

HOW TO WIN BURNING MAN

Evap Pond & Shower Plans





GET EXCITED

You're about to be a hero! Washing away hangovers with your bad ass shower and evaporating all your camp's nasty grey water. It's going to be the best burn yet. This shower and evap pond started as a basic [wikiwickatron](#), that has morphed over the years into what it is today. It's a simple system made of three main components (Grey Water Pond, Shower Platform and Shower). In the following pages there will be part lists and instructions to build the entire set up. Let me know if I could help with anything and please share any improvement ideas.

Thank you,

Uncle Dan

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Part List (Entire Project)

Materials

- 1) Shower Hose ½" x 60" White ACE 4360731
- 1) Battery Clips 30 amps
- 1) Danco Versaspray Handheld Shower Head
- 1) Extension cord 13 amp, 16 gauge 25' or longer
- 1) Light switch
- 1) Light switch cover
- 1) 1-Gang Shallow Electrical Outlet Box
- 10) 1 in. Galvanized 2-Hole Pipe Hanger Strap
- 1) Shoreline Marine Portable Manual Bilge Pump, 800 GPH, 12V, ¾" hose outlet
- 3) 16, 14 AWG Butt Splice Heat Shrinks Waterproof
- 4) 2 in. x 1-1/2 in. x 1-3/8 in. Galvanized Angle
- 4) HTP 3 in. x 7 in. ZMAX Galvanized Heavy Tie Plate
- 1) 27 Gallon tote
- 1) Pond liner 20 mil 10' x 13'
- 16) Spring clamps 6"
- 5) 2" x 4" x 8'
- 3) 1" x 4" x 8'
- 4) PVC 1" x 10' Schedule 40
- 7) PVC Tee fittings 1"
- 4) PVC 90 degree elbow 1"
- 4) PVC Coupling 1"
- 1lb) Screws 8 gauge T25 1 ¼" 1lb box
- 4) Hose clamps 1/2" to 1 ¼"
- 1) Bolt M4 - 0.7 x 25mm + rubber washers, washers and nut (secure pump to tote, any small bolt will do, need water tight washers)
- 4) Solar yard lights (light perimeter after set up)

Tools

- Circle bit 1 1/8"
- Measuring tape
- Wire stripping pliers
- Dikes
- Crescent wrench
- Electrical tape
- Pliers
- Drill
- Flat head screwdriver
- Razor blade
- Counter sink #8
- Lighter
- Drill bit 11/64
- Carpenter Square
- Chop saw
- Pencil
- Thread seal tape
- Phillips head screwdriver
- Zip ties

Part List (Evap Pond Only)

Materials

- 4) 2" x 4" x 8'
- 4) 2 in. x 1-1/2 in. x 1-3/8 in. Galvanized Angle
- 4) HTP 3 in. x 7 in. ZMAX Galvanized Heavy Tie Plate
- 16) PVC 1" x 23 1/2" Schedule 40
- 4) PVC Tee fittings 1"
- 4) PVC 90 degree elbow 1"
- 3) PVC Coupling 1"
- 8) 1 in. Galvanized 2-Hole Pipe Hanger Strap
- 64) Screws 8 gauge T25 1 1/4"
- 1) Pond liner 20 mil 10' x 13'
- 16) Spring clamps 6"
- 4) Solar yard lights (light perimeter after set up)

Tools

- Drill
- Measuring tape
- Chop saw
- Pencil

Part List (Shower Platform Only)

Materials

- 1) 2" x 4" x 8'
- 3) 1" x 4" x 8'
- 2) PVC 1" x 23 1/2" Schedule 40
- 1) PVC Coupling 1"
- 3) PVC Tee fittings 1"
- 2) 1 in. Galvanized 2-Hole Pipe Hanger Strap
- 60) Screws 8 gauge T25 1 1/4"

Tools

- Drill
- Measuring tape
- Counter sink #8
- Drill bit 11/64
- Carpenter Square
- Chop saw
- Pencil

Part List (Shower Only)

Materials

- 1) Shower Hose ½" x 60" White ACE 4360731
- 1) Battery Clips 30 amps
- 1) Danco Versaspray Handheld Shower Head
- 2) Extension cord 13 amp, 16 gauge 15'
- 1) Light switch
- 1) Light switch cover
- 1) 1-Gang Shallow Electrical Outlet Box
- 3) 16, 14 AWG Butt Splice Heat Shrinks Waterproof
- 1) 27 Gallon tote
- 4) Hose clamps 1/2" to 1 ¼"
- ¾" inner diameter hose x 8'
- ½" inner diameter hose x 1'
- 1) ¾" x ½" Plastic Barb Reducing Coupling
- 1) ½" barb insert female
- 1) ½" x 2 ½" sch 80 nipple
- 1) Bolt M4 - 0.7 x 25mm + rubber washers, washers and nut (secure pump to tote, any small bolt will do, need water tight washers)

Tools

- Drill
- 1 1/8" circle bit
- Wire stripping pliers
- Cutting pliers
- 2) Crescent wrench (small M4 bolt)
- Electrical tape
- Pliers
- Flat head screwdriver
- Phillips head screwdriver
- Razor blade
- Lighter
- Thread seal tape
- Zip ties

How to Build

Grey Water Pond



Perimeter & Tarp

(Skip steps 1 & 2 if you're okay transporting 8' long 2 x 4s)

1. Cut 8) 2" x 4" x 4'



2. Use 1) Heavy Tie Plate per 2) 4' long pieces to create 4) 8' long pieces



3. Lay the 8' boards in a square



4. Install 1) angle bracket on the inside of each corner. 4) screws per corner.



5. If the tarp is bigger than the wood perimeter, now is a good time to trim the excess. I try to leave at least 1' extra overlap of tarp on each side of the perimeter. After cutting, remove tarp so it is not damaged while building the PVC rack.

Perimeter & tarp complete

PVC Towel Rack

1) Cut 16) 23 ½" PVC 1" diameter



2) Connect 7) 23 ½" PCV pieces, 2) 90° elbows, 1) coupling and 2) Tee fittings to create one side of the PVC towel rack. Repeat for the other side of rack.



3) Connect both sides together with 1) coupling



- 4) Place PVC towel rack in middle of perimeter. Rack should go with the longer direction of the perimeter. Legs go on the outside of the wood.



- 5) Stage the PVC rack legs 2' in from the corners



- 6) Install 2) 1 in. Pipe Hanger Strap per leg



PVC towel rack complete

Shower Stand



Platform

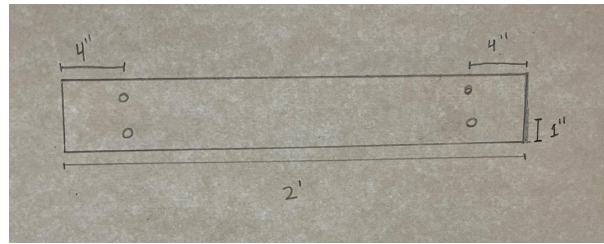
1) Cut 2) 2" x 4" x 2'



2) Cut 9) 1" x 4" x 2'



- 3) Pre drill the 1" x 4" x 2' pieces using the 11/64 drill bit



- 4) Counter sink the drilled holes with #8 counter sink



- 5) Install bottom planks: Stand the 2) 2" x 4" x 2' on end, install 2) 1" x 4" x 2's flush with the ends of 2" x 4"



- 6) Install top planks: Install 1 plank flush with the end of the 2" x 4", install rest of planks with 1 finger width gap in between



7) Install one plank of the front of the platform



Platform complete

Walkway

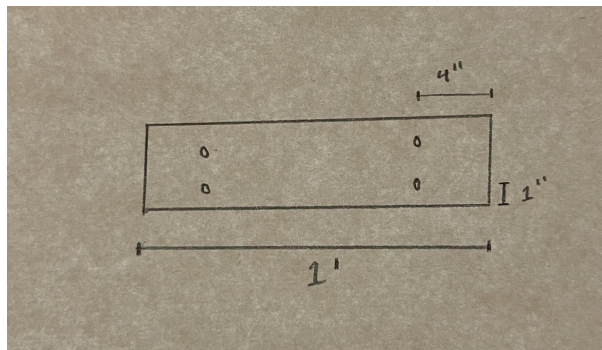
1) Cut 2) 2" x 4" x 2'



2) Cut 6) 1" x 4" x 1'



3) Pre drill the 1" x 4" x 1' pieces using the 11/64 drill bit



4) Counter sink the drilled holes with #8 counter sink



- 5) Lay 2) 2" x 4" x 2' flat, install 1 plank flush with the end of the 2" x 4"s, install rest of planks with 1 finger width gap in between



Walkway complete

Shower Head Rack

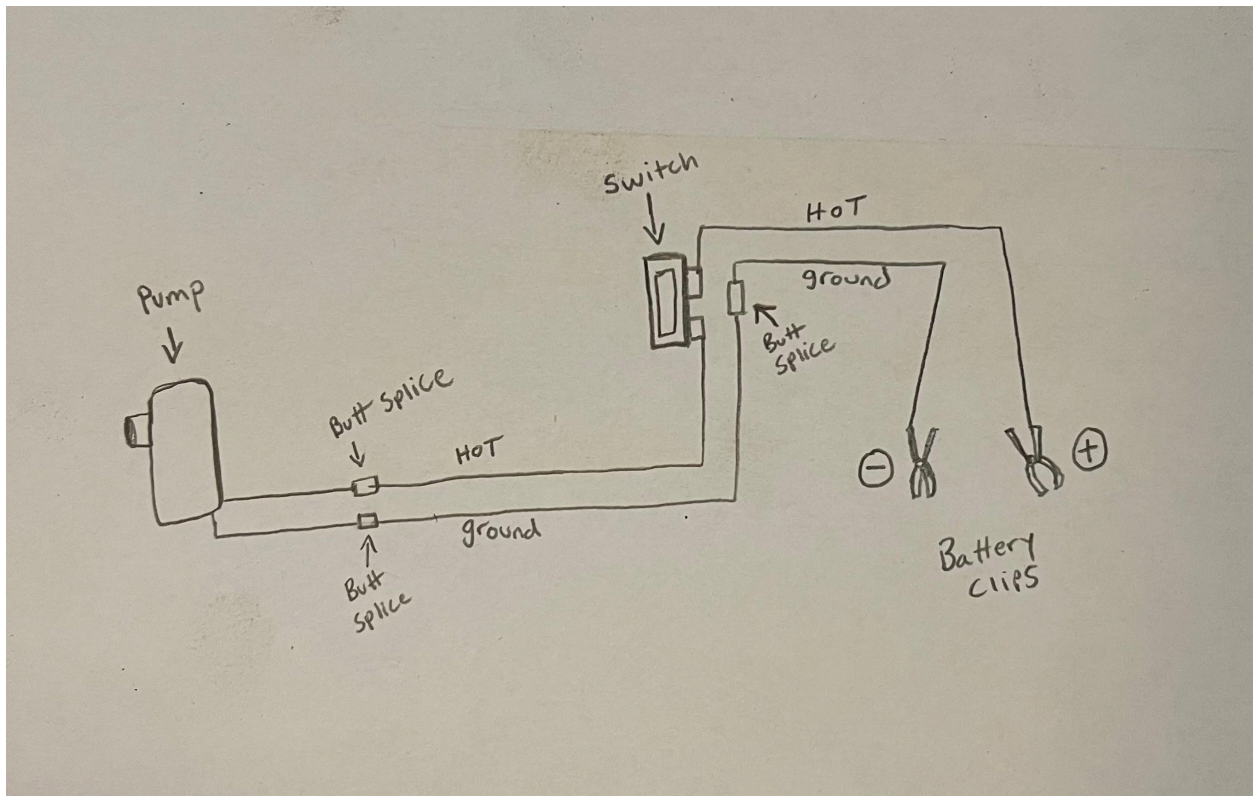
1) Cut 2) 23 ½" PVC 1" diameter	
2) Cut 2) 2" PVC 1" diameter	
3) Use 2) 1 in. Pipe Hanger Straps to install the PVC vertical in the center of the front of the platform	
4) Use 1) coupling to connect the 2) 23 ½" PVCs	
5) Install 1) Tee fitting on the top of the PCV and use the 2" cut PVC pieces to install 1) Tee on each side of that Tee.	

Shower head rack complete

Shower



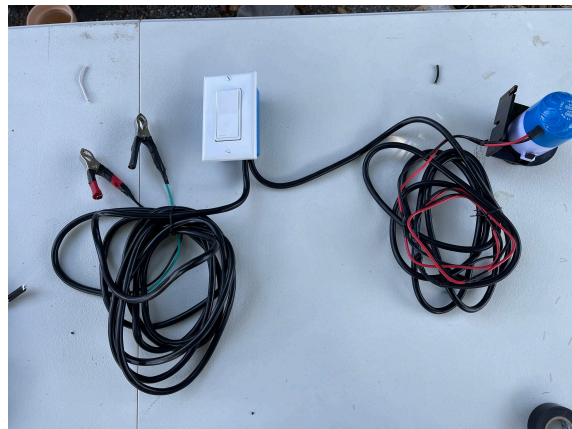
Shower Electrical



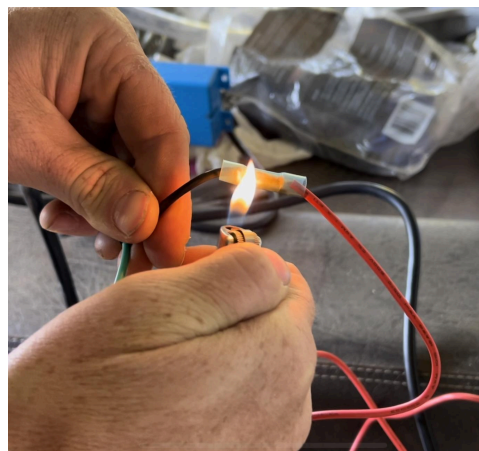
1) Run the hot wire from the bilge pump to the light switch

2) Run the hot wire from the battery cable clamps to the light switch

3) Connect the ground wire from the bilge pump directly to the ground wire with the battery cable clamp

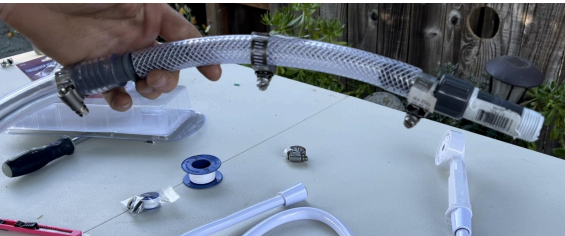
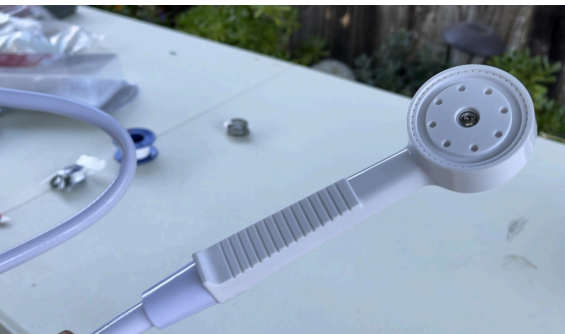


4) Crimp butt splices and use heat to make connection waterproof



Shower electrical complete

Shower Hose

1) Reduce $\frac{3}{4}$" hose to $\frac{1}{2}$"	
2) Attach 1) $\frac{3}{4}$" x $\frac{1}{2}$" Plastic Barb Reducing Coupling with a hose clamp to the $\frac{3}{4}$" ID hose	
3) Attach $\frac{1}{2}$" ID hose with a hose clamp to the other end of this coupling	
4) Attach 1) $\frac{1}{2}$" barb insert female to the $\frac{1}{2}$" hose with a hose clamp	
5) Wrap the 1) $\frac{1}{2}$" x 2 $\frac{1}{2}$" sch 80 nipple with thread sealing tape on both threads, install to the $\frac{1}{2}$" barb insert	
6) Attach the $\frac{1}{2}$" shower hose to the $\frac{1}{2}$" nipple	
7) Attach the shower head to the shower hose	

Shower hose complete

Water Tank & Shower Head

- 1) Drill 1 $\frac{1}{8}$ " hole in the upper corner of the side of the 27 gal tote



- 2) Use the M4 bolt with water tight rubber washers to mount the bilge pump at the bottom of the tote directly across from the 1 $\frac{1}{8}$ " hole



- 3) Attach the 3/4" ID hose to the bilge pump using a hose clamp. Be careful to not damage the tote where the pump is mounted



- 4) Unscrew the shower head from the shower hose. Put the hose through PVC Tee fitting from the shower head rack. Reinstall shower head to shower hose. This will secure the shower head to the shower head rack.



Water tank and shower head complete

How to Use

Set up

1. Build the wood perimeter
2. Lay tarp over perimeter, push corners down to make the tarp as flat as possible
3. Secure tarp to perimeter using 6" spring clamps
4. Build PVC towel rack
5. Attach PVC towel rack to perimeter
6. Assemble shower head rack to shower platform
7. Place shower platform in center of pond (careful not to damage tarp)
8. Place walkway in pond
9. Place water tank outside of pond close to the shower head rack side of platform
10. Attach shower head to shower head rack and zip tie shower hose to shower head rack (leave some slack in shower hose so shower head could be used to reach feet, etc...)
11. Run hose through hole in side of 27 gal tote and attach to bilge pump with hose clamp
12. Electrical wires for pump will come out the top of tote. Tote lid goes on top of wires
13. Zip tie light switch the shower head rack
14. Attach battery cable clamps to a 12v battery
15. Fill the 27 gallon tote with some water (half way usually lasts for a couple showers)
16. Lay towels over the PCV rack (no need to attach the towels, once they are wet they rarely blow away)





Grey Water Evap

- Tips of the towels should touch the grey water. Water will crawl up the towel and evaporate throughout the day
- The most effective way to evap the water is to completely dunk the towels in the pond a couple times a day and rehang them on the PVC rack

Grey Water Maintenance

- Filter dirty greywater through a strainer before dumping into the pond (avoid nasty food waste in the pond)
- Use gloves while working with greywater
- Add bleach to the greywater to eliminate odor (spray bottle works well)
- No piss in the grey water pond

Shower

- Do not run the bilge pump dry
- Always make sure there is water in the tote before showering
- Attach battery cables to 12v battery and turn switch on for water

Helpful tips:

- Light the grey water pond so people don't walk into it at night
- Disconnect the battery after each shower
- Disconnect shower a day or two before exodus so there's time to evap water
- Bring extra towels, swap the old towels for new ones at the end of the week
- Save some empty jugs incase evap pond doesn't completely finish before exodus
- Careful, the shower platform can get slippery when wet
- No shower curtain = no wind damage and makes most people take shorter showers

CONGRATS! YOU WON BURNING MAN

