

Thermosiphon J and J Free Heat Closed Circuit Systems

These systems are suitable for multiple installations. They are suitable for frost and harsh water regions.

J and J Free Heat Systems															
Model	150	151	180	181	182	220	221	222	300	301	302	303	400	440	444
Tank model		150J	180J	180J	220J	220J	300J	300J	300J	300J	300J	300J	400J	440J	440J
J Free Heat	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Collector model	150F	180F	180F	220F	220F	300F	300F	300F	300F	300F	300F	300F	400F	440F	440F
No. of collectors	1	1	1	1	2	1	2	1	1	2	1	3	3	3	4
Storage capacity	litres	150	150	180	180	220	220	300	300	300	300	300	400	440	440
Deliver capacity	US-gal	40	40	48	48	58	58	80	80	80	80	80	116	116	116
Deliver capacity	litres	130	130	180	180	200	200	240	240	240	240	240	400	400	400
(total)	US-gal	34	34	42	42	53	53	63	63	63	63	63	106	106	106
Boost capacity	US-gal	20	20	24	24	24	29	40	40	40	40	40	58	58	58
(electric or gas)	kg	56	102	66	108	154	78	124	170	90	145	187	229	148	280
Weight empty	lbs	123	225	146	228	340	172	273	375	218	320	412	505	326	639
Weight full	kg	206	256	245	292	398	298	348	394	399	449	495	541	588	730
	lbs	454	564	540	644	745	657	767	869	880	990	1091	1193	1296	1609
A - Width	m	1.40	1.40	1.62	1.62	2.42	1.88	2.04	2.42	2.42	2.42	3.38	3.41	3.40	4.44
	m	55.1	55.1	63.8	63.8	95.3	74.0	80.3	95.3	95.7	95.7	133.1	134.3	137.4	174.8
B - length	m	0.51	2.48	0.51	2.48	2.48	0.51	1.64	2.48	2.48	1.64	2.48	0.51	2.48	2.48
	in	20.1	97.6	20.1	97.6	97.6	20.1	64.6	97.6	97.6	64.6	97.6	20.1	97.6	97.6

*The J and J free heat systems can be installed in a solar panel with an in-line solar panel booster heater. Refer to the Solar panel booster specification sheet for further details on the gas booster.

Electric Boost Specifications

Heating unit type *	Copper shaft immersion element
Supply voltage	220 V - 250 V
Recovery rate @ 240 V and temperature rise of:	
Rating	40°C
Current	50°C
kW	60°C
litres	
1.8	8
2.4	10
3.0	13
3.6	15
4.0	20

*A boiler element (2.5 kW) is suitable for water or concrete water areas.

Gas Boost (In Tank - Optional) Specifications

Model type*	FD15 gas booster (fan forced)
Boiler rating - Input / Output	13 MJ/h / 110 MJ/h (2.8kW)
Recovery rate	59 litres per hour @ 40°C rise
Primary voltage	220 V - 250 V
Secondary voltage	12 V DC

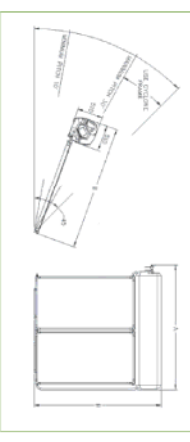
*Suitable for hot or concrete water areas.

Water Supply

TRV valve setting	kPa	1000	psi	145
EVV setting	kPa	690	psi	125
Max. supply pressure with EVV	kPa	690	psi	100
without EVV	kPa	800	psi	115
Water Connections	code	RP 3/1/20		
	hd	R 1/1/15		

J Collector											
Aperture (heating area)	m ²	1.87	1.97	1.97	2.0						
Dimensions	length	mm	1937	in	76.3						
	width	mm	1022	in	40.3						
	height	mm	77	in	3.0						
Capacity	empty	kg	3.5	US-gal	0.9						
	full	kg	46	lbs	101						
Working pressure	psi	80	psi	12							
Absorber surface											
Absorber material											
Riser material											
Number of risers											
Trey material											
Insulation material											
Glass											

J and J Free Heat

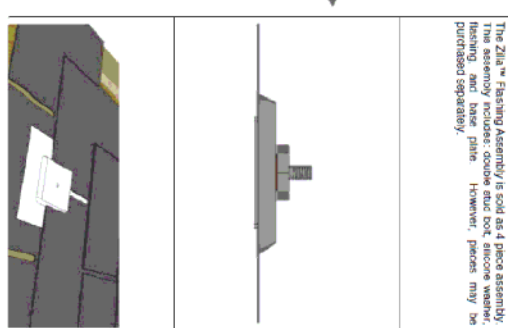
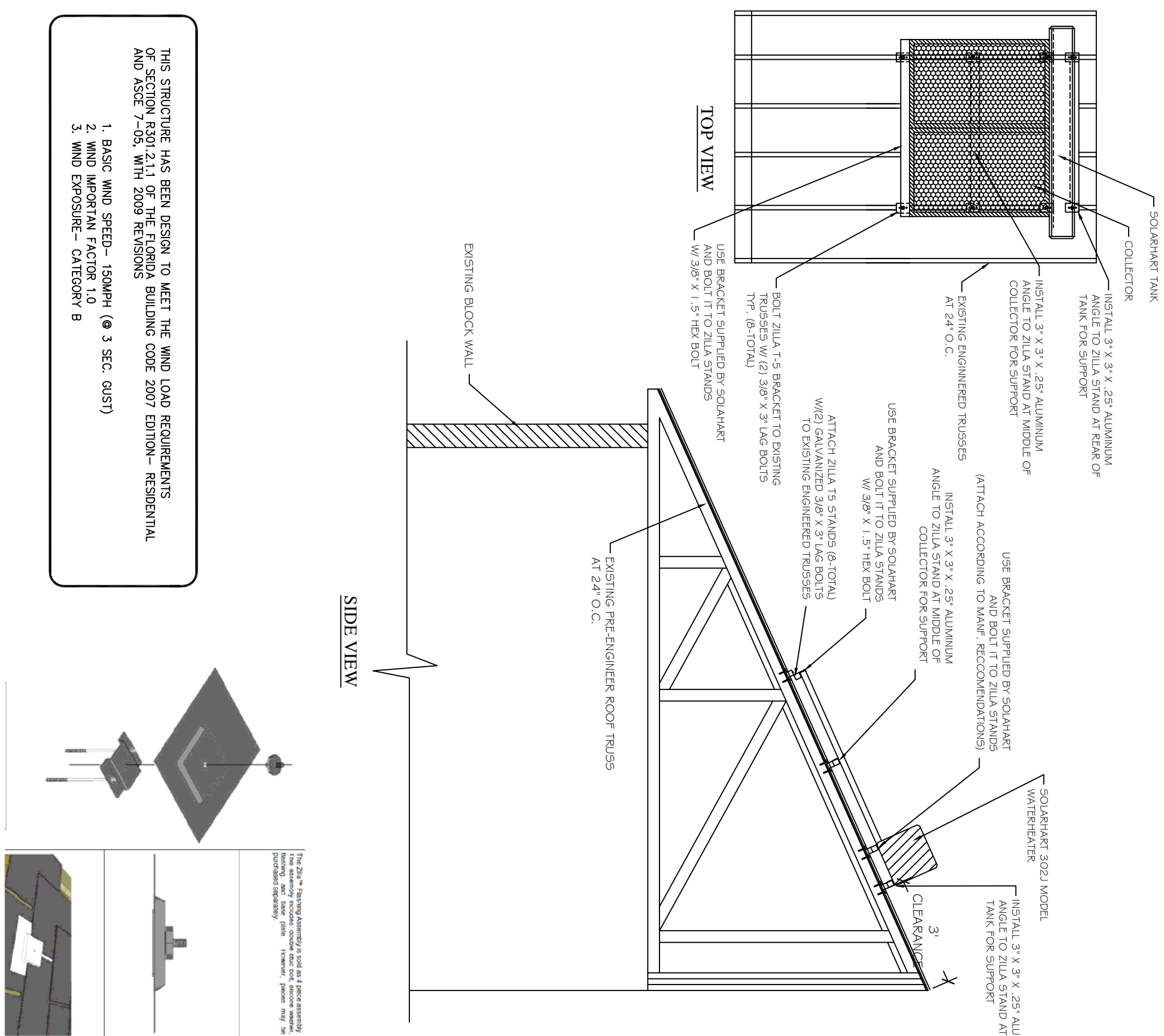


*System Detail View

Zilla™ Two Piece Threaded Standoff			
asphalt	ZSC02PC-	2.5AL	Threaded cap
	ZSC27PC-	6.5AL	aluminum
tile	ZSC02PC-	11.5AL	with threaded base allows for adjustable measurements up to 0.75"
	ZSC02PC-	2.5AL	6005 TS
	ZSC02PC-	2.5AL	aluminum
	ZSC02PC-	2.5AL	6005 TS
	ZSC02PC-	2.5AL	aluminum
	ZSC02PC-	2.5AL	6005 TS
	ZSC02PC-	2.5AL	aluminum
	ZSC02PC-	2.5AL	6005 TS
	ZSC02PC-	2.5AL	aluminum
	ZSC02PC-	2.5AL	6005 TS
ZSC02PC-	2.5AL	aluminum	

THIS STRUCTURE HAS BEEN DESIGN TO MEET THE WIND LOAD REQUIREMENTS OF SECTION R301.2.1.1 OF THE FLORIDA BUILDING CODE 2007 EDITION - RESIDENTIAL AND ASCE 7-05, WITH 2009 REVISIONS

1. BASIC WIND SPEED - 150MPH (@ 3 SEC. GUST)
2. WIND IMPORTAN FACTOR 1.0
3. WIND EXPOSURE - CATEGORY B

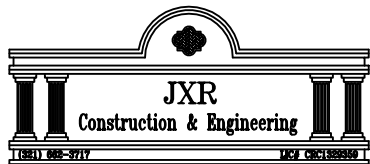


The Zilla™ Raising Assembly is sold as a piece assembly. The riser and base are sold separately. The cap and base are sold separately. The riser and base are sold separately. The cap and base are sold separately.

ENGINEER:
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13229 SHARSWOOD
ORLANDO, FL 32828
(407)-716-7394 Lic# 49421

SOLAHART 302J INSTALLATION DETAIL

ENGINEER:
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drawn by
checked by
date
scale
job no.

S-1

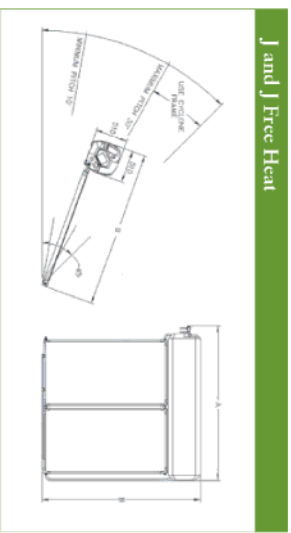
Thermosiphon J and J Free Heat Closed Circuit Systems

These systems are suitable for multiple installations. They are suitable for frost and harsh water regions.

J and J Free Heat Systems		150 tank system	180 tank system	181 system	182 system	220 tank system	221 system	222 system	300 tank system	301 system	302 system	303 system	440 tank system	443 system	444 system
Model	J	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tank model	150J	180J	180F	220J	220F	300J	300F	440J	440F						
J Free Heat	150F	J	J	J	J	J	J	J	J	J	J	J	J	J	J
Collector model	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J
No of collectors	1	1	1	2	1	2	1	2	1	2	3	3	3	4	4
Storage capacity	litres 150	150	180	180	180	220	220	220	300	300	300	300	440	440	440
	US gal 40	40	48	48	48	58	58	58	80	80	80	80	116	116	116
Delivery capacity	litres 130	130	160	160	160	200	200	240	240	240	240	240	400	400	400
	US gal 34	34	42	42	42	53	53	63	63	63	63	63	106	106	106
Boost capacity (electric or gas)	litres 75	75	90	90	90	110	110	110	150	150	150	220	220	220	220
	US gal 20	20	24	24	24	29	29	29	40	40	40	40	58	58	58
Weight empty	kg 56	102	66	108	154	78	124	170	99	145	187	229	148	290	320
	lbs 123	225	146	238	340	172	273	375	218	320	412	505	326	639	705
Weight full	kg 206	256	245	292	338	298	348	394	399	449	495	541	588	730	776
	lbs 454	564	540	644	745	657	757	869	880	990	1091	1193	1296	1609	1711
A - Width	m 1.40	1.40	1.62	1.62	2.42	2.42	2.04	2.42	2.43	2.43	3.38	3.41	3.49	4.44	4.44
	ft 55.1	55.1	63.8	63.8	95.3	95.3	80.3	95.7	95.7	95.7	133.1	134.3	137.4	174.8	174.8
B - Length	m 0.51	2.48	0.51	2.48	2.48	0.51	1.64	2.48	0.51	1.64	2.48	0.51	2.48	2.48	2.48
	ft 20.1	97.6	20.1	97.6	97.6	20.1	64.6	97.6	20.1	64.6	97.6	20.1	97.6	97.6	97.6

The J and J Free Heat systems can be installed as a solar preheater with an in-line Solihart gas booster water heater. Refer to the Solihart gas booster specifications sheet for further details on the gas booster.

J Collector			
Aperture (heating) area	length	width	height
m ²	mm	mm	mm
1.87	1937	1022	77
ft ²	in	in	in
20	76.3	40.3	3.0
Capacity	empty	full	
litres	kg	kg	US gal
3.5	0.9	42	3.5
Weight	empty	full	
kg	kg	kg	lbs
42	46	101	93
Working pressure	Black polyester powder coat		
Absorber material	steel		
Riser material	steel		
Number of risers	35		
Trey material	0.6 mm aluminium		
Emulsion material	55 mm polyester blanket		
Glass	3.2 mm tempered low iron		



J and J Free Heat

Electric Boost Specifications					
Heating unit type *	Copper sheath immersion element				
Supply voltage	220 V - 250 V				
Recovery rate @ 240 V and temperature rise of:	40°C	50°C	60°C		
Rating kW	Current Amps	litres	litres	litres	litres
1.8	8	39	31	26	26
2.4	10	52	41	34	34
3.0	13	64	52	43	43
3.6	15	77	62	52	52
4.8	20	103	83	69	69

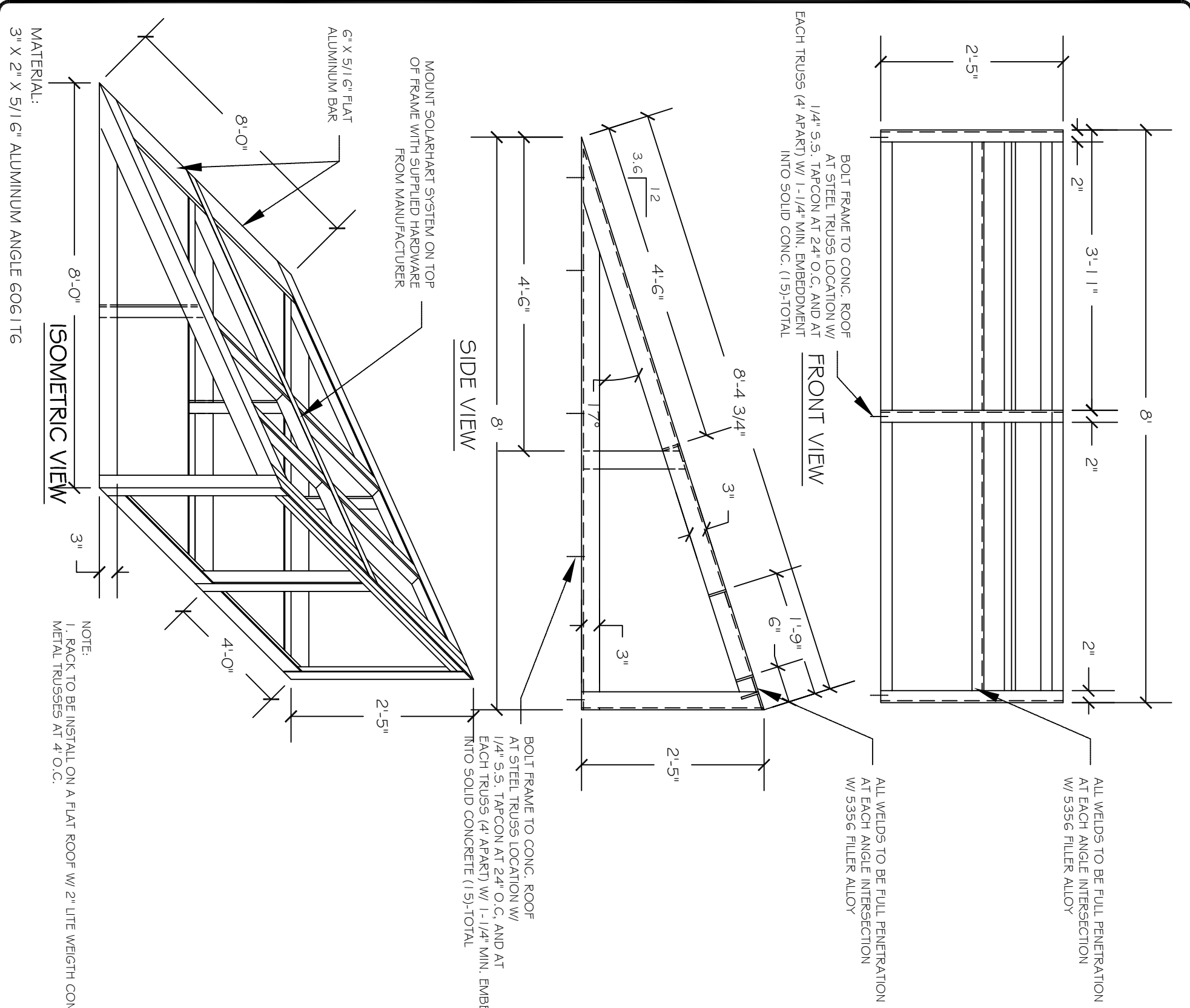
*A kitchen element (2.5 kW) is available for hard or combed water areas

Gas Boost (In Tank - Optional) Specifications	
Model type*	FD15 gas booster fan forced
Burner rating - Input / Output	13 MJ/h / 10 MJ/h (2.8kW)
Recovery rate	59 litres per hour @ 40°C rise
Primary voltage	220 V - 250 V
Secondary voltage	12 V DC

*Available for hard or combed water areas

Water Supply			
TRV valve setting	KPa	psi	145
ECV ¹ setting	KPa	psi	125
Max. supply pressure with ECV	KPa	psi	680
without ECV	KPa	psi	800
Water Connections	cold	PP 3/4" / 20	115
	hot	R 1/2" / 15	

¹Expansion Control Valve



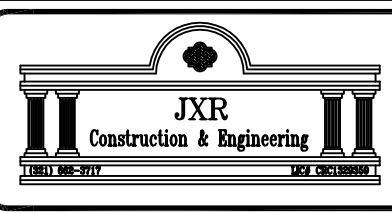
NOTE:
 1. RACK TO BE INSTALLED ON A FLAT ROOF W/ 2" LITE WEIGHT CONC. OVER METAL TRUSSES AT 4' O.C.

THIS STRUCTURE HAS BEEN DESIGN TO MEET THE WIND LOAD REQUIREMENTS OF SECTION R301.2.1.1 OF THE FLORIDA BUILDING CODE 2007 EDITION— RESIDENTIAL AND ASCE 7-05, WITH 2009 REVISIONS

1. BASIC WIND SPEED— 140MPH (@ 3 SEC. GUST)
2. WIND IMPORTANT FACTOR 1.0
3. WIND EXPOSURE— CATEGORY B

drawing no.
S-1

drawn by	J. RODRIGUEZ
checked by	J.R.
date	10-16-09
scale	3/16"=1'-0"
job no.	***



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ALUMINIUM RACK
 SOLARHART 302J SYSTEM

REVISIONS
REVISION A