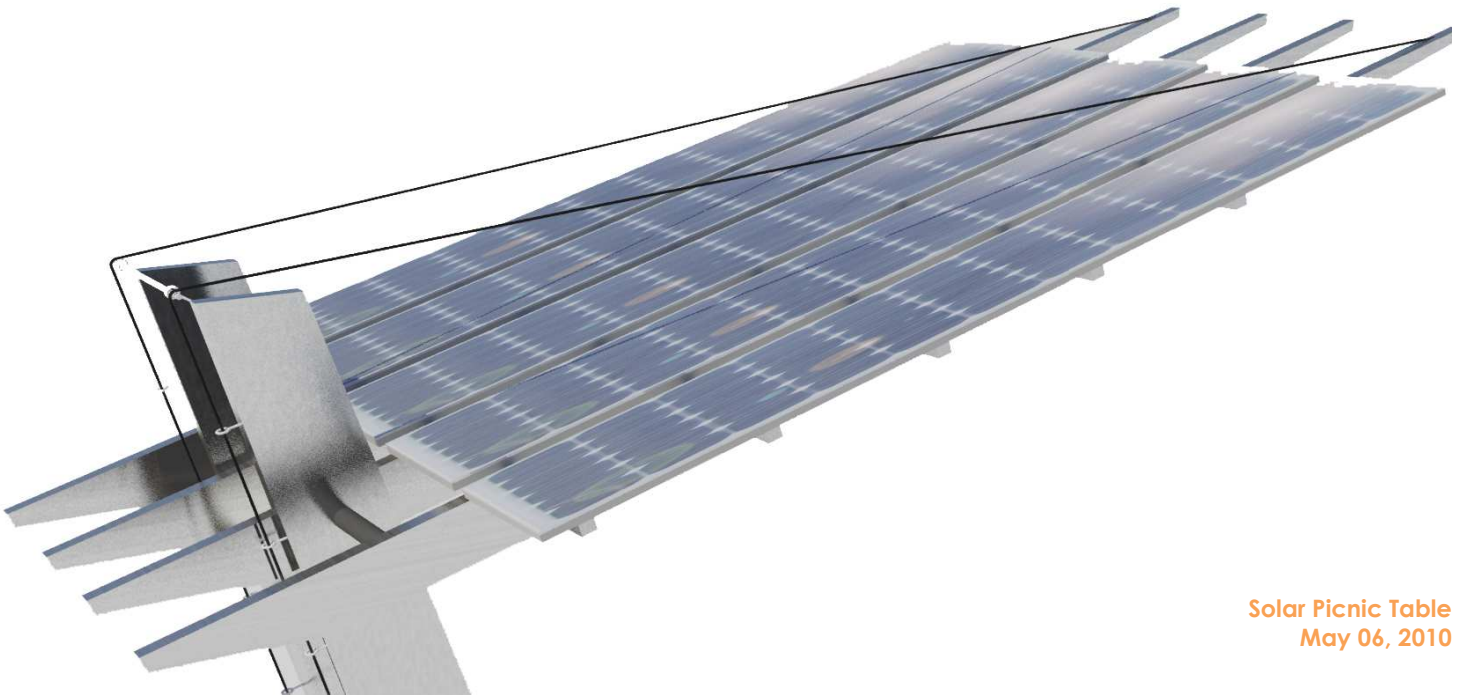
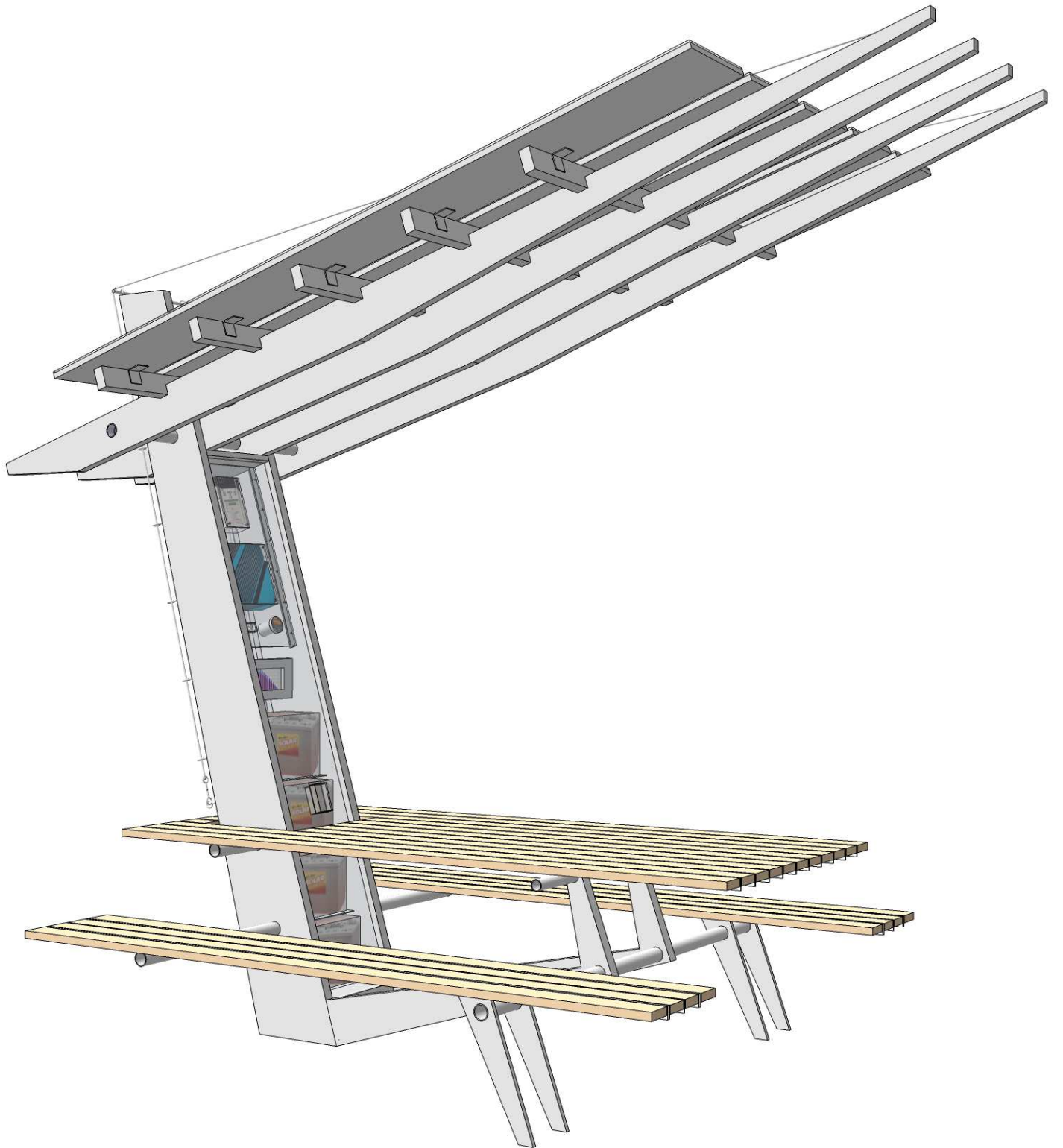
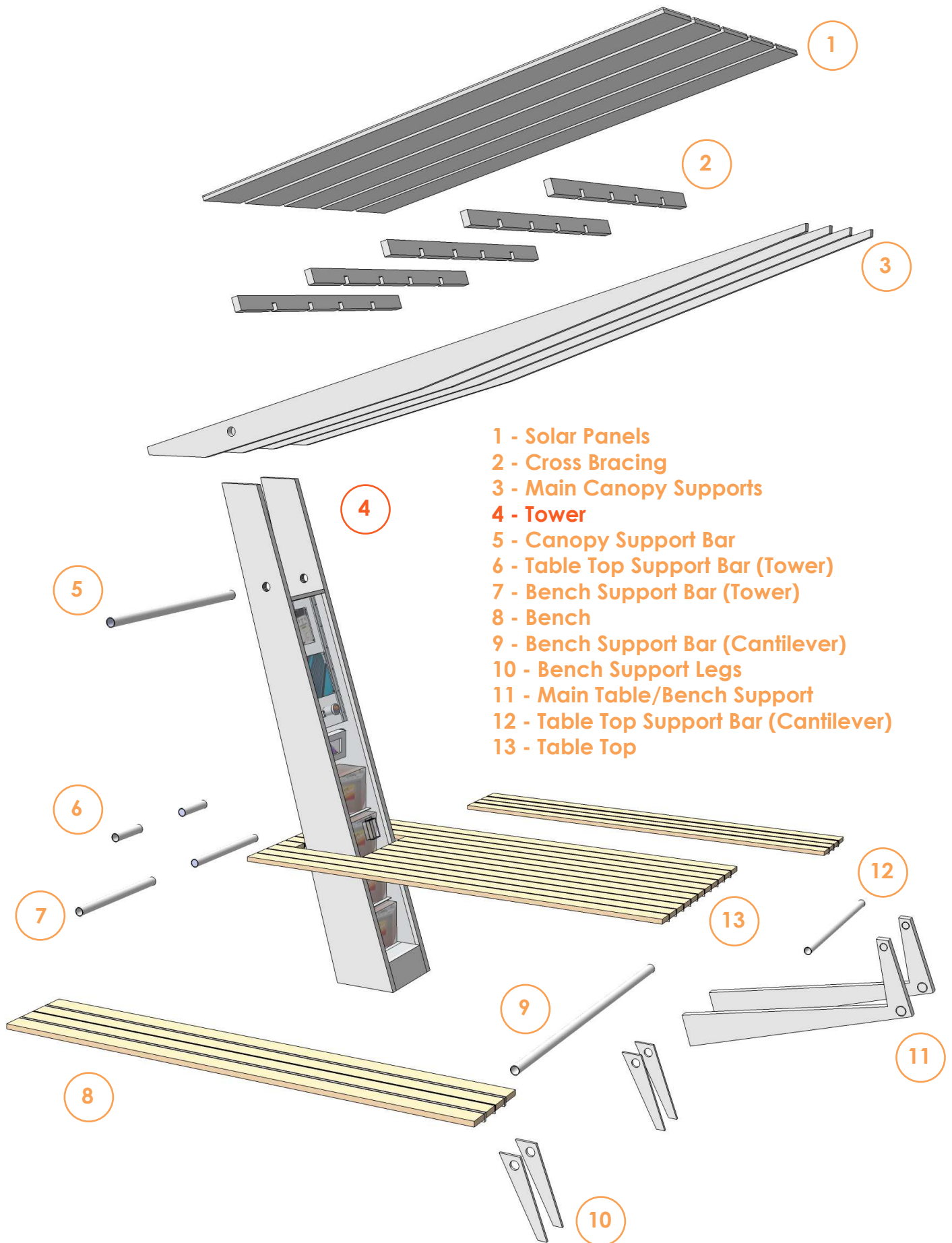


# Solar Picnic Table



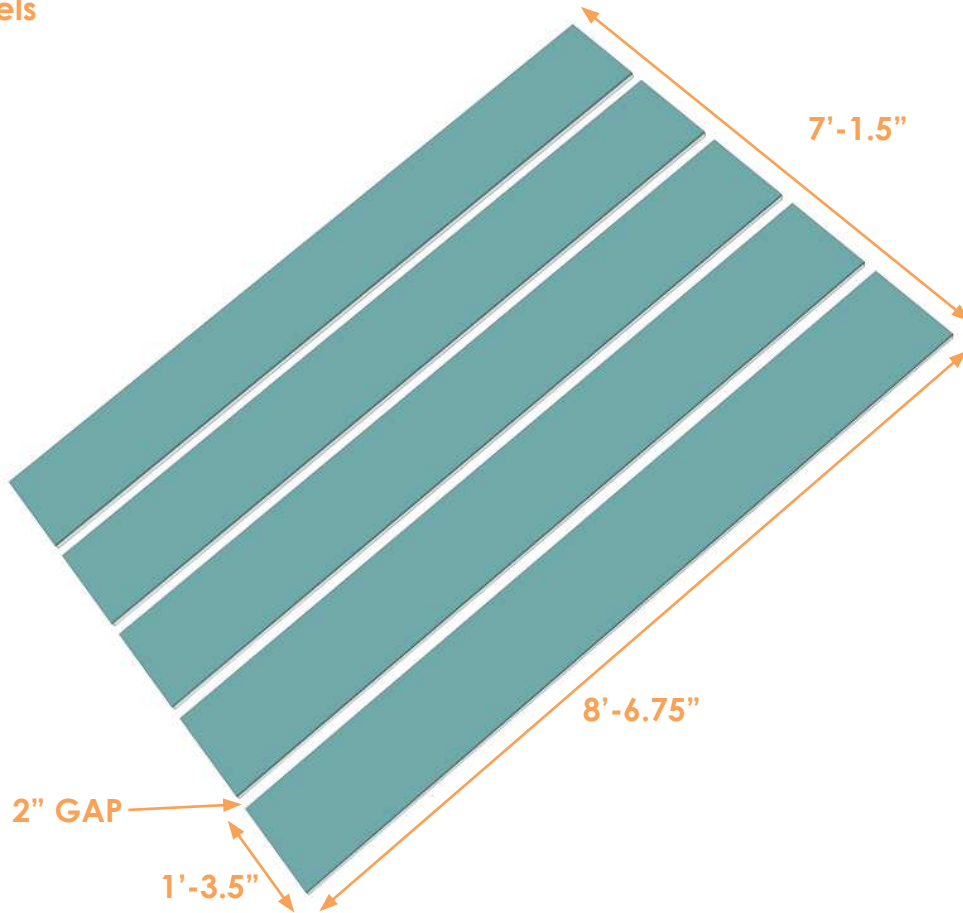


## PARTS AND DIMENSIONS

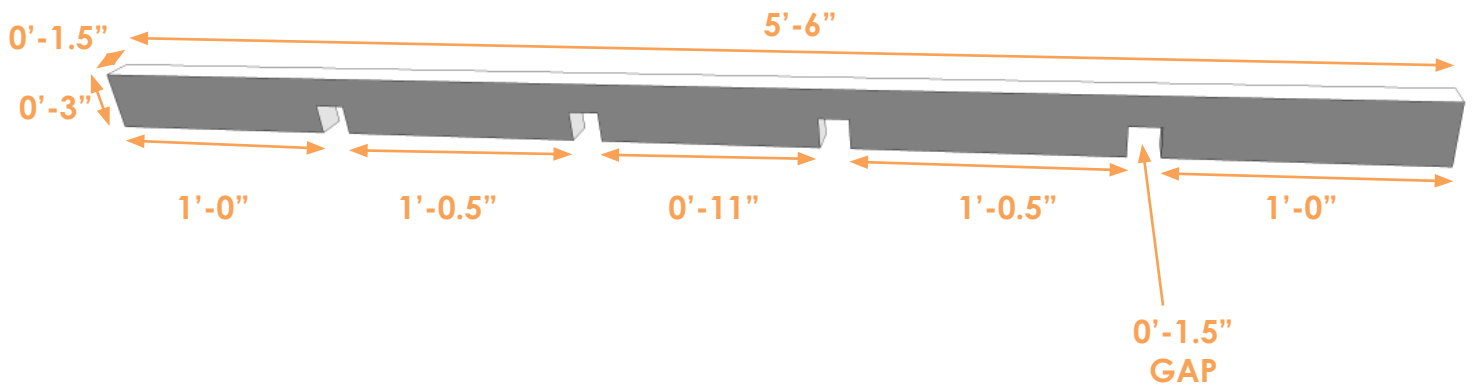


# PARTS AND DIMENSIONS

## 1 - Solar Panels

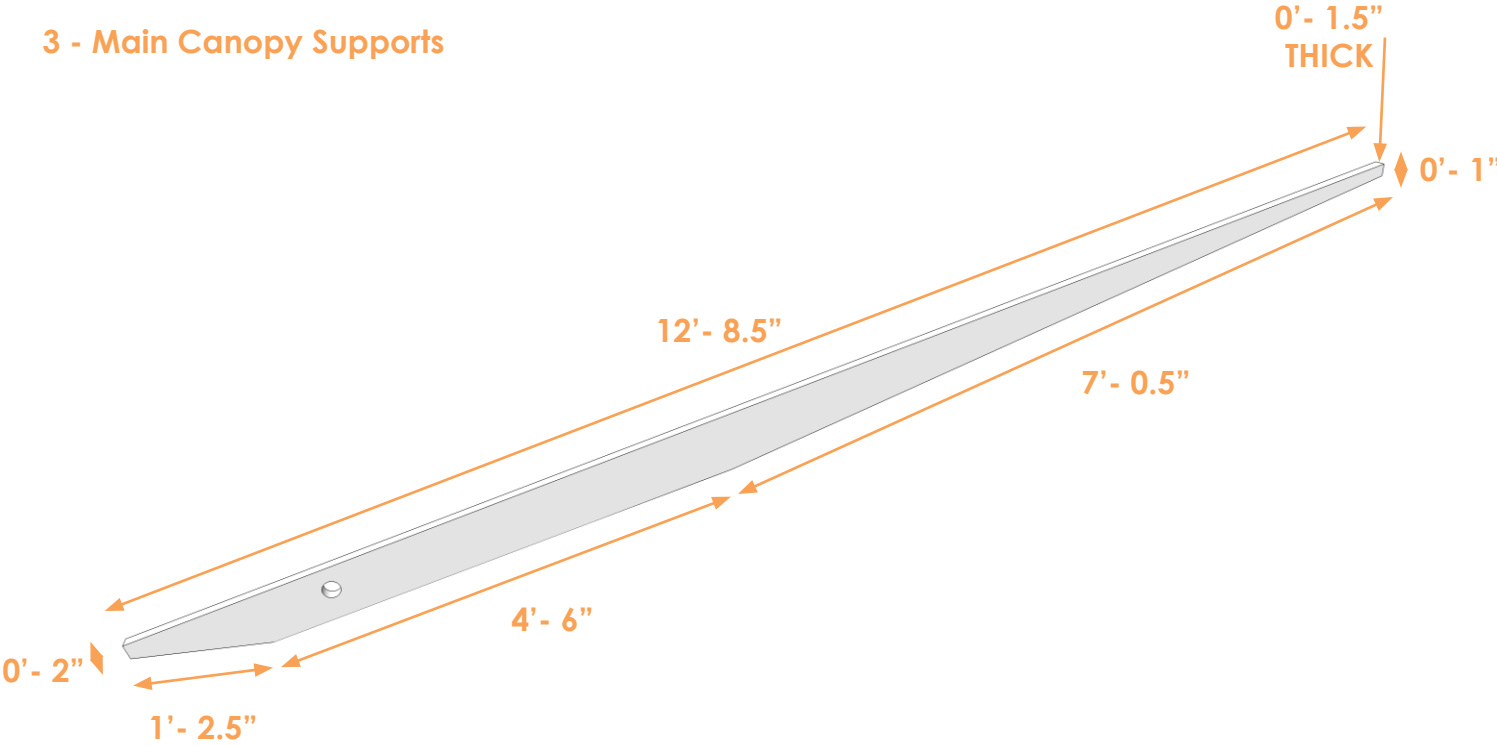


## 2 - Cross Bracing

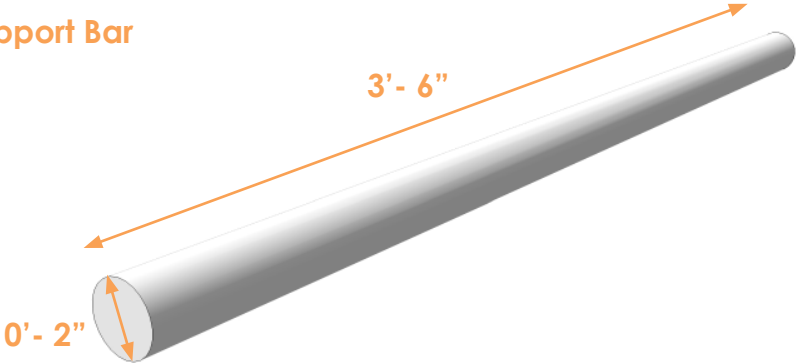


# PARTS AND DIMENSIONS

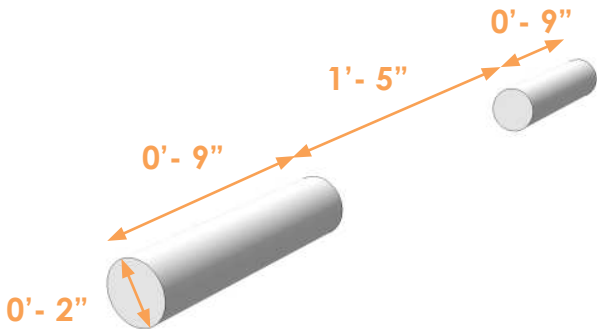
3 - Main Canopy Supports



5 - Canopy Support Bar

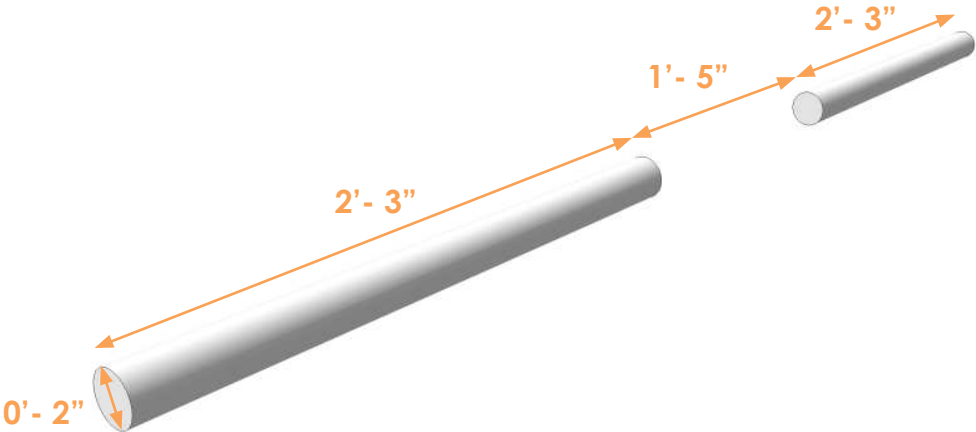


6 - Table Top Support Bar (Tower)

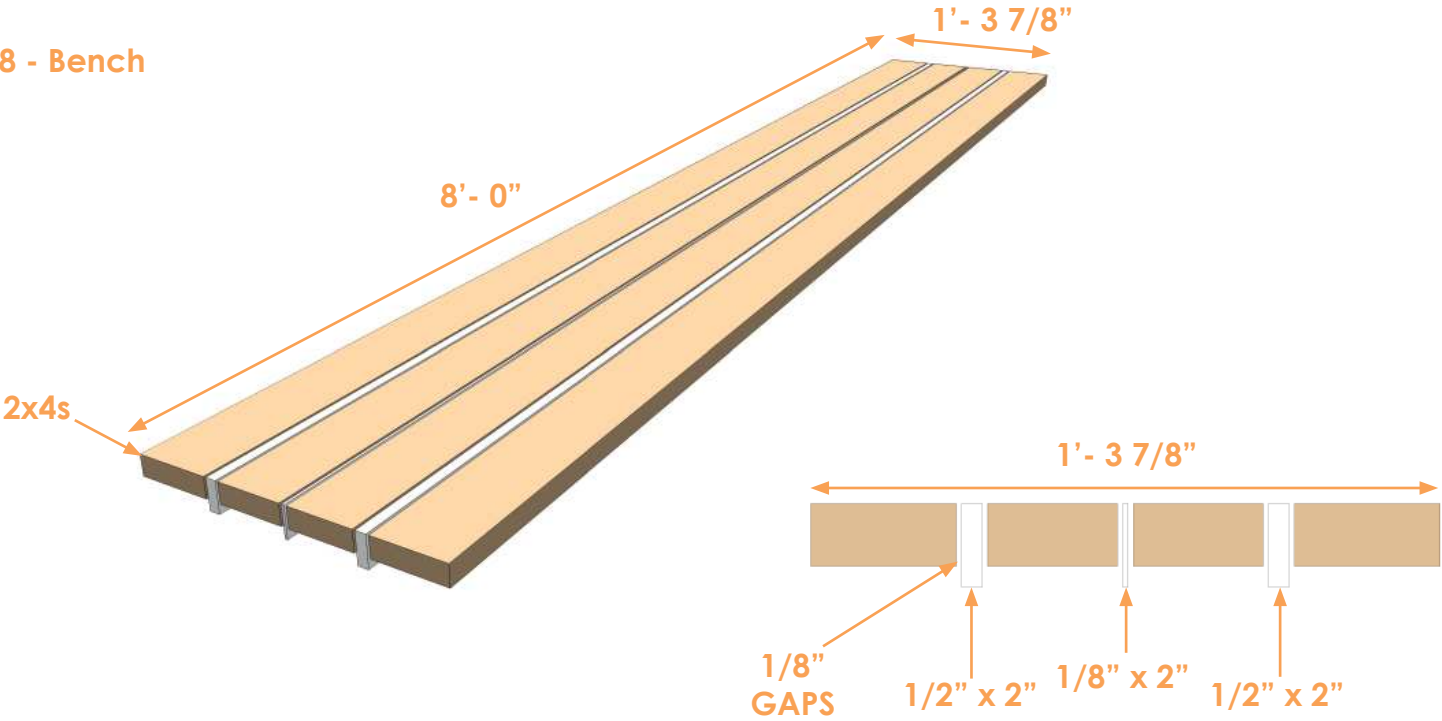


PARTS AND DIMENSIONS

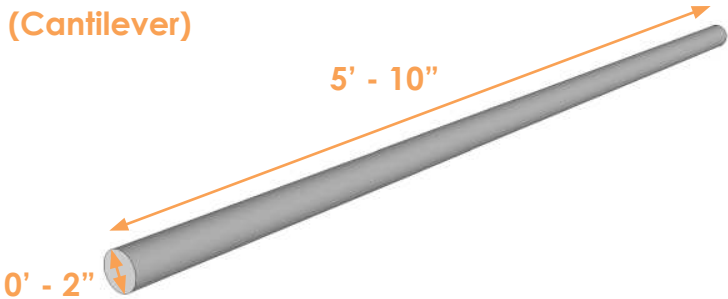
7 - Bench Support Bar (Tower)



8 - Bench

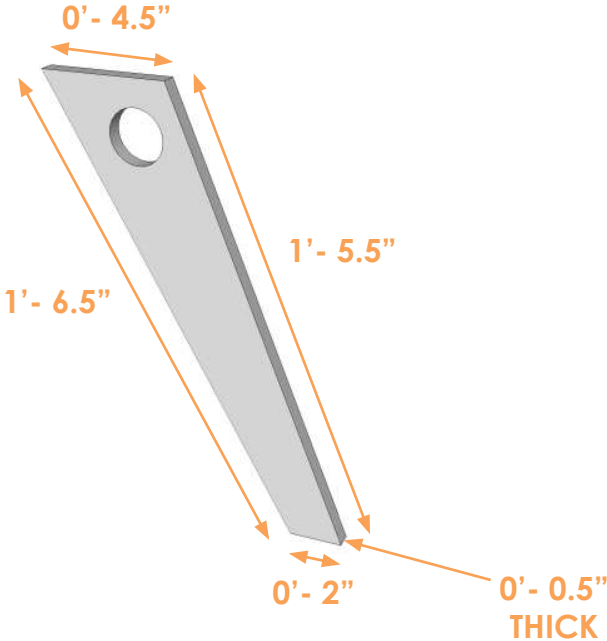


9 - Bench Support Bar (Cantilever)

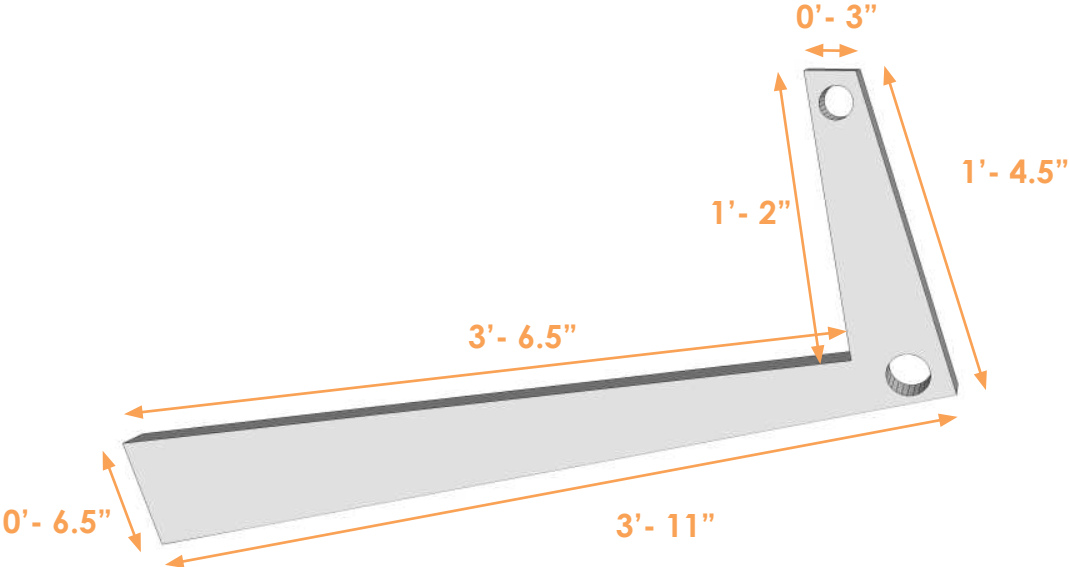


**PARTS AND DIMENSIONS**

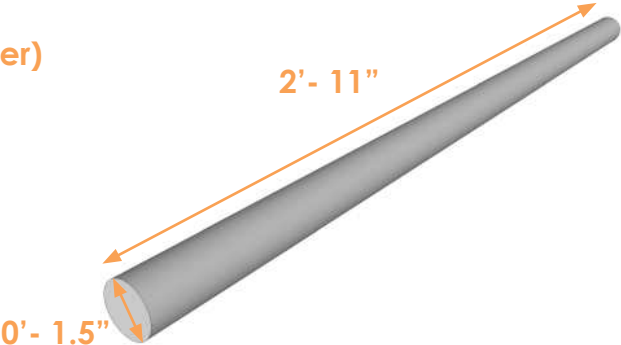
**10 - Bench Support Legs**



**11 - Main Table/Bench Support**



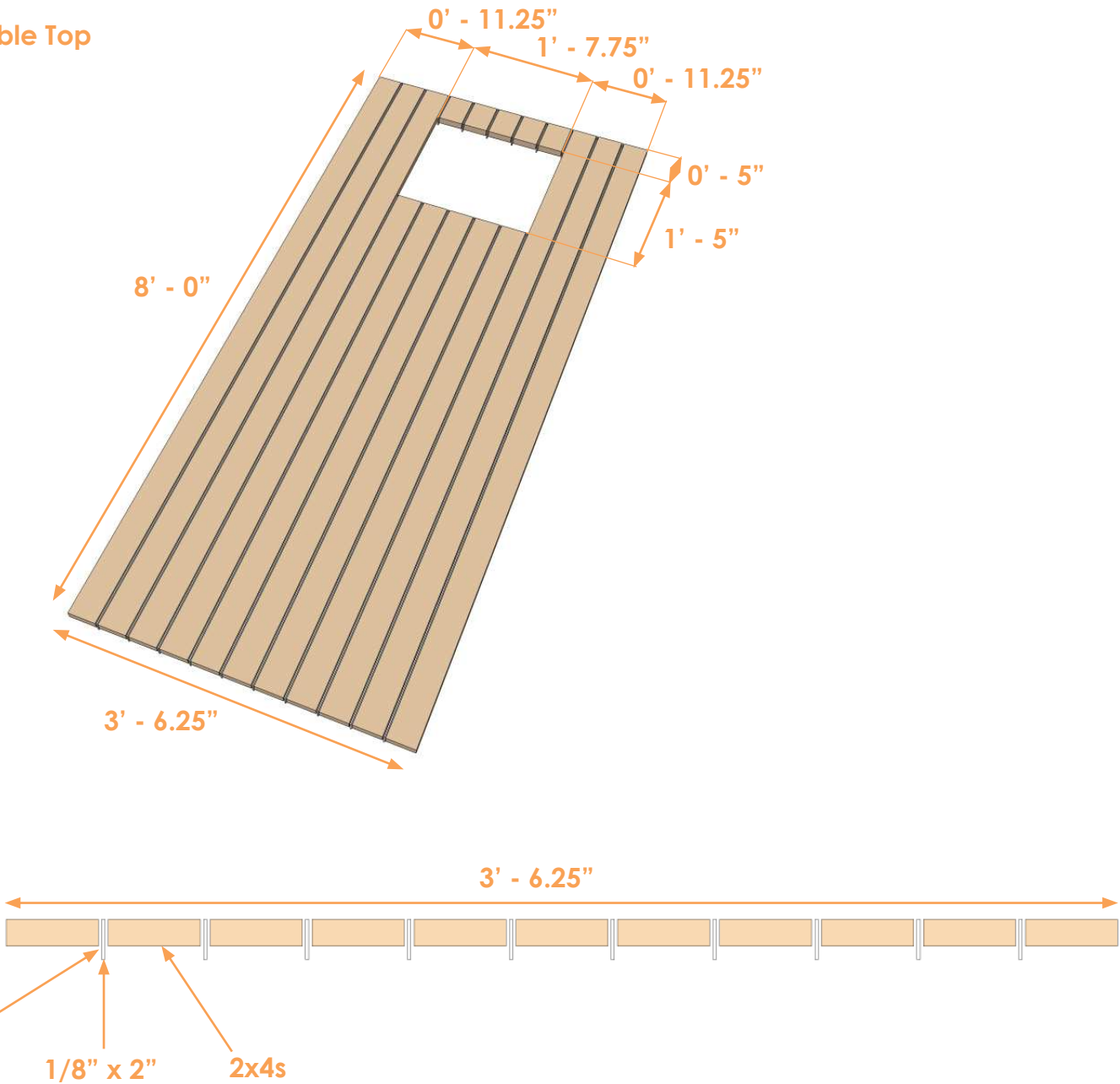
**12 - Table Top Support Bar (Cantilever)**





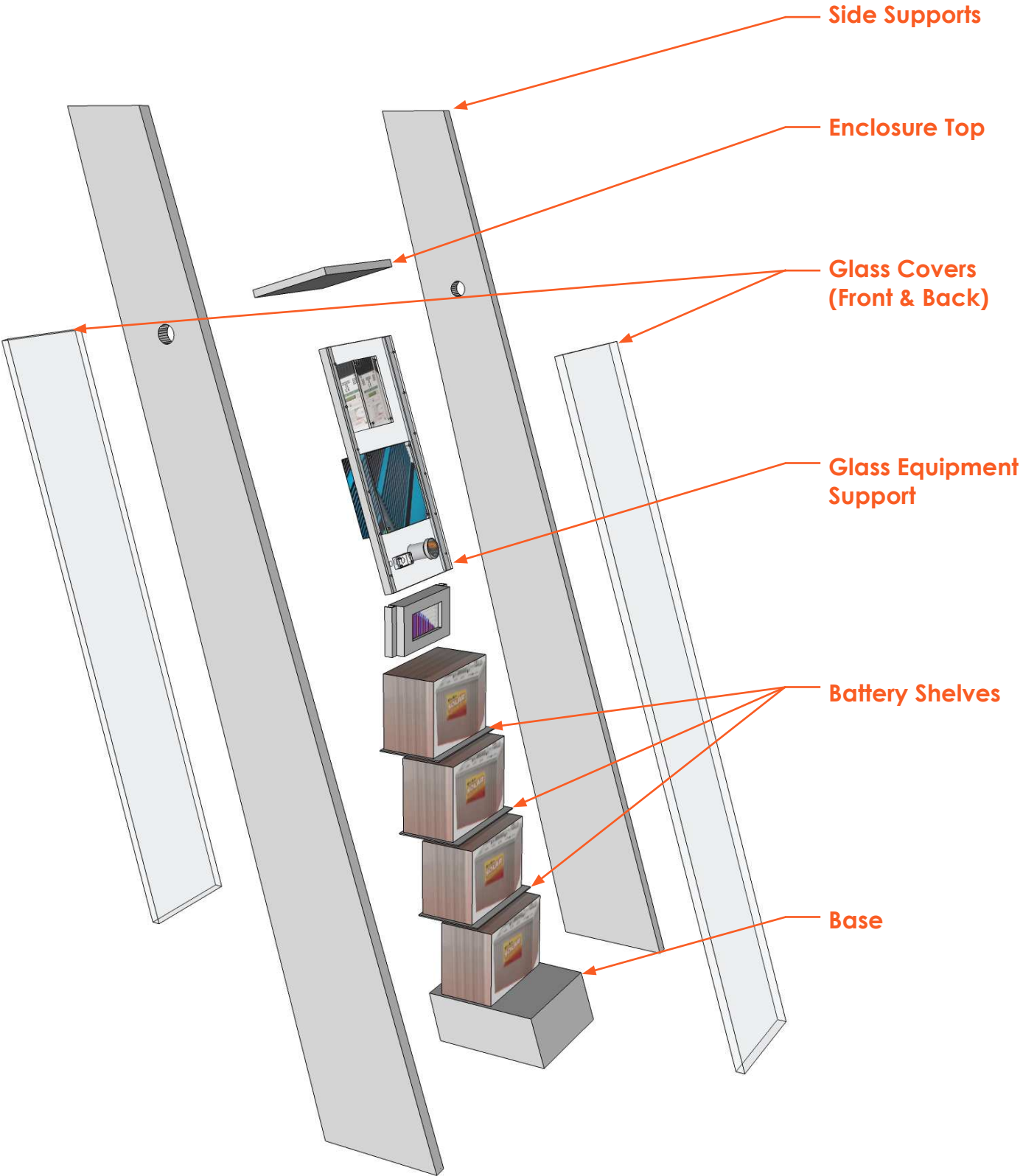
PARTS AND DIMENSIONS

13 - Table Top





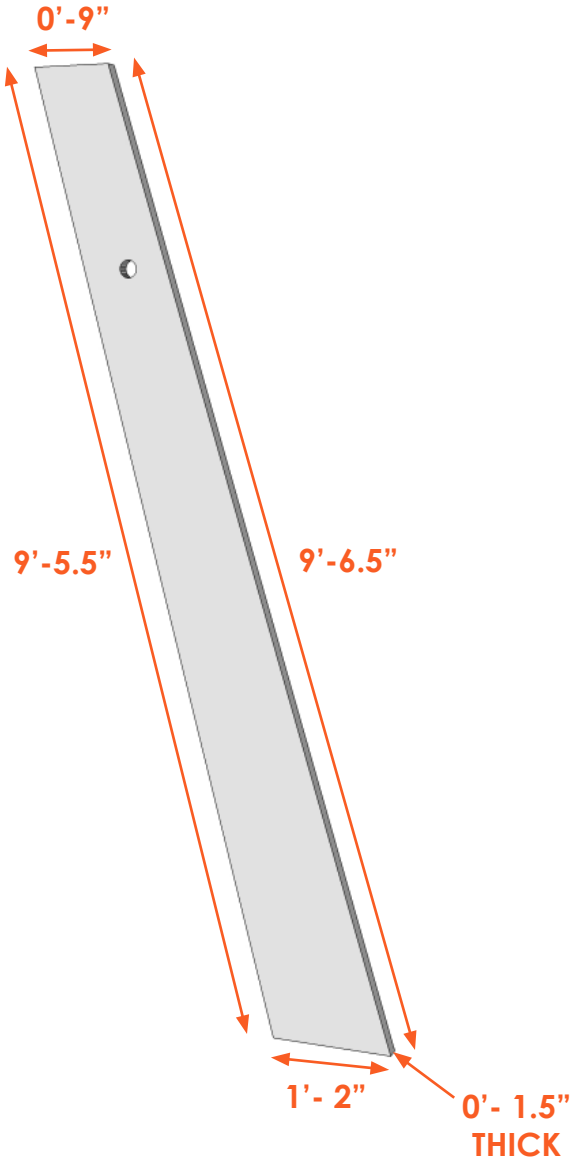
4 - Tower



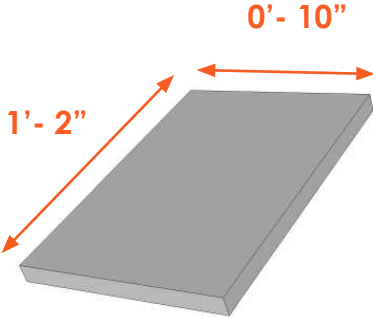
PARTS AND DIMENSIONS

4 - Tower

Side Supports



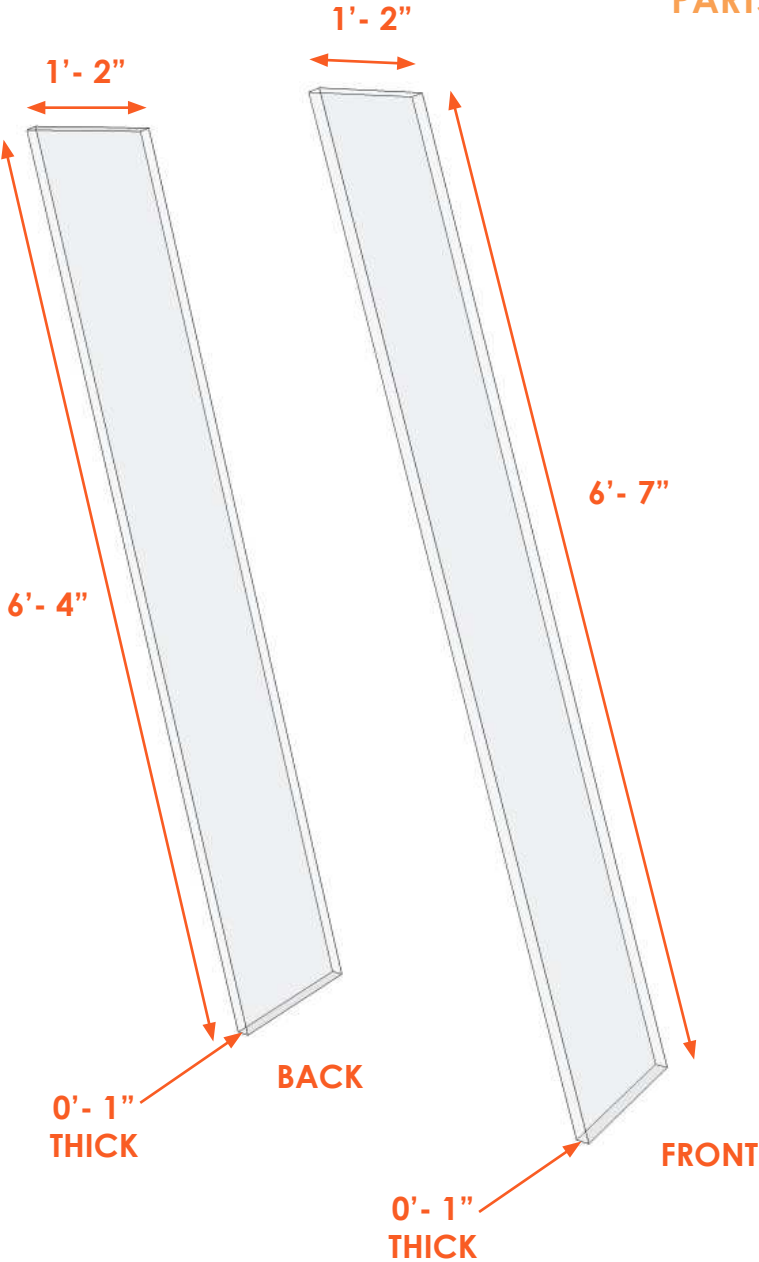
Enclosure Top



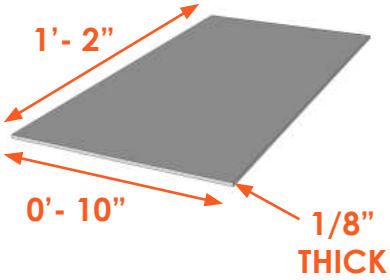
**PARTS AND DIMENSIONS**

**4 - Tower**

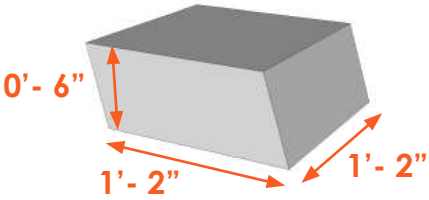
**Glass Covers  
(Front & Back)**



**Battery Shelves**



**Base**



# EQUIPMENT SPECIFICATIONS

## Solar Panels

[http://www.solarblvd.com/product\\_info.php?info=p933\\_Unisolar-PVL-68T-68W--12V-Thinfilm-Roof-Laminate.html](http://www.solarblvd.com/product_info.php?info=p933_Unisolar-PVL-68T-68W--12V-Thinfilm-Roof-Laminate.html)

### Unisolar PVL-68T 68W, 12V Thinfilm Roof Laminate

#### Dimensions & Specifications

Model Number	Laminate Length	Laminate Width	Laminate Thickness	Weight	Minimum Slope	Maximum Slope
PVL-31	4 ft. 7 1/8 in.	15 1/8 in.	0.12 in.	4.1 lb.	1:12 (5°)	21:12 (60°)
PVL-62	8 ft. 6 3/4 in.	15 1/2 in.	0.12 in.	8.2 lb.	1:12 (5°)	21:12 (60°)
PVL-88	9 ft. 4 1/8 in.	15 1/2 in.	0.12 in.	9 lb.	1:12 (5°)	21:12 (60°)
PVL-93	12 ft. 6 1/4 in.	15 1/2 in.	0.12 in.	12.3 lb.	1:12 (5°)	21:12 (60°)
PVL-124	16 ft. 5 1/4 in.	15 1/2 in.	0.12 in.	16.5 lb.	1:12 (5°)	21:12 (60°)
PVL-136	18 ft.	15 1/2 in.	0.12 in.	17 lb.	1:12 (5°)	21:12 (60°)



#### Electrical:

Performance	PVL-31	PVL-62	PVL-88	PVL-93	PVL-124	PVL-136
Rated Power (Watts)	31	62	88	93	124	136
Nominal Operating Voltage	6	12	2	18	24	24
Operating Voltage (Volts)	7.5	15	6.5	22.5	30.0	33.0
Operating Current (Amps)	4.13	4.13	4.13	4.13	4.13	4.13
Open-Circuit Voltage (Volts)	10.5	21.0	3.1	31.5	42.0	46.2
Open-Circuit Voltage (Volts) at -10°C and 1250 W/m <sup>2</sup>	12.0	23.9	6.3	35.9	47.9	52.7
Short-Circuit Current (Amps)	5.1	5.1	5.1	5.1	5.1	5.1
Short-Circuit Current (Amps) At 75°C and 1250 W/m <sup>2</sup>	6.7	6.7	6.7	6.7	6.7	6.7
Series Fuse Rating (Amps)*	8	8	8	8	8	8
Min. Blocking Diode (Amps)	8	8	8	8	8	8

## Charge Controller

[http://www.solarblvd.com/product\\_info.php?info=p793\\_Xantrex-C35-35A--12-24V-PWM-Charge-Controller.html](http://www.solarblvd.com/product_info.php?info=p793_Xantrex-C35-35A--12-24V-PWM-Charge-Controller.html)

### Xantrex C35 35A, 12/24V PWM Charge Controller



## Inverter

[http://www.solarblvd.com/product\\_info.php?info=p736\\_Xantrex-800W-PROWATT-800-24V-Inverter.html](http://www.solarblvd.com/product_info.php?info=p736_Xantrex-800W-PROWATT-800-24V-Inverter.html)

### Xantrex 800W PROWATT 800 24V Inverter



Solar Picnic Table  
May 06, 2010

## EQUIPMENT SPECIFICATIONS

### Pocket PC

[http://www.samsung.com/us/consumer/office/mobile-computing/ultra-mobile-pcs/NP-Q1U/000/SEA/index.idx?pagetype=prd\\_detail&tab=spec](http://www.samsung.com/us/consumer/office/mobile-computing/ultra-mobile-pcs/NP-Q1U/000/SEA/index.idx?pagetype=prd_detail&tab=spec)

### Samsung Q1U-XP



### Battery Monitor

[http://www.solarblvd.com/product\\_info.php?info=p2224\\_Xantrex-LinkPro-Battery-Monitor.html](http://www.solarblvd.com/product_info.php?info=p2224_Xantrex-LinkPro-Battery-Monitor.html)

### Xantrex LinkPro Battery Monitor



### 12 Volt Batteries

[http://www.solarblvd.com/product\\_info.php?info=p38\\_MK-Battery-S31-Gel-Deep-Cycle-Solar-Battery-12V--108Ah.html](http://www.solarblvd.com/product_info.php?info=p38_MK-Battery-S31-Gel-Deep-Cycle-Solar-Battery-12V--108Ah.html)

### MK Battery S31 Gel Deep Cycle Solar Battery 12V, 108Ah



### Outlet

[http://store.fastmac.com/product\\_info.php?products\\_id=458](http://store.fastmac.com/product_info.php?products_id=458)

**Power, Outlet: U-Socket, Dual Socket/ Dual USB, 110V, TruePower  
Model: ACE-7169**



<b>SOLAR PICNIC TABLE - FINAL CALCULATIONS</b>						
<b>LOADS</b>						
Component	Watts	Qty	Hrs/Day	Wh/day	Days/Week	Wh/Wk
Laptop	90	2	4	720	7	5040
Ipod	6	2	4	48	7	336
On Board Computer	10	1	8	80	7	560
<b>Total Loads</b>						<b>5936</b>
Safe Factor for battery charge/discharge losses						1.2
Total Power requirement per week (Wh/WK)						7123.2
<b>System Voltage (Volts)</b>						<b>12</b>
Amp-Hour requirement per week						593.6
Amp-Hour requirement per day						84.8

<b>Battery Bank</b>	
Daily Amp-Hour requirement (Ah)	84.8
<b>Consecutive cloudy days system can support</b>	<b>1</b>
Amp-hours system will need to store (Ah)	84.8
Safety Factor for depth of battery discharge	0.2
Stored Ah / SF battery discharge (Ah)	424
Safety Factor for average wintertime ambient temperature (50 Degrees	1.2
Amp-hours required to overcome cold weather effects	508.8
<b>Battery voltage rating</b>	<b>12</b>
<b>Battery Ah rating</b>	<b>108</b>
Number of batteries required wired in parallel	4
Batteries wired in series	1
Number of batteries required	4

Year round average sun-hours per day in Washington, DC	4.23
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<b>Array Size</b>	
Amp-Hour requirement per day	84.8
Year round average sun-hours per day in Washington, DC	4.23
Total amperage required from solar array (Amp)	20.0
<b>Peak amperage of solar module</b>	<b>4.13</b>
Solar Modules required in parallel	5
Battery Bank Voltage	12
Required modules in series	1
Total number of solar panels required in array	5
<b>Power rating of solar panel (W)</b>	<b>68</b>
Total power output of system (Watts)	330.1