

Request for Proposal

Supplemental Design and Construction of Twin
Pontoon Work Vessel

TLMC-RFP-17001

August 4th, 2017

Twin Lakes Management Company, LLC

8044 Lake McClure Rd

Snelling, CA 95369



Twin Lakes Management Co.

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1 Introduction

1.1 Twin Lakes Management Company, LLC (TLMC)

Twin Lakes Management Company is the concessionaire for the houseboat mooring and repair-yard operations on Lake McClure located on the Merced River in Mariposa County, California.

1.2 Intent

To procure a work vessel suitable for conducting various maintenance and repair functions for the mooring and marina infrastructure on Lake McClure.

The purpose of this RFP is to solicit proposals to establish a contract for the supplemental design and construction of a twin-pontoon-hull work vessel suitable for conducting maintenance and repairs on Lake McClure.

Please note that TLMC is not exempt from paying sales taxes.

1.3 Schedule

Proposal phase	Date
Request For Proposal is issued by TLMC	August 4, 2017
Documents on: www.lakemcclure.com/index.cfm/tlmc/rfps-solicitations	August 4, 2017
Deadline to submit written questions or requests for clarification – 4:00 PM	August 21, 2017
Response for submission of written questions and requests for clarification	September 5, 2017
Proposals due by 4:00 PM	September 22, 2017
Contract award by 4:00 PM	October 2, 2017

2 Scope of Work

The selected contractor shall furnish all labor and materials except where specifically noted otherwise to complete the design and construct this work vessel. Descriptions of intended use of the work vessel and general specifications for detail development by the selected contractor are provided in Section 10: Technical Specifications at the end of this document.

The contract execution will be divided into two phases as follows:

2.1 Phase I: Existing Drawings Review and Subsequent Detail Design and Construction

In this phase, the selected contractor will undertake the principal tasks of reviewing existing engineered drawings, completion of design, and development of a working plans for review by TLMC. If necessary, and upon prior approval from TLMC, contractor shall work up new drawings and specifications or amend existing drawings in order to provide detailed plans of construction. The working plans shall include all aspects including pontoons, stringers/chassis, deck, machinery, electrical systems, electronic systems, hydraulic systems, instrumentation, etc. TLMC review shall not relieve the contractor of responsibility for errors or omissions in working plans.

The working plans shall be provided to TLMC in PDF format. The working plans shall be of sufficient

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detail for detailed weight estimation and boat construction, as well as provide detailed material and equipment selections. At a minimum the following working plans shall be prepared and submitted to TLMC for review:

- General Arrangements
- Pilothouse Arrangements and Main Control Console Layout
- Fuel Tank Design, Foundation and Securing Details (including filling details)
- Main Propulsion Unit(s) Arrangement and Details (including foundation)
- Generator Arrangement, Foundation and Details
- Hydraulic Systems Schematic Diagrams
- Electrical/Control Wiring Drawings/Single-Line Diagrams
- Contractor's weight estimate
- Contractor's floatation performance estimates under various loading conditions

The contractor will consent to at least two (2) design reviews by TLMC prior to final approval of the specifications. Each revision of the working plans shall address scope, cost, change in delivery schedule, and approximate change in weight, center of gravity, baseline-buoyancy waterline, and ship-board systems performance characteristics. Drawing revisions, when required, are to be clearly indicated by revision symbols and clouds. A clear and concise revision write-up is to be included on the revised drawing indicating what was done and why (i.e. error correction, comment incorporation, etc.) the revision was done. Once a drawing (original or revised) has been issued no further changes are to be made to that revision of the drawing. Any additional changes to the drawing from that point will be on the next revision.

Normal TLMC review will require ten (10) work days. The contractor shall reply to all TLMC review comments within five (5) work days by indicating planned action. After final approval of the working plans TLMC shall issue a Notice-to-Proceed to Phase II. Any deviation from the working plans or approved drawing during the construction phase must be approved by TLMC in writing.

2.2 Phase II: Production

This phase will consist of work vessel construction, inspections, delivery, onsite lake trial, and operational training. Work on this phase by the contractor shall not commence until final approval of the working plans and issuance of a Notice-to-Proceed by TLMC. All construction work undertaken in advance of TLMC review and approval shall be at the contractor's risk.

During construction the work vessel, including all outfit, machinery and equipment shall be subject to inspection by TLMC. TLMC shall have free access to the work vessel and the contractor's plant for the purpose of inspecting materials and work in process. At a minimum, the contractor shall allow for one (1) inspection immediately prior to installation of the main decks, and one (1) inspection when the work vessel pontoon and pilothouse structure is complete and ready for installation of operating systems. A third and final inspection shall occur during the lake trial and tests. TLMC shall not accept the work vessel with any deficiencies noted at the final inspection that are not corrected.

The work vessel shall be delivered from the point of manufacture to TLMC, using contractor's equipment, to:

**McClure Point Boatyard
9510 McClure Point Rd
Snelling, CA 95369
37° 36.253' N, 120° 16.887' W**

A qualified delivery person representing the contractor shall deliver the work vessel. The contractor shall notify TLMC of the intended delivery date at least five (5) working days in advance of delivery.

THIS IS NOT A PREVAILING-WAGE PROJECT.

3 Submission Requirements

3.1 Time and Place for Submission of Proposals

Proposals must be provided in Portable Document Format (.pdf) and received on or before **4:00 p.m. on September 18, 2017**. Submittals shall be sent via e-mail to: jperez@mercedid.org and rhollinger@twinlakesmc.com.

Include "**Twin Pontoon Work Vessel**" in the .pdf file name and the submission e-mail subject line. A response will be sent to verify successful transmission of the message and associated submittal.

3.2 Submission Questions and Clarifications

You may contact the following person if you have any questions or require clarification on any topics covered in this Request for Proposal (RFP):

**Jason Perez, Purchasing Agent
Merced Irrigation District
744 West 20th St
Merced, CA 95340
jperez@mercedid.org**

3.3 Content

Firms interested in responding to this RFP must submit the following information; in the order specified below:

1) Introduction Cover Letter and Executive Summary

Submit a letter of introduction signed by a person authorized by your firm to obligate your firm to perform the commitments contained in this RFP.

2) Firm Qualifications

Briefly provide information on your firm's background and qualifications.

3) Fee proposal

Provide an itemized fee proposal that includes a total fee with a not-to-exceed figure (see Section 2: Scope of Work). Itemized costs may be used to negotiate changes in the Scope of Work if necessary.

4) Bidder's Security

A duly executed bid bond, or bidder's certified check, in the amount of ten percent

(10%) of the proposed price to Twin Lakes Management Company. A bid will not be considered unless one of the forms of bidder's security is enclosed with it.

4 Evaluation and Selection Criteria

As TLMC is a private company, and not subject to public-purchasing requirements, proposals will be opened privately and contents of the proposals evaluated by a selection committee comprised of TLMC representatives with expertise in boat operation and layout as it pertains to the operation of the work vessel pursuant to its intended use. Up to three firms with proposals that best meet TLMC's interests and needs for this project. A committee may be formed to interview up to the three best proposals in order to make the final selection.

4.1 Minimum Qualifications

Proposers shall possess the following:

- Knowledge of any pertinent regulatory issues. Specifically United States Coast Guard rules.
- Experience in the design and construction of at least three (3) similar type work vessels in excess of 26 feet in length within the last five (5) years and provide contact information for owners of said work vessels for purpose of soliciting a reference specific to input on design and performance of proposers.

Proposers shall submit proof of any applicable insurance.

Any proposal that does not demonstrate that the proposer meets these minimum requirements by the deadline for submittal of proposals will be considered non-responsive and will not be eligible for award of the contract.

4.2 Selection Criteria

TLMC intends to evaluate all proposals as to their adherence to requirements, best value, and best overall fit for this project.

5 Contract Award

If TLMC awards a contract it will award the contract to the firm whose proposal is the most advantageous to TLMC and offers the best value considering price and the evaluation factors set forth in the RFP. TLMC reserves the right to accept a proposal other than the lowest priced offer and to reject any and all proposals that is not responsive to this request.

Selection of any proposal shall not imply acceptance by TLMC of all terms of the proposal, which may be subject to further negotiations and approvals before TLMC may be legally bound thereby. TLMC may not disclose any information derived from the proposals submitted from competing offers in conducting such discussions.

If a satisfactory contract cannot be negotiated in a reasonable time, TLMC at its sole discretion, may terminate negotiations with the chosen proposer and may begin contract negotiations with the next highest ranked proposer.

TLMC reserves the right to award a contract for all or any portion of the proposal, award multiple contracts, or to reject any and all proposals, to re-solicit for proposals, to temporarily or permanently

abandon the procurement if deemed to be in the best interests of TLMC.

6 Work Schedule Assumptions & Constraints

6.1 Work Schedule

The work schedule shall be agreed upon between the contractor and TLMC Chief Operations Officer. The date for actual start of work shall be agreed upon between the contractor and TLMC prior to initiation of work and a signed contract is in place.

7 Terms and Conditions

7.1 Errors and Omissions in the RFP

Proposers are responsible for reviewing all portions of this RFP. Proposers are to promptly notify TLMC in writing; if the proposer discovers any ambiguity, discrepancy, omission, or other error in the RFP. Any such notification should be directed to TLMC promptly after discovery, but in no event later than five (5) working days prior to the date for receipt of proposals. Modifications and clarifications will be made by addenda as for provided below.

7.2 Inquiries Regarding RFP

Inquiries regarding the RFP and all oral notifications of intent to request written modification or clarification of the RFP must be directed via email or written correspondence via mail to:

Jason Perez, Purchasing Agent
Merced Irrigation District
744 West 20th St
Merced, CA 95340
jperez@mercedid.org

7.3 Objections to RFP Terms

Should a proposer object on any ground to any provision or legal requirement set forth in the RFP, the proposer must, not more than ten (10) calendar days after the RFP is issued, provide written notice to TLMC setting forth with specificity the grounds for the objection. The failure of a proposer to object in the manner set forth in this paragraph shall constitute a complete and irrevocable waiver of any such objection.

7.4 Change Notices

TLMC may modify the RFP, prior to the proposal due date, by issuing Change Notices, which will be posted on the TLMC website, www.lakemclure.com/index.cfm/tlmc/rfps-solicitations. The proposer shall be responsible for ensuring that its proposal reflects any and all Change Notices issued by TLMC prior to the proposal due date regardless of when the proposal is submitted. Therefore, TLMC recommends that the proposer consult with the website frequently, including shortly before the proposal due date, to determine if the proposer has downloaded all Change Notices.

7.5 Term of Proposal

Submission of a proposal signifies that the proposed services and prices are valid for 120 calendar days from the proposal due date and that the quoted prices are genuine and not the result of collusion or any other anticompetitive activity.

7.6 Revision of Proposal

A proposer may revise a proposal on the proposer's own initiative at any time before the deadline for submission of proposals. The proposer must submit the revised proposal in the same manner as the original. A revised proposal must be received in or before the proposal due date with the words, "Revised Proposal" clearly marked on the outside of the envelope and document.

In no case will a statement of intent to submit a revised proposal or commencement of a revision process extend the proposal due date for any proposer.

At any time during the proposal evaluation process, TLMC may require a proposer to provide oral or written clarification of its proposal. TLMC reserves the right to make an award without further clarifications of proposals received.

7.7 Errors and Omissions in Proposal

Failure by TLMC to object to an error, omission, or deviation in the proposal will in no way modify the RFP or excuse the vendor from full compliance with the specifications of the RFP or any contract awarded pursuant to the RFP.

7.8 Financial Responsibility

TLMC accepts no financial responsibility for any costs incurred by a firm in responding to this RFP. Submissions of the RFP will become the property of TLMC and may be used in any way deemed appropriate.

7.9 Reservation of Rights by TLMC

The issuance of this RFP does not constitute an agreement by TLMC that any contract will actually be entered in to by TLMC. TLMC expressly reserves the right at any time to:

- Waive or correct any defect or informality in any response, proposal, or proposal procedure
- Reject any or all proposals
- Reissue a Request for Proposals
- Prior to submission deadline for proposals, modify all or any portion of the selection procedures, including deadlines for accepting responses, the specifications or requirements for any materials, equipment or services to be provided under this RFP, or the requirements for contents or format of the proposals
- Procure any materials, equipment or services specified in this RFP by any other means
- Determine that no project will be pursued

7.10 No Waiver

No waiver by TLMC of any provision of this RFP shall be implied from any failure by TLMC to recognize or take action on account of any failure by a proposer to observe any provision of this RFP.

8 Contract Requirements

8.1 Standard Contract Provisions

The successful proposer will be required to enter into a contract substantially in the form of an Agreement for Professional Services. Failure to timely execute the contract, or to furnish any and all insurance certificated and policy endorsement, surety bonds or other materials required in the

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contract shall be deemed an abandonment of a contract offer. TLMC, in its sole discretion, may select another firm and may proceed against the original selectee for damages.

8.2 Contract Bonds

The Contractor will be required to execute the Performance and Payment Bonds within ten calendar days from the date when the Notice of Award is mailed to the Contractor. The Performance and Payment Bonds must be in the amount of 100 percent of the Contract price with a corporate surety approved by TLMC and authorized to do business in the state where the Contract is to be performed. Failure to execute the bonds within the time specified shall allow TLMC to consider that the bidder has abandoned the Contract, in which case the check or bidder's bond accompanying the proposal shall be the property of TLMC.

The bond covering performance and shall be conditioned upon the performance by the Contractor of all undertakings, covenants, terms, conditions, and agreements of the Contract. The bond covering payment shall be conditioned upon the prompt payment by the Contractor to all persons supplying labor and materials to be used in the performance of the Work. Such bond(s) shall also run in favor of any other person or entities required by law and shall be in the form(s) required by applicable statutes, if any, and acceptable to TLMC. Evidence of authority of any attorney, in fact, acting for the corporate surety must be provided in the form of a certificate as to his power of attorney and to the effect that it is not terminated and remains in full force and effect on the date of the bond. The expense of such bond(s) shall be borne by the Contractor. If at any time a surety on such bond(s) becomes irresponsible or loses its right to do business in the aforementioned State, TLMC may require another surety, which the Contractor shall furnish within ten calendar days after receipt of written notice to do so.

The performance bond shall guarantee the repair of all damage due to faulty materials or workmanship provided or done by the Contractor. This guarantee shall remain in effect for a period of five (5) years after the date of final acceptance of the job by TLMC

All alterations, extensions of time, extra and additional work, and other changes authorized by these specifications or any part of the contract, may be made without securing the consent of the surety or sureties of the contract bonds.

9 Insurance**9.1 Insurance Requirements For Work Performed On Merced Irrigation District Property**

All contractors performing work on Merced Irrigation District property, if applicable, must provide proof of the following insurance:

- General liability of \$2,000,000 single occurrence, \$4,000,000 aggregate
- \$1,000,000 statutory limits of workers compensation
- Merced Irrigation District and Twin Lakes Management Company as "additional insureds"
- Copy(ies) of Additional Insured Endorsement(s), ISO Form CG2026, or similar, with the following verbiage:
 - "The Merced Irrigation District and Twin Lakes Management Co., their directors, officers, employees and agents, are hereby declared/designated additional insured's under the terms of this policy".
- \$1,000,000 auto liability

9.2 Professional Liability

Professional Liability – With limits no less than \$1,000,000 per occurrence or claim, and \$2,000,000 policy aggregate

1. The retroactive date must be shown and must be before the date of the contract or the beginning of contract work.
2. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after the completion of the contract of work.
3. If coverage is canceled or non-renewed, and not replaced with another claims-made policy for with a retroactive date prior to the contract effective date, the contractor must purchase “extended reporting” coverage for a minimum of five (5) years after completion of contract work.

10 Technical Specifications

10.1 General Information

10.1.1 Introduction

These specifications provide general descriptions and requirements for the supplemental design and construction of one (1) 40' long x 16' beam, twin-pontoon-hull work vessel for TLMC. The specifications assume the contractor is competent and knowledgeable of common system and detail requirements in the various controls, machinery, and shipboard systems aboard this work vessel. Accordingly, the contractor shall be responsible for providing and installing systems, equipment and details necessary to deliver a serviceable and outfitted work vessel that is ready for service within the scope of these specifications.

The intended area of operation for this work vessel is Lake McClure, located on the Merced River in Mariposa County, California. The work vessel will be used to conduct various maintenance and repair operations including, but not limited to, lifting up to 10,000 lbs. at a dead lift, pulling and placing independent wire rope core (IWRC) cable up to 1-1/2 inches in diameter, minor salvage, general rigging, as well as moving of houseboat up to 60 feet in length by 24 feet in width and displacing up to 70 tons.

General operating conditions will include:

- Air temperature range of 10 to 110 °F
- Water temperature range of 42 to 80 °F
- Wind conditions of 0 to 30 knots
- Sea-state conditions from calm to 3 foot, short period, steep wind driven waves
- Lacustrine freshwater environments with depths ranging from 3 to >300 feet.
- Daylight and night operations

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10.1.2 General Specifications

Pontoon Length	40 feet
Pontoon Material	Body – 5052 Alum; beaching plates (nose protection – 6061 Alum)
Pontoon Thicknesses	As per engineered drawings
Deck Framing Material & Thickness	6061 Aluminum as per engineered drawings
Deck Plating	Exact specification to be determined by contractor
Length and Beam	40 feet by 16 feet
Electronics	VHF radio, GPS, sonar, etc.
Electrical	120VAC/240VAC; 12VDC
Generator	Westerbeke 22.5 SBEGA Low-CO w/PTO for hydraulic pump(s)
Propulsion	One 320 HP 5.3L Volvo-Penta Duo-prop package
Hydraulics	Up to three stations for control of two winches
Personnel and Cargo Capacity	6,000 lbs. as baseline loading
Fuel Capacity	100 US gallons
Waste Capacity	100 US gallons
Fresh Water Capacity	50 US gallons

10.1.3 Regulatory Bodies

This Vessel shall comply with all the applicable laws of the United States and the requirements of the various regulatory bodies and rules listed below in force at the time of delivery insofar as they may have jurisdiction.

American Boat and Yacht Council (ABYC)
 American Bureau of Shipping (ABS)
 American Society of Mechanical Engineers (ASME) American
 Society of Testing & Materials (ASTM)
 American Welding Society (AWS)
 Environmental Protection Agency (EPA)
 Federal Communications Commission (FCC)
 Institute of Electrical and Electronics Engineers (IEEE)
 International Organization for Standardization (ISO)
 National Fire Protection Association (NFPA)
 National Electrical Manufacturer's Association (NEMA)
 Occupational Safety and Health Administration (OSHA)
 Underwriter's Laboratories (UL)
 United States Coast Guard (USCG)

10.1.4 Materials and Workmanship

All apparatus (machinery, equipment, piping, etc.) is to conform to best marine practice for work vessels of this class. TLMC will give consideration to items differing in detail from those described herein, provided that these differences will not impair the efficiency, reliability, and durability of the apparatus and its suitability for the work vessel.

All work is to be performed to high-quality marine construction standards, in a workmanlike manner. All welding shall be in accordance with welding procedures approved by the American Bureau of Shipping.

All weld spatter, soot, and construction scars shall be removed or faired. All sharp edges and corners shall be dressed to prevent hazards to personnel and equipment.

When the phrase "or equal" follows the name of a manufacturer or trade designation, it is used herein
 Twin Lakes Management Company, LLC
 August 7, 2017

to indicate the general character of the design, quality, and construction of items. It is not the intent to restrict source of supply to such brands, but substitutes shall not be inferior to the item named in the specification and shall be to TLMC's satisfaction and approval. At a minimum, substitution requests should consider the following: dimensions, weight, materials, service facilities, performance, power requirements, cost, and special features. The judgment of TLMC shall in this regard be conclusive. Requests for any substitution by the contractor shall be submitted in writing to TLMC for review and approval and all work undertaken in advance of this review shall be at the contractor's risk.

When the phrase "or equivalent" does not follow the name or trade designation, the Contractor's bid shall be based on the product or item as specified and no substitution is acceptable in this bid.

Materials shall be ordered to recognized standard sizes wherever such apply to facilitate replacement or repair. All materials and equipment shall be new and of good commercial quality.

10.2 Specifications

10.2.1 General Requirements

The work vessel shall be designed so that the various systems and parts are readily accessible for inspection, adjustment, maintenance, lubrication and repair. Placement of equipment whenever possible must allow for its removal from the work vessel without having to disturb permanently installed structural members, and equipment shall be situated to allow for in place overhaul and repair. Structure and fittings in way of propulsion and auxiliary machinery shall be arranged to provide clearance for disassembling parts and components without dismantling other machinery, structure or piping.

Work vessel design shall maximize storage in all areas and include storage under decks, and in the cabin, where possible.

Weld beads may be applied to the center of panels or alongside stiffeners to reduce pontoon unfairness, subject to the approval of TLMC. All weld beads or any visible markings from them left on the opposite side of the plate of such welds shall be ground off visible surfaces. Well beads or any visible markings need not be ground off surfaces that will be insulated or other surfaces not visible after construction, surfaces such as inside voids or other unmanned spaces.

The pontoon and weather decks shall be watertight. Deck and bulkhead penetrations shall conform to the tightness of the deck or bulkhead on which they are installed. Hatches shall be watertight.

Gunning material, caulking-type material, peening, paint, etc. shall not be used to meet tightness requirements. Flanged joints, or cable/hose transits shall be provided to maintain the required tightness of structure where penetrated by non-welded items such as cables, wiring, hose, or tubing.

Pontoons shall be one-piece, full longitudinal-length, sheered and broke to shape so as to reduce the amount of welded joints.

Structural members within the pontoon bottoms, or in other areas where water may collect, shall have double continuous welds. This shall include any keel, girders, propulsion and generator engine pod(s), and reduction gear foundations to shell plating welds, as far as they apply to this work vessel. Longitudinals, transverses and other main support structure below the main chine, engine girders, and similar structure loaded by vibration or wave impact shall be continuously welded. Full penetration welds shall be provided for butts and seams of the keel, bottom shell, side shell, main deck, and transom. Welded joints in the keel, girders, propulsion and generator engine foundations, and bottom longitudinals, if any, shall be full penetration welds at the webs as well as the flanges.

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Attachments to bulkheads for the purpose of supporting local loads shall not impair the strength or tightness of the bulkhead. Insert and margin plates, additional reinforcing, special framing, or stiffening shall be installed to distribute local stress. Attachments shall be made to the framing and not directly to the bulkhead plating.

Full-penetration welds shall be provided for butts and seams of the bulkheads and tanks. Tee joints at boundary connections of bulkheads and tanks shall have continuous welding on both sides.

Where wiring trunks or pipe tunnels terminate in transverse watertight bulkheads, the ends of such trunks or tunnels shall be sealed watertight at each such bulkhead.

10.2.2 Pontoon Design

1. The pontoon shall be aluminum construction and shall be series 5052 as per existing engineered drawings
2. The pontoon length shall be as per existing engineered drawings
3. The pontoon beam shall be as per existing engineered drawings
4. Cargo capacity (including crew of four, each 200 lbs.) shall be at least 6,000 lbs as a baseline condition.
1. Deck plating specification to be determined by contractor in proposal, but shall not be of a porous nature.
2. The pontoons shall incorporate structural bulkheads every eight feet beginning from stern forming individually-sealed buoyancy compartments
3. Watertight, hinged aluminum access hatches (Freeman or equivalent) to all compartments shall be provided, except for engine and generator compartments
4. The engine pod transom shall be designed and properly framed for single I/O as referred to in 10.2.8
5. Freeboard to be ~18"
6. Pontoon bottoms shall have forefoot beaching wear plates as per existing engineered drawings

10.2.2 Pontoon Outfitting

1. Appropriate fastening hardware shall be used throughout the work vessel
2. Eight (8) 10" welded cleats shall be installed on structural component of the fascia
3. Two (2) magnesium anodes on brackets shall be welded to the aft vertical end of each pontoon
4. Two (2) magnesium anodes shall be installed on brackets on the generator and drive engine pods
5. One (1) welded outdrive guard shall be installed across the pontoons (exact specification to be to be determined by contractor in proposal)

10.2.3 Deck Outfitting

1. Two (2) 72" x 24" recessed storage trays on portside forward portion of main deck with expanded aluminum and bottoms
2. Two (2) 72" x 24" welded aluminum deck hatch shall be installed in the main deck covering storage trays
3. Four (2) 12" x 12" recessed storage trays on aft portion of portside main deck
4. Four (4) welded aluminum deck hatch shall be installed in the main deck covering storage trays.
5. Exact locations as per drawings
6. Two (2) hatch lids; one each for generator and drive engine
7. Other small appurtenances as per drawings

10.2.4 Transom A-frame

1. The Contractor shall design the A-frame system for approval by TLMC.
2. The A-frame will be used for deploying concrete weights (55 US gallon drums) up to 2,500 lbs
3. General considerations for A-frame design include:
 - a. The A-frame shall clear the rear work platform sufficiently to allow unhindered deployment with weights and other material
 - b. The A-frame shall not interfere with operation of other components

10.2.5 Wheelhouse

1. Wheelhouse dimensions shall be as per existing engineered drawings
2. All windows shall be constructed with safety glass or ¼" Plexiglas or equivalent
3. The wheelhouse roof shall have welded mounts for GPS antenna, searchlight, navigation lights, anchor-light, deck floodlights, and light bar
4. Wheelhouse shall be raised 18" and have lockable storage compartments underneath
5. The wheelhouse console shall be lipped and the lip shall be rounded for comfort
6. A full width overhead radio bar shall be installed above the wheelhouse console for mounting VHF radio, sonar, and GPS (see section 10.2.11 for additional details)
7. One (1) Wise 8WD1007-7-710 Captain Chair with Cushions and 12-18" Adjustable Height Pedestal, or equivalent
8. One (1) bench seating as per drawings

10.2.6 Systems

1. Fuel tank shall be non-integral and have a total capacity of 100 US gallons
2. Fuel tank shall be constructed or purchased according to USCG regulations
3. Fuel tank shall be installed complete with fill, vent, fuel sending unit, and gauge. There shall be access to the sending unit for routine maintenance or repair if required
4. The fuel tank fill and vents shall be located on the starboard rail adjacent to the wheelhouse
5. The fuel tank fill and vent piping shall be sized, installed, and located such that
 - a. Spills will not enter the boat or drain onto electrical connections or other components that would be adversely affected by fuel or would present a hazardous condition if contaminated by fuel
 - b. No tripping hazard is created
 - c. Filling can easily be accomplished at fuel dock
6. The fuel delivery system shall comprise USCG approved fuel lines, fuel/water separators, and shut off valve(s)
7. Fuel lines shall be installed in such a way as to prevent damage or unnecessary wear

10.2.7 Propulsion

1. One 320 HP 5.3L Volvo Penta Duo Prop package. Engine shall be installed in accordance with original equipment manufacturer (OEM) recommendations and guidance
2. Propulsion system shall be free of critical torsional, longitudinal, and whirling vibrations throughout the operating range.

10.2.8 Hydraulic Systems

1. Hydraulic fluid tank(s) sized to handle requirements
2. Hydraulic pump(s) sized to handle requirements
3. All hydraulic lines, fittings, valves and controls sized to handle requirements

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4. Exact specification to be determined by contractor
5. Three (3) operation stations with throttle and up/down controls
 - a. Be advised that two control stations were left off of the existing engineered drawings
 - b. On Pg GA1.2 there should be one station (the same as depicted on the aft-starboard section) in between the two winches and one in the wheelhouse. Exact locations TBD.

10.2.9 Rigging Systems

1. One (1) stern-mounted, up/down, hydraulically-controlled, articulating A-frame of 3" x 2" x ¼" mild steel construction with 2,500 lb workload limit
2. One (1) overhead beam and trolley to terminate at bow with 9,000 lb workload limit.
3. Two (2) appropriately sized hydraulic winches
4. Three (3) operation stations with throttle and up/down controls (locations as per drawings)

10.2.10 Electronics

1. One (1) Garmin echoMAP Chirp 53cv and associated through-hull sonar transducer
2. One (1) Garmin GPS 19x NMEA 2000 antenna
3. One (1) Standard Horizon GX2200W 30 Watt Class D Matrix Fixed Mount VHF
4. One (1) Standard Horizon 220SW 30W Round Hailer Horn and speaker wire

10.2.11 Electrical System – 12VDC

1. All electrical cables shall be marine grade copper tinned cable and labeled for each circuit.
2. Cables shall be routed in wire ways wherever possible. Wherever exposed to potential damage, cables shall be protected with rubber
3. Electrical cable shall be sized in accordance with ABYC
4. All electrical cables shall be marked in accordance with the marking in electrical drawings.
5. All 12VDC switches shall be of heavy-duty type toggles and properly insulated
6. The electrical system shall be grounded
7. One (1) group 27 lead acid marine starting battery will be provided and installed in plastic battery boxes secured with straps
8. Four position battery switch(es) will be provided and installed
9. Electrical breaker panels shall have sufficient and properly sized breakers for all circuits

10.2.12 12VDC Electrical Components

1. One (1) 12-position 12VDC distribution panel on the console
2. Four (4) 12VDC power receptacles on the wheelhouse console
3. Two (2) 2,200 gph 12VDC bilge pumps with automatic float switches, discharge piping, bronze through-hull fittings, and auto/manual switch on the wheelhouse console for each engine pod
4. One (1) 12VDC 140 CFM ventilation blower in the fuel tank compartment. Switch to operate the blower shall be located on the wheelhouse console
5. One (1) Shurflo PRO BLASTER Washdon Kit Model 4903-4292 complete with filter/strainer, standard bronze through-hull intake welded thru hull fitting, and seacock. Pump shall be plumbed to 2-port hose bib outlets. Switches to operate the pumps shall be located on the wheelhouse console
6. One (1) self-parking windshield wiper with individual switch located on the wheelhouse console
7. Electronics as per 10.2.11 and 10.2.25

10.2.13 120/240 VAC Electrical System

1. One (1) AC six circuit panel with five (5) 120VAC receptacles and one (1) 240VAC receptacle (locations TBD)

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2. All electrical cables shall be marine grade copper tinned cable and labeled for each circuit.
3. Cables shall be routed in wire ways wherever possible. Wherever exposed to potential damage, cables shall be protected with rubber
4. Electrical cable shall be sized in accordance with ABYC and NEMA
5. All electrical cables shall be marked in accordance with the marking in electrical drawings

10.2.14 Lighting

1. One (1) LED red/white wheelhouse dome light
2. Six (6) LED floodlights (Rigid Dually LED) on wheelhouse roof (two facing forward, two facing stern, one facing port, and one facing starboard) with four separate switches at console to allow individual operation of each zone
3. One (1) Jabsco 146SL RC 60080 remote controlled searchlight on forward peak of roof
4. One (1) USCG approved LED anchor light installed on hinging mast on aft peak of roof
5. One (1) USCG approved LED navigation light package – location TBD
6. One (1) DaMeGa Engineering 30" amber Razor Lightbar Linear, or equivalent

10.2.15 Safety Package

1. Three (3) Class B fire extinguishers and install on mounting brackets – location TBD
2. One (1) First Aid kit (Honeywell 148820 Major Trauma Kit or equivalent)
3. One (1) Philips HeartStart Home Defibrillator, or equivalent
4. One (1) life ring installed complete with three point stainless steel mounting bracket

10.2.16 Sanitary Facilities

1. One (1) 100 US gallon stainless steel holding tank
2. One (1) marine toilet with straight connection to holding tank
3. One (1) marine sink with faucet
4. One (1) enclosure as per drawings
5. One (1) Vertical 2" Camlock type cleanout on starboard side behind enclosure at 12" above deck line
6. One (1) 2" ABS vent to terminate at the roof liner behind enclosure
7. One (1) 50 US gallon fresh water tank

10.2.17 Documentation

1. Installation, Operation, and Maintenance Manuals
2. Other OEM technical literature for all supplied equipment
3. As-built work vessel drawings
4. As-built electrical system drawings
5. As-built hydraulic system drawings
6. Original Bill of Sale and Manufacturer's Statement of Origin conveying free and clear title(s)