

ADVANCED CONTAINMENT SYSTEMS, INC

32' FIELD SANITATION TRAILER

FST 328

1. GENERAL INFORMATION

- 1.1 Fresh warm water requirements – approximately 14 gpm or 840 gph
- 1.2 Fresh water inlet requirements one (1), 1-1/2” fire hose
- 1.3 Total BTU requirement for water heater (boiler) –550,000 BTUH
- 1.4 Diesel capacity on board to operate the water heaters and generator on full load for a minimum of 4 hours

2. DIMENSIONS

- 2.1 Length of sanitation area no less than 23’ – 0”
- 2.2 Width of body 8’ – 0”
- 2.3 Length of body hull a minimum 32’ – 0”
- 2.4 Overall length 39’ – 0” app.
- 2.5 Overall height 11’ – 6”
- 2.6 Ceiling height at least 7’ – 0”

3. CHASSIS

- 3.1 Main beams 12 x 22 steel wide flange beams.
- 3.2 Cross members – 6 x 8# of structural steel channel.
- 3.3 Floor joists – 2 x 2 x 16 ga. red kote steel tubing, 16” on center.
- 3.4 Side rails – 4 x 2 – 12 ga. galvanized steel angle.
- 3.5 Three (3) high speed 6000 # sprung axles with electric brakes shall be provided.

- 3.5.1 Tires – Seven (7) LT235-85R-16 ‘E’ range mounted on steel wheels.
- 3.5.2 Includes a spare tire and mounted on tongue.
- 3.6 Tongue Jack 30,000 # capacity for the trailer, two speed, drop leg type.
- 3.7 Stabilizer jacks. – swivel type.
 - 3.7.1 Four (4), one mounted to each rear corner.
 - 3.7.2 Capacity shall be 7000 lbs each.
 - 3.7.3 Bubble levels mounted to each corner area.
- 3.8 Bumper – Rear
 - 3.8.1 Heavy duty steel step type.
 - 3.8.2 1’ – 0” deep x 8’ long
- 3.9 Hitch to be a 3” lunette eye, adjustable height.
- 3.10 Rear steps.
 - 3.10.1 One (1) set at rear door.
 - 3.10.2 Heavy duty fabricated 12 gauge steel fold down type.
 - 3.10.3 2 – step assembly.
 - 3.10.4 Includes an aluminum hand rail for steps.
 - 3.10.5 All step surfaces, shall be coated with non-slip safety grip paint
 - 3.10.6 Fold down steps to be alumina tread.
- 3.11 Side door steps.
 - 3.11.1 Heavy duty fabricated 12ga. steel telescopic.
 - 3.11.2 Fold-out.
 - 3.11.3 3- step assembly attached to main beam
 - 3.11.4 Each stair tread is 36”L x 9”D.

- 3.11.5 All step surfaces, shall be coated with non-slip safety grip paint.
- 3.11.6 Includes fabricated fold out aluminum hand rails with three point attachment.
- 3.11.7 Fold down steps to be alumina tread.

4. BODY STRUCTURE

- 4.1 Floor system designed to eliminate wheel box.
- 4.2 All steel frame construction
- 4.3 Wall studs shall be 2 x 2 red kote steel tubing 16 ga. minimum (16" o.c.).
- 4.4 Roof rafters shall be 2 x 2 red kote steel tubing, 16 ga minimum (16" o.c.)
- 4.5 3/4 " CDX tongue and groove plywood floor.
- 4.6 Seal Skin sprayed on rubber floor covered 1 1/2" up the walls to provide a non-slip, very durable, seamless, chemical resistant, water proof floor.
 - 4.6.1 Color: Gray.
- 4.7 Exterior siding.
 - 4.7.1 Aluminum, smooth .040 thick **WHITE baked enamel finish.**
 - 4.7.2 Sheets to be 49" wide for 1" overlap.
 - 4.7.3 Attached to studs with aluminum fasteners.
 - 4.7.4 Each sheet must be sealed.
- 4.8 Seamless Fiberglass Reinforced Plastic (FRP) .060.
 - 4.8.1 Laminated to 3/8" plywood on interior walls and ceiling with corner joints vinyl trimmed and sealed with a high quality silicone sealant to provide a waterproof, air tight interior.
- 4.9 Roof .040 thick seamless aluminum roof fastened to the perimeter

aluminum top rail.

4.9.1 All fasteners are located outside the trailer body.

4.10 Heavy duty extruded aluminum top rail installed around perimeter of roof.

4.11 R11 rigid foam insulation installed in all walls, floor and ceiling.

4.12 Three (3), heavy duty, aluminum framed entry / exit doors.

4.12.1 One (1) rear and two (2) curb side.

4.12.2 30" wide x 78" high with, aluminum exterior skins, FRP interior skins, continuous hinges, full perimeter seal and stainless steel door handles with dead bolts keyed alike with interior thumb latches.

4.12.3 Hydraulic hold open door closers to restrain doors and to close automatically to aid in the negative pressure process.

4.12.4 An aluminum drip rail installed over each door.

4.12.5 The following lettering shall be provided.

4.12.6 The rear door will be labeled as follows: 4" letters left door and right door will read "MEN EXIT" .

4.12.7 One side door will be on the curbside and have in 4" letters will read "WOMEN". One side door will be on the curbside and have in 4" letters will read "MEN ENTRANCE"

4.13 Generator compartment shall have two (2) heavy duty aluminum vented framed doors (30" wide x 78" high) with fabricated galvanized steel panel inner cores, aluminum exterior skins, galvanized interior skins, continuous hinges, full perimeter neoprene bulb seal and stainless steel door handles with dead bolts keyed alike.

4.13.1 Walls and ceiling shall be covered with galvanized steel.

4.14 A double sound attenuation wall is installed between the generator compartment and the sanitation area.

5. BODY INTERIOR

5.1 Trailer includes a rehab compartment with a men's section and a women's section.

- 5.2 Ten (10) low consumption flushing Thetford toilets with stainless steel partitions and doors will be installed against the streetside wall. The rear 8 toilets will be the men's room and the forward 2 will be the women's room.
 - 5.2.1 Each partition door to have a transportation lock
 - 5.2.2 Each door is secured with a heavy duty extruded aluminum clamp and bolt thru partition hardware
 - 5.2.3 The interior curbside shall be left open for a corridor.
 - 5.2.4 Two (2) lavs with mirrors will be installed on the mens side and one (1) lav with mirror will be installed on the womens side. Women's lav to face the door.
 - 5.2.5 Each stall will have a toilet paper holder.
 - 5.2.6 Five drains will be installed. One by each entrance/exit door and one in the Men's side and one in the Women's side.
 - 5.2.7 Women's stall doors to swing toward the rear. Men's stall doors to swing to the front.
- 5.3 Four 14" x 14" domed skylight roof vents will be installed.
- 5.4 Two small shelves will be installed in the rear of the men's side in the open space before the first toilet stall.

6. 120 / 240 AC ELECTRICAL SYSTEM

- 6.1 System is powered by on board 12 KW diesel generator or by shore power.
- 6.2 All AC electric functions are controlled by one (1), 100 amp load center with properly sized breakers.
 - 6.2.1 Located in the front interior wall in the equipment room.
 - 6.2.2 A pass through will be installed in the floor of the equipment room for a future shore power cord. Pass through to have cap.
- 6.3 Five (5) wet location type, 2 bulb, 4', 40 watt fluorescent light fixtures are included. (4 in rehab area and one in the equipment room)

- 6.3.1 Lights in Men's side to be offset above the front of the sinks for clearance and to be spaced equally throughout the men's side.
- 6.4 All wiring to be installed in strict accordance with NEC.
- 6.5 Three (3) 60 watt enclosed porch lights, one by each entrance/exit door.
 - 6.5.1 Switch controlled from control panel.
- 6.6 Ten (10) GFCI protected grounded duplex type wall receptacles installed as follows.
 - 6.6.1 Three (3) located in the sanitation area, one located at each vanity.
 - 6.6.2 Six (6) exterior, one each curbside corner, two centered in front and two centered in rear.
 - 6.6.2.1 The 110 volt outlets on the front and rear need to be spread so they are spaced with one at the edge opposite the door and one next to the door
 - 6.6.3 One (1) in the utility room.
 - 6.6.4 All outlets shall have waterproof covers.
 - 6.6.5 All outlets wired to the circuit breaker panel.
- 6.7 Three (3) emergency single exit lights, wired to the generator batteries, with a timer.

7. ELECTRICAL – OTHER

- 7.1 12v DC Electrical
 - 7.1.1 7 pole (Bargman) Trailer wiring circuit
 - 7.1.2 Combination stop, tail, and rear directional lights LED lights installed at the rear of the trailer.
 - 7.1.3 Clearance, marker, and LED ID lights installed in roof rail.
 - 7.1.4 License plate bracket with light installed at the rear.
 - 7.1.5 All wiring to be of proper size for amperage rating of lights. All wiring to be automotive stranded copper.

- 7.1.6 Main electrical cable to be 7-conductor trailer wire
- 7.1.7 All lighting to be in compliance with FMVSS lighting standards.
- 7.1.8 Two (2) deep cycle batteries rated at a minimum of 225 minutes at 25 amps. Are installed for the DC electrical system.
 - 7.1.8.1 Model Trojan SCS225
 - 7.1.8.2 A Kussmaul, model 091-39-12 auto battery charger shall be supplied to augment the DC power needed to run the system.
 - 7.1.8.3 External power connection for the battery charger, to allow charger to be connected to power when trailer generator is not operating. A 120V, 15 amp male power inlet receptacle installed in a #091-03 red weatherproof cover.
 - 7.1.8.4 Power connection to be located externally on the front of the trailer.
- 7.1.9 Current limiting relays prevent back flow from inlet receptacle to ant other electrical connections.
- 7.2 Whelen Scene Light Package consisting of seven (7) #810CAOZR clear lens 8-32 degree halogen scene lights, surface mounted.
 - 7.2.1 Two (2) on curbside of the trailer.
 - 7.2.2 Four (4) on street side of trailer.
 - 7.2.3 One (1) mounted at the rear of trailer in between the doors.
 - 7.2.4 Lights are powered by deep cycle batteries and controlled by switches Located on the control panel.
 - 7.2.5 All scene light switches to be rocker type.
 - 7.2.6 All other low other voltage switches located within interior of trailer to also be rocker type.
- 7.3 Control Panel
 - 7.3.1 Enclosure shall be mounted in the equipment room, on the front wall, accessible from the ground.
 - 7.3.2 Enclosure shall have a NEMA rating of 3, 3R, 4, 4X, 12 & 13

- 7.3.3 Enclosure is designed to meet the Joint Industrial Council (JIC) standards in the United States.
- 7.3.4 Enclosure made from corrosion resistant hot compression molded fiberglass reinforced polyester.
- 7.3.5 The enclosure includes four (4) stainless steel captive screws that secure the cover to the base by means of four (4) threaded brass inserts contained in the base.
- 7.3.6 Size of box, OD dimensions, 15.3” x 13.3” x 6.7”
- 7.3.7 Mounting plate shall be non-metallic
- 7.3.8 Mounted on the face plate shall be:
 - 7.3.8.1 Generator switch
 - 7.3.8.2 Generator hour meter
 - 7.3.8.3 Generator fuel gauge,
 - 7.3.8.4 Generator temperature gauge
 - 7.3.8.5 Generator oil pressure gauge
 - 7.3.8.6 Battery charging monitor
 - 7.3.8.7 Gray water tank level monitor
 - 7.3.8.8 Nine (9) 125 V illuminated round rocker switches
 - 7.3.8.9 Three (3) 12V illuminated round rocker switches
 - 7.3.8.10 All switches function labeled

7.4 Whelen Emergency Lighting Package consisting of:

7.4.1 Two (2) #70R00FRR, 700 Series Amber LED flashing lights, surface mounted one each – high on each corner on the rear.

7.4.2 Emergency LED’s to be activated from a switch in the control panel.

8. GENERATOR

- 8.1 One (1) 12 KW Generator, to run all components of the trailer simultaneously.
 - 8.1.1 The generator shall produce 120-240v at 60 HZ.
 - 8.1.2 It shall be equipped with diesel fuel system, remote control, (located on the front wall of the equipment area) and a minimum of 10 amp battery charger kit.
- 8.2 Generator will be located in the equipment compartment.
 - 8.2.1 Aluminum louvers will be installed to provide adequate ventilation to the generator and boilers.
 - 8.2.2 Generator to be vented out the front wall.
- 8.3 Fuel supply shall be a 50 gallon fuel tank.
 - 8.3.1 Fuel tank shall be located between the forward frame rails for protection.
 - 8.3.2 Fuel fill shall be at the front of the trailer.
 - 8.3.3 Fuel cap shall have a secure chain.
 - 8.3.4 Diesel Only label to be placed above fill.

9. **PLUMBING**

- 9.1 One (1), diesel fired tankless boiler unit to supply hot water, continuous water flow, 550,000 BTU's, will be installed in the equipment room next to the generator in same enclosure.
 - 9.1.1 One (1) electronic water temperature controller with digital temperature readout will be installed to provide constant 96 to 100 degree tempered water throughout the unit. A desired temperature will be programmed in and all rinse and decon solution shower ports will provide the desired tempered water.
 - 9.1.2 Controller to be set at a 100 degree goal temperature.**
- 9.2 A black water tank is included of approximately 1150 gallons.
 - 9.2.1 Steel waste tank, sandblasted and coated with a coal tar epoxy, mounted under trailer with cleanout and sight glass

- 9.3 City water inlet with installed at front of unit on curb side.
 - 9.3.1 Inlet fitting to be 1 ½” NPT female inlet fitting fire hose connection. This will supply the exterior showers and the interior toilet plumbing.
- 9.4 System shall be provided for concentrated decon solutions with desired percentage of dilution to be metered into shower system.
 - 9.4.1 Concentrate is pumped out of a 5 gallon bucket, an adjustable metering distribution system to inject into the solution distribution heads.
 - 9.4.2 System should be driven by water volume not water pressure. System will be non-electric.
 - 9.4.3 System will provide solution water to all fixtures, showers, sinks, toilets, and external QD connections.
- 9.5 Plumbing supply lines are high density, cross linked polyethylene tubing with brass swaged lock fittings.
 - 9.5.1 All drain lines are SCH. 40 PVC pipe.
- 9.6 Three (3) quick disconnect (QD) fittings located on curbside rear.
 - 9.6.1 Each QD is controlled by a ball valve.
 - 9.6.2 Two (2) solution connections for external water functions.
- 9.7 A city sewer hookup with 3” slide valve and 2” camlock fitting with cap is included for black water tank discharge.

10. HVAC SYSTEM

- 10.1 Two (2) roof mounted A/C units with heat strips are included.
 - 10.1 Both units mounted in the Men’s side and the forward unit is ducted into the Women’s side.
- 10.2 13,500 BTU’s of cooling, 5600 BTU’s of heating.

10.3 An aluminum deflector will be mounted and installed in front of each AC unit.

11. PLUMBING FOR EXTERIOR BOOMS

- 11.1 Two exterior decon stations will be installed on the streetside of the trailer.
- 11.2 The decon station will consist of two (2) stainless steel shower booms that swing out from the trailer to distribute decon solution water.
- 11.3 All booms are equipped with two (2) nozzles attached with threaded fittings for easy interchangeability with other decon accessories.
- 11.4 Both booms will be plumbed to distribute decon solution.
- 11.7 Control valves will be mounted on the streetside of the trailer at point of use to operate each boom.
- 11.8 Water supply to exterior booms is provided by diesel fired tankless boiler units described in section 9. Constant water temperature is maintained by same electronic controller that controls interior water delivery.

12. AWNINGS

- 12.1 Two (2) 8' x 14' awning will be installed on the street side of the trailer.
 - 12.1.1 Awnings will be white in color.
 - 12.1.2 Two (2) containment berms will be provided, approximately 8' x 14'
 - 12.1.3 Privacy curtains and 3' wide x 14' long roll up elevation grids will be included for all 3 sides of both awnings.
 - 12.1.4 Each curtain assembly to be constructed in 3 pieces (1pc full length side curtain, 1pc full width each end curtain). And cover 14' of the exterior shower area.
 - 12.1.4.1 A privacy curtain divider and hanging pole will be included. Collapsible pole will mount in the middle of the forward awning.

- 12.1.5 Each piece of curtain assembly independently secured to pole frame so that end curtains can be removed while side curtain remains erected.
- 12.1.6 Velcro flaps on end curtains will cover onto side curtain to maximize privacy. Velcro straps to retain flaps in open position. Curtains are to constructed of 18 lb vinyl.
- 12.1 Blocking for a future 14' awning will be installed in the rear curbside of the trailer.

13. MISCELLANEOUS

- 13.1 Labeling: All control switches, faucets, valves, function indicators, etc. to be labeled with engraved vinyl self-adhesive signage. All load center breaker functions to be labeled for easy identification. All shower and QD connections will be labeled SOLUTION.
- 13.2 An operators manual will be included.
- 13.3 Conspicuity tape installed around the lower portion and inverted L shapes in the upper rear corners of the trailer
- 13.4 Five (5) sets of trailer keys will be provided. All doors will be keyed alike.