STATE OF CALIFORNIA
Department of General Services - Office of Procurement
PURCHASE ORDER

Form GSOP 1-PIN (04/98)

Purchase Order No.	Rev.	Date
61922		1/ 2/2008

Supplier No.	Solicitation No.	Delivery Date	FOB Point	Invoice Terms
258759	56617	360 Days ARO	Destination	

CRYSTALINER CORP
1626 PLACENTIA AVE
COSTA MESA, CA 92627
Attn: LEWIS PAGE (949) 548-1385

Phone: 949-548-1385

Ship To:
DEPT OF PARKS & RECREATON
SANTA CRUZ SMALL CRAFT HARBOR
SANTA CRUZ, CA 95062
Attn: C. BELLTAWN 916/375-6828

Charge To:
PARKS & RECREATION A-50
ATTN: AMANDA MIRANDA
1416-9TH STREET, RM 1052
SACRAMENTO, CA 94296

Agency Billing	Agency Purchase Estimate	Purchase Estimate	Revision
53715	E06K0002	66565	2

Agency Contact	Phone	Date Received
AMANDA MIRANDA	916-657-4085	

Item No.	Quantity	Unit	Commodity Code	Description	Unit Price	Extension

THE GENERAL PROVISIONS FOR NON-IT COMMODITIES ARE HEREBY INCORPORATED BY REFERENCE. THESE GENERAL PROVISIONS CAN BE OBTAINED BY PHONING (916) 375-4400 OR BY ACCESSING OUR WEBSITE AT:

www.documents.dgs.ca.gov/pd/modellang/GPnonIT0407.pdf

THE FOLLOWING INFORMATION IS PROVIDED FOR AGENCY USE ONLY:

PRIME CONTRACTOR: NS

APPLICATION OF DVBE INCENTIVE RESULTED IN AWARD: NO

1	1	EA	1990-999-9999-7	VESSEL MARINE (AS DESCRIBED)	337,000.0000	337,000.00

SURF WATCH RESCUE BOAT IN ACCORDANCE WITH SPECIFICATION #1990-07BS-001R1 OF 19 PAGES DATED APRIL 2007

THIS VESSEL SHALL INCLUDE THE FOLLOWING OPTIONS:
OPTION 1-POWER TRAIN
OPTION 3-BOAT LENGTH

SHIP TO: SANTA CRUZ, CA 95062

Brand: CRYSTALINER
Model: LIFEGUARD

Sales and/or use tax to be extra unless noted above

Buyer	Phone	BOC Number
TIM PATTON	916-375-4412	

STATE OF CALIFORNIA

Department of General Services - Office of Procurement

PURCHASE ORDER CONTINUATION

Form GSOP 2-PIN (04/98)

Purchase Order No.	*Revision*	*Date*	*Supplier No.*	*Supplier Name*
61922		1/ 2/2008	258759	CRYSTALINER CORP

Item No.	*Quantity*	*Unit*	*Commodity Code*	*Description*	*Unit Price*	*Extension*
2	1	EA	1990-999-9999-7	VESSEL MARINE (AS DESCRIBED)	351,000.0000	351,000.00

SURF WATCH RESCUE BOAT IN ACCORDANCE WITH SPECIFICATION #1990-07BS-001R1 OF 19 PAGES DATED APRIL 2007

THIS VESSEL SHALL INCLUDE THE FOLLOWING OPTIONS:

OPTION 1-POWER TRAIN
OPTION 2-DELIVERY LOCATION
OPTION 3-BOAT LENGTH
OPTION 4-CABIN ENTRANCE
OPTION 5-FUEL TANK CAPACITY

SHIP TO: DANA POINT, CA 92629

Brand: CRYSTALINER
Model: LIFEGUARD

Total Value: 688,000.00

For the purpose of this purchase order, only F.O.B. Destination will be accepted.

INSPECTION

The vessel shall be subject to inspection during construction by the Department representative designated by the Department of Parks and Recreation. Any unsatisfactory materials or evidence of faulty workmanship shall be removed and replaced or corrected by and at the expense of the contractor. Failure by the Department of Parks and Recreation to find faulty materials or workmanship at inspection times does not release the builder of the responsibility for said faulty materials or workmanship.

SEA TRIALS

Prior to acceptance, successful bidder shall notify the Department of Parks and Recreation to make arrangements for sea trials of the vessel at a mutually acceptable location. The State shall have five days to determine if the vessel as delivered meets the performance requirements and specifications.

WARRANTY

Builder shall guarantee the boat against failure due to faulty material, workmanship or design for a period of not less than one (1) year after acceptance. If warranty repairs are necessary they shall be accomplished at a boat repair yard in Santa Cruz Small Craft Harbor

Boat shall be guaranteed to be free from leaks except through propeller shaft or rudder shaft packings for a period of one (1) year after acceptance.

Machinery and other suppliers or installed items shall be guaranteed and provided by their respective manufacturers.

STATE OF CALIFORNIA
Department of General Services - Office of Procurement

PURCHASE ORDER CONTINUATION

Form GSOP 2-PIN (04/98)

Purchase Order No.	Revision	Date	Supplier No.	Supplier Name
61922		1/2/2008	258759	CRYSTALINER CORP

Item No.	Quantity	Unit	Commodity Code	Description	Unit Price	Extension

Workmanship and materials used in the installation of machinery and other components shall be guaranteed by builder against failure for one (1) year.

MANUALS, DIAGRAMS, PARTS LIST
For future reference and parts ordering, the builder shall provide a list of all materials used, component manufacturers' instruction and maintenance manuals with the boat at time of delivery. Software to hook up and monitor boat engines.

DELIVERY
After acceptance of sea trials, the boat shall be delivered in the water by the manufacturer at no additional cost to the State at Santa Cruz Small Craft Harbor, Santa Cruz, CA 95062.

DELIVERABLE PAYMENTS
Payment will be made for the following installed deliverables:

1. Final Engineering Drawings with Marine Architect Stamp
2. Hull, Bulwark, Ramp, and House
3. Powertrain
4. Hydraulics, Electrical System, Piping System

No greater than 70% of the delivered goods as verified by authorized State employees per accurate bills of lading, purchase orders, and inventory lists may be paid for prior to completion of assembly of delivered goods. No payments may be made without State verification of installation of deliverable item listed above. Payments will only be made on installed deliverable goods. Awardee shall bear the travel expenses, food, lodging & incidentals for State representative inspection to verify installation of deliverable goods. If, after payment, storage of deliverable goods is required, the contractor shall be responsible for securing such storage. Storage of goods shall be the sole expense of the contractor. Storage shall be in a in a bonded warehouse with one key held by the State or their designated representative.

INSURANCE :
Contractor, at its sole expense, shall procure and present, within 21 days of award, proof to the State, prior to the commencement of any Agreement contract work, and maintain until delivery of the Vessel to Owner, the following coverages:

(a) Contractors' Risk insurance (including protection and indemnity clauses, and coverage for voluntary wreck removal) for the Vessels, engines, and all associated equipment of the Vessel and engines, in an amount not less than the total purchase price of the Vessel;

(b) Third Party Liability insurance (including Products Liability) to protect against liability of Contractor to third parties relating in any way to the Vessels or the Vessels' construction before delivery to Owner;

(c) Hull insurance;

(d) Contractual liability insurance with respect to Contractor's obligations and undertakings as set forth in the Agreement;

STATE OF CALIFORNIA

Department of General Services - Office of Procurement

PURCHASE ORDER CONTINUATION

Form GSOP 2-PIN (04/98)

Purchase Order No.	*Revision*	*Date*	*Supplier No.*	*Supplier Name*
61922		1/ 2/2008	258759	CRYSTALINER CORP

Item No.	*Quantity*	*Unit*	*Commodity Code*	*Description*	*Unit Price*	*Extension*

(e) Comprehensive automobile liability insurance (including, but not limited to, owned and non-owned-hired coverages);

(f) Pollution liability insurance (including, but not limited to, land and water coverages) as required by any applicable federal, state, or local acts; and

(g) Such other insurance in such forms and amounts as may be required by law or custom in similar circumstances to fully protect itself, Owner and the Ferry from any and all liabilities in connection with the construction, testing and delivery of the Vessels.

All liability insurance coverage's, except for statutory compensation, shall be in amounts of not less than TWO MILLION DOLLARS ($2,000,000) per accident or occurrence.

This Purchase order has been registered into the state contact and procurement registration system (https://www.scprs.dgs.ca.gov/). The registration number is 37900108278933.

Surf Watch Rescue Boat

Department of Parks and Recreation
Mobile Equipment Unit

1. SCOPE:

1.1 GENERAL DESCRIPTION:
It is the intent of these specifications to describe, in detail, the construction, machinery installation, outfitting, equipping and delivery of one (1) twin screw 29' 5" to 30' 2" ocean rescue boat. Better material than those specified within may be used. The boat will be used for providing fast initial response to swimmer rescues, and marine emergencies, particularly in or near the surf zone, where the ability to maneuver and back quickly is of prime importance. This specification and project shall be managed by the State of California, Parks and Recreation Equipment Manager. Changes made by any other State Employee will not be accepted or paid for.

1.2 ITEMS NOT SPECIFIED:
In the case of details which are impractical to fully specify, or inadvertent omissions from the plans and specifications, or inadvertent inclusions therein, it is understood that the intent of the plans and specifications is to be carried out in all respects in accordance with the best boat building practice. Materials, construction, and equipment are to be first class in every particular to produce a boat of the maximum strength and durability for the service anticipated.

1.3 ESTIMATED LIFE:
The specified boat will have an expected life of not less than twenty (20) years. The boat builder should bear this in mind when designing and building the boat. For this reason, certain minimum qualities of materials and workmanship are specified which may exceed those normally furnished in pleasure boats.

2. PERFORMANCE REQUIREMENTS:
The vessel shall be capable of performing the following test while carrying all of the specified equipment and payload:

a. Able to maintain an average two-way speed of not less than 32 knots on calm water without exceeding engine manufacturer's rated maximum engine R.P.M.
b. Make a two hour test run without power loss (to be determined by engine run up to maximum rated R.P.M.), overheating of engines, refueling, and while planning and maintaining an average speed of not less than 24 knots.
c. Able to start from a dead still position to a full plane in a maximum of 75 Yards.
d. Capable of making a full throttle, hard over, 180 degree turn without causing damage to the hull or steering components or becoming unstable.

Payload shall include: Full fuel tank, two crewmen, all specified equipment, and miscellaneous equipment weighting approximately 600 pounds.

3. TECHNICAL REQUIREMNTS:

3.1 HULL:

The hull is to be conventional "V" bottom, hard chine type, in accordance with the most modern practice for high speed service under severe open sea weather conditions. This form of hull was selected as it will produce the minimum destructive wake for operation at planning speed in confined waters.

3.1.1 Dimensions:

Design Parameters	
Overall Length	29' 5" to 30' 2" plus swim step
Beam at Sheer	11' (min)
Freeboard, Forward	43" (min) to 47" (max)
Freeboard, Aft	31" (min) to 35" (max)
Transom Width *	111" (min) to 112" (max)

* The aft vertical transom surface shall rake at a minimum of four degrees to a maximum of seven degrees.

3.1.2 Construction:

The hull shall be constructed of hand laid fiberglass as specified. Chopper gun lay up is **NOT** acceptable. The longitudinal stingers shall be of maximum thickness covered with two layers of 1 1/2 ounce mat and two layers of 24 ounce roving, with additional mat and roving used in securing stringers to center section of hull, bulkheads and transom. Spray rails shall be eliminated wherever possible. Hull construction shall include two longitudinal lifting strakes per side, one extending from the stem to the stern and the other extending from the stem approximately two thirds the distance to the stern. Each shall be molded into the bottom during the lay up process of the fiberglass. Limber holes shall be provided where necessary to provide for proper drainage. Cabin, deck structure and hull shall be bonded together using Matt and Roving process, with a minimum of two layers 24 ounce roving and two layers of 1 1/2 ounce Matt. A 1 3/4" X 1/2" black vinyl rub rail and one inch stainless steel covering shall be provided along shear and transom. There shall be two (2) water tight bulkheads; one (1) anchor chain locker and one (1) forward engine room. There shall be a third partial bulkhead located between the engine room and fuel tank compartment. The bulkhead shall be constructed to provide hull strength and support to the towing bit, not extending downward further than necessary, to allow proper ventilation and fire suppression ability between the two compartments.

3.1.3 Materials:

All materials used shall be of high quality. All fasteners shall be stainless steel, grade 18-8, 300 series or equal. All self locking nuts shall be stainless steel with "NY-LOC" inserts. All through-hull fittings shall be bronze. Any type of nylon, galvanized iron, aluminum or plastic type materials will not be acceptable unless specified. All fiberglass cloth, roving, mat, etc., shall be high quality marine grade. All lay ups shall be of polyester laminating resin.

The hull components shall have the following minimum thicknesses:

a. Hull bottom 1/2" - one layer 7 1/2 ounce cloth, five layers 24 ounce roving, six layers 1 1/2 ounce mat.

b. Keel and stem area - one layer 7 1/2 ounce cloth, eight layers 24 ounce roving, and nine layers of 1 1/2 ounce mat.
c. Hull sides 3/8" - one layer 7 1/2 ounce cloth, three layers 24 ounce roving, four layers 1 1/2 ounce mat.
d. Transom 1/2" - one layer 7 1/2 ounce cloth, four layers 24 ounce roving, five layers 1 1/2 ounce mat.
e. Decks 5/8"

Plywood, fiberglass covered water tight bulkheads, of sufficient strength, shall be provided.

3.2 DECK CONSTRUCTION:

3.2.1 Minimum thickness of 5/8".

3.2.2 Maximum use of deck supports.

3.2.3 Fiberglass lay up of mat and cloth or equivalent.

3.2.4 Vessel shall have two inside deck levels:
a. Lower aft deck.
b. Engine compartment and control area deck in front of the aft deck.

3.2.5 Cockpit decks, hatch covers and bow decks shall be fiberglass covered on all sides, have gutters, be weather tight and self draining.

3.2.6 Cockpit hatches shall be wide enough to allow easy servicing of outboard side of each engine by access over top of engine, and shall be long enough to service the fore and aft engine components including the transmission and propeller shaft packing nuts from the engine compartment. There shall be no cover boards at this deck level.

3.2.7 One fuel tank hatch shall be bedded and screwed and located to allow for easy removal of tank. Supporting beams and blocks shall also be easily removed and shall be placed to prevent any movement of the tank. The hatch and deck shall be flush.

3.2.8 Aft cockpit deck shall slope aft and be self draining through two 2" X 6" (minimum size) fiberglass scuppers located on transom and **as far outboard as possible**. Hinged flaps shall be installed over scuppers to minimize water entry.

3.2.9 Aft cockpit deck shall be a minimum of 15" above the water.

3.2.10 Toe rails, if provided, shall be constructed of fiberglass during the lay up process of the deck and shall be free of voids to permit proper fastening of chafing strips, etc.

3.3 CONTROL STATION AND COCKPIT:

3.3.1 A stream lined open cockpit shall be provided on the main deck with removable helm seats. Seats provided shall be rigid back type and mounted in a location as instructed by the Department of Parks and Recreation representative. Hardware shall be constructed to support seats when engine hatches are removed. Seat mounts shall be through bolted

with machine screws, lock nuts and finishing washers. Footrests, minimum size 12" X 4 1/2", shall be installed on the cabin bulkhead adjacent teach seat. All controls, steering, instruments, switches, etc., shall be located on the starboard side at a level so as to be operational in a standing or sitting position with visibility of prime importance.

3.3.2 The forward side of the spray shield shall be curved and raked aft, 48 degrees to 50 degrees from fore deck, to insure good visibility and lines.

3.3.3 The cockpit deck shall be at a height which will insure unrestricted visibility.

3.3.4 Cockpit spray shield shall have a forward sloping windscreen across the front and around the forward corners.

3.3.5 A radar arch shall be installed over the cockpit area, aft of the seats, and extending from coaming to coaming. Arch shall be of sufficient strength to support radar, marine radio, loran and DF antennas, and P.A. speaker. A backing plate of sufficient size and through bolt sleeves shall be used with radar antenna mount to prevent collapsing of arch as bolts are tightened. Height of arch from distance between deck and underneath side of arch shall be a minimum of 79". A canvas bimini top with cover, and clear plastic shield to exent and snap in front of helms shall be included.

3.3.6 Cabin door shall be located in the center of the cabin bulkhead for easy access and visibility of electronics and cabin area. Door shall be a minimum of 24" wide. Cabin door design shall be the folding type, lockable and water tight. Cabin door hatch shall be a minimum 24" wide, approximately 28" deep, and be two-piece water tight. Lockable hinges and latches shall be installed on hatch and door to hold the door and hatch in the open position.

3.4 FORWARD CABIN:

3.4.1 Aft bulkhead of cabin shall be located approximately 157" to 161" from the bow to provide optimum visibility while standing at the helm.

3.4.2 The forward cabin shall consist of two 6' (approximately) vee bunks extending aft from anchor chain locker. Areas under bunks and seats shall be accessible through bunk tops and seat tops for storage. Cushions shall be 4" HIGH DENSITY, poly-foam covered with light gray 32 ounce marine grade vinyl (Naugahyde).

3.4.3 Drawers and storage compartments shall be provided on port and starboard sides with cabinets and racks to contain the following: first aid box, resuscitator, oxygen bottles, diving gear, folding stretcher, radio ear, blankets, hanging jackets, wet suits and other accessories. Various item descriptions shall be supplied at time of construction. Drawers and cabinet doors shall be self latching.

3.4.4 For increased lighting, four fixed non-sliding portholes shall be installed on the cabin structure; one porthole 15" x 4" shall be mounted on each side of the cabin. Brand: "Go Industries" or equivalent.

3.4.5 Cabin ladder shall be constructed of starboard or comparable, free standing and removable.

3.4.6 Exact location of cabin bulkheads, electronic and electrical panels will be determined as necessary at time of construction.

3.4.7 Cabin decking shall be covered with Silica Sand epoxy.

3.4.8 All cabinet faces, door and drawer faces, and counter tops shall be plastic laminate (Reference Brand Formica or equivalent), fiberglass or starboard. Color and pattern to be selected by Department of Parks and Recreation.

3.4.9 Starboard shall be used where necessary for wire runs, trim, and self facing.

3.5 TRANSOM CUTOUT:
A 25" to 27" cutout shall be provided at the center of the transom, matching the general lines of the transom. 25" shall be the absolute minimum between the vertical guides for the vertical guides for the sliding Starboard transom door. Clearance required to slide litter into boat without lifting litter over gunwale. Guides shall be constructed of fiberglass and be gel coated.

3.6 UNDERWATER WATER SWIM STEP:
Shall be a 10" continuation of bottom extending full width of transom. Thickness of center section shall be distance from top of step to bottom of keel. A recess shall be provided for a zinc plate in the vertical section of step. Step shall be constructed of molded fiberglass foam filled and attached with all-thread, then covered and attached further with a minimum thickness of 3/8" mat and roving.

3.7 TOWING BITT:
A 4" O.D. polished stainless steel, thick wall tubing post with a threaded 1" stainless steel rod. Rod shall be removable (two such rods shall be provided). The towing bit shall be attached to aft engine bulkhead, both inboard longitudinal stringers and aft decking. The bulkhead, longitudinal stringers, decking, towing bit and mounting hardware shall be sufficiently backed, braced and constructed to withstand towing vessels in heavy seas. Height of bit shall be sufficient so that the towing line will clear all transom hardware.

3.8 TOWING LINE AND REEL:
A towing reel with 600 feet of line shall be installed on the aft deck with stainless steel mounts. These mounts shall be machine screwed to a stainless steel pad that is machine screwed through the deck. A stainless steel reel with 600 feet of double braided nylon tow line will be provided by Department of Parks and Recreation and shall be installed by the builder.

3.9 HARDWARE:
All hardware shall be of polished stainless steel, with chromed brass as an alternate where stainless is not available (State Agency will determine availability). Galvanized steel or aluminum is not be acceptable. All hardware shall have adequate backing plates.

a. Bow bit, "West Marine Products," #212381, 7 1/2" minimum height, through bolted.
b. Two spring mooring cleats 8" to 10" in length through bolted.
c. Two stern mooring cleats 8" to 10" in length through bolted.

d. Two stern hawse pipes. Pipe selected shall have maximum radius possible to minimize line chafing.
e. Two bow chocks, "West Marine Products", #188540, minimum 6" in length, through bolted.
f. Eight 12" minimum rub strips shall be installed; one at each chock, one at each spring cleat, two at each stern cleat.
g. Recessed lifting rings on all hatch covers.
h. Fuel and water tank deck fittings.
i. Two 1/8" x 3" x 3" right angle stock to be mounted on each transom corner, from sheer to chine guard, with flat head machine screws with cap nuts.
j. Any required hinges shall be stainless steel piano hinges.
k. Steering wheel - 20" stainless steel Morse brand (See item #27A).
l. Two stainless steel P.A. speaker mounts, one on bow and on radar arch.
m. A 7/8" tubing bimini top frame with blue Acrilan, Dacron thread, using #0 bronze hooks and welded snap eyes shall be installed. Top shall not interfere with operation of equipment mounted on radar arch. #3-1" nylon shall be used for strapping material. Storage "Boot" of blue Acrilan with an all plastic zipper and slide shall be provided.
n. Bow anchor roller, 18".
o. One anchor chain deck pipe with hinged cap.
p. Eight 1" x 8" grab handles shall be located in the cockpit area; location shall be determined by Department of Parks and Recreation representative.
q. Two 1" x approximately 24" grab handles shall be mounted on cabin structure, location shall be determined by Department of Parks and Recreation.
r. 1" rub strip shall be mounted on the stem extending from sheer downward 4' beneath the water line.
s. 1" rub strip shall be mounted on top of transom, extending as far outboard and inboard as possible to prevent wear on fiberglass by tow line. Wood screws shall be well recessed to prevent tow line chafing.
t. A grab handle shall be mounted on each side of the transom door, extending from the sheer to the boot stripe with one center stanchion.
u. Two pair of ring buoy holders shall be installed by the builder in the cockpit area, location to be determined by Department of Parks and Recreation representative.
v. All hose clamp/screw assemblies shall be stainless steel. Reference Brand: Tridon or equivalent.
w. One removable rail of 1" tubing, shall be provided to "Bridge" the transom door opening. Curvature of rail shall be gradual, creating a smooth transom line that will not foul the tow line as it moves across the stern. A secure storage rack shall be provided under sheer deck.
x. A step plate, 6" x 6" x 24", 3/32" to 1/8" thick shall be installed on the aft wash deck, extending through the transom door and down the transom face. The plate shall be bedded and screwed flush with flat head wood screws.

3.10 VENTILATION:

Engine and fuel tank compartment ventilation system shall comply with the latest U.S. Coast Guard requirements. Exterior vents shall be of fiberglass and be same color as hull. Vent hosing shall be constructed of non-collapsing non-corrosive material.

3.11 ANCHOR SYSTEM:

a. One Danforth, deep set, "Hi-Tensile" T-2500 with stainless steel shackle, to be stowed vertically on anchor chain locker bulkhead.

b. Anchor mounting hardware with set screws.
c. 20' 1/4" hot dipped galvanized anchor chain.
d. 200' of Sampson or Tubbs brand 3/4" nylon three strand line.
e. Anchor locker shall have a hinged door with a slide bolt latch.

Anchor, Chain and Line will be provided by Depratment of Parks and Recreation.

3.12 ENGINES AND TRANSMISSIONS:

Propulsion shall be provided by two Mercruiser 496 cu inch engines 8.1 Horizon, 370 horsepower, with comparable hydraulic transmission. The remote oil filters shall be mounted vertically between inboard engine beds; raw water pumps. Engines shall be left and right hand rotating through the transmissions, reduction gears, and all accessories shall have full interchangeability with like engine configurations on existing rescue boats owned by State of California, Department of Parks and Recreation, in Orange County, California. These vessels are available for inspection by appointment only at their docks in Newport Beach, California, telephone number (916-375-6828) for arrange appointment.

3.13 FUEL SYSTEM:

a. 200 gallon fuel tank, constructed of minimum ¼" Aluminum, shall be installed over the keel and/or longitudinal stringers, aft of the towing bit. Installation shall allow future examination and removal without disturbance to main hull or deck structure. Tank shall be adequately supported and braced to prevent movement. The supports and braces shall be insulated from contact with the tank with non-abrasive and non-absorbent material, Neoprene rubber. Tank shall have a minimum of four (4) welded lifting eyes and one (1) bonding tab connected to the boats bonding system. A 1 1/2" fuel fill and/or dip-stick access shall be installed and properly labeled.
b. There shall be a siphon type pick-up tube for each engine, minimum size determined by the engine manufacturer.
c. Fuel shut-off valves shall be accessible in engine compartment to stop fuel flow when servicing fuel filters.
d. Each engine shall have an individual fuel filter, mounted high on aft engine compartment bulkhead with a stainless steel bracket and bolts.
e. Fuel lines shall be fire and alcohol resistant and comply with engine manufacturer recommendations. They shall be run at the level of the tank top to a point as close to the fuel filters as practical. They shall be accessible, protected from mechanical damage, and secured against movement by straps.
f. The discharge end of vent pipe shall be located on transom and be fitted with screens or flame arrestors. The flame screens shall consist of a single screen of corrosion resistant wire of at least #30 mesh. The flame screens or flame arrestors shall be of such size and design as to prevent reduction in the net cross-sectional area of the vent pipe and permit cleaning or renewal of the flame screens or arrestors elements.

3.14 COOLING SYSTEM:

Each engine shall have combination engine and transmission oil coolers, and a separate, aft mounted, fresh water heat exchanger. The oil coolers and heat exchangers shall each have "zinc pencils" for corrosion protection and shall be constructed of Cupra-Nichols by "R & D". The high speed water scoops/valves, 1 1/4" #1-S125, "Buck-Algonquin", with stainless steel handles, shall provide raw water to each engine via

separate "San Juan" strainers. Each strainer at water scoop/valve shall be easily accessible through center engine hatch. All hoses shall be heavy duty, wire inserted, with ends double clamped below the water line.

3.15 EXHAUST SYSTEM:
Exhaust shall be routed through heavy duty wire inserted exhaust hoses, fiberglass mufflers and fiberglass through hull exhaust ports. Mufflers shall be 33 5/8" x 9", with 4" inlets and outlets. All hose ends shall have two stainless steel clamps and system is to be adequately supported along entire length. Exhaust ports shall be located on side of hull, as near transom as possible and be above water line.

3.16 ENGINE BEDS/MOUNTING SYSTEM:
The high speed use of this vessel in high seas and the surf zone will include frequent full throttle acceleration, full throttle turns, and deceleration loading that may cause standard engine mounting system of sufficient strength to bear the weight of each engine and severe loading during full throttle maneuvers. Each engine bed shall be through bolted with a minimum of 10 3/8" bolts and bonded directly to a longitudinal stringer with mill fibers and resin: each shall be a minimum of three (3) inches wide, solid wood, or solid wood faced on both vertical sides with plywood. If facing is used, it shall be glued, screwed and finished to prevent delamination. The boat builder shall determine the proper thickness (depth) and strength of the engine beds with the knowledge the beds, particularly the outboard beds, are affected by the engine height and the vie of the boat bottom. Each engine bed shall be capped with a 1/4" stainless steel saddle, extending from the front motor mount to the rear motor mount, and secured with horizontal 3/8" through bolts. Motor mounts shall be secured with "Grade-8" bolts, lock washers and nuts, directly through each saddle. Saddle design shall include space to insert the nuts and lock washers, and tool clearance. A vertical thrust plate shall be welded to each saddle, forward of each motor mount, with sufficient clearance not to transfer normal engine vibration, and yet close enough to prevent engine shifting during acceleration and forward loading.

3.17 ENGINE ALIGNMENT:
The alignment of the coupling flanges of the reduction gear and propeller shaft shall be parallel within .002 inches. With engines aligned, motor mounts, after adjustment, shall have a minimum of 1/4" down and 1/4" up movement remaining for future adjustments.

3.18 SHAFT LOGS:
Shaft logs shall be a fiberglass tunnel with bronze through hull. Packing glands shall be bronze, self aligning and connected to the shaft log with hose double clamped at each end. Space shall be retained between the packing gland and the transmission flange for the installation of bonding system wiper brush.

3.19 STRUTS:
Two heavy duty cast manganese bronze, single arm struts with rubber bearings shall be installed and aligned. Struts shall be bolted with 3/8" Bronze bolts through the bottom and inside bronze backing plates.

3.20 PROPELLER SHAFTS:

Two Aquamet - 19 propeller shafts, 1 1/2" diameter, machined to S.A.E. standards with double brass nuts and stainless steel cotter pins. Propeller shaft flange shall be bronze with tapered bore style.

3.21 PROPELLERS:

Selection of propeller diameter and pitch shall be determined by boat builder to match maximum engine R.P.M. specified by engine manufacturer. Four (4) each propellers (two left rotation, two right rotation) shall be provided, Michigan Ni-Bral, dynamically and hydraulically balanced, three bladed, 1 1/2" shaft with tapered, keyed hole. See performance requirements in Section 2.

3.22 RUDDER SYSTEM:

a. Steering wheel shall be "Morse", #045152, 20" diameter, stainless steel destroyer type, without rudder indicator, mounted vertically and centered 7" to left of center line of throttles.
b. Steering shall be hydraulic. The steering ram at the aft end shall be anchored with a stainless steel mount and bolts and be sufficiently strong to withstand rudder loads during high speed turns.
c. Rudder arms shall be heavy duty bronze, keyed to rudder posts and clamped with stainless steel machine bolts. Heavy duty stops shall be installed to limit rudder angle to 55 degrees, port or starboard.
d. Connecting rod, clevis, pins, lock nuts and cotter keys shall be solid stainless steel. Adjustments shall be possible by S.A.E., N.F., or N.C., left and right hand threads on opposite ends of the connecting rod and lock nuts. Thread purchase in the clevises, after adjustment, shall be equal to at least the diameter of the connecting rod. Clevises shall be secured to connecting rods with cotter keys after final adjustment of rudders.
e. Rudder ports shall be manganese bronze, 1 3/8" inside diameter. Rudder port sleeves shall be cut to allow 1/8" projection outside of hull. These sleeves shall be tightly fitted in hull bottom for support during high speed turns. Rudder ports shall be secured to hull with bronze carriage bolts.
f. The upper support bearing for each rudder shaft shall be located as high as aft deck permits to better withstand rudder side loads during high speed turns. Bearing shall be bronze, minimum 2" vertical bearing area.
g. A stainless steel locking collar with stainless steel set screws shall secure rudder from slipping downward.
h. Rudders shall be manganese bronze with "Aquamet" - 19, 1 3/8" shafts. Rudder pattern shall be well balanced to minimize turning effort, have sufficient blade area for idle speed steerage, and shall be selected to have maximum strength to withstand high speed full throttle turns. Both rudders shall be offset from center line of propeller shafts to facilitate propeller shaft removal without removing rudders. For the safety of swimmers, the aft edge of each rudder blade shall be inset forward of the ft edge of the swim step a minimum distance of six (6) inches.

3.23 ALARM SYSTEMS:

a. Each engine shall have a low oil pressure and overheat sending unit. All sending units shall be connected to a marine horn via two (2) "Cole Hersee", #M482 switches and "Delco-Remy" relays. Horn shall be mounted out of the weather near transom door.

b. Two (2) "Lewco" heavy duty float switches shall be connected to an "Aqua-Alarm" marine bell mounted out of the weather, under steer deck, near helm. A float switch shall be mounted adjacent to each automatic bilge pump. Alarm breaker shall be independent of main battery switches. Float switch leads shall be connected to their main leads by a non-corrosive terminal board.

3.24 ENGINE THROTTLES AND TRANSMISSION CONTROLS:
Shall be mounted, centered on instrument panel, and placed as close as possible to each other, with throttles adjacent. Transmission controls shall be two (2) "Morse S", model #31002-001; throttle controls shall be one (1) "Morse Twin S", model #31001-001. "Morse" connection kits and heavy duty cables shall be installed on the engines and transmissions. Transmission control knobs shall be black, and throttle control knobs shall be red.

3.25 WATER TANK:
Shall be minimum 20 gallon, and constructed of plastic. Location shall be determined by builder. Fill pipe shall have watertight deck plate suitably marked for identification. A plastic hose shall lead to a "Jabsco" auto pump #36970-1000, via a "Jabsco" inline filter. Auto pump and filter to be located high in engine compartment in location protected from moisture. Pump discharge plastic hose shall lead to a standard bronze hose bib with bronze handle in aft cockpit area. Specific location to be determined by Department of Parks and Recreation representative.

3.26 SOUNDPROOFING:
The engine hatches shall have soundproofing material on the underside to effectively reduce noise. Material shall be silent running and mildew resistant.

3.27 INSTRUMENT PANEL:
Panel to be constructed of fiberglass, all instruments to be "Stewart Warner" individual units and self lighted. All lights to be controlled by a single breaker. A clear plastic shield shall be mounted over panel with a water proof hinge. Instrument panel shall include the following:

a. Two (2) electric tachometers - #82150.
b. Two (2) oil pressure gauges - #82113.
c. Two (2) starting push switches with rubber covers "Cole-Hershee" #M-626, independent of Ignition circuit.
d. Two (2) ignition pull switches-#M482
e. Two (2) Volt meters
f. Two (2) water temperature gauges - #82114.
g. Three (3) automatic bilge pump indicator lights "Cole Hersee" #M-320 amber, mounted in line, parallel to keel.
h. One (1) emergency water pump indicator light "Cole Hersee", #320-RED, mounted in line with amber lights.

Specific locations of instruments and lights on panel shall be determined by Department of Parks and Recreation representative.

3.28 COMPASS:

One (1) "Ritchie", model #45 shall be installed compass forward of instrument panel and have the instrument adjusted by a professional adjuster. Care should be taken to minimize deviation. A deviation card and a white "Acrilan" cover with stainless steel or chromed brass snaps shall be provided.

3.29 BILGE PUMPS:
Two (2) "Rule-A-Matic" #2000 pumps and two (2) float switches shall be installed: One (1) each just aft of forward engine bulkhead and one (1) each just forward of transom, each mounted as low in bilge as possible. All discharge hoses shall have loops rising as high as possible to prevent back flow of sea water. Pumps will be monitored by engine instrument panel lights. Pump electrical breakers shall be independent of main battery switches. The short production electrical leads provided with each pump and auto-switch shall be connected to their power leads via a non-corrosive terminal board. All connectors shall be sealed with "3-M Scotch-Kote" electrical sealant.

3.30 EMERGENCY WATER PUMP:
One (1) "Jabsco" 1 1/4", model #1160-0004, with magnetic clutch driven by the starboard engine, shall be installed with an electro polished heavy duty stainless steel mount sufficiently strong to prevent pump wobble, and slotted for adjustment of V belts. Discharge shall be through starboard hull below helm. Intake will be connected to one "Bosworth Guzzler" 3-way valve, permitting pumping at two (2) points; one point shall be lowest portion of bilge just aft of forward engine bulkhead, second point shall be located on aft side of aft engine bulkhead, starboard side, easily accessible from aft deck. Second point shall have 40' of heavy duty 1 1/4" non-collapsing, all plastic hose with slip-on ends. Both intakes shall have protective screens. Hose storage shall in the aft deck starboard railing compartment. Pump shall be protected by a breaker and controlled by "Cole-Hershee" switch #M482 located in cabin accessible from helm. A "Cole Hersee" #M320 red light located on instrument panel shall monitor pump.

3.31 110 V.A.C. CIRCUIT:
"Hubbell" waterproof connector #23CM17 shall be installed near forward engine bulkhead. Two (2) circuits shall be provided and protected by breakers; one (1) circuit shall power only the built-in battery charger. Remaining circuit shall power two (2) "Hubbell" outlets; one (1) in engine room and the other in cabin. All circuits shall be grounded via a 30' shore-power cord. Back side of all 110 V.A.C. breakers shall be enclosed for personnel safety. Breakers shall be located on main electrical panel.

3.32 110 V.A.C. BATTERY CHARGER:
A "Lewco Electric" 20 amp battery charger #1220-ACD shall be mounted in cabin and connected to battery banks, independent of main battery switches.

3.33 FIRE EXTINGUISHER SYSTEM:
A U.S. Coast Guard approved manual/automatic fire protection system shall be installed. Correct size and model shall be determined by manufacturer, based on the combined volume of engine and fuel tank compartments. Location of controls shall be determined by the Department of Parks and Recreation representative. Two (2) 10 lb dry-charged extinguishers and stainless mounts shall be installed in cabin, one located on each side of cabin door accessible from cockpit.

3.34 CORROSION CONTROL:

Manufacturer recommended amount of zinc anode, and cap nuts recessed into the swim step of boat and two (2) propeller shaft wiper brushes. Each engine, propeller shaft, shaft log, strut, rudder post and port and all underwater through hull fitting shall be bonded by a No. 12 copper plastic covered wire Where pressure terminals are used, "3-M Scotch Kote" shall be applied to reduce wire corrosion. Wiring shall be properly secured along its entire length. Each wire run shall have a six (6") inch extra wire loop at each end for future repairs.

3.35 BOAT COVER:

A cover shall be provided to protect cockpit area enclosing windshield to aft engine room bulkhead coaming to coaming. Cover shall be protected with added material at each stress and chafe point to prevent wear. Cover shall be constructed of 9.75 once blue "Acrilan" with bonded polyester thread and stainless steel and chrome plated brass "Lift-A-Dot", short post snaps with two mounting screws each.

3.36 ELECTRICAL SYSTEM, 12 V.D.C.:

a. Batteries:
Two (2) Group 31 batteries, with common ground cable between banks, with a ground cable to its respective engine. Starboard bank shall provide power to all remaining "house" circuits. Battery terminals shall be "Lewco Electric", heavy duty bronze, with stainless steel bolts. Batteries shall be secured with hold-downs resistant to acid damage.

b. Battery Box:
Shall be constructed of fiberglass, be self draining, installed in engine room and provided with a lid coated with non-skid to provide a walkway.

c. Battery Main Switches:
Two (2) "Cole Hersee" #M705 switches shall be provided, one for each battery bank. Switches shall control all 12 V.D.C. on boat except for automatic bilge pumps. Electronics may be connected directly to battery only when necessary for noise suppression. All stud nuts shall have lock washers and be properly tightened with full thread purchase. If stud length is insufficient for all cable lugs, a cable extension with a heavy duty terminal board or stud shall be provided. Switches shall be mounted vertically, side by side, in cabin on forward engine room bulkhead to operate switches normally; they shall be wired so that the arrows point towards each other. To "parallel", the batteries, the switches shall each be in the "both" position.

d. Wiring General:
All wiring, insulated terminals, looms, lugs, nylon tie straps, nylon clips and miscellaneous electrical accessories shall be heavy duty "Whitaker". Wiring shall be loomed, color-coded or identified by numbers or letters, neatly run, secured and protected against mechanical damage, heat, oil, or moisture. Wire sizes shall be selected to prevent excessive voltage drop. Two conductor wires shall be used where possible. All crimping of insulated terminals shall be with "Sta-kon" crimpers. Improper crimping will be rejected. Where subject to moisture, all crimping shall be coated with "3-M Scotch Kote" electrical sealant. All wiring shall be run as high as practical above the bilge's to minimize moisture exposure. No splices or butt connectors shall be permitted in any conduit.

e. Engine (Electrical)
Twelve volt D.C. negative ground pre-wired electrical system with quick disconnect wiring harness. Both alternators shall be fifty amp marine type, with

built in voltage regulator. Each alternator output shall be connected via a separate conductor and amp meter to the cold side of their respective battery switch. Each wiring harness, alternator and voltage regulator shall be fully interchangeable with existing rescue boats operated by the Department of Parks and Recreation.

f. Electrical Panel
Shall be faced with plastic laminate (Reference Brand: Formica or equivalent), mounted in cabin, on the reverse side of helm, underneath engine instrument panel. Panel shall be flush mounted, hinged and latched for easy servicing of equipment. Panel shall consist of one (1) "Newmar", with a total of twenty one (21) breakers and one (1) volt meter. A "Hobbs" hour meter shall be mounted on this panel, connected to the port ignition switch.

3.37 ELECTRONICS:
The following specialized devices shall be provided as indicated installed on the vessel:

a. Unitrol siren, P.A. system with remote switches and two speakers. Speakers will operate independently by a two position rubber covered toggle switch provided and installed by builder.
b. Department of Parks and Recreation radio, control head and antenna. A copper ground plane of adequate size shall be provided and installed by builder. Radio provided by Parks and Recreation.
c. Raymarine E120 System or similar systems GPS/Radar/Depth and H20Temp/VHF Radio System. Dual Display. Radome style radar antenna. ADF system interrelated if available. Provided and installed by builder.
d. Low Band County Radio and Antenna-to be installed by builder. Radio and antenna provided by Parks and Recreation.

3.38 DOME LIGHTS:
Four (4) in engine compartment and three (3) in cabin, all to be operated by separate switches. All dome lights shall be 5" globes. Specific locations of dome lights within cabin and engine compartment shall be determined by the Department of Parks and Recreation representative.

3.39 INDIRECT COCKPIT AND AFT DECK LIGHTING:
Indirect lighting shall be provided in the cockpit and aft deck areas. Two (2) lights in the cockpit area; one (1) located under the port seat and one (1) under the starboard seat. Lights shall be mounted flush under coaming, facing downward. Two (2) lights in the aft deck area; one (1) mounted under the port side sheer deck and one (1) mounted under the starboard side sheer deck both to be mounted flush facing downward. A separate "Cole Hersee", #M-482 switch shall control the lights at each deck level.

3.40 NAVIGATION LIGHTS AND EQUIPMENT:
Shall be U.S. Coast Guard approved for International waters. (Note: Horn requirement will be met by a P.A./siren system). Lights shall be stainless steel. All lights shall be mounted to minimize reflections into operator's eyes.

3.41 SPOT LITE:

A 12 V.C.D. "Cole Hersee" water proof stainless receptacle shall be installed near helm at location specified by Department of Parks and Recreation. Receptacle shall have a screw-on water proof cap when not in use.

3.42 FINISH:
The boat shall have a "Yacht Quality" finish, with high gloss gel coat or epoxy finish over adequate primers and/or flat coats according to finish system used. All exterior surfaces above boot stripe shall be yellow equal to "Sterling" #1623 yellow. Cockpit area, inside of transom and coaming around aft deck shall be light blue shade equal to "A-Spar" Pelican Blue. The forward cabin interior bulkheads, hull, overhead, and interior of all storage areas shall be gel coat, epoxy, or linear polyurethane in a color to be selected by Department of Parks and Recreation representative. A blue gel coat or linear polyurethane boot stripe, minimum 2" wide shall be provided at water line, paint and color shall be equal to "Sterling" Award Blue #1713.

3.43 BOTTOM PAINT:
Bottom to be sanded with #80 sandpaper, not to penetrate gel coat finish, followed by the application of Interlux InterProtect 2000E/2001E two-part epoxy barrier coat according to manufacturer's specifications. Barrier coat will be cured prior to application of three coats of "Pettit" #1620 Red.

3.44 NON SKID:
All deck surfaces shall be non-skid with #16 Silica sand applied evenly onto wet pigmented resin. A second coat of pigmented resin shall be applied after first coat is dried. A 1/2" border free of non-skid material shall be provided at the following locations: around hatch openings, hatches, any deck hardware, hinges and vertical surfaces. Pigment shall be equal in color to "Z-Spar Mist Gray.

3.45 LETTERING:
All lettering shall be Award Blue, exact size, style and location to be determined by Department of Parks and Recreation representative after all exterior hardware and accessories are installed.

a. "LIFEGUARD" shall be block style proportioned letters, 10" to 12" high, on each side of coaming or hull.
b. "RESCUE" shall be block style proportioned letters, 13" to 15" high, on forward portion of spray shield.
c. "SURF WATCH XX" shall be script style, proportioned letters, across the width of the transom. (the XX shall be Roman Numberals and determined at the time of build by the Equipment Mangaer)
d. "CF" numbers shall comply with State requirements.

3.46 PRE-CONSTRUCTION MEETING:
Prior to construction the successful bidder shall meet with the Department of Parks and Recreation representatives and the State automotive inspector to review these specifications.

3.47 CARE DURING CONSTRUCTION:
The vessel must be protected from the weather during construction and prior to delivery. The contractor shall take care to preserve the structure, fittings, outfit, paint work, engines, auxiliaries, appliances and apparatus to insure delivery in a satisfactory

condition. Measures shall be taken to prevent wear and tear or damage to construction and to prevent corrosion and contamination of machinery parts. All defects, damage and deterioration of the vessel or components that develop during construction, fitting out, and trials, shall be corrected by and at the expense of the contractor.

3.48 INSPECTION:
The vessel shall be subject to inspection during construction by the Department representative designated by the Department of Parks and Recreation. Any unsatisfactory materials or evidence of faulty workmanship shall be removed and replaced or corrected by and at the expense of the contractor. Failure by the Department of Parks and Recreation to find faulty materials or workmanship at inspection times does not release the builder of the responsibility for said faulty materials or workmanship.

3.49 SEA TRIALS:
Prior to acceptance, successful bidder shall notify the Department of Parks and Recreation to make arrangements for sea trials of the vessel at a mutually acceptable location. The State shall have five days to determine if the vessel as delivered meets the performance requirements and specifications.

3.50 WARRANTY:

a. Builder shall guarantee the boat against failure due to faulty material, workmanship or design for a period of not less than one (1) year after acceptance. If warranty repairs are necessary they shall be accomplished at a boat repair yard in Santa Cruz Small Craft Harbor.
b. Boat shall be guaranteed to be free from leaks except through propeller shaft or rudder shaft packings for a period of one (1) year after acceptance.
c. Machinery and other suppliers or installed items shall be guaranteed and provided by their respective manufacturers.
d. Workmanship and materials used in the installation of machinery and other components shall be guaranteed by builder against failure for one (1) year.

3.51 MANUALS, DIAGRAMS, PARTS LIST:
For future reference and parts ordering, the builder shall provide a list of all materials used, component manufacturers' instruction and maintenance manuals with the boat at time of delivery. Software to hook up and monitor boat engines.

3.52 DELIVERY:
After acceptance of sea trials, the boat shall be delivered in the water by the manufacturer at no additional cost to the State at Santa Cruz Small Craft Harbor, Santa Cruz, CA 95062.

Surf Watch - Rescue Boat
Options

OPTION 1: POWERTRAIN

In lieu of Section 3.12 the vessels power train shall be as follows:

a. The engines shall be Marine Diesel Co. Hammerhead Model MD 300 SC or comparable.
b. Each engine shall be a V-8 configuration and have a minimum 6.5 Liter displacement.
c. Each engine shall be Supercharged or Turbo Charged and provide a minimum of 300 HP continuous.
d. The engines shall be compliant with any applicable emissions standards in effect at time of manufacture.
e. Each engine shall be coupled to a ZF 63A or comparable transmission.
f. The transmission shall have a 1.56:1 gear ratio.
g. The exhaust system maybe upgraded as needed for the Diesel Engines, with the approval of the Parks Equipment Manager in writing.
h. 12 Volt Electrical System to have 4ea Group 31 Batteries with 3ea Switches.
i. No Software required as specified in Section 3.51.

OPTION 2: DELIVERY LOCATION

In lieu of Section 3.52 and after acceptance of sea trials, the boat shall be delivered in the water by the manufacturer at no additional cost to the State, and shall be delivered to the Dana Point Harbor, located in Dana Point, CA 92629.

OPTION 3: BOAT LENGTH

In lieu of the length described in Section 3.1.1, the length shall be between 32.0 feet and 34.0 feet not including swim step.

OPTION 4: CABIN ENTRANCE

In lieu of the cabin door location described in Section 3.3.6, the cabin door and entrance shall be on port side.

OPTION 5: FUEL TANK CAPACITY

In lieu of the fuel tank capacity described in Section 3.13 section a, the Fuel Tank Capacity shall be 120 gallons.

DGS

1990-07BS-001R1

Surf Watch - Rescue Boat
Questionnaire

Make CRYSTALINER

Model R/S

REFERENCES AND QUALIFYING STATEMENT

In addition to this questionnaire, the vendor shall submit three references (with contact information) and a qualifying statement regarding to who your company has sold this or similar product. It shall include how many of this or similar product has been produces in the last 5 years and how long the company has been in business selling this or similar product. Similar product includes the design and manufacturer a "similar" type of vessel, not necessarily exactly, but one that is used in similar operational situations and the same hull design, with similar size, materials, and certification requirements, etc. Failure to submit this information could void the bid.

1. DESIGN

Type hull CONVENTIONAL 'V" BOTTOM, HARD CHINE

Dead rise angle (at transom) 11°

Is the proposed hull design a proven production design? Yes ☒ No ☐

Hull material FIBERGLASS

2. DIMENSIONS

a. Length:

Overall Length 34' feet

Hull Length 33'2" feet

b. Beam (overall) 11' feet

(chine at transom) 97" feet

c. Depth Side 40" inches

d. Weight of boat, less fuel 11,500 pounds

3. PERFORMANCE

a. Top speed 34 knots

b. Water depth required 36 inches

c. Maximum turning radius (slow speed) 30 feet

d. Draft (stationary) 30 inches

DGS

1990-07BS-001R1

e. Freeboard (stationary) 33" AFT 45" FWD inches

4. CONSTRUCTION

Type of material used FRP

Number of Layers 22

Thickness of hull bottom 7/8"

Thickness of hull sides 1/2"

Anti-fouling compound on bottom of hull? Yes ☒ No ☐

Access provided to all voids? Yes ☒ No ☐

5. DRIVE TRAIN

Engines:

Manufacturer MARINE DIESEL CO.

Model HAMMERHEAD MD 300 SC

Displacement 6.5L in^3

Gross Hp 300

Continuous duty Hp 250

Gross torque 515 ft #

a. Electronic Fuel Injection? Yes ☒ No ☐

b. Cooling system type 4 STAGE CUNI INTERCOOLING

c. Sediment trap supplied? Yes ☒ No ☐

d. Provisions to flush system? Yes ☒ No ☐

e. Spin-on type oil filters? Yes ☒ No ☐

f. Throttle control manufacturer TELEFLEX model S-TWIN

g. Alternator size 100 amperes

Transmission:

Manufacturer ZF MARINE

Model ZF 63A

Housing construction material ALUMINUM ALLOY

Propeller:

Manufacturer MICHIGAN

Model DNA-JET

Diameter 18"

Pitch 20"

Material NIBRAL

DGS

1990-07BS-001R1

6. GAUGES

Are required gauges provided? Yes ☒ No ☐

7. FUEL CAPACITY

Number of tanks ONE

Location(s) CENTER AFT BILGE

Capacity of each tank 120 DANA PT, 200 SANTA CRUZ gallons

Tank construction material ALUMINUM

8. LIGHTS

USCG required lighting? Yes ☒ No ☐

Search light manufacturer N/A model

9. INTEGRATED RADAR/CHART PLOTTER/GPS/DEPTH FINDER

Integrated electronics system manufacturer RAYMARINE (OR EQUAL)

LCD screen size 12"

LCD screen model E 120

Chart plotter manufacturer RAYMARINE model RAY E 02013

Antenna manufacturer " model RAY " " "

Depth finder manufacturer " model RAY " " "

Please list any additional information or exceptions to the specifications below:

Company CRYSTALINE CORP

Address 1626 PLACENTIA AVE. COSTA MESA, CA 92627

LEWIS PAGE
Representative Name

Signature

PE 66565
Gonzalez, R.

DGS

1990-07BS-001R1

949-548-1385
Telephone Number

GENERAL MANAGER
Title

REFERENCES AND QUALIFYING STATEMENT

CRYSTALINER HAS BEEN IN THE BOAT BUILDING BUSINESS FOR 50 AND HAS BEEN BUILDING LIFEGUARD AND PATROL BOATS SINCE 1977. THE COMPANY HAS BUILT AND DELIVERED THREE LIFEGUARD RESCUE BOATS TO THE STATE OF CALIF. IN THE PAST.

DURING THE LAST FIVE YEARS CRYSTALINER HAS DELIVERED SIMILAR BOATS TO:

CITY OF NEWPORT BEACH, CA. – THOMAS FULTON 949-718-3464
LIFEGUARD DEPT.

CITY OF HUNTINGTON BEACH, CA. – SCOTT SMITH 714-536-5429
LIFEGUARD DEPT.

CITY OF REDONDO BEACH, CA. – DAN MADRIGAL 310-318-0663
HARBOR PATROL/RESCUE

CITY OF OCEANSIDE, CA – DAN HADLEY 760-435-4007
HARBOR POLICE/RESCUE