

SHERIFF'S - MARINE UNIT PATROL BOAT & TRAILER

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A - GENERAL DESCRIPTION:

- A-1** It is the intent of this specification to describe an aluminum hulled vessel, complete with trailer, suitable to perform Law Enforcement, search and rescue and rescue patrol functions in and on the waterways in and surrounding Siskiyou County. The vessel and trailer configuration, balance and construction must be stable and maneuverable at all speeds in various wind, water, depth or wave conditions which are normally encountered in the rivers and waterways of Siskiyou County. These conditions will vary from “flat” to 2'-5' choppy waves from weather and boating traffic. Specifications and requirements listed **shall** be strictly adhered to, with any and all exceptions listed on a separate enclosure consistent with section B-7 (Bid Exceptions) of this document. The following requirements listed within this section are general specifications. It should be noted that this vessel will primarily be used as a river / bay and lake patrol and rescue vessel. All of these waterways require a planning vessel to have a very shallow draft as water levels can rapidly fluctuate from several feet of depth to just a few inches.
- A-2** It is intended that the manufacturer, when selecting components, materials, and design practices for the specified vessel, will use those which are the best available in the industry for the type of operation and conditions for which the vessel will be subjected. All components, materials and design practices will be selected to give maximum performance, service life and safety.
- A-3** The term “***heavy duty***” as used in these specifications **shall** mean that the item to which the term is applied **shall** exceed the usual quantity, quality or capacity supplied with the standard production unit(s) and it **shall** be able to withstand unusual strain, exposure, temperature, wear and use.
- A-4** Vessel **shall** be constructed of “new” marine grade aluminum and designed for shallow river / bay and lake patrol functions.
- A-5** The length of this vessel **shall** be a minimum twenty-two feet (22') and a maximum of twenty-four feet (24'). The centerline length **shall not** include the dive platform.
- A-6** The hull design **shall** be a hard chine semi-vee, with a 14-degree tapered radius bottom.
- A-7** General construction **shall** be considered a white-water style.
- A-8** Propulsion **shall** be accomplished utilizing a marine gas engine complete with water jet propulsion unit equipped with a stainless steel or turbo impeller. (Refer to F-1 and F-4 Propulsion and Related Machinery Requirements)
- A-9** A walk-through console with steering/helm and control functions on the starboard side of the vessel. Glove box shall be included on passengers' side (port).
- A-10** All edges and surfaces that may come in contact with hands or feet **shall** be smooth or

rounded, including but not limited to storage boxes, side trays, cabin, engine cover, etc. Any rough or unfinished edges will not be acceptable.

B - BID REQUIREMENTS:

- B-1** Bids must include all costs of the finished vessel with all components listed herein including labor, materials, and all other costs for a completely operational vessel upon receipt. The bid ***shall*** include any freight
- B-2** All work done, when and where governed, must comply with current United States Coast Guard (USCG), National Marine Manufacturers Association (NMMA).
- B-3** The successful bidder must be a recognized manufacturer (by the Department of Boating & Waterways) of heavy-duty aluminum water craft who has been in business continuously for a minimum of 24 months to the bid opening date.
- B-4** All equipment and components listed as standard by the manufacturer for the model quoted ***shall*** be furnished whether or not such items are detailed herein (e.g. special wrenches, tool kits, jacks adequate to safely lift the vessel when loaded to rated capacity, etc.)
- B-5** Specifications listed on the following pages are written with the intent to meet all applicable laws, rules and regulations, but the final certification to comply ***shall*** rest with the vendor and not the County of Siskiyou. Should our requirements not comply, the manufacturer shall contact Siskiyou County Purchasing Buyer immediately to refigure and have Siskiyou County revise the specifications to meet all laws, rules and regulations (Refer to California Vehicle Code and B-2) where it applies to items such as the ratings of axles, tires, rims, brakes, batteries, cooling capacity, etc.
- B-6** County will not accept any part, component or system which is not an established standard product of the bidding manufacturer (e.g. “prototypes”, “experimental”, etc.)
- B-7** The bidder ***shall*** list on a separate sheet, any variations from or exceptions to the conditions, requirements or specifications of this document. This sheet will be labeled “**Exceptions to bid Conditions and Specifications**” and ***shall*** be attached to the bid form. It is not the intent of these specifications to restrict a manufacturer’s ingenuity in design or to conflict with the standard marine construction practices.
- B-8** Warranties will include:
- | | |
|---------------------------|---|
| <i>Engine and pump/IO</i> | = full manufacturer’s warranty |
| <i>Hull</i> | = minimum 10 years on materials
and, workmanship |
| <i>Equipment</i> | = manufacturer’s warranty or
California Laws |
- B-9** Supplier will notify Siskiyou County Sheriff’s Department of various stages of construction. The primary purpose of the inspections will be to assure compliance with all designs,

specifications and installation instructions.

B-10 The successful bidder shall deliver the completed vessel and trailer to a location designated by Siskiyou County.

B-10.1 The Successful bidder shall provide 4 to 8 hours of time to instruct designated Siskiyou County personnel how to operate and maintain the completed boat and trailer at a location agreed upon by manufacture and purchaser.

B-11 Owner/operator and service manual shall accompany the vessel and trailer upon delivery.

B-11.1 A complete service and repair manual for the vessel, including the engine and jet propulsion unit, shall accompany the vessel and trailer upon delivery.

B-11.2 A complete parts manual for the vessel, including engine and jet propulsion unit, shall accompany the vessel and trailer upon delivery.

B-12 The original dealer's Report of Sale shall be furnished to the County at the time of delivery of the vessel.

B-12.1 (180) to one hundred and eighty to (240) calendar days to build and deliver the completed Patrol vessel to the location agreed upon. The 180 to 240 days shall begin on the date the purchase contract-agreement is signed between the vendor and the County of Siskiyou.

B-13.1 There shall be an agreement by all parties to this contract that in case all the work called for under the contract in all parts and requirements is not finished or completed within the time period as set forth in this contract, damage will be sustained by the County of Siskiyou, and that it is and will be difficult or impossible to ascertain and determine the actual damage which the County will sustain in the event of and by reason of such delay; and it is therefore agreed that Vendor shall pay to the County the sum of one hundred dollars (\$100) per calendar day for each and every working day delay in finishing the work in excess of the time period prescribed; and the Vendor agrees to pay said liquidated damages as herein provided, and in case the same is not paid, agrees that County may deduct the amount thereof from any money due that may become due Vendor under this contract of any other contract between the County and the Vendor.

B-13.2 The Vendor shall not be assessed with liquidated damages during any delay in the completion of the work caused by acts of God or of the public enemy, acts of the County, fire, floods epidemics, quarantine, restrictions, strikes, freight embargoes, or unusually severe weather due to such causes, provided that the Vendor shall, within ten (10) days from beginning of any such delay, notify Siskiyou County Sheriff's Office in writing of the cause of the delay, who shall then ascertain the facts and the extent of the delay, and the County's findings of the facts thereon shall be final and conclusive.

C - DESIGN AND CONSTRUCTION REQUIREMENTS:

- C-1 The material and equipment used in the construction **shall** be new. The hull **shall** be constructed of heavy duty, high grade marine aluminum alloy and **shall** meet the appropriate Federal and Industry standards for material and installation. The aluminum **shall** be a minimum of .250" thickness for the bottom and .190 for the transom, .125" thickness for the sides.
- C-2 Hull **shall** be a hard chine semi-Vee tapered radius in design with a minimum center line length of twenty-two (22') excluding dive platform.
- C-3 The bottom Vee **shall** have a deadrise of fourteen degrees at the planning surface, including the intake shoe and transition forward of the radius intake shoe.
- C-4 All hull frame and stiffener connections **shall** be welded continuously inside and outside on all seams, stress free. Riveted connections **shall not** be considered acceptable.
- C-5 The sides and bottom will meet at a modified pointed bow.
- C-6 The tapered radius is to extend from the bow to the transom.
- C-7 The hull will be assembled, using a shaped and slotted formed extrusion between the sides and the bottom (chine) and the sides and the top (gunwale and foredeck) or an assembly system of equal and approved design by NMMA. All welds are to be continuous, both inside and outside the hull.
- C-8 Heavy duty bow chocks **shall** be securely welded to the hull.
- C-9 The bottom will be hard chine and with six (6) lifting strakes welded on the bottom of the boat designed with the internal T-bar support with-in the strakes. The bottom width **shall** be appropriate to the size, shape, weight, and intended use of the vessel as stated by Siskiyou County.
- C-10 The gunwale top section **shall** be a flat surface between eight (8) to ten (10) inches wide with appropriate cowling to allow water to run off without entering the vessel.
- C-11 The sides (gunwales) **shall** be thirty to thirty-two inches in height with a rub rail between gunwale and chine.
- C-12 The beam width **shall** be one hundred and two inches (102") and bottom width (78").
- C-13 All fasteners utilized in the construction of, or attachment of equipment to this vessel **shall** be aluminum or 300 series stainless steel and consistent with standard marine construction practices. If bidder uses stainless steel, the fasteners **shall** be insulated from aluminum.
- C-14 Two (2) welded bow eyes three inches (3") apart and two (2) stern eyes, one welded to each side of the transom suitable for use in towing.

- C-15** Griffith rubber 3” to 4” solid rubber rub rail to be bolted to each side of the boat approx.. 12” down from the gunnel extrusion. Length should be from the transom to front edge of the windshield. Where bow start curving towards bow nose of boat.
- C-16** A minimum of a three inch (3") high, aluminum hand rail ***shall*** be welded on top of the gunwale on each side. It shall go from the stern a minimum of three (3) feet along the gunwale.
- C-17** There ***shall*** be the same type hand rail along each side of the bow, beginning at the front of the windshield on each side. This rail ***shall*** include an opening at the extreme bow area for persons boarding.
- C-18** There ***shall*** be three (3) 8" heavy-duty, open based cleats that will be backed and welded or backed and through-bolted on the gunwale on each side. There ***shall*** also be one (1) 8” marine grade aluminum cleat mounted on the bow.
- C-19** The windshield framing ***shall*** be of five (5) panel welded construction with full support braces on the inside corners with a walk-through open bow. All window glass ***shall*** be clear safety glass.
- C-20** All bulkhead doors and hatch covers will be framed with one inch (1") aluminum alloy channel.
- C-21** The exterior ***shall*** be painted (compatible for aluminum) from the top of the gunwale to the top of the rub-rail. The painted stripe ***shall*** continue from the front of where the rub-rail ends to the bow. The color ***shall*** be green. The same green painted stripe ***shall*** extend completely across the transom, in line with the side paint. No markings or wording will be required on the hull of the vessel as the County will make arrangements to have the proper Sheriff's Department markings installed upon receipt of the vessel. There will be no bottom paint.
- C-22** Aluminum “Tow Bit/Christ pole” (3 ½ " aluminum) ***shall*** be welded to the centerline at the transom. It ***shall*** be capable of towing large vessels without undue stress.
- C-23** A dive platform/pump protector is to run the full width of the transom and be constructed of a minimum of 1.5" aluminum tubing. The platform will be covered with aluminum diamond plating, extending a minimum of thirty inches (30") behind the transom at the center. This platform should be designed with eyes or rings to aid in the securing of large items upon it (i.e. full body bag, etc.) with rope or tie-down straps.
- C-23.1** The dive platform ***shall*** be located as close to the water line as practical.
- C-24** A twelve inch (12") wide hand rail will be attached to the rear of the transom above the

platform on both the port and starboard side to assist divers to enter/exit the water.

D - ELECTRICAL REQUIREMENTS:

- D-1** All hoses, wires and pipes shall be routed to be clear of all heat sources and shall be routed, secured or otherwise protected from any present or potential source of snags, abrasions or sharp edges.
- D-2** All wiring shall be protected from corrosion.
- D-3** Vessel shall consist of a 12-volt, negative ground electrical system. Two (2) heavy-duty RV marine batteries with a minimum of 650 amperes cold cranking power and heavy duty cables shall be installed. Battery shall be a **Group 24 Interstate** brand battery or equivalent. Alternators rated for electrical load at idle engine speed RPM. Unit shall maintain all electrical systems while engine is at idle in fog or low visibility conditions.
- D-3.1** Batteries shall be secured inside the transom. The transom will be constructed so there are cabinets port and starboard to accommodate the dual battery system. Cabinet opening should be large enough to accommodate easy removal of batteries. The batteries should be electronically isolated from the hull and easily accessible.
- D-3.2** All batteries, bilge pumps and fuel filters are to be contained inside the transom or engine compartment and mounted in such a way as to be readily and easily accessible for service, upon opening the transom or engine compartments.
- D-3.3** Battery receptacle shall be mounted on the interior of stern, and shall include a set of jumper cables.
- D-4** A single heavy-duty battery selector switch shall be installed and include four (4) positions: "1, 2, both and Off." This should be mounted in the transom compartment or engine compartment.
- D-4.1** The battery switch shall be easily accessible in a lockable compartment.
- D-5** Minimum #6 gauge cable from the batteries to the dash. One twelve (12) position fuse block is to be mounted under the operator's (starboard) console, wired directly to the batteries. Each fuse will be labeled for identification.
- D-5.1** A minimum of five (5) empty fuses/circuits shall be installed at the starboard console for future electronic needs.
- D-5.2** There shall be a circuit breaker installed next to each toggle switch on the control console. Toggle switches, Euro-style duty switches shall be rated at 30 amps, resistive with lighted indicator for ON position and shall be waterproof.

- D-5.3** There shall be a fuse or a conduit breaker with 18" at each end of every power source. All wiring harnesses must meet and NMMA color code for NMMA certification. All electrical items shall be labeled on a panel
- D-5.4** A three-way, waterproof ignition switch of the Vendor's choosing, key operated, shall be installed in the dash of the operator's console.
- D-6** Dashboard shall consist of the following gauges and meters, at a minimum, are to be installed in the starboard console: The instrument panel, which holds all gauges and switches, must be made of aluminum and Teleflex marine instruments or equivalent are to be used.
- *Hour meter
 - *Engine oil pressure (audible alarm and warning light and override switch)
 - *Tachometer
 - *Volt or amp meter (warning light)
 - *Fuel level gauge
 - *Engine water temperature (audible alarm and warning light and override switch)
- D-7** All gauges shall be illuminated with 12-volt lighting, red lights, non-glare with a separate activation switch in the operator's console. All gauges/meters will be illuminated with a dimmer switch on the starboard console.
- D-8** There shall be two (2) heavy-duty bilge pumps with a minimum of 1,100 gph (each), chosen by the Vendor. One will be wired directly to the batteries to afford automatic operation with an automatic system. The second pump will have a manual switch at the starboard console.
- D-9** Four (4) 12-volt power outlets (cigarette style) marine grade, wired to adequately handle handheld high power spot lights. Each plug shall have a plastic style cover.
- D-9.1** One (1) power outlets shall be located at each console.
- D-9.2** One (1) power outlet shall be located inside each gunwale near the transom.
- D-10** LED style, marine grade navigational lighting shall be provided and comply with international navigational rules and be USCG-approved. The port and starboard bow lights shall be mounted on the lower side of the windshield. There shall be a white all-around light mounted on the light bar platform.
- D-11** Heavy duty electric bilge blower of appropriate size shall be provided and installed, along with natural ventilation. The switch for the bilge blower shall be mounted on the operator's console.
- D-12** Welded diamond plate on bow sides of boat.

- D-13** Two (2) LED work lights/courtesy lights provided and installed at port and starboard dash.
- D-14** Provisions for passenger heating and/or windshield defrosting shall be provided with controls on the starboard console. (Refer to D-22 for specifications)
- D-15** Vendor selected, dual heavy-duty windshield wipers, with coordinated and self-parking, full panoramic capability for driver and passenger with controls located at the operator's console.
- D-16** The emergency light bar shall be commercially manufactured for emergency vehicles/vessels. The light bar shall be low profile, LED-style with only blue flashing lights. Whelen model LB 110 or equivalent is acceptable.
- D-16.1** The light bar shall be made up of all blue lights to meet the USCG requirements for emergency vessel.
- D-16.2** A siren/P.A. speaker shall be mounted externally in front of the port bulk head facing forward. Galls Deluxe Speaker/Siren Kit, model # 8R-SK147 or equal.
- D-16.3** The On/Off switch for the light bar shall be a rocker-type mounted on the starboard console, for easy access by the operator.
- D-17** The light bar, speaker and siren/P.A. shall be provided and installed by the Vendor. (Reference D-16 through D-16.2)
- D-18** A police radio shall be provided by the county and installed by the successful bidder.
- D-19** The Police radio and Siren controls shall be installed as described in section E-9.2.
- D-19.1** The Police radio antenna shall be installed on top of the arch / superstructure in a position as to not interfere with operation and emergency situations.
- D-20** The light bar, spotlights and flood lights shall be mounted atop the light bar arch. The light bar shall be centered and the four (4) forward and rear facing spotlights and flood lights as far port and starboard as practical.
- D-20.1** Two (2) blue LED lights shall be provided and installed rear facing, one on each side of the transom. Whelen TIR3 Series, Model # 8R-GR196 or equivalent.
- D-20.2** Two (2) white LED courtesy/running lights shall be provided and mounted, rear facing (one on each side of the transom). Whelen LIN3 Series, Super LED, Model # 8R-GR258 or equivalent.
- D-21** All electrical wire harnesses shall be encased in a small appropriate size conduit before inserting into large conduit. All harnesses in the engine compartment will be tied up as high as possible and heat-shielded as required, hidden inside the arch tubing wherever practical

and not exposed from the gunwale to where each unit is mounted.

- D-22** The vessel shall have a heavy duty heater/defrost system with three (3) outlets. One outlet shall be installed at each helm console and windshield and one at each helm lower sections.
- D-23** The successful bidder shall install a **Lowrance HDS-9 touch screen** depth finder, GPS unit on the starboard console as far to the right as practical to aid in full field of view. This unit shall be provided by the successful bidder.
- D-24** Installed in the transom compartment of the vessel shall be a **Shurflo** wash-down assembly to include a minimum of 4.0 g.p.m. pump, $\frac{3}{4}$ & $\frac{5}{8}$ garden hose adapters with quick connects, raw water strainer, and a UV protected 25 foot coiled hose with nozzle. (Or equal.)
- D-25** **Dual lever shift/throttle system. Steering shall be a $\frac{3}{4}$ turn lock to lock rack and pinion steering system.**

E - INTERIOR REQUIREMENTS:

- E-1** There shall be 3-5" conduit run from the engine compartment to the control area. All control cables will run in this conduit. No exposed cables or hoses or wires at the transom or along the sides except when the engine compartment is open.
- E-2** The bow area in front of the windshield shall have an open deck configuration. There shall be a minimum of one lockable storage compartment (anchor locker) in the extreme bow. The bow shall be self-bailing with openings on both the port and starboard sides allowing water to exit the vessel.
- E-3** All interior sides shall be covered grey carpet.
- E-3.1** Dashboard, interior cabinets, countertops, etc. shall be painted with grey "zolotone" or approved equivalent.
- E-4** All compartments shall be locking, keyed alike with recessed half circle pull rings or handles. All compartments should have sealed watertight doors.
- E-5** All locks to be stainless steel or an equivalent non-corrosive material.
- E-6** Deck surface shall be constructed of a minimum of $\frac{3}{4}$ inch marine grade exterior plywood covered with a marine vinyl. Grey in color.
- E-7** The aluminum engine cover is to be thoroughly insulated and isolated as to keep the DBA at the operator's console at 90 or less (per decibel meter). The sound deadening material shall be fire retardant.
- E-7.1** The cover will be hinged for total engine access. The cover will open aft and balance over the center.

E-8 Noise level shall not exceed 90 DBA at the driver's console at any speed, in accordance with OSHA. Standards and testing shall be done by the manufacturer under closed, as well as open, hatch conditions. All sound deadening materials used shall be of fire retardant material.

E-9 Two consoles shall be provided and include a dashboard area behind the windshield. Dimensions will be determined by the successful bidder.

E-9.1 The port side console shall have a locking glove box.

E-10 Driver and passenger seats shall be the air ride shock suspension type, **Mariner brand**, or equal. Seats shall adjust in height, have folding armrests, adjust forward and aft and shall swivel per seat manufacturer. Seats will be wide enough to accommodate an officer with gun belt and equipment. Both seats to swivel.

E-10.1 All interior vinyl shall be alike, including the same color, which will be grey in color. Siskiyou County may approve a two-tone design, with the primary color being grey.

E-11 Helm shall be located on the starboard side and consist of a three (3) spoke, cushion grip wheel with a minimum diameter of 11.5" and a maximum diameter of 13.5". A Rack and pinion steering system with ¾ turn lock to lock.

E-11.1 Throttle and controls shall be "Flow Tec" heavy duty or equal. Throttle and shift shall be separate dual controls mounted on the starboard gunwale. Single control or binnacle mount controls will not be accepted.

E-12 There shall be storage trays on the inside gunwales of both the port and starboard sides, from the transom to the consoles. These trays will allow for the maximum storage that the hull design can allow. Port and starboard trays shall have a six foot (6') locking door, located from the transom forward. From the front of the door to the helm bulkheads, the tray shall be open.

E-13 There shall be (2) lockable seats/storage boxes, minimum of 48" long and 20" wide and 19" tall with vinyl cushions installed on each seat lid. Seats shall be placed directly behind the operator and front passenger seats and face the center of the boat. One of the seat/storage boxes will be vented. Access for the storage boxes shall be through a lift-up hinged lid.

F - PROPULSION AND RELATED MACHINERY REQUIREMENTS:

F-1 The engine shall be a new Ford "Raptor 6.2 fuel-injected gasoline engine, or equal, with a minimum of 400 horse power. Engine must meet all marine industry requirements. Catalytic exhaust manifolds are required.

- F-1.1** Engine shall provide fresh water cooling to include raw/fresh water heat exchangers as required, including a sand trap-type debris filter.
- F-1.2** Include heat exchanger as per the manufacturer's specifications.
- F-1.3** Provide a remote oil filter location suitable for ease of maintenance.
- F-1.4** There shall be access to drain the oil, including a hose attached to the engine to facilitate the draining of oil out the transom.
- F-1.5** Alternator shall be rated for anticipated electrical load at idle engine RPM. Unit shall maintain all electrical systems while engine is at idle in fog or low visibility conditions. Minimum 90 amps.
- F-2** The engine shall meet California State engine exhaust limitations at 50'.
- F-3** A single fuel tank shall be located low, amid ship or in a position to enhance stability and planning of the vessel. The fuel tank shall be located in the bilge area beneath the deck in a manner that allows access to the fuel gauge sending unit.
- F-3.1** Fuel tank shall be fabricated of marine grade aluminum as determined by the successful bidder.
- F-3.2** Fuel tank shall have a minimum capacity of 70 and a maximum of 80 U.S. gallons.
- F-3.3** Fuel tank shall be pressure tested and certified by the successful bidder.
- F-3.4** Fuel tank shall meet or exceed all Federal and California fuel tank requirements.
- F-3.5** Fuel fill inlet shall be located on the starboard side gunwale or transom and be opposite exterior battery jump receptacle and shall not have any hard turns or kinks which would restrict normal fuel flow, or hinder the ability to fully fuel up the tank.
- F-3.6** Fuel system shall include a duplex, heavy duty marine fuel/water separator/filter in a location to facilitate ease of maintenance.
- F-4** The water jet propulsion shall be a Hamilton HJ 212 model and a 2.4 kw stainless steel turbo impeller. A solid billet (1 ¼") thick intake base (6061 T6 alloy) shall be welded into the hull to mount the jet drive. No cast aluminum intake base will be accepted.
- F-4.1** The unit shall have a clean-out port on the pump intake to allow debris to be removed. The clean-out shall be accessible from the inside while the vessel is afloat.
- F-4.2** The unit shall have a spring-loaded intake grate located on the bottom of the hull to facilitate ease of maintenance and clearing a fouled intake on the pump. The grate should be designed to drop when pressure is placed on a foot stomp bar located behind the transom. Personnel

should be able to step on the bar and drop the grate while standing on the rear platform.

F-5 Engine compartment **shall** have a 1” drain hole to exterior through the transom.

G - CANVAS COVERING REQUIREMENTS:

G-1 The top **shall** be constructed welded aluminum with welded grab handles, interior red/white dome light, rear facing flood light, top mounted anchor light. With welded arch on roof for spot lights, or blue light bar. Canvas covering.

G-2 The top **shall** have the ability to be unsnapped at the windshield, rolled back and secured, exposing the center, either helm station, or all at the same time.

G-3 The top **shall** be of a design to accommodate the unit while being tailored without damage at speeds of 55 m.p.h.

G-4 There will be removable side curtains that zip to the top portion, and snap to the gunwale and windshield.

G-5 There will be a rear drop curtain that extends from the top to the floor behind the bench seat / storage boxes. The curtain will be attached to the top and the side curtains with zippers. There **shall** be two vertical zippers from the deck to near the top as a rear door. There will be a strap/snap system to allow the rear curtain to be rolled up while still attached to the top.

G-6 The side curtains and back drop **shall** come with a storage type boot for protection when not being used.

G-7 The side and rear curtains shall be constructed of a combination of canvas and clear plastic as to allow 360 degree visibility with minimal obstruction.

G-8 All snaps, hinges and other hardware used **shall** be 300 series stainless steel. All zippers **shall** be nylon YKK zippers, or equal.

G-9 All canvas **shall** be grey in color, made of Top Gun 11oz material, or equivalent.

H - TRAILER REQUIREMENTS:

- H-1** Trailer shall be all welded Aluminum, with tandem axles, (no bolt together framing) to accommodate the size and weight of the specified vessel, fully fueled and equipped.
- H-2** Trailer shall be “bunk” style. Roller style shall not be considered acceptable. Bunks shall be adjustable. **Side guides with UHMW overlay above fenders.**
- H-2.1** Aluminum loading bunks with UHMW-overlay.
- H-3** A matching spare tire and wheel shall be mounted on the trailer.
- H-4** Tires shall be radial of a size and ply rating to accommodate the gross weight of the vessel fully loaded. The rim diameter will be a minimum of 15” inches.
- H-4.1** Wheels shall be equipped with Vault oil bath bearings or approved equivalent.
- H-5** Trailer tongue shall be equipped with a two inch (2”) ball hitch.
- H-6** Fenders shall be of aluminum diamond plate.
- H-7** A “Fulton” swing away, or approved equal tongue jack with 2 solid rubber wheels, shall be included and installed. Jack shall be rated to exceed the tongue weight of the loaded vessel.
- H-8** The trailer shall be equipped with a heavy-duty winch with nylon strap. The winch shall be attached to the trailer with security bolts.
- H-9** The trailer shall be equipped with a heavy-duty safety chain below the winch for additional safety.
- H-10** Trailer shall be equipped with “surge disc” type brakes on all four (4) wheels.
- H-11** The trailer shall have installed required “trailer lights.” The lights shall be classified as “submersible.” These lights shall be LED or equal.
- H-12** Trailer shall meet all Federal, State of California Vehicle Code and S.A.E. requirements.
- H-13** The trailer weight rating shall exceed the weight of the vessel, fully fueled and loaded.