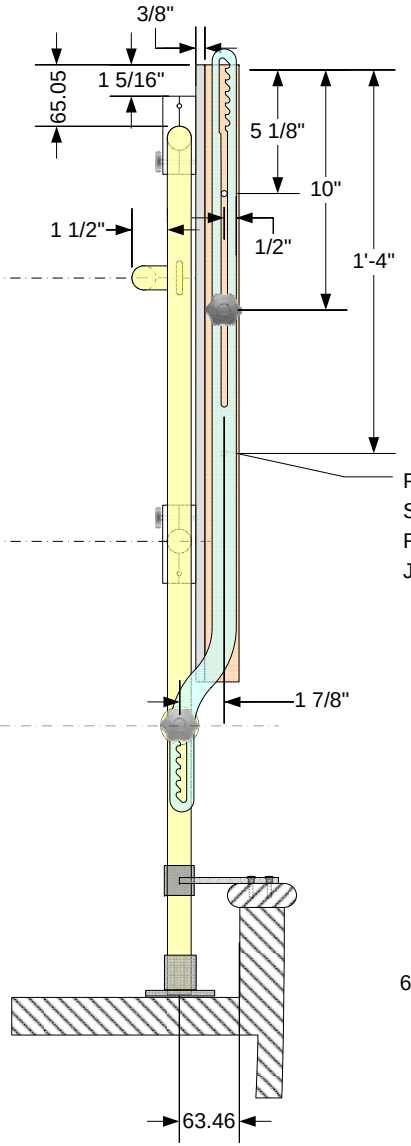
S/V BEATRIX - KELLY-PETERSON 44 #286 (1980)	TITLE Solar Panel Mounts - Plan View - Aft Panel Starboard Side - Kyocera 135	REV E	SCALE 1: 8	PAGE 1 OF 20	DATE 21/09/2017	DRAWN BY JEFF STANDER 0400239418

NOTE:
Although this drawing shows the stanchion as vertical there is a 5 degree camber of both the cap rail and deck which must be accounted for when fabricating the extension to the original stern pulpit.





2-13/16" x 3-916"



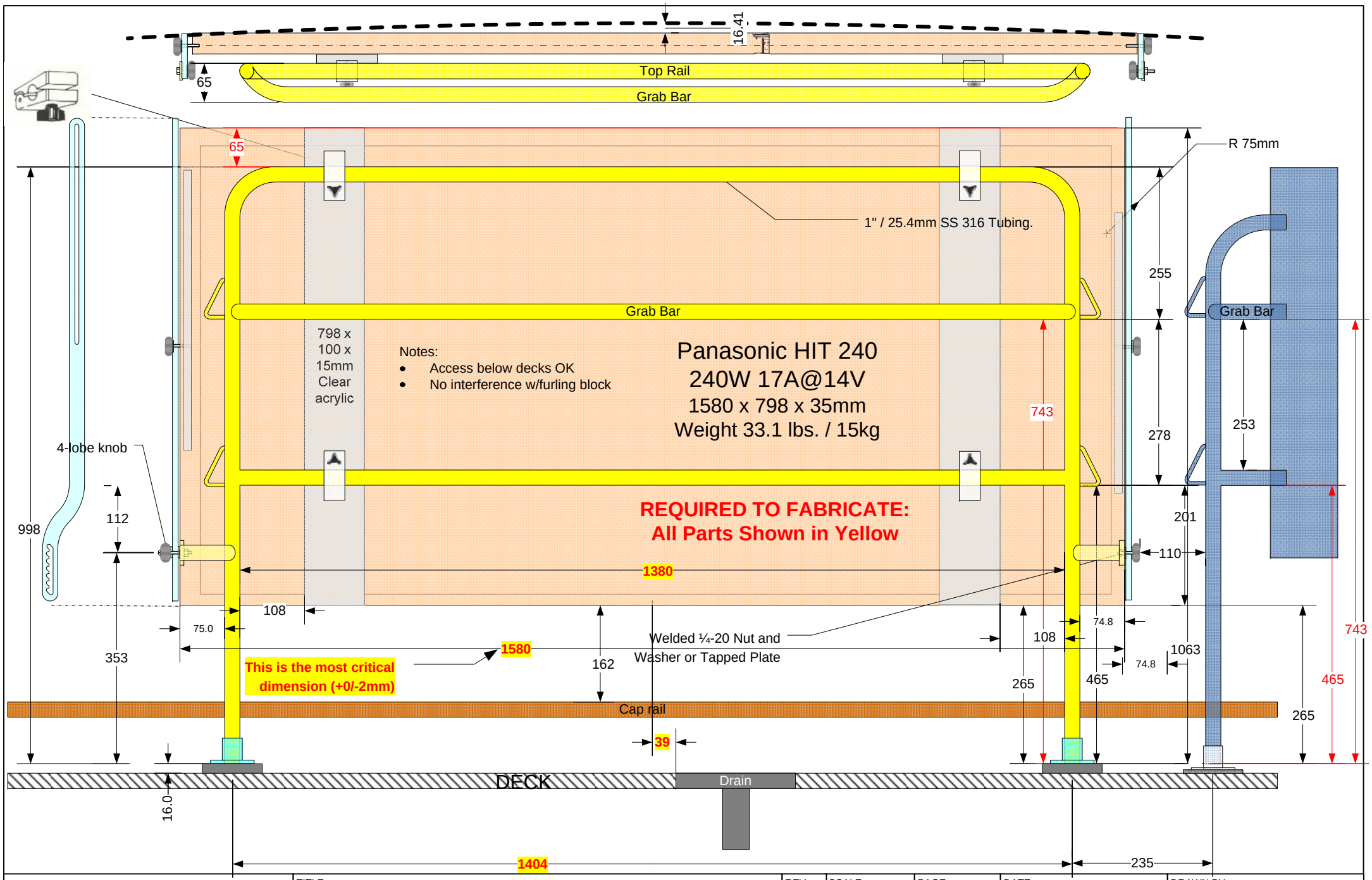
Plastic Knob
Stainless Stud
Reid Tool Supply
JCL-189

6' of 3" S/S
$99.20

SUN-S3610-0000

3deg Suncor

S/V BEATRIX - KELLY-PETERSON 44 #286 (1980)	TITLE: Solar Panel Mounts - Panel End View - Aft Panel Starboard Side Kyocera	REV: E	SCALE: 1: 8	PAGE: 2 OF 20	DATE: 9/21/2017	DRAWN BY: JEFF STANDER



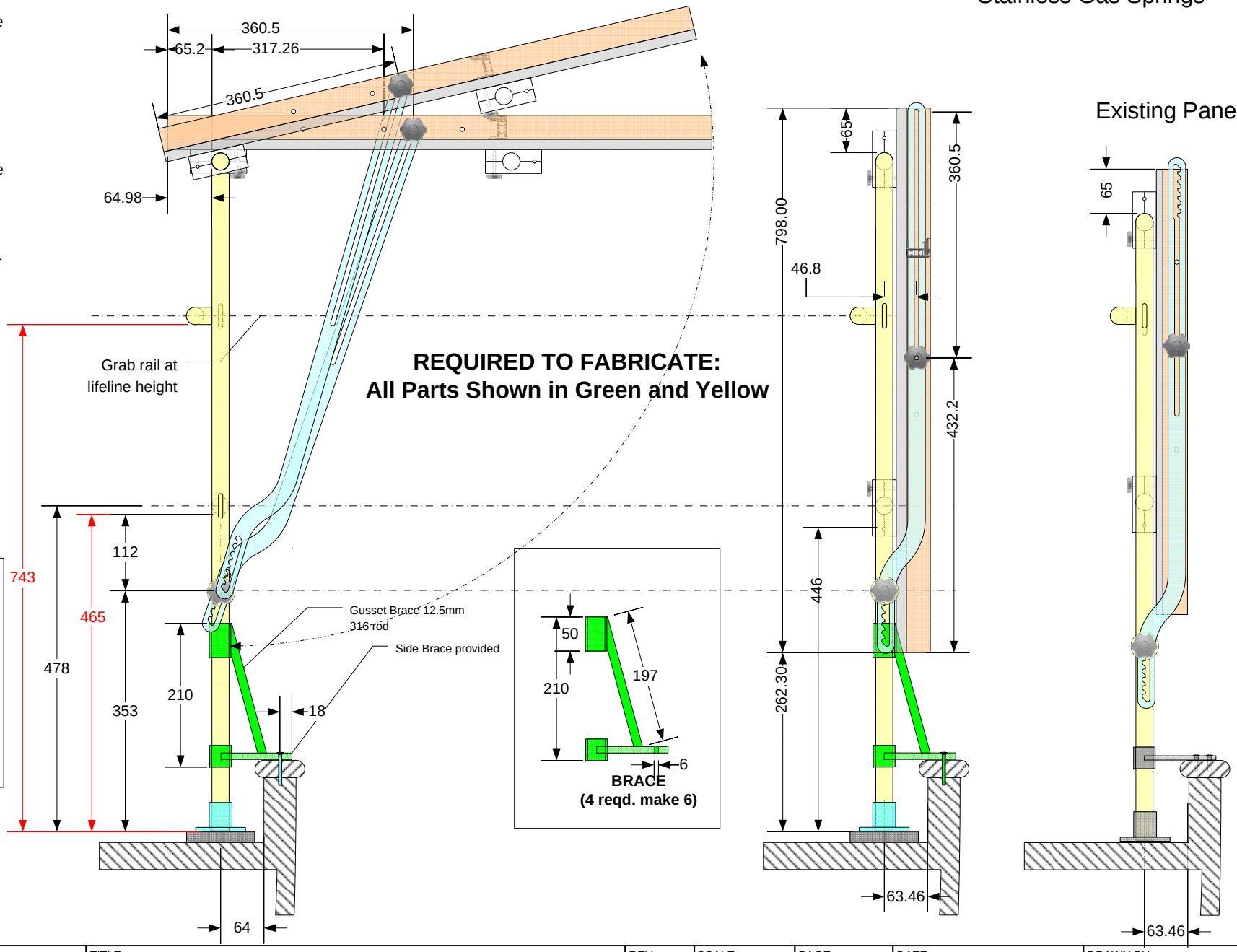
S/V BEATRIX - KELLY-PETERSON 44 #286 (1980)	TITLE: Solar Panel Mounts - Plan View - Forward Panel Stbd - Panasonic 240	REV: E	SCALE: 1: 8	PAGE: 3 OF 20	DATE: 9/21/2017	DRAWN BY: JEFF STANDER

NOTE:
Although this drawing shows the stanchion as vertical there is a 5 degree camber of both the cap rail and deck which must be accounted for when fabricatIng the frame and braces.

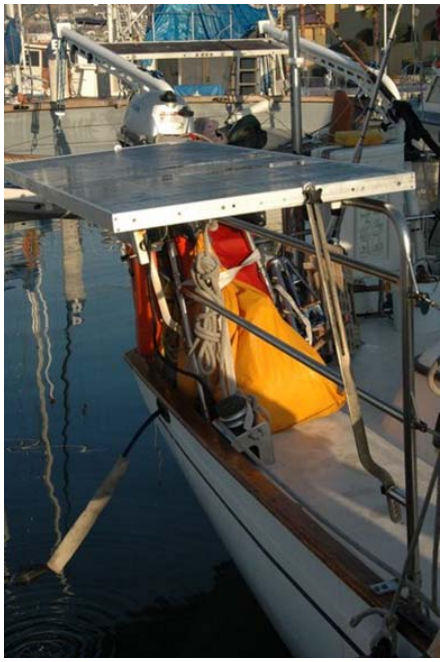
NOTE:
The deck rail is curved, so the middle stanchion is approx. 25mm farther away from the cap rail. This necessitates both a longer brace and a stanchion base located closer inboard.

Stainless Gas Springs

Existing Panels

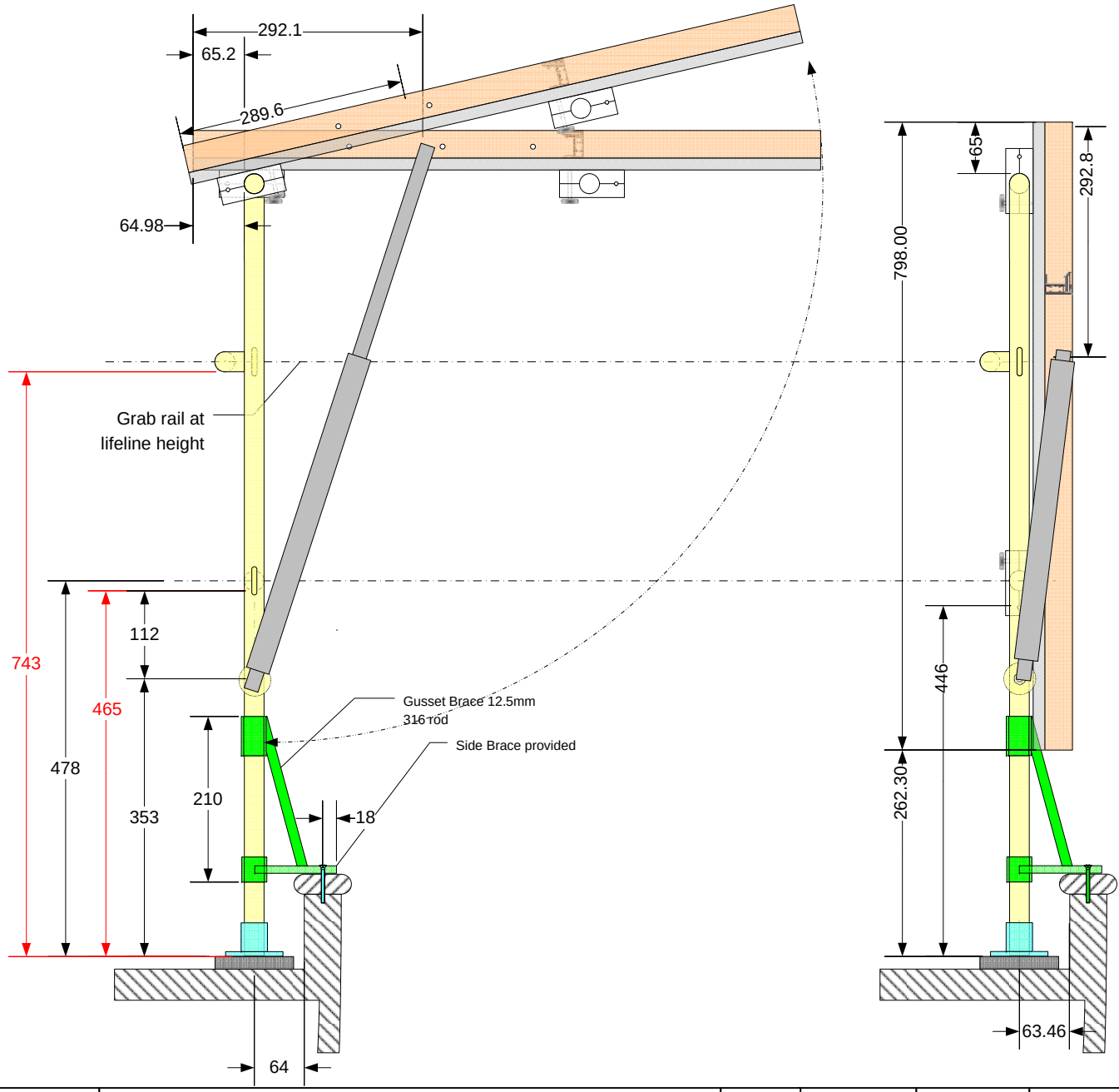


S/V *BEATRIX* - KELLY-PETERSON 44 #286 (1980)	TITLE: Solar Panel Mounts - Panel End View - Forward Panel Starboard Side - Panasonic 240	REV: E	SCALE: 1: 8	PAGE: 4 OF 20	DATE: 9/21/2017	DRAWN BY: JEFF STANDER

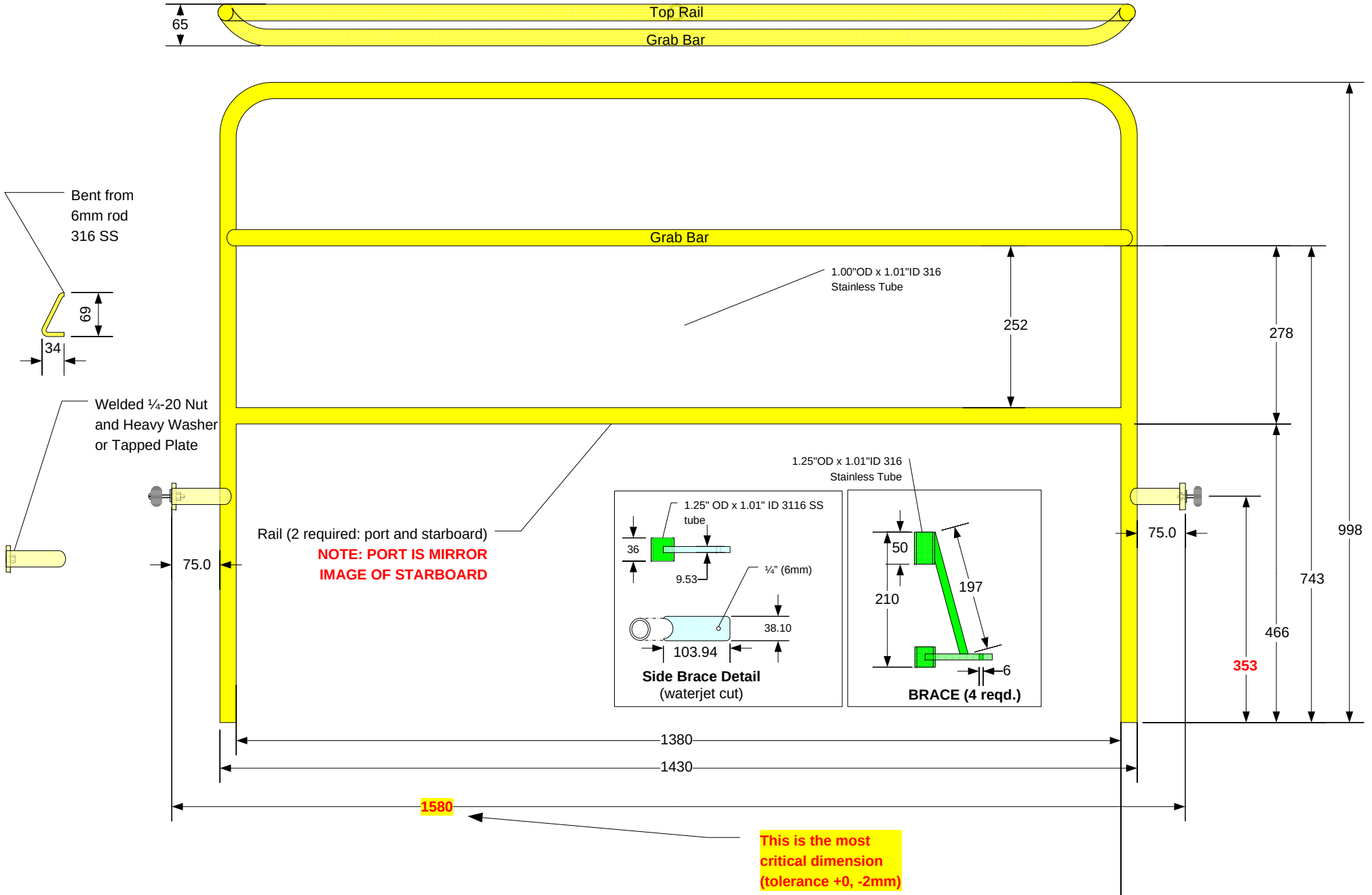


S/V *BEATRIX* - KELLY-PETERSON 44 #286 (1980)	TITLE	REV	SCALE	PAGE	DATE	DRAWN BY
	Solar Panel Mounts - Photos of Existing Aft Installations	E	1: 1	5 OF 20	21/09/2017	JEFF STANDER

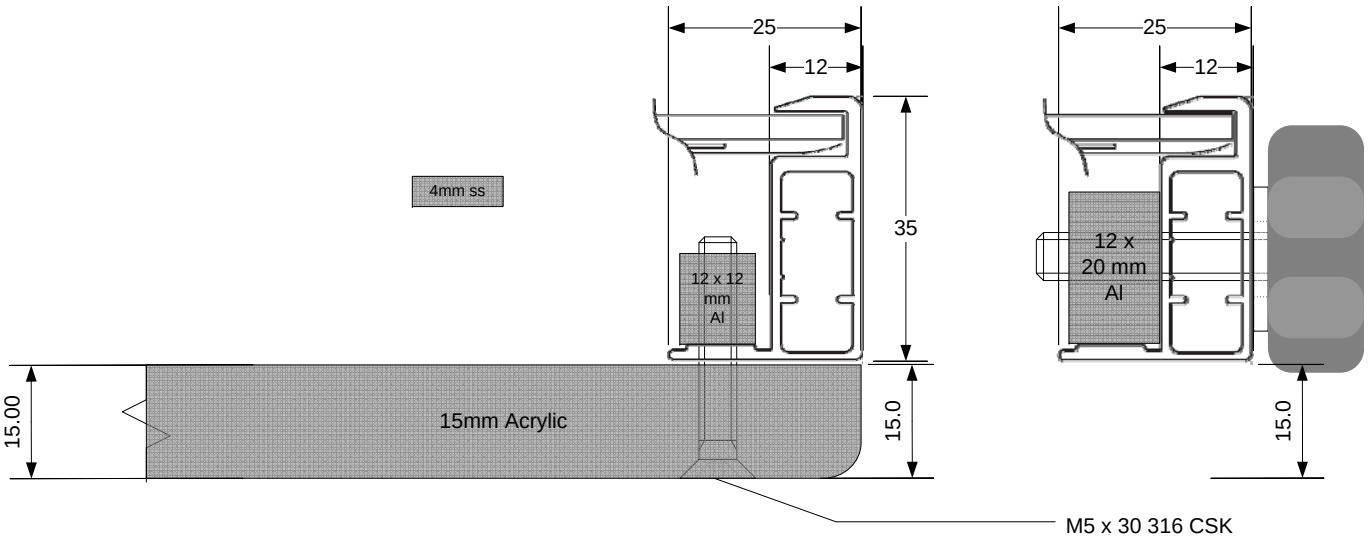
Stainless Gas Springs



S/V *BEATRIX* - KELLY-PETERSON 44 #286 (1980)	TITLE Solar Panel Mounts - Panel End Vew - Fwd Panel w/Gas Struts (design)	REV E	SCALE 1: 8	PAGE 6 OF 20	DATE 9/21/2017	DRAWN BY JEFF STANDER



S/V BEATRIX - KELLY-PETERSON 44 #286 (1980)	TITLE: Solar Panel Mounts - Fabrication Items	REV: E	SCALE: 1: 8	PAGE: 7 OF 20	DATE: 9/21/2017	DRAWN BY: JEFF STANDER



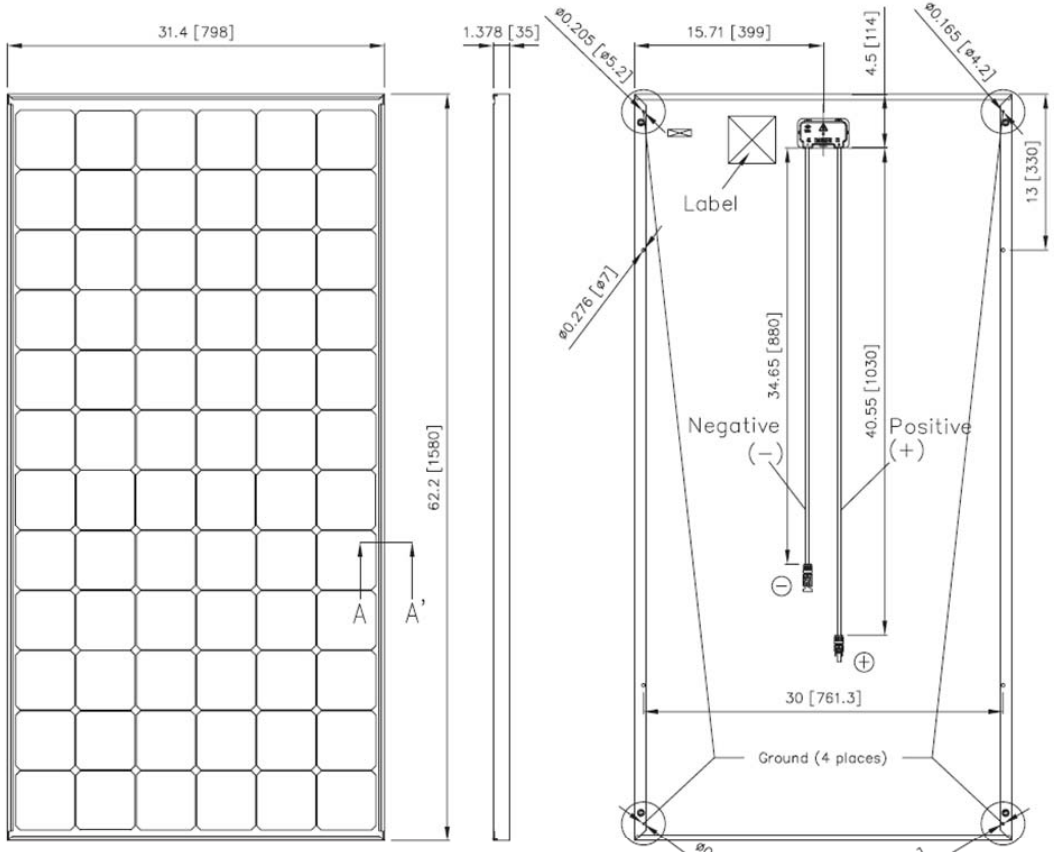
S/V *BEATRIX* - KELLY-PETERSON 44 #286 (1980)	TITLE Solar Panel Mounts - Panasonic HIT240 Frame Cross Section	REV E	SCALE 1: 1	PAGE 8 OF 20	DATE 21/09/2017	DRAWN BY JEFF STANDER

Electrical Specifications

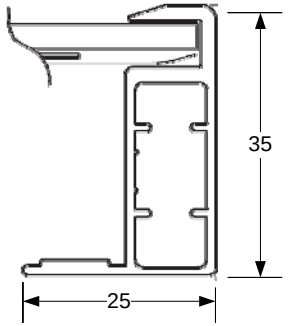
Model	HIT Power 240S or VBHN240SA06
Rated Power (Pmax)[1]	240 W
Maximum Power Voltage (Vpm)	43.7 V
Maximum Power Current (Ipm)	5.51 A
Open Circuit Voltage (Voc)	52.4 V
Short Circuit Current (Isc)	5.85 A
Temperature Coefficient (Pmax)	-0.30%/ °C
Temperature Coefficient (Voc)	-0.126 V/ °C
Temperature Coefficient (Isc)	1.76 mA/ °C
NOCT	118.9°F (48.3°C)
CEC PTC Rating	223.5 W
Cell Efficiency	21.6%
Module Efficiency	19.0%
Watts per Ft.²	17.70 W
Maximum System Voltage	600 V
Series Fuse Rating	15 A
Warranted Tolerance (-/+)	-0% / +10%

Mechanical Specifications

Internal Bypass Diodes	3 Bypass Diodes
Module Area	13.56 Ft² (1.26m²)
Weight	33.1 Lbs. (15kg)
Dimensions LxWxH	62.2x31.4x1.4 in. (1580x798x35 mm)
Cable Length +Male/-Female	40.55/34.64 in. (1030/880 mm)
Cable Size / Type	No. 12 AWG / PV Cable
Connector Type[3]	Multi-Contact® Type IV (MC4™)
Static Wind / Snow Load	50 PSF (2.400 Pa)
Pallet Dimensions LxWxH	63.2x32x.65 in. (1607x815x1650 mm)
Quantity per Pallet / Pallet Weight	40 pcs./1388.9 Lbs (630 kg)
Quantity per 40' Container	560 pcs.
Quantity per 20' Container	280 pcs.



$599 each
Solar Online Australia
Unit 3, 301 Hillsborough Road
Warners Bay NSW 2282
(south of Newcastle)
See Jake

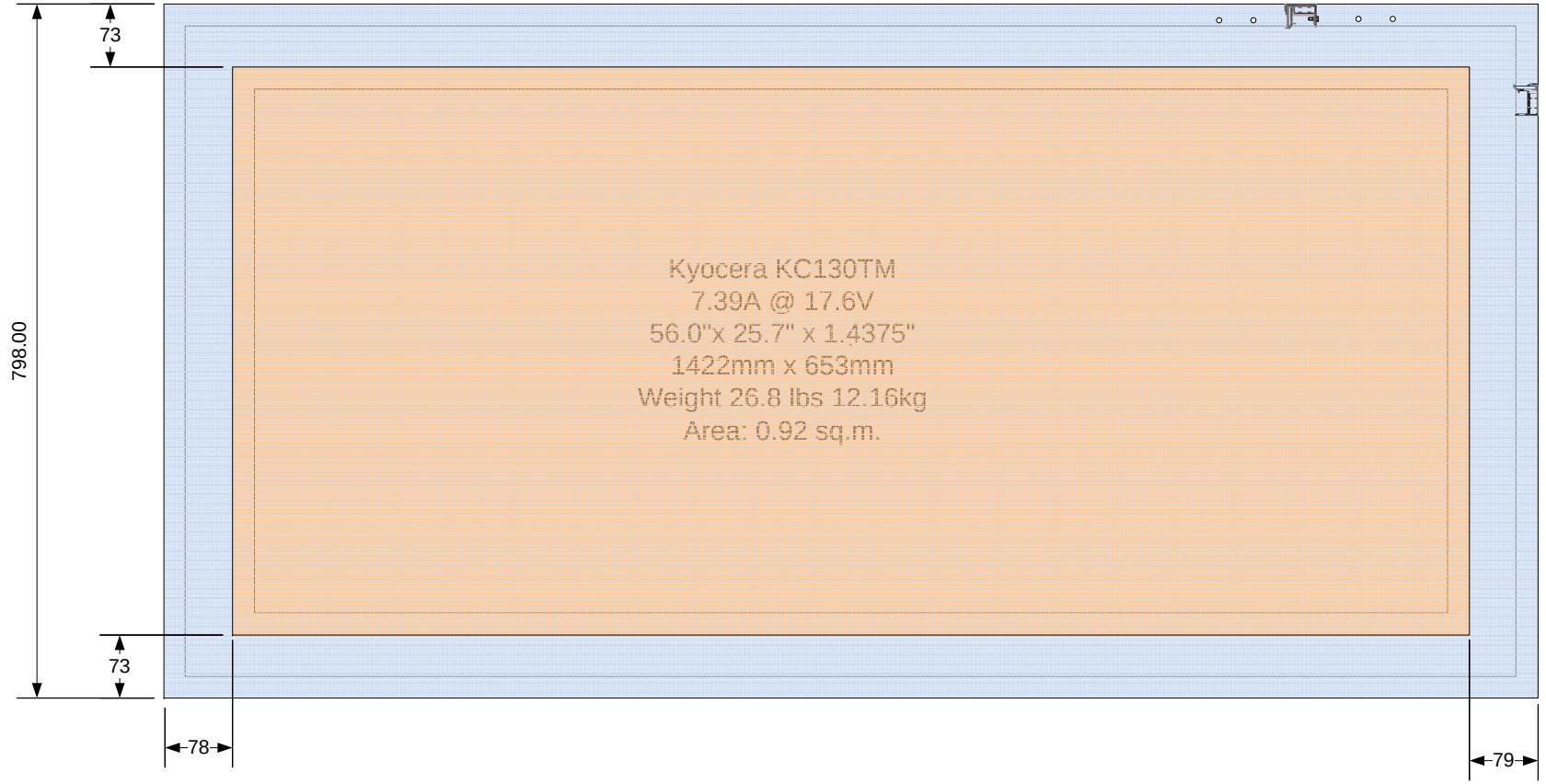


S/V *BEATRIX* - KELLY-PETERSON 44 #286 (1980)	TITLE: Solar Panel Mounts - Panasonic HIT240	REV: E	SCALE: 1: 1	PAGE: 9 OF 20	DATE: 21/09/2017	DRAWN BY: JEFF STANDER

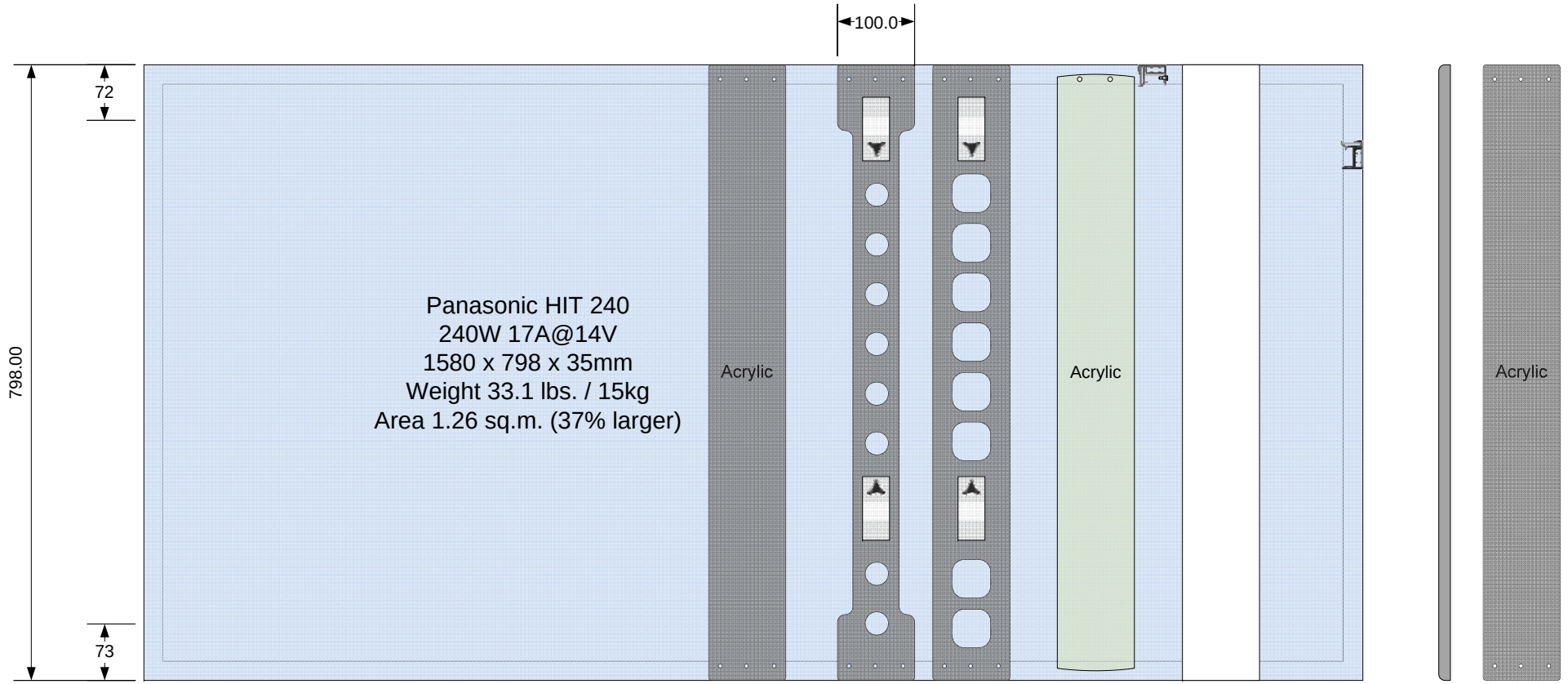
Existing: 135+135+80 = 350W	20A
Plus HIT240: 350+480 = 880W	50A
Replace with HIT240: 80+480 = 560W	30A
Replace 80 with 240: 135+135+240=410W	23A

*amps @ 17.6v

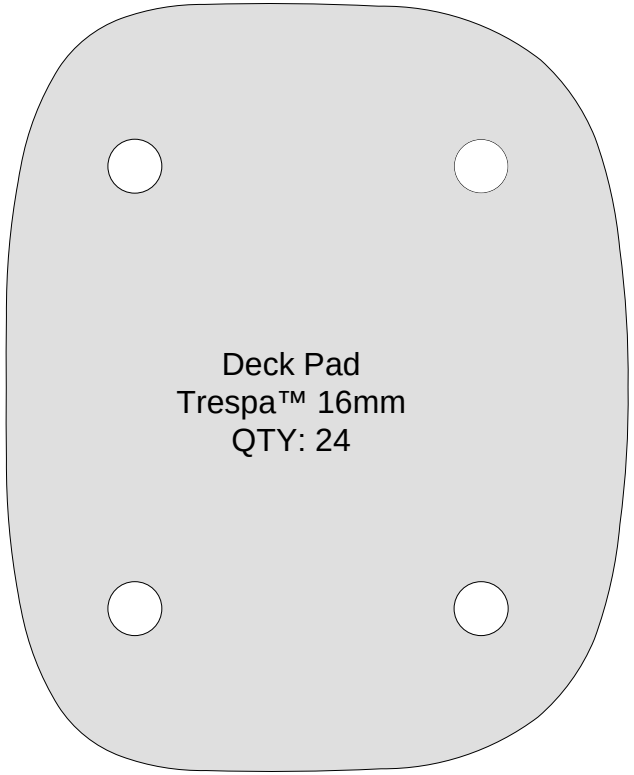
Panasonic HIT 240
240W 17A@14V
1580 x 798 x 35mm
Weight 33.1 lbs. / 15kg
Area 1.26 sq.m. (37% larger)



S/V BEATRIX - KELLY-PETERSON 44 #286 (1980)	TITLE: Solar Panel Mounts - KC135 vs Panasonic HIT 240	REV: E	SCALE: 1: 8	PAGE: 10 OF 20	DATE: 9/21/2017	DRAWN BY: JEFF STANDER

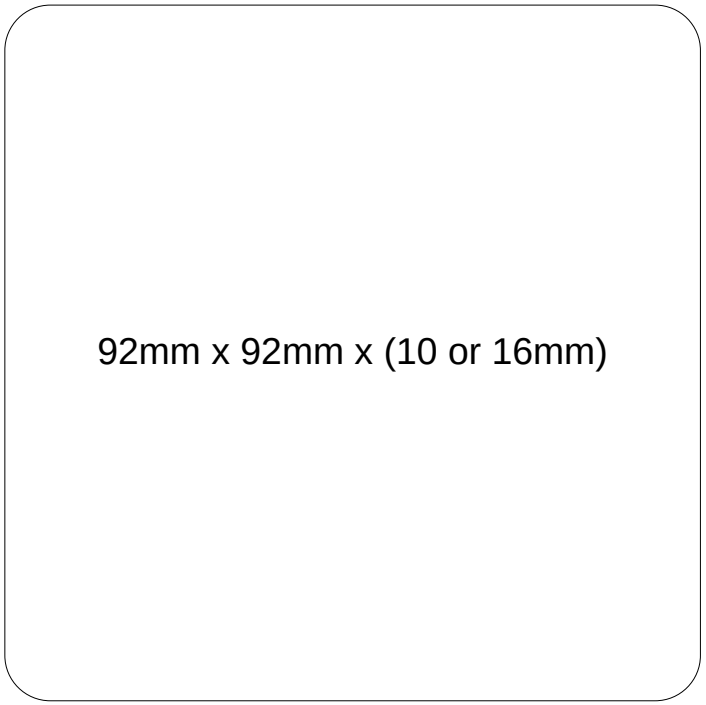


S/V BEATRIX - KELLY-PETERSON 44 #286 (1980)	TITLE: Solar Panel Mounts - Panel Supports for Panasonic HIT 240	REV: E	SCALE: 1: 8	PAGE: 11 OF 20	DATE: 9/21/2017	DRAWN BY: JEFF STANDER



S/V *BEATRIX* - KELLY-PETERSON 44 #286 (1980)	TITLE Solar Panel Mounts - Conforming Stanchion Base Pads	REV E	SCALE 1: 1	PAGE 12 OF 20	DATE 21/09/2017	DRAWN BY JEFF STANDER

16mm Trespa™
routted down to 10mm is desirable but not required.
Thickness needs to be constant.
10 required

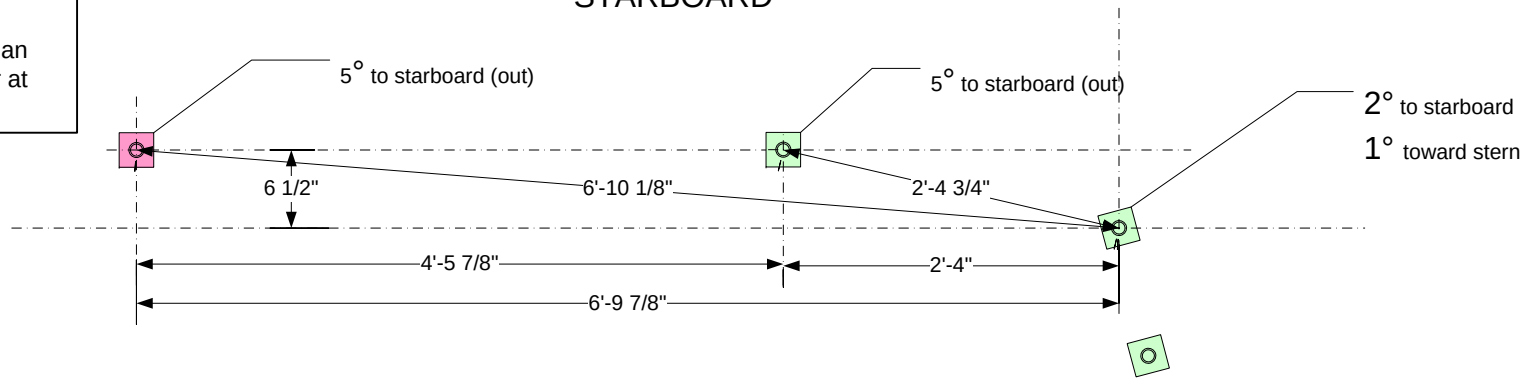


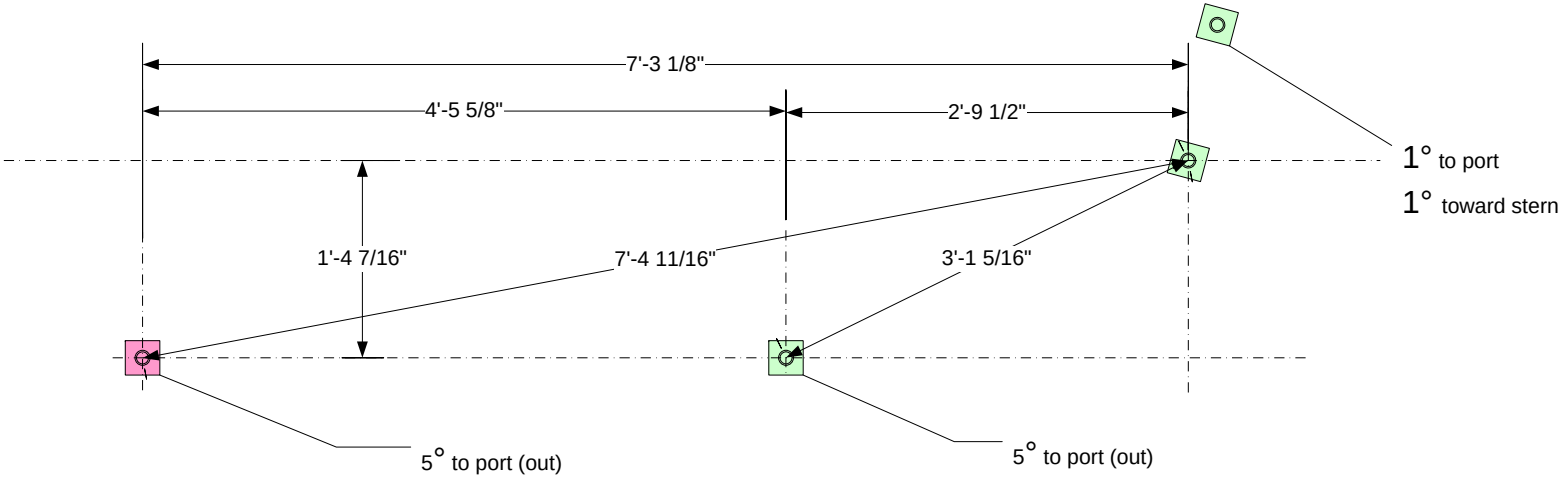
S/V *BEATRIX* - KELLY-PETERSON 44 #286 (1980)	TITLE	REV	SCALE	PAGE	DATE	DRAWN BY
	Solar Panel Mounts - Square Stanchion Base Pads	E	1: 1	13 OF 20	21/09/2017	JEFF STANDER

Note:
The fabricator will need these measurements to take the aft pulpits and arrange them in the workshop exactly as on the boat. This allows the pulpit extension to fit exactly. This diagram is for s/v *Beatrix.* It will be different for each vessel.

Measurements include the flat plan layout and the degree of camber at the deck.

STARBOARD

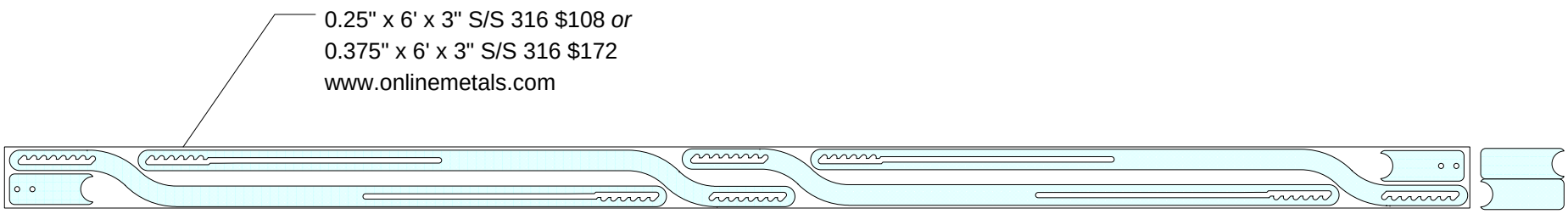


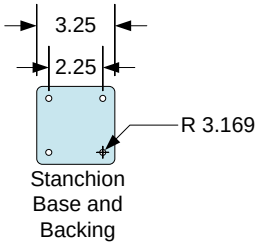


PORT

S/V *BEATRIX* - KELLY-PETERSON 44 #286 (1980)	TITLE	REV	SCALE	PAGE	DATE	DRAWN BY
	Solar Panel Mounts - Pushpit and Stanchion Positioning	E	1: 16	15 OF 20	21/09/2017	JEFF STANDER

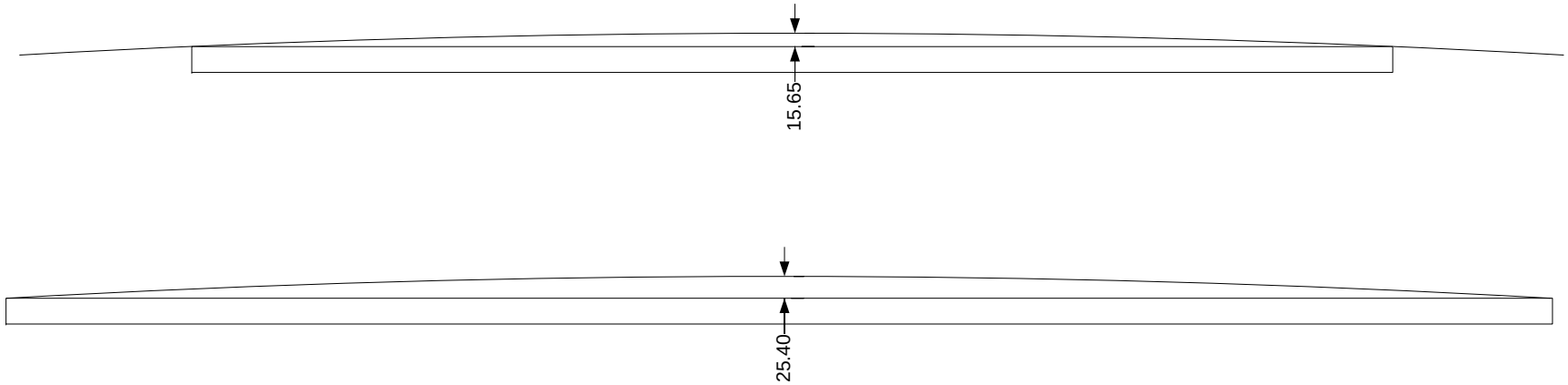
0.25" x 6' x 3" S/S 316 $108 *or*
0.375" x 6' x 3" S/S 316 $172
www.onlinemetals.com





Stanchion
Base and
Backing

S/V *BEATRIX* - KELLY-PETERSON 44 #286 (1980)	TITLE	REV	SCALE	PAGE	DATE	DRAWN BY
	Solar Panel Mounts - Layout for Waterjet Cutting of Braces & Other Parts	C	1: 8	16 OF 20	21/09/2017	JEFF STANDER



S/V BEATRIX - KELLY-PETERSON 44 #286 (1980)	TITLE: Solar Panel Mounts - Deck Curve Allowances	REV: E	SCALE: 1: 8	PAGE: 17 OF 20	DATE: 9/21/2017	DRAWN BY: JEFF STANDER

Kyocera has perfected its new surface treatment technology and is introducing it on a new line of modules named d.Blue, for its dark blue color.

The newly developed treatment method processes multi-crystalline silicon cells in order to produce a surface texture that minimizes surface reflectance and maximizes output. The result is a maximum conversion efficiency of 15 %, one of the highest conversion efficiencies in the polycrystalline module industry. Because Kyocera modules are so efficient less space is required than other solar modules of equal output. This translates to both more wattage per square foot and lower mounting structure cost.

d.Blue is ideal for installation on all types of buildings, from residential to large scale commercial systems. The stylish dark blue cells, combined with black module frames, allow the modules to blend in with the buildings architecture while producing energy at exceptional efficiencies.

The d.Blue modules are available in 167-watts and 125-watts panels. Both feature Multi-Contact output cables, a heavy-duty box-style anodized aluminum frame; and an industry high 25-year power output warranty.

VENDOR: Affordable Solar http://affordable-solar.com

Kyocera KC130TM

Two Panels @ $559.00 : $ 1,118.00 (Aug 2006)

Shipping : + $50.00

Tax : + $ 0.00 **Net**

Total : $ 1,168.00

Performance Warranty
1 year limited warranty on material and workmanship
25 year limited warranty on power output

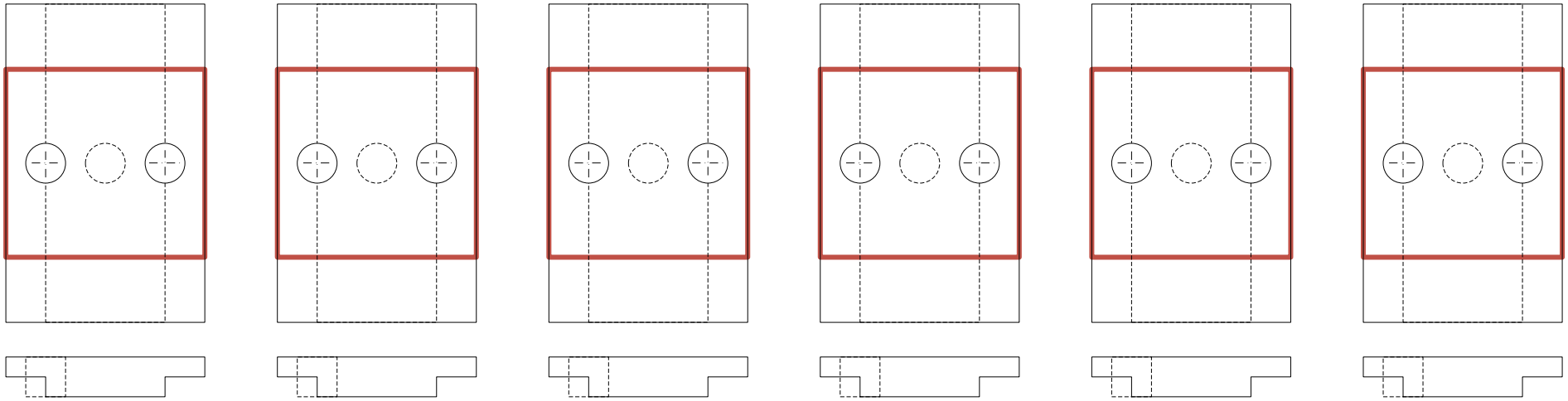
Junction Box
Dimension (LxWxD): 56.0"x 25.7" x 1-7/16" (smaller than published spec)
Weight: 26.8 lbs / 12.19 kg
Shipping Weight: 33 lbs. / 15 kg

Performance Estimate Per Panel at 14.4 volts
130 AMPS / 14.4 VOLTS = 9 AMPS
9 AMPS * 8 HOURS = 72 AHg
Expected Daily Amp-hours for two panels: 100 to 140

Electrical Specifications:	
Open Circuit Voltage (V)	21.9
Short-circuit Current (A)	8.02
Maximum Power (W)	130
Maximum Power Voltage (V)	17.6
Maximum Power Current (A)	7.39
Max. System Voltage (12/24/48V Nominal)	600
Series Overcurrent Protection (A)	12
Minimum Conductor Size (AWG, Stranded)	10
Temperature Rating of Field Connection (oC)	90
Nominal Operating Cell Temperature (oC)*	47
Production Tolerance (%)	+10/-5

■ Electrical Performance under Standard Test Conditions (*STC)	
Maximum Power (Pmax)	130W (+10%/−5%)
Maximum Power Voltage (Vmpp)	17.6V
Maximum Power Current (Impp)	7.39A
Open Circuit Voltage (Voc)	21.9V
Short Circuit Current (Isc)	8.02A
Max System Voltage	600V
Temperature Coefficient of Voc	-8.21×10^{-2} V/℃
Temperature Coefficient of Isc	3.18×10^{-3} A/℃

S/V *BEATRIX* - KELLY-PETERSON 44 #286 (1980)	TITLE	REV	SCALE	PAGE	DATE	DRAWN BY
	Solar Panel Mounts - KC130TM Specifications	E	1: 1	18 OF 20	21/09/2017	JEFF STANDER



S/V *BEATRIX* - KELLY-PETERSON 44 #286 (1980)	TITLE	REV	SCALE	PAGE	DATE	DRAWN BY
	Solar Panel Mounts - Drill Templates	E	1: 1	19 OF 20	21/09/2017	JEFF STANDER

In AUS the KC130TM has been replaced with this model :

KD135SX triple bus a little longer than the KC130TM

1500 x 668 or 16m wider than older KC model. Quantity purchased 2 – 39 = $1198 less 29% discount and I think he said plus GST. So trade price for two would be $850.58 x 2 =$1701.16 plus $10.00 for shipping plus GST maybe.

The cost is $1168 for quantities 40 – 80 with 29% Discount plus GST?

Shipping for two panels is approx $10 with delivery time approx 2 day.

For the trade discount send an email providing trade information including the ABM # to Gailian@Bigpond.net.au . Purchases are paid for by Bank Deposit.