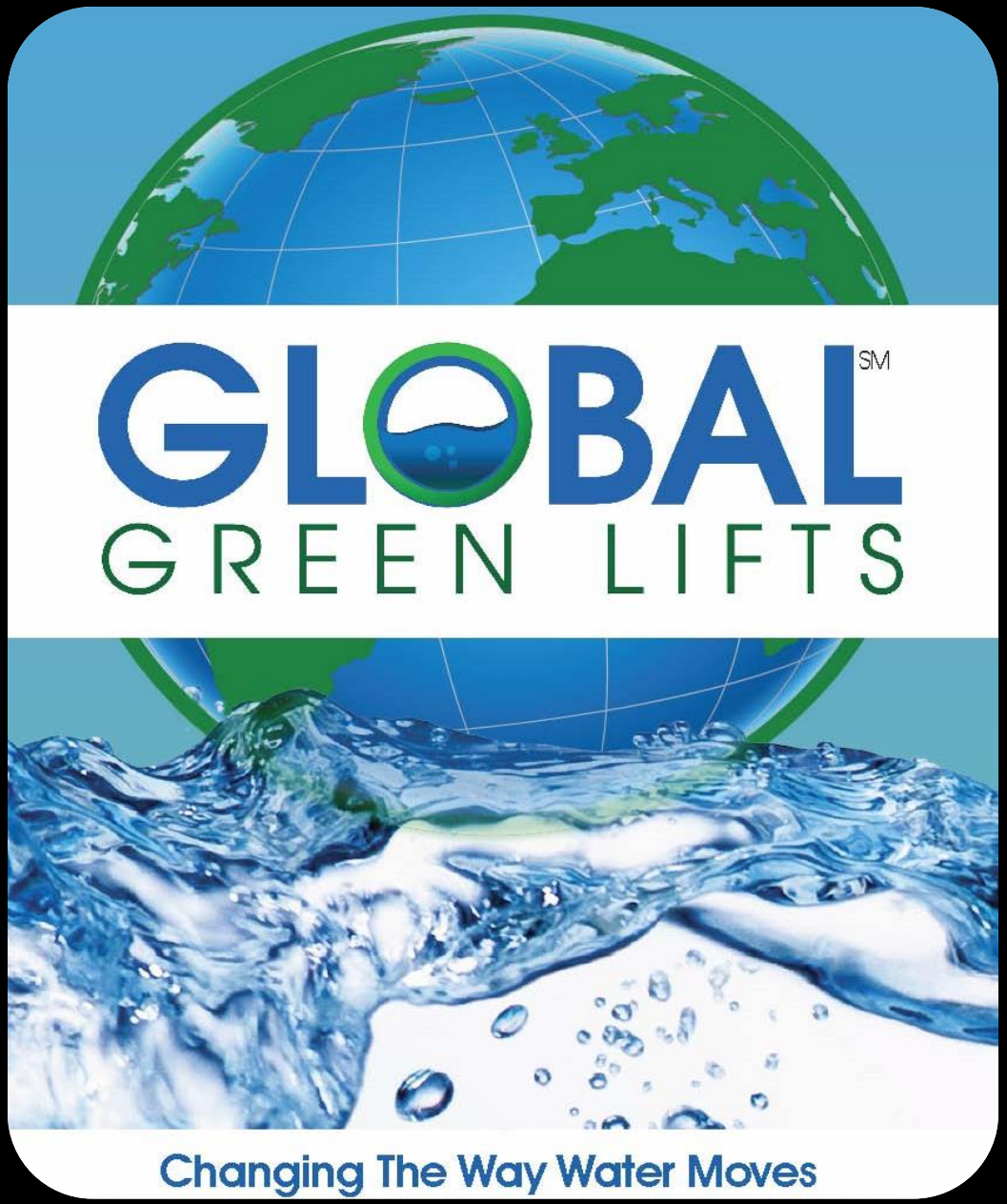

GLOBAL SM
GREEN LIFTS
Changing The Way Water Moves

Energy Saving Green Lift Station

The First Real Breakthrough In Wastewater Lift Station Operating Design Since The 1940's

Inventor: Fred Mehr, PhD

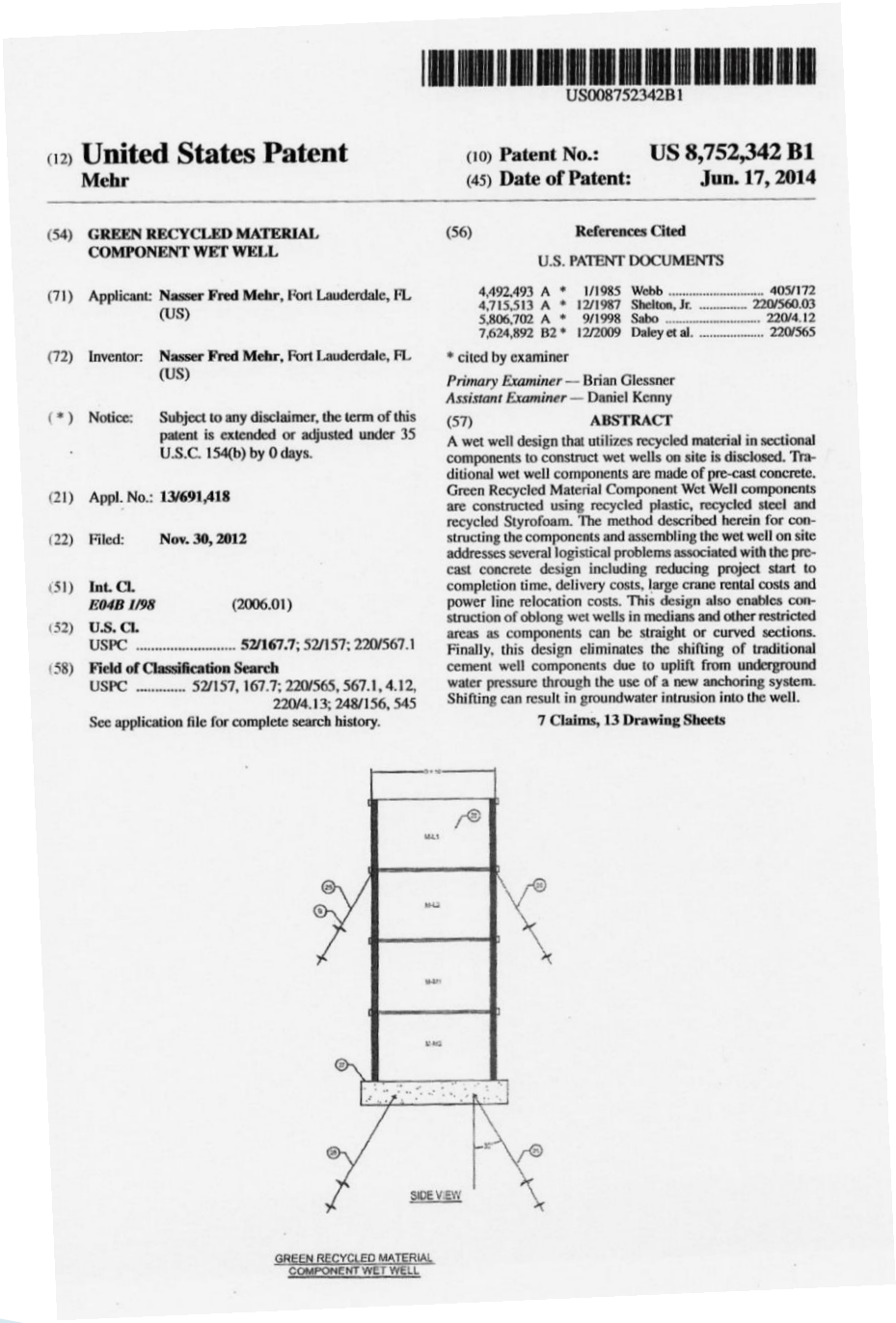
Patent Awarded January 23, 2013 – Control Panel

Patent Awarded July 15, 2014 – Green Lift-Station Design

Patent Awarded June 17, 2014 – Green Recycled Wet Well

GLOBAL GREEN LIFTS

- Green Recycled Material Component Wet Wells
- U.S. Patent No. 8,752,342
- Issue Date 06-17-2014



US008752342B1

(12) **United States Patent**
Mehr

(10) **Patent No.: US 8,752,342 B1**
(45) **Date of Patent: Jun. 17, 2014**

(54) **GREEN RECYCLED MATERIAL COMPONENT WET WELL**

(71) Applicant: **Nasser Fred Mehr**, Fort Lauderdale, FL (US)

(72) Inventor: **Nasser Fred Mehr**, Fort Lauderdale, FL (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **13/691,418**

(22) Filed: **Nov. 30, 2012**

(51) **Int. Cl.**
E04B 1/98 (2006.01)

(52) **U.S. Cl.**
USPC **52/167.7**; 52/157; 220/567.1

(58) **Field of Classification Search**
USPC 52/157, 167.7; 220/565, 567.1, 4.12, 220/4.13; 248/156, 545
See application file for complete search history.

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Primary Examiner — Brian Glessner
Assistant Examiner — Daniel Kenny

(57) **ABSTRACT**

A wet well design that utilizes recycled material in sectional components to construct wet wells on site is disclosed. Traditional wet well components are made of pre-cast concrete. Green Recycled Material Component Wet Well components are constructed using recycled plastic, recycled steel and recycled Styrofoam. The method described herein for constructing the components and assembling the wet well on site addresses several logistical problems associated with the pre-cast concrete design including reducing project start to completion time, delivery costs, large crane rental costs and power line relocation costs. This design also enables construction of oblong wet wells in medians and other restricted areas as components can be straight or curved sections. Finally, this design eliminates the shifting of traditional cement well components due to uplift from underground water pressure through the use of a new anchoring system. Shifting can result in groundwater intrusion into the well.

7 Claims, 13 Drawing Sheets

GREEN RECYCLED MATERIAL
COMPONENT WET WELL

Our Green Recycled Wet Wells are…

- ✓ Expedient! – Installation Time
- ✓ Environmental! – Recycles & Less Transport Fuel
- ✓ Eligible! – Energy Conservation Grants
- ✓ Economical! – Installation and Material

Expedient!

PRECAST CONCETE WELLS	GREEN RECYCLED WELLS
Schedule & production time = 10 to 30 days	Shelf item available in 3 to 5 business days
Curing = 28 days	Curing = 3 days
Delivery time 40 to 60 days	Delivery time 1 to 5 days
30 ton cranes require power company permits to reroute power lines or disrupt power	Hoists work under existing lines and do not interrupt neighborhood power supply

Environmental!

1) Construct from up to 80% recycled materials

2) Low density materials require less energy to transport, load & install

- 50% less energy consumed vs. precast concrete
- Traditional concrete sections weighing 20 tons require 30 ton crane, while the heaviest Green Lift module section weighs only 4.5 tons
- 5 Ton mechanical hoist lifts the Green Lift module compared to the required 30 ton crane
- Energy used to dismantle Green Lift Components is less than Concrete components
- Green Lift Components can be recycled again and again

Eligible!

Reasons why Federal and State Grants should FUND Global Green Lift:

- Energy Efficiency
- Carbon Reduction ability
- Environmental Friendly

Economical!

A- Cheaper to build

- Use of cheap, light, and recycled material with a shorter time to build

B- Cheaper to install

- Excavation
  - Concrete wet wells require a deeper excavation depth than Green lifts, while delivering the same useful depth
  - Ex. For a useful depth of 22 feet, excavation of concrete wet well is 30 feet vs. 24 feet of Green wet wells
  - More excavated material to be handled

Economical!
(Continued)

- Dewatering
  - Less depth, shorter excavating time, less water to pump out
- Buoyant Force
  - To compensate the buoyant force, the bottom 9-10 feet of the traditional is filled with concrete, which is 10-40 cubic-yard (40,000-162,000 lb)
  - To compensate the buoyant force, in Green wet wells 6 mechanical anchors, 140 lb each, will be used

Other Info…

Traditional Concrete Wet Wells

They Separate by buoyant force causing ground water intrusion (I & I)

Intrusion results in:

- More Water To Treat
- More Chemicals
- More Pumping
- More Power
- More Money

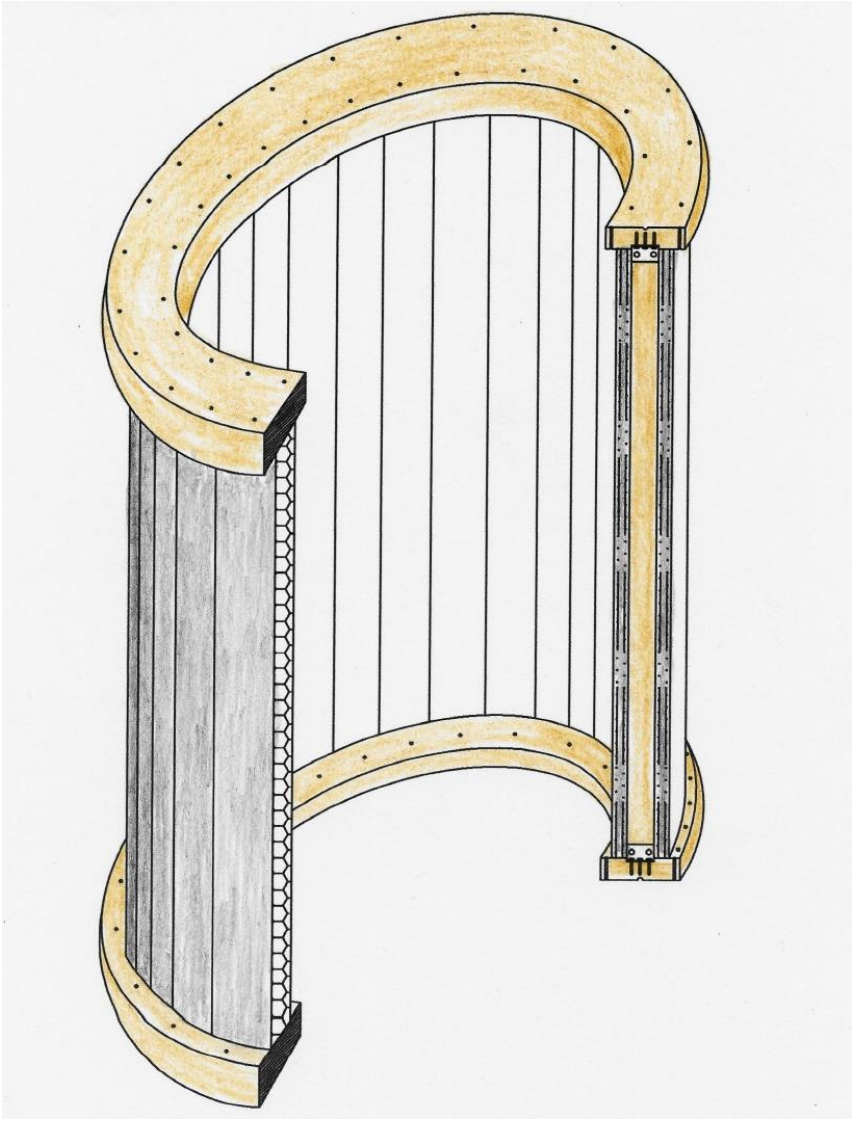
Green Recycled Material Wet Wells

Do not separate due to:

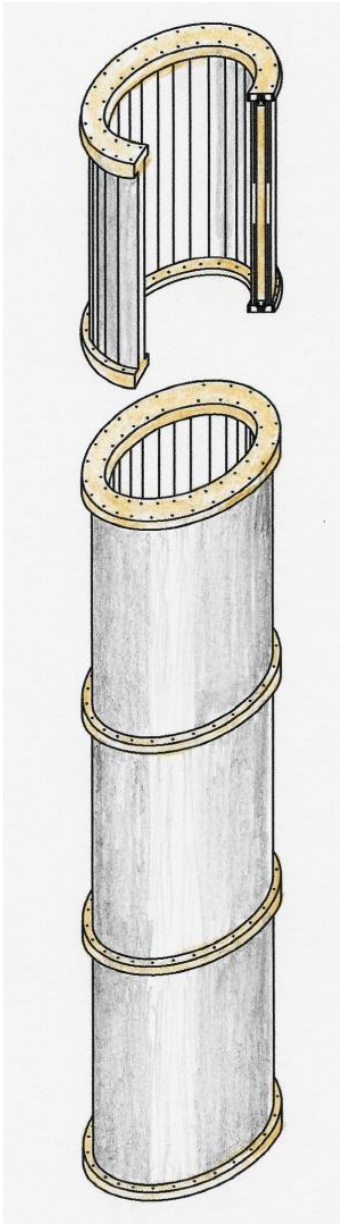
- ✓ Calculated designed buoyant force resistant fastening system

And

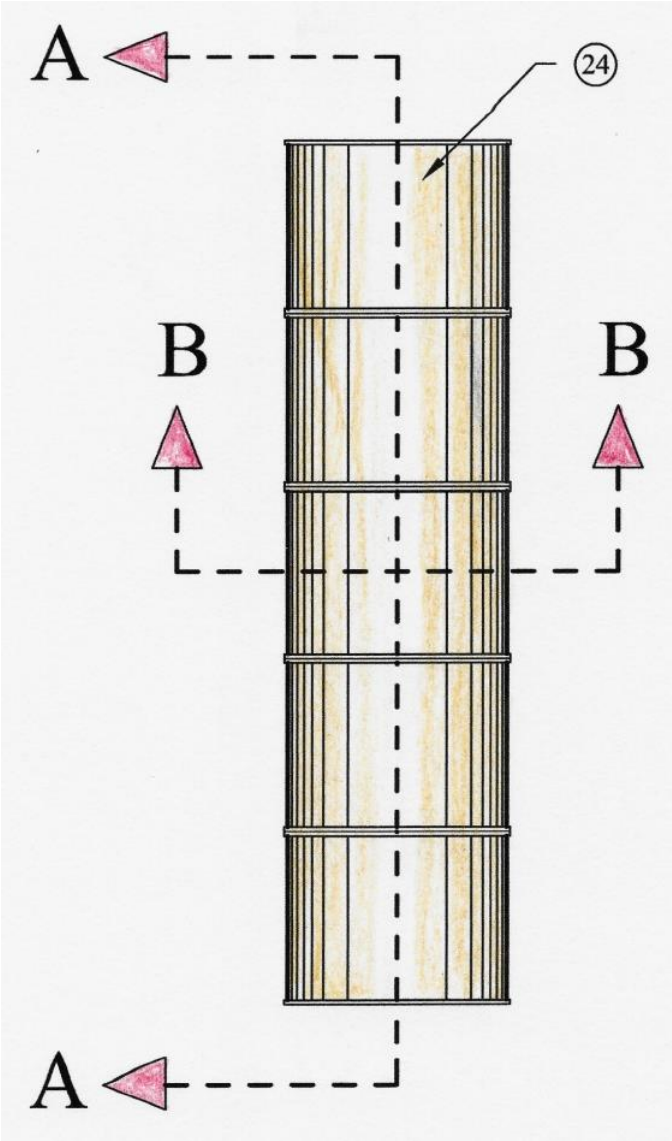
- ✓ Helical anchoring system



MODULE SEGMENT 90˚ CUT



4 MODULES ASSEMBLY



MODULE SEGMENTS ASSEMBLY
VERTICAL & HORIZONTAL CUTS

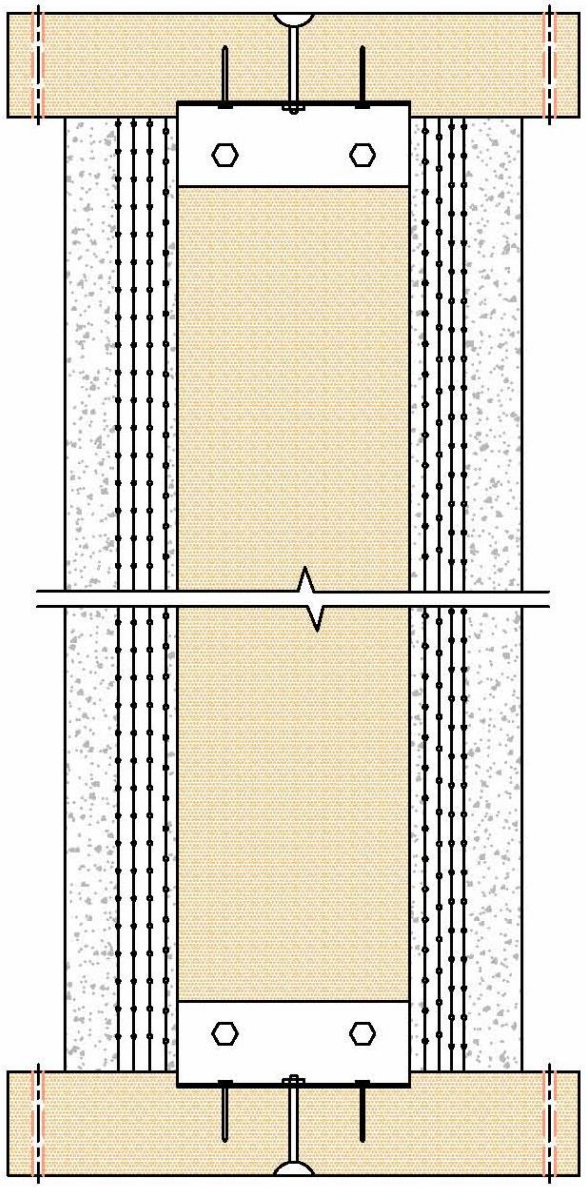
Green Wet Well Design

Cylindrical Modules Include:

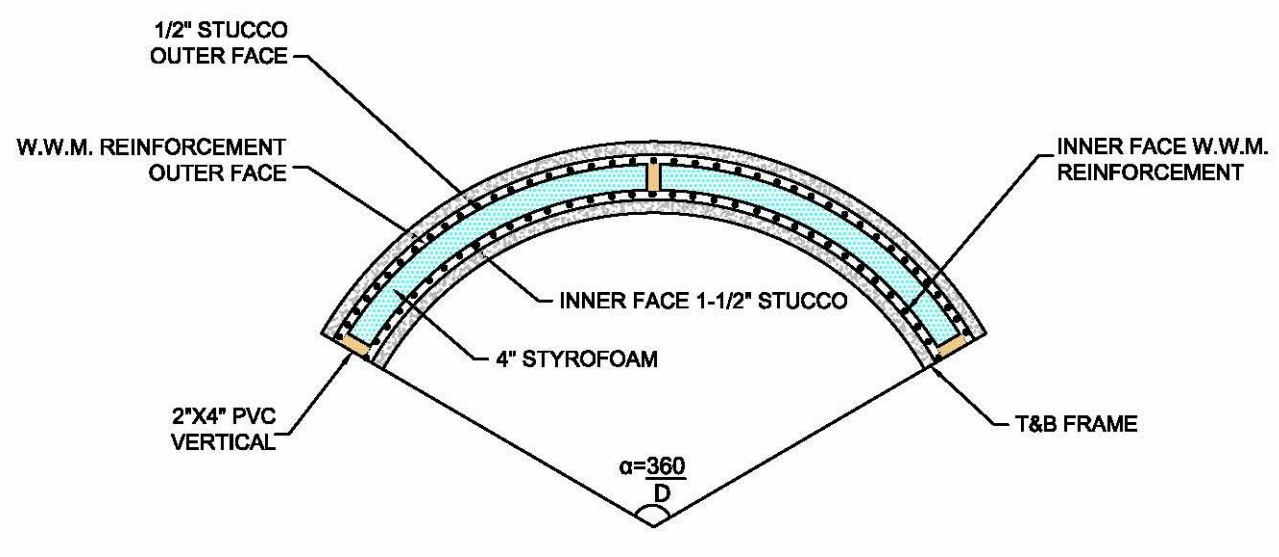
- Top & Bottom Frames – Recycled Plastic
- Vertical Members – Recycled PVC
- Space Refill – Recycled Styrofoam
- Inner & Outer Surface Reinforcement – Welded Wire Mesh

Both Inner & Outer Surface Reinforcements Coated by:

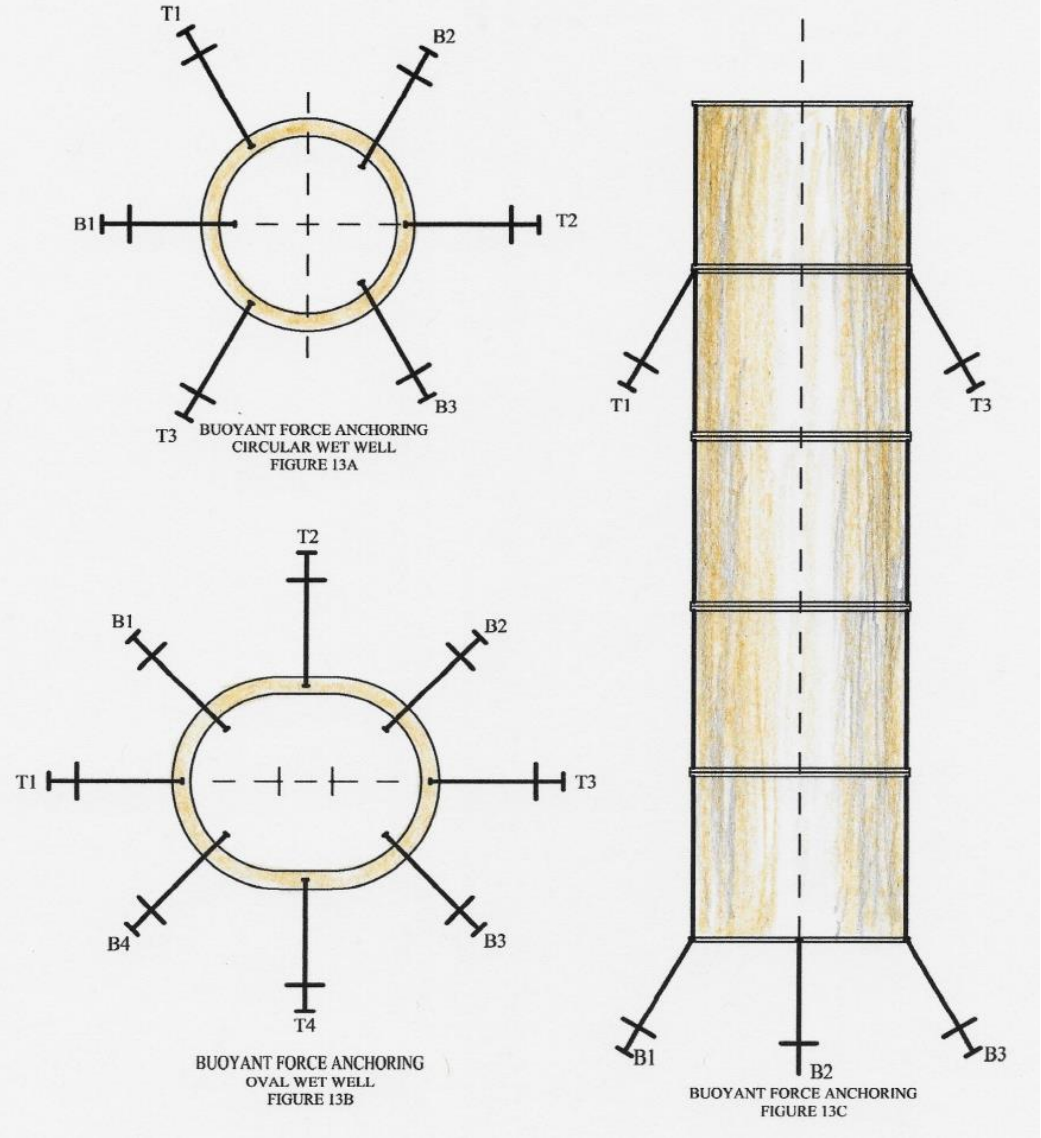
- Layer of Stucco
- Tar Based Water Proofing



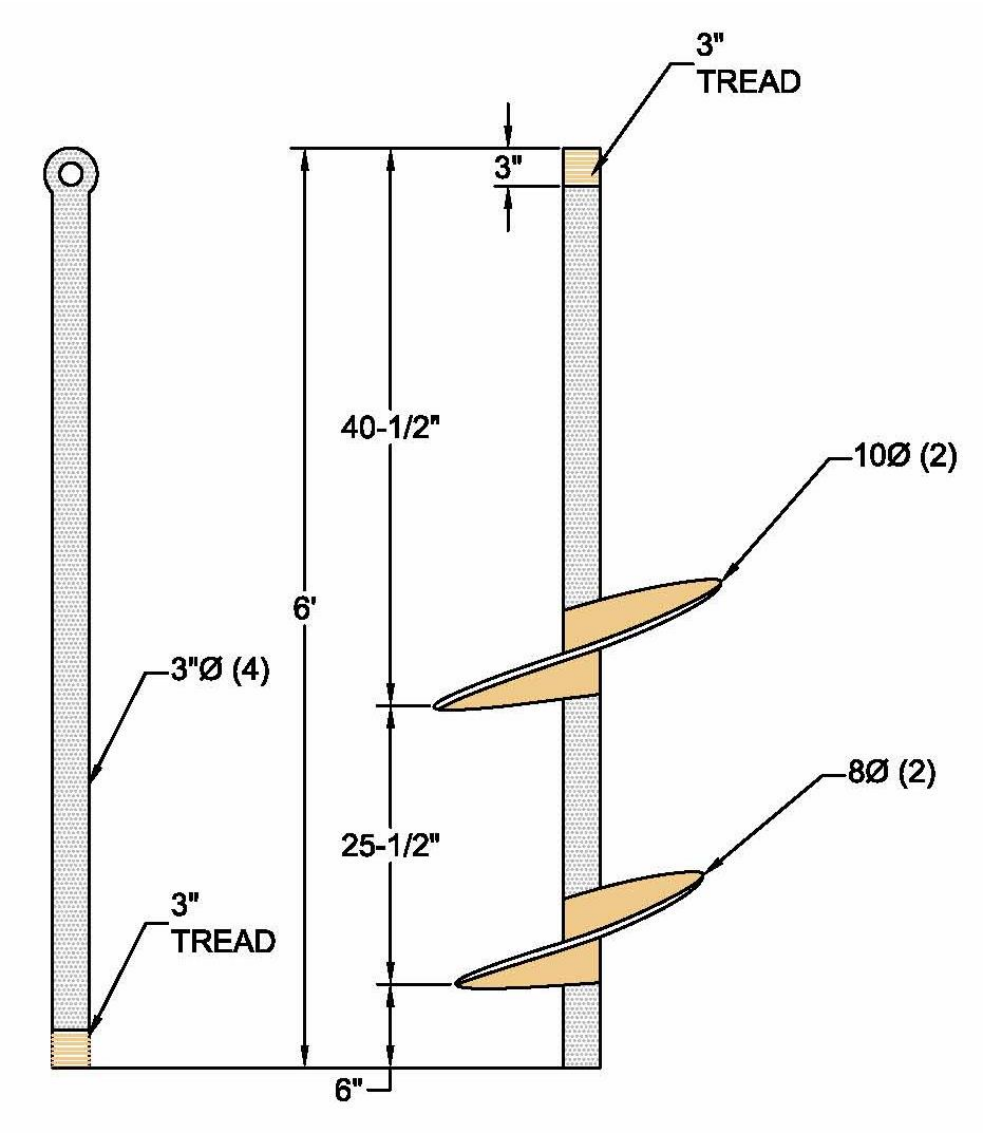
Vertical Section of Module
(A-A Cross Section)



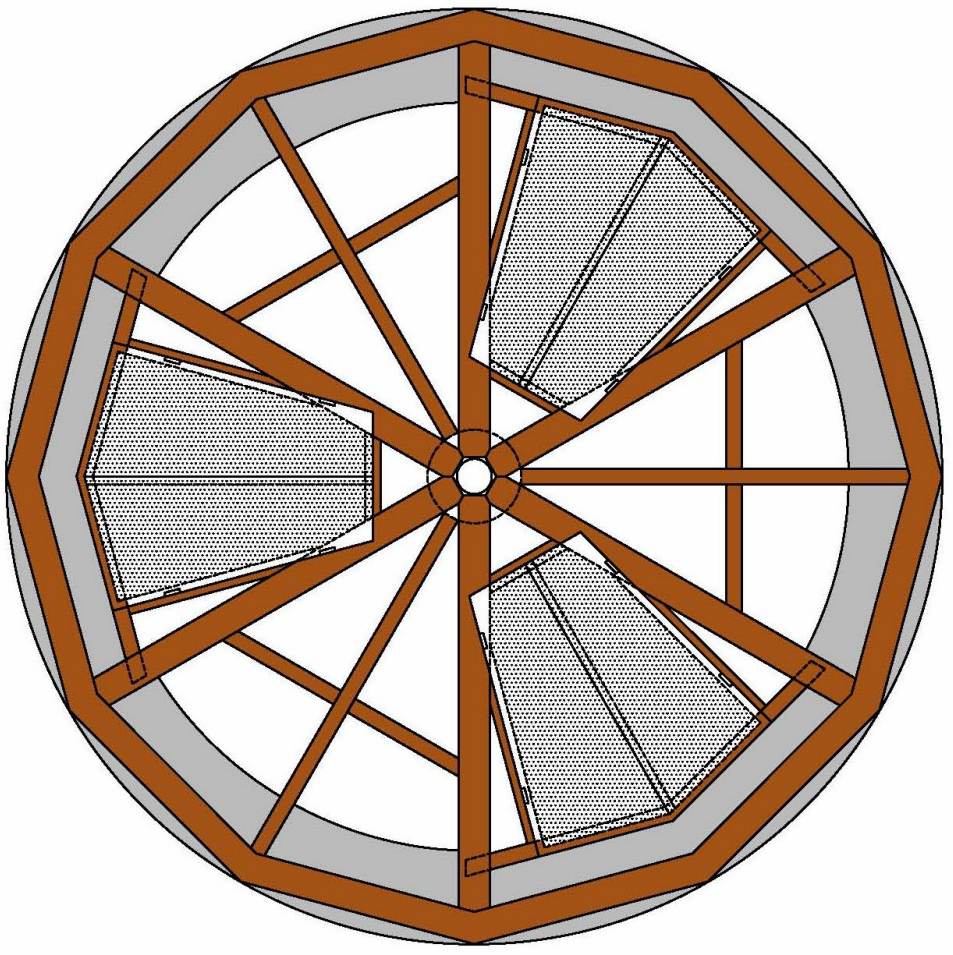
Horizontal Section of Module
(B-B Cross Section)



Anchor Placement In Circular & Oval Wet Wells



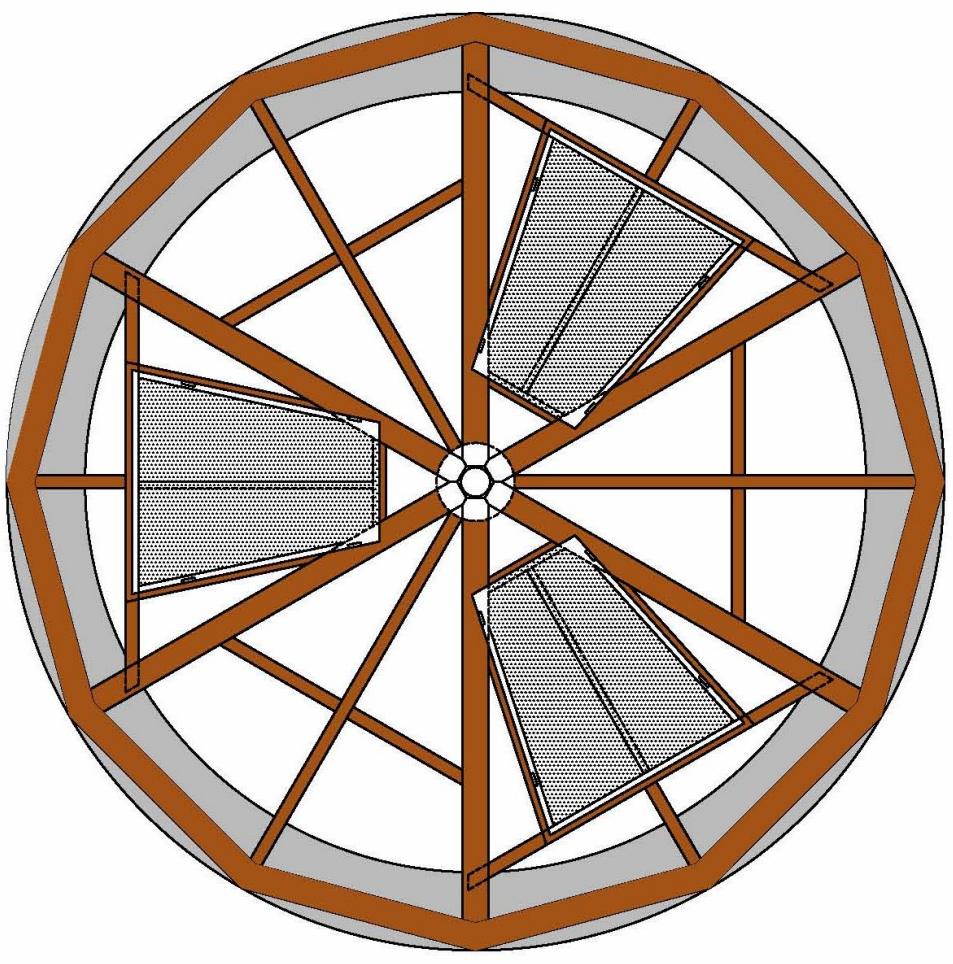
Mechanical Anchor
140 lb.



Aluminum Top Cover

8 feet diameter Wet Well

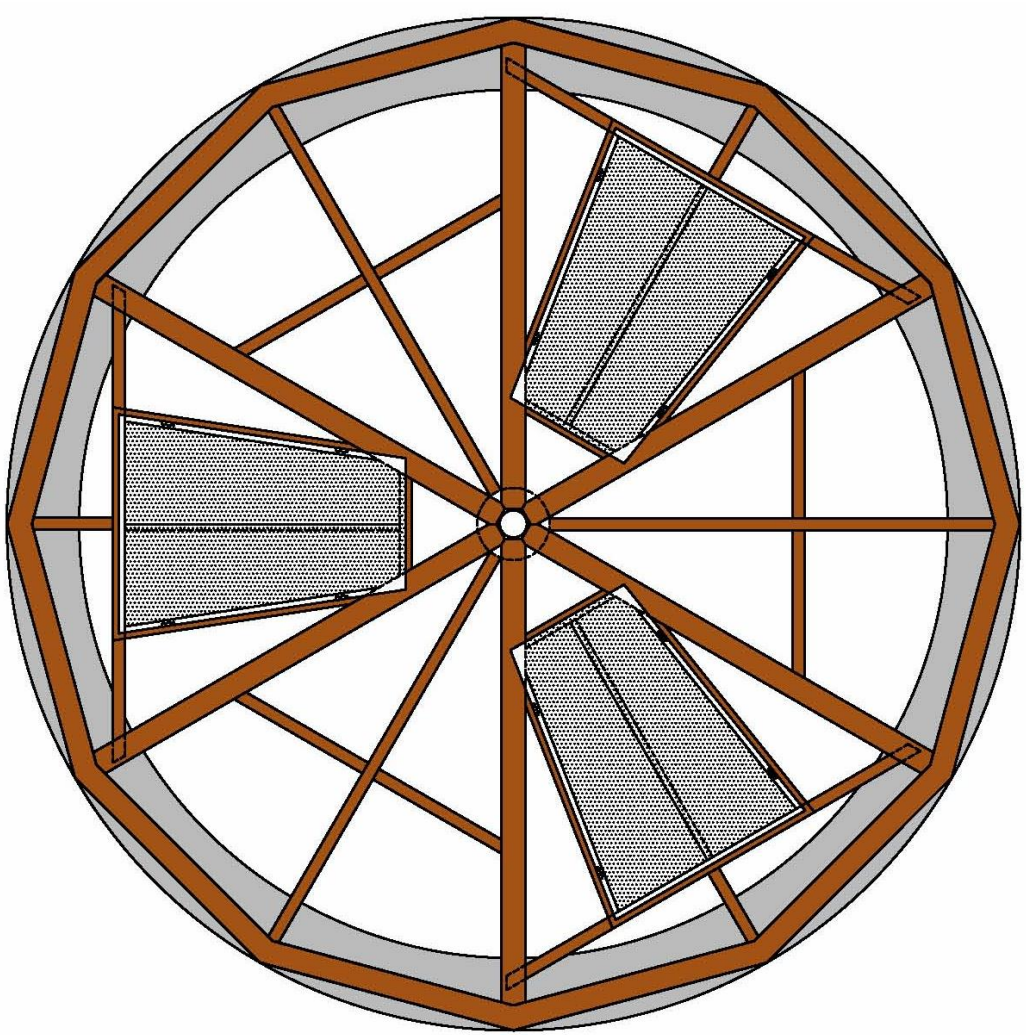
Hatch Opening 10x30x36 inches



Aluminum Top Cover

10 feet diameter Wet Well

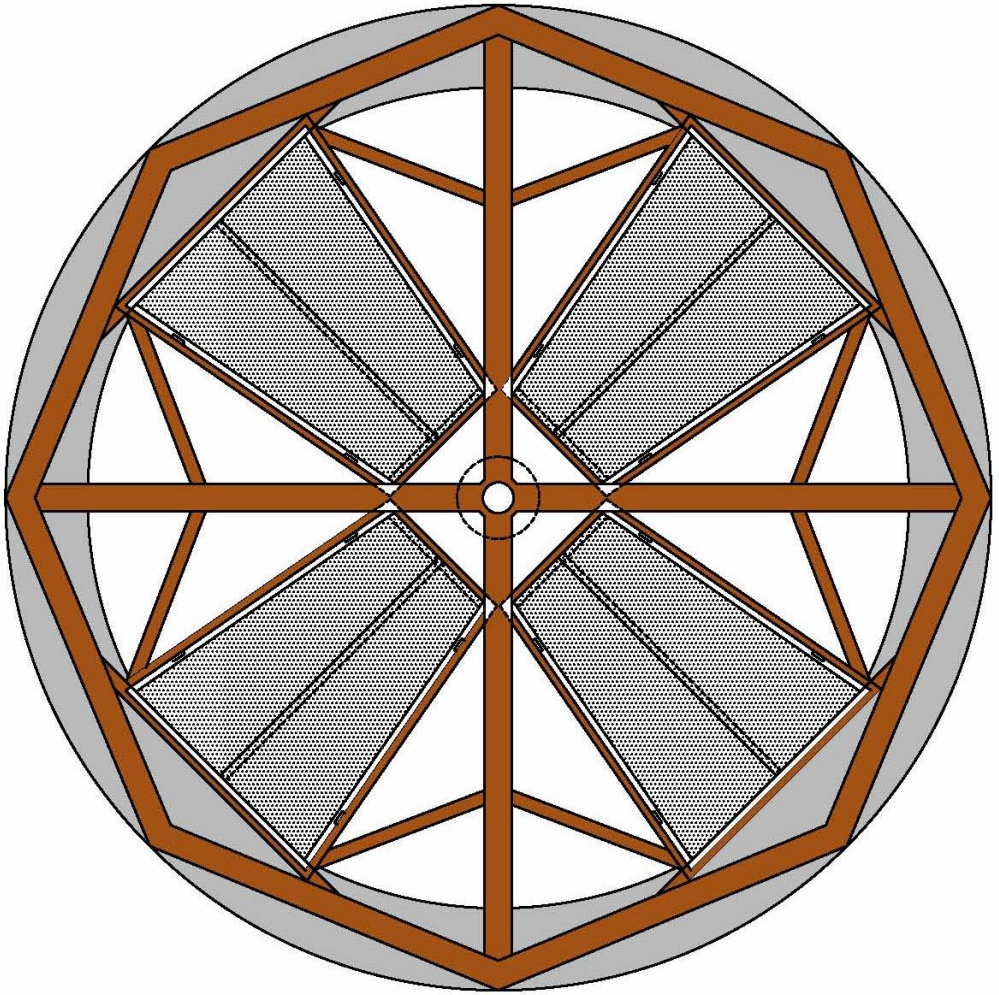
Hatch Opening 12x32x37 inches



Aluminum Top Cover

12 feet diameter Wet Well

Hatch Opening 16x34x46 inches



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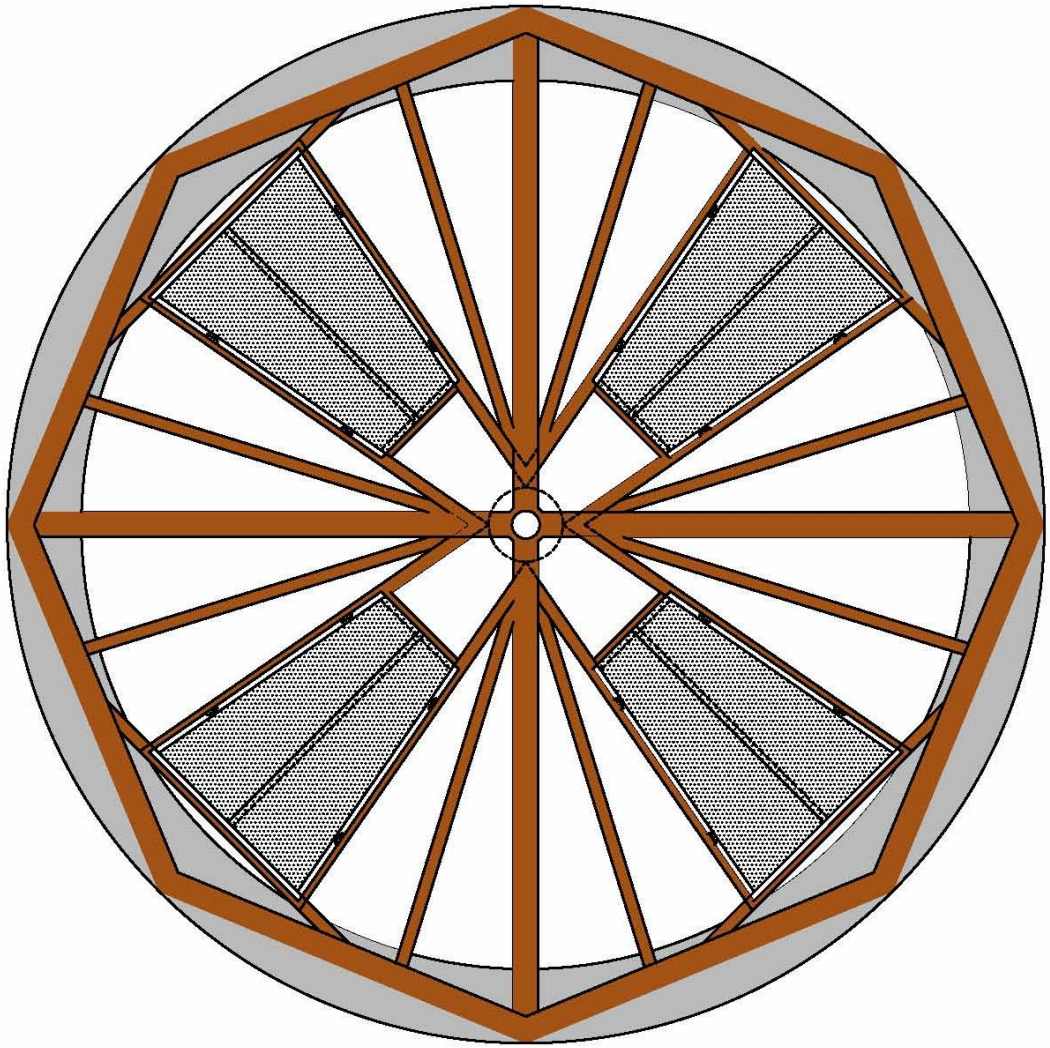
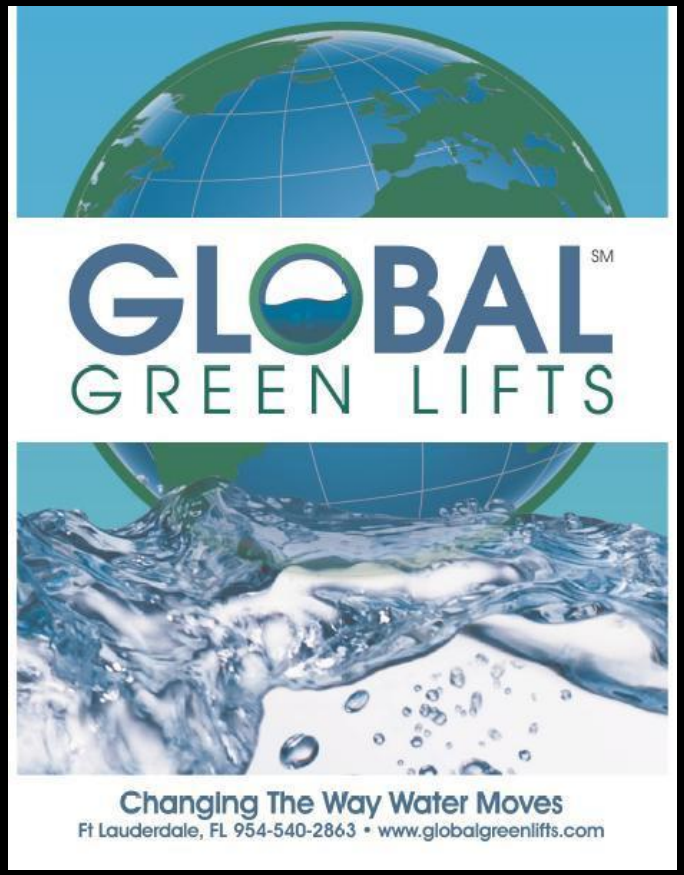


Aluminum Top Cover

12 feet diameter Wet Well

Hatch Opening 16x34x46 inches

Why Not Start



Today?