

ORIGINAL

CONTRACT RESULTING FROM REQUEST FOR PROPOSAL NUMBER 10090032-24-M OCEAN SAMPLING VESSEL

This Contract (Contract) is entered into by and between the City of San Diego, a municipal corporation (City), and the successful proposer to Request for Proposal (RFP) # 10090032-24-M, Ocean Sampling Vessel (Contractor).

RECITALS

On or about 10/4/23, City issued an RFP to prospective proposers on services to be provided to the City. The RFP and any addenda and exhibits thereto are collectively referred to as the "RFP." The RFP is attached hereto as Exhibit A.

City has determined that Contractor has the expertise, experience, and personnel necessary to provide the services.

City wishes to retain Contractor to provide a new construction ocean sampling vessel as further described in the Scope of Work, attached hereto as Exhibit B (Services).

For good and valuable consideration, the sufficiency of which is acknowledged, City and Contractor agree as follows:

ARTICLE I CONTRACTOR SERVICES

1.1 Scope of Work. Contractor shall provide the Services to City as described in Exhibit B which is incorporated herein by reference. Contractor will submit all required forms and information described in Exhibit A to the Purchasing Agent before providing Services.

1.2 General Contract Terms and Provisions. This Contract incorporates by reference the General Contract Terms and Provisions, attached hereto as Exhibit C.

1.3 Contract Administrator. The Public Utilities Department (Department) is the Contract Administrator for this Agreement. Contractor shall provide the Services under the direction of a designated representative of the Department as follows:

Ryan Kempster, Senior Marine Biologist
2392 Kincaid Road
San Diego, CA 92101
(619) 758-2329
rkempster@sandiego.gov

ARTICLE II DURATION OF CONTRACT

2.1 Term. This Contract shall be for a period beginning on the Effective Date until completion of the Scope of Work. The term of this Contract shall not exceed five years unless approved by the City Council by ordinance.

2.2 Effective Date. This Contract shall be effective on the date it is executed by the last Party to sign the Contract and approved by the City Attorney in accordance with San Diego Charter Section 40.

**ARTICLE III
COMPENSATION**

3.1 Amount of Compensation. City shall pay Contractor for performance of all Services rendered in accordance with this Contract in a firm fixed amount of \$8,390,680.00 (exclusive of applicable taxes). The City shall also pay Contractor the applicable California State and local sales tax which will be calculated prior to invoicing for an additional amount up to, but not to exceed, 10.75% or \$901,998.10, for the City of San Diego in San Diego County.

**ARTICLE IV
WAGE REQUIREMENTS**

4.1 Reserved.

**ARTICLE V
CONTRACT DOCUMENTS**

5.1 Contract Documents. The following documents comprise the Contract between the City and Contractor: this Contract and all exhibits thereto, the RFP; the Notice to Proceed.

5.2 Contract Interpretation. The Contract Documents completely describe the Services to be provided. Contractor will provide any Services that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result whether or not specifically called for or identified in the Contract Documents. Words or phrases which have a well-known technical or construction industry or trade meaning and are used to describe Services will be interpreted in accordance with that meaning unless a definition has been provided in the Contract Documents.

5.3 Precedence. In resolving conflicts resulting from errors or discrepancies in any of the Contract Documents, the Parties will use the order of precedence as set forth below. The 1st document has the highest priority. Inconsistent provisions in the Contract Documents that address the same subject, are consistent, and have different degrees of specificity, are not in conflict and the more specific language will control. The order of precedence from highest to lowest is as follows:

- 1st Any properly executed written amendment to the Contract
- 2nd The Contract
- 3rd Contractor's Pricing
- 4th Vessel Building Agreement and vessel building documents:
 - a) Materials List
 - b) Specifications book
 - c) General Arrangement drawing
- 5th The RFP

5.4 **Counterparts.** This Contract may be executed in counterparts which, when taken together, shall constitute a single signed original as though all Parties had executed the same page.

5.5 **Public Agencies.** Other public agencies, as defined by California Government Code section 6500, may choose to use the terms of this Contract, subject to Contractor's acceptance. The City is not liable or responsible for any obligations related to a subsequent Contract between Contractor and another public agency.

IN WITNESS WHEREOF, this Contract is executed by City and Contractor acting by and through their authorized officers.

CONTRACTOR

All American Marine Inc.

Proposer

1010 Hilton Ave

Street Address

Bellingham, WA

City

360-647-7602

Telephone No.

rwille@allamericanmarine.com

E-Mail

CITY OF SAN DIEGO
A Municipal Corporation

BY:



Print Name:

Claudia C. Garcia

Director, Purchasing & Contracting Department

November 20, 2024

Date Signed

BY:

Ronald Wille

Ronald Wille (Oct 14, 2024 08:11 PDT)

Signature of
Proposer's Authorized
Representative

Ronald Wille

Print Name

President & COO

Title

Oct 14, 2024

Date

Approved as to form this 21st day of

November, 2024.

MARA W. ELLIOTT, City Attorney

BY:



Deputy City Attorney

EXHIBIT A
PROPOSAL SUBMISSION AND REQUIREMENTS

A. PROPOSAL SUBMISSION

1. Timely Proposal Submittal. Proposals must be submitted as described herein to the Purchasing & Contracting Department (P&C).

1.1 Reserved.

1.2 Paper Proposals. The City will accept paper proposals in lieu of eProposals. Paper proposals must be submitted in a sealed envelope to the Purchasing & Contracting Department (P&C) located at 1200 Third Avenue, Suite 200, San Diego, CA 92101. The Solicitation Number and Closing Date must be referenced in the lower left-hand corner of the outside of the envelope. Faxed proposals will not be accepted.

1.3 Proposal Due Date. Proposals must be submitted prior to the Closing Date indicated on the eBidding System. E-mailed and/or faxed proposals will not be accepted.

1.4 Pre-Proposal Conference. No pre-proposal conference will be held for RFP.

1.4.1 Reserved.

1.5 Questions and Comments. Written questions and comments must be submitted electronically via the eBidding System no later than the date specified on the eBidding System. Only written communications relative to the procurement shall be considered. The City's eBidding System is the only acceptable method for submission of questions. All questions will be answered in writing. The City will distribute questions and answers without identification of the inquirer(s) to all proposers who are on record as having received this RFP, via its eBidding System. No oral communications can be relied upon for this RFP. Addenda will be issued addressing questions or comments that are determined by the City to cause a change to any part of this RFP.

1.6 Contact with City Staff. Unless otherwise authorized herein, proposers who are considering submitting a proposal in response to this RFP, or who submit a proposal in response to this RFP, are prohibited from communicating with City staff about this RFP from the date this RFP is issued until a contract is awarded.

2. Proposal Format and Organization. Unless electronically submitted, all proposals should be securely bound and must include the following completed and executed forms and information presented in the manner indicated below:

Tab A - Submission of Information and Forms.

2.1 Completed and signed Contract Signature Page. If any addenda are issued, the latest Addendum Contract Signature Page is required.

2.2 Exceptions requested by proposer, if any. The proposer must present written factual or legal justification for any exception requested to the Scope of Work, the

Contract, or the Exhibits thereto. Any exceptions to the Contract that have not been accepted by the City in writing are deemed rejected. The City, in its sole discretion, may accept some or all of proposer's exceptions, reject proposer's exceptions, and deem the proposal non-responsive, or award the Contract without proposer's proposed exceptions. The City will not consider exceptions addressed elsewhere in the proposal.

2.3 The Contractor Standards Pledge of Compliance Form.

2.4 Equal Opportunity Contracting forms including the Work Force Report and Contractors Certification of Pending Actions.

2.5 Reserved.

2.6 Reserved.

2.7 Manufacturer's Price List.

2.8 Additional Information as required in Exhibit B.

2.9 Reserved.

Tab B – Executive Summary and Responses to Specifications.

2.10 A title page.

2.11 A table of contents.

2.12 An executive summary, limited to one typewritten page, that provides a high-level description of the proposer's ability to meet the requirements of the RFP and the reasons the proposer believes itself to be best qualified to provide the identified services.

2.13 Proposer's response to the RFP.

Tab C – Cost/Price Proposal (if applicable). Proposers shall submit a cost proposal in the form and format described herein. Failure to provide cost(s) in the form and format requested may result in proposal being declared non-responsive and rejected.

3. Proposal Review. Proposers are responsible for carefully examining the RFP, the Specifications, this Contract, and all documents incorporated into the Contract by reference before submitting a proposal. If selected for award of contract, proposer shall be bound by same unless the City has accepted proposer's exceptions, if any, in writing.

4. Addenda. The City may issue addenda to this RFP as necessary. All addenda are incorporated into the Contract. The proposer is responsible for determining whether addenda were issued prior to a proposal submission. Failure to respond to or properly address addenda may result in rejection of a proposal.

5. Quantities. The estimated quantities provided by the City are not guaranteed. These quantities are listed for informational purposes only. Quantities vary depending on the demands of the City. Any variations from the estimated quantities shall not entitle the proposer to an adjustment in the unit price or any additional compensation.

6. Quality. Unless otherwise required, all goods furnished shall be new and the best of their kind.

6.1 Items Offered. Proposer shall state the applicable trade name, brand, catalog, manufacturer, and/or product number of the required good, if any, in the proposal.

6.2 Brand Names. Any reference to a specific brand name in a solicitation is illustrative only and describes a component best meeting the specific operational, design, performance, maintenance, quality, or reliability standards and requirements of the City. Proposer may offer an equivalent or equal in response to a brand name referenced (Proposed Equivalent). The City may consider the Proposed Equivalent after it is subjected to testing and evaluation which must be completed prior to the award of contract. If the proposer offers an item of a manufacturer or vendor other than that specified, the proposer must identify the maker, brand, quality, manufacturer number, product number, catalog number, or other trade designation. The City has complete discretion in determining if a Proposed Equivalent will satisfy its requirements. It is the proposer's responsibility to provide, at their expense, any product information, test data, or other information or documents the City requests to properly evaluate or demonstrate the acceptability of the Proposed Equivalent, including independent testing, evaluation at qualified test facilities, or destructive testing.

7. Modifications, Withdrawals, or Mistakes. Proposer is responsible for verifying all prices and extensions before submitting a proposal.

7.1 Modification or Withdrawal of Proposal Before Proposal Opening. Prior to the Closing Date, the proposer or proposer's authorized representative may modify or withdraw the proposal by providing written notice of the proposal modification or withdrawal to the City Contact via the eBidding System. E-mail or telephonic withdrawals or modifications are not permissible.

7.2 Proposal Modification or Withdrawal of Proposal After Proposal Opening. Any proposer who seeks to modify or withdraw a proposal because of the proposer's inadvertent computational error affecting the proposal price shall notify the City Contact identified on the eBidding System no later than three working days following the Closing Date. The proposer shall provide worksheets and such other information as may be required by the City to substantiate the claim of inadvertent error. Failure to do so may bar relief and allow the City recourse from the bid surety. The burden is upon the proposer to prove the inadvertent error. If, as a result of a proposal modification, the proposer is no longer the apparent successful proposer, the City will award to the newly established apparent successful proposer. The City's decision is final.

8. Incurred Expenses. The City is not responsible for any expenses incurred by proposers in participating in this solicitation process.

9. Public Records. By submitting a proposal, the proposer acknowledges that any information submitted in response to this RFP is a public record subject to disclosure unless the City determines that a specific exemption in the California Public Records Act (CPRA) applies. If the proposer submits information clearly marked confidential or proprietary, the City may protect such information and treat it with confidentiality to the extent permitted by law. However, it will be the responsibility of the proposer to provide to the City the specific legal grounds on which the City can rely in withholding information requested under the

CPRA should the City choose to withhold such information. General references to sections of the CPRA will not suffice. Rather, the proposer must provide a specific and detailed legal basis, including applicable case law, that clearly establishes the requested information is exempt from the disclosure under the CPRA. If the proposer does not provide a specific and detailed legal basis for requesting the City to withhold proposer's confidential or proprietary information at the time of proposal submittal, City will release the information as required by the CPRA and proposer will hold the City, its elected officials, officers, and employees harmless for release of this information. It will be the proposer's obligation to defend, at proposer's expense, any legal actions or challenges seeking to obtain from the City any information requested under the CPRA withheld by the City at the proposer's request. Furthermore, the proposer shall indemnify and hold harmless the City, its elected officials, officers, and employees from and against any claim or liability, and defend any action brought against the City, resulting from the City's refusal to release information requested under the CPRA which was withheld at proposer's request. Nothing in the Contract resulting from this proposal creates any obligation on the part of the City to notify the proposer or obtain the proposer's approval or consent before releasing information subject to disclosure under the CPRA.

10. Right to Audit. The City Auditor may access proposer's records as described in San Diego Charter section 39.2 to confirm contract compliance.

B. PRICING

1. Fixed Price. All prices shall be firm, fixed, fully burdened, FOB destination, and include any applicable delivery or freight charges, and any other costs required to provide the requirements as specified in this RFP. The lowest total estimated contract price of all the proposals that meet the requirements of this RFP will receive the maximum assigned points to this category as set forth in this RFP. The other price schedules will be scored based on how much higher their total estimated contract prices compare with the lowest:

$$(1 - \frac{(\text{contract price} - \text{lowest price})}{\text{lowest price}}) \times \text{maximum points} = \text{points received}$$

For example, if the lowest total estimated contract price of all proposals is \$100, that proposal would receive the maximum allowable points for the price category. If the total estimated contract price of another proposal is \$105 and the maximum allowable points is 60 points, then that proposal would receive $(1 - ((105 - 100) / 100)) \times 60 = 57$ points, or 95% of the maximum points. The lowest score a proposal can receive for this category is zero points (the score cannot be a negative number). The City will perform this calculation for each Proposal.

2. Taxes and Fees. Taxes and applicable local, state, and federal regulatory fees should not be included in the price proposal. Applicable taxes and regulatory fees will be added to the net amount invoiced. The City is liable for state, city, and county sales taxes but is exempt from Federal Excise Tax and will furnish exemption certificates upon request. All or any portion of the City sales tax returned to the City will be considered in the evaluation of proposals.

3. Escalation. An escalation factor is not allowed unless called for in this RFP. If escalation is allowed, proposer must notify the City in writing in the event of a decline in market price(s) below the proposal price. At that time, the City will make an adjustment in the Contract or may elect to re-solicit.

4. Unit Price. Unless the proposer clearly indicates that the price is based on consideration of being awarded the entire lot and that an adjustment to the price was made based on receiving the entire proposal, any difference between the unit price correctly extended and the total price shown for all items shall be offered shall be resolved in favor of the unit price.

C. EVALUATION OF PROPOSALS

1. Award. The City shall evaluate each responsive proposal to determine which proposal offers the City the best value consistent with the evaluation criteria set forth herein. The proposer offering the lowest overall price will not necessarily be awarded a contract.

2. Sustainable Materials. Consistent with Council Policy 100-14, the City encourages use of readily recyclable submittal materials that contain post-consumer recycled content.

3. Evaluation Process.

3.1 Process for Award. A City-designated evaluation committee (Evaluation Committee) will evaluate and score all responsive proposals. The Evaluation Committee may require proposer to provide additional written or oral information to clarify responses. Upon completion of the evaluation process, the Evaluation Committee will recommend to the Purchasing Agent that award be made to the proposer with the highest scoring proposal.

3.2 Optional Interview/Oral Presentation. The City may require proposers to interview and/or make an oral presentation.

3.3 Mandatory Interview/Oral Presentation. The City will require all responsive, and responsible proposers to interview and/or make an oral presentation in person at a City facility or remotely via MS Teams.

Interviews and/or oral presentations will be made to the Evaluation Committee in order to clarify the proposals and to answer any questions. The interviews and/or oral presentations will be scored as part of the selection process. The City will complete all reference checks prior to any oral interview. Additionally, the Evaluation Committee may require proposer's key personnel to interview. Interviews may be by MS Teams and/or in person. Multiple interviews may be required. Proposers are required to complete their oral presentation and/or interviews within seven (7) workdays after the City's request. Proposers should be prepared to discuss and substantiate any of the areas of the proposal submitted, as well as proposer's qualifications to furnish the subject goods and services. Proposer is responsible for any costs incurred for the oral presentation and interview of the key personnel.

3.4 Discussions/Negotiations. The City has the right to accept the proposal that serves the best interest of the City, as submitted, without discussion or negotiation. Contractors should, therefore, not rely on having a chance to discuss, negotiate, and adjust their proposals. The City may negotiate the terms of a contract with the winning proposer based on the RFP and the proposer's proposal or award the contract without further negotiation.

3.5 Inspection. The City reserves the right to visit a vendor and inspect their facilities if they are a highest bidder and/or within 10 points of another high bid. For those vendors meeting these criteria, the inspection will be scored as part of the final selection process. As a part of the City visit the City will determine if the proposer's equipment and facilities will be capable of fulfilling this Contract. Inspection will include, but not limited to, survey of proposer's physical assets and financial capability. Proposer, by signing the proposal agrees to the City's right of access to physical assets and financial records for the sole purpose of determining proposer's capability to perform the Contract. Should the City conduct this inspection, the City reserves the right to disqualify a proposer who does not, in the City's judgment, exhibit the sufficient physical and financial resources to perform this Contract.

3.6 Evaluation Criteria. The following elements represent the evaluation criteria that will be considered during the evaluation process:

	MAXIMUM EVALUATION POINTS
A. Responsiveness to the RFP.	15
1. Requested information included and thoroughness of response	
2. Understanding of the project and ability to deliver as exhibited in the Executive Summary.	
3. Technical Aspects	
B. Staffing Plan.	15
1. Qualifications of personnel adequate for requirement	
2. Availability/Geographical location of personnel to conduct sea trails and vessel familiarization training	
3. Clearly defined Roles/Responsibilities of personnel	
C. Firm's Capability to provide the services and expertise and Past Performance.	30
1. Relevant experience of the Firm and subcontractors	
2. Previous relationship of firm and subcontractors on similar projects	
3. Other pertinent experience	
4. Past/Prior Performance	
5. Capacity/Capability to meet The City of San Diego needs in a timely manner	
6. Capacity/Capability to meet CA air quality and other pertinent vessel regulatory requirements as necessary.	
7. Reference checks	
D. Price.	5
E. Interview/ /Presentation.	25
1. Demonstration of skills and experience presented in A-C	

	MAXIMUM EVALUATION POINTS
SUB TOTAL MAXIMUM EVALUATION POINTS:	<u>90</u>
F. Participation by Small Local Business Enterprise (SLBE) or Emerging Local Business Enterprise (ELBE) Firms*	12
Sub Total Maximum Evaluation Points	<u><u>102</u></u>
G. Inspection/Visit	10
1. Capability/capacity of skills, Facilities and Equipment referenced in A-E	<u>112</u>
FINAL MAXIMUM EVALUATION POINTS INCLUDING SLBE/ELBE (F and G):	

*The City shall apply a maximum of an additional 12 percentage points to the proposer's final score for SLBE OR ELBE participation. Refer to Equal Opportunity Contracting Form, Section V.

D. ANNOUNCEMENT OF AWARD

1. **Award of Contract.** The City will inform all proposers of its intent to award a Contract in writing.

2. **Obtaining Proposal Results.** No solicitation results can be obtained until the City announces the proposal or proposals best meeting the City's requirements. Proposal results may be obtained by: (1) e-mailing a request to the City Contact identified on the eBidding System or (2) visiting the P&C eBidding System to review the proposal results. To ensure an accurate response, requests should reference the Solicitation Number. Proposal results will not be released over the phone.

3. **Multiple Awards.** City may award more than one contract by awarding separate items or groups of items to various proposers. Awards will be made for items, or combinations of items, which result in the lowest aggregate price and/or best meet the City's requirements. The additional administrative costs associated with awarding more than one Contract will be considered in the determination.

E. PROTESTS. The City's protest procedures are codified in Chapter 2, Article 2, Division 30 of the San Diego Municipal Code (SDMC). These procedures provide unsuccessful proposers with the opportunity to challenge the City's determination on legal and factual grounds. The City will not consider or otherwise act upon an untimely protest.

F. SUBMITTALS REQUIRED UPON NOTICE TO PROCEED. The successful proposer is required to submit the following documents to P&C **within ten (10) business days** from the date on the Notice to Proceed letter:

1. **Insurance Documents.** Evidence of all required insurance, including all required endorsements, as specified in Article VII of the General Contract Terms and Provisions.

2. **Taxpayer Identification Number.** Internal Revenue Service (IRS) regulations require the City to have the correct name, address, and Taxpayer Identification Number (TIN) or Social Security Number (SSN) on file for businesses or persons who provide goods or services to the City. This information is necessary to complete Form 1099 at the end of each

tax year. To comply with IRS regulations, the City requires each Contractor to provide a Form W-9 prior to the award of a Contract.

3. Business Tax Certificate. Unless the City Treasurer determines a business is exempt, all businesses that contract with the City must have a current business tax certificate.

4. Bond. A bond as described in Exhibit B.

5. Reserved.

The City may find the proposer to be non-responsive and award the Contract to the next highest scoring responsible and responsive proposer if the apparent successful proposer fails to timely provide the required information or documents.

EXHIBIT B SCOPE OF WORK

A. SPECIFICATIONS

The below specification has been developed through an independent review of the City's ocean monitoring program vessel needs and consultation with staff. The specifications listed here should be used as a guide, but final vessel specifications will be determined upon design consultation between City staff and the Contractor.

B. GENERAL REQUIREMENTS OF DESIGN AND CONSTRUCTION

The City of San Diego requires a new construction ocean sampling vessel as described in the below specifications. Generally, the vessel shall be approximately 60 ft in length with a fully enclosed, climate-controlled cabin to accommodate up to 10-14 staff members.

The vessel will operate in the offshore waters around the City of San Diego and northern Mexico.

1. **Design & Construction Standards.** All aluminum construction utilizing marine grade aluminum alloys.
2. **Flotation & Stability.**
 1. *Flotation*
 - i. Vessel shall be designed with multiple watertight compartments below deck. The builder shall provide engineering analysis and reporting to demonstrate that the vessel will remain reasonably level and afloat with any compartment fully flooded. Specifically, the vessel should be capable of housing equipment below, while maintaining flotation and stability highlighted here:
 - ii. Winches (main trawl, bow, side davit, knuckle crane)
 - iii. Transducer mount for fathometer
 - iv. Built-in retractable or swinging transducer boom for ROV TracLink system
 - v. 5000 lbs in added equipment weight (anchors, moorings, oceanographic instrumentation etc.)
 2. *Stability*
 - i. The vessel shall be designed to meet stability requirements of ISO 12217 Category B. A wide beam equal to or greater than 23ft is required to provide superior stability for launching scientific equipment.

3. **Structure.** All structure and scantlings will be designed to meet the requirements set forth in ABS Rules for High-Speed Naval Craft or equivalent guidelines and standards for catamaran design.
4. **Design Review Requirement.**
 1. *General statement:* The proposer shall provide for a design review process to ensure that end user requirements are incorporated into the final design of the vessel.
 2. *Post Award Conference:* Within one week of contract award, the proposer shall schedule a post award conference with the City's representatives to ensure that all elements of the specification are fully understood.
 3. *Detailed Design Deliverables*
 4. At the completion of final design, the successful proposer shall provide copies of all production level data in the form of a technical data package for the City. Confidential and proprietary data shall not be included in the technical data package. The technical data package shall include, but is not limited to:
 - i. General structural arrangement
 - ii. Equipment and outfitting arrangement drawings
 - iii. Major system and sub-system drawings and arrangements
 - iv. Electrical diagrams
5. **Quality Assurance / Quality Control.** The proposer shall provide an overview of their quality assurance and quality control process in their proposal to the City. The proposer shall also provide recent customer reference for comparable build.

C. DETAILED VESSEL SPECIFICATIONS

1. Overall.

1. *Vessel Dimensions:*
 - i. Length Overall – 60 feet
 - ii. Beam Overall – 23' or greater
 - iii. Height – To be determined in design.
 - iv. Draft – To be determined in design.
2. *Performance Characteristics*
 - i. Maximum Speed – To be determined in design, but minimum of 22 knots.

- ii. Cruise Speed – To be determined in design, but ideally 18 to 24 knots with lighter load days.
 - iii. All proposed performance characteristics shall be provided for a vessel in the full load condition.
 - iv. Must comply with CARB (Cal. Air Resources Board) requirements.
2. **Operational Area.** The operational area for this vessel will be in the vicinity up to 30 miles offshore of San Diego, CA and northern Mexico. The vessel is required to operate in a variety of conditions subject to location and weather impacts. The vessel must be designed to not only operate in protected waters, but also be able to withstand potential significant sea states when sampling offshore (up to 20 knot winds, 4-8ft swell).

The operational mission profile for this vessel based on the mission of the San Diego Ocean monitoring program will include, but is not limited to:

- 1. Deployment of water sampling devices
- 2. Operation of remotely operated vehicles
- 3. Deployment and retrieval of large ocean moorings with 2000lbs anchors
- 4. Fish trawling and sediment sampling
- 5. Rig fishing

Sea State Requirements: The vessel shall be designed to meet stability requirements in ISO 12217 Category B.

Low Clearance Requirement: There are no anticipated low clearance requirements for the vessel in operations.

Storage Requirement: The vessel will be stored in the water secured to a dock.

3. **Hull Design.**

- 1. *Overall Hull Design:* Catamaran design with maximizing deck space area.
- 2. *Shell and Supporting Structure:* The vessel shall be constructed of marine grade aluminum. All hull bottom plate shall be a minimum of 0.25" thickness. All seams below the waterline shall be fully welded inside and out.
- 3. *Tie Down Fittings:* Final arrangement and placement of tie down fittings shall be determined in design after contract award but ideally with 2' x 2' threaded sockets for threaded inserts. For example, thread pad eyes that will thread into deck.

4. *Handrails*: Handrails shall be provided to facilitate safe movement around the vessel. Final handrail placement shall be determined in design. Handrails should be strong enough to support an adult.

4. Bilge Pumps, Fire/ Wash Down pumps and Alarm systems

1. *Bilge Pump System and High Water Alarm*
 - i. Bilge alarm system shall be installed to monitor all vessel compartments.
 - ii. Bilge System - Each machinery space shall be fitted with submersible pumps. These pumps shall connect to automatic level switches.
2. *Wash down pumps*
 - i. Raw water washdown system rated for up to 40 gpm on pressure cell made composite materials/non ferrous materials with multiple outlets configured throughout aft deck that can be controlled by a manifold system or similar idea.
 - ii. One engine driven 12V DC, 1 1/2" Jabsco 50200 pump (or equivalent) shall be installed to draw from the engine room and act as fire pump.

5. Winches and Cranes

1. Inter oceans or equivalent scientific/ oceanographic research winch rated up to 5,000 lbs with ability to have multiple spools to interchange as needed for various type of work. (Mounting location on top of main cabin).
2. Inter oceans conducting wire winch with 1000 ft of 316 single conductor wire (mounting location to be determined during final design)
3. One spool with minimum of 5,000 ft of 1/4" stainless steel wire.
4. 5,000 lbs. Rated A Frame boxed min 14'.
5. Morgan Marine/Palfinger knuckle crane rated up to 3,000 lbs.
6. Bow winch 800 lbs with spool capable of holding 1000ft of 5/16" Amsteel synthetic line.
7. Capstan rated for up 2,000 lbs fixed or possibly manipulable for various deck operations.
8. Applicable hydraulic system to run multiple systems at once (Power Take Off [PTO] off of Main engine, or off of generator, or off of a Hydraulic Power Unit [HPU] system).
9. Other specific needs for winches and cranes will be authorized with final design.

6. Fuel Tanks/Fuel System.

1. Fuel tanks shall be installed compliant with current USCG and EPA emissions rules.
2. Potential builders shall propose a fuel tank size computed to handle 1-2 weeks of sampling prior to refueling.
3. Fuel Fill and vents shall be located to provide for ease of filling and to prevent the accidental discharge of fuel into the environment.
4. Fuel tanks shall be designed for accessibility to fittings and sending units for future maintenance and repair.
5. Fuel Pick-Ups shall be stainless steel and be sized in accordance with the OEM guidelines.

7. Fendering. To be determined in design.

8. Main Cabin.

1. Pilot House

- i. Pilot house located separately above main cabin on upper deck of main cabin.
- ii. Fully enclosed and accessible from main cabin. Secondary access from back deck.
- iii. Two shock absorbing Captain's chairs with bench seating for additional 3 to 4 people or possibly small table which lays flat for single bunk in wheelhouse.
- iv. Forward main controls with steering wheel and jog lever and full controls, aft control stations, and small wing stations (controls bare min./ enough to park vessel ex. Throttles, jog lever, and bow thruster controls or possible joystick only if applicable).

2. Main cabin/ Lab/ Galley

- i. In main cabin there must be a lab area with large work bench with freshwater sink and small refrigerator that can fit under the work bench. This area will primarily be used for sample handling and or mounting system for remotely operated vehicle (ROV) console and monitors. Three to four modular removable seats to be placed in front of monitors. Galley area with dinette in space with large galley seating for up to 8 to 10 people
- ii. Dinette to include: an additional small refrigerator (same size as above), freshwater sink, microwave, toaster oven, and possibly small stove that can also convert to flat area when not being used.

- iii. 2 Berthing accommodations in forward portion of hulls accommodating 2 to 4 people per berth, ideally 3 racks per accommodation but determined in design.

3. *Windows and Doors*

- i. Multiple front facing windows that are fully enclosed and sealed (Upper wheelhouse windows having top of window angled forward to have water fall off easier). Configuration needs to be approved by City staff.
- ii. Main cabin and pilot house shall have multiple sliding side windows with the ability to open.

4. *Wiper / Washer*

- i. *Variable speed wipers on all forward-facing windows of pilot house, with controls on dash with wiper wash.*

5. *Seating and Computer*

- i. Modular four shock absorbing seats shall be provided in the main cabin or modular bench for ROV work in front of workbench.
- ii. In lab area, one dedicated workstation with shock absorbing seat in the main cabin with access to power outlets. Computer rack present for housing computer, monitor, keyboard, and mouse.
- iii. Two shock absorbing Captain's chairs in pilot house.

6. *Head*

- i. Enclosed full standing head with sink.

7. *Insulation and Paneling*

- i. The interior of the vessel shall be fully insulated and paneled with noise reducing and vibration canceling material/panels for sound attenuation and insulating properties.

8. *Flooring*

- 9. Anti-fatigue flooring/ marine grade flooring shall be provided in the interior of the pilot house and main cabin, and must also have easy ability for cleaning (needs to be approved by City).
- ii. All exterior walking surfaces shall be coated with a marine grade non-skid bedliner type coating.
- iii. Non-skid edge guard adhesive on all stairs throughout vessel.

9. Propulsion.

1. Twin Caterpillar C-18 engines Tier III (due to CARB requirements, engines may be changed to a Tier IV but for RFP requirements all proposers to quote same Tier III engine).
2. Oil change system Reverso GP-715 or equivalent – equipped to change main engines, gear boxes and gen set as well.
3. Ability to have station keeping with vessel **not full Dynamic positioning ability but station keeping**, with the use of bow and possible side thrusters.

10. AC Electrical.

1. (2) 12V or 24V (depending on starting battery bank systems) Caterpillar Marine Diesel Generator (Minimum 16KW) or equivalent approved gensets and associated equipment to include the following:

Note: A load study shall be completed by the proposer to assure that the total generator capacity will be sufficient to operate all the systems when needed. Generators shall be upgraded to larger sizes if the load study determines more capacity is necessary.

- i. Generator Control – Remote start and stop panel located near the operator's station.
 - ii. Generator Compartment Ventilation – Proper natural and/or powered ventilation to meet the OEM installation guidelines and ABYC requirements.
 - iii. Generator Fuel System – Fuel to be supplied from the main tank to the generator that includes a shut off valve located at the tank and a Racor or equivalent spin on fuel filter / water separator sized to meet the OEM installation guidelines.
 - iv. Generator Cooling System – Generator to be heat exchanger cooled through a dedicated stainless-steel sea strainer, through-hull pick-up with valve sized to meet the OEM installation guidelines.
 - v. Generator Exhaust System – Generator to be provided with exhaust system including water-lift muffler sized and installed in accordance with the OEM installation guidelines.
 - vi. Generator Fire Suppression – The generator compartment shall be provided with a fire alarm and suppression system. The system size shall be adequate for the generator compartment. The system shall provide for both automatic rate of raise actuation, and manual actuation from the operator's station.
2. *50A Shore Power System*

- i. Vessel to be provided with a (2) 50A 125V Shore Power System to include a shore power inlet, galvanic isolator and ELCI breaker. Spit bus panel to allow 2 shore power cables to allow more power to run multiple systems at the dock.
 - ii. Vessel to be provided with a (2) 50A 125V Shore Power cord at least 50' long.
3. *AC Electrical Distribution System*
 - i. The AC electrical distribution system shall be a single point grounded system in accordance with ABYC requirements.
 - ii. The system shall include a Blue Sea Systems distribution panel with multimeter, ship shore selector switch, main breaker, and enough breaker slots to account for all vessel AC loads plus a minimum of 3 spares.
4. *AC Outlets:* Vessel to be equipped with 15A 125V Duplex outlets
5. *Air Conditioning:* Adequate AC for the vessel size. Separate controls for main cabin and wheelhouse.

11. DC Electrical.

1. Batteries

- i. Sealed AGM batteries to be provided for each engine and sized in accordance with OEM installation requirements. In addition, there shall be one Sealed AGM House battery at a minimum to provide for all house loads. An Electrical Load Analysis showing proper battery quantity and size to be provided with the bid.
- ii. Batteries shall be stored in plastic battery boxes, secured in a custom cut aluminum frame and located in an appropriately ventilated compartment.
- iii. All batteries shall have a means for disconnect and emergency paralleling via a battery switch.
- iv. Starting batteries shall be charged by their respective engine's alternators, House batteries shall be charged from an isolated charging lead from each propulsion engine alternator.

2. DC Distribution

- i. The DC Distribution system shall be configured in accordance with ABYC requirements.

- ii. All conductors shall be the size and type appropriate for their respective environments and loads.
 - iii. DC Circuit protection shall be provided in accordance with ABYC requirements and at a minimum include enough circuit breakers in the panel to account for all vessel DC loads plus a minimum of 4 spares.
 - iv. Multimeter and battery monitor with ammeter should be integrated in the DC panel.
3. *Lighting*
- i. Navigation lights – LED Navigation lights shall be provided in accordance with applicable federal regulations.
 - ii. Flood lights – (8) LED Flood lights shall be installed on the cabin roof. Lights must have a minimum output of 1000 lumens each. Switched separately, Port, Starboard, Forward, and Aft.
 - iii. Cabin Lighting with white and red lighting to provide adequate lighting for size of vessel.
 - iv. Cabin Lighting switches should be lit or easily accessible in darkness and toggle to red or white.
4. *Crew comfort / convenience: 12V / USB Receptacle* – (2) Combination Pilothouse and Main cabin 12V / USB Receptacles shall be located near the console to allow for charging of cell phones and tablet devices.
5. *Alarm, safety, and warning systems: Carbon monoxide / smoke detector* – A First Alert combination Carbon Monoxide Detector and Smoke alarm shall be installed in the cabin.

12. Navigation Electronics and Communication.

- 1. *Non-electrical / electronic navigation aids: Compass (lighted, dimmable)*
- 2. *Electrical navigation aids*
 - i. Furuno TZtouch3 system with (2) TZT19F on main control station, (1) TZT9F for after control station (Radar, Chart plotter, Depth finder and 3D depth finder, AIS system with FA 170 display)
 - ii. Radar dome- DRS4D-NXT
 - iii. Transducer –165T-PM542 with DFF3D and DI-FFAMP boxes to run dual transducer unit with TZtouch3 systems.
 - iv. Wind speed indicator with its own dash display from Furuno 220WX

3. *Steering system*

- i. Steering system with FU and NFU capable with bottom on dash to switch between the two versions.
- ii. Simrad commercial Auto pilot (AP70 Mk2)
- iii. Main control station with steering wheel and Jog lever – Jog levers at wing stations and aft control station (Simrad FU80's)

4. *Radio systems*

- i. Marine VHF's – The vessel shall include ICOM M605 VHF at main control station with (2) HM 195 (placed on aft driving station and one on main cabin level near aft door all connected with M605) also additional ICOM M510 secondary VHF at main control station.
- ii. Department Radios – The builder shall be responsible for the installation of a City provided department radio (e.g. Motorola).
- iii. Loud hailer with forward and aft facing speakers plus one on main deck for crew communications.

5. *Visual and audible communication systems:* Cameras throughout vessel for monitoring equipment and personnel with associated monitor and controls. Loud hailer capable of being operated from control station(s).

6. *Stereo:* A marine stereo with associated amplifiers and speakers shall be provided throughout the vessel and head unit in pilot house will be wired and installed by proposer.

13. Paint, Non-Skid and Graphics. All paint and graphics designs shall be provided for City approval prior to application to vessel.

1. *Non-Skid:* Bedliner non-skid paint shall be provided on all walking/deck surfaces.
2. *Bottom Paint:* Anti-foulant bottom paint shall be provided.
3. *Graphics/Paint:* To be determined in design.

14. Fire Suppression Systems. Fixed FM200 system, design applicable to engine room layout once design has been approved.

15. Outfit.

1. *Safety Equipment.* The vessel shall be provided with the following:
 - i. 24" ring buoy with mount

- ii. Fire extinguishers (in accordance with USGC requirements according to vessel size)
- iii. 2 Halon Fire extinguishers
- iv. 16 person inflatable Solas life raft or two 8 person versus one large raft.
- v. Location of equipment mounting to be determined at design review.
- vi. *Anchoring*- Anchor with shackles and chain and spectra line on anchor winch (drum style is a good possibility with chain and line all in one). Anchor is to be mounted below other bow work winch. This will be reviewed at the final design meeting.

16. Tests and Trials.

- 1. *Engine Break In:* The proposer will ensure that any trials conducted with the vessel to verify performance prior to delivery of the vessel will be conducted in accordance with the propulsion and pump engine break in procedures to avoid damage to the components. It is not expected that the propulsion engines and pump engines will complete the full break in procedure prior to delivery.
- 2. *Customer Trials:* The proposer will be responsible for making the vessel available at the build location to conduct sea trials and familiarization training with the City's representatives. The cost of travel and lodging for City personnel will be borne by the City.

17. Documentation.

- 1. *Technical Data Package:* The proposer shall provide a technical data package that includes (as applicable), but is not limited to, the following technical information (all drawings shall be clearly labeled and include a list of installed equipment and parts):
 - i. Profile and General Arrangement
 - ii. Control Station Arrangements (helm, radio flap, fire control station, etc.)
 - iii. Schedule of Windows, Doors and Hatches
 - iv. Hull Assembly
 - v. Below Deck (Penetrations, Piping, Foundations, and Rigging Tubes)
 - vi. Fuel Tank Construction
 - vii. Deck Arrangement
 - viii. Freeboard Assembly

- ix. Superstructure Assembly (includes pilothouse top foundations + mast)
- x. Pilothouse Interior
- xi. Rub Rails, Side Fendering, Push Knees, Hull Appendages
- xii. Handrails and Pipework (includes tow post, fire system above deck, motor guards)
- xiii. Special Purpose Structures (Sonar Arm, Bow Door Assembly, etc.)
- xiv. Main Engines – Location and Details
- xv. AC / DC One Line Diagram
- xvi. Equipment & Outfitting Arrangement
- xvii. Steering System
- xviii. Seawater Cooling / Raw Water System
- xix. Main Engine, Generator, Auxiliary Exhaust System
- xx. Bilge System
- xxi. Fire System
- xxii. Fuel System
- xxiii. Potable Water System
- xxiv. Grey Water / Black Water System
- xxv. Raw Water Washdown System
- xxvi. HVAC / Ventilation System (includes machinery spaces when applicable)
- xxvii. Bow Thruster System
- xxviii. Trailering Plan (includes Lift Plan when applicable)
- xxix. Hull Markings and Paint Details
- xxx. Insulation Schedule and Details

18. Warranty. The proposer shall warranty the vessel as specified below:

- 1. For a period of one (1) year from the date of acceptance: the covered boat will be free from defects caused by faulty workmanship, installation, or materials;

2. For a period of fifteen (15) years from the date of acceptance: the hull, deck, and consoles of the covered boat will be free from structural defects caused by faulty workmanship or materials. This includes all aluminum fabrication, welding, and fuel tank.
3. OEM provided equipment will be covered by existing manufacturer warranty.

The proposer may exclude the following from their warranty:

- a. Parts and accessories not manufactured by the proposer including, but not limited to, electronics, controls, and instrumentation. However, if included with the original sale, the installation of these parts and accessories is covered for a period of one (1) year.
 - b. Paint damage of fading as a result of normal use. This is a cosmetic not structural and therefore not considered defective material of workmanship.
 - c. Damage resulting from abuse, misuse, accidents, overloading or powering in excess of the recommended maximum horsepower, use of improper trailer, modification or alteration of hull including penetration of the hull by anyone other than the proposer's authorized personnel.
 - d. Corrosion or electrolysis caused by the owner installation of bronze, brass or steel components to the hull, cabin or other aluminum parts.
19. **Delivery.** The proposer shall arrange for delivery of the vessel by their personnel or by contract through a commercial carrier. The cost for this delivery charge, which includes logistics and unloading the vessel into the water, shall be included in the Cost Proposal.

The vessel shall be delivered to San Diego Harbor (specific address to be determined). If proposer plans to ship it on a container ship, then they can deliver it to San Diego Bay and unload into the water there.

The City may consider an alternate delivery option; however, it must be approved by the Contract Administrator, prior to shipping arrangements being made by the proposer.

Proposer shall notify Contract Administrator once the vessel ships and provide relevant shipping information including arrival date a minimum of three (3) days in advance of vessel arrival.

D. PERFORMANCE BOND

Contractor shall be required to furnish the City of San Diego with a surety bond executed by a surety company authorized to do business in the State of California, and approved by the City of San Diego, in a sum equal to one-hundred percent (100%) of the Contract amount, conditional for the performance of the Contract, as follows:

1. A bond equal to 17.5% of the total Contract Compensation amount shall be submitted prior to the execution of the Contract. The bond amount shall be equal

to the amount of the first payment as shown in the payment schedule.

2. The bond for the remaining Contract amount, or 82.5% of the total Contract Compensation amount, shall be submitted prior to the second payment in the payment schedule for Contractor to commence erection of first hull frame.

The performance bond shall be submitted to Purchasing & Contracting within ten (10) days of each request under items D.1 and D.2 above. Failure to provide the bond within the time frame specified by the City shall be cause for the bid to be rejected as nonresponsive or shall be cause for termination of the Contract.

The bond(s) shall be maintained by the Contractor in full force and effect during the entire period of performance under Contract. Failure to do so shall be cause for termination of the Contract. Refer to Article VIII of the City's Contracting Term's and Provisions for additional information.

E. TECHNICAL REPRESENTATIVE

The Technical Representative for this Contract shall be identified in the notice of award and is responsible for overseeing and monitoring this Contract.

F. COST PROPOSAL

Proposers shall complete the cost proposal in its entirety. Prices quoted shall be FOB Destination to San Diego Harbor (specific address to be determined). Unit prices shall be based on the Unit of Measure (U/M) as specified on the Cost Proposal Page. Any changes to the Unit of Measure made by the Proposer may be cause for the item to be rejected as non-responsive.

Item No.	Quantity	U/M	Description	Unit Price	Total Price
1	1	EA	60' Ocean Sampling Vessel		
Total					\$



THE CITY OF SAN DIEGO
GENERAL CONTRACT TERMS AND PROVISIONS
APPLICABLE TO GOODS, SERVICES, AND CONSULTANT CONTRACTS

ARTICLE I

SCOPE AND TERM OF CONTRACT

1.1 Scope of Contract. The scope of contract between the City and a provider of goods and/or services (Contractor) is described in the Contract Documents. The Contract Documents are comprised of the Request for Proposal, Invitation to Bid, or other solicitation document (Solicitation); the successful bid or proposal; the letter awarding the contract to Contractor; the City's written acceptance of exceptions or clarifications to the Solicitation, if any; and these General Contract Terms and Provisions.

1.2 Effective Date. A contract between the City and Contractor (Contract) is effective on the last date that the contract is signed by the parties and approved by the City Attorney in accordance with Charter section 40. Unless otherwise terminated, this Contract is effective until it is completed or as otherwise agreed upon in writing by the parties, whichever is the earliest. A Contract term cannot exceed five (5) years unless approved by the City Council by ordinance.

1.3 Contract Extension. The City may, in its sole discretion, unilaterally exercise an option to extend the Contract as described in the Contract Documents. In addition, the City may, in its sole discretion, unilaterally extend the Contract on a month-to-month basis following contract expiration if authorized under Charter section 99 and the Contract Documents. Contractor shall not increase its pricing in excess of the percentage increase described in the Contract.

ARTICLE II

CONTRACT ADMINISTRATOR

2.1 Contract Administrator. The Purchasing Agent or designee is the Contract Administrator for purposes of this Contract, and has the responsibilities described in this Contract, in the San Diego Charter, and in Chapter 2, Article 2, Divisions 5, 30, and 32.

2.1.1 Contractor Performance Evaluations. The Contract Administrator will evaluate Contractor's performance as often as the Contract Administrator deems necessary throughout the term of the contract. This evaluation will be based on criteria including the quality of goods or services, the timeliness of performance, and adherence to applicable laws, including prevailing wage and living wage. City will provide Contractors who receive an unsatisfactory rating with a copy of the evaluation and an opportunity to respond. City may consider final evaluations, including Contractor's response, in evaluating future proposals and bids for contract award.

2.2 Notices. Unless otherwise specified, in all cases where written notice is required under this Contract, service shall be deemed sufficient if the notice is personally delivered or deposited in the United States mail, with first class postage paid, attention to the Purchasing Agent. Proper notice is effective on the date of personal delivery or five (5) days after deposit in a United States postal mailbox unless provided otherwise in the Contract. Notices to the City shall be sent to:

Purchasing Agent
City of San Diego, Purchasing and Contracting Division
1200 3rd Avenue, Suite 200
San Diego, CA 92101-4195

ARTICLE III COMPENSATION

3.1 Manner of Payment. Contractor will be paid monthly, in arrears, for goods and/or services provided in accordance with the terms and provisions specified in the Contract.

3.2 Invoices.

3.2.1 Invoice Detail. Contractor's invoice must be on Contractor's stationary with Contractor's name, address, and remittance address if different. Contractor's invoice must have a date, an invoice number, a purchase order number, a description of the goods or services provided, and an amount due.

3.2.2 Service Contracts. Contractor must submit invoices for services to City by the 10th of the month following the month in which Contractor provided services. Invoices must include the address of the location where services were performed and the dates in which services were provided.

3.2.3 Goods Contracts. Contractor must submit invoices for goods to City within seven days of the shipment. Invoices must describe the goods provided.

3.2.4 Parts Contracts. Contractor must submit invoices for parts to City within seven calendar (7) days of the date the parts are shipped. Invoices must include the manufacturer of the part, manufacturer's published list price, percentage discount applied in accordance with Pricing Page(s), the net price to City, and an item description, quantity, and extension.

3.2.5 Extraordinary Work. City will not pay Contractor for extraordinary work unless Contractor receives prior written authorization from the Contract Administrator. Failure to do so will result in payment being withheld for services. If approved, Contractor will include an invoice that describes the work performed and the location where the work was performed, and a copy of the Contract Administrator's written authorization.

3.2.6 Reporting Requirements. Contractor must submit the following reports using the City's web-based contract compliance portal. Incomplete and/or delinquent reports may cause payment delays, non-payment of invoice, or both. For questions, please view the City's online tutorials on how to utilize the City's web-based contract compliance portal.

3.2.6.1 Reserved.

3.2.6.2 Reserved.

3.3 Annual Appropriation of Funds. Contractor acknowledges that the Contract term may extend over multiple City fiscal years, and that work and compensation under this Contract is contingent on the City Council appropriating funding for and authorizing such work and compensation for those fiscal years. This Contract may be terminated at the end of the fiscal year for which sufficient funding is not appropriated and authorized. City is not obligated to pay Contractor for any amounts not duly appropriated and authorized by City Council.

3.4 Price Adjustments. Based on Contractor's written request and justification, the City may approve an increase in unit prices on Contractor's pricing pages consistent with the amount requested in the justification in an amount not to exceed the increase in the Consumer Price Index, San Diego Area, for All Urban Customers (CPI-U) as published by the Bureau of Labor Statistics, or 5.0%, whichever is less, during the preceding one year term. If the CPI-U is a negative number, then the unit prices shall not be adjusted for that option year (the unit prices will not be decreased). A negative CPI-U shall be counted against any subsequent increases in the CPI-U when calculating the unit prices for later option years. Contractor must provide such written request and justification no less than sixty days before the date in which City may exercise the option to renew the contract, or sixty days before the anniversary date of the Contract. Justification in support of the written request must include a description of the basis for the adjustment, the proposed effective date and reasons for said date, and the amount of the adjustment requested with documentation to support the requested change (e.g. CPI-U or 5.0%, whichever is less). City's approval of this request must be in writing.

ARTICLE IV SUSPENSION AND TERMINATION

4.1 Reserved.

4.2 City's Right to Terminate for Convenience. City may, at its sole option and for its convenience, terminate all or any portion of this Contract by giving thirty (30) days' written notice of such termination to Contractor. The termination of the Contract shall be effective upon receipt of the notice by Contractor. After termination of all or any portion of the Contract, Contractor shall: (1) immediately discontinue all affected performance (unless the notice directs otherwise); and (2) complete any and all additional work necessary for the orderly filing of documents and closing of Contractor's affected performance under the Contract. After filing of documents and completion of performance, Contractor shall deliver to City all data, drawings, specifications, reports, estimates, summaries, and such other information and materials created or received by Contractor in performing this Contract, whether completed or in process. By accepting payment for completion, filing, and delivering documents as called for in this section, Contractor discharges City of all of City's payment obligations and liabilities under this Contract with regard to the affected performance.

4.3 City's Right to Terminate for Default. Contractor's failure to satisfactorily perform any obligation required by this Contract constitutes a default. Examples of default include a determination by City that Contractor has: (1) failed to deliver goods and/or perform the services

of the required quality or within the time specified; (2) failed to perform any of the obligations of this Contract; and (3) failed to make sufficient progress in performance which may jeopardize full performance.

4.3.1 If Contractor fails to satisfactorily cure a default within ten (10) calendar days of receiving written notice from City specifying the nature of the default, City may immediately cancel and/or terminate this Contract, and terminate each and every right of Contractor, and any person claiming any rights by or through Contractor under this Contract.

4.3.2 If City terminates this Contract, in whole or in part, City may procure, upon such terms and in such manner as the Purchasing Agent may deem appropriate, equivalent goods or services and Contractor shall be liable to City for any excess costs. Contractor shall also continue performance to the extent not terminated.

4.4 Termination for Bankruptcy or Assignment for the Benefit of Creditors. If Contractor files a voluntary petition in bankruptcy, is adjudicated bankrupt, or makes a general assignment for the benefit of creditors, the City may at its option and without further notice to, or demand upon Contractor, terminate this Contract, and terminate each and every right of Contractor, and any person claiming rights by and through Contractor under this Contract.

4.5 Contractor's Right to Payment Following Contract Termination.

4.5.1 Termination for Convenience. If the termination is for the convenience of City an equitable adjustment in the Contract price shall be made. No amount shall be allowed for anticipated profit on unperformed services, and no amount shall be paid for an as needed contract beyond the Contract termination date.

4.5.2 Termination for Default. If, after City gives notice of termination for failure to fulfill Contract obligations to Contractor, it is determined that Contractor had not so failed, the termination shall be deemed to have been effected for the convenience of City. In such event, adjustment in the Contract price shall be made as provided in Section 4.3.2. City's rights and remedies are in addition to any other rights and remedies provided by law or under this Contract.

4.6 Remedies Cumulative. City's remedies are cumulative and are not intended to be exclusive of any other remedies or means of redress to which City may be lawfully entitled in case of any breach or threatened breach of any provision of this Contract.

ARTICLE V ADDITIONAL CONTRACTOR OBLIGATIONS

5.1 Inspection and Acceptance. The City will inspect and accept goods provided under this Contract at the shipment destination unless specified otherwise. Inspection will be made and acceptance will be determined by the City department shown in the shipping address of the Purchase Order or other duly authorized representative of City.

5.2 Responsibility for Lost or Damaged Shipments. Contractor bears the risk of loss or damage to goods prior to the time of their receipt and acceptance by City. City has no obligation to accept damaged shipments and reserves the right to return damaged goods, at Contractor's

sole expense, even if the damage was not apparent or discovered until after receipt.

5.3 Responsibility for Damages. Contractor is responsible for all damage that occurs as a result of Contractor's fault or negligence or that of its' employees, agents, or representatives in connection with the performance of this Contract. Contractor shall immediately report any such damage to people and/or property to the Contract Administrator.

5.4 Delivery. Delivery shall be made on the delivery day specified in the Contract Documents. The City, in its sole discretion, may extend the time for delivery. The City may order, in writing, the suspension, delay or interruption of delivery of goods and/or services.

5.5 Delay. Unless otherwise specified herein, time is of the essence for each and every provision of the Contract. Contractor must immediately notify City in writing if there is, or it is anticipated that there will be, a delay in performance. The written notice must explain the cause for the delay and provide a reasonable estimate of the length of the delay. City may terminate this Contract as provided herein if City, in its sole discretion, determines the delay is material.

5.5.1 If a delay in performance is caused by any unforeseen event(s) beyond the control of the parties, City may allow Contractor to a reasonable extension of time to complete performance, but Contractor will not be entitled to damages or additional compensation. Any such extension of time must be approved in writing by City. The following conditions may constitute such a delay: war; changes in law or government regulation; labor disputes; strikes; fires, floods, adverse weather or other similar condition of the elements necessitating cessation of the performance; inability to obtain materials, equipment or labor; or other specific reasons agreed to between City and Contractor. This provision does not apply to a delay caused by Contractor's acts or omissions. Contractor is not entitled to an extension of time to perform if a delay is caused by Contractor's inability to obtain materials, equipment, or labor unless City has received, in a timely manner, documentary proof satisfactory to City of Contractor's inability to obtain materials, equipment, or labor, in which case City's approval must be in writing.

5.6 Restrictions and Regulations Requiring Contract Modification. Contractor shall immediately notify City in writing of any regulations or restrictions that may or will require Contractor to alter the material, quality, workmanship, or performance of the goods and/or services to be provided. City reserves the right to accept any such alteration, including any resulting reasonable price adjustments, or to cancel the Contract at no expense to the City.

5.7 Warranties. All goods and/or services provided under the Contract must be warranted by Contractor or manufacturer for at least twelve (12) months after acceptance by City, except automotive equipment. Automotive equipment must be warranted for a minimum of 12,000 miles or 12 months, whichever occurs first, unless otherwise stated in the Contract. Contractor is responsible to City for all warranty service, parts, and labor. Contractor is required to ensure that warranty work is performed at a facility acceptable to City and that services, parts, and labor are available and provided to meet City's schedules and deadlines. Contractor may establish a warranty service contract with an agency satisfactory to City instead of performing the warranty service itself. If Contractor is not an authorized service center and causes any damage to equipment being serviced, which results in the existing warranty being voided, Contractor will be liable for all costs of repairs to the equipment, or the costs of replacing the equipment with new equipment that meets City's operational needs.

5.8 Industry Standards. Contractor shall provide goods and/or services acceptable to City in strict conformance with the Contract. Contractor shall also provide goods and/or services in accordance with the standards customarily adhered to by an experienced and competent provider of the goods and/or services called for under this Contract using the degree of care and skill ordinarily exercised by reputable providers of such goods and/or services. Where approval by City, the Mayor, or other representative of City is required, it is understood to be general approval only and does not relieve Contractor of responsibility for complying with all applicable laws, codes, policies, regulations, and good business practices.

5.9 Records Retention and Examination. Contractor shall retain, protect, and maintain in an accessible location all records and documents, including paper, electronic, and computer records, relating to this Contract for five (5) years after receipt of final payment by City under this Contract. Contractor shall make all such records and documents available for inspection, copying, or other reproduction, and auditing by authorized representatives of City, including the Purchasing Agent or designee. Contractor shall make available all requested data and records at reasonable locations within City or County of San Diego at any time during normal business hours, and as often as City deems necessary. If records are not made available within the City or County of San Diego, Contractor shall pay City's travel costs to the location where the records are maintained and shall pay for all related travel expenses. Failure to make requested records available for inspection, copying, or other reproduction, or auditing by the date requested may result in termination of the Contract. Contractor must include this provision in all subcontracts made in connection with this Contract.

5.9.1 Contractor shall maintain records of all subcontracts entered into with all firms, all project invoices received from Subcontractors and Suppliers, all purchases of materials and services from Suppliers, and all joint venture participation. Records shall show name, telephone number including area code, and business address of each Subcontractor and Supplier, and joint venture partner, and the total amount actually paid to each firm. Project relevant records, regardless of tier, may be periodically reviewed by the City.

5.10 Quality Assurance Meetings. Upon City's request, Contractor shall schedule one or more quality assurance meetings with City's Contract Administrator to discuss Contractor's performance. If requested, Contractor shall schedule the first quality assurance meeting no later than eight (8) weeks from the date of commencement of work under the Contract. At the quality assurance meeting(s), City's Contract Administrator will provide Contractor with feedback, will note any deficiencies in Contract performance, and provide Contractor with an opportunity to address and correct such deficiencies. The total number of quality assurance meetings that may be required by City will depend upon Contractor's performance.

5.11 Duty to Cooperate with Auditor. The City Auditor may, in his sole discretion, at no cost to the City, and for purposes of performing his responsibilities under Charter section 39.2, review Contractor's records to confirm contract compliance. Contractor shall make reasonable efforts to cooperate with Auditor's requests.

5.12 Safety Data Sheets. If specified by City in the solicitation or otherwise required by this Contract, Contractor must send with each shipment one (1) copy of the Safety Data Sheet (SDS)

for each item shipped. Failure to comply with this procedure will be cause for immediate termination of the Contract for violation of safety procedures.

5.13 Project Personnel. Except as formally approved by the City, the key personnel identified in Contractor's bid or proposal shall be the individuals who will actually complete the work. Changes in staffing must be reported in writing and approved by the City.

5.13.1 Reserved.

5.13.2 Photo Identification Badge. Contractor shall provide a company photo identification badge to any individual assigned by Contractor or subcontractor to perform services or deliver goods on City premises. Such badge must be worn at all times while on City premises. City reserves the right to require Contractor to pay fingerprinting fees for personnel assigned to work in sensitive areas. All employees shall turn in their photo identification badges to Contractor upon completion of services and prior to final payment of invoice.

5.14 Standards of Conduct. Contractor is responsible for maintaining standards of employee competence, conduct, courtesy, appearance, honesty, and integrity satisfactory to the City.

5.14.1 Supervision. Contractor shall provide adequate and competent supervision at all times during the Contract term. Contractor shall be readily available to meet with the City. Contractor shall provide the telephone numbers where its representative(s) can be reached.

5.14.2 City Premises. Contractor's employees and agents shall comply with all City rules and regulations while on City premises.

5.14.3 Removal of Employees. City may request Contractor immediately remove from assignment to the City any employee found unfit to perform duties at the City. Contractor shall comply with all such requests.

5.15 Licenses and Permits. Contractor shall, without additional expense to the City, be responsible for obtaining any necessary licenses, permits, certifications, accreditations, fees and approvals for complying with any federal, state, county, municipal, and other laws, codes, and regulations applicable to Contract performance. This includes, but is not limited to, any laws or regulations requiring the use of licensed contractors to perform parts of the work.

5.16 Contractor and Subcontractor Registration Requirements. Prior to the award of the Contract or Task Order, Contractor and Contractor's subcontractors and suppliers must register with the City's web-based vendor registration and bid management system. The City may not award the Contract until registration of all subcontractors and suppliers is complete. In the event this requirement is not met within the time frame specified by the City, the City reserves the right to rescind the Contract award and to make the award to the next responsive and responsible proposer of bidder.

ARTICLE VI INTELLECTUAL PROPERTY RIGHTS

6.1 Rights in Data. If, in connection with the services performed under this Contract, Contractor or its employees, agents, or subcontractors, create artwork, audio recordings, blueprints, designs, diagrams, documentation, photographs, plans, reports, software, source code, specifications, surveys, system designs, video recordings, or any other original works of authorship, whether written or readable by machine (Deliverable Materials), all rights of Contractor or its subcontractors in the Deliverable Materials, including, but not limited to publication, and registration of copyrights, and trademarks in the Deliverable Materials, are the sole property of City. Contractor, including its employees, agents, and subcontractors, may not use any Deliverable Material for purposes unrelated to Contractor's work on behalf of the City without prior written consent of City. Contractor may not publish or reproduce any Deliverable Materials, for purposes unrelated to Contractor's work on behalf of the City, without the prior written consent of the City.

6.2 Intellectual Property Rights Assignment. City acknowledges that the construction of the Vessel is pursuant to a single vessel license and that the design of the Vessel is the intellectual property of designer. City warrants that all specification, schedules, plans and as built drawings provided pursuant to this Contract shall be used solely for (1) the maintenance and repair of the Vessel; and (2) information purposes with respect to compliance with regulations and requirements of the U.S. Coast Guard and other applicable agencies.

6.3 Contractor Works. Contractor Works means tangible and intangible information and material that: (a) had already been conceived, invented, created, developed or acquired by Contractor prior to the effective date of this Contract; or (b) were conceived, invented, created, or developed by Contractor after the effective date of this Contract, but only to the extent such information and material do not constitute part or all of the Deliverable Materials called for in this Contract. All Contractor Works, and all modifications or derivatives of such Contractor Works, including all intellectual property rights in or pertaining to the same, shall be owned solely and exclusively by Contractor.

6.4 Subcontracting. In the event that Contractor utilizes a subcontractor(s) for any portion of the work that comprises the whole or part of the specified Deliverable Materials to the City, the agreement between Contractor and the subcontractor shall include a statement that identifies the Deliverable Materials as a "works for hire" as described in the United States Copyright Act of 1976, as amended, and that all intellectual property rights in the Deliverable Materials, whether arising in copyright, trademark, service mark or other forms of intellectual property rights, belong to and shall vest solely with the City. Further, the agreement between Contractor and its subcontractor shall require that the subcontractor, if necessary, shall grant, transfer, sell and assign, free of charge, exclusively to City, all titles, rights and interests in and to the Deliverable Materials, including all copyrights, trademarks and other intellectual property rights. City shall have the right to review any such agreement for compliance with this provision.

6.5 Reserved.

6.6 Software Licensing. Contractor represents and warrants that the software, if any, as delivered to City, does not contain any program code, virus, worm, trap door, back door, time or clock that would erase data or programming or otherwise cause the software to become inoperable, inaccessible, or incapable of being used in accordance with its user manuals, either automatically, upon the occurrence of licensor-selected conditions or manually on command. Contractor further represents and warrants that all third party software, delivered to City or used by Contractor in the performance of the Contract, is fully licensed by the appropriate licensor.

6.7 Publication. Contractor may not publish or reproduce any Deliverable Materials, for purposes unrelated to Contractor's work on behalf of the City without prior written consent from the City.

6.8 Royalties, Licenses, and Patents. Unless otherwise specified, Contractor shall pay all royalties, license, and patent fees associated with the goods that are the subject of this solicitation. Contractor warrants that the goods, materials, supplies, and equipment to be supplied do not infringe upon any patent, trademark, or copyright, and further agrees to defend any and all suits, actions and claims for infringement that are brought against the City, and to defend, indemnify and hold harmless the City, its elected officials, officers, and employees from all liability, loss and damages, whether general, exemplary or punitive, suffered as a result of any actual or claimed infringement asserted against the City, Contractor, or those furnishing goods, materials, supplies, or equipment to Contractor under the Contract.

ARTICLE VII INDEMNIFICATION AND INSURANCE

7.1 Indemnification. To the fullest extent permitted by law, Contractor shall defend (with legal counsel reasonably acceptable to City), indemnify, protect, and hold harmless City and its elected officials, officers, employees, agents, and representatives (Indemnified Parties) from and against any and all claims, losses, costs, damages, injuries (including, without limitation, injury to or death of an employee of Contractor or its subcontractors), expense, and liability of every kind, nature and description (including, without limitation, incidental and consequential damages, court costs, and litigation expenses and fees of expert consultants or expert witnesses incurred in connection therewith and costs of investigation) that arise out of, pertain to, or relate to, directly or indirectly, in whole or in part, any goods provided or performance of services under this Contract by Contractor, any subcontractor, anyone directly or indirectly employed by either of them, or anyone that either of them control. Contractor's duty to defend, indemnify, protect and hold harmless shall not include any claims or liabilities arising from the sole negligence or willful misconduct of the Indemnified Parties.

7.2 Insurance. Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or

in connection with the performance of the work hereunder and the results of that work by Contractor, his agents, representatives, employees or subcontractors.

Contractor shall provide, at a minimum, the following:

7.2.1 Commercial General Liability. Insurance Services Office Form CG 00 01 covering CGL on an "occurrence" basis, including products and completed operations, property damage, bodily injury, and personal and advertising injury with limits no less than \$1,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.

7.2.2 Commercial Automobile Liability. Insurance Services Office Form Number CA 0001 covering Code 1 (any auto) or, if Contractor has no owned autos, Code 8 (hired) and 9 (non-owned), with limit no less than \$1,000,000 per accident for bodily injury and property damage.

7.2.3 Workers' Compensation. Insurance as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than \$1,000,000 per accident for bodily injury or disease.

7.2.4 Professional Liability (Errors and Omissions). For consultant contracts, insurance appropriate to Consultant's profession, with limit no less than \$1,000,000 per occurrence or claim, \$2,000,000 aggregate.

If Contractor maintains broader coverage and/or higher limits than the minimums shown above, City requires and shall be entitled to the broader coverage and/or the higher limits maintained by Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to City.

7.2.5 Other Insurance Provisions. The insurance policies are to contain, or be endorsed to contain, the following provisions:

7.2.5.1 Additional Insured Status. The City, its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of Contractor including materials, parts, or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to Contractor's insurance (at least as broad as ISO Form CG 20 10 11 85 or if not available, through the addition of both CG 20 10, CG 20 26, CG 20 33, or CG 20 38; and CG 20 37 if a later edition is used).

7.2.5.2 Primary Coverage. For any claims related to this contract, Contractor's insurance coverage shall be primary coverage at least as broad as ISO CG 20 01 04 13 as respects the City, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by City, its officers, officials, employees, or volunteers shall be excess of Contractor's insurance and shall not contribute with it.

7.2.5.3 Notice of Cancellation. Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to City.

7.2.5.4 Waiver of Subrogation. Contractor hereby grants to City a waiver of any right to subrogation which the Workers' Compensation insurer of said Contractor may acquire against City by virtue of the payment of any loss under such insurance. Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the City has received a waiver of subrogation endorsement from the insurer.

7.2.5.5 Claims Made Policies (applicable only to professional liability). The Retroactive Date must be shown, and must be before the date of the contract or the beginning of contract work. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of the contract of work. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, Contractor must purchase "extended reporting" coverage for a minimum of five (5) years after completion of work.

7.3 Self Insured Retentions. Self-insured retentions must be declared to and approved by City. City may require Contractor to purchase coverage with a lower retention or provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or City.

7.4 Acceptability of Insurers. Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A-VI, unless otherwise acceptable to City.

City will accept insurance provided by non-admitted, "surplus lines" carriers only if the carrier is authorized to do business in the State of California and is included on the List of Approved Surplus Lines Insurers (LASLI list). All policies of insurance carried by non-admitted carriers are subject to all of the requirements for policies of insurance provided by admitted carriers described herein.

7.5 Verification of Coverage. Contractor shall furnish City with original certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by City before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive Contractor's obligation to provide them. City reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.

7.6 Special Risks or Circumstances. City reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

7.7 Additional Insurance. Contractor may obtain additional insurance not required by this Contract.

7.8 Excess Insurance. All policies providing excess coverage to City shall follow the form of the primary policy or policies including but not limited to all endorsements.

7.9 Subcontractors. Contractor shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and Contractor shall ensure that City is an additional insured on insurance required from subcontractors. For CGL coverage, subcontractors shall provide coverage with a format at least as broad as the CG 20 38 04 13 endorsement.

ARTICLE VIII BONDS

8.1 Payment and Performance Bond. Prior to the execution of this Contract, City may require Contractor to post a payment and performance bond (Bond). The Bond shall guarantee Contractor's faithful performance of this Contract and assure payment to contractors, subcontractors, and to persons furnishing goods and/or services under this Contract.

8.1.1 Bond Amount. The Bond shall be in a sum equal to twenty-five percent (25%) of the Contract amount, unless otherwise stated in the Specifications. City may file a claim against the Bond if Contractor fails or refuses to fulfill the terms and provisions of the Contract.

8.1.2 Bond Term. The Bond shall remain in full force and effect at least until complete performance of this Contract and payment of all claims for materials and labor, at which time it will convert to a ten percent (10%) warranty bond, which shall remain in place until the end of the warranty periods set forth in this Contract. The Bond shall be renewed annually, at least sixty (60) days in advance of its expiration, and Contractor shall provide timely proof of annual renewal to City.

8.1.3 Bond Surety. The Bond must be furnished by a company authorized by the State of California Department of Insurance to transact surety business in the State of California and which has a current A.M. Best rating of at least "A-, VIII."

8.1.4 Non-Renewal or Cancellation. The Bond must provide that City and Contractor shall be provided with sixty (60) days' advance written notice in the event of non-renewal, cancellation, or material change to its terms. In the event of non-renewal, cancellation, or material change to the Bond terms, Contractor shall provide City with evidence of the new source of surety within twenty-one (21) calendar days after the date of the notice of non-renewal, cancellation, or material change. Failure to maintain the Bond, as required herein, in full force

and effect as required under this Contract, will be a material breach of the Contract subject to termination of the Contract.

8.2 Alternate Security. City may, at its sole discretion, accept alternate security in the form of an endorsed certificate of deposit, a money order, a certified check drawn on a solvent bank, or other security acceptable to the Purchasing Agent in an amount equal to the required Bond.

ARTICLE IX CITY-MANDATED CLAUSES AND REQUIREMENTS

9.1 Contractor Certification of Compliance. By signing this Contract, Contractor certifies that Contractor is aware of, and will comply with, these City-mandated clauses throughout the duration of the Contract.

9.1.1 Drug-Free Workplace Certification. Contractor shall comply with City's Drug-Free Workplace requirements set forth in Council Policy 100-17, which is incorporated into the Contract by this reference.

9.1.2 Contractor Certification for Americans with Disabilities Act (ADA) and State Access Laws and Regulations: Contractor shall comply with all accessibility requirements under the ADA and under Title 24 of the California Code of Regulations (Title 24), if applicable. Contractor warrants and certifies compliance with all federal and state access laws and regulations and further certifies that any subcontract agreement for this contract contains language which indicates the subcontractor's agreement to abide by the provisions of the City's Council Policy and any applicable access laws and regulations.

9.1.3 Non-Discrimination Requirements.

9.1.3.1 Compliance with City's Equal Opportunity Contracting Program (EOCP). Contractor shall comply with City's EOCP Requirements. Contractor shall not discriminate against any employee or applicant for employment on any basis prohibited by law. Contractor shall provide equal opportunity in all employment practices. Prime Contractors shall ensure that their subcontractors comply with this program. Nothing in this Section shall be interpreted to hold a Prime Contractor liable for any discriminatory practice of its subcontractors.

9.1.3.2 Non-Discrimination Ordinance. Contractor shall not discriminate on the basis of race, gender, gender expression, gender identity, religion, national origin, ethnicity, sexual orientation, age, or disability in the solicitation, selection, hiring or treatment of subcontractors, vendors or suppliers. Contractor shall provide equal opportunity for subcontractors to participate in subcontracting opportunities. Contractor understands and agrees that violation of this clause shall be considered a material breach of the Contract and may result

in Contract termination, debarment, or other sanctions. Contractor shall ensure that this language is included in contracts between Contractor and any subcontractors, vendors and suppliers.

9.1.3.3 Compliance Investigations. Upon City's request, Contractor agrees to provide to City, within sixty calendar days, a truthful and complete list of the names of all subcontractors, vendors, and suppliers that Contractor has used in the past five years on any of its contracts that were undertaken within San Diego County, including the total dollar amount paid by Contractor for each subcontract or supply contract. Contractor further agrees to fully cooperate in any investigation conducted by City pursuant to City's Nondiscrimination in Contracting Ordinance. Contractor understands and agrees that violation of this clause shall be considered a material breach of the Contract and may result in Contract termination, debarment, and other sanctions.

9.1.4 Equal Benefits Ordinance Certification. Unless an exception applies, Contractor shall comply with the Equal Benefits Ordinance (EBO) codified in the San Diego Municipal Code (SDMC). Failure to maintain equal benefits is a material breach of the Contract.

9.1.5 Contractor Standards. Contractor shall comply with Contractor Standards provisions codified in the SDMC. Contractor understands and agrees that violation of Contractor Standards may be considered a material breach of the Contract and may result in Contract termination, debarment, and other sanctions.

9.1.6 Noise Abatement. Contractor shall operate, conduct, or construct without violating the City's Noise Abatement Ordinance codified in the SDMC.

9.1.7 Storm Water Pollution Prevention Program. Contractor shall comply with the City's Storm Water Management and Discharge Control provisions codified in Division 3 of Chapter 4 of the SDMC, as may be amended, and any and all applicable Best Management Practice guidelines and pollution elimination requirements in performing or delivering services at City owned, leased, or managed property, or in performance of services and activities on behalf of City regardless of location.

Contractor shall comply with the City's Jurisdictional Urban Runoff Management Plan encompassing Citywide programs and activities designed to prevent and reduce storm water pollution within City boundaries as adopted by the City Council on January 22, 2008, via Resolution No. 303351, as may be amended.

Contractor shall comply with each City facility or work site's Storm Water Pollution Prevention Plan, as applicable, and institute all controls needed while completing the services to minimize any negative impact to the storm water collection system and environment.

9.1.8 Service Worker Retention Ordinance. If applicable, Contractor shall comply with the Service Worker Retention Ordinance (SWRO) codified in the SDMC.

9.1.9 Product Endorsement. Contractor shall comply with Council Policy 000-41 which requires that other than listing the City as a client and other limited endorsements, any advertisements, social media, promotions or other marketing referring to the City as a user of a product or service will require prior written approval of the Mayor or designee. Use of the City Seal or City logos is prohibited.

9.1.10 Business Tax Certificate. Unless the City Treasurer determines in writing that a contractor is exempt from the payment of business tax, Contractor is required to obtain a Business Tax Certificate (BTC) if Contractor performs more than six (6) days of work in San Diego, and to provide a copy of its BTC to the City.

9.1.11 Equal Pay Ordinance. Unless an exception applies, Contractor shall comply with the Equal Pay Ordinance codified in San Diego Municipal Code sections 22.4801 through 22.4809. Contractor shall certify in writing that it will comply with the requirements of the EPO.

9.1.11.1 Contractor and Subcontract Requirement. The Equal Pay Ordinance applies to any subcontractor who performs work on behalf of a Contractor to the same extent as it would apply to that Contractor. Any Contractor subject to the Equal Pay Ordinance shall require all of its subcontractors to certify compliance with the Equal Pay Ordinance in its written subcontracts.

ARTICLE X CONFLICT OF INTEREST AND VIOLATIONS OF LAW

10.1 Conflict of Interest Laws. Contractor is subject to all federal, state and local conflict of interest laws, regulations, and policies applicable to public contracts and procurement practices including, but not limited to, California Government Code sections 1090, *et. seq.* and 81000, *et. seq.*, and the Ethics Ordinance, codified in the SDMC. City may determine that Contractor must complete one or more statements of economic interest disclosing relevant financial interests. Upon City's request, Contractor shall submit the necessary documents to City.

10.2 Contractor's Responsibility for Employees and Agents. Contractor is required to establish and make known to its employees and agents appropriate safeguards to prohibit employees from using their positions for a purpose that is, or that gives the appearance of being, motivated by the desire for private gain for themselves or others, particularly those with whom they have family, business or other relationships.

10.3 Contractor's Financial or Organizational Interests. In connection with any task, Contractor shall not recommend or specify any product, supplier, or contractor with whom Contractor has a direct or indirect financial or organizational interest or relationship that would violate conflict of interest laws, regulations, or policies.

10.4 Certification of Non-Collusion. Contractor certifies that: (1) Contractor's bid or proposal was not made in the interest of or on behalf of any person, firm, or corporation not identified; (2) Contractor did not directly or indirectly induce or solicit any other bidder or proposer to put in a sham bid or proposal; (3) Contractor did not directly or indirectly induce or

solicit any other person, firm or corporation to refrain from bidding; and (4) Contractor did not seek by collusion to secure any advantage over the other bidders or proposers.

10.5 Hiring City Employees. This Contract shall be unilaterally and immediately terminated by City if Contractor employs an individual who within the twelve (12) months immediately preceding such employment did in his/her capacity as a City officer or employee participate in negotiations with or otherwise have an influence on the selection of Contractor.

ARTICLE XI DISPUTE RESOLUTION

11.1 Mediation. If a dispute arises out of or relates to this Contract and cannot be settled through normal contract negotiations, Contractor and City shall use mandatory non-binding mediation before having recourse in a court of law.

11.2 Selection of Mediator. A single mediator that is acceptable to both parties shall be used to mediate the dispute. The mediator will be knowledgeable in the subject matter of this Contract, if possible.

11.3 Expenses. The expenses of witnesses for either side shall be paid by the party producing such witnesses. All other expenses of the mediation, including required traveling and other expenses of the mediator, and the cost of any proofs or expert advice produced at the direct request of the mediator, shall be borne equally by the parties, unless they agree otherwise.

11.4 Conduct of Mediation Sessions. Mediation hearings will be conducted in an informal manner and discovery will not be allowed. The discussions, statements, writings and admissions will be confidential to the proceedings (pursuant to California Evidence Code sections 1115 through 1128) and will not be used for any other purpose unless otherwise agreed by the parties in writing. The parties may agree to exchange any information they deem necessary. Both parties shall have a representative attend the mediation who is authorized to settle the dispute, though City's recommendation of settlement may be subject to the approval of the Mayor and City Council. Either party may have attorneys, witnesses or experts present.

11.5 Mediation Results. Any agreements resulting from mediation shall be memorialized in writing. The results of the mediation shall not be final or binding unless otherwise agreed to in writing by the parties. Mediators shall not be subject to any subpoena or liability, and their actions shall not be subject to discovery.

ARTICLE XII MANDATORY ASSISTANCE

12.1 Mandatory Assistance. If a third party dispute or litigation, or both, arises out of, or relates in any way to the services provided to the City under a Contract, Contractor, its agents, officers, and employees agree to assist in resolving the dispute or litigation upon City's request. Contractor's assistance includes, but is not limited to, providing professional consultations,

attending mediations, arbitrations, depositions, trials or any event related to the dispute resolution and/or litigation.

12.2 Compensation for Mandatory Assistance. City will compensate Contractor for fees incurred for providing Mandatory Assistance. If, however, the fees incurred for the Mandatory Assistance are determined, through resolution of the third party dispute or litigation, or both, to be attributable in whole, or in part, to the acts or omissions of Contractor, its agents, officers, and employees, Contractor shall reimburse City for all fees paid to Contractor, its agents, officers, and employees for Mandatory Assistance.

12.3 Attorneys' Fees Related to Mandatory Assistance. In providing City with dispute or litigation assistance, Contractor or its agents, officers, and employees may incur expenses and/or costs. Contractor agrees that any attorney fees it may incur as a result of assistance provided under Section 12.2 are not reimbursable.

ARTICLE XIII MISCELLANEOUS

13.1 Headings. All headings are for convenience only and shall not affect the interpretation of this Contract.

13.2 Non-Assignment. Contractor may not assign the obligations under this Contract, whether by express assignment or by sale of the company, nor any monies due or to become due under this Contract, without City's prior written approval. Any assignment in violation of this paragraph shall constitute a default and is grounds for termination of this Contract at the City's sole discretion. In no event shall any putative assignment create a contractual relationship between City and any putative assignee.

13.3 Independent Contractors. Contractor and any subcontractors employed by Contractor are independent contractors and not agents of City. Any provisions of this Contract that may appear to give City any right to direct Contractor concerning the details of performing or providing the goods and/or services, or to exercise any control over performance of the Contract, shall mean only that Contractor shall follow the direction of City concerning the end results of the performance.

13.4 Subcontractors. All persons assigned to perform any work related to this Contract, including any subcontractors, are deemed to be employees of Contractor, and Contractor shall be directly responsible for their work.

13.5 Covenants and Conditions. All provisions of this Contract expressed as either covenants or conditions on the part of City or Contractor shall be deemed to be both covenants and conditions.

13.6 Compliance with Controlling Law. Contractor shall comply with all applicable local, state, and federal laws, regulations, and policies. Contractor's act or omission in violation of applicable local, state, and federal laws, regulations, and policies is grounds for contract

termination. In addition to all other remedies or damages allowed by law, Contractor is liable to City for all damages, including costs for substitute performance, sustained as a result of the violation. In addition, Contractor may be subject to suspension, debarment, or both.

13.7 Governing Law. The Contract shall be deemed to be made under, construed in accordance with, and governed by the laws of the State of California without regard to the conflicts or choice of law provisions thereof.

13.8 Venue. The venue for any suit concerning solicitations or the Contract, the interpretation of application of any of its terms and conditions, or any related disputes shall be in the County of San Diego, State of California.

13.9 Successors in Interest. This Contract and all rights and obligations created by this Contract shall be in force and effect whether or not any parties to the Contract have been succeeded by another entity, and all rights and obligations created by this Contract shall be vested and binding on any party's successor in interest.

13.10 No Waiver. No failure of either City or Contractor to insist upon the strict performance by the other of any covenant, term or condition of this Contract, nor any failure to exercise any right or remedy consequent upon a breach of any covenant, term, or condition of this Contract, shall constitute a waiver of any such breach of such covenant, term or condition. No waiver of any breach shall affect or alter this Contract, and each and every covenant, condition, and term hereof shall continue in full force and effect without respect to any existing or subsequent breach.

13.11 Severability. The unenforceability, invalidity, or illegality of any provision of this Contract shall not render any other provision of this Contract unenforceable, invalid, or illegal.

13.12 Drafting Ambiguities. The parties acknowledge that they have the right to be advised by legal counsel with respect to the negotiations, terms and conditions of this Contract, and the decision of whether to seek advice of legal counsel with respect to this Contract is the sole responsibility of each party. This Contract shall not be construed in favor of or against either party by reason of the extent to which each party participated in the drafting of the Contract.

13.13 Amendments. Neither this Contract nor any provision hereof may be changed, modified, amended or waived except by a written agreement executed by duly authorized representatives of City and Contractor. Any alleged oral amendments have no force or effect. The Purchasing Agent must sign all Contract amendments.

13.14 Conflicts Between Terms. If this Contract conflicts with an applicable local, state, or federal law, regulation, or court order, applicable local, state, or federal law, regulation, or court order shall control. Varying degrees of stringency among the main body of this Contract, the exhibits or attachments, and laws, regulations, or orders are not deemed conflicts, and the most stringent requirement shall control. Each party shall notify the other immediately upon the identification of any apparent conflict or inconsistency concerning this Contract.

13.15 Survival of Obligations. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with this Contract, as well as all continuing obligations indicated in this Contract, shall survive, completion and acceptance of performance and termination, expiration or completion of the Contract.

13.16 Confidentiality of Services. All services performed by Contractor, and any sub-contractor(s) if applicable, including but not limited to all drafts, data, information, correspondence, proposals, reports of any nature, estimates compiled or composed by Contractor, are for the sole use of City, its agents, and employees. Neither the documents nor their contents shall be released by Contractor or any subcontractor to any third party without the prior written consent of City. This provision does not apply to information that: (1) was publicly known, or otherwise known to Contractor, at the time it was disclosed to Contractor by City; (2) subsequently becomes publicly known through no act or omission of Contractor; or (3) otherwise becomes known to Contractor other than through disclosure by City.

13.17 Insolvency. If Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, Contractor agrees to furnish, by certified mail or electronic commerce method authorized by the Contract, written notification of the bankruptcy to the Purchasing Agent and the Contract Administrator responsible for administering the Contract. This notification shall be furnished within five (5) days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of City contract numbers and contracting offices for all City contracts against which final payment has not been made. This obligation remains in effect until final payment is made under this Contract.

13.18 No Third Party Beneficiaries. Except as may be specifically set forth in this Contract, none of the provisions of this Contract are intended to benefit any third party not specifically referenced herein. No party other than City and Contractor shall have the right to enforce any of the provisions of this Contract.

13.19 Actions of City in its Governmental Capacity. Nothing in this Contract shall be interpreted as limiting the rights and obligations of City in its governmental or regulatory capacity.

EXHIBIT D

Bond No. K40441724

PERFORMANCE BOND, LABOR AND MATERIALMEN'S BOND

FAITHFUL PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND:

All American Marine Inc., a corporation, as principal, and
Westchester Fire Insurance Company, a corporation authorized to do
business in the State of California, as Surety, hereby obligate themselves, their successors and assigns,
jointly and severally, to The City of San Diego a municipal corporation in the sum of
\$1,579,755.00 for the faithful performance of the
annexed contract, and in the sum of \$1,579,755.00 for the benefit
of laborers and materialmen designated below.

Conditions:

If the Principal shall faithfully perform the annexed contract with the City of San Diego, California, then the obligation herein with respect to a faithful performance shall be void; otherwise it shall remain in full force.

If the Principal shall promptly pay all persons, firms and corporations furnishing materials for or performing labor in the execution of this contract, and shall pay all amounts due under the California Unemployment Insurance Act then the obligation herein with respect to laborers and materialmen shall be void; otherwise it shall remain in full force.

The obligation herein with respect to laborers and materialmen shall inure to the benefit of all persons, firms and corporations entitled to file claims under the provisions of Article 2. Claimants, (iii) public works of improvement commencing with Civil Code Section 9100 of the Civil Code of the State of California.

Changes in the terms of the annexed contract or specifications accompanying same or referred to therein shall not affect the Surety's obligation on this bond, and the Surety hereby waives notice of same.

The Surety expressly agrees that the City of San Diego may reject any contractor or subcontractor which may be proposed by Surety in fulfillment of its obligations in the event of default by the Principal.

The Surety shall not utilize the Principal in completing the improvements and work specified in the Agreement in the event the City terminates the Principal for default.

EXHIBIT D

PERFORMANCE BOND, LABOR AND MATERIALMEN'S BOND (continued)

Dated November 21, 2024

Approved as to Form

All American Marine Inc.

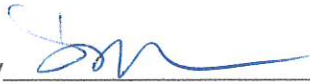
Principal

By 

Ronald W. Wilke, President & COO

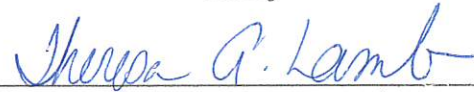
Printed Name of Person Signing for Principal

Mara W. Elliott, City Attorney

By 
Deputy City Attorney

Westchester Fire Insurance Company

Surety

By 
Attorney-in-fact Theresa A. Lamb

Approved:

One Port Street, 35th Floor

Local Address of Surety

By  11/20/2024
Mayor or Designee
Claudia C. Abaca
Director, Purchasing & Contracting

San Francisco, CA 94104

Local Address (City, State) of Surety

Local Telephone No. of Surety

Premium \$ \$30,805.00

Bond No. K40441724

ATTORNEY-IN-FACT ACKNOWLEDGEMENT

STATE OF WASHINGTON)
) ss:
COUNTY OF KING)

On this 21st day of November, 2024, before me, the undersigned,

a Notary Public in and for the said State, personally appeared Theresa A. Lamb,

known to me to be the Attorney-in-fact for Westchester Fire Insurance Company,
whose name is subscribed to the within instrument and acknowledged to me that he/she
executed the same.



Jim S. Kuich

Jim S. Kuich NOTARY PUBLIC

My commission expires: 10-26-2028

Power of Attorney

Federal Insurance Company | Vigilant Insurance Company | Pacific Indemnity Company
Westchester Fire Insurance Company | ACE American Insurance Company

Know All by These Presents, that **FEDERAL INSURANCE COMPANY**, an Indiana corporation, **VIGILANT INSURANCE COMPANY**, a New York corporation, **PACIFIC INDEMNITY COMPANY**, a Wisconsin corporation, **WESTCHESTER FIRE INSURANCE COMPANY** and **ACE AMERICAN INSURANCE COMPANY** corporations of the Commonwealth of Pennsylvania, do each hereby constitute and appoint Heather L. Allen, Natalie C. Chau, Emma C. Doleshel, Jim S. Kuich, Theresa A. Lamb, Michael A. Murphy, Steve Wagner and Ben Wells of Bothell, Washington; Ted Baran, Dana Brown and Carol Lowell of Anchorage, Alaska -----

each as their true and lawful Attorney-in-Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said **FEDERAL INSURANCE COMPANY**, **VIGILANT INSURANCE COMPANY**, **PACIFIC INDEMNITY COMPANY**, **WESTCHESTER FIRE INSURANCE COMPANY** and **ACE AMERICAN INSURANCE COMPANY** have each executed and attested these presents and affixed their corporate seals on this 9th day of February, 2024.

Dawn M. Chloros

Dawn M. Chloros, Assistant Secretary

Stephen M. Haney

Stephen M. Haney, Vice President



STATE OF NEW JERSEY
County of Hunterdon

SS.

On this 9th day of February, 2024 before me, a Notary Public of New Jersey, personally came Dawn M. Chloros and Stephen M. Haney, to me known to be Assistant Secretary and Vice President, respectively, of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, PACIFIC INDEMNITY COMPANY, WESTCHESTER FIRE INSURANCE COMPANY and ACE AMERICAN INSURANCE COMPANY, the companies which executed the foregoing Power of Attorney, and the said Dawn M. Chloros and Stephen M. Haney, being by me duly sworn, severally and each for herself and himself did depose and say that they are Assistant Secretary and Vice President, respectively, of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, PACIFIC INDEMNITY COMPANY, WESTCHESTER FIRE INSURANCE COMPANY and ACE AMERICAN INSURANCE COMPANY and know the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of said Companies; and that their signatures as such officers were duly affixed and subscribed by like authority.

Notarial Seal



Albert Contursi
NOTARY PUBLIC OF NEW JERSEY
No 50202369
Commission Expires August 22, 2027

Albert Contursi
Notary Public

CERTIFICATION

Resolutions adopted by the Boards of Directors of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY on August 30, 2016; WESTCHESTER FIRE INSURANCE COMPANY on December 11, 2006; and ACE AMERICAN INSURANCE COMPANY on March 20, 2009:

"RESOLVED, that the following authorizations relate to the execution, for and on behalf of the Company, of bonds, undertakings, recognizances, contracts and other written commitments of the Company entered into in the ordinary course of business (each a "Written Commitment"):

- (1) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise.
- (2) Each duly appointed attorney-in-fact of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise, to the extent that such action is authorized by the grant of powers provided for in such person's written appointment as such attorney-in-fact.
- (3) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to appoint in writing any person the attorney-in-fact of the Company with full power and authority to execute, for and on behalf of the Company, under the seal of the Company or otherwise, such Written Commitments of the Company as may be specified in such written appointment, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
- (4) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to delegate in writing to any other officer of the Company the authority to execute, for and on behalf of the Company, under the Company's seal or otherwise, such Written Commitments of the Company as are specified in such written delegation, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
- (5) The signature of any officer or other person executing any Written Commitment or appointment or delegation pursuant to this Resolution, and the seal of the Company, may be affixed by facsimile on such Written Commitment or written appointment or delegation.

FURTHER RESOLVED, that the foregoing Resolution shall not be deemed to be an exclusive statement of the powers and authority of officers, employees and other persons to act for and on behalf of the Company, and such Resolution shall not limit or otherwise affect the exercise of any such power or authority otherwise validly granted or vested."

I, Dawn M. Chloros, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, PACIFIC INDEMNITY COMPANY, WESTCHESTER FIRE INSURANCE COMPANY and ACE AMERICAN INSURANCE COMPANY (the "Companies") do hereby certify that

- (i) the foregoing Resolutions adopted by the Board of Directors of the Companies are true, correct and in full force and effect,
- (ii) the foregoing Power of Attorney is true, correct and in full force and effect.

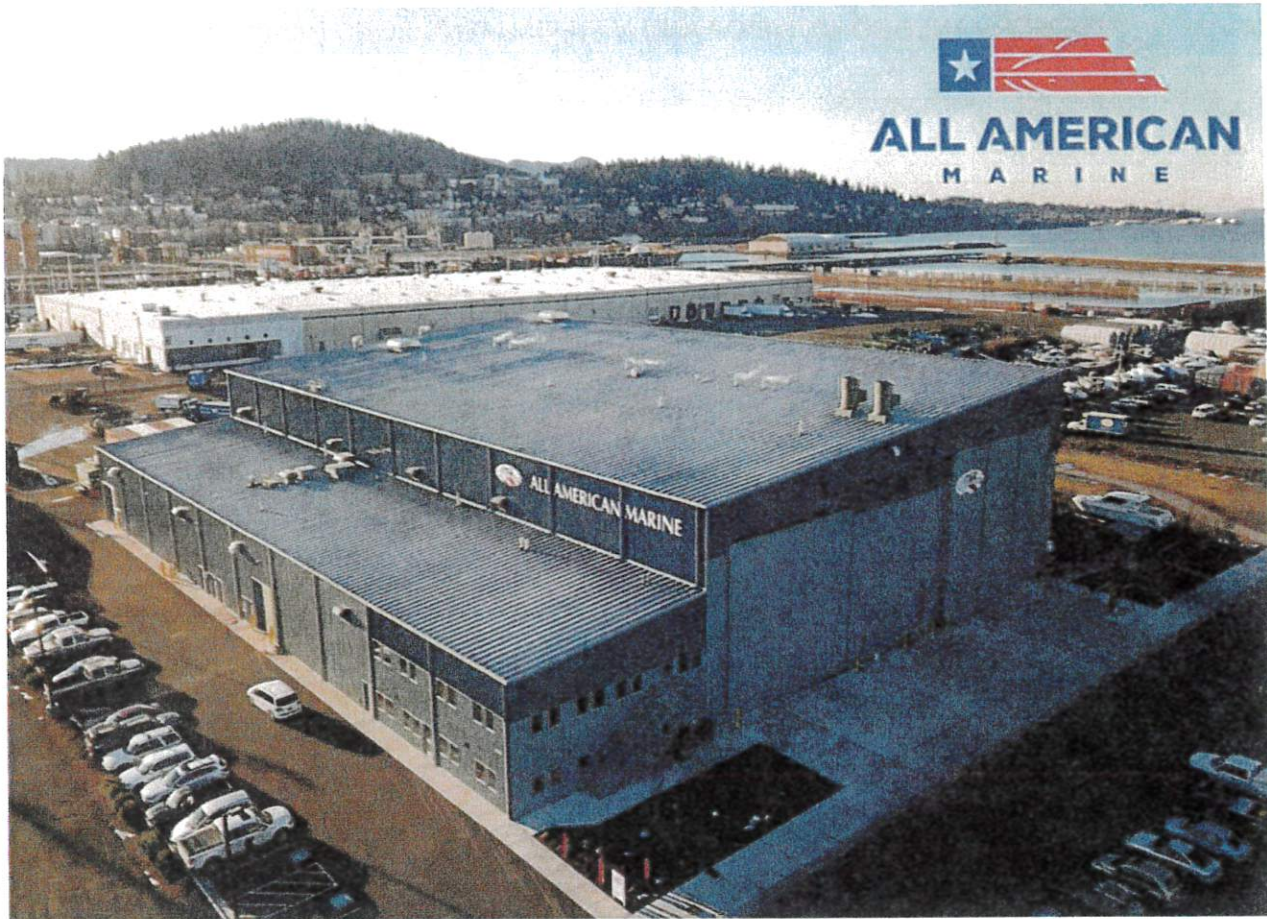
Given under my hand and seals of said Companies at Whitehouse Station, NJ, this November 21, 2024



Dawn M. Chloros

Dawn M. Chloros, Assistant Secretary

IN THE EVENT YOU WISH TO VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT:
Telephone (908) 903-3493 Fax (908) 903-3656 e-mail: surety@chubb.com



ALL AMERICAN MARINE

Response to:

**The City of San Diego's RFP# 10090032-24-M Ocean
Sampling Vessel**

November 5, 2023

All American Marine Inc.

1010 Hilton Ave

Bellingham WA 98225

www.allamericanmarine.com

[\(360\) 647-7602](tel:(360)647-7602)

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November 5, 2023



Attn: Marc Holt
1200 Third Avenue, Suite 200
San Diego, CA 92101-4195
mholt@sandiego.gov

Dear Marc Holt,

All American Marine Inc. (AAM) is grateful for the opportunity to respond to the City of San Diego's Request for Proposal (RFP) for a new Ocean Sampling Vessel. AAM acknowledges the receipt of a complete set of RFP documents and all other associated attachments and addenda.

All American Marine is a well-known and respected builder of aluminum catamaran passenger vessels. It has become one of the nation's largest builders of aluminum catamarans 55 ft and larger. All American Marine's core competency is aluminum catamarans, and our sales history of repeat business from many of our customers is a strong testament. AAM has constructed several USCG approved research vessels using the systems and methods proposed in this document. These vessels are proven designs operating reliably every day. AAM vessels are unique, and the quality and functionality exceed the standard offerings provided by other aluminum catamaran builders. AAM not only builds world-class vessels for our clients, but we also build long-lasting, mutually beneficial relationships. We have a long track record of delivering on our promises.

Our reputation for repeat business from many customers is a solid testament to our commitment to innovation and proven performance. AAM works diligently to provide the best overall value for our customers. We pride ourselves on being honest, forthright, and well-informed about our projects. We work hard to avoid change orders and create a "win-win" relationship with the customers who entrust us to build their new vessels. AAM-built vessels are familiar sights along waterfronts across the US, with dozens of vessels designed by Teknicraft Design and built by AAM from Alaska to New England and Hawaii to Puerto Rico. The vessel presented in this document shall best fulfill the mission as presented in the City of San Diego's Scope of Work and General Description located in Exhibit B within the RFP.

All American Marine, Inc. ("AAM") is a Washington State, C-Corporation organized on April 19, 1993. AAM is a wholly owned subsidiary of RMG Holdings Co. Byron Bolton is the Chief Executive Officer for the company.

All American Marine Inc.'s sole location and headquarters is:

1010 Hilton Avenue, Bellingham, WA 98225

POINT OF CONTACT:

Daniel Zech, Business Development Manager
All American Marine, Inc.
1010 Hilton Ave.
Bellingham, WA 98225
(360) 647-7602 (Direct)

(443) 775-1065 (Cell)
dzech@allamericanmarine.com

I would be happy to answer any questions or provide you with any further information you may require. Thank you for your time in reviewing our proposal and for considering All American Marine for this project.

Best Regards,

A handwritten signature in black ink, appearing to read 'D. Zech', is positioned below the 'Best Regards,' text.

Daniel Zech, Business Development Manager
All American Marine, Inc.

Executive Summary

All American Marine, Inc., (AAM) is an internationally recognized and award-winning boat builder with over 30 years of experience in the design and construction of aluminum monohull and multihull boats. AAM specializes in 60' to 135' catamaran hulled vessels, including state-of-the-art hydrofoil-assisted catamarans, high speed and ultra-low wake non-foil-assisted catamarans, hybrid electric propulsion systems, and traditional monohulls for the passenger, patrol boats, workboat, and research and survey industries. AAM's success during the past quarter-century clearly demonstrates a corporate culture that pays attention to detail and delivers as promised. AAM's shipyard, based in Northwest Washington State, has built and delivered aluminum catamarans to numerous locations, including the far reaches of Alaska and Hawaii, the shallower waters of the Gulf, and along the Eastern seaboard from New York City to Florida, as well as Puerto Rico.

All American Marine's production facility is located along the Northern shore side of Bellingham Bay in Bellingham, Washington, approximately 85 miles North of Seattle. In early 2017, AAM moved into a new, purpose-built 57,000 square foot boat construction facility located on Squalicum Harbor. AAM's environmentally controlled facility is divided into 4 bays. The main construction facility consists of a 45' x 260' production bay and a 60' x 260' production bay that is divided by a centerline support bay housing all trade crafts and inclusive of an aluminum weld panel line, electrical production shop, plumbing shop, hydraulics shop, mechanics shop, and carpentry loft. The fourth bay houses a secure material inventory control storage warehouse and a CNC cutting room with adjacent aluminum material handling and storage area. Each production bay is large enough to allow as many as two large catamarans to be in various stages of production concurrently – four in total. AAM maintains a long-term lease on this facility from the Port of Bellingham. AAM maintains a fulltime team of highly skilled craftsmen and does not actively engage subcontractors for production work. AAM's team covers fabrication, systems installation, plumbing, electrical, finish carpentry, and paint.

The attributes of Teknicraft's signature hull design have been proven in the construction of over 100 hulls of this design around the world which greatly mitigates design and performance risk, and often exceeds objectives in performance and economy. The unique shape of the Teknicraft catamaran hull lifts and enhances the performance of the vessel while maintaining a smooth ride. The hull form is a semi-planing type catamaran and employs a combination of symmetrical and asymmetrical sponson shapes, thereby combining the attributes of both shapes into one hull. The symmetrical bow-section ensures directional stability in rough conditions, while the asymmetrical midship and aft sections ensure softness of ride and reduce the wetted area, enhancing comfort and fuel economy, as well as decreasing wake energy. The boats feature a high and wide tunnel between the semi-planing demi-hulls. This allows free passage of wind-waves underneath without harsh contact against the underside of the deck above. Additionally, Teknicraft uses proven experience along with advanced 3D modeling and Computational Fluid Dynamics (CFD) analysis testing. Teknicraft has been working with CFD testing for more than a decade to refine and optimize hull shapes for high speed, fuel efficient, and ultra-low wake performance. Teknicraft has the experience and capabilities to perform CFD tests, along with resources to perform any required Finite Element Analysis (FEA) testing associated with specialized structural components. The software has been utilized on dozens of Teknicraft hulls to predict design performance and the actual hulls "as built" with All American Marine have always met the predicted performance or proven better.

Before starting any project, AAM and Teknicraft thoroughly evaluate the specifications to determine all the exact customer requirements. The design is also carefully balanced to maintain performance while incorporating the desires of the customer and suitable amenities for this type of craft. Teknicraft Design will review the propulsion manufacturer's model specific information to perform all the calculations associated with

hull resistance and power requirements. These calculations will be used to perform final engineering and calculations to verify the efficiency and suitability of the complete propulsion system to the point where the application achieves approval by all essential parties.

Current construction projects include a catamaran passenger ferry for Phillip's 26 Glacier Tours in Alaska, a research vessel catamaran for NOAA's Gray's Reef National Marine Sanctuary in Georgia, and a law enforcement catamaran for the State of California. Based upon a contract award in December 2023, the AAM and Teknicraft team will design, construct, and deliver the proposed research vessel within a 12-month time period, with delivery of the vessel occurring in the middle of March 2025. AAM's and Teknicraft Design's ability to begin design work and construction is consistent with the recommended schedule of this RFP. At the time of this RFP submittal, AAM and Teknicraft are available to commence the work following the proposed contract award in accordance with the timeline illustrated in Section 5. The production schedule in Section 5 illustrates the key construction milestones and general flow of a project through our shipyard.

AAM has carefully reviewed the requirements of this RFP, and this project is clearly within AAM's current scope and capacity. Since entering an exclusive partnership with Teknicraft in 1999, AAM has constructed over 70 Teknicraft vessels. More than 40 have been USCG inspected aluminum passenger catamarans, 50' or greater. AAM has worked with public agencies, private individuals, and companies to build custom USCG inspected vessels such as a 77' research vessel for Duke University, a 77' research vessel for Bluetide Puerto Rico, and a 77' survey vessel for Geodynamics/NV5. AAM's most recently completed research vessel was a 68.5' research catamaran for the University of Hawai'i in Manoa. In addition to these research vessels, AAM has built numerous commercial passenger vessels including a 128' 600 passenger electric hybrid tour vessel for San Francisco's Red and White Fleet, a 134' Catamaran for C & C Technologies, twin 104' 328 passenger high speed ferries for King County, WA, and twin 80' ultra-low wake ferries for Kitsap Transit in Washington State. We have expertise in constructing research and survey vessels as well as law enforcement, passenger ferries, and have also built electric hybrid vessels and the world's first (and only) USCG approved hydrogen powered passenger vessel.

The following individuals are authorized to make representations on behalf of All American Marine, and Daniel Zech will be the main Point of Contact during contract negotiations and any final specification revisions.

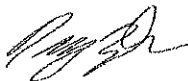
Ron Wille: President and COO: (907) 491-2222 (cell)

Daniel Zech: Business Development Manager: (443) 775-1065 (cell)

Our facility is located at 1010 Hilton Ave, Bellingham WA 98225

We appreciate your consideration and this opportunity to design and build this new research vessel for The City of San Diego.

Sincerely,



Daniel Zech

1.1: Management and Experience

All American Marine has developed and maintains a clear set of roles and responsibilities within the team under the leadership of the President, Ron Wille. Internally, AAM's project manager will be primarily responsible for overseeing the project and managing interactions with the City of San Diego. AAM's production manager will assume responsibility for production and the schedule, together with a team of craft supervisors. AAM's technical manager will be the primary point of contact with Teknicraft Design, the Designated Naval Architect responsible for the design. Each AAM built, Teknicraft designed hull, is specifically designed for that vessel's unique application. Every component of the hull and vessel design is analyzed and tested across all departments to ensure maximum efficiency and to exceed performance objectives. This requires a cohesive team working together across a variety of skills to ensure the best vessel possible.

Teknicraft Design will provide all engineering and design of the powered craft with regards to hull shape, hull construction, superstructure construction, stability, propulsion, aesthetical design and both interior and exterior arrangements. Teknicraft Design also engineers and designs structural components as well as assisting with technical specifications. Teknicraft and All American Marine have a 20+ year relationship, and AAM maintains an exclusive design agreement to license and build Teknicraft Design catamarans in North America. To date, AAM has constructed more than 70 Teknicraft vessels. Teknicraft specializes in the design of medium and high-speed catamarans, with designs that range from offshore work boats to high-speed commercial boats and passenger ferries as well as highly specialized research platforms and para-military boats. Nic de Waal, managing director, has been designing catamarans for over 30 years and his hull designs have a proven track record in providing an excellent balance between stability, low resistance, and ride comfort, especially in heavy seas.

AAM's Technical Manager and Designated Naval Architect evaluate all technical requirements and formulate the appropriate vessel design and detailed construction specifications as well as assist with comprehensive preparation during the design phase, after the contract is awarded. AAM's project manager, production manager and purchasing manager will oversee the actual vessel construction and project management following Contract Award. Craft supervisors, the quality inspector and the safety officer will carry out the production plan under the orchestrated guidance of the Project Manager and Production Manager. AAM's purchasing manager works within his network of vendors to source each required component within the budgeted amount. AAM maintains a resource list of reliable vendors that source quality products and components. AAM repeatedly relies on these vendors and has developed a trusting and dependable relationship.

AAM's Technical Manager is the primary point of contact between AAM and Teknicraft and ensures that Teknicraft has a clear scope of work and a complete understanding of absolutely all contractual and design requirements. Before starting any project, AAM and Teknicraft thoroughly evaluate the specifications to determine the exact customer requirements. The design is also carefully balanced to maintain performance while incorporating the desires of the customer and suitable amenities for this type of vessel. All drawings shall conform to a mutually agreeable Ship Work Breakdown Structure (SWBS) numbering system. All required drawings shall be submitted to the City of San Diego in electronic format as AutoCAD® .dwg and Adobe® Acrobat .pdf version of the AutoCAD files. During the design phases, drawings shall be reviewed on a weekly basis at a web meeting organized by AAM and shall include all personnel deemed necessary for the meeting, and any others requested by the City of San Diego. AAM shall be responsible for taking meeting minutes and emailing a brief synopsis of each meeting to include all decisions made and any action items. Zoom recordings can be used in lieu of written notes.

Teknicraft Design will perform all the calculations associated with hull resistance, power requirements and propulsion that are needed to perform final engineering, thereby verifying the efficiency and suitability of the complete propulsion system to the point where the application achieves approval by all essential parties. Teknicraft has the capability to perform Computational Fluid Dynamics (CFD) analysis for hull optimization and performance prediction, along with Finite Element Analysis (FEA) associated with optimizing structural components. This analysis has been utilized successfully on numerous projects to predict design performance. Our results when using this process has been that the actual hulls, as built by All American Marine have met the predicted performance or proved better.

Staffing:

All American Marine currently has a staff of 60+ spread between all the required trades to design and build a vessel from start to finish without subcontracting any trade. AAM creates a manpower allocation schedule for each vessel to identify the utilization of each worker vs. the required manpower hours needed for each trade (welding/fabrication, systems, interior, electrical, and paint) to complete necessary tasks. AAM strategically increases its labor force and hires additional workers with previous experience when there are sustainable positions available. AAM's production crew will work overtime beyond its normal four 10 hour shifts per week, if necessary, in order to complete a project on schedule.

AAM typically chooses to work overtime rather than quickly hiring additional workers, who may require a learning period and may need to be laid off when the company is building fewer vessels. This management decision allows AAM to retain a trained, skilled, and reliable labor force. The added cost of working overtime is offset by reducing the burden of AAM's allocated fixed overhead costs. AAM's management closely monitors any use of overtime to ensure that quality is not compromised, and crew members are not fatigued.

AAM's workforce has been cross-trained between crafts, allowing certain craft personnel to work in other areas outside of their usual designations due to potential constraints of construction scheduling. As an example, this philosophy or method is used with production workers and Painting. Since the majority of the paint work is preparation, AAM's journeymen painters delegate and oversee the preparation (degreasing and sanding) of the hull, cabin, and decks prior to actual painting using primarily the production worker personnel.

Contrary to many shipyards, AAM's goal is to maintain a steady, permanent workforce instead of going through project-specific hiring and layoff cycles. As a result, AAM retains a higher-skilled, flexible, and motivated employee which results in a consistently high-quality finished product.

AAM has a very strong risk management and safety program. All AAM employees, including management, participate in monthly safety meetings. AAM's safety coordinator makes regular rounds to ensure that all production risks are being mitigated. AAM rewards its employees for being safe and exhibiting safety-minded behavior. During each safety meeting, safety and risk concerns are addressed, reminders are given, and educational information about safety and risk management is imparted.

1.2: Organizational Chart



All American Marine - Organizational Chart Nov. 2023



1.3: Key Personnel: Innovation and Cost-Competitiveness

All American Marine's leadership team consists of professionals that have been in the maritime industry throughout their professional careers. Their lifelong experiences coupled with our thorough design process allows us the foresight to conceptualize all the aspects of a vessel when coordinating with Teknicraft. Our combined team knows what can be efficiently built and leverages the quality and capabilities of our production team. These synergies provide us with a global industry advantage. Nowhere else in the world will you find such a closely linked partnership between naval architect and shipyard.

This partnership has provided both Teknicraft and All American Marine the opportunity to push the boundaries of innovation to create and build effective, cutting edge designs. Due to All American Marine's attention to detail and strict adherence to high-performance catamaran specifications, our reputation for fuel-efficient and high-speed hulls has become widely recognized throughout the maritime industry. This partnership has also led to the innovative industry leadership in dynamic foiling catamarans and electric hybrid vessels. AAM has also constructed the first USCG approved hydrogen fuel cell powered passenger vessel in the world.

That same attention to detail in both design and construction carries over into cost effectiveness. Because All American Marine exclusively builds Teknicraft's Designs, we have a long-standing relationship with the same vendors from project to project. That fidelity to our vendors has gained us significant purchasing power. Our vendors know our style and methods and are constantly sharing innovative products and pricing, which gives us a competitive advantage. These relationships can be attributed to our positive company culture, and goals of making every interaction a win-win scenario.



RON WILLE

President & COO



Qualifications & Experience

Ron has had a ten-year working relationship with All American Marine (AAM), but joined the company in the Fall of 2018 as Business Development Manager. As President & COO, Ron now oversees the entire organization, and is integral to its future success. His roles include daily operations, sales & marketing, contract administration, project technical management oversight, warranty and guarantees, and many more. Prior to coming on board at AAM, Ron worked at Kenai Fjords Tours in Seward, Alaska for fifteen years. Ron has a strong background working as the vessel Operations Manager and from 2012 - 2018 as their General Manager. Over the last decade Kenai Fjords Tours purchased and operated three AAM hydrofoil assisted catamarans. He managed and directed company operations in Southcentral Alaska. Specializing in glacier and wildlife tours in near coastal waters, including Kenai Fjords National Park. Ron provided direct oversight of all Kenai Fjords Tours operations, including but not limited to marketing, sales, budgeting, passenger vessel safety, ground transportation, warehouse, and remote lodge operations. He maintained operational control and supervision of a fleet of up to 14 vessels in Seward and Whittier, Alaska. He was also the primary company liaison with the United States Coast Guard. His maritime career also includes experience on tugboats that specialized in commercial ship assists and commercial towing in Southcentral Alaska. Ron became President and Chief Operating Officer of All American Marine in February 2021.



Education, Training, & Certifications

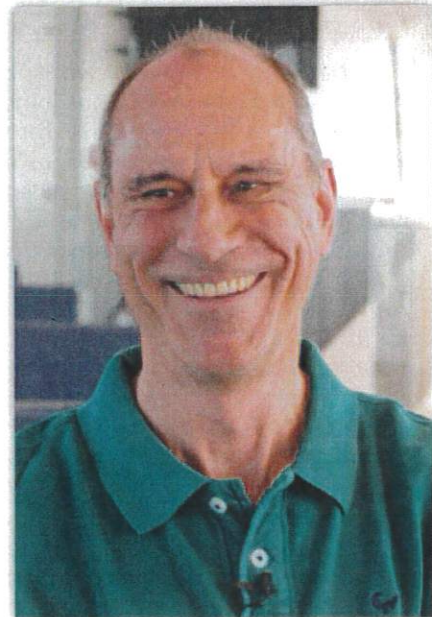
Ron graduated from Oakland University in Rochester, Michigan in December 1993. He has a Bachelor of Science, Business Administration with a major in Finance. Ron also holds a current United States Coast Guard, Merchant Mariner License. 200T Master Near Coastal, 200T Mate, AB Special, Master of Towing. (5th Issue)



Qualifications & Experience

Nic de Waal relocated from South Africa to New Zealand in 1996 to start Teknicraft Design Ltd – during this relocation, he focused on fine tuning his designs for hull shapes and foil systems operating together to optimize performance and sea keeping. With this focus, he has been successful in reducing resistance, thus, increasing fuel economy. Teknicraft has become a well recognized name in the marine industry for quality high and medium speed craft design. With over 160 projects completed to date, Teknicraft is well versed in design and compliance with regulations of Classification Societies and National Authorities. Nic works hand in hand with AAM in the design and construction phases of each vessel, and his attention to detail lasts well into the life of a vessel with its operator. Nic leads in initial vessel design and CFD analysis, as well as project technical management, design and engineering, systems integration, production design support, and any rare warranty issues that may pop up.

Prior to this relocation, Nic de Waal was Managing Director/ Naval Architect at Teknicraft Design CC in Cape Town South Africa from 1991-1996, a freelance Naval Architect/ Design Consulting Engineer from 1987-1990 and a Naval Architect / Design Engineer at Liebenberg & Stander Consulting Engineers from 1981-1986. During this time, Nic worked on designs including structural, propulsion and mechanical systems. Working together, both AAM and Teknicraft have built high quality and efficient vessels.



Education, Training, & Certifications

Before commencing his work experience, Nic received his Bachelor of Science in Engineering from the University of Stellenbosch, South Africa in 1981. Nic de Waal is a Fellow of the Royal Institution of Naval Architects and a Member of the Marine Industries Association.





DANIEL ZECH

Business Development Manager



Qualifications & Experience

Daniel, originally a Bellingham local, sailed on vessels from French Polynesia to the Caribbean for over a decade. His maritime career took him to the Charter House Yacht Club in the US Virgin Islands, where he managed day-to-day operations for a charter fleet of 28 catamarans and monohulls for multiple years. In addition, his experience includes managing and captaining a number of commercial boats on a variety of missions while holding his 500-ton USCG Masters License and endorsements. Daniel's most recent experience had him presiding over a robust sales pipeline which he helped to create, nurture, and grow significantly during his tenure at Electronics Value Recovery Inc., where he was the VP of Business Development.

Daniel's new role as Business Development Manager at AAM will focus on expanding All American Marine's presence in the North American and international maritime markets. He will oversee the sales pipeline of new customers and past operators looking to add to their fleet. Daniel has a history of effective team leadership, a deep understanding of the maritime market, and a successful history in Business Development. We are excited to welcome him back home to Bellingham and aboard the crew at AAM.



Education, Training, & Certifications

Danny graduated on the Dean's List from Loyola University in Baltimore, Maryland with a BA in History. Danny also holds a current United States Coast Guard, Merchant Mariner License. 500T Master Near Coastal with sailing endorsement (3rd issue).



GENE QUANZ

Technical Manager



Qualifications & Experience

Gene Quanz started at AAM in 1997. During this time he has been an asset in the primary design phase of multiple aluminum vessels and working as the AAM - Teknicraft liaison. His years of experience have made him well versed in USCG codes and the Code of Federal Regulations for the maritime industry. Gene has many roles at AAM, including project technical management, production design support, vessel design and engineering, and systems integration to name a few. His experience as a welder has made him a great resource for the AAM team to help manage technical problems. After his education, Gene went on to be a Installer/Mechanic at Fisherman's Cove Marina from 1985-1990, an Installer/Fabricator/Welder at All American Marine, Inc from 1990-1995, and a Mechanic/Fabricator at RPM Services/Pro Fab NW from 1995-1997. Luckily, Gene Quanz came back to AAM to utilize his immense experience in Marine Technology. While playing a key role in many projects at AAM, a few of Gene's that stand out are: Kenai Fjords Tours - Three 150 Passenger 83' Passenger Catamarans, King County Water Taxi - Two 278 passenger 105' Passenger Catamarans, and Harbor Breeze Cruises - One 150 passenger 83' Passenger Catamaran, One 250 passenger 83' catamaran, and the 2018 WorkBoat of the year, the 600 passenger Enhydra.



Education, Training, & Certifications

Gene graduated Mt Baker High School in 1980 and went on to study more technical classes from 1979-1980 at Bellingham Vocational Technical Institute. These classes included Refrigeration and air conditioning, diesel mechanics, welding, and AutoCAD.



KYLE PORTER

Production Manager



Qualifications & Experience

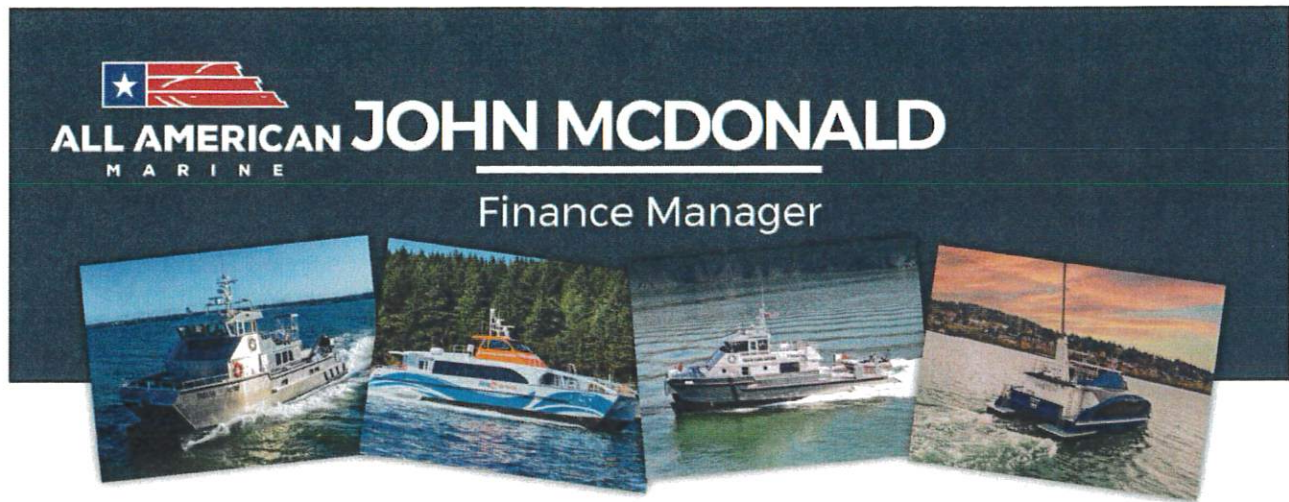
Kyle Porter joined the AAM team in 2017, and has quickly moved up the ranks as a relied-upon Project Manager. Kyle directly communicates with the customer, naval architect, and production team to ensure that the project remains on schedule, on budget and in full accordance with the specifications. Kyle also helps oversee scheduling, manpower and labor hours, project technical management, quality control, production design support, systems installation, and many other duties as Production Manager.

From 2007-2012, Kyle served as a Corporal in the USMC where he managed teams of Marines in various conditions including foreign deployments to combat areas to ensure the readiness and serviceability of government assets. Starting in 2013, after completion of his degree, Kyle took on a role as a welder and quality assurance lead - as well as USCG liaison - for a West Coast shipyard. In 2017, Kyle started at AAM as weld/fab with his CWI obtained in 2015, he quickly rose to his current position as a Production Manager at AAM with his strong leadership skills and knowledge of vessel building. Prior to Production Manager, Kyle was the lead project manager on the Kitsap Hybrid Waterman vessel where his knowledge of a hybrid system working vessel is extensive.



Education, Training, & Certifications

Kyle started in the US Marine Corps and served for 6 years. After serving, Kyle graduated with a degree in Applied Science and Welding from Bellingham Technical College in 2012. Since 2015, Kyle has held a Certified Welding Inspector title.



Qualifications & Experience

John McDonald joined the All American Team as the Finance Manager in 2018 where he oversees the company's daily and long term financial activities and contract management. Serving a number of roles at AAM, John keeps the house in order here at AAM. His duties include (and are not limited to): contract management/negotiations, financial planning and tracking of projects, and warranty and guarantees.

John came to AAM after serving for two years as the VP & Controller for Everson Cordage Works, a manufacturer of rope and twine. Prior to that he worked for the public accounting firm Moss Adams, LLP from 2007 to 2016 as a business assurance manager working on a variety of clients with a focus on the construction and manufacturing industries. John was integral to handling the smooth transition of financial matters and planning at AAM from long-time owner Matt Mullett to the new owner, Bryton Marine Group.



Education, Training, & Certifications

John received his bachelor's in accounting and Master's of Business Administration from Western Washington University in 2006 and 2007, respectively. He has been licensed in the state of Washington as a Certified Public Accountant since 2008.



MIKE ATHEARN

Quality Assurance Inspector



Qualifications & Experience

Mike has worked for All American Marine since 2004, and has been a tremendous value to the growth and culture within our talented workforce. He began as a production worker, and quickly moved into our systems department where he was a systems installer. Not only does he oversee our Quality control processes and systems, including launch and sea trials, he also works hand in hand with foremen and project managers to oversee project technical management, systems integration and installation, and many other roles.

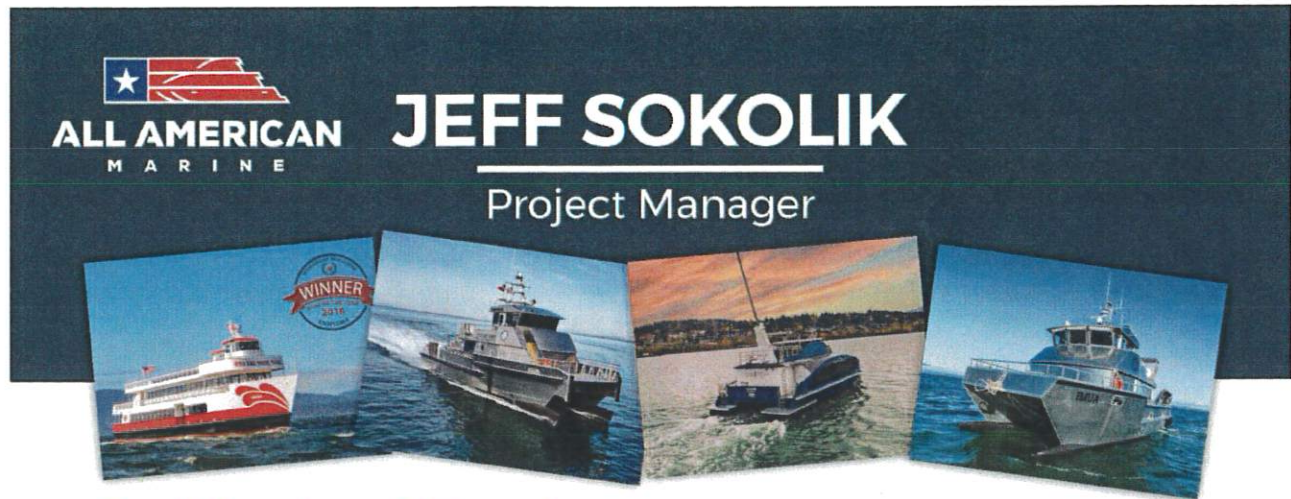
Mike completed our in house weld test, welded and did installations on numerous vessel systems for over 5 years. He then transferred to our electrical department to further his knowledge of the vessel construction process, until he had a chance to move into our Quality Assurance department in 2011. QA quickly became Mike's passion, and is where he leads the program today. Mike also is in charge of the launch, move and haulout of each of our vessels.

Mike works with the technical manager when issues arise and works closely with the weld fab manager, systems lead, project manager and production manager throughout the vessel construction process.



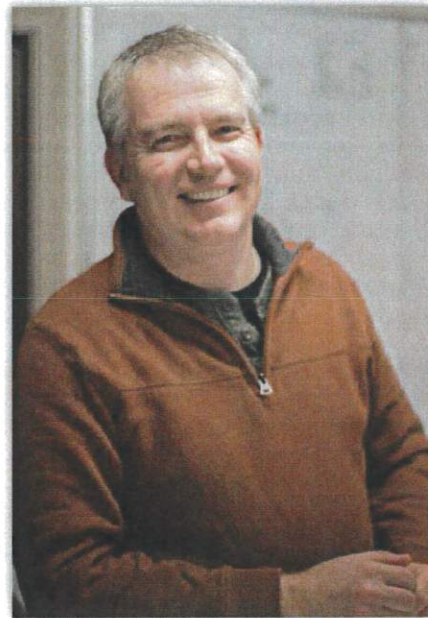
Education, Training, & Certifications

Mike studied diesel engine mechanics at Bellingham Technical College prior to arriving at All American Marine. He also holds an ABYC (American Boat & Yacht Council) certificate for electrical systems.



Qualifications & Experience

Since 2010, Jeff Sokolik has been a Project Manager & Engineer with All American Marine. As Project Manager, Jeff maintains a comprehensive understanding of the project progress, specifications, inspections, deliverables, as well as serving as the point of contact for the customer. He oversees and serves as customer liaison for a number of roles including, but not limited to; Project technical management, systems integration and installation, production design support, and quality control. Jeff is very personable and receives the highest regard from all the owner's representatives he has worked with. Jeff directly communicates with the customer, naval architect, and production team/project superintendent to ensure that the project remains on schedule, on budget, and in full accordance with the specifications. From 1997 -1999 he was Chief Engineer of the M/V Spirit of 98, 2000-2001 Mate/Chief Engineer of the S/V HMS Rose, 2001-2002 he was Captain/Port Engineer of Adventures for Sound Experience. In 2002-2003 he worked as an Assistant Project Manager for the Maritime Services Corporation, repowering WA state ferries. Starting in 2003, Jeff took on the role as Project Manager/ Electrical Supervisor for Puglia Engineering until winding up at AAM in 2010. During his previous experience, he gained a deep understanding of regulatory bodies' expectations that has benefited AAM greatly. Some projects that Jeff has played a key role in are: R/V Sea Scout - One Subchapter T, 134' Research Vessel, King County Water Taxi - Two Subchapter K, 278 passenger 105' Passenger Catamarans, and Currently, Argosy Cruises - One Subchapter K 500 passenger 125' catamaran. Jeff also was the project manager on the Enhydra, a 600 passenger hybrid-electric monohull.



Education, Training, & Certifications

Jeff graduated with a Bachelor of Science in Marine Engineering and Nautical Science from U.S. Merchant Marine Academy in 1996. Following this, until 2004, he was an Officer in the US Naval Reserve, Master 100 Ton Aux. Sail, 1600 Ton Mate, Oceans; Third Mate, Ocean Routes, Unlimited Tonnage; Third Assistant Engineer, Unlimited Horsepower.



MATT RIEDEL

Project Manager



Qualifications & Experience

Talented project manager, marine systems and electrical supervisor with over 25 years of experience in design, procurement, installation and commissioning marine propulsion, hydraulic, HVAC, plumbing, electronics and electrical systems in more than 60 custom built aluminum vessels from 20' to over 100' in size. These vessels range from commercial fishing vessels, USCG inspected passenger vessels to high tech research vessels for NOAA and various agencies. Skills also include processes in aluminum fabrication, welding, interiors, paint and all manners involved with the construction of custom aluminum vessels.

Matt has been with All American Marine for over 15 years working as a Project Manager on a number of projects including the Rich Passage 2 and 3 for Kitsap Transit, as well as the Saratoga and Swiftsure for Puget Sound Express. Matt has been the Project manager for multiple builds for NOAA. Matt directly communicates with the customer, naval architect, and production team to ensure that the project remains on schedule, on budget and in full accordance with the specifications to meet and often exceed customer expectations.



Education, Training, & Certifications

Capable and certified operation and handling of vessels up to 93' for sea trials and delivery, including over 160 hours operating the Rich Passage class (high speed/low wake, hydrofoil-assisted catamarans) of boats for Kitsap Transit.



JASON JEFFCOAT

Project Manager



Qualifications & Experience

In 2021, Jason became part of AAM as an Assistant Project Manager and swiftly ascended through the organization, taking charge of a number of innovative projects. He now serves as one of three Project Managers at AAM, overseeing a steady workflow of vessels from design to delivery, as well as any training, warranty, or follow-up issues that may arise with our operators. Prior to coming on board at AAM, Jason was a Project Manager at a number of innovative firms, including Camtec where he was responsible for all aspects of the company, from sales to reviewing financial reports and giving input directly to ownership. Jason organized sales meetings and secured high-end prospects including SpaceX, Blue Origin, and Amazon Space, while maintaining customers like Janicki and Samson Rope. Jason was also responsible for working with the Department of the State to keep Cam-tec's ITAR (International Trade and Arms) certificate current and regulations upheld. Prior to Camtec, Jason was a Project Manager at Janicki Industries where he worked on high profile projects for NASA, the Department of Defense, as well as overseeing marine molds for 235+ Delta Mega Yachts for over a decade. Jason also served Design Engineer for the America's Cup BMW Oracle Racing Team, where he was responsible for 3D model Multihull Platform Advancements, Mast Updates, and modeling/drafting for the Appendages program. Jason brings a breadth of experience, as well as strong leadership skills across a diverse range of departments, all to help deliver the best performing vessels for our operators.



Education, Training, & Certifications

Jason graduated from York Technical College in Rock Hill, SC in April of 1997, where he received his Associate Degree in Engineering Graphics and Technology

1.4: References

Please find below five references for currently operating vessels similar to the proposed boat/hull design. Additional references with contact information are also listed on the past project sheets found directly after this page or contained in RFP Response.

Reference #1

Company Name: **University of Hawai'i at Manoa**

Contact Name: **Carl Meyer / PhD Fellow**

Phone #: **808-428-4819** Email: **carlm@hawaii.edu**

Type of Vessel Sold: **68' Research Vessel** Date Delivered: **7/28/23**

Reference #2

Company Name: **NV5 / Geodynamics**

Contact Name: **Chris Freeman / Sr. VP & GM Hydrosatial Division**

Phone #: **252-422-3209** Email: **chris@geodynamicsgroup.com**

Type of Vessel Sold: **73' Survey Vessel** Date Delivered: **3/17/23**

Reference #3

Company Name: **National Oceanic and Atmospheric Administration (National Marine Sanctuary)**

Contact Name: **Dave Lott / Regional Operations Manager**

Phone #: **831-647-6453** Email: **dave.lott@noaa.gov**

Type of Vessel Sold: **50' Research Vessel** Date Delivered: **7/31/21 and the newest one is currently undergoing sea trials, scheduled for operational acceptance on November 10, 2023.**

Reference #4

Company Name: **Duke University**

Contact Name: **John Wilson / Marine Operations Manager**

Phone #: **252-504-7506**

Email: **john.t.wilson@duke.edu**

Type of Vessel Sold: **77' Research Vessel** Date Delivered: **10/16/19**

Reference #5

Company Name: **Bluetide Puerto Rico**

Contact Name: **Wilbert de la Paz / Executive Director**

Phone #: **787-727-8980**

Email: **wdelapaz@bluetidepr.org**

Type of Vessel Sold: **76' Research Vessel** Date Delivered: **1/31/22**

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R/V IMUA



68' RESEARCH VESSEL

All American Marine together with the University of Hawai'i at Mānoa are proud to introduce IMUA, an innovative research vessel, built on behalf of the Hawai'i Institute of Marine Biology (HIMB). This state-of-the-art research vessel, is a 68.5' x 25' semi-displacement aluminum catamaran hull that was developed by Nic de Waal of Teknikraft Design in Auckland, New Zealand. IMUA was constructed to US Coast Guard (USCG) standards and will operate as a multipurpose research vessel in the Hawaiian Waters and Offshore on Ocean Routes. The twin-engine speed and fuel-efficiency of this vessel will be fundamental to meet the University of Hawai'i's research goals and allow them to access and study marine environments in the Hawaiian Islands. For the operator, one valuable feature of this vessel is the excellent fuel economy, while also maintaining an estimated fully laden cruise speed of 22-24 knots and with a fuel-efficient minimum survey speed of 3 knots. With a large fuel capacity of 1800 gallons, this design will support a science team of 8 on offshore multiday missions and 22 students/crew on shorter day excursions.



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SPECIFICATIONS:

LENGTH	68.5'
BEAM	25'
DRAFT	27'
PASSENGERS	20 DAY 8 LIVE ABOARD
ENGINES	2X SCANIA DI16
RATING	800 MHP @ 2100 RPM
FUEL CAPACITY	1800 TOTAL GALLONS
PROPULSION	TWIN FIXED PITCH PROPELLERS
SPEED	24 KNOTS CRUISE 3 KNOTS SURV.
MISSION	COASTAL RESEARCH
DESIGN	FUEL-EFFICIENT, LONG RANGE
FEATURES	HYDROFOIL-ASSISTED
LAUNCHED	JULY 2023
CLASSIFICATION	USCG SUBCHAPTER T



CLIENT CONTACT:

Company Name: University of Hawai'i at Manoa | HIMB

Company Address: P.O. Box 1346 Kaneohe, HI 96744

Contact Name/Title: Carl Meyer | PHD Fellow / University of Hawai'i

Phone/Email Address: 808.428.4819 / carlm@hawaii.edu



SHACKLEFORD

73' HYDROGRAPHIC RESEARCH VESSEL

All American Marine (AAM) is proud to announce the delivery of a cutting-edge research and hydrographic survey vessel that will service the growing offshore wind market as well as accomplish many other scientific survey missions. The Shackleford is a 73' x 26.7' semi-displacement aluminum catamaran and will have an integral role in NV5-Geodynamics' mission of providing turnkey / "single pass" offshore surveys and has been specifically customized to serve the burgeoning offshore wind sector on the US Eastern Seaboard. Shackleford leverages the fundamental, and proven design elements of previously built All American Marine vessels. This design has proven to be highly successful for near-coastal research environments. The speed and unique stability of this twin-engine hull design is fundamental for Geodynamics' continuing expansion of their specialized nearshore / mid-shelf hydrographic and geophysical survey operations.



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SPECIFICATIONS:

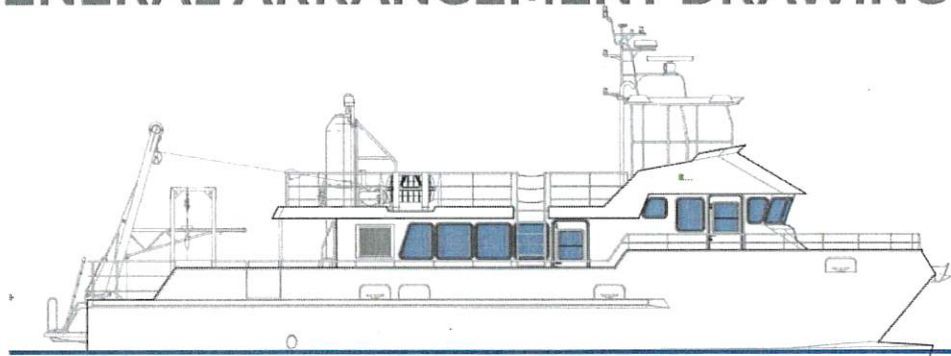
LENGTH	73'
BEAM	26.7"
DRAFT	6'
PASSENGERS	10 LIVE ABOARD, 16 DAY
ENGINES	2 X CAT C18 "D" ACERT, TIER 3
RATING	803 BHP/2100 RPM
FUEL CAPACITY	2X 1500 GALLONS
PROPULSION	TWIN FIXED PITCH PROPELLERS
SPEED	20 KNOTS CRUISE 8 KNOTS SURVEY
MISSION	HYDROGRAPHIC SURVEY
DESIGN	FUEL-EFFICIENT, LONG RANGE
FEATURES	RETRACTABLE SONAR STRUT
LAUNCHED	MARCH 2023
CLASSIFICATION	USCG SUBCHAPTER T



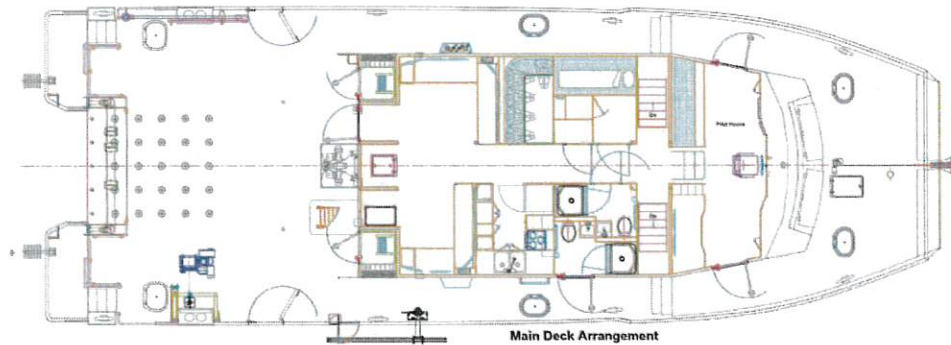
CLIENT CONTACT:

Company Name: NV5 | GEODYNAMICS
Company Address: 310A Greenfield Drive Newport, NC 28570
Contact Name/Title: Chris Freeman / Sr. VP & GM Hydrosatial Division
Phone/Email Address: 252-422-3209 | chris@geodynamicsgroup.com

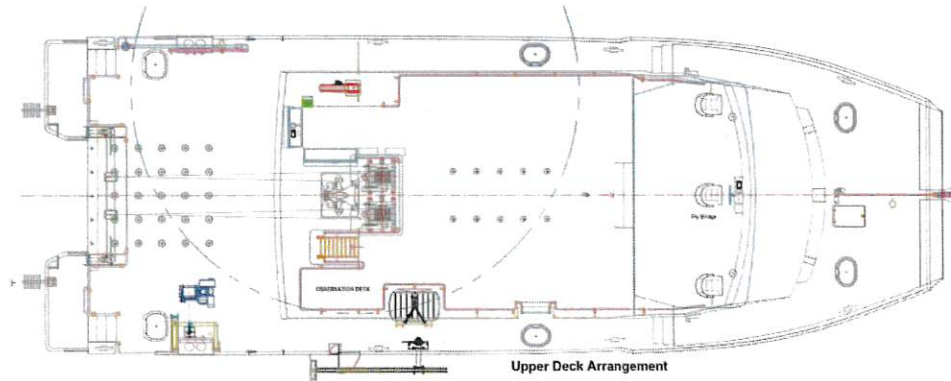
GENERAL ARRANGEMENT DRAWINGS



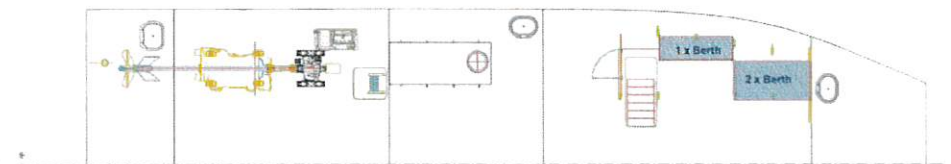
Profile



Main Deck Arrangement



Upper Deck Arrangement



Hull Arrangement



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R/V BLUE MANTA

76' RESEARCH VESSEL

All American Marine is proud to announce delivery of an innovative research vessel for BLUETIDE Puerto Rico. This 73' x 26.7' aluminum catamaran, was constructed to USCG Subchapter T standards for use on both near coastal and ocean routes. The twin-engine vessel is BLUETIDE'S first vessel for their marine research, education, innovation, and conservation work based out of Puerto Rico. The most valuable feature of these vessels is the excellent fuel economy, which consumes approximately the same gallons per nautical mile throughout the estimated cruising speed of 18-24 knots, with a fuel-efficient survey operation speed of 3 knots. With a large fuel capacity of 1500 gallons, this fuel-efficient design will be able to hold up to 30-day passengers (up to 8 live-aboard in 3 separate bunk rooms) including crew.



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SPECIFICATIONS:

LENGTH	76'
BEAM	26.5"
DRAFT	6'
PASSENGERS	8 LIVE ABOARD, 30 DAY
ENGINES	2 X CAT C18 "D" ACERT, TIER 3
RATING	803 BHP/2100 RPM
FUEL CAPACITY	2X 1500 GALLONS
PROPULSION	TWIN FIXED PITCH PROPELLERS
SPEED	20 KNOTS CRUISE 3 KNOTS SURVEY
MISSION	OCEANIC RESEARCH
DESIGN	FUEL-EFFICIENT, LONG RANGE
FEATURES	WET, DRY LABS, 8 BUNKS
LAUNCHED	FEBRUARY 2022
CLASSIFICATION	USCG SUBCHAPTER T



CLIENT CONTACT:

Company Name: BLUETIDE PUERTO RICO
Company Address: PO Box 13832 San Juan, PR 00908
Contact Name/Title: WILBERT DE LA PAZ | EXECUTIVE DIRECTOR
Phone/Email Address: 787.727.8980 / wdelapaz@bluetidepr.org



R/V STORM PETREL



50' RESEARCH VESSEL

Storm Petrel is a 50' Research Vessel built by AAM for the National Oceanic and Atmospheric Administration (NOAA), designated for the Olympic Coast National Marine Sanctuary in Washington State. The twin-engine, Teknicraft Design vessel was constructed by AAM to USCG Subchapter T regulation standards. The vessel will carry up to 18 personnel on board on a near coastal route. Olympic Coast National Marine Sanctuary (OCNMS) includes 3,188 square miles of marine waters off the rugged Olympic Peninsula coastline. The sanctuary extends 25 to 50 miles seaward, covering much of the continental shelf and several major submarine canyons. The vessel was designed by Teknicraft, and is complemented by Teknicraft's signature integration of a wave piercer that is positioned between the catamaran sponsons to break up wave action and ensure reduced drag while conducting research missions in and around the Olympic Peninsula region.



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SPECIFICATIONS:

LENGTH	50'
BEAM	18' 8"
DRAFT	2' 9"
PASSENGERS	18 PERSONNEL
ENGINES	2X CUMMINS QSC 8.3
RATING	493 BHP @ 2600 RPM
FUEL CAPACITY	2X 275 GALLONS
PROPULSION	TWIN FIXED PITCH PROPELLERS
SPEED	18 KNOTS CRUISE @ 60% POWER
MISSION	OCEANIC RESEARCH
DESIGN	FUEL-EFFICIENT, LONG RANGE
FEATURES	250 SQ FEET OF AFT DECK SP.
LAUNCHED	JULY 2021
CLASSIFICATION	USCG SUBCHAPTER T



CLIENT CONTACT: **Company Name:** Olympic Coast National Marine Sanctuary | NOAA
Company Address: 227 Jackson St, Port Townsend, WA 98368
Contact Name/Title: Dave Lott | Regional Operations Manager
Phone/Email Address: 831.647.6453 / Dave.Lott@NOAA.gov

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R/V SHEARWATER

77' RESEARCH VESSEL

This Duke University Marine Lab high-speed Teknicraft catamaran is used primarily as a research platform, allowing marine scientists from DUML and other institutions to conduct research along the Atlantic seaboard in a wide range of fields including marine ecology and conservation, biological oceanography, and renewable energy ocean development. The 77' x 26.5' vessel was based upon two successful Teknicraft Design vessels AAM built for NOAA. Teknicraft's unique hydrofoil-assisted hull design is proven to have industry-leading low-wake wash energy and fuel economy. The Duke Marine Lab is a year-round teaching and research campus located on Pivers Island in Beaufort, North Carolina. It offers academic programs at the doctoral, masters and undergraduate levels, and is home to the Nicholas School of the Environment Marine Science and Conservation programs.



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SPECIFICATIONS:

LENGTH	77'
BEAM	26.7 FEET
DRAFT	5.8 FEET
PASSENGERS	30 DAY 14 LIVE ABOARD
ENGINES	2X CAT C18 "D" ACERT TIER 3
RATING	803 HP @ 2100 RPM
FUEL CAPACITY	1500 GALLONS
PROPULSION	2X FIXED PITCH PROPS
SPEED	24 KN. CRUISE 3 KN. SURVEY
MISSION	RESEARCH AND SURVEY
FEATURES	FUEL-EFFICIENT, HIGH SPEED
WORKSPACE	WET AND DRY LABS ONBOARD
LAUNCHED	SEPTEMBER 2019
CLASSIFICATION	USCG SUBCHAPTER T



CLIENT CONTACT: Company Name: DUKE UNIVERSITY MARINE LAB
 Company Address: 135 Duke Marine Lab Road, Beaufort, NC 28516
 Contact Name/Title: John Wilson | Marine Operations Manager-
 Phone/Email Address: 252.504.7506 | john.t.wilson@duke.edu

1.5: Past Project Relevancies

The first of the referenced projects was chosen specifically for its comparability to the City of San Diego's specified project. It is All American Marine's most recently delivered vessel. It is the basis for the current proposed design, and it is also propelled by twin engines with a similar output, powering fixed propellers.

The next example vessels are iterations of a 73' hull that was first built for Duke University. The *Shearwater* was the first of these three "sister" ships. The hull and general design were so operationally effective and comfortable that Bluetide Puerto Rico wanted a similar vessel of their own, with a few modifications. The final of the three vessels was constructed for Geodynamics / NV5, a geospatial surveying company operating out of North Carolina. Geodynamics saw the Duke University vessel underway in their operating area and wanted an equally reliable platform that would catapult them ahead in the US hydrographic survey industry. Geodynamics' *Shackelford* is the most electronically complex of the three vessels due to the necessary surveying precision. AAM's recent building succession of these three vessels has provided invaluable experience that will be applied to The City of San Diego's upcoming project. In fact, All American Marine's *Shackelford* has been named by Workboat magazine as one of the 10 most significant workboats in the world in 2023. It is in the running for the prestigious "Workboat of the Year" award at the end of November.

The following two projects illustrate some more of the breadth of All American Marine's designs when it comes to commercial work vessels. The *Capt. Murchison* utilizes the raised pilothouse that AAM is proposing for the City of San Diego's vessel. It is larger than the proposed vessel but highlights some additional performance characteristics indicative of water jet performance. The *Sea Scout* highlights a larger survey vessel and illustrates AAM's capabilities when it comes to designing and building vessels on a bigger scale. Following the informational page for the *Sea Scout*, we have also included a brief overview of some past Teknicraft/All American Marine builds to illustrate the proven technology and concepts we plan to incorporate into your vessel.

1.6: Additional Past Project References and Contact Information



**ALL AMERICAN
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CAPTAIN MURCHISON



80' PATROL VESSEL

The 80' x 27' (OAL) Captain Murchison was built for the Texas Parks and Wildlife Department, and will serve an integral role patrolling both Texas state and federal waters for the law enforcement division of Texas Parks and Wildlife. This vessel features twin CAT C18 ACERT D Engines, with Hamilton Jet HM 521 waterjets and is built to USCG Subchapter T standards. The state-of-the-art hydrofoil assisted vessel, from Teknicraft Design, will combine innovative design features critical to modern maritime law enforcement. One revolutionary feature is the inclusion of Teknicraft's Rapid RHIB launching system. This feature integrated into the stern of the vessel, will increase safety and reduce the time and manpower required to deploy the vessels' rigid hull inflatable boat (RHIB). It will allow for deployment and retrieval in under 1 minute. The Captain Murchison is also the first vessel in North America to feature Hamilton Jet's innovative Advanced Vessel Control (AVX) system.



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SPECIFICATIONS:

LENGTH	80' OAL
BEAM	26.7 FEET
DRAFT	38 INCHES
PASSENGERS	7 LIVE ABOARD
ENGINES	2X CAT C18 "D" ACERT TIER 2
RATING	873 BHP @2200 RPM
FUEL CAPACITY	1850 GALLONS
PROPULSION	2X HAMILTON JET HM 521
SPEED	27 KN. CRUISE
MISSION	PATROL & LAW ENFORCEMENT
FEATURES	RAPID RHIB DEPLOYMENT
FEATURES	HAMILTON AVX CONTROL SYSTEM
LAUNCHED	FEBRUARY 2020
CLASSIFICATION	USCG SUBCHAPTER T



CLIENT CONTACT: Company Name: TEXAS PARKS & WILDLIFE DEPARTMENT
 Company Address: 4200 Smith School Rd. austin, tx 78744
 Contact Name/Title: CODY JONES / Law Enforcement Division Assistant Commander
 Phone/Email Address: 512-389-4624 | codyjones@tpwd.texas.gov



R/V SEA SCOUT



134' RESEARCH AND SURVEY

This unique, quad-prop catamaran was custom designed to significantly increase C & C's surveying capabilities offshore, and marked a shift for C & C, which typically operates steel monohull vessels. Getting to the site quickly means more time on the job and fewer trips offshore. In addition, the catamaran design offers great sea-keeping ability which allows the survey team to operate in all kinds of weather. "The challenge was to design a vessel that would run at high speeds and over long distances to reach the project site, but also a vessel that would be efficient spending a long time on low power and low speed during surveying work," said Nic de Waal of Teknikraft Design. Ltd., naval architect behind the Sea Scout.



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SPECIFICATIONS:

LENGTH	134'
BEAM	37' 4"
DRAFT	6' 6"
PASSENGERS	22 SCIENTISTS + 4 CREW
ENGINES	2X CAT C32 + 2X CAT C18
RATING	900 HP @2300 RPM
FUEL CAPACITY	11060 GALLONS
PROPULSION	4X FIXED PITCH PROPS (5 BLADE)
SPEED	20 KN CRUISE / 28 KN TOP
MISSION	SURVEY, OCEAN FLOOR MAPPING
FEATURES	LONG RANGE, FUEL EFFICIENT
DESIGN	SCIENCE LAB, GYM, LAUNDRY
LAUNCHED	FEBRUARY 2012
CLASSIFICATION	USCG SUBCHAPTER T



CLIENT CONTACT:

Company Name: AQUEOS CORPORATION
 Company Address: 1186 Petroleum Pkwy. Broussard, LA 70518
 Contact Name/Title: TONY OWENS - Vessel & Equipment Manager
 Phone/Email Address: 337.714.0033 / towens@aqueossubsea.com



All American Marine - Past Project Experience

<u>Boat/Project Name</u>	<u>Boat Type</u>	<u>Completion Date</u>
NOAA (Fulmar)	64'11"x24' Research Catamaran	8/10/06
NOAA (Auk)	48'x18.5' Research Catamaran	4/19/06
NOAA (Peter Gladding)	55'x21' Law Enforcement Catamaran	12/30/05
Lanai Ferry (Expeditions Five)	55'x24' Passenger Catamaran	11/1/06
Kenai Fjords Tours (Aialik Voyager)	82'9"x29'6" Passenger Catamaran	3/31/07
Hoku Nal'a	65'x23'9" Passenger Catamaran	7/16/07
NOAA (Manta)	82'8"x30' Research/Survey Catamaran	3/13/08
Tennessee Aquarium (River Gorge Explorer)	65'x23.5' Passenger Catamaran	5/1/08
NOAA Survey Launches 2801; 2802	30' Monohulls (2)	4/30/08
Kenai Fjords Tours (Orca Voyager)	82'9"x29'6" Passenger Catamaran	9/30/08
NOAA Survey Launches 2803; 2804	30' Monohulls (2)	2/19/09
Kitsap Transit - Rich Passage 1	78'x28' Passenger Catamaran (Ultra Low Wake Wash) Catamaran	11/30/11
Seldovia Native Association (Kachemak Voyager)	82'9"x29'6" Passenger Catamaran	6/1/09
NOAA Survey Launches 2805; 2806	30' Monohulls (2)	11/10/09
NOAA Survey Launches 2807; 2808	30' Monohulls (2)	11/10/09
State of Utah	35' Monohull Patrol Vessel	9/14/09
Goldman Sachs (York)	72'x26' Passenger Catamaran	1/16/11
Goldman Sachs (Jersey)	72'x26' Passenger Catamaran	1/16/11
Bristol Bay (Chambers)	32' Monohull fishing boat	2/9/11
Bristol Bay (Narog)	32' Monohull fishing boat	4/25/12
Bristol Bay (Ferris)	32' Monohull fishing boat	5/2/11
C & C Technologies, Inc. (Sea Scout)	134'x36' Research/Survey Catamaran	2/29/12
Middlebury College (David Folger)	45'x19' Research Catamaran	5/10/12
LA Port Police - Dive Boat 1	65'x24' Law Enforcement Catamaran	8/19/12
US Army Corps of Engineers (Florida II)	62'x24' Catamaran	3/31/13
Superboats (Island Explorer)	65'x25' Passenger Catamaran	4/28/13
Harbor Breeze Cruises (Triumphant)	83'x29' Passenger Catamaran	6/1/13
Kenai Fjords Tours (Callisto Voyager)	82'9"x29'6" Passenger Catamaran	3/1/14
Hornblower (Guardian)	72.5'x15.75' Passenger Monohull	12/1/13
Harbor Breeze Cruises (La Espada)	83'x29' Passenger Catamaran (USCG-K Class)	5/14/16
King County (Sally Fox)	104.3'x32.9' Catamaran (USCG-K Class)	9/11/15
King County (Doc Maynard)	104.3'x32.9' Catamaran (USCG-K Class)	9/11/15
Univ. of New Hampshire (Gulf Surveyor)	45'x17' Research Catamaran	1/31/16
US Army Corps of Engineers (H.R. Spies)	64' Hydrographic Survey Catamaran	7/22/17
National Park Service (Turtle Runner)	72.5'x28' Passenger Catamaran	4/30/17
National Park Service (Pelican Perch)	72.5'x28' Passenger Catamaran	4/30/17
Argosy Cruises (Salish Explorer)	125', 500 Passenger Monohull (USCG-K Class)	11/22/17
Red & White Fleet (Enhydra)	128', 600 Passenger Monohull (USCG-K Class, Hybrid Propulsion)	8/18/18
Puget Sound Express (Saratoga)	73'x30' Passenger Catamaran	4/18/18
Kitsap Transit - Hybrid (Waterman)	70'x26' Passenger Catamaran (Hybrid Propulsion)	6/30/19
Kitsap Transit (Reliance)	78'x28' Passenger Catamaran (Ultra Low Wake Wash)	6/30/19
Kitsap Transit (Lady Swift)	78'x28' Passenger Catamaran (Ultra Low Wake Wash)	10/8/19
Duke University (Shearwater)	77'x26' Research Catamaran	10/6/19
Texas Dept of Fish and Wildlife (Captain Murchison)	80'x26.7' Law Enforcement Catamaran	3/22/20
Great Western Attractions (Orca I)	80'x27' Passenger Catamaran	5/29/20
Great Western Attractions (Orca II)	80'x27' Passenger Catamaran	7/24/20
Major Marine Tours (Spirit of Matushka)	85'x32' Passenger Catamaran	4/21/21
NOAA (Olympic Coast NMS)	50'x18' Research Catamaran	8/15/21
Bluelide Puerto Rico (Blue Manta)	77'x26' Research Catamaran	1/31/22
Major Marine Tours (Skana)	87'x32' Passenger Catamaran	5/5/22
Puget Sound Express (Swiftsure)	77'x30' Passenger Catamaran	7/21/22
Geodynamics/NV5 (Shackleford)	77'x26' Research Catamaran	3/17/23
Inuka Hawaii (Poseidon)	50'x17' Passenger Catamaran	7/28/23
University of Hawaii (IMUA)	68.5'x25' Research Catamaran	8/5/23

2: Facilities and Production Capabilities

2.1: Shipyard, Construction Approach, and Build Strategy

All American Marine's production facility is located along the Northern shore side of Bellingham Bay in Bellingham, Washington, approximately 85 miles north of Seattle. In early 2017, AAM moved into a new, purpose-built construction facility located in Squalicum Harbor. AAM's environmentally controlled facility is divided into 4 bays. The main construction facility consists of a 45' x 260' production bay and a 60' x 260' production bay that is divided by a centerline support bay housing all trade crafts and inclusive of an aluminum weld panel line, electrical production shop, plumbing shop, hydraulics shop, mechanics shop, and carpentry loft. AAM maintains a long-term lease on this facility from the Port of Bellingham with the option for another decades-long renewal. AAM maintains a fulltime team of highly skilled craftsmen and does not actively engage subcontractors for production work. AAM's team covers welding, fabrication, systems installation, plumbing, electrical, finish carpentry, and paint.

Each vessel is constructed inside our 57,000 square foot, climate-controlled building on a laser leveled jig that is expandable according to the length of each vessel. AAM owns a 175 ton x 14' wide press brake, a 10' wide shear, and an 8' wide x 30' long Mastercam 5000 router table. Between the 40' and 60' production bays there is a mezzanine designed to house AAM's interior craft department. The mezzanine has table saws, miter saws, joiners, and all carpentry machinery. When outfitting a vessel under construction, a ramp joins the mezzanine to the vessel to cut down traffic and distance for the interior craft department. This allows for a more efficient use of time and material handling while outfitting the vessel cabin. Underneath the mezzanine is housed the systems departments where fabrication of piping and vessel systems can be accomplished. The AAM electrical department has an area adjacent to the mezzanine for fabrication of subcomponents. Material is handled via wheeled carts and 3 forklifts, one propane rated at 10,000 lbs., one propane rated at 5,000 lbs., and one all electric rated at 4,000lbs.

The facility has a 3-phase 440-480 volt electrical supply at 600 Amps with over thirty 60-amp welding outlets distributed throughout. AAM operates over 30 MIG welding machines and 6 TIG welding machines. The main fabrication building has two compressors: one at 60HP and one at 25HP to drive AAM's air powered tools.

AAM's construction approach includes the use of 'just-in-time' inventory of required components along with some pre-construction and modular construction techniques. All hull frames and cabin side panels are constructed and welded on an aluminum weld panel line. This process allows for nearly all weld-out of the panel to be completed in one stage. Similarly, AAM can construct some modules, such as pilot houses on the floor and then fly them up as an assembly once the cabin superstructure is complete. Friction Stir Weld (FSW) panels are also used as AAM's primary decking panel material. FSW is a solid-state joining process that uses a non-consumable tool to join two facing workpieces without melting the workpiece material. Heat is generated by friction between the rotating tool and the workpiece material, which leads to a softened region near the FSW tool. While the tool is traversed along the joint line, it mechanically intermixes the two pieces of metal, and forges the hot and softened metal by the mechanical pressure, which is applied by the tool. It is primarily used on extruded aluminum and particularly for structures which need very high weld strength. These decking panels are ordered in 8' wide sheets that are fully welded using the FSW process. Each panel includes stiffening T extrusions as part of the back side for strength, so the panel just has to be cut and fit directly into place. AAM has an 8' x 30' CNC router table in house and utilizes the machine to cut all plate and FSW deck panels. AAM fully utilizes the CNC capabilities to precisely cut out frame components, windows, doors, and hatches along

with creating custom designed deck drains, inscribing part numbers onto sub-assembly pieces, taking/labeling measurements, and inscribing weld marks and frame landing locations. Many of the assemblies for cabinetry, pilot house consoles, and seating can be pre-constructed and then fit directly into place once the superstructure is complete. Other than the ordering and outsourcing of FSW panels, AAM performs all fabrication onsite with AAM built components and assemblies. The resultant panel seams are difficult to visually locate.

AAM's production methodology utilizes a linear production flow model, whereby the vessel moves from one end of the production facility to the opposite end as the production progresses. This linear model allows AAM to have more than one vessel under construction at any given time in each production bay. AAM's facility has a 45' x 260' production bay and a 60' x 260' production bay and each bay is large enough to allow two 250+ passenger catamarans to be in various stages of production concurrently. The production shop contains 7 overhead bridge cranes comprised of 2 x 30 ton cranes in Bay One, 2 x 5 ton cranes in Bay Two, 2 x 10 ton cranes in Bay Three, and 1 x 10 ton crane in Bay Four. The cranes in Bays 1-3 can traverse the entire 260' length of the vessel construction facility. The crane in Bay 4 can traverse the entire aluminum material cutting and aluminum materials storage room. On the far side of the entire facility are a series of roll up garage doors that permit semi-trucks and trailers to drive completely through a designated lane that passes through all 4 bays. This allows trucks to enter the facility and offload heavy materials and equipment (aluminum plate and diesel engines) from flatbed trucks using the overhead cranes.

Upon receiving the contract award, AAM will engage Teknikraft Design to complete the design engineering and provide construction cut files. Thereafter, AAM shall commence construction of the final City of San Diego design on a hull framing jig. Each vessel constructed at All American Marine is fabricated from marine grade aluminum that has been specifically formulated for its strength, light weight properties, and durability in harsh marine environments. Following the issuance of a Notice to Proceed (NTP), aluminum material will be ordered, delivered, and inspected. The aluminum is then precisely cut on AAM's CNC router table, deburred, re-inspected, sorted, and stored in a heated and dry area. Each hull frame is prepared and attached to the jig in an inverted position. The hull longitudinals and plating are then installed and welded into place. Upon completing the remaining weld-out of the hull and after all required inspections are performed, the hull is released from the jig and rolled-over to its upright position via overhead cranes and trunnions.

Once upright, decking material is installed. Following this step, the vessel may move forward within the production facility to accommodate the start of additional hulls. Side panels and structural bulkheads will then be lifted onto the hull and fit into place to form the cabin superstructure. After this stage, the complete weld-out of the vessel is complete and the welding crew can transition to another hull.

It will be critical for the City of San Diego to completely understand AAM's design proposal prior to the start of construction. AAM will desire to minimize the impact of incorporating significant change orders that will greatly impact the design and push back the production schedule.

2.2: Materials Handling and Storage

Shipping and Receiving at AAM's facility is located in an adjoining bay alongside the main production/fabrication shop. This separate and secure area leads directly into the main building through a high roll-up door. All mechanical, electrical, and interior components are first delivered and processed through this area. Material is stored on city permitted pallet racking 4ft deep x 8ft wide x 20ft tall that has been seismically engineered and

anchored to the ground and is protected by a specially designed sprinkler system for high pile storage. Hull and cabin plate is delivered to CNC cutting room and aluminum material storage area.

S & R personnel notify AAM's Quality Assurance Inspector of all deliveries of vessel components for the inspector to assess their propriety, quantity, and condition upon arrival at AAM. Once the materials have been processed, they are repackaged and located in segregated areas, racks, or shelves by project identification number, and where suitable, placed in pre-determined and addressed bins relating to the work item for mechanical, plumbing, electrical, or joiner systems. The project manager along with the mechanical, electrical, or interior systems superintendents are then informed that the components have arrived and are ready for installation.

2.3: Outfitting Plan

Following AAM's weld-out procedure, the systems and interior crews will begin insulating the hull and cabin, installing wire ways, and installing plumbing runs. During this time, the interior crew can begin to pre-fabricate cabinetry and consoles. Following completion of the insulation, plumbing runs, and pulling of wire, the interior crew will install the wall panels, windows, and doors. Likewise, the systems' crew will start to install equipment, components, generators, and the engines will be put in place and pre-aligned. The installation schedule of essential machinery will be clearly communicated to the owner's representative so that they can be in attendance and witness installation if they want to.

Once the hatches are installed, the vessel is sealed, and the appropriate exterior surfaces are prepared for coating. While the system and interior finish work continues, the coating preparation occurs during the day, with the actual coating being done at night in a temperature and dust-controlled area utilizing dry, clean air.

AAM shall construct each vessel in a manner consistent with best trade practices and in accordance with best commercial quality finishing, which would be applied for the construction of similar strong, light-hull vessels using modern technology. AAM shall ensure that only suitably skilled and experienced employees or qualified subcontractors be engaged to work on each vessel.

All material and equipment used on the vessels will be in accordance with the specification and drawings supplied unless alternatives are approved. For other material and minor items of equipment not specified, the AAM will ensure they comply with the requirements of the USCG where applicable per The City of San Diego's requirements and are in accordance with good shipbuilding practice and lightweight in design, commensurate for use in research vessels.

The vessel will be maintained in a clean state throughout the building process. At regular intervals the entire vessel will be cleaned, and the tanks and bilges be cleared of all debris, filings, and waste. All equipment, including gensets and engines will be properly covered with protective material to ensure that its original clean state is maintained throughout. Special care will be taken to ensure that all soft fabrics and materials are completely covered with fixed plastic sheeting. Before handing over, the vessel shall be completely and thoroughly cleaned in every detail.

2.4: Launch and Sea Trials Plan

After a vessel reaches a point of inspection and completion where it can be launched, the vessel is loaded onto AAM's custom trailer and dolly system. The custom steel trailer is capable of handling boats up to 150ft long

and is maneuvered by a semi-truck with hydraulic winches. The vessel will travel on the trailer and dolly system out of the AAM production shop and across the parking lot over to the Port of Bellingham boat launch ramp. The Port of Bellingham has established a designated launch route and provides AAM with a Right-of-Way. AAM's launch trailer transits directly down the ramp to a safe depth where the vessel can launch and float free from the trailer. Following the launch of the vessel it will immediately be towed to a nearby mooring facility. AAM's workforce is then able to access the vessel to allow for any final construction, dock-trials, and sea-trials. The pier is in a protected waterway which provides a safe harbor. AAM will schedule to launch the vessel around high tide and is not limited by other environmental factors or seasonal constraints.

Once the vessel has been launched and is secured at the dock, AAM's workforce can begin a final round of systems checks and start machinery commissioning. AAM will coordinate with the owner's representative, and the equipment manufacturers to come to our facility for commissioning. The equipment commissioning will be done in accordance with the equipment manufacturer's instructions. A comprehensive commissioning plan will be developed in coordination with the owner's representative at least 30 days prior to the launching of the vessel to insure attendance by all applicable parties.

AAM has implemented a complete and thorough testing and quality assurance program. The purpose of this program is to ensure that all workmanship is satisfactory, all equipment has been properly installed, all systems are functioning properly, all subcontract work is satisfactory and that all required regulatory inspections have been completed. This program covers all aspects of construction, including metal work, machinery systems, piping systems, electrical systems, interior and joinery, outfitting and paint. Sea state requirements for speed trials and motions will be determined by the builder and mutually agreed to by the Owner.

AAM shall develop, in cooperation with The City of San Diego, a final comprehensive testing and sea trials plan and agenda, no later than 30 Days prior to vessel launch. The plan shall identify all testing milestones, communicate, and continually update a testing schedule, define testing procedures, and track deficiencies, corrections, and acceptance. Sea Trials will be conducted in a location mutually agreed to by the City of San Diego Representative and AAM, and all procedures shall follow SNAME T&R Bulletin C-2, 1973 "Code for Sea Trials" or as otherwise stated or agreed to by the City of San Diego. AAM will assemble a list of tests to be completed and will coordinate with the Purchaser's Agent and regulatory inspectors to demonstrate completion of various tests and inspections. Testing shall not be limited to the regulatory requirements but shall prove all systems to the satisfaction of the City of San Diego. The City of San Diego shall be given at least forty-eight (48) hours' notice on all system testing and will witness the tests, unless the option to witness is specifically waived.

Dock trials shall be conducted to demonstrate proper functioning of propulsion systems and controls, auxiliary systems, electronics, and safety equipment prior to sea trials. Following completion of dock trials, sea trials will be conducted to demonstrate the performance of the Vessel and proper function of systems underway. Every effort shall be made to replicate a "working" scenario at sea. Speed trials will be conducted at a minimum of 100 rpm intervals from idle to 75% load. Above 75% load, speed trials will be conducted at a minimum of 50 rpm intervals. For each setting, two (2) runs will be made in opposite directions over a reciprocal course to account for any wind, waves or current. Speed will be determined by measuring the time to cover a set distance as determined by the Vessel's GPS. A minimum of one hour of trials shall be conducted at night, commencing no earlier than 1 hour after sunset, at maximum possible operating speed, to determine if visibility, reflections, night backlighting, or fogging issues are present on the bridge and to correct them.

2.5: Delivery Plan

All American Marine will deliver the vessel for final acceptance to the City of San Diego via its own hull. Provisions can be made to allow for representatives from the City of San Diego to ride along during the delivery and continue vessel specific training, if so desired.

All American Marine's mission is to provide win-win scenarios for both the purchaser and shipyard. One of the best ways to ensure our clients are happy with our product and are set up for success is a comprehensive training plan once we have handed over our vessels. All American Marine will furnish all the wiring, plumbing, ducting, and machinery diagrams as well as the pertinent manuals. We will also provide up to 32 hours of in-person, intensive training program in Bellingham for the City of San Diego's captains and crewmembers.

Following acceptance trials, All American Marine shall provide operational training for the vessel's crew. Operational training shall consist of vessel operation and maneuvering, including fire and safety drills, machinery operation, and maintenance instruction. During operational training, the AAM is solely responsible for the vessel and shall provide a licensed master and a deckhand as designated operators. All American Marine has offered additional operational training at clients' locations in the past and would be open to proposing additional training in San Diego if desired.

All American Marine's support and training doesn't stop with that initial training period in Bellingham. One of the major reasons our customers decide to build multiple boats with AAM is the relationships that we establish throughout the building process and our proven customer support of our vessels after delivery.

2.6: Project Management Plan

AAM uses Corporate Project Management software called Microsoft Project to outline and dedicate manpower to work items. The software capably shows constraints such as facility utilization, early starts and finishes, crew availability, component lead times and arrivals, and milestones. Project flow using this software is based on these various factors, thereby establishing a critical path that is used to schedule the work. All costs are tracked and evaluated in a regular budget analysis. Costs are analyzed based upon a percentage of project completion and are evaluated against the budget versus the projected cost of completion. AAM's controller ensures that all costs associated with the project are accounted for and classified by the appropriate department.

AAM's purchasing manager works within his network of vendors to source each required component within the budgeted amount. When necessary or appropriate, suitable lower cost alternatives may be proposed to the Client. If AAM and the Client agree to not use an item that has been budgeted for in the lump sum price, AAM will provide the Client with the appropriate credit. The purchasing manager also maintains communication with the production manager, project manager, and crew supervisors to ensure that all required materials are ordered and delivered in a timely fashion that coincides with the current stage of production. All procured items are checked against the packing list and the packing list is verified against the purchase order. All components are initially inspected for quality upon receipt.

2.7: Process for Managing Project Documentation and Communication

During the construction cycle, the QA Inspector is responsible for keeping the USCG informed and will meet with them on a weekly basis for inspections throughout the vessel hull weld-out. The local OCMI (officer in charge of marine inspections) be invited to witness fuel tank hydro tests, verify fire protection installation, review the fire

safety plan, review the dead-weight survey and procedures, attend sea-trials, and inspect all electrical and mechanical systems necessary to obtain a Certificate of Inspection ("COI"). The Owner shall be responsible for any crew safety drills and operational paperwork with USCG once the vessel has been launched, sea-trialed, delivered, and accepted. The project manager will relay all information regarding inspections, communications, and provide records and documentation of all approvals, tests, deficiencies, and repairs to the Owner's representative.

The project manager is responsible for updating and maintaining all project documentation on AAM's internal server. Communication on design elements and Owner preferences as to interpretations of the vessel specifications will flow to the Owner directly via AAM's designated Project Manager. At times and when appropriate, communication may be with AAM's designer, Nic de Waal of Teknikraft Design and AAM's Technical Manager. It is imperative that during the design and engineering phase of the project, AAM has input from the Owner as to the customized layout of the wheelhouse, cabin, and lower-deck arrangement. This will also include drawing reviews for electrical and mechanical systems.

In addition to the usual day-to-day operational adjustments in production, more significant adjustments may be required by the Owner or may be discovered as a necessity during construction. To this end, AAM utilizes an Engineering Change Proposal (ECP) system to facilitate all changes that affect the specifications or contract. The ECP addresses any changes that AAM finds to be necessary during construction, changes initiated by client request and are outside of the contract or changes necessary as the result of the trial and testing of the vessel. All changes will be addressed with the Designer, Customer, and AAM technical and production departments in a proactive manner for clarification and approval before implementation. The ECP form details the change description, the requestor, schedule implications, the additional cost or credit, and weight and performance implications in a complete and comprehensive manner.

The review interface process will occur in a similar process, with the designated project manager as the main point of contact for all review and change orders during the design, construction, and delivery/acceptance phases of this RFP.

During the design development process an AAM project manager will be assigned to this project. The project manager will have a complete understanding of the scope of work and will ensure that the production crew and naval architect are kept current on any developments. The project manager and the production manager perform and evaluate a bi-weekly labor analysis and maintain a current project timeline using project management software. AAM's time management system alerts the project manager to any areas of the production process that may be ahead of or behind schedule. The project manager will work with the production manager to maintain the proper allocation of labor so that the project will be completed on schedule.

All hourly employees' time is tracked on a weekly basis using internal computer software.

AAM disseminates information during weekly manager meetings and daily production meetings. The production manager, project manager, technical manager, purchasing manager, and crew supervisors participate in the production meetings. During weekly production meetings status reports are given, issues are discussed, and each department gets updated with accurate information so that all components of the production process will come together, on time, and on budget. If there are any issues concerning human resources or the allocation of labor, it is addressed in the production meeting and administrated by the production manager and project manager. Any escalating issues are resolved at the manager meetings.

Warranty

All American Marine (Builder) warrants that for 12 months from the date of delivery of the Vessel, Builder will repair in a professional, workmanlike manner and with reasonable speed, any defects to the Vessel arising from defective materials supplied by the Builder or faulty workmanship. Builder will not take responsibility for the quality of any materials supplied by the Purchaser (unless such quality is warranted and assured by third party vendors) and will only accept supply of materials by the Purchaser upon mutual agreement of the Parties. Builder shall obtain, for the benefit of Purchaser, all warranties offered by suppliers of materials, engines, fixtures, fittings, and other items incorporated into the Vessel. Purchaser will notify Builder of all defects in a prompt and timely manner. Builder's warranty does not extend to engines, materials, appliances, and such other fixtures and fittings that are not manufactured or adapted by Builder, and other items which are not sold by Builder to Purchaser. Builder will, however, negotiate, but not insure or guarantee any warranty issues with these suppliers at the request of Purchaser.

Purchaser agrees to provide satisfactory evidence to Builder that the items or work covered by this warranty have been properly maintained, correctly lubricated, and prudently operated within normal conditions, and under competent supervision and within load, stress, or other capacity limits.

The Parties agree that Purchaser's sole and exclusive remedy with respect to Builder's liability for any alleged negligent or defective work shall be strictly limited to, at Builder's sole election, repair, replacement, or adjustment of the alleged negligent or defective work. All warranty repairs not completed prior to delivery of the Vessel shall be completed at the City of San Diego's docks or such other location agreeable to both the Builder and the Purchaser. In the case of repairs, replacement, or adjustment to be performed by Builder under this Section, all costs shall be borne by the Builder, except Purchaser agrees to pay for the freight charges related to materials or parts necessary to perform the warranty work and the cost of delivery of the Vessel to the agreed upon location if other than the City of San Diego's docks. Builder reserves the right to perform such warranty work by its own crew if it can be accomplished in a timely manner.

Commitment to Safety

At the core of our organization lies an unwavering commitment to safety. From monthly safety meetings involving all staff, including management, to regular risk assessments by our dedicated safety coordinator, we prioritize risk mitigation. Our culture values and rewards safety-conscious behavior, fostering an environment where safety and risk management are integral components of AAM's operations. AAM rewards its employees for being safe and exhibiting safety-minded behavior. During each safety meeting, safety and risk concerns are addressed, reminders are given, and educational information about safety and risk management is imparted.

3: Project Planning and Engineering

3.1: Vessel Structure and Systems Engineering

All American Marine and Teknikraft Design propose a 60', aluminum hulled catamaran in response to the City of San Diego's RFP. This vessel shall be twin engine and propeller driven. The propulsion package is based upon the use of Caterpillar's C18 EPA Tier 3 - 599kW engines. These engines provide the City of San Diego the best option currently available on the market, to meet current federal emissions standards. Based on the currently proposed

CARB regulations that are pending federal approval, CARB may require the vessel owner to submit for CARB Executive Officer approval. Per the proposed rules, this CARB submittal cannot be legally completed and submitted by the shipyard, but we would be happy to assist the City of San Diego as needed.

To meet the RFP requirements, we have engineered a vessel capable of meeting the speed requirement of 18-24 knots depending on the deadweight load for the day. When designing this vessel, specific consideration had to be taken to balance the overall mass of the vessel with the multi-functional operating profile. We wanted to make sure to propose a vessel that could perform as many of the stated specifications as possible while remaining cost competitive.

We propose a vessel that can reach cruising speeds of 22 knots at 85% power. Every effort was made to design a vessel capable of cruising at that speed without sacrificing research and sampling capabilities. Teknicraft Design has stressed that the vessel will perform as stated in our Technical Specifications, but care must be taken to be diligently aware of the deadweight limits. The preliminary deadweight calculations in the Technical Specifications are preliminary but special attention needs to be given to any variance in vessel mass during final engineering. The vessel cannot exceed the deadweight limits as provided in the Teknicraft specification.

The proposed vessel structure was designed to meet Lloyd's G2A3 scantlings guidelines. This standard is accepted by the USCG on an "Oceans Routes" not to exceed 60 nm offshore. The vessel shall meet the stability criteria for "Exposed Waters".

The Technical Specifications will go into further detail regarding the system's engineering. All considerations have been made to meet or exceed standard maritime practices. The hydraulic system utilizes two pressure sensing PTO pumps driven by the ZF gears, and they share a header reservoir to maintain hydraulic pressure and minimize hydraulic noise.

The generators are twin C1.5, 12 kW, single-phase, Caterpillar marine generators to ensure adequate power even under heavy loads. The AC and DC lighting are all LED both to minimize power consumption as well as maximize longevity.

The bunkrooms have been designed for year-round operations with the inclusion of dedicated A/C systems. Care has also been taken to meet USCG safety regulations regarding firefighting, safety, bilge pump arrangements, plumbing, electrical wiring, etc. Even though the City of San Diego does not intend to have the vessel inspected by the USCG, AAM will still build to this standard.

During our initial drawing stage, AAM went through several arrangement iterations to maximize the usable space. We paid significant attention to the usability of the main cabin area, maximizing size, and providing opportunities for future growth and varied mission profiles. All American Marine is confident that with our superior craftsmanship, attention to detail, and experience with building research vessels, the proposed City of San Diego vessel will be a flagship vessel for the region.

3.2: Quality Control, Quality Assurance, and Testing:

AAM's quality program covers both the inspection of materials and equipment upon receipt and the control of handling materials and equipment throughout the production process. Other than in-house fabrication of welded structural elements and interior finishing/joinery, all other equipment is delivered to AAM's facility as an OEM manufactured good, ready for installation. AAM will inspect all manufactured equipment and raw

materials for quality and adherence to the specifications listed on the original Purchase Order (PO) and Invoice/Packing List. Final quality inspection will be subject to testing upon installation and during Sea Trials.

AAM has implemented a complete and thorough testing and quality assurance program. The purpose of this program is to ensure that all workmanship is satisfactory, all equipment has been properly installed, all systems are functioning properly, all subcontract work is satisfactory and that all required regulatory inspections have been completed. This program covers all aspects of construction, including metal work, machinery systems, piping systems, electrical systems, interior and joinery, outfitting and paint. A copy of AAM's Quality Control program can be provided for review.

AAM utilizes a team approach to quality, where each employee adheres to a philosophy of personal quality performance based in part on a fixed set of criteria which is comprised of: AAM's Quality Assurance Program; AAM's designer; the construction specifications; AAM's in-house Quality Assurance Inspector's attention to detail; USCG/Class Society standards; and personal accountability. AAM's Quality Assurance Program is designed to be flexible and adaptable (custom modified as necessary prior to start of the project) and consists of a detailed process whereby all aspects of the project are documented and reviewed. The Quality Assurance Inspector performs daily inspections of the construction process, logs all repairs/rework and provides feedback to Production, Project and Technical Managers. The QA Inspector possesses authority to stop work until problems are addressed. AAM has a USCG approved ASTM Section IX welding procedure and AAM welders have taken and passed the Welding Operator Qualifications Tests (WPQ) as per ASTM Section IX. Under the guidance of AAM's Technical Manager, AAM retains an in-house Quality Assurance ("QA") Inspector and a Certified Weld Inspector (CWI) on staff. The QA inspector has been with the company for 15 years and the CWI for 5 years. The QA Inspector handles all weld inspections, test memos, testing, and record-keeping for welding, mechanical systems, plumbing and electrical.

AAM has created policies and procedures for nearly all elements of vessel construction and outfitting: from window installation to tank hydrostatic testing. AAM craft personnel are responsible for quality control ("QC"), all the various elements they work on with the craft superintendent taking an oversight lead. AAM's QA policy requires the QA Inspector to assure and document that QC procedures are maintained.

AAM shall develop, in cooperation with the Owner, a comprehensive testing plan. The plan shall identify all testing milestones, communicate, and continually update a testing schedule, define testing procedures and track deficiencies, corrections and acceptance. The local USCG OCMI (officer in charge of marine inspections) comes for weekly site visits to the AAM facilities. This close working relationship allows us a seamless and straightforward USCG inspection process because they have seen every aspect of the build.

The testing and inspection of metal work will begin with inspection of frames and sub-assembly fabrications and will progress through module assembly and finally complete hull and deckhouse assembly. All fabricated tanks will be pressure tested and demonstrated to be tight. All watertight bulkheads and decks will be tested and shown to be tight. All doors, windows, hatches, and other hull openings will be tested and demonstrated to be watertight or weather tight as appropriate. If required by the regulatory bodies, x-ray testing (or other regulatory accepted test with specified requirements) will be performed on shell seams and supporting structure. Measurements of shaft diameter and radial run-out shall be recorded. Proper installation of the main engines and gears will be confirmed and the alignment procedures for the main engines and shafting verified and recorded.

All piping systems will be flushed as required, and pressure tested in accordance with regulatory requirements and manufacturer's recommendation. The proper installation of all piping systems including routing, materials,

equipment installation, labeling, piping support and isolation will be confirmed. The proper functioning of individual components will be confirmed, and overall system performance will be verified and recorded.

The installation and calibration of all electrical systems, sensors, alarms, tank levels, and electronics will be inspected. The proper operation of the electrical systems, including but not limited to generators, switchboard and power management systems will be verified. The proper installation and functioning of all electronics, including but not limited to: navigation, communication and security systems will be confirmed in conjunction with the relevant vendors.

The installation of all insulation, joinery and finished interior will be inspected and reviewed. AAM will also be responsible for verifying proper operation of other various equipment and systems including appliances, lighting, sanitary systems, etc.

An authorized manufacturer's representative shall be present for major systems inspections and shall confirm acceptance of all work completed. Paint preparation and final finish will be confirmed with the Paint Supplier representative.

AAM will assemble a list of tests to be completed and will coordinate with the Owner and regulatory inspectors to demonstrate completion of various tests and inspections. Testing shall not be limited to the regulatory requirements but shall prove all systems operational.

All work completed shall be inspected by AAM in the presence of the Owner, if desired, and regulatory inspectors, as required. The Owner shall have the right to appoint additional consultants and representatives to witness tests and trials at his discretion. Certain equipment may be factory tested and accepted based on the satisfactory results of factory tests.

4: Technical Specifications

4.1: Technical Specifications

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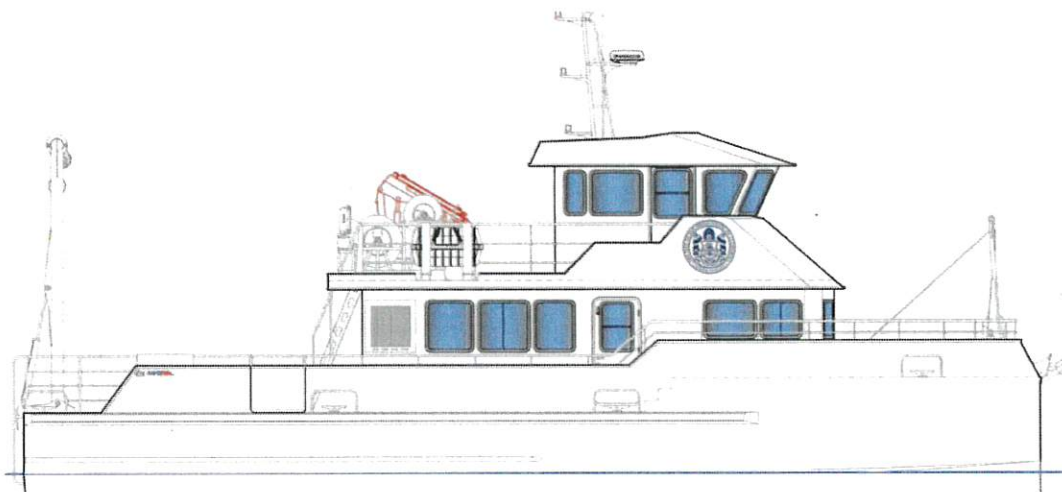
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Specification for Construction of a

60' Ocean Sampling Vessel



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1.GENERAL**1.1 General Description**

The vessel shall be a twin engine, propeller driven aluminum catamaran outfitted for scientific research.

The vessel will operate as a multipurpose ocean sampling and survey vessel in the Southern California Waters and Offshore on an Oceans Route. The vessel shall be designed to Lloyds SSC G2 standards for service in waters where the range to refuge is 60 nautical miles or less. The vessel shall be complete in all respects, except as specifically noted in sections herein. It shall be fully equipped and fitted out by the Contractor, constructed in accordance the following regulations and standards, complying with best marine practices and the required rules and regulations of the United States Coast Guard and other regulatory requirements, as applicable.

Principal dimensions shall be approximately as follows:

• Length (hull)	59.4'
• Length (overall)	62.4'
• Beam (molded)	24'
• Beam (extreme)	25'
• Draft (navigation)	6.2'
• Engines	2 x Caterpillar C18, Tier 3
• Power	803 (bhp) /2100 rpm
• Transit Speed	~18-22 knots, 80% Rated power*
• Propulsion	Propeller
• Minimum speed	1.5 Knots (survey operation)
• Fuel capacity	600 gal
• Construction	Marine grade aluminum
• Complement (Live aboard)	6
• Compliment (Day)	14
• Crew	2, as determined by USCG.

• Construction Standard

USCG Subchapter T***

**Estimated Service Speed is approximate and is based on sea trial speed at 80% of rated power, with a deadweight of 13464 lbs. ** operating in calm seas and a clean bottom. Seawater, and ambient temperatures should not exceed the standard engine rating test conditions.*

*** The deadweight conditions and vessel performance are based on the following values:*

• Passengers and Crew (185 lbs. x 14)	2,590 lbs.
• Fuel (600 gallons)	4,206 lbs.
• Water (200 gallons)	1,668 lbs.
• Scientific equipment & Stores	5,000 lbs.
• Total	13,464 lbs.

**** Refer to section 1.3 for further clarification regarding Subchapter T standards*

1.2 Documents

The vessel construction shall be in accordance with the following primary documentation:

- Teknicraft supplied construction drawings.
- Specification: Doc. no T18WCSD-DOC-001, including any revisions
- USCG 46CFR, Subchapter T, as applicable for service for vessels limited to operate on "Oceans" route not more than 60 nm from a harbor of safe refuge. ***

The builder shall fit, by way of welding it to the hull structure inside the Port Lazarette, an inscribed plate with the vessel's Official number.

An inscribed plaque will be fitted in an appropriate position in the passenger or wheelhouse areas, depicting the names of the builder, designer, vessel, and the launch date.

All manuals, warranties and technical documentation as supplied by the manufacturers of equipment shall be provided to the Purchaser upon delivery of the vessel.

As-Built drawings for the purpose of maintenance of the vessel will be supplied following delivery

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of the vessel. The set of drawings will be as follows:

- General Arrangement
- Docking Plan
- Machinery Arrangement
- Exhaust System Diagram
- AC & DC Electrical One Line Diagram
- Bilge & Fire Piping Diagram
- Fire System
- Fuel System Diagram
- Seawater System Diagram
- Fresh, Grey, and Black Water Systems
- Electrical System Load Analysis Calculations
- HVAC / Ventilation System including machinery spaces where applicable.
- Hydraulic System Diagrams
- Fire and Safety Plan
- Bow Thruster System
- A-Frame, Davit, Hydraulic Winch and Spool Arrangements, including Safe Working Tensions (SWT), safe working load (SWL) information and weight handling scenarios. This information may be provided by the manuals, and technical documentation as supplied by the equipment manufacturers.

1.3 Certifications

Following completion of successful sea-trials and completion of any outstanding work, the vessel shall be delivered to the Purchaser via its own hull in San Diego.

The vessel shall be designed to operate as a Research Vessel for all trips, both day and overnight. The vessel shall be built to USCG Subchapter T standards for a vessel on an Oceans Route where the range to safe refuge is not more than 60 nautical miles with a stability criterion

for Exposed Waters. The vessel will be built to USCG Subchapter T standards but shall NOT be inspected by the USCG unless otherwise specified by the Purchaser prior to contract signing.

A provisional stability calculation shall be performed following initial engineering and weight & balance calculations. Such calculation shall confirm if all USCG criteria could be met in the stated vessel loading scenario, or if required, limitations to any of the loading conditions to be implemented.

The vessel as built will comply with regulation 46 CFR part 69 Subpart E Simplified Measurement System for less than 100 gross tons.

Following completion of successful sea-trials and completion of any outstanding work, the vessel shall be operationally accepted by the Purchaser, ready for work, at the All American Marine dock in Bellingham, WA. AAM will construct the vessel having met all construction requirements for obtaining a USCG Certificate of Inspection. The vessel shall be subject to a final inspection, crew safety demonstrations and official acceptance and issuance of the Certificate of Inspection by the Purchaser's local OCMi IF the purchaser decides to obtain a USCG Certification. If the Purchaser decides to obtain a USCG Certification, this shall be agreed upon in writing prior to the signing of a vessel building agreement, otherwise the vessel will be built to these standards but will not receive a USCG Stability Letter or USCG Construction Oversight Letter.

Builder shall furnish to the Purchaser the following certificates and/or documents:

- FCC Bridge-to-Bridge Radiotelephony Certificate
- FCC Communications ACT Safety Radiotelephony Certificate
- Life raft certificates
- Stability Calculations: If the purchaser decides to have a USCG inspected vessel, the Purchaser shall supply to All American Marine all purchaser furnished equipment information for completion of stability calculations.

1.4 Tests and Trials

Once the vessel's detailed design is complete the Builder shall work with the Purchaser to develop a detailed test and trials plan that is suitable for the vessel design and its diverse operational profile.

On completion of the vessel, and prior to launching, the vessel shall be weighed on calibrated load cells, and the measurements recorded. Thereafter, a series of wharf tests and sea-trials shall be carried out at the Builder's yard to confirm that all systems are in proper working order, and that the vessel and its equipment perform in accordance with the contract.

A representative of the Purchaser may witness all equipment commissioning. A detailed test procedure will be developed and approved by all parties at least two weeks before tests are to be commenced.

The Builder shall conduct the sea trials and shall provide all the necessary personnel, fuel, lubricating oils, fresh water, testing equipment and all other items required for the operation of the vessel on trials. The Builder shall be responsible for collecting all data on the trials.

The Builder shall be responsible to arrange for the attendance of representatives of the equipment suppliers/manufacturers at each of the trials where necessary. Suppliers of main engines, drive shafts, painting, electronic equipment, etc, must sign their approval of the installation and proper working order of the respective systems.

All underwater surfaces shall be in a clean state prior to commencement of sea trials.

The sea trials will include, but not be restricted to, a series of measurements listed below, which will be done throughout the engine speed range at intervals not exceeding 100 rpm. The sea trials will be done in sea state 1, or otherwise at the discretion of the Designer.

- Engine power output and average speed over ground (measured by GPS in opposite

directions).

- Fuel consumption. The engine manufacturer's ECM supplied data will be used for calculating consumed fuel.
- Dynamic trim angle

1.5 Design

All American Marine Inc. shall be responsible to procure Teknicraft Design's drawings and information. Teknicraft Design Ltd will retain the copyright to the design and contents of all technical material and information supplied. No part shall be used in any way whatsoever, reproduced or modified in whole or in part without their written permission.

1.6 U.S.C.G. Surveys

The boat shall be constructed and outfitted to meet the regulations of the US Coast Guard, Subchapter T, for vessels operating on a "Oceans" route not more than 60 nautical miles from a harbour of safe refuge. Stability shall meet the criteria of the US Coast Guard, Subchapter T for "Exposed Waters". However, the vessel shall not be inspected by the USCG unless otherwise noted as mentioned in section 1.3.

The Builder shall ensure that all equipment necessary for compliance with the requirements of the USCG, be fitted to the vessel.

The Builder shall perform a deadweight survey. Based on the deadweight measurements, the Designer shall calculate and compile stability calculations for the vessel in various conditions of loading.

1.7 Alternatives

The Builder may wish to propose alternative materials, equipment, or methods, which would be more economical and/or practical for them to supply and fit. In such case they should discuss alternative solutions with the Designer and Purchaser's representative for approval prior to

implementation.

The Purchaser shall have the right to make changes, alterations, and additions to the specification, but changes must be requested in writing.

Any variation to the drawings or specification that is proposed by the Builder or the Purchaser, shall be documented on an Engineering Change Proposal (ECP) document, and signed by all parties, prior to implementation.

1.8 Materials, Equipment and Workmanship

All materials shall be of good quality and suitable and fit for the purpose intended.

It is intended that machinery components shall be selected that shall give best service with the least amount of maintenance. The machinery and equipment shall be installed complete and ready for operation.

The Builder shall construct the vessel in a manner consistent with best trade practices and in accordance with best commercial quality finishing, consistent with the industry standards which would be applied for the construction of similar hull vessels using modern technology.

The Builder shall ensure that only suitably skilled and experienced employees or sub-Contractors be engaged to work on the vessel.

All materials and equipment used on the vessel shall be in accordance with the specification and drawings supplied unless alternatives are approved. For other materials and minor items of equipment not specified, the Builder shall ensure that they comply with the requirements of USCG and are in accordance with good shipbuilding practice and lightweight in design, suitable for use in medium speed craft.

1.9 Cleanliness

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The vessel is to be maintained in a clean state throughout the building process. At regular intervals the entire vessel is to be cleaned and the tanks and bilges be cleared of all debris, fillings, and waste.

All equipment, including engines are to be properly covered with protective material to ensure that its original clean state is maintained throughout.

Special care is to be taken to ensure that all soft fabrics and materials are completely covered with fixed plastic sheeting.

Before handing over, the vessel shall be completely and thoroughly cleaned in every detail.

1.10 Ambient conditions

The systems shall be designed and installed to operate in moderate conditions, commensurate with the ambient conditions prevalent in Southern California and Northern Mexico.

2. STRUCTURE

2.1 Construction General

The vessel hull shall be of all welded alloy construction in accordance with the requirements of USCG and shall conform to the scantlings as shown on the plans. All aluminium and filler material to be of shipbuilding quality, with appropriate mill certificates.

Limber holes shall be provided in the structure of the hull to prevent accumulation of condensation water in the hull, other than at bilge suction points.

Scuppers shall be fitted through the gunwale and side plating to drain deck water from the aft deck directly overboard. The scupper arrangement shall be approved by the Purchaser's representative prior to construction.

Scuppers and drains shall have suitable fairings to prevent spray from entering the boat via the openings.

2.2 Aluminium Alloys

The designer specifies the aluminium alloys used for construction of structural and non-structural portions of the vessel. Plating shall be AA5083 H116, or approved equivalent. Extrusions shall be AA6082-T6, AA6061-T6, AA6063-T6, and AA6005-T6 or approved equivalent. Welding filler wire shall be AA5183. These alloys shall be high quality marine grade as required by USCG.

2.3 Welder qualifications

All welders shall be certified to the All American Marine weld procedure as required by the USCG.

2.4 Welding

All welding shall be electric arc type using either MIG or TIG process. All welding shall meet the requirements of the USCG. All welding shall be graded to ISO 10042 Level D.

2.5 Grinding

High spots in weld beads on exterior hull plate welds below waterline shall be ground to be flush with surrounding welding. Deck plating welds shall have high spots removed on the external side of the plating. Grinding shall not be done to the detriment of the required strength at the joint.

5000 FABRICATION

5028 Fendering and Guards

Each side of the vessel will be fitted with a fabricated fender extending to approximately 40' forward of the transom. The forward and aft ends shall be neatly faired into the hull.

5034 Spray Rails

The vessel shall be fitted with spray rails as required.

5040 Deck

External and internal decks shall be fabricated from aluminum deck extrusion. Lower berth area decks will be marine grade plywood.

The main deck and upper deck will be flat with a rest trim to eliminate standing water.

The foredeck and wheelhouse roof will have camber.

Decks shall be reinforced in way of all machinery, deck fittings, deck sockets, etc. that require direct load carry connections to deck girders and frames.

5041 Deck Sockets

Tie down points should be provided for any clear deck space that might be used for the installation of equipment including the main aft weather deck and portion of O1 deck aft of the pilothouse.

40 recessed deck sockets inserts shall be fabricated in the aft deck as per the GA drawing. Each socket will have a countersunk 3/4" -10 NC stainless insert. The depth of the countersunk area will allow a blanking bolt to be installed leaving the deck flush. A 3/4" - 10 threaded synthetic or non-ferrous plugs shall be provided for each deck socket to prevent debris accumulation in sockets while maintaining a flush deck. Each installed assembly shall be tested with a 750 lb. vertical pull test and the socket stamped accordingly with the SWL.

Approximately 10 recessed deck sockets inserts shall be fabricated in the upper deck as per the GA drawing. Each socket will have a countersunk 3/4" - 10 NC stainless insert. The depth of the countersunk area will allow a blanking bolt to be installed leaving the deck flush. A 3/4" - 10 threaded synthetic plugs shall be provided for each deck socket to prevent debris accumulation in sockets while maintaining a flush deck. Each installed assembly shall be tested with a 300 lb. vertical pull test and the socket stamped accordingly with the SWL.

There shall be an additional 4 recessed deck sockets inserts installed on the bow as per the G.A. drawing. Each socket will have a countersunk 3/4" - 10 NC stainless insert. The depth of the countersunk area will allow a blanking bolt to be installed leaving the deck flush. A 3/4" - 10 threaded synthetic plugs shall be provided for each deck socket to prevent debris accumulation in sockets while maintaining a flush deck. Each installed assembly shall be tested with a 300 lb. vertical pull test and the socket stamped accordingly with the SWL.

Any additional attachment hardware shall be supplied by the Purchaser.

5043 Fuel Tank

Two integral fuel tanks shall be fabricated and fitted. Total Capacity shall be ~600 gallons.

Each tank shall be inspected during construction and witnessed by the Purchaser. Pressure testing shall be done per the USCG regulations 46 CFR 182.435 and witnessed by the Purchaser.

Fuel tanks shall be thoroughly cleaned of all debris, weld spatter and other foreign matter prior to initial filling and shall be kept closed thereafter until ready for use.

The filling of the fuel tanks shall be affected through a single port side filler located on the main deck. The filling station for each tank will enable spill fuel to be contained in a cofferdam. The cofferdam shall have a minimum of 2.5-gallon capacity. Fuel filler caps to be camlocks with cap attachment chain.

Each fuel tank shall be fitted with a vent/overflow pipe fitted at the forward end of each fuel tank.

The vent pipe shall be fitted with a vent to atmosphere (with anti-flash gauze). Each tank will have a connection for draining water in the lowest part of the tank.

5058 Handrails and ladders

Ladders shall be located as described below. All ladders shall be bolted in place with 316 stainless steel bolts in such a way that the ladders can be easily removed and replaced. The interior inclined ladders shall be constructed with folded aluminum steps and 1.25" aluminum pipe handrails.

Two (2) fixed ladders shall be provided on the starboard and port transom for boarding divers/swimmers from the water. The ladder shall be custom designed and fabricated from Schedule 80 aluminum pipe. It shall have two handrails, one attached on either side of the ladder to assist divers climbing out of the water.

Interior vertical ladders shall be fitted to provide access below each hatch. Ladders with handrails shall be fitted to provide access to the engine rooms.

An inclined ladder will be provided between the main deck and the upper deck located on the aft cabin bulkhead. The exterior inclined ladder shall be constructed with folded aluminum steps and 1.25" aluminum pipe handrails.

Cabin top rails and all main deck rails mounted on the bulwark cap shall be fixed. The top of the uppermost course shall be at least 39 1/2" above the deck. Stanchions shall be aluminium plate and intermediate rails shall be 3/4" aluminium pipe and be spaced at intervals not exceeding 12". Stanchions shall be no more than 5'-0" apart.

Grab rails shall be installed throughout the interior/exterior of the vessel, including the pilothouse overhead, to ensure safe handholds in any location. Transom grab rails shall be provided for the swim platform. Rails shall be 1.25" standard aluminum pipe. The ends of the rails shall be faired into the mounting surface. Grab rails as approved by the Purchaser to assist in entry and exit from spaces shall be fitted.

5061 Hatches and Port Lights

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The vessel shall be fitted with flush, quick acting, hinged and dogged watertight hatches. The hatches shall be *Freeman Marine* or equal aluminum hatches with drain tubes. Three (3) *Freeman* removable "Tee" handles shall be included. Hatches shall be located clear of main deck traffic areas whenever possible.

Hatches shall be fitted in the following places:

- Port forepeak 1524H
- Starboard forepeak 1524H
- Port lazarette 1524H
- Starboard lazarette 1524H
- Port thruster access 1524H
- Starboard Thruster access 1524H
- Port Tank Compartment 1524H
- Starboard Tank Compartment 1524H

Fabricated, flush fitting, hinged hatches shall be installed above the engine room compartments. These hatches shall be watertight and shall have two (2) suitably sized gas struts/springs to assist with opening the engine hatches and keeping them open when working in the engine rooms. They shall be in the following locations:

- Port aft deck (genset and main engine removal)
- Starboard aft deck (genset and main engine removal)

There shall be an additional fabricated, flush fitting, hinged hatch on the foredeck that will allow for access into the wet locker. This hatch shall be watertight to prevent flooding of that storage void.

Exterior hatches shall be fitted with drains in the coaming gutter to minimize water entering voids when opening the hatches.

5067 Stairwells

Inclined ladders shall be provided for passengers and crew to move between the cabin and the port and starboard focsle. An interior inclined ladder will lead up to the pilot house. Exterior

stairways will be fitted as shown on the General Arrangement Drawings.

The stairways shall be fabricated from folded aluminum plate. The stair tread plates shall be finished with non-skid tread noses.

Each stairway shall be fitted with a handrail.

5073 Arch and Radar Tower

An aluminum radar arch and mast shall be mounted on the housetop. The arch shall support mounts for the radar antennas on centerline and mounts for other antennas port and starboard. The mast shall be mounted to the arch on centerline and shall carry the masthead and anchor lights. A ladder or suitable equivalent shall be included in the mast design to allow ready access to the upper mast for equipment installations and repairs.

The mast shall be fitted with a crosstree, mounted with port, starboard, and centerline flag halyard blocks. Halyard cleats shall be mounted on the radar arch near the base of the mast. Halyards, complete with snaps shall be provided. In addition to standard navigational lights, RAM (restricted ability to maneuver) lights and day shapes in accordance with the COLREGS shall be provided. A flag flying system shall be installed.

See section 5357 for safety placard information.

5075 Main Deck A-Frame

An A-frame will be mounted on the main deck level on centerline at the stern of the vessel. It will be used to deploy and retrieve overboard scientific equipment such as towed nets and deployment and retrieval of buoys, moorings, ROV's and AUV's. The A-frame is both for lifting and for towing astern. Lifting operations will either make use of the A-frame mounted winch, or a deck mounted Hydraulic winch via cross member mounted sheave. Towing operations may be performed from the cross-member sheave. A Safe Working Tension Load rating shall be posted in plain view of the operator station on the upper deck.

The A-Frame design shall include hydraulic cylinders with internal stops. The frame and cylinders foundation pads shall be mounted directly to the deck frames using insert plates with full penetration welds.

The frame shall have 14 feet clearance above deck. Clearance will be 14 feet between uprights. The A-frame shall extend at least 10' feet aft and 8' feet forward of transom.

The SWL of the A-Frame shall be based on a 5,000 lbs total load, vertically suspended, and hooked onto the sheave mounting points, through the full travel arc of the frame. The SWL stress shall be based on a safety factor of 3 on the yield strength of the materials from which it is fabricated. The 5,000 lbs total load is measured from the pick point on the A-Frame, not to be confused with the pulling load from the winch.

The A-frame shall have a cross member mounted winch for lifting on centerline. The winch will be **4,500 lb.** load rated. The winch will be loaded with synthetic line, *Amsteel-Blue* or equal, with a soft eye in the tail end and a weak link of 4,500 lbs. The A-frame will be outfitted with a PL5 Pull Master (4,500lb WLL) cross-member mounted winch for lifting on centerline. The PL5 will have controls at the main deck and upper control station.

The A-frame and A-frame winch shall be controlled at the upper deck level, aft facing control station. An emergency stop button for the hydraulic system shall be provided in the control station. Every effort shall be made to limit the impact of the A-frame footprint and hydraulic cylinders mounting locations on the function of the working deck area.

The customer shall provide an electronic sheave for the A-Frame. The sheave shall be of sufficient diameter for use with either 3/8" wire or 3/8" synthetic cable for use with the Scientific Winch towing/lifting spool and designed in accordance with the requirements of UNOLS recommendations for sheave size and load rating. It shall have a minimum safety factor of 3. Please refer to section 5339 for scientific winch specifics.

The A-Frame will be provided with a sheave of sufficient diameter for use with the Scientific Winch CTD spool and a single conductor 0.316" cable. Customer shall supply the electronic sheaves. The sheaves shall be suitable for use with the conducting wire and designed in

accordance with the requirements of UNOLS recommendations for sheave size and load rating. It shall have a minimum safety factor of 3. Please refer to section 5339 for scientific winch specifics.

The cross member shall have two attachment points with the same working load limit, one port, and one starboard of centreline on the upper level, within the optimum operating angles of the *Okeanus* scientific winch.

The legs of the A-frame shall be provided with ladder rungs to provide access to the top of the frame. Flood lights shall be mounted on the A-frame to illuminate the water's surface below the frame when deployed. Two-line cleats, one per side, mounted on inboard verticals.

Hydraulic lines will be connected through quick connect deck fittings.

The total SWL load on the A-frame is limited so only one of these winches can be used at a time.

5079 Gates

Chain gates shall be installed at the main deck rails at head of starboard and port swim ladder access, at the main deck transom opening between the A-Frame legs, and between the bow A-Frame legs.

These chain gates shall be made with 316 SS 3/16" proof coil chain. Each end of the chain will have 316 SS carabineer.

Hinged, inward swinging gates will be fit in the bulwarks below the cap rail between frames D & E and both the port and starboard side. The gates will be secured closed with latches and vertical barrel bolts on each gate. These gates shall have a means to secure open.

5082 Bollards and Cleats

Four mooring cleats shall be installed on each side of the vessel parallel to the bulwark. The forward cleats shall be located to lead through the port and starboard scupper holes. The aft cleat will be on the outboard corner transom. They shall be mounted parallel to the gunwale. All mooring

cleats will be 18" cast aluminum weld on deck cleats. The cleats shall be installed on suitable deck inserts and supported by under deck structure. All welds shall be ground smooth to eliminate snags which will damage synthetic lines. Fairleads to be provided as needed to prevent damage to mooring lines.

Four 7.5" cleats to be installed in way of the aft A-frame at customer directed locations and two 7.5" cleats will be installed in way of the bow A-frame.

There shall be a fabricated anchor bollard installed on the starboard side of the foredeck as illustrated on the G.A. drawing.

5085 Seats and Stowage

The Vessel shall provide permanent storage for 14 life jackets and 8 work vests as per the G.A drawing.

Stowage shall be provided in the pilothouse sitting settee desks, the lab drawers, under the interior inclined ladder, in the bunkrooms, as well as other areas shown in the GA.

5300 Systems

5303 Engines

2 Electronic, high efficiency, Tier 3 low emission diesel engines that meet or exceed all federal emission standards shall be fitted.

Make	Caterpillar
Model	C18
Rating	599 kW / 803 hp @ 2100 rpm*

* D Rating, Intermittent Duty: For vessels operating at rated load and rated speed up to 16% of the time (up to 50% load factor). Typical operating ranges from 1000 to 3000 hours per year.

- Heat Exchanged Cooled
- Flex mounts
- 24 Volt Isolated Ground
- 24 Volt 75 amp alternators
- Base system 2.0 with 26 meter harnesses and main supply box
- Digital displays with start/stop for Pilot House.
- Digital displays with start/stop for Engine Rooms.
- Dry exhaust fittings/elbows
- Front mounted bilge pumps
- Oil change hose whips with Parker 60 Series quick disconnects.
- Air cleaners and crankcase ventilation kits
- Parts and operator's manuals
- Lube Oil and coolant
- Torsional Vibration Analysis
- Application Review
- ZF 665 V Gear or Equal
- Trolling Valves

The main engines shall be installed as per the recommendations and requirements of and under the supervision of the manufacturer's technical representatives.

The main engines shall be arranged to start and stop from the helm station and in the engine rooms.

The main engines will be supplied with extended service coverage- Cat Platinum, 48 month total, 8,000 hours. Extended warranty can be edited throughout the course of the warranty period.

5312 Props and Shafts

The Contractor shall provide and install VEEM NiBrAL propellers with interceptor strips to provide the correct pitch. The propellers shall be right and left hand, turning outboard when going ahead. The propellers shall be designed for maximum efficiency and shall be matched to available transmission gear ratios. They shall be mounted with a tip clearance of ~20% of the propeller diameter.

Diameter TBD"

Pitch TBD" (pitch needs to be finalized after engineering)
 Material NiBrAL

A close-fitting clamp-on type propeller rope cutter shall be fitted on the aft end of the stern tube so as to prevent lines from wrapping on the shaft between the propeller hub and aft end of the stern tube.

The gear coupling will be connected directly to an *Aquamet* 22 HS propeller shaft. Shaft diameter will comply with USCG requirements.

The shaft couplings and propellers will be blue fit to the shaft tapers in order verify no less than 80% contact has been achieved.

The shaft will be fit with two shaft bearings. The stern bearing will be housed in a fabricated A-bracket. The intermediate bearing will be fit in the stern tube.

The stern tube will be fit with a *PYI* PSS drip less shaft seal that is cooled with water from the main engine raw water-cooling circuit.

The shaft bearings shall be *Johnson Duramax*.

The ends of the shaft shall be machined to standard SAE tapers and fitted with keys. The shaft coupling shall be machined to match the propeller shafts. The bearings shall be locked in place with SS grub screws.

5315 Rudders

Two stainless steel 316 fabricated profiled rudders complete with shafts, seals, bearings, and tillers will be supplied and fitted.

Each rudder will be fitted with a safety stop to keep the rudder from falling out in case of a steering failure.

The high efficiency balanced rudders will be fabricated from 316 stainless steel. The rudders shall be welded to Aquamet 22HS rudderstocks and shall be mounted to allow removal of the propeller shafts without removing the rudders. A water-tight flush drain fitting shall be provided at the bottom of each rudder to allow for inspection and condensation removal during haul outs.

The rudder bearing shall be precision-machined from UHMW-PE, an ultra-high molecular weight polyethylene. UHMW is extremely durable, abrasion resistant and does not absorb water. The upper bearing shall be fitted with a seal. The rudder bearings will be fitted with a rudder tube and chocked into place.

5318 Gensets

Two diesel generator sets will be fitted with one port and one starboard. Output will be 120/240 VAC 60 Hz, single phase. The engine will be fitted with a 24V DC starting system. A preliminary electrical load analysis has been carried out and all systems can be powered from the combined output of the generators. To assist with load management, the HVAC system shall primarily be powered via one generator while the standard hotel load and electronics package shall be run via the other. An emergency crossover will be installed to allow for redundant power options.

The gensets will not be fitted with sound shields.

The engine will be heat exchanged cooled.

- Make Caterpillar
- Model C1.5
- Rating 12 kW / 60Hz
- Voltage 120/240 VAC
- Phase Single Phase

Generator features will include:

Document no : T18WCSD-DOC-001
Commercial-In-Confidence

Construction Specification
November 7, 2023

- Heavy-duty construction
- Certified by the Environmental Protection Agency (EPA) to conform to Tier III marine auxiliary.
- Diesel fueled, Three cylinders, Four cycle.
- Electric fuel lift pump
- Lifting eye
- Remote start 12-pin connector
- Class H insulation
- Voltage regulation of $\pm 1.0\%$
- Radio suppression
- Outstanding motor-starting capability
- Directly connected to the engine, the generator has sealed precision ball bearings with a precision-machined steel sleeve in the end bracket to prevent shaft misalignment and extend bearing life.
- Raw Water/Heat Exchanger Cooling
- 24-volt DC starter motor
- Remote mount control panels at Switchboard and Helm Station
- Automatic safety shutdown systems
 - Low oil pressure shut down.
 - Engine Overspeed
 - High engine temperature shut down.
 - Loss of coolant shut down.
 - Seawater flow failure shutdown
- Vibration mounts

5321 Engine Exhaust

The main engines shall be fitted with a water-lock silencer wet exhaust system. Each engine shall have its own individual exhaust system.

A mixer shall be fit to each main engine to mix seawater-cooling water with the exhaust gas. The wet exhaust gas will discharge in the engine room through heat resistant glass fiber piping, muffler, and connect via a flexible hose to an aluminum pipe welded to the side of the vessel

outboard. Mufflers will have drains.

The systems shall be installed to be within the engine manufacturer's backpressure requirements. The systems shall be installed to protect the engines from back filling with seawater.

5324 Genset Exhaust

The generator engine shall be fitted with a water-lock silencer wet exhaust system.

A mixer shall be fit to the generator engine to mix seawater-cooling water with the exhaust gas. The wet exhaust gas will discharge through heat resistant wet exhaust hose, muffler, and connect to an aluminum pipe welded to the side of the vessel in the engine compartment. Mufflers will have drains.

The systems shall be installed to be within the generators manufacturer's backpressure requirements. The systems shall be installed to protect the engines from back filling with seawater.

5327 Steering System

A 4-station electric hydraulic power steering system will be installed. The power system will consist of a *Dometic Optimus EPS 5000* power unit with two electric driven hydraulic pumps (EP1600). Provisions shall be made to provide overcurrent protection for steering-gear systems. The main helm control station will be fitted with an electronic Helm and a large diameter steering wheel.

- Maximum rudder angle +/- 35 degrees
- Rudder speed (+35 degrees to -35 degrees) 10 seconds (Engine Driven)

The main helm station will be fitted with a rudder angle indicator. The main helm station dash will be fitted with *Simrad AP70 Mk2* autopilot remote that will provide follow up jog steering and rudder position indication.

The wing stations both port and starboard shall be fitted with an electronic helm and a large diameter steering wheel. Rudder angle indicators shall be incorporated into the wing station arrangement. The aft facing control station shall be fitted with an electronic jog lever and rudder angle indicator.

Each tiller will be fitted with mechanical stops. Prior to launching the steering rudders will be perfectly aligned by measurements taken behind the transom. The position of the tiller arms will then be permanently marked on the inside of the transom for later reference. The system will be plumbed with SS hydraulic tubing.

There shall be two (2) hydraulic, retractable bow thrusters. They shall be *Max Power* R300 or similar and shall have the ability to integrate with the Glendenning ProPosition 2 controls for basic station keeping capabilities.

The *Dometic Optimus* steering system integrates with the Glendenning control system and bow thruster controls to provide basic station keeping capabilities.

The control system shall be served by two sources of uninterruptible DC power.

5330 Controls

A 4-station control system will be fitted to the vessel with dual lever control heads or equivalent.

- Make Glendenning or Equivalent
- Model Complete Controls 2
- Special Modes System will come with the ProPosition 2 controller allowing:
 - Heading hold when drifting
 - Position hold if allowed to adjust heading.
 - Control interface for this system will be provided at all control stations.

The following areas will be fitted with controls:

- Main helm

- Port side wing station
- Starboard side wing station
- Upper deck aft station

The control system will provide troll speed control of the reduction gear. It shall be served by two independent sources of DC power.

5333 Fire Suppression

Each engine room shall be fitted with a *NOVEC 1230* fixed fire suppression system of suitable capacity. The system shall be capable of automatic discharge upon heat detection. The manual release controls shall be fitted outside of the engine room space.

The system shall be installed to control the ventilation system and shut down the main engine and genset in that space upon fire detection.

A *Maretron* smoke and heat detection system panel will be fitted in the pilot house. It will be an 8 zone system with annunciation in the PH.

The following zones will be monitored:

- Port engine room (Heat and manual pull)
- Starboard engine room (Heat and manual pull)
- Port focsle (Smoke)
- Starboard focsle (Smoke)
- Main cabin (Smoke and manual pull)
- Pilothouse (Smoke)
- Tank Voids (Smoke x2)
- Lazaretttes (Smoke and Heat x2)

The following additional equipment will be supplied and fitted:

- 1 x 2 1/2 lb ABC fire extinguisher will be fitted in the pilot house.
- 1 x 10 lb ABC fire extinguisher will be fitted in main Cabin.
- 1 x 5 lb ABC fire extinguishers will be fitted in each focsle.
- 1 x 5 lb ABC fire extinguisher will be fitted near galley.
- 2 x 5 lb ABC Corrosion proof fire extinguishers will be fitted at each engine room entrance (1 ea. Port and Starboard).
- 2 x 2.5 lb Halon fire extinguishers, one in the pilot house and one in the dry lab.

5336 Anchor System

One anchor, chain and line shall be supplied and fitted. The anchor line end shall be permanently connected to the vessel.

A *Windline* universal anchor roller suitably sized for a Fortress FX-85 shall be fit into a hawse hole through the foredeck.

One Fortress FX-85 anchor, shall be shackled to 30 feet of 1/2 inch diameter galvanized anchor chain and 200 feet of 3/4 inch Yale 8 strand braid nylon anchor line.

The anchor windlass will be a hydraulic Maxwell RC1212HD with capstan. Control will be by tethered remote stowed in anchor locker. (See Section 5450 for Hydraulic details)

5339 Crane, Scientific Winch, Bow Winch, Universal Sonar Mount

A boom type Morgan Marine Crane, hydraulic and marinized with a 4500 lb. capacity at 5'2" feet, 1,870 lbs. at 12'5" and a max reach of this crane is 19' feet with a lifting capacity of 1210 lbs. The crane will be fitted with a canvas all-weather, removable cover. The crane will have a manual control station with stand on crane. A belly pack is included in the design.

The vessel shall be supplied with an *Okeanus* dual drum scientific winch set up in a "waterfall"

style configuration. The winch shall have a SWL of 5,000lbs located on the upper deck facing aft and shall have the following features:

- Conducting Wire (CTD) Drum
 - 1000' of .316 single conductor wire
- Hydro drum
 - 5,000' of 1/4" stainless wire
- Canvas all weather, removable cover.
- Control will be via touch screen and joystick at station on upper deck facing aft with weather cover.

The A-Frame shall have a cross member mounted *PullMaster* (PL-5) Winch or equivalent for lifting on centerline. The winch will be 4,500 lb. load rated for the 1st layer. The winch will be loaded with synthetic line, with a soft eye in the tail end. Control will be via electric joystick at the Aft control station and via pushbutton on a tether at A-frame. (See section 5075 A-Frame for more details).

A small A-Frame shall be incorporated into the bow for use in conjunction with the bow winch. The SWL of the A-Frame shall be based on an 800 lbs. total load, vertically suspended, and hooked onto the sheave mounting points, through the full travel arc of the frame. The vessel shall be supplied with a *Kinematics* (16x10) hydraulic bow winch, located on the foredeck. It shall be mounted behind and above the anchor tackle and be arranged such that the winch and capstan can operate simultaneously without interference. The foundation pad shall be mounted directly to the deck frames using insert plates with full penetration welds. The bow winch shall have the following features:

- SWL of 800 lbs. on the first layer
- 1000' of 5/16" Amsteel synthetic line*
- Fairlead / Roller
- Control will be by tethered remote stowed in anchor locker.
- Canvas all weather, removable cover for winch.

*Please note that due to Amsteel's low elasticity, care should be used to avoid shock loading the bow winch when

in use. If the bow winch is used in a manner similar to an anchor windlass, premature wear may ensue.

A Universal Sonar Mount shall be installed on the port side of the vessel. It shall be the *USM Hightower* assembly that is capable of being rotated aft and stowed on a hinged bracket alongside the vessel, parallel to the bulwarks, when not in use. This bracket will be stowed flat and secured against the hull when not in use. The bulwarks shall have an opening that allows for the pole mount assembly to pass through when it is installed. A cover plate will be provided to reduce spray on deck when the pole mount assembly is not installed and will be fastened in place with three (3) J-Bolts. The pole assembly arm will be 17" to extend beyond the hull fendering and allow for clear sonar mount rotation.

An additional, hydraulic capstan rated for up to 2,000 lbs. mounted to a backing plate with 2' x 2' bolting pattern shall be provided. The capstan shall get its power from main deck mounted hydraulic quick connect fittings. The capstan assembly shall be able to be manipulated and moved for various deck operations once it is bolted into the deck socket mounting grid.

5351 HVAC

The forepeaks, tank voids and lazarette will have pipes fitted to allow for natural ventilation. Ventilation pipes will terminate with a vent check.

The vessel shall be fitted with *Webasto* 230 VAC air conditioning systems. The system shall be arranged as follows:

- 1 x 16,000 BTU for the pilot house.
- 3 x 10,000 BTU for the labs and galley
- 1 x 6,000 BTU for the Port below deck berths
- 1 x 6,000 BTU for the Stbd below deck berths

Each unit will have an individual thermostat and have the respective sea water pump turned on as needed via relay control box. Adequate air flow per manufacture's specifications will be

confirmed after installation.

The galley will be fitted with a range hood to provide galley ventilation.

The head shall be fitted with a 4" ventilation exhaust fan rated for 190 CFM.

5353 Machinery Ventilation

Engine rooms shall be fitted with ventilation systems comprising of ventilation fans of suitable capacity. Fans shall be fitted on rubber mountings, and the casings shall be aluminium. The ventilation shall be controlled at the helm.

Each engine room shall be fitted with air inlet and discharge openings. The openings shall be oriented and shrouded to minimize spray induction into the engine room. All air inlets and outlets shall be fitted with fire dampers and salt-water spray diffusers. Fire dampers, Delta T or equivalent, will be remote controlled and electrically operated.

5354 Acoustical Insulation

The noise level in passenger spaces shall be kept as low as possible to enable the public address system to be heard. Furthermore, noise levels shall meet the OSHA permissible noise exposure regulations 29 CFR Part 1910.95, and any interior spaces occupied by passengers shall not exceed an 8-hour time-weighted average of 85 decibels measured on the A-scale, when the vessel is travelling at normal cruise speed. Noise levels shall be measured during sea trials.

The engine rooms shall be insulated on the deck heads, ventilation trunks, as well as engine room sides and forward bulkhead. Insulation on the sides shall extend down to the lower chine.

Engine room shall be fitted with acoustical insulation as follows:

- Overhead

- 30 mm Air Gap
- Layer 1 - USP, ALU1 36kg/60mm Roll ALU1 facing.
- Layer 2 - 2.5 mm Wavebar Quadzero NL 1lb-ft²
- Forward USP, ALU1 36kg/60mm Roll ALU1 facing.
- Aft USP, ALU1 36kg/60mm Roll ALU1 facing.
- Inboard USP, ALU1 36kg/60mm Roll ALU1 facing.
- Outboard USP, ALU1 36kg/60mm Roll ALU1 facing.
- Ventilation Trunk and Engine Room Entrance
 - Layer 1 - USP, ALU1 36kg/60mm Roll ALU1 facing.
 - Layer 2- 2.5 mm Wavebar Quadzero NL 1lb-ft²

The insulation shall be installed with pins and caps glued directly to bare aluminium plate. All seams shall be taped.

Insulation shall generally be installed with pins and caps glued directly to bare aluminium plate. All seams shall be taped.

5357 Life Saving Equipment

The restricted in ability to maneuverability day shapes and mast lights will be provided.

Safety equipment should be marked per 46CFR196.37.

The following equipment shall be supplied and fitted:

- 1 x 16 person IBA life raft with container, cradle, and lashing (installed upper deck starboard side as per the G.A. drawing).
- 14 x Adult sized Type-I life vests permanently stowed aboard the boat.
- 1 x ACR 2830 Satellite-3 406 Cat 1 EPIRB
- 1 x 24" life ring (mounted on the aft deck)
- 1 x Man overboard light
- 1 x Life ring throw rope

- 12" bell
- 1 x Fire Axe
- 2 x Orion 802 Red Flare kit (3ea) – current within 90 days
- 2 x Orion 958 Orange Smoke kit (3ea) – current within 90 days
- 1 x Orion 4267 Orange Ammo Box

The following placards and signage will be provided:

- 2 x MARPOL Oil Discharge Placard
- 1 x MARPOL No Dumping Placard
- 1x Personnel to Remain Clear When Electronics Are in Operation
- 3 x Sink Drain and Pollution
- 2 x Hearing Protection Required for Engine Rooms
- SWT and SWL marked on A-frame and Winch.
- Load chart posted at Crane Controls
- Winch, A-frame, and Crane controls shall be labeled.

(All items will be required for the deadweight survey and will always remain on board the vessel.)

5373 Galley Equipment

The galley will be fit with the following equipment:

- 1 x Bottom-Freezer Refrigerator, *Summit* FFBF181ESIMLHD or Equal
- 1 x *Whirlpool* 1.9 cu. ft. Over the Range Convection Microwave/Hood in Stainless Steel with Sensor Cooking
- 1 x 3 Burner Electric Range, *Force 10* or equal
- Sink with Garbage Disposal
- 1 x White Board in hallway

5375 Lines and Buoys

The following shall be provided:

- 4 x 7/8" x 70' 2-1 double braid nylon deck line w/ 24" eye splice one end
- 4 x Polyform F10 Fender w/ 8' tag line

5376 Anodes

The vessel shall be fitted with 8 x *Divers Dream* Aluminum anodes. Each anode shall be 6" x 12" x 1/2". Two shall be located on each transom. Two shall be located in the forward tunnel. Two mounted on the port hull and 2 mounted on the starboard hull.

The rudders shall have teardrop anodes on their bottom plates.

A separate earth bonding system, which will not be normally current conducting, shall be installed. Metal casings of all machinery and equipment shall be commonly bonded to the hull and the anodes.

Piping shall be protected with zinc anodes or with isolation as necessary.

The vessel will be fit with a Digital logging hull potential meter to monitor the condition of the anodes.

Bonding: See 5500 Electrical.

5381 Driveline Shrouds

All rotating machinery, such as drive shafts and remote mounted pumps, will have aluminum fabricated safety guards fitted to adequately protect crew from injury.

The guards shall be lightweight and easily removable to facilitate inspection and servicing.

5400 Plumbing

Runs of pipework will, as far as possible, be kept clear of work or access areas, etc. Pipes shall be secured to the vessel's structure by suitable blocks. Pipe runs shall be connected with short

runs of suitable hose to facilitate removal. Where aluminum pipes pass through shell, bulkheads or deck, a short length of the pipe with suitable flange doublers shall be welded into the structure.

All plumbing shall be installed with accessible low point drains.

Unless otherwise specified, copper alloy (such as brass or bronze) equipment or fittings will not be fitted below the main deck. All systems' piping shall be labeled with system identification and flow direction.

Conveniently sized and properly labeled access panels shall be provided for access to all wiring, valves, and pipe connections.

Where possible, ducts, pipes, etc., in the accommodation spaces, shall be installed behind linings, or shall be boxed in. Panels covering ducts, pipes, wire ways, etc., shall be removable.

Cable trays and pipes for scientific instrumentation shall be placed in easily accessible locations and not be covered or boxed in.

Plumbing systems with dissimilar metals which are threaded together shall be lubricated with either Tefgel or Eck or similar as a dielectric lubricant. Dissimilar metals with flanges shall have plastic shoulder isolation washers to insulate from each other.

All system piping will be color coded and labeled for the system served.

All piping shall be installed per applicable USCG regulations.

5405 Fuel System

Each fuel tank shall be fitted with sight gauges. The sight glass on each tank will have self-closing 316 stainless steel valves at both the upper and lower end of the glass. The sight glass shall be protected with a slotted aluminum guard, which shall be marked to indicate tank content in increments of 50 gallons.

SS ball valves and hose tails shall be used for all fuel lines outside the tanks. Piping inside the tanks shall be per USCG requirements. The port tank shall supply fuel to the port engines, and

the starboard tank to the starboard engines. Each supply line will have a shut off valve inside the engine room, with a remotely controlled cable to enable the valve to be shut from outside of the engine room space. Cable levers shall be properly labeled. Long straight runs shall be plumbed in 316 SS tubing.

Each main engine supply line shall be fitted with a single *Racor* Simplex fuel filter. Each filter shall be fitted with a drain valve and a drip pan under each filter assembly to contain fuel spilled during servicing.

Each generator supply line shall be fitted with *Racor* Simplex filter and shall be fitted with a drain valve and a drip pan under the filter assembly to contain fuel spilled during servicing.

5407 Oil Change System

Each main engine, gear and generator will be connected to a common pipe plumbed to each ER entrance. Two (2) *Reverso GP-3023* 3-valve 24 VDC FLOCS transfer pumps shall be installed, one on each side, for rapid oil changing.

5410 Engine Cooling

The main engines will be equipped with its own raw water pump, which shall take suction from a dedicated sea chest thru a 3" SS butterfly valve and *Arctic Steel* 3" bottom in and side out stainless steel strainer. The strainers will be installed to allow easy inspection and cleaning of the strainers. Piping to the engine will be 5086 Aluminum. The raw water shall be discharged from the engines through the exhaust system.

A suitable hard wall hose will be used for flexibility. All flexible connections will be double clamped.

Zincs are to be installed in strainers and in aluminum piping every 4~6 ft.

5420 Genset Cooling

The generator engines will be equipped with their own raw water pump, which shall take suction from a dedicated sea chest thru a 2" SS butterfly valve and *Arctic Steel* 2" bottom in and side out stainless steel strainer. The strainers will be installed to allow easy inspection and cleaning of the strainers. The raw water shall be discharged from the engines through the exhaust system. This sea strainer will also provide raw water to the Fire Pump. (see 5430 Fire Pump System)

A suitable hard wall hose will be used for flexibility. All flexible connections will be double clamped.

Zincs are to be installed in strainers and in piping every 4~6 ft.

5425 Bilge System

Each watertight compartment aft of the collision Bulkhead shall have a *Rule* 2000 GPH 24 VDC bilge pump, plumbed to overboard drain(s). The bilge system shall be connected to a 24-hour power supply.

The bilge pickups shall be mounted at the lowest point in the compartments with bows slightly trimmed up.

An audible and visual alarm shall be fitted at the helm station operated from float switches. Alarm-silence switches shall be fitted in the helm area.

The following points shall be monitored:

- Port Forepeak High Bilge
- Stbd Forepeak High Bilge

- | | |
|------------------------|------------|
| • Port Focsle Bunkroom | High Bilge |
| • Stbd Focsle Bunkroom | High Bilge |
| • Port Engine room | High Bilge |
| • Stbd Engine room | High Bilge |
| • Port Lazarette | High Bilge |
| • Stbd Lazarette | High Bilge |

Forepeak voids shall be serviced with a manual bilge pump, *Beckson* 136P, with a flexible suction hose terminating at the bottom of the void and a flexible discharge hose with enough length to clear vessel side. This will have storage provided in Port Forepeak.

5430 Fire Pump System

There shall be no fire pump supplied. Firefighting water shall be supplied from the washdown pump. See section 5446 for further details.

5435 Black Water System

One (1) SANIMARIN-48 24VDC marine toilet shall be fitted to the vessel. The toilet flushing water will be plumbed from the raw-water pressure system (*Surrelio* AquaKing II Supreme). The toilet discharge shall be plumbed directly to the black water tank. All sanitary piping will be PVC.

The vessel will be fitted with one (1) 120-gallon polypropylene wastewater tank. The tank will have an outlet that will be plumbed to the *Headhunter Tortuga* 115VAC diaphragm pump to allow discharging of the tank overboard. The tank will also have an outlet that will be plumbed to a cam lock style shore side pump out line located on the aft deck. The cam lock size will be 1 ½". A saltwater back flush line will be fitted to each tank outlet. The tank shall be fitted with an inspection hatch and drainage facility. The black water tank will be fit with a 1 ½" vent line plumbed into the tunnel. The tank shall be located on the starboard tank void.

A Maretron tank pressure monitor will be fitted to monitor the level of the black water tank with the display located in the wheelhouse at the operator's station.

5440 Fresh Water System

Freshwater shall be supplied from two integral freshwater tanks installed in the port and starboard lazarettes, providing 200 usable gallons. The interior of these tanks shall be coated with a two-part BlueSeal epoxy system. The freshwater supply line shall be fitted with one (1) Shurflo Aqua King II Supreme 24VDC water pump. The tank shall be vented through a 1-1/2" vent check with protective screen. The tank shall be filled through a standpipe located on the STBD side of the vessel.

The fresh-water pump shall be powered by the vessels DC electrical systems.

All freshwater piping shall be CPVC and have drains at the low points.

A 120 VAC 2.5 gallon Tiny Titan electric tankless hot water heater will be fit.

Hot and cold freshwater will be plumbed to the following:

- Sink in head.
- Sink in the galley.
- Sink in the wet lab.

Cold Fresh water will be plumbed to the following:

- Hose bib on back of cabin
- Hose bib on upper deck
- Window washer system
- Galley Refrigerator

See placard requirements under safety (section 5357)

5445 Grey Water

All grey water plumbing shall be PVC.

The 120 gallon capacity polypropylene grey water tank will be installed in the starboard tank void and will have an overboard connection with motorized valve controlled from the Pilothouse.

The tank will be supplied with a 4" clean out port. The tank will also have an outlet plumbed to a deck standpipe pump out connection located on the STBD side for discharging through a shore facility. The tank shall be vented between the hulls with a check valve to prevent back flushing when underway at high speeds.

A Maretron tank monitoring device will be fitted to monitor the tank level.

5446 Wash Down

The fire pump system will supply sea water to a wash down faucet located on the aft cabin bulkhead.

An engine driven, 24 VDC Jabsco 50200, self-priming 1 1/2" electromagnetic clutched pump shall provide wash down water. The pump shall be mounted onto the main engine and shall be driven via a V-belt. The suction side of the pump shall be connected to the Main Engine raw water strainer. The discharge shall be to wash down spigots on the aft deck, the toilet flushing, and a pressure relief overboard. This pump shall be controlled from the bridge and engine room.

The fire pump system shall be plumbed with 316 Stainless pipes with suitable corrosion protection when transitioning to dissimilar metals.

- Four (4) manifolded aft deck spigots.
- Toilet flushing
- Bow spigot

5448 Deck Drains

Exterior Deck drains will be welded into the deck of the following spaces to provide drainage to the next deck down.

- PH roof aft corners P & S
- Upper Deck Aft corners P & S

Interior Deck drains will be welded into the deck of the following spaces to provide overboard drainage. Drains will be sealed to the flooring.

- Head
- Galley
- Wet Lab

5450 Hydraulics

The Vessel shall be fitted with an engine driven hydraulic system. Two (2) clutchable pumps will be driven by the C-pad on each of the engine marine gears. The system shall have two load sensing pumps and a control manifold. The system will provide a minimum of 30 GPM at 3850 psi with both pumps. The hydraulic oil used MUST be a mineral oil and NOT a biodegradable oil as the use of a biodegradable oil will cause coagulation in the system. There shall be hydraulic oil filters on the oil return line back into the reservoir.

Two retractable hydraulic bow thrusters shall be installed to provide basic station keeping abilities. They shall be *Max Power* R300/21 series retractable thrusters or similar. The bow thrusters will be installed per the manufacturers' recommendation and shall have the ability to integrate with the *Glendinning* ProPosition 2 controls.

The vessels hydraulic system shall power the following:

- Deck crane
- A-Frame cylinders
- A-Frame Winch (connection available as auxiliary power if needed)
- Scientific Winch.

- Anchor Windlass.
- Bow Winch
- Bow A-Frame cylinders
- Bow Thrusters

The hydraulic system shall have emergency shut offs at the transom, Aft cabin area and aft upper deck control station. Port or Stbd control valves can be selected for use from the PH. An alarm switch will be installed in the header tank above the shutoff to provide notification to the crew of low oil before shutdown. Two (2) thirty five (35) gallon hydraulic reservoir tanks shall be fitted, one each port and starboard. These tanks shall share a 5 gallon common header to retain header and priming pressure on the hydraulic pumps. The hydraulic system shall be heat-exchanger cooled.

The system shall be hard plumbed with ASTM A269 / A213 seamless SS hydraulic tubing. The fitting for this system shall be *Parker* Triple-Loc fittings meeting SAE J514 and ISO 8434-2 industry standard for 37 deg flare fittings or commonly known as JIC fittings. The flexible hoses shall be SAE 100 R2 AT. Dry-disconnect Quick connect fittings shall be fit for all removable equipment. Disconnects will be shielded from physical damage.

5500 Electrical

All cables shall be adequately protected against mechanical damage, chaffing, heat, corrosion, and wherever possible be installed clear of bilges. The cables between engine rooms and wheelhouse shall be neatly fastened to aluminum cable trays fitted below deck.

Cable penetrations through bulkheads and decks must have adequate sealing arrangements to maintain water and, where appropriate, fire integrity.

All cable voltage ratings must be suitable for the circuit voltage. Conducting wire must be stranded copper. All sub-circuits shall be double insulated cables.

Cabling and installation will comply with the USCG regulations.

The Contractor will supply a complete set of as-built wiring diagrams of the vessel's electrical

system on delivery of the vessel.

Electrical control panels must be provided containing all necessary controls and starters for the proper control and running of all systems. Circuit breakers shall be mounted on the panel and to be used for switching of circuits. Provision must be made for at least four spare circuit breakers on each of the AC and DC panels.

Cables shall be identified at the origin and the termination.

Each electrical cable will have an identification label at the origin and the termination. The labeling system will be a *Brady* wire labeling system using self-laminating vinyl thermal transfer labels. Cable numbers shall be devised by the Contractor and on the electrical drawings.

Care shall be taken to not mount electrical equipment under the exhaust, engine room vents and in way of soft patches.

5505 DC

The DC system will be a 2 wire with an earthed negative buss. A separate Bonding circuit will be used as needed to ensure a single point of connection between the electrical system and the hull. Multimeter and Battery Monitor with Ammeter should be integrated into the DC panel.

All batteries shall be extra heavy duty low-maintenance type. Battery banks shall be installed in vented, non-metal lined, plastic boxes. The battery boxes will have lids and be strapped into place.

An isolating switch shall be placed as close as practicable to each battery set.

Automatic Charge Relays will be installed between the engine start batteries and the house services battery. When the Automatic Charge Relay senses a charging source from any engine alternator or battery charger it will close and charge both battery banks. The Automatic Charge Relay can be manually closed to provide emergency parallel starting.

Provision is to be made to supply power to the bilge pumps when the normal service distribution is isolated.

Each main engine will have a 24V starting battery bank, consisting of a Lifeline GPL XT starting batteries. The electrical system will allow engines to be started from either bank of batteries. Batteries shall be charged from the main engine fitted alternators.

Each generator will start from the 24V main engine starting banks. Each generator will be isolated thru a battery switch.

A 24V house services battery bank, consisting of 4 x 6 Lifeline GPL-6CT batteries, shall be installed to supply the vessel's DC consumers. The batteries shall be in series to have 24V. The generator or shore power via a dedicated charger will charge the Services battery bank.

A load analysis will be completed prior to electrical system installation.

The 24V DC electrical system will supply power to the following equipment:

- DC Circuit breaker/switch panels
- DC Electronics Circuit breaker/switch panels
- Engine room ventilation dampers
- Main engines start and monitoring.
- Main engine controls
- Gensets start and monitoring.
- Housekeeping bilge pumps system
- (3) Carbon Monoxide detectors (Honeywell or similar)- 1 in each bunkroom, 1 in main cabin.
- Wipers with a pentagraph wiping arrangement and window washing system.
- Horn (Buell 15" Air Horn)
- Newmar PI-10 intercom system with Handsets at
 - o PH
 - o Port ER
 - o Stbd ER
 - o Lab Space
 - o Galley

- o Stbd Bunk Room
 - o Port Bunk Room
- 2 x 12 VDC outlets w/ USB ports in dash
- Navigation lights (individually controlled from the wheelhouse switch panel)
 - o Steaming light
 - o Port light
 - o Starboard light
 - o Stern light
 - o 3x all around lights (Red over White over Red) to signal Restricted Ability to Maneuver or vessel anchored as required by COLREGS.
- Vessel Alarm System (Maretron or equal)
 - o Bilge High levels
 - o Main Engine Exhaust High Temperature
 - o Engine Room High Temperature
 - o Genset Exhaust High Temperature
 - o Grey Water Tank High Level
 - o Black Water
 - o Port and Starboard fuel levels
 - o Fresh Water level
- DC Lights
 - o Floodlights
 - 4 x Vision-X DURA660 LED work light (Fwd. Deck Lights)
 - 4 x Vision-X DURA660 LED work light (Aft Deck Lights)
 - 4 x Vision-X DURA660 LED work light (A-Frame Lights)
 - 2 x Vision-X DURA660 LED work light (Aft Upper Deck Lights)
 - 2 x Vision-X DURA660 LED work light (Bow gunwale)
 - o 6 x Bunk Lights, 1 at each berth
 - o 20 x F-28 LED or equal machinery/below deck lighting.
 - 4 x each Propulsion Room
 - 2 x each Lazarette
 - 2 x each Tank Space
 - 2 x each Forepeak

- 10 x LED Red and White ceiling lights
 - 1 x each Focslle
 - 2 x Pilot House
 - 1 x Galley
 - 4 x Main Cabin
 - 1 x Head
 - 1 x Lab space

A 24V DC to 12V DC converter shall be installed to power 12V electronic components, if required.

5510 AC

The AC installation shall be 120/240 V, Single phase, 60 Hz, with Neutral Earth but non hull return. Supplies shall be from the diesel generators (see 5318 genset) or the shore power connection.

The shore power inlet shall be two (2) 50 Amp 120/240 V, Single phase, receptacles thru isolation transformers for galvanic protection and be located on the port side of the vessel next to the Lazarette entrance. Two 50' long, shore power leads complete with inlet cord connectors, will be provided with storage in the Port Laz. There will be three (3) AC distribution panels with source selections of: Genset(s)/Shore power.

One generator will primarily be used for HVAC and battery charging purposes while the other generator shall be primarily used for the rest of the AC hotel loads. An emergency cross over switch shall be included to allow each generator to power the entire AC system if the other generator experiences a mechanical issue. In this event, care must be taken to manage electrical load to prevent overloading the single generator.

The switchboards shall have sufficient reserve electrical capacity and physical space to support 10% future growth.

Double conversion UPS Modules for Clean and uninterrupted power sensitive equipment shall be installed.

One (1) *Eaton* UPS (9PX3000RT) system shall be installed in the server rack in the dry lab to provide clean, uninterrupted 120VAC power to the lab and pilot house to prevent power dropouts to City of San Diego furnished science and pilot house equipment.

One (1) *Eaton* UPS system shall be installed in the server rack in the dry lab to provide clean, uninterrupted 240VAC 1Ø power to the aft main deck and 240VAC 1Ø to the wet and dry lab.

The AC electrical system will supply power to the following equipment to be installed:

- AC Circuit breaker/switch panel
- Air Conditioning
- Hot water tank
- Engine room ventilation fans
- Lab and rack UPS systems
- Window Wiper Motors
- Intra DHR230 Remote controlled Searchlight - with remote panel in PH
- Under Counter sample refrigerator in the wet lab (*Global Industrial* 2.4 Cu Ft).
- Galley equipment
 - Galley refrigerator
 - Microwave Oven and Hood
 - Force 10 electric range
 - Coffee Maker
- AC Lighting (Dimmable, max color temperature of 3000K)
 - 1 x 4" Lithonia LED in head
 - 2 x 6" Lithonia LED in P.H.
 - 1 x 6" Lithonia LED in Galley
 - 4 x 6" Lithonia LED in Main Cabin
 - 2 x 6" Lithonia LED in Lab Space
 - 1 x 6" Lithonia LED in Port Focsl
 - 1 x 6" Lithonia LED in Stbd Focsl
- AC Outlets
 - 2 x Duplex (with USB jacks) power outlets in wheelhouse

- 1 x Power strip (with USB Jacks) power outlets Dry lab from dedicated UPS
- 2 x power strips (with USB jacks) power outlets Wet lab from dedicated UPS
- 1 x duplex power outlet under the wet lab counter for sample refrigerator
- 1 x Duplex (with USB jacks) power outlets Sette Area
- 2 x Quad GFCI Galley area
- 1 x Duplex power outlet in each lazarette
- 1 x Duplex power outlet in each engine room
- 1 x Duplex power outlet in each void space
- 1 x Duplex (with USB jacks) power outlet in each bunk (4 total)
- 2 x Duplex power outlet upper deck
- 1 x Duplex power outlet foredeck in storage locker
- 1 x Duplex GFCI power outlet in the head
- 1 x 240V 30-amp single phase outlet on aft cabin bulkhead (survey scientific)
- 2 x 120V outlets mounted on the aft deck at the engine room exhaust plenums in watertight enclosures and service from a single 20-amp breaker.

Power panels ratings will be sufficient to allow for 10% growth in power demand and in spare breaker slots.

5515 Electronic Equipment

The navigation and communication at the helm shall include a Multifunction Navigation display and two (2) 24" computer displays. One computer display shall be cabled to a server computer in the lab space, the other to a computer running navigation software. The DGPS output in NMEA format shall be provided to the dry lab workstation desk by means of a labeled serial cable or serial bus bars.

The following list includes electronic items that shall be fit on the vessel:

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- (1) VHF radios with DSC in pilot house- (*ICOM M605*)
- (2) VHF radios (*HM195*)- one for aft control station and one near aft door, both connected to *M605*.
- (1) VHF radio (secondary)- *ICOM M510* in pilot house.
- (1) *Furuno "NavNet TZTouch3" System*
 - (2) *TZT19F* Displays on main control station
 - (1) *TXT9F* for aft control station
 - US West Coast & Baja California C-Map Media Vector Charts
- Professional V4 *Nobeltec Time Zero Professional V4*
- *Nobeltec* Second Station License for Time Zero
- *Nobeltec* PBG Module
- Lenovo Tiny PC Mini PC i5 10500T, 8GB RAM, 256GB SSD
- Logitech K360 Wireless Keyboard - Glossy Black
- Logitech Wireless Trac Ball Mouse
- 2 ea. QNB-1-PMW NEMA 2000 Quick Network Block
- 2 ea. IF-NMEA2K2 NMEA0183 format to NMEA2000
- *Furuno 600W Mix & Match Cable w/Furuno 10pin.*
- Transducer- *Furuno "165T-PM542* with DFF3D and DI-FFAMP boxes to run dual transducer unit with TZtouch3 systems.
- Radar Dome- *DRS4D-NXT*
- Wind Speed indicator with its own dash display- *Furuno 220WX*
- DGPS – *Furuno "GP170D"*
- GPS – *Furuno "GP39"*
- AIS – *Furuno "FA 170"*
- Pilot Plug – *Furuno "FA1703"*
- Doppler Speed Log – *Furuno DS85*
- EPIRB – *ACR "GlobalFix V4"*
- Autopilot – *SIMRAD "AP70 Mk2 system"*
- Ultrasonic speed through water- *UST 850*
- Non-follow up autopilot jog lever (Aft station) – *SIMRAD NF80*
- Satellite Compass – *Furuno "SC70"*
- 5" Magnetic Compass – *Ritchie "FD-500"*
- Loudhailer/sound signaling/internal communication – *Furuno "LH5000."*

- Four (4) Rudder Angle Indicators – *Dometic "Optimus"*
- Maritime *Starlink* assembly
 - 1 month of service for testing.
- Multi-camera display at main helm – 8-Channel 4K NVR and 8 Outdoor 4K (8MP) IP Fixed 30FPS Real-Time Format Nocturnal Cameras with Color Night Vision, includes a 3TB Hard Drive, Lorex Technology or equal.
 - 8 Port POE switch
 - *Beetronics* 22" standard format Marine Display, 800 Nit LED Backlit, AR Glass, (2) Signal Inputs, VGAX1, HDMI DVIX1, Resolution 1920 x 1080
 - 2 x one (1) ea. Port and Starboard engine rooms
 - 2 x aft deck
 - 2 x foredeck
 - 2 x upper deck facing aft.
- 1 Fusion Electronics MS-RA670 – Apollo Marine Entertainment System will be fitted with 3 zones (head unit located in pilot house)
 - Exterior
 - 4 ea. *Fusion XS Series 4"* (MS-0S420) 120-watt Exterior will be supplied as follows:
 - 2 x Main Deck aft
 - 1 x Upper Deck aft
 - 1 x Foredeck
 - Pilot House
 - 2 ea. *Fusion XS-Series 4"* 100-watt ceiling speaker (black)
 - Main Cabin, Galley, and Lab spaces
 - 4 ea. *Fusion XS-Series 4"* 100-watt ceiling speaker (white)
- 1 Fusion Electronics Apollo Marine Amplifier – 4 channels
 - Two (2) Victron Energy 24/12-70 DC-DC converters, 70A (one for the header and one for the amp)

A Compass shall be fitted at the main helm station. Deviation cards will be posted in pilot house.

The vessel must be fitted with a wired intercom system that allows the broadcast of general alarm signals and voice commands from the main console. (See Section 5505 for speaker locations). The system must allow the base station to broadcast to all speakers, or any one speaker.

The Purchaser will assist with the placement of the above equipment to suit the Purchaser's requirements and operation. The final arrangement will be agreed upon 30 days prior to the start of electrical work on the vessel.

A Compass shall be fitted at the main helm station. Deviation card will be posted in pilot house.

The Purchaser will assist with the placement of the above equipment to suit the Purchaser's requirements and operation.

5520 Mission Specific Equipment

A computer half height rack for network systems shall be located under the countertop in the Dry Lab. The rack will be mounted as per the GA drawings, with final orientation subject to Purchaser approval.

A scientific washdown service via a pump taking water from Stbd genset seawater intake will provide sea water to:

- Wet lab Sink faucet.
- Bow spigot

Fresh water will be provided to the scientific sea water pump suction to allow flushing of the system.

Wet lab sink will be single basin 316 SS with two faucets, one for fresh water and one for raw water. Drain will have valves to select dumping into the grey water tank or directly overboard.

An under counter refrigerator (Frigidaire FFPE4533UM 4.5 cu. ft. or equal) will be supplied for the wet lab area.

Wire chases shall be routed from the dry lab directly to the following locations, Pilot House, Mast above Pilot House, Wet Lab, Transducer Pole Mount.

Cable trays and pipes for scientific instrumentation shall be placed in easily accessible locations and not be covered or boxed in.

A plastic conduit will be run from Lab overhead to Radar Arch temporary penetration.

Penetrations for temporary gear:

Lab Aft Bulkheads: 1 x Port 4" standard aluminum pipe, extending ~2" outboard, capped with a hinged aluminum pipe cap on the outboard end. They shall be located as directed by the Purchaser.

Lab Side Bulkheads: 1 x Port/Stbd 2" standard aluminum pipe, extending ~2" outboard, capped with a hinged aluminum pipe cap on the outboard end. They shall be located as directed by the Purchaser.

Pilothouse Top: 1 x 2" standard aluminum pipe, goosenecked, extending ~16" above the housetop, capped with a reusable watertight wire penetration. Located adjacent to the starboard base of the radar arch and shall be accessible through removable ceiling panels.

- Over the side pole foundation structure provided. Port side wire way to Lab provided.

The vessel is to be fitted with a universal sonar mount. Mounting location on the starboard side for the future installation and deployment of multibeam transducers, sonars, or hydrophones that can be lowered below the keel depth for profiling and animal tracking (see section 5339).

The vessel shall be equipped with multiple systems providing internet access while underway and in port. The vessel internet system bandwidth shall support office activities (email, file transfer, web browsing, video conferencing), streaming video and HD or 4K video bursts. Internet access should be available in the Pilothouse, Dry lab, Wet lab, Galley, and Berths. A two tiered system shall be provided in this order of priorities:

- A Marine 5G/4G Cellular Data System

- A Fixed Satellite System

The system shall use land based WIFI Access Points when available. It will automatically switch from marina Wi-Fi to cellular data once the WIFI signal is lost. The Marine System will be the primary internet access solution for operations occurring within 10 nm from shore. The system shall operate using land-based commercial cellular phone infrastructure and support multiple (up to 14) users using the internet.

The Fixed Satellite System (FSS) shall provide high bandwidth internet access throughout the vessels operating range and will be the primary internet access solution when operating >10 nm offshore. The FSS will utilize a Starlink High power flat panel or equivalent antenna mounted on the mast or pilothouse roof to ensure good connectivity and bandwidth. System bandwidth should support download and upload speeds of at least 50mbps and 5mbps respectively. The system should utilize a data plan with unmetered/unlimited data usage (e.g., Starlink or equivalent).

(The builder shall provide and install this equipment. The Purchaser is financially responsible for providing the data plan and associated account needed to operate this equipment.)

Additionally, Cat 6 cables and jacks shall be routed from the rack location to the Dry Lab (2 above countertop jacks), Wet Lab (2 above countertop jacks), Wheelhouse (2), Galley/Mess (1 near the dining table) and a single drop to a central location in the main deckhouse for the installation of a wireless router. Ethernet cables should be run separately from power cables to avoid signal interference.

5530 Wire and Cable

Electrical cable used shall meet USCG requirements. Conductor sizing will be calculated to prevent more than 10% voltage drop>

5535 Wireway and Penetrations

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Wireways will be installed throughout vessel for electric cables. Penetrations thru watertight boundaries will be with a rated system such as Roxtec or equal.

5550 COATINGS

All paints shall be applied in accordance with the manufacturer's recommendations and specifications. All surfaces not intended to be painted shall be carefully masked and protected during painting. After painting, any extraneous paint and masking shall be removed.

5555 Sandblast / Clean-up

The Contractor shall remove or seal off machinery, equipment, and interior openings whenever sandblasting is done nearby to prevent possible damage to any machinery or equipment from any abrasive grit, filings, or dust. All surfaces below the water line to be painted shall be abrasive blasted to Sa 2½ ISO 8501-1 and shall be immediately coated with the first primer coat.

5565 Top Side Paint

The topside of the boat shall not be painted. The City's crest shall be printed on marine grade, high quality vinyl and applied on either side of the vessel. Final artwork and placement shall be decided by the city at least 30 days prior to vessel rollover.

5570 Bottom Paint

The bottom shall be painted with anti-fouling paint to approximately 4" above the loaded waterline.

General paint application schedule:

- 2 x coats Interprotect 2001E/2001E epoxy primer
- 2 coats Trilux 33 anti-foul paint

The bottom paint color shall be blue for the first coat and black for the topcoat.

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The propellers, rudders, shafts, and struts shall be coated with Propspeed.

5572 Bilge Paint

Bilges plate will be painted from the keel to the first stiffeners inboard and outboard of the keel. Paint will go 2" up keel and stiffeners. The area directly under the shaft seal will also be painted.

Paint application schedule:

- Prepare by sanding with 36 grit.
- 2 x 6 mils dry coats international 300 epoxy primer

5575 Deck Paint

Decks and walkways shall be coated with an *Alexseal* deck coating system. *Alexseal* course nonskid will be broadcast into the deck coating system.

- 1 coat of Alexseal 135 Core Spec Primer (2.5-3 wft 1 dft)
- 1-2 coats of Alexseal 161 Protective Primer (8-12 wft 3-5 dft)
- 1 coat *Alexseal 501 Urethane Topcoat* (2-3 wft 3-5 dft)
- Broadcast 30/60 Grit Garnet Nonskid
- 1-2 coats *Alexseal 501 Urethane Topcoat* (2-3 wft 3-5 dft)

Deck paint shall have a border around all topcoat paint. The deck paint color shall be light grey.

The stairs will be fitted with *Corvex* stair tread, dark grey non-slip fiberglass with safety yellow nose edge.

The 12" along the transom between the A-frames and the 12" along the bow between the A-frames will have aggressive peel and stick tiles. "Danger Zones" will be identified with 4" safety yellow tape. The arrangement of the "danger zones" will be approved by the purchaser.

The edges of the peel-and-stick tiles/tape will be sealed.

5600 Interior

The interior layout shall be as per the general arrangement drawings.

All corners of furnishings shall be well rounded and there shall be no sharp protrusions in the cabin area.

Work surfaces shall be provided with *Tec-Lock* tie-down rails for securing equipment. Two *Tec-Lock* tie-down rails will be fit on top of each of the counters in the lab. The purchaser shall approve final locations.

Counter tops in the Labs shall be ¾" Plywood to accommodate mounting of monitor arm stands.

5605 Interior Insulation

50mm fiberglass of density of 24 kg/m³ with aluminum face thermal insulation shall be fit at all HVAC boundaries of the accommodation areas of the cabin. This will also include the overheads in those spaces. For below deck accommodation spaces, the HVAC boundary shall be determined as the bunk's spaces and the ayres paneling around the bunk entrances. The insulation shall be installed on the exterior of these bunk accommodations prior to final fitment, to insulate the accommodation area and minimize unnecessary vessel mass.

All seams shall be taped to form moisture barriers. All insulation shall be secured in place by pins and caps. Foil-bubble foil insulation shall be fit around exposed frames in the accommodation areas of the HVAC boundary area.

5610 Interior Hardware

All hardware shall be synthetic or SS and of good marine quality unless otherwise specified in the specification.

5615 Panelling and Trim

In general, 10 mm and 20 mm Ayres Aluminum honeycomb panels covered with laminate will be used on the cabin walls. Aluminum skins of 0.5 mm front 0.3 mm back per aluminum sheet, with 0.71 mm vertical grade laminate applied to both sides of the panel. Tables shall have 1mm aluminum skin on the top and .5mm aluminum skin on the bottom.

10 mm *Ayrlite 2052* laminate covered aluminum cored panel shall be used to finish the cabin interior.

20 mm *Ayrlite 2052* laminate covered aluminum cored panel shall be used for interior partitions.

Trim shall be aluminium extrusions from *Ayres*.

All joints shall be bonded using *Sika 292i* white adhesive compound.

5630 Cabinets

The cabinets will be constructed out of 10 mm and 20 mm *Aluminum honeycomb* panels covered with laminate. Frames will be made of aluminum. Aluminum extrusions will be used for Trim. The assembly of the cabinets will be glued and fastened with *Sika 292i* structural adhesive compound.

Cabinet locations will be as shown on the General Arrangement Drawings.

5635 Drawers

The drawers will be constructed out of 10 mm *Aluminum honeycomb* panels covered with laminate. Aluminum extrusions will be used for Trim. The assembly of the drawers will be glued and fastened with *Sika 292i* structural adhesive compound. The drawers will be installed with 150 lbs. SS drawer slides. The drawers will be retained in the closed position by push button

latches.

5640 Bunks

The Bunk bases will be made from 20 mm *Aluminum honeycomb* panels covered with laminate. The assembly of the bunk will be glued and fastened with *Sika 292i* structural adhesive compound.

Bunks will be built to use standard rectangular mattresses as shown in the GA.

All Berths shall have additional storage compartments as depicted on the GA drawing.

Privacy curtains will be installed at the landing of the ladders leading to the focsle bunkrooms. The curtains shall be equipped with a snapped holdback to retain it in the open position. Fabric and color shall be as selected, from supplier's standard charts, by the Purchaser.

The Builder shall install fabric privacy curtains on each of the upper and lower bunks. Fabric and color shall be as selected, from supplier's standard charts, by the Purchaser.

Care shall be taken that there is adequate room between the mattress and the ceiling to accommodate an averaged sized person. See General Arrangement Plans.

5645 Dinette

The dinette will be constructed out of aluminum honeycomb panels. Aluminum extrusions will be used for the trim. The assembly of the dinette will be glued and fastened with *Sika 292i* structural adhesive compound.

Storage will be provided as per the general arrangement drawings.

Removable covers will be provided for cushions and shall be 10-14 ounce material with plastic zippers.

5650 Laminate

The color and texture of the laminate shall be selected by the Purchaser. Builder to supply color-board of recommended materials at least 30 days prior to selection deadline.

5655 Flooring

All interior cabin flooring shall be *Roppe* #991 Charcoal, raised finish, 50 cm tiles. Final color and texture to be decided by Purchaser 30 days prior to selection deadline. Stairs shall be fit with stair tread noses of contrasting color.

5660 Headliner

The ceiling system will be 600x600 *Dampa Tiles*, 0.7 mm, beveled edge aluminum folded plate sections fitted to an overhead structure. The individual aluminum tiles will be removable.

The headliner in the lower bunkrooms shall be 10mm Ayres paneling in order to minimize weight and maximize headroom clearance. The final arrangement shall be approved by the purchaser.

The system will incorporate all edge trimmings, end closures and finishing. Interior lighting will be flush mounted into the ceiling panels.

5663 Windows and Glass

All windows shall be single pane, clamp-in style windows. All Pilothouse windows shall be clear glass. All other glass on vessel shall be tinted except for the drop down window in the head, which shall be opaque.

All the windows in Wheelhouse will be fitted with Mylar shades.

The exterior door for the amidships head shall include a window with a privacy curtain.

The thickness of the glass shall be as required by USCG rules.

5666 Exterior Doors

The cabin doors shall be weather tight, *Diamond Seaglaze* or equal, aluminum doors and frames. The doors shall have stainless locks and be keyed alike. Hinged doors will have 2 dogs and round corners. The perimeter of the doors shall be equipped with a replaceable neoprene gasket.

The doors to the cabin and pilot house shall have reduced combings to minimize the door sill and potential tripping hazard.

The hinged interior entrance door into the head shall be made from 20 mm *Aluminum* honeycomb panel covered with laminate and *Ayres* aluminum Extrusions. The hinged exterior door shall have a half-drop sliding window. The glass shall be opaque for privacy.

The tops of doors shall be at least 6'-6" above the finished deck surface unless otherwise specified.

All door hardware shall be good quality aluminum or stainless steel.

5669 Seating

Two *Liebrock* Tradewinds Series 2 Helm Chair with a pedestal mount with slider and footrest will be installed in the pilot house.

Four *Norsap* 800 (or equivalent) shock absorbing chairs on swivel mounts shall be installed in the main cabin lab area. One will be mounted in front of the dedicated computer/workstation and the other three shall be installed on mounts in the dry lab area. The mounts shall be such that the chairs can be removed, and Inserts placed in the holes for a flush deck.

The pilothouse will have a built-in bench seat with a tabletop located on the starboard side. Built in bench seating shall also be installed in the main cabin settee.

5670 Galley

The galley will be made out of 10 mm and 20 mm *Aluminum honeycomb* panels covered with laminate. Frames will be made out of aluminum. Aluminum extrusions will be used for Trim.

The assembly of the cabinets will be glued and fastened with *Sika 292i* structural adhesive compound.

5675 Helm Station

The helm will be constructed out of 10 mm *Aluminum honeycomb* and 12 mm plywood panels covered with laminate. Frames will be made out of aluminum. Aluminum extrusions will be used for Trim.

The assembly of the cabinets will be glued and fastened with *Sika 292i* structural adhesive compound.

The instrument panel will have a dull dark, matte colored finish and will house all the vessel controls, navigation, and communication equipment. DC electrical distribution and switch panels shall be fitted on the instrument panel.

All instrumentation shall be installed to reduce glare and provide maximum visibility to the captain. Final configuration requires Purchasers approval.

Drawers and storage will fit as per the general arrangement drawings.

A chart table with locking file drawers and a workstation table at the bench shall also be installed in the aft section of the pilothouse per the G.A. drawing.

5680 Heads

The vessel shall be fit with one complete restroom as per the GA.

The toilet compartment shall be finished with Ayres panels and trim.

The head will be fit with handrails.

Paper towel dispenser and SS toilet paper holder to be fit.

5925 Lettering and Striping

The vessel name in decal form cut from vinyl shall be installed on each of the bows 10" tall. The vessel name and port of registry in decal form cut from vinyl shall be installed on the stern.

A premium 2-mil cast vinyl strip with permanent adhesive shall be installed as the boot stripe. The Purchaser will approve the color.

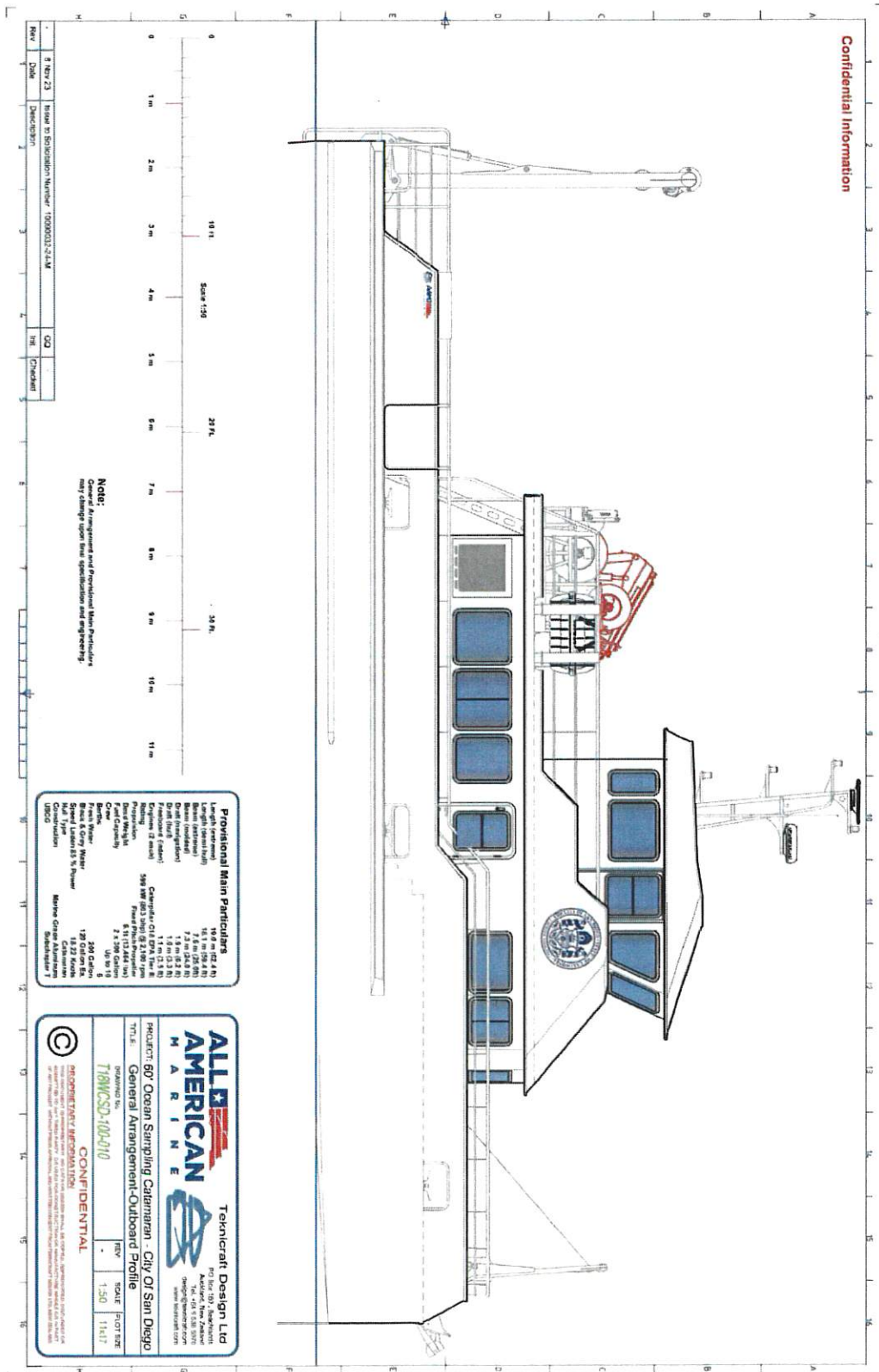
Maximum draft and trim limits will be marked on the hull via 1" x 8" lines at points defined by the Naval Architect.

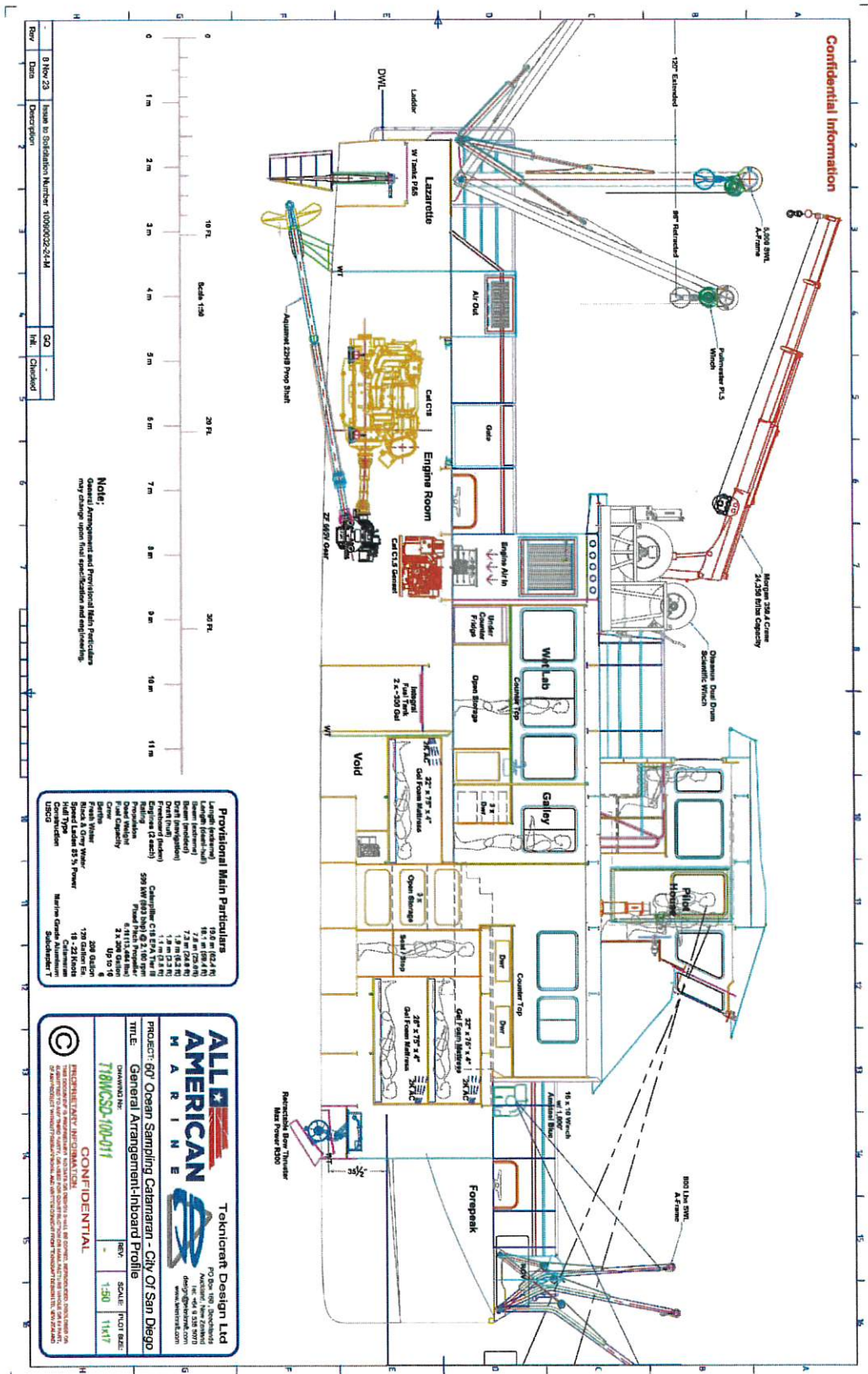
City of San Diego Logo 24" diameter, design provided by Customer shall be installed on both Port and Starboard Hull. Additional graphics shall be done on a time and materials basis.

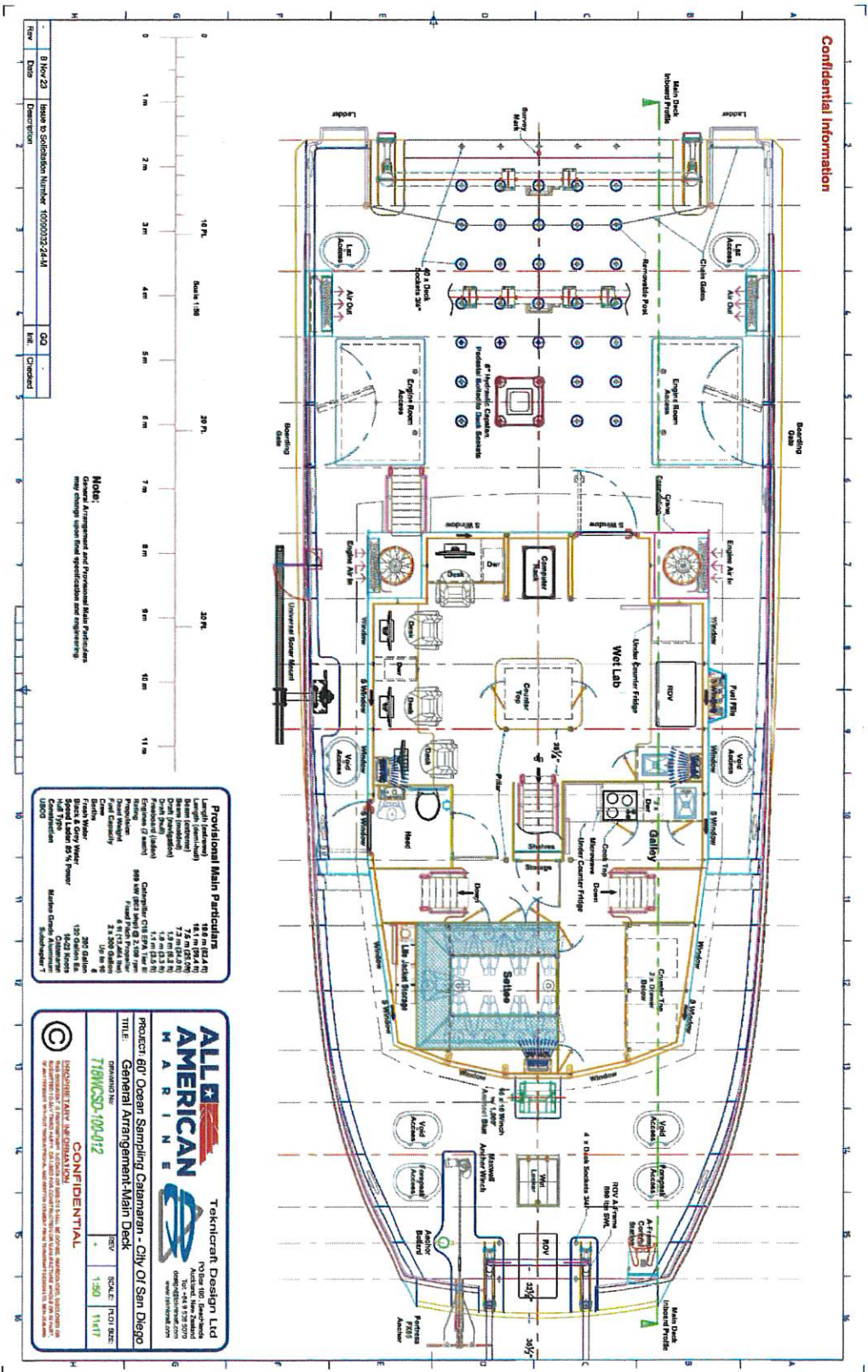
A moderate insignia for both All American Marine and Teknicraft Design shall be affixed to exterior of the vessel in a prominent location on both sides of the vessel.

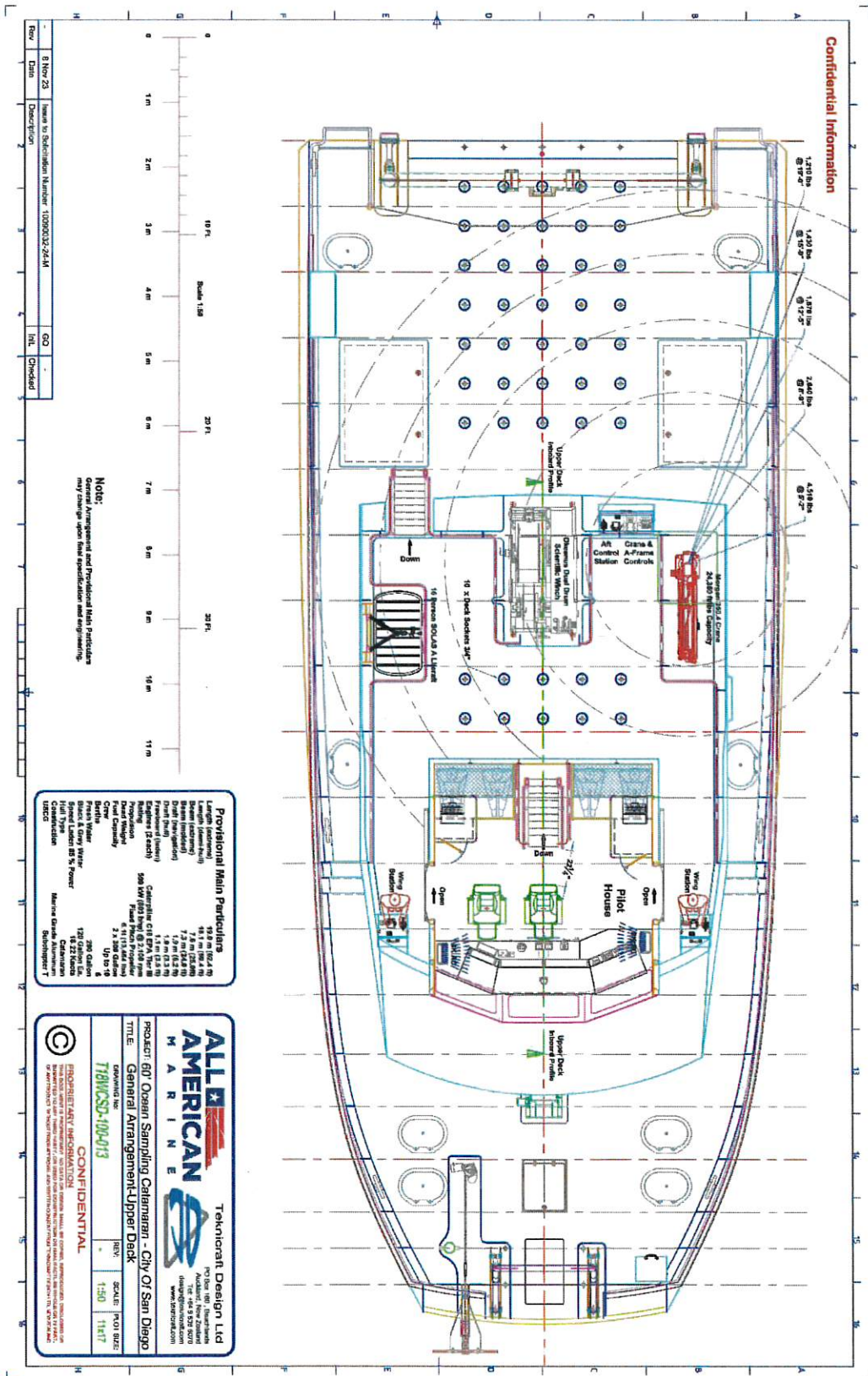
Small arrows on the side of vessel below rub rail will be installed to mark location for lifting straps.

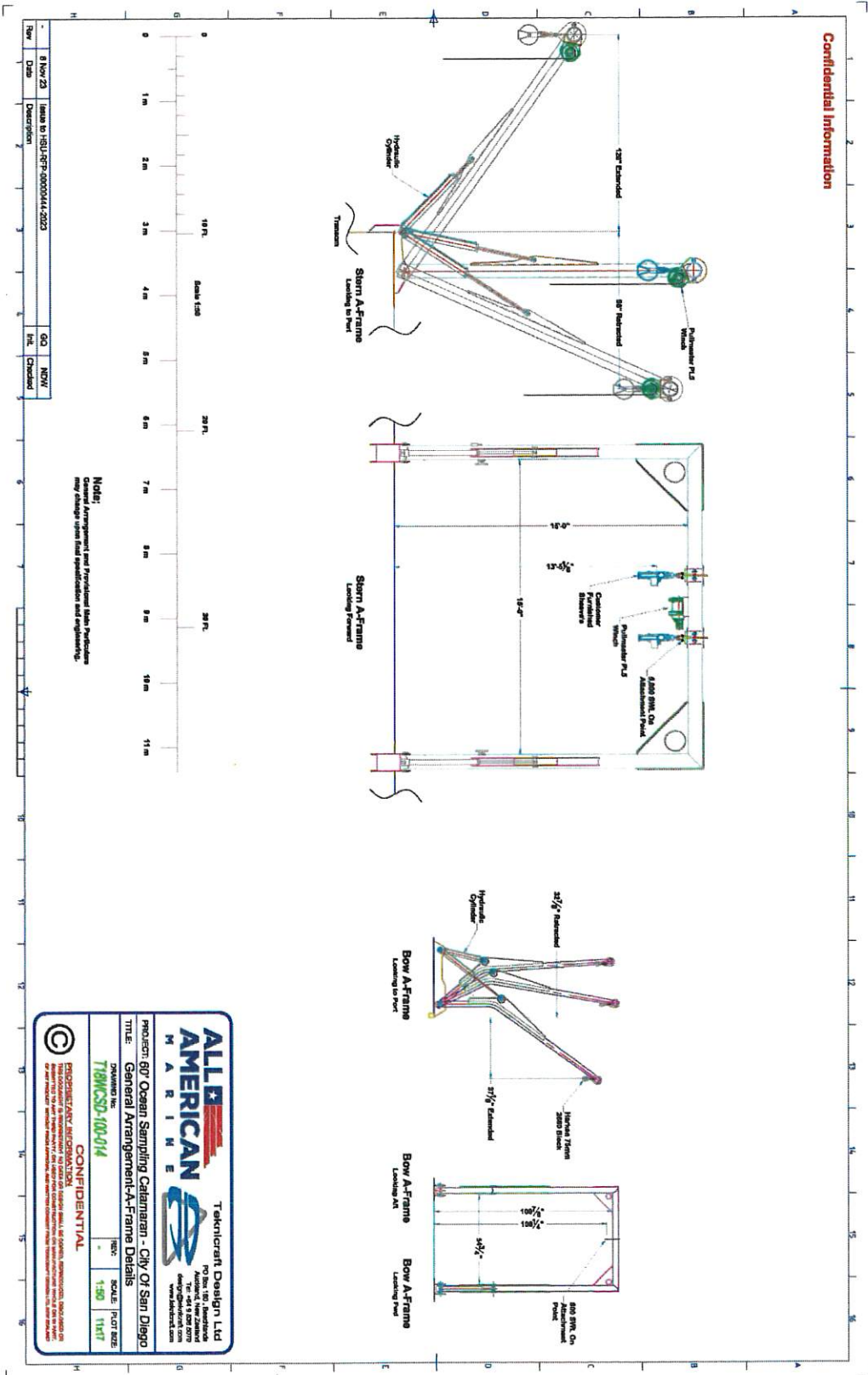
4.2: General Arrangement Drawings









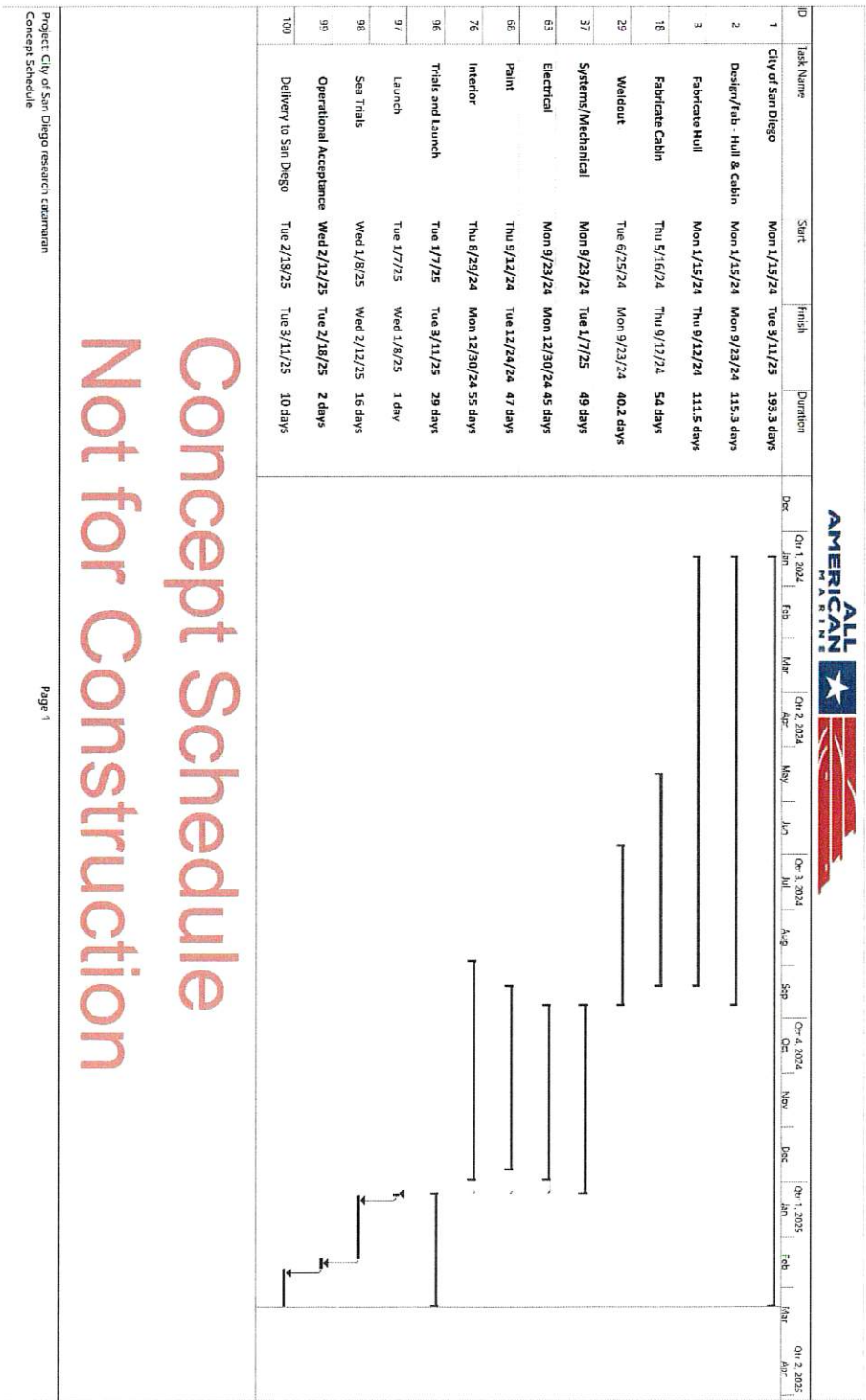


4.3: Special Notations and Exceptions to Exhibit B

The AAM/Teknicraft team has provided a full vessel specification as part of our technical response in section 4.1.

- All American Marine offers a comprehensive 1-year warranty on the hull as described in Section 2.8. However, AAM cannot offer a 15 year warranty on the hull. AAM cannot be responsible for how the vessel is operated, or the care and maintenance that will be required over this time period. The vessel is designed to have an extended service life, but proper care and maintenance are the responsibility of the operator. Caterpillar does offer extended service coverage (ESC) warranty options for their equipment for up to 60 months (5 years). This engine warranty can be purchased initially or at any time during the first year of operations. If interested AAM can provide examples of Caterpillar's Commercial Marine Propulsion coverage and options.
- 24 knots maximum speed is attained at 100% power and is only possible at the deadweight specifications included in the AAM provided Technical Specifications on page 6. The vessel's maximum deadweight capacity based on initial calculations is 13464 lbs. as provided on page 6 of the Technical Specifications.
- All American Marine has historically had underperformance issues with bow thrusters on catamarans due to the installation depth constraints. This has led to inadequate tunnel depth and thruster cavitation. We have chosen these retractable bow thrusters due to their ability to integrate with the Glendenning ProPosition 2 controls, their robust duty cycle rate, and the retractable feature to provide additional tunnel depth. However, care should be taken to follow the manufacturer's instructions for use. The station keeping abilities are not meant to be certified but should provide basic functionality.
- Delivery shall be made via the vessel's own hull. AAM shall arrange for the delivery logistics and intends to use the same delivery captain and company that has delivered previous AAM vessels to California. If the City of San Diego wishes, their personnel can be included on the passenger manifest and the vessel's project manager will take the opportunity to continue specific vessel training during the trip down.

5: Schedule



6: Cost

Cost Proposal

All prices listed below are based upon vessel delivery in San Deigo, CA. Vessels exported to locations outside Washington State are eligible for a Washington State tax exemption. The price listed DOES NOT include any applicable sales and/or use taxes that may be imposed by jurisdictions outside of Washington State.

Item No.	Quantity	U/M	Description	Unit Price	Total Price
1	1	EA	60' Ocean Sampling Vessel	\$5,450,780	\$5,450,780
Total					\$5,450,780.00

In the event All American Marine is successful with our proposal, a sample vessel building agreement with proposed payment schedule is provided for informational purposes and is included in Appendix B.

Exhibit AA. Contractor's Certification of Pending Actions

AA. CONTRACTORS CERTIFICATION OF PENDING ACTIONS

As part of this Contract, the Contractor must provide to the City a list of all instances within the past 10 years where a complaint was filed or pending against the Contractor in a legal or administrative proceeding alleging that Contractor discriminated against its employees, subcontractors, vendors or suppliers, and a description of the status or resolution of that complaint, including any remedial action taken.

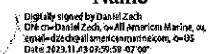
CHECK ONE BOX ONLY.

- ☒ The undersigned certifies that within the past 10 years the Contractor has NOT been the subject of a complaint or pending action in a legal administrative proceeding alleging that Contractor discriminated against its employees, subcontractors, vendors or suppliers.
- ☐ The undersigned certifies that within the past 10 years the Contractor has been the subject of a complaint or pending action in a legal administrative proceeding alleging that Contractor discriminated against its employees, subcontractors, vendors or suppliers. A description of the status or resolution of that complaint, including any remedial action taken and the applicable dates is as follows:

DATE OF CLAIM	LOCATION	DESCRIPTION OF CLAIM	LITIGATION (Y/N)	STATUS	RESOLUTION/ REMEDIAL ACTION TAKEN

Contractor Name: All American Marine, Inc.

Certified By Daniel Zech Title B.D. Manager

Signature Date November 5, 2023

Equal Opportunity Contracting
 Sole Source Contracts, Cooperative Procurement Contracts
 Goods/Services Contracts Under \$150,000
 Revised 1/1/16
 OCA Document No. 1208377

Exhibit BB. Work Force Report

**EQUAL OPPORTUNITY CONTRACTING (EOC)**

1200 Third Avenue, Suite 200 • San Diego, CA 92101

Phone: (619) 236-6000 • Fax: (619) 236-5904

BB. WORK FORCE REPORT

The objective of the *Equal Employment Opportunity Outreach Program*, San Diego Municipal Code Sections 22.3501 through 22.3517, is to ensure that contractors doing business with the City, or receiving funds from the City, do not engage in unlawful discriminatory employment practices prohibited by State and Federal law. Such employment practices include, but are not limited to unlawful discrimination in the following: employment, promotion or upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rate of pay or other forms of compensation, and selection for training, including apprenticeship. Contractors are required to provide a completed *Work Force Report (WFR)*.

**NO OTHER FORMS WILL BE ACCEPTED
CONTRACTOR IDENTIFICATION**

Type of Contractor: ☒ Construction ☐ Vendor/Supplier ☐ Financial Institution ☐ Lessee/Lessor
☐ Consultant ☐ Grant Recipient ☐ Insurance Company ☐ Other

Name of Company: All American Marine, Inc.

ADA/DBA: _____

Address (Corporate Headquarters, where applicable): 1010 Hilton Ave.City: Bellingham County: Whatcom State: WA Zip: 98225Telephone Number: 360-647-7602 Fax Number: 360-647-7607Name of Company CEO: Byron Bolton

Address(es), phone and fax number(s) of company facilities located in San Diego County (if different from above):

Address: n/aCity: n/a County: n/a State: n/a Zip: n/aTelephone Number: n/a Fax Number: n/a Email: dzech@allamericanmarine.comType of Business: Shipyard Type of License: "C" CorporationThe Company has appointed: Marianne Brudwick

As its Equal Employment Opportunity Officer (EEOO). The EEOO has been given authority to establish, disseminate and enforce equal employment and affirmative action policies of this company. The EEOO may be contacted at:

Address: 1010 Hilton Ave. Bellingham WA 98225Telephone Number: 360-746-6552 Fax Number: 360-647-7607 Email: mbrudwick@allamericanmarine.

- ☒ One San Diego County (or Most Local County) Work Force - Mandatory
☒ Branch Work Force *
☒ Managing Office Work Force

Check the box above that applies to this WFR.

**Submit a separate Work Force Report for all participating branches. Combine WFRs if more than one branch per county.*

I, the undersigned representative of All American Marine, inc.

(Firm Name)

Whatcom hereby certify that information provided

(County)

(State)

herein is true and correct. This document was executed on this 3rd day of November, 2023

(Authorized Signature)

(Print Authorized Signature Name)

WORK FORCE REPORT – Page 2

NAME OF FIRM: All American Marine, Inc.

DATE: 11/03/2023

OFFICE(S) or BRANCH(ES): sole location

COUNTY: Whatcom

INSTRUCTIONS: For each occupational category, indicate number of males and females in every ethnic group. Total columns in row provided. Sum of all totals should be equal to your total work force. Include all those employed by your company on either a full or part-time basis. The following groups are to be included in ethnic categories listed in columns below:

- | | |
|--------------------------------------|---|
| (1) Black or African-American | (5) Native Hawaiian or Pacific Islander |
| (2) Hispanic or Latino | (6) White |
| (3) Asian | (7) Other race/ethnicity; not falling into other groups |
| (4) American Indian or Alaska Native | |

Definitions of the race and ethnicity categories can be found on Page 4

ADMINISTRATION OCCUPATIONAL CATEGORY	(1) Black or African American		(2) Hispanic or Latino		(3) Asian		(4) American Indian/Nat. Alaskan		(5) Pacific Islander		(6) White		(7) Other Race/ Ethnicity	
	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)
Management & Financial											8	1		
Professional											1			
A&E, Science, Computer														
Technical	1										3			
Sales														
Administrative Support											1	2		
Services														
Crafts														
Operative Workers											2			
Transportation														
Laborers*														

*Construction laborers and other field employees are not to be included on this page

Totals Each Column	1										15	3		
--------------------	---	--	--	--	--	--	--	--	--	--	----	---	--	--

Grand Total All Employees

19.00

Indicate by Gender and Ethnicity the Number of Above Employees Who Are Disabled:

Disabled	1										5			
----------	---	--	--	--	--	--	--	--	--	--	---	--	--	--

Non-Profit Organizations Only:

Board of Directors														
Volunteers														
Artists														

WORK FORCE REPORT – Page 3

NAME OF FIRM: All American Marine, Inc.

DATE: 11/03/2023

OFFICE(S) or BRANCH(ES): sole location

COUNTY: Whatcom

INSTRUCTIONS: For each occupational category, indicate number of males and females in every ethnic group. Total columns in row provided. Sum of all totals should be equal to your total work force. Include all those employed by your company on either a full or part-time basis. The following groups are to be included in ethnic categories listed in columns below:

- | | |
|--------------------------------------|---|
| (1) Black or African-American | (5) Native Hawaiian or Pacific Islander |
| (2) Hispanic or Latino | (6) White |
| (3) Asian | (7) Other race/ethnicity; not falling into other groups |
| (4) American Indian or Alaska Native | |

Definitions of the race and ethnicity categories can be found on Page 4

TRADE OCCUPATIONAL CATEGORY	(1) Black or African American		(2) Hispanic or Latino		(3) Asian		(4) American Indian/ Nat. Alaskan		(5) Pacific Islander		(6) White		(7) Other Race/ Ethnicity	
	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)
Brick, Block or Stone Masons														
Carpenters											4			
Carpet, Floor & Tile Installers Finishers														
Cement Masons, Concrete Finishers														
Construction Laborers														
Drywall Installers, Ceiling Tile Inst.														
Electricians											4			
Elevator Installers														
First-Line Supervisors/Managers														
Glaziers														
Helpers; Construction Trade											1	1	1	
Millwrights														
Misc. Const. Equipment Operators											1		1	
Painters, Const. & Maintenance			2								2			
Pipelayers, Plumbers, Pipe & Steam Fitters			1								5			
Plasterers & Stucco Masons														
Roofers														
Security Guards & Surveillance Officers														
Sheet Metal Workers														
Structural Metal Fabricators & Fitters														
Welding, Soldering & Brazing Workers			1		1		2				19			
Workers, Extractive Crafts, Miners														
Totals Each Column			4		1	1	2				36	1	2	
Grand Total All Employees	46													
Indicate By Gender and Ethnicity the Number of Above Employees Who Are Disabled:														
Disabled											6			

Exhibit D: Performance Bond, Labor, and Materialmen's Bond

Upon notice of Contract Award and as part of the contract execution paperwork, All American Marine, Inc shall provide the completed performance bond paperwork referenced below.

EXHIBIT D

PERFORMANCE BOND, LABOR AND MATERIALMEN'S BOND

FAITHFUL PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND:

All American Marine, Inc., a corporation, as principal, and
HUB International Northwest LLC, a corporation authorized to do
business in the State of California, as Surety, hereby obligate themselves, their successors and assigns,
jointly and severally, to The City of San Diego a municipal corporation in the sum of
TBD for the faithful performance of the
annexed contract, and in the sum of TBD for the benefit
of laborers and materialmen designated below.

Conditions:

If the Principal shall faithfully perform the annexed contract with the City of San Diego, California, then the obligation herein with respect to a faithful performance shall be void; otherwise it shall remain in full force.

If the Principal shall promptly pay all persons, firms and corporations furnishing materials for or performing labor in the execution of this contract, and shall pay all amounts due under the California Unemployment Insurance Act then the obligation herein with respect to laborers and materialmen shall be void; otherwise it shall remain in full force.

The obligation herein with respect to laborers and materialmen shall inure to the benefit of all persons, firms and corporations entitled to file claims under the provisions of Article 2, Claimants, (iii) public works of improvement commencing with Civil Code Section 9100 of the Civil Code of the State of California.

Changes in the terms of the annexed contract or specifications accompanying same or referred to therein shall not affect the Surety's obligation on this bond, and the Surety hereby waives notice of same.

The Surety expressly agrees that the City of San Diego may reject any contractor or subcontractor which may be proposed by Surety in fulfillment of its obligations in the event of default by the Principal.

The Surety shall not utilize the Principal in completing the improvements and work specified in the Agreement in the event the City terminates the Principal for default.

EXHIBIT D

PERFORMANCE BOND, LABOR AND MATERIALMEN'S BOND (continued)

Dated TBD

Approved as to Form

All American Marine, Inc

Principal

By _____

Ron Wille, President and COO

Printed Name of Person Signing for Principal

Mara W. Elliott, City Attorney

By _____

Deputy City Attorney

HUB International Northwest LLC

Surety

By Dan Stowe

Attorney-in-fact

Approved:

Local Address of Surety

By _____

Mayor or Designee

Local Address (City, State) of Surety

Local Telephone No. of Surety

Premium \$ _____

Bond No. _____

Contractor Standards: Pledge of Compliance

City of San Diego CONTRACTOR STANDARDS Pledge of Compliance

The City of San Diego has adopted a Contractor Standards Ordinance (CSO) codified in section 22.3004 of the San Diego Municipal Code (SDMC). The City of San Diego uses the criteria set forth in the CSO to determine whether a contractor (bidder or proposer) has the capacity to fully perform the contract requirements and the business integrity to justify the award of public funds. This completed Pledge of Compliance signed under penalty of perjury must be submitted with each bid and proposal. If an informal solicitation process is used, the bidder must submit this completed Pledge of Compliance to the City prior to execution of the contract. All responses must be typewritten or printed in ink. If an explanation is requested or additional space is required, Contractors must provide responses on Attachment A to the Pledge of Compliance and sign each page. Failure to submit a signed and completed Pledge of Compliance may render a bid or proposal non-responsive. In the case of an informal solicitation or cooperative procurement, the contract will not be awarded unless a signed and completed Pledge of Compliance is submitted. A submitted Pledge of Compliance is a public record and information contained within will be available for public review except to the extent that such information is exempt from disclosure pursuant to applicable law.

By signing and submitting this form, the contractor is certifying, to the best of their knowledge, that the contractor and any of its Principals have not within a five (5) year period – preceding this offer, been convicted of or had a civil judgement rendered against them for commission of a fraud or a criminal offense in connection with obtaining, attempting to obtain or performing a public (Federal, State or local) contract or subcontract.

"Principal" means an officer, director, owner, partner or a person having primary management or supervisory responsibilities within the firm. The Contractor shall provide immediate written notice to the Procurement Contracting Officer handling the solicitation, at any time prior to award should they learn that this Representations and Certifications was inaccurate or incomplete.

This form contains 10 pages, additional information may be submitted as part of Attachment A.

A. BID/PROPOSAL/SOLICITATION TITLE:

Request for Proposal (RFP) for Ocean Sampling Vessel
10090032-24-M

B. BIDDER/PROPOSER INFORMATION:

All American Marine, Inc.

Legal Name	Bellingham	DBA	98225
1010 Hilton Ave	City	WA	Zip
Street Address	(360) 488-2901	State	(360) 647-7607
Daniel Zech, Business Development Manager	Phone	Fax	
Contact Person, Title			

Provide the name, identity, and precise nature of the interest* of all persons who are directly or indirectly involved** in this proposed transaction (SDMC § 21.0103). Use additional pages if necessary.

* The precise nature of the interest includes:

- the percentage ownership interest in a party to the transaction,
- the percentage ownership interest in any firm, corporation, or partnership that will receive funds from the transaction,
- the value of any financial interest in the transaction,
- any contingent interest in the transaction and the value of such interest should the contingency be satisfied, and
- any philanthropic, scientific, artistic, or property interest in the transaction.

** Directly or indirectly involved means pursuing the transaction by:

- communicating or negotiating with City officers or employees,
- submitting or preparing applications, bids, proposals or other documents for purposes of contracting with the City,
or
- directing or supervising the actions of persons engaged in the above activity.

Byron Bolton	Owner/CEO
Name	Title/Position
Vernon, B.C. Canada	RMG Holdings Co.
City and State of Residence	Employer (if different than Bidder/Proposer)
All American Marine is a wholly owned subsidiary of RMG Holdings Co.	
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

C. OWNERSHIP AND NAME CHANGES:

1. In the past five ten (5) years, has your firm changed its name?

☐ Yes ☒ No

If **Yes**, use Attachment A to list all prior legal and DBA names, addresses, and dates each firm name was used. Explain the specific reasons for each name change.

2. Is your firm a non-profit?

☐ Yes ☒ No

If **Yes**, attach proof of status to this submission.

3. In the past five (5) years, has a firm owner, partner, or officer operated a similar business?

☐ Yes ☒ No

If **Yes**, use Attachment A to list names and addresses of all businesses and the person who operated the business. Include information about a similar business only if an owner, partner, or officer of your firm holds or has held a similar position in another firm.

D. BUSINESS ORGANIZATION/STRUCTURE:

Indicate the organizational structure of your firm. Fill in only one section on this page. Use Attachment A if more space is required.

☒ **Corporation** Date incorporated: 04/19/1993 State of incorporation: Washington

List corporation's current officers: President: Ron Wille
 Vice Pres: _____
 Secretary: _____
 Treasurer: _____

Type of corporation: C ☒ Subchapter S ☐

Is the corporation authorized to do business in California: ☐ Yes ☒ No

If **Yes**, after what date: _____

Is your firm a publicly traded corporation? ☐ Yes ☒ No

If Yes, how and where is the stock traded? _____

If Yes, list the name, title and address of those who own ten percent (10 %) or more of the corporation's stocks:

Do the President, Vice President, Secretary and/or Treasurer of your corporation have a third party interest or other financial interests in a business/enterprise that performs similar work, services or provides similar goods? ☐ Yes ☒ No

If Yes, please use Attachment A to disclose.

Please list the following:	Authorized	Issued	Outstanding
a. Number of voting shares:	_____	_____	_____
b. Number of nonvoting shares:	_____	_____	_____
c. Number of shareholders:		_____	_____
d. Value per share of common stock:		Par	\$ _____
		Book	\$ _____
		Market	\$ _____

Limited Liability Company Date formed: _____ State of formation: _____

List the name, title and address of members who own ten percent (10%) or more of the company:

☐ **Partnership** Date formed: _____ State of formation: _____

List names of all firm partners:

☐ **Sole Proprietorship** Date started: _____

List all firms you have been an owner, partner or officer with during the past five (5) years. Do not include ownership of stock in a publicly traded company:

☐ **Joint Venture** Date formed: _____

List each firm in the joint venture and its percentage of ownership:

Note: To be responsive, each member of a Joint Venture or Partnership must complete a separate *Contractor Standards form*.

E. FINANCIAL RESOURCES AND RESPONSIBILITY:

1. Is your firm preparing to be sold, in the process of being sold, or in negotiations to be sold?

☐ Yes ☒ No

If **Yes**, use Attachment A to explain the circumstances, including the buyer's name and principal contact information.

2. In the past five (5) years, has your firm been denied bonding?

☐ Yes ☒ No

If **Yes**, use Attachment A to explain specific circumstances; include bonding company name.

3. In the past five (5) years, has a bonding company made any payments to satisfy claims made against a bond issued on your firm's behalf or a firm where you were the principal?

☐ Yes ☒ No

If **Yes**, use Attachment A to explain specific circumstances.

4. In the past five (5) years, has any insurance carrier, for any form of insurance, refused to renew the insurance policy for your firm?

☐ Yes ☒ No

If **Yes**, use Attachment A to explain specific circumstances.

5. Within the last five years, has your firm filed a voluntary petition in bankruptcy, been adjudicated bankrupt, or made a general assignment for the benefit of creditors?

☐ Yes ☒ No

If **Yes**, use Attachment A to explain specific circumstances.

6. Are there any claims, liens or judgements that are outstanding against your firm?

☐ Yes ☒ No

If **Yes**, please use Attachment A to provide detailed information on the action.

7. Please provide the name of your principal financial institution for financial reference. By submitting a response to this Solicitation Contractor authorizes a release of credit information for verification of financial responsibility.

Name of Bank: People's Bank

Point of Contact: Drew Smith, SVP Commercial Banking Officer

Address: 3100 Woburn St. Bellingham WA 98225

Phone Number: (360) 756-8389

8. By submitting a response to a City solicitation, Contractor certifies that he or she has sufficient operating capital and/or financial reserves to properly fund the requirements identified in the solicitation. At City's request, Contractor will promptly provide to City

a copy of Contractor's most recent balance sheet and/or other necessary financial statements to substantiate financial ability to perform.

9. In order to do business in the City of San Diego, a current Business Tax Certificate is required. Business Tax Certificates are issued by the City Treasurer's Office. If you do not have one at the time of submission, one must be obtained prior to award.

Business Tax Certificate No.: _____ Year Issued: _____

F. PERFORMANCE HISTORY:

1. In the past five (5) years, has your firm been found civilly liable, either in a court of law or pursuant to the terms of a settlement agreement, for defaulting or breaching a contract with a government agency?

☐ Yes ☒ No

If Yes, use Attachment A to explain specific circumstances.

2. In the past five (5) years, has a public entity terminated your firm's contract for cause prior to contract completion?

☐ Yes ☒ No

If Yes, use Attachment A to explain specific circumstances and provide principal contact information.

3. In the past five (5) years, has your firm entered into any settlement agreement for any lawsuit that alleged contract default, breach of contract, or fraud with or against a public entity?

☐ Yes ☒ No

If Yes, use Attachment A to explain specific circumstances.

4. Is your firm currently involved in any lawsuit with a government agency in which it is alleged that your firm has defaulted on a contract, breached a contract, or committed fraud?

☐ Yes ☒ No

If Yes, use Attachment A to explain specific circumstances.

5. In the past five (5) years, has your firm, or any firm with which any of your firm's owners, partners, or officers is or was associated, been debarred, disqualified, removed, or otherwise prevented from bidding on or completing any government or public agency contract for any reason?

☐ Yes ☒ No

If Yes, use Attachment A to explain specific circumstances.

6. In the past five (5) years, has your firm received a notice to cure or a notice of default on a contract with any public agency?

☐ Yes ☒ No

If Yes, use Attachment A to explain specific circumstances and how the matter resolved.

7. Performance References:

Please provide a minimum of three (3) references familiar with work performed by your firm which was of a similar size and nature to the subject solicitation within the last five (5) years.

Please note that any references required as part of your bid/proposal submittal are in addition to those references required as part of this form.

Company Name: University of Hawai'i at Manoa

Contact Name and Phone Number: Carl Meyer (808) 428-4819
 Contact Email: carlm@hawaii.edu
 Address: 1314 S. King St. Suite B Honolulu, HI 96814
 Contract Date: April 28, 2022
 Contract Amount: \$ 5,586,125.00
 Requirements of Contract: Design and Build a 68' Research Vessel

Company Name: NV5/Geodynamics
 Contact Name and Phone Number: Chris Freeman (252) 422-3209
 Contact Email: chris@geodynamicsgroup.com
 Address: 200 South Park Rd. Suite 350 Hollywood, FL 33021
 Contract Date: March 18, 2022
 Contract Amount: \$ 4,800,000.00
 Requirements of Contract: Design and Build a Survey Vessel

Company Name: Duke University
 Contact Name and Phone Number: John Wilson (252) 504-7506
 Contact Email: john.t.wilson@duke.edu
 Address: 135 Duke Marine Lab Rd. Beaufort, NC 28516
 Contract Date: April 4, 2018
 Contract Amount: \$ 4,695,551.46
 Requirements of Contract: Design and Build a Research Vessel

G. COMPLIANCE:

1. In the past five (5) years, has your firm or any firm owner, partner, officer, executive, or manager been criminally penalized or found civilly liable, either in a court of law or pursuant to the terms of a settlement agreement, for violating any federal, state, or local law in performance of a contract, including but not limited to, laws regarding health and safety, labor and employment, permitting, and licensing laws?
☐ Yes ☒ No

If Yes, use Attachment A to explain specific circumstances surrounding each instance. Include the name of the entity involved, the specific infraction(s) or violation(s), dates of instances, and outcome with current status.

2. In the past five (5) years, has your firm been determined to be non-responsible by a public entity?
☐ Yes ☒ No

If **Yes**, use Attachment A to explain specific circumstances of each instance. Include the name of the entity involved, the specific infraction, dates, and outcome.

H. BUSINESS INTEGRITY:

1. In the past five (5) years, has your firm been convicted of or found liable in a civil suit for making a false claim or material misrepresentation to a private or public entity?

☐ Yes ☒ No

If **Yes**, use Attachment A to explain specific circumstances of each instance. Include the entity involved, specific violation(s), dates, outcome and current status.

2. In the past five (5) years, has your firm or any of its executives, management personnel, or owners been convicted of a crime, including misdemeanors, or been found liable in a civil suit involving the bidding, awarding, or performance of a government contract?

☐ Yes ☒ No

If **Yes**, use Attachment A to explain specific circumstances of each instance; include the entity involved, specific infraction(s), dates, outcome and current status.

3. In the past five (5) years, has your firm or any of its executives, management personnel, or owners been convicted of a federal, state, or local crime of fraud, theft, or any other act of dishonesty?

☐ Yes ☒ No

If **Yes**, use Attachment A to explain specific circumstances of each instance; include the entity involved, specific infraction(s), dates, outcome and current status.

4. Do any of the Principals of your firm have relatives that are either currently employed by the City or were employed by the City in the past five (5) years?

☐ Yes ☒ No

If **Yes**, please disclose the names of those relatives in Attachment A.

I. BUSINESS REPRESENTATION:

1. Are you a local business with a physical address within the County of San Diego?

☐ Yes ☒ No

2. Are you a certified Small and Local Business Enterprise certified by the City of San Diego?

☐ Yes ☒ No

Certification # _____

3. Are you certified as any of the following:

- a. Disabled Veteran Business Enterprise Certification # _____
b. Woman or Minority Owned Business Enterprise Certification # _____
c. Disadvantaged Business Enterprise Certification # _____

J. WAGE COMPLIANCE:

In the past five (5) years, has your firm been required to pay back wages or penalties for failure to comply with the federal, state or local prevailing, minimum, or living wage laws? ☐ Yes ☒ No If **Yes**, use Attachment A to explain the specific circumstances of each instance. Include the entity involved, the specific infraction(s), dates, outcome, and current status.

By signing this Pledge of Compliance, your firm is certifying to the City that you will comply with the requirements of the Equal Pay Ordinance set forth in SDMC sections 22.4801 through 22.4809.

K. STATEMENT OF SUBCONTRACTORS & SUPPLIERS:

Please provide the names and information for all subcontractors and suppliers used in the performance of the proposed contract, and what portion of work will be assigned to each subcontractor. Subcontractors may not be substituted without the written consent of the City. Use Attachment A if additional pages are necessary. If no subcontractors or suppliers will be used, please write "Not Applicable."

Company Name: All American Marine does not subcontract any of its services

Address: _____

Contact Name: _____ Phone: _____ Email: _____

Contractor License No.: _____ DIR Registration No.: _____

Sub-Contract Dollar Amount: \$ _____ (per year) \$ _____ (total contract term)

Scope of work subcontractor will perform: _____

Identify whether company is a subcontractor or supplier: _____

Certification type (check all that apply): ☐ DBE ☐ DVBE ☐ ELBE ☐ MBE ☐ SLBE ☐ WBE ☐ Not Certified

Contractor must provide valid proof of certification with the response to the bid or proposal to receive participation credit.

Company Name: _____

Address: _____

Contact Name: _____ Phone: _____ Email: _____

Contractor License No.: _____ DIR Registration No.: _____

Sub-Contract Dollar Amount: \$ _____ (per year) \$ _____ (total contract term)

Scope of work subcontractor will perform: _____

Identify whether company is a subcontractor or supplier: _____

Certification type (check all that apply): ☐ DBE ☐ DVBE ☐ ELBE ☐ MBE ☐ SLBE ☐ WBE ☐ Not Certified

Contractor must provide valid proof of certification with the response to the bid or proposal to receive participation credit.

L. STATEMENT OF AVAILABLE EQUIPMENT:

A full inventoried list of all necessary equipment to complete the work specified may be a requirement of the bid/proposal submission.

By signing and submitting this form, the Contractor certifies that all required equipment included in this bid or proposal will be made available one week (7 days) before work shall commence. In instances where the required equipment is not owned by the Contractor, Contractor shall explain how the equipment will be made available before the commencement of work. The City of San

Diego reserves the right to reject any response, in its opinion, if the Contractor has not demonstrated he or she will be properly equipped to perform the work in an efficient, effective manner for the duration of the contract period.

M. TYPE OF SUBMISSION: This document is submitted as:

- ☒ Initial submission of *Contractor Standards Pledge of Compliance*
- ☐ Initial submission of *Contractor Standards Pledge of Compliance* as part of a Cooperative agreement
- ☐ Initial submission of *Contractor Standards Pledge of Compliance* as part of a Sole Source agreement
- ☐ Update of prior *Contractor Standards Pledge of Compliance* dated _____.

Complete all questions and sign below.

Under penalty of perjury under the laws of the State of California, I certify that I have read and understand the questions contained in this Pledge of Compliance, that I am responsible for completeness and accuracy of the responses contained herein, and that all information provided is true, full and complete to the best of my knowledge and belief. I agree to provide written notice to the Purchasing Agent within five (5) business days if, at any time, I learn that any portion of this Pledge of Compliance is inaccurate. Failure to timely provide the Purchasing Agent with written notice is grounds for Contract termination.

I, on behalf of the firm, further certify that I and my firm will comply with the following provisions of SDMC section 22.3004:

- (a) I and my firm will comply with all applicable local, State and Federal laws, including health and safety, labor and employment, and licensing laws that affect the employees, worksite or performance of the contract.
- (b) I and my firm will notify the Purchasing Agent in writing within fifteen (15) calendar days of receiving notice that a government agency has begun an investigation of me or my firm that may result in a finding that I or my firm is or was not in compliance with laws stated in paragraph (a).
- (c) I and my firm will notify the Purchasing Agent in writing within fifteen (15) calendar days of a finding by a government agency or court of competent jurisdiction of a violation by the Contractor of laws stated in paragraph (a).
- (d) I and my firm will notify the Purchasing Agent in writing within fifteen (15) calendar days of becoming aware of an investigation or finding by a government agency or court of competent jurisdiction of a violation by a subcontractor of laws stated in paragraph (a).
- (e) I and my firm will cooperate fully with the City during any investigation and to respond to a request for information within ten (10) working days.

Failure to sign and submit this form with the bid/proposal shall make the bid/proposal non-responsive. In the case of an informal solicitation, the contract will not be awarded unless a signed and completed *Pledge of Compliance* is submitted.

Daniel Zech Business Development Manager



Digitally signed by Daniel Zech
DN: cn=Daniel Zech, o=All American Marine,
ou, email=dzech@allamericanmarine.com,
c=US
Date: 2023.11.07 11:25:27 -0800

11/07/2023

Name and Title

Signature

Date

**City of San Diego
CONTRACTOR STANDARDS
Attachment "A"**

Provide additional information in space below. Use additional Attachment "A" pages as needed. Each page must be signed.
Print in ink or type responses and indicate question being answered.

I have read the matters and statements made in this Contractor Standards Pledge of Compliance and attachments thereto and I know the same to be true of my own knowledge, except as to those matters stated upon information or belief and as to such matters, I believe the same to be true. I certify under penalty of perjury that the foregoing is true and correct.

Daniel Zech, Business Development Manager

Print Name, Title



Signature

Digitally signed by Daniel Zech
DN: cn=Daniel Zech, o=All American Marine,
ou, email=dzech@allamericanmarine.com,
c=US
Date: 2023.11.07 15:45:09 -0800

11/07/2023

Date

Appendix A: Standard Certificate of Insurance (For Informational Purposes)

ACORD®		CERTIFICATE OF LIABILITY INSURANCE		DATE (MM/DD/YYYY) 10/31/2022			
THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.							
IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).							
PRODUCER Global Marine Insurance Agency 12935 S West Bayshore Dr Ste 205 Traverse City MI 49684			CONTACT NAME: Joy Albart PHONE (A/C No. Ext.): (800) 748-0224 FAX (A/C No.): E-MAIL: JAlbart@GlobalMarineInsurance.com ADDRESS:				
INSURED Renaissance Marine Group, Inc; All American Marine Inc. BRIX Marine, Inc. (SEE PAGE 2 for Additional Names) 908 Port Dr. Clarkston WA 99403			INSURER(S) AFFORDING COVERAGE INSURER A: Travelers Property Casualty Insurance Co INSURER B: Travelers Indemnity Company of Connecticut INSURER C: AEU The American Equity Underwriters, Inc. INSURER D: INSURER E: INSURER F:		NAIC # 25674 25682		
COVERAGES		CERTIFICATE NUMBER: QL22103112326		REVISION NUMBER:			
THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.							
INSR LTR	TYPE OF INSURANCE	ADOL	SUBR	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR ☒ Marine Legal Liability (Ship Repair) GEN'L AGGREGATE LIMIT APPLIES PER: ☒ POLICY ☐ PRO-JECT ☐ LOG OTHER:			ZOL-21P1831A-22-ND	10/23/2022	10/23/2023	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 25,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGO \$ 2,000,000 WA Stop Gap \$ 1,000,000
B	AUTOMOBILE LIABILITY ☒ ANY AUTO ☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY ☐ AUTOS ONLY			BA-6N854737-22-43-G	10/23/2022	10/23/2023	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	UMBRELLA LIAB ☐ OCCUR EXCESS LIAB ☐ CLAIMS-MADE DED ☐ RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$ \$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in WA) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	ALMA00349-07	10/23/2022	10/23/2025	PER STATUTE ☐ OTH-ER ☐ USLH Included E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
A	Marine Builders Risk Protection & Indemnity			ZOH-91N05431-22-ND	10/23/2022	10/23/2023	Hull Limit - Any One Vessel/Accident/Occurren \$8,900,000 P&I any one occurrence \$1,000,000
DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)							
For Information Purposes Only							
CERTIFICATE HOLDER				CANCELLATION			
For Information Purposes Only				SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.			
				AUTHORIZED REPRESENTATIVE 			

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ACORD 25 (2016/03)

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11/7/2023

ALL AMERICAN MARINE, INC.

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Additional Named Insureds	
Other Named Insureds	
BRIX Marine Inc	
All American Marine, Inc.	
Renaissance Property Holding LLC	
RMG Holdings, LLC	
0946661 B.C. Ltd	
Bolton Family Trust	
Duckworth Boat Works, Inc.	
Weldcraft Marine Industries, Inc.	
North West Jet, Inc.	
Armstrong Marine USA, Inc.	
OFAPPINF (02/2007) COPYRIGHT 2007, AMS SERVICES INC	

Appendix C: Confidentiality Index

PLEASE NOTE ALL ITEMS LISTED IN THE FOLLOWING CONFIDENTIALITY INDEX, AND INCLUDING THOSE PAGES AS MAY ALSO BE MARKED INDIVIDUALLY, AS BEING CONFIDENTIAL AND PROPRIETARY INFORMATION OF ALL AMERICAN MARINE INC. AND TEKNICRAFT DESIGN LTD.

1. Section 4.1 Technical Specifications

- a. This specification contains proprietary information as to the methods and materials All American Marine incorporates into our builds, and if released could provide valuable information to competitors of Teknicraft Design Ltd and All American Marine, Inc.

2. Section 4.2: General Arrangement Drawings

- a. These drawings and information consist of proprietary information for Teknicraft Design and All American Marine Inc., in relation to the unique hull design and shape, and if released could provide valuable information to competitors of Teknicraft Design Ltd and All American Marine, Inc.

3. Section 6: Cost /Cost Proposal

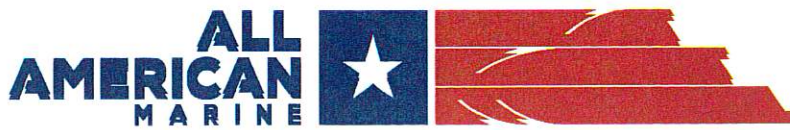
- a. The information enclosed in the pricing proposal consists of proprietary information for Teknicraft Design and All American Marine Inc., in relation to the strategies and business practices, and if released could provide valuable information to competitors of Teknicraft Design Ltd and All American Marine, Inc.

Request for Proposals 10090032-24-M

Proposal Revisions Dated May 17, 2024 and July 10, 2024 - Ocean Sampling Vessel

Proposal revisions submitted May 17, 2024 and July 10, 2024 in response to the following City modifications to the Scope of Work:

1. Propulsion Engines changed from (EPA-Tier III) Caterpillar C-18 to (EPA-Tier IV) MAN Diesel Marine Engines Model: D2862LE438
2. The new engines will require the vessel to be 73 feet long due to the size and hp output.



May 17, 2024

Hugo Mora (Supervising Procurement Contracting Officer)

1200 Third Ave. Suite 200.

San Diego, CA 92187

(619) 236-6154

HMora@sandiego.gov

Dear Hugo,

All American Marine is pleased to have the opportunity to work with the City of San Diego to provide you with a new, state of the art, ocean sampling vessel that will serve the City for decades to come. Based on the Request for Proposal Revision sent on April 22nd, 2024, All American Marine has incorporated the requested updated changes and necessary accompanying equipment changes into the following Best and Final Offer (BAFO) price. This price also includes 100% bonding as required by the City.

The price below is for a vessel, delivered to San Diego, exclusive of any applicable state and local sales tax in California. The vessel will be exempted from Washington State sales tax. If the City of San Diego needs California sales tax to be included in the total vessel price, All American Marine will happily include and remit on San Diego's behalf. AAM will need the City of San Diego to provide the total combined state and local tax rate. For other publicly owned vessels AAM has delivered in California, some of the entities have asked us to collect the sales tax in each milestone payment and then remit to California to simplify the procurement paperwork. Included in this price is the CARB approved, Tier 4 MAN D2862LE438 engines as well as all the required exhaust aftertreatment systems including both the SCR and DPF systems. As per the formal request, along with our professional approval, the vessel has been increased from 60' to 73' in order to physically accommodate the CARB required Tier 4+ engine and aftertreatment package.

It is impossible to provide a pricing matrix to give a direct "apples to apples" comparison for the cost increase for the following reasons. Increasing the length of a vessel from 60 to 73 feet is not as simple as "stretching" the hull to make it longer. The vessel does not grow in a direct linear comparison because the beam (width) of the vessel will also change based on the length. The hull shape also has to change to accommodate for change in vessel displacement. The best comparison for increasing a vessel's length and its implications on the overall amount of aluminum, wiring, plumbing, and insulation necessary to build the vessel is similar to ordering an 18" pizza rather than a 12" pizza. The surface area grows at a geometric rate. The change to the vessel size also affects the number and placement of windows, the surface area of cabin superstructure that requires thermal and acoustical insulation, as well as the amount of bottom paint necessary, to name just a few items.

The previous engine package requested, Caterpillar C-18s, were an EPA Tier 3 engine that would work great for the originally proposed vessel except that the new emissions standards in California require not only an EPA Tier 4 engine, but also further upgraded to include a Diesel Particulate Filter (DPF) system. Changing from an EPA Tier 3 to a Tier 4 engine package significantly alters both the physical size and weight of the engines available, but also dramatically alters the required exhaust aftertreatment system. A Tier 4 engine requires a Selective Catalytic Reactor (SCR) system which requires the use of Diesel Exhaust Fluid (DEF). This system requires both the engine OEM manufactured SCR equipment as well as the DEF tanks and stainless steel plumbing. The DPF system, which is an upgrade to the already clean Tier 4 solution adds additional engine room volume requirements, additional thermal insulation requirements, as well as additional exhaust tubing.

Not only did the engine package and the resultant vessel size increase the price- the City of San Diego has rightly requested that the vessel be built to USCG Subchapter "T" standards. Once a vessel crosses the 65' threshold, another set of safety requirements concerning bilge pumps and firefighting come into effect, which then requires an engine driven fire main and bilge system. These safety requirements exist for a reason and while they don't dramatically increase the overall price on their own, it is just another example of the overall domino effect created by the CARB regulations. All American Marine tried every engineering iteration possible to see if a CARB compliant Tier 4 engine package would fit in the previously proposed vessel, or any vessel between 60 and 73'. We concluded that the City of San Diego made the correct decision and that the 73' vessel is the smallest, practical sized hull, to meet the core mission parameters while providing a CARB compliant engine package.

All American Marine has concluded that the changes required to provide the City of San Diego with a 73' research vessel with a Tier 4 CARB approved engine package has resulted in a fully burdened vessel cost of **\$7,105,310.00** exclusive of any pertinent state and local sales/use taxes. This quote is valid for 60 calendar days from the date of this letter, May 20, 2024. After 60 days, All American Marine will need to refresh our vendors' quotes and update this price. We will be able to provide an updated quote within 5 business days of request to requote the exact same specification and General Arrangement proposal.

Prior to Covid, AAM witnessed an annual compounding inflationary rate that hovered around 5%. The past couple of years these inflationary prices have increased and are not tied to any particular index. Some items have increased on an annual basis of 7-8% while others such as engines have been even higher. All American Marine strives to provide accurate pricing and does not "pad" our prices with the intent to be open and transparent, creating win-win scenarios for all parties involved. Here is an example of the cost savings our methodology provides our customers. We recently filed a FOIA request for an RFP that we won that was based on a similar sized vessel. This vessel is for another California based public entity, Cal-Poly Humboldt. AAM's bid was ~\$7.5M while the next closest competitor was ~\$14.5M. All American Marine is able to provide our low costs for a number of reasons, and one of them is that we are incredibly accurate and detailed with our bids.

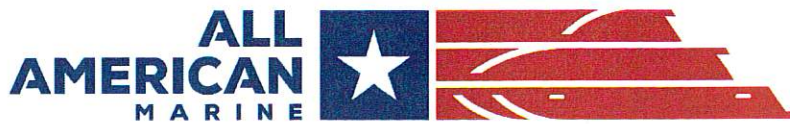
All American Marine urges that the City of San Diego not delay in the procurement process. President Biden announced a few weeks ago that he has instructed the United States Trade Representative (USTR) to triple the import tariffs on Chinese steel and aluminum products when they finalize their review this year of Section 301, the previous administration's tariff on Chinese aluminum and steel. This increase in tariffs will effect the cost of not only the aluminum that the vessel is made of, but also the windows, engines, winches, crane, paneling, pumps, etc. We can mitigate that risk with an executed contract and first milestone payment so that AAM can issue P.O.s for the engines, gears, aluminum, and winches. The timing of the review and eventual tariff increase is unknown, but it will happen this year and we think it is safe to assume prior to the presidential election.

We look forward to discussing this in further detail and moving forward with the procurement process. All American Marine strives to create win-win scenarios for our customers. This vessel provides San Diego a word-class, CARB-complaint vessel that is based on a commercially proven design that is significantly less expensive than any potential competitor because All American Marine has the expertise and knowledge to bid this project accurately and knows what it takes to build this in a timely manner. We look forward to building this vessel for you in the near future.

Sincerely,



Daniel Zech
Business Development Manager



July 10, 2024

Hugo Mora (Supervising Procurement Contracting Officer)
1200 Third Ave. Suite 200.
San Diego, CA 92187
(619) 236-6154
HMora@sandiego.gov

Dear Hugo,

All American Marine is pleased to have the opportunity to work with the City of San Diego to provide you with a new, state of the art, ocean sampling vessel that will serve the City for decades to come. Based on the Request for Proposal Revision sent on April 22nd, 2024, and resultant pricing letter sent to San Diego on May 20th, 2024, All American Marine has incorporated the latest quotes from our vendors and inflationary numbers to the vessel quotation. The updated quote for the same vessel, inclusive of bonding, is **\$8,390,680.**

This quote is valid for 177 calendar days (Dec. 31st 2024) from the date of this letter, July 8th, 2024. After 177 days (Dec. 31st, 2024), All American Marine will need to refresh our vendors' quotes and update this price. We will be able to provide an updated quote within 5 business days of request to requote the exact same specification and General Arrangement proposal.

The price is for a vessel, delivered to San Diego, exclusive of any applicable state and local sales tax in California. The vessel will be exempted from Washington State sales tax. If the City of San Diego needs California sales tax to be included in the total vessel price, All American Marine will happily include and remit on San Diego's behalf. AAM will need the City of San Diego to provide the total combined state and local tax rate. For other publicly owned vessels AAM has delivered in California, some of the entities have asked us to collect the sales tax in each milestone payment and then remit to California to simplify the procurement paperwork.

Prior to Covid, AAM witnessed an annual compounding inflationary rate that hovered around 5%. The past couple of years these inflationary prices have increased and are not tied to any particular index. Some items have increased on an annual basis of 7-8% while others such as engines have been even higher. All American Marine strives to provide accurate pricing and does not "pad" our prices with the intent to be open and transparent, creating win-win scenarios for all parties involved. All American Marine is able to provide our low costs for a number of reasons, and one of them is that we are incredibly accurate and detailed with our bids.

All American Marine urges that the City of San Diego does not delay in the procurement process. We can only mitigate inflationary risk with an executed contract and first milestone payment so that AAM can issue P.O.s for the engines, gears, aluminum, and winches. All American Marine also operates on a "first come, first served" bases and the only way to secure a building slot is with an executed VBA and receipt of the first milestone payment. We look forward to building this vessel for you in the near future.

Sincerely,

Daniel Zech
Business Development Manager

VESSEL BUILDING AGREEMENT

For good and valuable consideration, the parties agree to the the following Vessel Building Agreement:

BACKGROUND

The Builder has agreed to build, launch and outfit for the Purchaser one (1) Aluminum 73' Teknicraft Design, Ocean Sampling Catamaran ("Vessel") in accordance with the plans and with the specifications attached hereto as Exhibit "A" of this Agreement, Purchaser shall pay Builder for performance of all Services rendered in accordance with the City's Contract in a firm fixed amount of \$8,390,680.00 (exclusive of applicable taxes). The Purchaser shall also pay Contractor the applicable California State and local sales tax which will be calculated prior to invoicing for an additional amount up to, but not to exceed, 10.75% or \$901,998.10, for the City of San Diego in San Diego County. The combined state and local sales tax rate for the city of San Diego in San Diego County, shall be collected from Purchaser and remitted by the Builder on the Purchaser's behalf.

1. **Purchase of the Vessel.** The Builder will build for the Purchaser, and the Purchaser will purchase from the Builder, the Vessel for the Purchase Price on the terms and conditions appearing in the City's Contract.

2. **Standard.** The Vessel will be built in accordance with the plans and specifications attached to the City's Contract in a reasonable, professional, and workmanlike manner.

A. Builder shall provide or cause to be provided and shall pay for design services, construction services, installation, labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation and other facilities and services necessary for the proper construction and completion of the Vessel, whether temporary or permanent and whether or not incorporated or to be incorporated into the Vessel.

B. Builder shall comply with laws and ordinances in effect at the date of signing of the Agreement that govern the proper performance of Builder's obligations under the City's Contract.

C. Builder shall pay all royalties and license fees for patented designs, processes or products in connection with construction of the Vessel and shall arrange for any such licenses to be assigned or transferred to the Purchaser as may be necessary for the Purchaser to operate the Vessel.

D. Builder shall be responsible for all construction means, methods, techniques, sequences and procedures, and for coordinating all portions of the construction of the Vessel.

E. Builder retains the right to affix to the Vessel moderate insignia indicating the Vessel was constructed by the Builder and designed by the Builder's named naval architect.

3. **Payments.**

A. The Purchaser shall pay to the Builder the Purchase Price, plus applicable California state and local sales tax, in United States Dollars, which shall be payable to the Builder via check, bank wire, or other form acceptable to the Builder, in the following manner:

Vessel Building Agreement (Continued)

- (i) 17.5% of the Purchase Price. Non-refundable payment due upon the execution of the City's Contract for initial design, equipment, materials, propulsion system deposit, and mobilization costs;
- (ii) 15% of the Purchase Price. Commence erection of first hull frame;
- (iii) 15% of the Purchase Price. Weldout of hull completed – evidenced by rollover of the welded hull into an upright position;
- (iv) 10% of the Purchase Price. Arrival of propulsion system at Builder's site.
- (v) 10% of the Purchase Price. Completion of deck and attaching cabin to hull;
- (vi) 10% of the Purchase Price. Commencement of outfitting, and interior finishes;
- (vii) 10% of the Purchase Price upon launch;
- (viii) 7.5% of the Purchase Price plus the value of any amendment(s) approved by the City of San Diego but not yet invoiced by the Builder, due within thirty (30) business days after San Diego's receipt of an invoice thereof and written certification from the BUILDER that construction of the Vessel has been completed, the Vessel has completed a satisfactory Sea Trial, and the Vessel has been inspected and accepted by San Diego in Bellingham, WA (subject only to "punch list" items as set forth in Section 15.E and Warranty). (Operational Acceptance")
- (ix) 5% of the Purchase Price plus the value of any amendment(s) approved by Purchaser but not yet invoiced by Builder, plus the cost of any fuel remaining in the vessel. Upon completion of the Vessel, a satisfactory sea trial, and inspection;

Purchaser understands and acknowledges that the foregoing progress payments are not equal progress payments but, rather, are designed to correspond to the Builder's segmented costs for constructing the Vessel.

B. In the event that the Purchaser has reasonable cause to doubt that the Builder has made satisfactory progress in relation to the construction of the Vessel, Purchaser shall advise the Builder in writing not less than five (5) days before the due date of the payment, and provide the Builder an opportunity to demonstrate to the Purchaser that satisfactory progress to date has been accomplished, or provide the Builder a reasonable opportunity to cure the alleged problem in accordance with City's General Contract Terms and Provisions Article IV.

4. Fixed Price and Plans Modification.

A. The Purchase Price is a fixed price based on the attached plans and specifications. The Purchase Price shall only vary in the event the Purchaser and the Builder agree in a writing signed by authorized representatives of both parties, hereto, to upgrade to a higher quality or newer model of equipment, or to such other variations made by the Purchaser in accordance with this Section and the City's General Contract Terms and Provisions. The Builder will make a reasonable effort to avoid increases in the cost of materials by attempting to obtain materials at such times and locations, and from such suppliers to avoid increases.

Vessel Building Agreement (Continued)

B. If the Vessel is designed by an individual or entity other than the Builder or Purchaser, the parties must secure the written consent and authorization of the designer to the modified plans and specifications, before Builder will make the modifications. The Builder and the Purchaser shall cooperate to investigate whether modifications to the plans and specifications can be made which produce material cost savings, but which will not adversely affect the structural integrity or safety of the Vessel, nor violate any applicable rules or regulations of the United States Coast Guard or standard naval engineering and architectural practices. The Builder, upon the written direction of the Purchaser, shall implement such modifications. Any cost savings achieved in making such modifications shall be deducted from the Purchase Price. Builder is under no obligation to construct the modifications hereunder, unless, and until, the requirements of this Section and Section 18 have been fulfilled.

C. Purchaser understands and acknowledges that Builder has allocated a reasonable number of hours (estimated 250 hours) for Builder and Purchaser (or Builder's representative) to discuss design and construction issues as part of the Purchase Price. Excluding discussions on design or construction issues initiated by the Builder, and also excluding discussions which result from delays, defaults, or deviations from the Agreement by the Builder.

D. Purchaser may require Builder to make any reasonable alterations or additions within the Builder's capability to be made to the Vessel during the course of construction of the Vessel. There may also be additional equipment and/or installation(s), change(s) and/or upgrade(s) to the Vessel requested by Purchaser after execution hereof or thereafter required by change in regulation, change in regulatory interpretation, clarification or supplementation. Any such alterations or additions shall be made only upon a document signed by both Purchaser and Builder which shall specify at least the work to be done. The rates for any such alterations will be determined by using a labor rate of \$120.00 per man-hour and a reasonable mark-up on material/production costs. If Purchaser and Builder do not agree on the price for such alterations or additions, then such alterations shall be done on a time and materials, including variable production costs, basis using accurately kept records of the work and the labor and/or materials/variable production costs incorporated into or accessory to the work. The rates will be determined by using a labor rate of \$120.00 per man-hour and a reasonable mark-up on material/production costs. However, Builder will not be responsible for any changes that affect the design, if Purchaser chooses to proceed with changes after being appropriately warned by Builder. Any amendment shall give Builder a right to require extensions for completion and delivery of the Vessel to such other date as may be fixed by agreement of Purchaser and Builder. Any such extensions shall be stated in the amendment signed by both Purchaser and Builder.

E. Payments for any such alterations or additions shall be made by Purchaser upon approval and at completion of the alterations or additions.

5. Insurance.

Builder shall maintain the following insurance during the period of construction at Builder's sole cost and expense:

A. Workers Compensation and Employers' Liability

- i. In accordance with the laws of the State(s) of operation;
- ii. Coverage B-Employers' Liability Limit \$1,000,000 each accident;
- iii. U. S. Longshore and Harbor Workers (USL&H) Compensation Act coverage with Maritime Employer's Liability (MEL) endorsement.

B. General Liability

- i. Comprehensive General Liability or Commercial General Liability coverage, including coverage for Premises and Operations, Products and Completed Operations and Contractual Liability (Claims-Made Forms not acceptable);
- ii. Limits \$ 1,000,000 each occurrence, \$ 2,000,000 aggregate;

Vessel Building Agreement (Continued)

- iii. "In Rem" endorsement providing that a claim against the vessel shall be treated as a claim against the Insured;
 - iv. Including Pollution Liability coverage for Sudden & Accidental Pollution.
- C. Auto Liability: Covering Bodily Injury and Property damage arising out of the ownership or use of all owned, non-owned and hired motor vehicles with not less than \$1,000,000 liability limit.
- D. Ship Repairer's Liability
- i. Coverage usual to American Institute Ship Repairer's Liability Clauses
 - ii. Limit \$ 1,000,000;
 - iii. Demurrage/ Detention coverage added;
 - iv. This coverage may be added to General Liability Policy.
- E. Builder's Risk Policy
- i. Coverage usual to American Institute Builder's Risk Clauses (2-8-79) including American Hull Insurance Syndicate Addendum 1. American Hull Insurance Syndicate Addendum 2 is specifically deleted from the policy coverage for this Agreement;
 - ii. Including coverage for Strikes, Riots and Civil Commotion and vandalism;
 - iii. Including coverage for Owner Furnished Equipment, if any, while in transit and in storage awaiting installation;
 - iv. Including coverage for Protection & Indemnity and pollution liability;
 - v. The Protection & Indemnity section of the Builder's Risk Insurance policy for the Builder shall be amended to provide Jones Act Crew Coverage for employees of the Purchaser;
 - vi. Limit for Hull & Machinery to be the completed value of the vessel including Owner Furnished Equipment or the cost to rebuild the vessel following a total loss, whichever is greater;
 - vii. Limit for Protection & Indemnity to be not less than \$1,000,000 or the completed value of the vessel, whichever is greater (unless excess limit is included in a Bumbershoot Policy).
- F. General
- i. All policies to contain a waiver of subrogation in favor of Purchaser;
 - ii. All policies (except Workers Compensation/ USL&H, Ship Repairer's Liability, and Auto Liability) shall name Purchaser as Additional Insured;
 - iii. All policies (except Workers Compensation/ USL&H, Ship Repairer's Liability, and Auto Liability) shall be endorsed to be primary to any similar coverage available to Purchaser;
 - iv. Certificates of insurance shall be provided to Purchaser evidencing the above insurance and guaranteeing Purchaser not less than 30 days advance notice of cancellation (except 10 days notice for non-payment of premium);
 - v. Any additional insurance coverage which may be sought by the Purchaser to protect its interests in the Vessel, and/or to provide coverage for damage, injury or loss for which the Purchaser is legally liable, must be obtained by the Purchaser at the Purchaser's sole expense. In the event that such insurance is obtained, the Purchaser shall name the Builder as an additional insured and expressly waive any subrogation claim against the Builder;
 - vi. The Purchaser shall provide workman's compensation coverage to its employees, contractors and agents, at the Purchaser's sole expense and, if any work is performed on the Vessel at the Builders' site, the Purchaser shall provide proof of coverage under a USL&H policy to the Builder.

Vessel Building Agreement (Continued)

6. Acceptance and Risk.

A. On completion of the Vessel, the Builder will notify the Purchaser and arrange for the Purchaser, or the Purchaser's nominated representative, to inspect the Vessel and observe a sea trial of the Vessel with the Builder. The sea trial shall be conducted at a reasonable time, upon reasonable notice on local waters with a Builder supplied operational crew, and at Builder's sole expense. Builder expressly assumes any and all risk of damage or loss of any kind caused in any manner while operating the Vessel during this sea trial. The Purchaser will provide a representative to ride the Vessel during the sea trial. Prior to conducting the sea trials, Builder shall develop, with Purchaser's agreement as to content, and provide Purchaser with a customized sea trial acceptance checklist. This Builder-supplied sea trial is not inclusive of operational or training exercises requested by Purchaser – such exercises may be conducted at Purchaser's expense subsequent to delivery. On completion of a satisfactory inspection and sea trial and payment of the balance of the Purchase Price, the Builder shall deliver the Vessel to the Purchaser.

B. Risk of any loss or damage shall pass upon delivery of the Vessel to the Purchaser in City of San Diego, California.

C. Common with industry practice, the sea trial acceptance checklist referred to in Section 6.A. may have noted on it certain minor items, as agreed between the Builder and the Purchaser, needing completion subsequent to delivery. These "punch list" items will not prevent the Vessel from being delivered from the Builder to the Purchaser as they will be treated as warranty items, per Section 13, by the Builder. By signing off the sea trial acceptance checklist, the Purchaser is deemed to have accepted the Vessel. The Builder may, in addition to any rights which the Builder may have under Section 10 of this Agreement, recover from the Purchaser a reasonable storage, wharfage or other similar fee, which shall include, but not be limited to, all labor and services costs, for the Vessel for each day (or part thereof) following the Purchaser's refused delivery during which the Builder must care for the Vessel. The manner in which the Builder cares for the Vessel shall be reasonable and shall be in the Builder's sole discretion.

7. Title and Property.

A. Title to the Vessel shall not transfer in the Purchaser until the Purchaser has unconditionally accepted delivery and paid the Builder's final invoice in full and without any reservation. While the Vessel is under construction, any and all materials intended for the Vessel's construction, regardless of location, shall become the Purchaser's property, subject to all lien rights and liens of the Builder, only after full payment for those materials has been made by the Purchaser. The Builder shall ensure that all materials intended for use in the construction of the Vessel and the Purchaser supplied equipment are stored separately and the Purchaser supplied and purchased property is identified as being the property of the Purchase.

B. The parties acknowledge that the Purchaser and its lender(s), if any, has or have a substantial economic interest in the safety and preservation of the Vessel while under construction to ensure it is free from loss or destruction. Therefore, the Purchaser and its lender has or have an insurable interest in the Vessel and the Purchaser may secure the insurance designated in Section 5, herein or will be named as an additional insured party to the insurance acquired by the Builder pursuant to Section 5.

C. Purchaser shall have the sole expense and responsibility to register and document the Vessel with any and all applicable regulatory agencies.

8. **Lien.** The Builder shall have at all times any and all liens of any type as provided by law, but shall deliver a completed vessel to Purchaser that is free and clear of all other liens against the vessel including but not limited to any liens of Builder's suppliers or employees.

Vessel Building Agreement (Continued)

9. Commencement of Work and Delivery.

A. The Builder shall commence work on the construction of the Vessel as soon as reasonably possible and shall make every reasonable effort to have the Vessel completed and ready for sea at the earliest possible delivery, or not later than the date stipulated in the City's Contract.

B. Upon completion of the Vessel, and provided that the payments on account of the Purchase Price of the Vessel have been duly made in accordance with the Schedule of Payments as set out in Section 3, the Builder shall tender the Vessel to the Purchaser, and the Purchaser shall accept delivery of the Vessel. Unless the parties hereto otherwise agree in writing, operational acceptance shall be made at the Builder's yard at 1010 Hilton Ave, Bellingham, Washington. Final Delivery and Final Acceptance shall be made at Safe Harbor, Shelter Island 2330 Shelter Island Dr. #1, San Diego, CA 92106. Costs associated with transporting the Vessel shall be borne by the Builder.

10. **Default by the Purchaser.** Upon three (3) days written notice, if any of the undisputed and properly submitted payment requests due under Section 3 of this Agreement shall remain unpaid for 45 days, other than for reasons of default by the Builder, the Purchaser shall pay interest on such moneys due at the rate of 10% per annum from the due date for monies due thereof until the Builder receives payment in full. For partial payments, the rate of 10% will only be accrued on monies due to AAM. In addition, the Builder may suspend all work on the Vessels if payment has not been made after 90 days from submittal of the undisputed and properly submitted payment request until all such monies are paid. Any expenses involved in suspending the work (including, but not limited to, increased costs of labor and materials), will be negotiated as a separate change order. In addition, and without prejudice to any and all other rights and remedies available to the Builder at law or in equity, the Builder may:

- A. Cancel this Agreement and pursue all or any of the following remedies, namely:
 - i. Forfeit and retain for its own benefit any deposit paid by the Purchaser;
 - ii. Dispose of the Vessel, whether by auction or by private contract and either for cash or on credit and upon such other terms and conditions as the Builder may, in the Builder's complete discretion, think proper.

11. **Access.** The Purchaser (or its nominated agent) shall have access to the Vessel at all reasonable times for the purposes of inspection, and investigation only, but only after a prior appointment has been made with the Builder, except that no appointment shall be required for the Purchaser to exercise its rights under Section 9. Any work carried out on the Vessel by the Purchaser, subject to the USL&H requirement contained in Section 5, must have prior approval from the Builder after the Purchaser has agreed to fully comply with the Builder's policies. Neither the Purchaser nor its nominated Agent shall take possession of the Vessel during any such inspection except where Purchaser is exercising its rights under Section 9.

12. Warranty.

A. The Builder warrants that for twelve (12) months from the date of delivery of the Vessel, the Builder will repair in a professional, workmanlike manner and with reasonable speed, any defects to the Vessel arising from faulty workmanship carried out by the Builder.

B. The Builder shall pass along, for the benefit of the Purchaser, all published, written manufacturer's warranty information provided directly to the Builder for materials, engines, fixtures and fittings incorporated into the Vessel. Where manufacturers or suppliers for materials, engines, fixtures, and fittings incorporated into the Vessel make provision in their published warranty terms for direct assignment, and upon Purchaser's request, Builder shall effect assignment of such warranties from the Builder to the Purchaser.

C. The Purchaser will notify the Builder of all defects in a prompt and timely manner, as soon as any defect is noticed, or should have been noticed.

Vessel Building Agreement (Continued)

D. Builder's warranty does not extend to engines, materials, appliances, and such other fixtures and fittings that are not manufactured or materially adapted by the Builder, and other items which are not sold by the Builder to the Purchaser. The Builder will, however, negotiate any warranty issues with these suppliers at the request of the Purchaser.

E. The Purchaser agrees to provide satisfactory evidence to the Builder that the items or work covered by this warranty and regarding which a warranty claim is made have been properly maintained, correctly lubricated, and prudently operated within normal conditions, and under competent supervision and within load, stress, or other capacity limits.

F. The Builder and the Purchaser agree that the Purchaser's sole and exclusive remedy against the Builder with respect to the liability for any alleged negligent or defective work shall be strictly limited to, at the Builder's sole election, repair, replacement or adjustment of the alleged negligent or defective work. All warranty repairs not completed prior to delivery of the Vessel, shall be completed at a location agreeable to both the Builder and the Purchaser. Builder reserves the right to perform such warranty work by its own crew, if it can be accomplished in a timely manner. Cost of the delivery of the item, work, or the Vessel to the agreed upon location shall be borne by the Purchaser.

G. In connection with the terms of Builder's warranty, It is further agreed that the Builder will not be liable for any of the following:

- (i) Any incidental, special or consequential damages of any nature whatsoever, and/or
- (ii) Any delay or loss of use of the Vessel, facility, or item, including without limitation, lost revenues, crew wages, salvage or towing expenses, delay or loss of use.

13. **Taxes.** Washington State law requires the imposition of Washington State sales tax on any charges made in Washington State to the Purchaser by the Builder, inclusive of the Purchase Price, listed in this Agreement except where the Purchaser provides proof or documentation as to exemption from Washington State sales tax. If exempt, Purchaser agrees to provide the Builder with proof or documentation as to exemption along with a valid Washington State tax exemption certificate, if applicable, prior to delivery of the Vessel. If said proof, documentation, exemption certificate, or other claim as to exemption by the Purchaser is later found to be invalid by Washington State, then Purchaser expressly agrees and covenants to indemnify and hold the Builder harmless from any and all tax liability, including penalties and interest, which may arise from the Purchaser's failed exempt status in regards to said taxes.

The charges listed in this Agreement, inclusive of the Purchase Price, do not include any applicable sales and/or use taxes that may be imposed by jurisdictions outside of Washington State. Any assessment for such taxes is the sole obligation of the Purchaser and shall be paid directly by the Purchaser. Purchaser shall provide the Builder with evidence that all applicable taxes have been paid. Purchaser expressly agrees and covenants to indemnify and hold the Builder harmless from any and all tax liability, including penalties and interest, which may arise from the Purchaser's failure to pay said taxes.

14. **Damages.** Under no circumstances, and notwithstanding any provision of the Agreement to the contrary, shall the Purchaser have any claim for damages against the Builder for indirect or consequential losses of any kind in excess of \$5,000.00.

15. **Coastguard and Maritime Safety Requirements.** The Builder shall construct the Vessel as may be required to meet the applicable maritime safety rules, regulations, and requirements of the United States Coast Guard and standard naval engineering and architectural practices.

Vessel Building Agreement (Continued)

16. **Assignment.** The Builder and the Purchaser shall not assign, transfer or otherwise dispose of (including by way of sub-contract) any of their rights, obligations or benefits under this Agreement except with the prior written consent of the other, which consent shall not be unreasonably withheld. As an exception, Purchaser may grant a security interest in the Vessel to its lender(s) without Builder's prior written consent.

17. **Notices.** All notices required hereunder shall be deemed given 48 hours after they are deposited into the mail, postage pre-paid, to the following addresses or sent via facsimile, provided the sending party retains the facsimile transmission page showing the transmission was successfully sent to the correct facsimile number:

Builder:	All American Marine, Inc. 1010 Hilton Avenue Bellingham, WA 98225 U.S.A. 360-647-7602
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Purchaser:	City of San Diego Purchasing and Contacting Department 1200 Third Avenue, Suite 200 San Diego, CA92101
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18. **Waiver.** No provision of this Agreement may be waived except in writing signed by the party to be bound by the waiver. Any waiver of any term or provision of this Agreement shall not be construed as a waiver of any other term or provision.

19. **Binding Effect.** This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, personal representatives, successors and assigns.

20. **Amendment.** No modification, termination or amendment of this Agreement may be made except by written agreement signed by authorized representatives all parties, except as provided herein.

21. **Captions.** The captions of this Agreement are for convenience and reference only and in no way define, limit, or describe the scope or intent of this Agreement.

22. **Neutral Authorship.** Each of the provisions of this Agreement has been reviewed and negotiated, and represents the combined work product of all parties hereto. No presumption or other rules of construction which would interpret the provisions of this Agreement in favor of or against the party preparing the same shall be applicable in connection with the construction or interpretation of any of the provisions of this Agreement.

23. **Survivability.** All promises or covenants herein that require performance or observance past the termination shall survive termination.

24. **Severability.** The parties hereto agree that if any part of this agreement is determined to be illegal, the validity of the remaining portions shall not be affected and the rights and obligations of the parties shall be construed as if the agreement did not contain the particular illegal part.

25. **No Agency Created.** The Builder is an independent contractor and shall not be deemed an agent for or an employee of the Purchaser.

Vessel Building Agreement (Continued)

26. **Confidentiality.** Neither party shall disclose or communicate to any individual, person, corporation, media organization or any other entity, in any manner whatsoever, any information of any kind or nature concerning any matters affecting or relating to this contract. The parties acknowledge that the Vessel's design is owned by the designer and shall not be disclosed or communicated in any manner to any individual, person, corporation or other entity of any type for any reason or purpose. Purchaser covenants and agrees that it will not, and is not entitled to, take, have, reproduce or copy the plans or specifications without the express written consent of the Vessel's designer.

Purchaser acknowledges that the construction of the Vessel is pursuant to a single vessel license and that the design of the Vessel is the intellectual property of designer. Purchaser warrants that all specification, schedules, plans and as built drawings provided pursuant to this Agreement shall be used solely for (1) the maintenance and repair of the Vessel; and (2) information purposes with respect to compliance with regulations and requirements of the U.S. Coast Guard and other applicable agencies.

Notwithstanding the foregoing confidentiality provisions of this section, Builder reserves the right, as part of its portfolio of products advertised in its promotional materials and/or on its website, to display and link to Vessel details, information, and images contained within promotional materials provided on Purchaser's website. Additionally, Builder reserves the right to publish information about the Vessel, and the underlying activities in designing and constructing the Vessel, on websites, social media, in magazine articles, and in other forms of printed materials associated with the maritime industry.

27. **Equal Employment Opportunity and Affirmative Action Program.** Builder is an Equal Opportunity Employer and subject to affirmative action programs required by the United States Office of Federal Contract Compliance. As such, the Builder, and related direct subcontractors of the Builder, shall comply with United States Equal Employment Opportunity laws and regulations, and shall:

- Abide by the requirements of *41 CFR 60-1.4(a)*. This regulation prohibits discrimination against qualified employees or applicants for employment because of race, color, religion, sex, or national origin, and requires affirmative action by covered prime contractors and subcontractors to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin;
- Abide by the requirements of *41 CFR 60-741.5(a)*. This regulation prohibits discrimination against qualified individuals on the basis of disability, and requires affirmative action by covered prime contractors and subcontractors to employ and advance in employment qualified individuals with disabilities;
- Abide by the requirements of *41 CFR 60-300.5(a)*. This regulation prohibits discrimination against any employee or applicant for employment because he or she is a disabled veteran, recently separated veteran, other protected veteran, or Armed Forces service medal veteran in regard to any position for which the employee or applicant for employment is qualified, and requires affirmative action by covered prime contractors and subcontractors to employ, advance in employment and otherwise treat qualified individuals without discrimination based on their status as a disabled veteran, recently separated veteran, other protected veteran, or Armed Forces service medal veteran in all employment practices.

28. **Entire Agreement.** This Agreement contains the entire agreement between the Builder and the Purchaser with respect to the matters addressed herein. Any prior or contemporaneous oral or written agreement between the parties or suppliers with respect to such matters shall be of no force and effect.

Exhibit A to the Vessel Building Agreement

Vessel Building Documents

- a) Materials List
- b) Specifications book dated May 15, 2024
- c) General Arrangement drawing

The above listed vessel building documents contain Proposal revisions submitted to the City of San Diego on May 17, 2024 in response to the following City modifications to the Scope of Work:

1. Propulsion Engines changed from (EPA-Tier III) Caterpillar C-18 to (EPA-Tier IV) MAN Diesel Marine Engines Model: D2862LE438
2. The new engines will require the vessel to be 73 feet long due to the size and hp output.



Vessel Type: Research Vessel
Vessel Name: San Diego
Regulatory Authority: Uninspected
City of San Diego
Vessel Particulars:
Length Overall: 73.5ft, Beam: 27.7 Ft,
Built to USCG Subchapter "T" Standards

SWBS Classification	Materials Code	Quantity	Unit	Description
Aluminum	205005 - Aluminum Materials	1	Ea.	205005 - Aluminum Materials Shipset
		1	Ea.	205005-205005 Hull Plate
		1	Ea.	205005-205006 Hull Extrusions
		1	Ea.	205005-205040 Deck
		1	Ea.	205005-205043 Fuel Tank
		1	Ea.	Integral Fresh Water Tanks - 200 Gallons Each
		1	Ea.	205005-205064 Cabin Plate
		1	Ea.	205005-205065 Cabin Extrusions
		1	Ea.	205005-204075 A-Frame
		1	Ea.	
		1	Ea.	
		1	Ea.	
		1	Ea.	
		1	Ea.	
Fabrication	205028 - Fendering and Guards			Shipset - Aluminum Fendering System
				All American Marine Guard (Rub Rail) Type: Plate / Gusset
		156	Feet	Cap Plate - Aluminum Plate .188" x 96" x 300" 5083-H116 Weight 2.8 Lbs. Per Foot
		31.2	Each	Gussets - Aluminum Plate .188" x 96" x 300" 5083-H116 Weight .31lbs Each
		156	Feet	Aluminum Angle 3" x 3" x .188" 6061 Weight 1.25 lbs. Per Foot
		1	Ea.	Miscellaneous Hardware Shipset
				All American Marine Half-Pipe Rub Rails
		7.8	Each	Half Pipe 3-1/2" OD x .190" Wall x 20ft 6061
		1	Each	Shipset - Adjustable Hydrofoil Materials Shipset
	205037 - Rollover Structural Hardware			Shipset - Rollover Structural Hardware
	205041 Deck			205041 Deck - Shipset
				Extruded Decking Materials Are Included Within The Aluminum Shipset - Section 205005 Aluminum.
		76	Ea.	Quantity 76 Deck Sockets, Spacing 24" X 24" Threads - 3/4" -10 NC
		15	Ea.	Ken Forging K2028-316SS Eye Bolts 3/4"-10 x 2" Long Shank 316SS, Rated to 5,000 Lbs. Working Item 37GY3, Mfr. Model K2028
	205043 - Diesel Fuel Tanks			3/4-10 x 2" 316SS Socket Head Cap Screw (Fastenal Sku 79095)
				Helicoll Inserts 3/4-10 x 1-1/2" long, 316SS
		1	Ea.	Orion 514 Orange Ammo Box - For Deck Sockets Eye Bolts
		2	Ea.	Ultra Safety Systems TG2 Ultra Tef-Gel Anti-Seize Lubricant - 2 oz Jar - For Deck Sockets
		50	Ea.	Deck Sockets 2.25" OD x 4.50" Long 6061 Round Rod - Iron Gate Machining - Labor & Materials
		2	Ea.	95606A570 Nylon Plastic Washer for 3/4" Screw Size, 0.875" ID, 1.125" OD, Black, packs of 50
		50	Ea.	91345A660 Fiberglass Hex Head Screw, 3/4"-10 Thread Size, 1-1/2" Long, packs of 1
				205043 - Diesel Fuel Tanks - Two Structurally Integrated Fuel Tanks 800 US Gallons Each
		1	Ea.	Shipset - Hardware & Materials
	205058 - Hand Rails & Ladders & Dive Ladders			205058 - Handrails / Ladders & Dive Ladders
				Handrails
		12	Ea.	Aft Transom Handrails - Pipe 3/4" Sch 40 x 20ft Aluminum 6063 Weight: 0.391 Lbs. Per Linear Foot
		12	Ea.	MN Longitudinal - Pipe 1-1/4" Sch 40 x 20ft Aluminum 6063 Weight: 0.786 Lbs. Per Linear Foot
		3	Ea.	MN Deck Bow Handrails - Pipe 3/4" Sch 40 x 20ft Aluminum 6063 Weight: 0.391 Lbs. Per Linear Foot
		4	Ea.	2nd Deck Handrails - Pipe 1-1/4" Sch 40 x 20ft Aluminum 6063 Weight: 0.786 Lbs. Per Linear Foot
		12	Ea.	2nd Deck Handrails - Pipe 3/4" Sch 40 x 20ft Aluminum 6063 Weight: 0.391 Lbs. Per Linear Foot
				Hull Void Ladders
		2	Ea.	Ladder 12ft Aluminum Single Extension 300lb - Void Space #1
		2	Ea.	Ladder 8ft Aluminum Single Extension 300lb - Lazarette
		1	Ea.	Interior & Exterior Grab Rail Shipset
				Engine Room - Fabricated Pipe Ladders
		4	Ea.	Pipe 1-1/4" Sch 40 x 20ft 6063
	205061 - Hatches			205061 - Hatches - Shipset
				Hatches - Hull Access
		2	Ea.	Forepeaks, Freeman 15" x 24" Oval Aluminum Hatch, Hinged, Knife Edge Seal, Aluminum Ring # 2474-0002
		2	Ea.	Tank Spacos Freeman 30"x30" Square Hatch, hinged, knife-edge seal, SS dogging Mech - Complete Unit with AL Ring - 2466-0006-0001
		2	Ea.	Handle, Inside - Escape, mill finish - [Stainless Steel], For hatches w/ SS Dogging Mech- 0031-2119

205064 - Cabin (Cabin Construction)	2	Ea.	Lazarettes, Freeman 15" x 24" Oval Aluminum Hatch, Hinged, Knife Edge Seal, Aluminum Ring # 2474-0002
205067 - Stairwells	3	Ea.	Freeman Removable "Tee" Handles
	60	Lbs	Aluminum Plate
	4	Ea.	Marine Town 0319223 316SS Friction Hinge 40" x 76.2mm Barrel Up
	2	Ea.	Marine Town 0407970 316SS Compression D Latch 2" w/o Lock
	1	Ea.	205064 Cabin (Cabin Construction Materials)
			205067 - Stairwells
			205067 - Stair Treads
			Aft Inclined Ladders - Fiberglass Stair Tread Covers
	12	Ea.	American Stair Treads Or Equal - Standard Size: 9" Deep - 18" Wide (1 Color) Color: Black Coarse (Heavy-Duty)
			Surface: No Holes
205073 - Arch / Radar tower	6	Ea.	Adhesive
	5	Ea.	205073 - Arch / Radar Tower - Primary Mast
	3	Ea.	Pipe 1-1/4" Sch 40 x 20ft 6063
	1	Ea.	Pipe 2" Sch 40 x 20ft 6063
	1	Ea.	Pipe 3" Sch 40 x 20ft 6061
	1		Canopy Shipset
205074 - Bow Thruster			205074 - Bow Thruster
			Max Power Bow Thruster Assembly
	2	Ea.	R300/21 Thruster Assembly
	2	Ea.	Aluminum Mounting base for R300
	2	Ea.	Electronic controller for R300
	4	Ea.	Black Joystick R300
	2	Ea.	Lifting Pump R300-R450 .75KW AC Motor 400V 3 PH
	8	Ea.	Connector Y Beige 7m 2 conduct. 6 poles
	5	Ea.	25' wire harness between 633522 controller and the 318226 Joystick
	2	Ea.	Sea Water cooled Heat Exchanger-Shipset
	4	Quart	Transmission Drive Oil - Hypoid HD 80W-90, AMSOL AGLFK-EA or equal.
	1	Ea.	Commissioning
	1		Bow Thruster Insulation
	1	Ea.	Insulation Adhesive 1 Gallon
	1	Ea.	Insulation Caps 12ga 304SS - Box of 1000
	1	Ea.	Insulation Caps 12ga Aluminum - Box of 1000
	1	Ea.	Insulation Pins 12ga x 3-1/2 Galvanized Steel - Box of 1000
	1	Ea.	Insulation Washers 12ga x 1-1/2" Galvanized Steel - Box of 1000
	4	Ea.	AGC Tape 17059506-3 TAPE AGC 75 MM x 45 M
	2	Ea.	1lb Wavelet Quadzero NonLite IMO / USCG Approved MLV Roll Size 54" x 30" = 135 ft2
	1	Ea.	Bow Thruster Anode Shipset
205075 - "A-Frame"			205075 - "A-Frame"
			Stern A-frame Materials
	2	Ea.	Pipe 8" Sch 40 X 20ft 6061
	1	Ea.	Grab Rail - Pipe 1" Sch 40 X 20ft 6063
	1	Ea.	Aluminum Folding Ladder Rung Shipsets
	2	Ea.	Hydraulic Cylinder for A-Frame All Stainless Steel - CAL-West Machining, Includes Internal Stops
	1	Ea.	A-frame Cylinder Wooden Crates
	4	Ea.	Lower Ram Sleeve - 316SS Material - T15W194-591-007 - Labor and Materials
	2	Ea.	Lower Cylinder Mount - 2-1/2" OD 6061-T6 Rod Material - T15W194-591-011 - Labor and Materials
	4	Ea.	Upper Ram Sleeve - 316SS Material - T15W194-591-010 - Labor and Materials
	4	Ea.	Main Pivot Sleeve - 316SS Material - T15W194-591-006 - Labor and Materials
	4	Ea.	Main Pivot Boss - 2-1/2" OD 6061-T6 Rod Material - T15W194-591-004 - Labor and Materials
	2	Ea.	Lower Ram Pin - 1" OD SAF2205 Rod Material - T15W194-591-008 - Labor Only, AAM providing 1.25" O...
	2	Ea.	Main Pivot Pin - 1" OD SAF2205 Rod Material - T15W194-591-005 - Labor Only, AAM providing 1.25" O...
	2	Ea.	Upper Ram Pin - 1" OD SAF2205 Rod Material - T15W194-591-009 - Labor Only, AAM providing 1.25" O...
	1	Ea.	A-Frame Controls -
			A-Frame Winch - Pull master Planetary Hydraulic Winch, Equal Speed, 4,500lb Bare Drum Pull.
	1	Ea.	Auto Brake, CCW, 24GPM Motor, 7.38" Barrel X 6.55" Length X 11.0" Flange G02Marine.com SKU: 299874
			Mtg.# PLS-12-210-1
			* 4,500lbs. capacity hoist storing 235 ft. of 3/8" dia. rope
			* With Auto Brake
			* Counter-Clockwise Rotation (Direction of drum rotation viewed from motor when pulling or lifting)
			* Intervent
			* 24 GPM Motor, 4,500 lb. capacity

* No Free spool
 * 7.38" Barrel x 6.56" length x 11.0" flange

A-Frame Sheave, Owner Furnished
 Miscellaneous Sheave Materials

A-Frame Lighting

Vision X DUR4-660 Duralux 6 LED Work Light 60 Degrees (2 Forward Facing & 2 Aft Facing)

A-Frame Work Lights Junction Box

12 awg 2 conductor UL marine

12 awg 4 conductor UL marine

Blue Sea UL-489 Circuit Breaker - 20A Flat Rocker P/N: 7464

Aft A-Frame Cleats - Fraser Bronze FRB 001.7 Cast Storage Boxes & Stowage 7.5" Deck Cleat Small DC-085

205079 - Boarding Gates

Chain Gates In way of Drive Ladders

5/16" Stainless Steel Screw Type Snap Link

3/16" Type 316 Stainless Steel Chain

5/16" Stainless Steel Snap Link

Chain Gates In way of Stern A-Frame

5/16" Stainless Steel Screw Type Snap Link

3/16" Type 316 Stainless Steel Chain

5/16" Stainless Steel Snap Link

Rolling Gates Shipset

205082 - Bollards/Cleats

Main Deck Cleats - Fraser Bronze FRB 006.0 18" Deck Cleat DC-18

Swim Step Cleats - Fraser Bronze FRB 003.0 12" Deck Cleat DC-12

"Note" See Section 205075 - "A-Frame" for A-Frame Cleats

Towing Bitt / Anchor Bollard

Pipe 6" Sch 40 X 24.00" Aluminum

Round Bar 2.00" Aluminum

Plate 3/8" Aluminum

205084 - System Brackets

Systems Bracket Shipset

205085 - Storage Boxes / Stowage

Storage Box Shipset

205303 - Engines

Engines Shipset - Shipset (Two)

SCR Variant Axial Inlet/Axial Outlet (may change with GA adjustments)

Dosing Unit Variant 1 (may change with GA adjustments)

DPF "B Variant" - Axial Inlet, Radial Outlet

SCR System Configuration "A Variant" - Axial/Axial, DEF Mixer unit Z Flow

Each Tier 4 Engine Requires an individual 7" Display at each station.

Vulcan AVR50, Gearbox tie Plates & Stringer Soles. Fits MGX-5599SC Transmission

Vulcan AVR50

Make-MAN

Model-D2862LE438V12-1200 EPA TIER 4,

Rating-882 kW (1,182 bhp) @ 2100 rpm*

Engine with standard parts

Exhaust turbocharger, water-cooled

Fuel filter, flame proof piping and hoses

Lube oil filter and oil cooler, combined, standard

Exhaust manifold water-cooled

Engine data plate, German / English

Engine trial run not attended by customer

Resilient mounting, adjustable in height

Alternator 28 V, 120 A, class version

Engine bracket at front end and rear end

Sea-water pump

Single exhaust gas outlet central, horizontally (+/- 10 degrees) or vertically (+/- 10 degrees) adjustable by shipyard

Engine cover, black

V-belt guard, black, attached

Packing for overland transport, also suitable for shipment within cargo container

Valve hoods, standard

		Engine primer beige
		Injection system Common Rail, EDC box attached
		Injection piping, standard
		Fuel prefilter with water separator, flame-proof, detached, hose line 1.5 m
		Electric starter, 24 V, 7.0 kW, 2-pole insulated (ID: 1505)
		Lube oil sump, standard, dipstick marked
		Mounting parts for oil drain
		Dry air cleaner (Duralite)
		Plate heat exchanger with surge tank up to 32 degrees C sea water temperature, attached
		Flywheel 2.08 kgm
		Engine fitted PTO for attachment of a hydro-pump
		IMO Technical File (technical code 2008)
		Technical Information, English
		Service documentation on CD
		Engine room equipment consisting of: E-Box (alarm system) with display, local control station and emergency stop.
		5 m connecting cable XS, terminal box engine to terminal box engine 2 (if applicable)
		NLPE commissioning service (Domestic). Priced for Two Days of Commissioning. Additional Charges may Apply.
		Labor hours @ \$180.00 per hour; travel cost \$115.00 per hour travel expenses @ actual cost, pricing may vary depending on specific location and vessel readiness for commissioning. Estimated on this quote as 2 Days. 16 hours of work and 6 hours of driving
1	Ea.	AIR FILTER ASSEMBLY HIGH TEMP,
4	Ea.	FILTER ONLY 41-1081
0	Ea.	Kit, Block Heater, Front and Rear, MAN V12, NLPE (Category_8)
6	Ea.	Kit, Start/Stop Pushbuttons, NLPE standard for Engine Start/Stop
		Single Station, MAN 16 / V8 / V12, (Category_11)
2	Ea.	Kit, Switch, Pressure 10PSI N.O., MAN V8 / V12 Engine Run Signal
		Source, NLPE, (Category_26)
2	Ea.	Kit, Fuel System additions, Unit Mounted Fuel Primer assembly and
		3/4-37 JIC (Male) Connections, MAN V8/MAN V12, NLPE (Category_5)
2	Ea.	Kit, Gear Oil Drain (Service), MGX65599A, MAN V12, NLPE
2	Ea.	EXHAUST EXPANSION JOINTS (X2), V8 & V12 SINGLE STAHE
2	Ea.	TURBO CHARGED WITH DUEL EXHAUST OUTLETS AND SCR ENGINES
2	Ea.	ADDITIONAL V-BELT PULLEY, 4-GROOVE, FRONT END FOR
		POWER TAKE-OFF (PROFILE 9PA 12.5) V8, V12
2	Ea.	Gears - MGX65599RC
		Ratio 2.48:1
		SAE 14 VULCAN FLEXIBLE COUPLING
		SAE 1 HOUSING,
		EC600 CONTROLLER,
		TRANSMISSION
		HARNES AND SENSORS WITH TROLLING, INCLUDING PRESSURE AND TEMP SENSOR AND
		INPUT/OUTPUT SPEED PICKUPS
		CLUTCHABLE C PAD 4 BOLT PTO W/ELECTRIC PTO CONTROL VALVE
		MGCF Companion Flange - 240 MM Length
		TVA
		*TWIN DISC INTERMEDIATE DUTY - 3000 HRS PER YEAR, 50% AT FULL POWER RATING
1	Ea.	Torsional Vibration Analysis (TVA)
1	Ea.	Kit, Seawater Return Tube with Integrated Fuel Cooler, 3 in., Copper Port, MAN V12-1550 (F85) (Category_4) 27-10035
1	Ea.	Kit, Seawater Return Tube with Integrated Fuel Cooler, 3 in., Copper, Starboard, MAN V12-1550 (F85) (Category_4) 27-10040
205309 - Drivelines		
		Cardan Shaft - [2x] MAN Diesel Engines 1,182 HP @ 2100 RPM Diesel Engines
1	Ea.	Vulkan Vulastik L 155 torsional coupling w/ 225mm DIN output flange
		Twin Disc MGX65599RV remote marine gear w/ 225mm DIN input flange
		Face to face installed operating length to be 35.50"
		System operating angles to be limited to 3 degrees
1	Ea.	Qty, [1x] Ship Set DLS 217935-00 Eurocardan Shaft Assemblies
		Completely assembled and dynamically balanced at 2100 rpm
		Includes fasteners and coating for marine application
1	Ea.	Alignment Tool
205312 - Props and Shafts		

1	Ea.	Olympic Propellers - Pair (2)	Veem 37 R 43 VERMSTAR-C 5 Blade NIBral Propeller 0.80 DAR Interceptor (1.5mm)
2	Ea.	VM Darbee - Pair (2)	3.50" Diameter AQ22 HS Propeller Shafts, 194.625" Length, Standard Taper, Fit To Coupling
1	Ea.	VM Darbee - Pair (2)	Shaft Couplings, * 07 Steel Taper Bored 3.50 to Fit 2F 66SV Gear
400	Ea.	VM Darbee - Pair (2)	6-3/4" OD aluminum strut hubs 16-3/4" long. As per drawing
2	Ea.	Aluminum Plate	5083-H116 1.250 X 36.000 X 82.000. 361.62 Lbs.
2	Ea.	Pipe 5" Sch 80	5086-HB2 x 80" long
2	Ea.	PW PSS 02-312-512 Shaft Tube	3-1/2" Shaft x 5-1/2"
2	Ea.	Johnson-Duramax MANDY - SAE Cutless Non-Metallic Sleeve Bearings	3-1/2" x 4-1/4" x 14"
1	Ea.	Propeller rope Cutter Shipset	
205315 - Rudders			
2	Ea.	4" AQ 22 rudder shafts	83.67" long. Taper one end, turn and taper top end. Out keyway. All a...
1	Ea.	316SS Rudder Cut Parts / Pieces	
2	Ea.	FRP-TUBE-5000 FIBERGLASS TUBE	
2	Ea.	RFB-E-2500-XX	
2	Ea.	RFB-G-4000-12 PORT/BEAR-SLEEVE+FLANGE	
4	Ea.	Locdite PC 7202 OR	Orange Chocking Compound Kit (1 GAL) 3731.6
2	Ea.	Locdite 3731.6 Orange Chocking Compound Kit	
2	Ea.	Round Rod .750" x 35"	1316SS
1	Ea.	Flat Bar .187" x 1" x 12ft	1316SS
1	Ea.	Haskell Corporation - 316SS Rudder: Rudder Cut Parts	
2	Ea.	Tides Marine, Inc. - WASHER 2500-17	
205318 - Generators, Two Northern Lights			
1	Ea.	Shipset: Two (2) M84LW3G.3 - Generators, Shipset	
Heavy duty engine - Tier 3 compliant.			
Oil drain system with shut-off valve plumbed to base pan.			
Cleanable air filter element with intake silencing system.			
Heat exchanger cooled models include water cooled stainless steel exhaust elbow & high temperature safety shutdown switch. Keel			
cooled models include dry exhaust elbow with heat shield.			
Fresh water cooling system with integral cast iron exhaust manifold / heat exchanger and expansion tank, raw water pump or connections			
to keel cooler.			
Coolant recovery system.			
Engine mounted spin-on fuel filter.			
12 volt negative ground marine grade electrical system with battery charging alternator.			
USCG A-1 / ISO 7840 Fuel lines plumbed to connections on base pan.			
Northern Lights brushless generator with voltage regulator.			
Automatic safety shutdown system for low oil pressure, high coolant temperature and high exhaust temperature.			
S-1B remote engine control panel with control switch, shutdown bypass/preheat switch, engine hour meter and wire harness.			
20 foot wire harness extension.			
Belt guard.			
Steel base pan with integral drip sump.			
Marine quality, corrosion-resistant gloss white finish.			
Shipped with oil.			
Load tested at factory.			
Stainless steel fasteners.			
Operator's and parts manuals.			
Lloyd's Register of Shipping Type Approval.			
OPTIONS			
1		Shipset: Two (2) - 06-78450 Sound Enclosure, Gen Series Super Attenuated	
1		Shipset: Two (2) - Tachometer and Mag Pick-up Additional Kit - 24V	
1		Shipset: Two (2) - Speed Switch, Dual Element 1500 & 1800 RPM	
1		Shipset: Two (2) - Pre-Alarm Switches, High Coolant Temperature / Low Oil Pressure, Isolated Ground - non-Classed	
1		Shipset: Two (2) - 22-78410 24V Isolated Ground Electrical System Conversion - NU Installed	
1		Shipset: Two (2) - 22-95612 5-3c Compact Flush Mount Control Panel 24V - VDO Viewline Gauges New-Gen B+ & Deutsch Connector	
205321 - Engine Exhaust, Shipset			
4	Ea.	FABRICATE - ELBOWS FROM TURBO TO SCR INLET. BLANKET INSULATION 1.5" THICK BLACK IN COLOR	
4	Ea.	FS-6 BL-FLEX SECTION 6" BLANKET 1.5" THICK BLACK IN COLOR. CONNECTION BETWEEN SCR OUTLET AND CROSSOVER COLLECTOR	
2	Ea.	FABRICATE - CROSSOVER COLLECTOR FROM FLEX SECTIONS TO MIXER TANK. BLACK HARDCOAT INSULATION	
2	Ea.	MT-12-M - MIXER-TANK 12D MATTE 316SS	
4	Ea.	GASKETS - DOUBLE JACKETED GASKETS FROM TURBO ELBOWS TO SCR INLET. 6"	
8	Ea.	GASKETS - DOUBLE JACKETED GASKETS FLEX SECTION SCR OUTLET. 6"	
2	Ea.	GASKETS - DOUBLE JACKETED GASKETS MIXER TANK CONNECTION 12"	
4	Ea.	B12-041701 - BELLOWS KIT 6INDE BLACK FOR ELBOW CONNECTION TURBO TO SCR INLET. WITH BLANKET AND CLAMP INCLUDED	

16	Ea.	ASO-038250 -BOLT SET 3/8"-16 X 2.50" 18-8 (SET OF 4) RISERS FROM TURBO BELLOW TO SCR INLET
16	Ea.	ASO-038225 -BOLT SET 3/8"-16 X 2.25" 18-8 (SET OF 4) FLEX SECTION CONNECTION
8	Ea.	B04-040700 -STANCHION KIT/MATTE 38 INCH LG SUPPORT FOR CROSSOVER COLLECTOR. TBD AFTER DESIGN
8	Ea.	FLANGE CUFF
4	Ea.	BOLT SET 1/2"-13 X 2.50" 18-8 (SET OF 4) CONNECTION AT MIXER TANK
4	Ea.	FLANGE CUFF
8	Ea.	Christie & Grey Type CRM Hanger
67	Lbs	Aluminum for DPF Foundations
1	Ea.	SCR System Thermal Blanket Shipset
2	Ea.	Def System
2	Ea.	Def Tanks- 50 Gallons, Stainless Materials, Cutting and Machining - Shipset
2	Ea.	Def Tank Installation Materials
2	Ea.	Shipset - Stainless Piping Materials
2	Ea.	Def Heater Shipset
2	Ea.	Blue DEF - URGA - 55 Gallon Drum Premium Diesel Exhaust Fluid
2	Ea.	Air Pipe Head 2-1/2" Stainless
2	Ea.	Maretron TLM100 Tank Level Monitor - 40" Depth Max - No Gas [TUM100-01]
2	Ea.	Coatings, Interior Def Tank -
2	Ea.	Blue Seal Base Coat
2	Ea.	Blue Seal Top Coat
2	Ea.	DEF leveling Sensor
205324 - Genset Exhaust		205324- Genset Exhaust, Shipset
2	Ea.	Verna lift Muffler
4	Ea.	90 Deg Elbow - 3" Dia
4	Ea.	80 Deg Returns, 3"
8	Ea.	Trident Flex - Wired Wet Exhaust & Water Hose, 3" ID
205327 - Steering System		205327 - Steering System - Domestic Optimus Steering System,
1	Ea.	Domestic Optimus Steering System
2	Ea.	Epsk1500 Kit, Optimus Eps, Inboard, Large
1	Ea.	E58850 1/8 Cylinder, Eps, 2.125 X 12.0
1	Ea.	En1512 Helm Eps Front Mount
1	Ea.	H15000 Eps Helm Full Follow Up Lever
1	Ea.	Cm10020 Cable, Micro-C Ext, Standard Moh, 20'
1	Ea.	Cm22036 Harness Eps H20 Fcan Extender M-F 6-Pin Fd 36Ft
2	Ea.	Cm20480 Harness, Eps, H4, 6 Pin Fd, 60 Ft
3	Ea.	H057045s Spro Hoses 2 X 4" Kit, 5s Pkg
1	Ea.	Cm10060 Tee Adaptor Micro-C 1-Way
1	Ea.	Cm10020 Cable, Micro-C Ext, Standard Mf, 20'
1	Ea.	Cm20503 Harness, Eps, HS \$ 38.31.1
1	Ea.	Cm20430 Harness Eps H4 6 Pin Fd 30 Ft
1	Ea.	Cm21702 Harness Eps H17 Fcan Wye
1	Ea.	Ed1800 Display Color Single Eps
1	Ea.	H15000 Eps Helm Full Follow Up Lever
2	Ea.	Cm20406 Harness, Eps, H4, 6 Pin Fd, 6 Ft
2	Ea.	Cm20436 Harness Eps H4 6 Pin Fd 36 Ft
2	Ea.	Cm21702 Harness Eps H17 Fcan Wye
2	Ea.	Ed1800 Display Color Single Eps
2	Ea.	Cm22401 Harness H24 Fcan Union M-M 6-Pin Fd 10in
2	Ea.	H15000 Eps Helm Full Follow Up Lever
205330 - Controls (Engine / Throttle)		205330 - Controls - Glandimling "Complete Control 2", "CC2" (Engine / Throttle)
1	Ea.	Auto Pilot & Bowthru Intergration Equipment
4	Ea.	ProGrade Control Head - Twin engine (Inboard) - 4 button keypad, includes trolling activation button - 114191-TWIN-48
2	Ea.	Graphic Display - T1900-1S
2	Ea.	11730-4DS Hyd Vlv Mfrld(V2)- (need single valve)
8	Ea.	CAN communications cable (M/F) - 5x feet 11600-01-xx
5	Ea.	114201-TWIN-B CC2 GenesysCH-Twn, Inbd, Black
4	Ea.	11480-SCU Steering Control Unit
1	Ea.	Harness - Dual CAN - 3 feet 11610-D2-03
4	Ea.	CAN tee - dual 11600-DTEE
6	Ea.	CAN tee - single 11600-1EE
8	Ea.	CAN communications cable (M/F) - 3 feet 11600-01-03
2	Ea.	Terminating Resistor (Female) 11600-TRF

		Hydraulics 5 GPM @ 3,335 PSI
		330 Degrees Rotation, Rotational Torque 5,900 ft/lbs
		JIC Standard Hose Ends, wrapped
		4 Function Control Valve, Loose for Remote Mount
		Winch 5,900 Lbs T12 Rotzler Planetary including cable & load hook
		Weight 1,700 Lbs
		Paint Color Black, Ral 9005
1	Ea.	Anti 2 Block System, L25AM-4
1	Ea.	# 16.5.568 H 4 Function Radio Remote Control System, Hand Held Pistol Grip Style, Proportional Operation, One Function at a time, Rechargeable Battery.
1	Ea.	Morgan Marine Model 200.3 Marine Crane
		13'8" Maximum Hydraulic Reach
		14,000 ft/lbs Capacity
		3,300 lbs @ 4'1"
		1,848 lbs @ 7'5"
		1,276 lbs @ 10'8"
		990 lbs @ 13'9"
		Hydraulic System 5 gpm, 3,000 psi, Open Center
		360 Degree Rotation Non Continuous
		Rotational Torque 2,350 ft/lbs
		T11 Winch 2,850 lb Planetary including 75' 3/8" Cable & Load Hook
		Weight 595 lbs
		Paint Color Black, Ral 9005
		Stainless Steel Hose Ends
		Four Function Hydraulic Control Valve (loose for remote mount)
1	Ea.	Morgan Model 200.3 Manual Boom Extension
1	Ea.	Winch-Single Oceanus Waterfall Winch Combines the
		Double Drum Waterfall Style Winch
1	Ea.	- CTD Winch: Model DT302-10-016010-H
1	Ea.	- Hauling Winch: Model DT290-50-20.12.36-L
1	Ea.	1,000ft of A21618255 3/16" single conductor cable spooled onto CTD drum (stainless steel option)
1	Ea.	Conducting Wire Winch 2-Channel Slipping
1	Ea.	Termination of CTD Cable with TBD Wet-Mateable Connector and PMI Ever-Grip, Tested to 125% SWL
1	Ea.	5,000ft of 0.25" Stainless Steel Wire Rope Spooled on DT290 Winch
1	Ea.	Overboard "Wide Throat" Trawl Sheave w/4" Min Width Converted to Include Speed/Scope Sensors w/ Connector
1	Ea.	Smart Shackle for Tension Data Speed/Scope/Tension Data Panel Mount Display Integrated into Console (w/ 3 Inputs)
1	Ea.	CTD Overboard Sheave - ECO Sheave - 2,000lb SWL
1	Ea.	CTD Sheave Type Levelwind Upgrade
1	Ea.	Speed and Scope Data Sensor Package Integrated into CTD Winch Levelwind Shared Data Display with Metered Sheave (toggle between)
1	Ea.	Additional Panel Mounted Cable Data Display
1	Ea.	Hydraulic Control Console
1	Ea.	Okeanus CTD Winch-Scandalone (L1W-10-12.12.28-L)
1	Ea.	Sheave Type Levelwind
1	Ea.	Tethered Remote Control
1	Ea.	Speed and Scope Cable Data (excludes display)
1	Ea.	Additional Cable Data Display
1	Ea.	4-Channel Slipping
1	Ea.	Cable Termination (Wet-mateable connector and PMI ever-grip.)
1	Ea.	CTD Cable (final size TBD, either 1/4" or 1/8")
1000	Pt.	See Section 205075 - "A-Frame" for A-Frame Winch Details
		Bow Winch - Kinematic 14" X 12"
		14" Diameter Flange x 12" Width Between Flanges - Anchor Winch with Hydraulic Motor, 16 GPM Spring to Center Control Valve, & Hydraulic Hoses (Deluxe backing plate) 1100 ft
1	Ea.	5/16" as cable
1	Ea.	AW Roquet Hyd Valve, Flame Spray Zinc Metalized Corrosion Coating
1	Ea.	1.5" SS Diamond Screw Levelwind All stainless steel Box roller, Stainless steel chain driven, nickel bronze pawl, stainless bearings etc.
1	Ea.	12"-16" Anchor Winch Roquet Directional Control Valve (16GPM) with Spring to Center and 4th Position Hold & Handle /ea
1	Ea.	AW Roquet Hyd Valve, Flame Spray Zinc metalized Corrosion Coating
		205339 - Sonar Mount
1	Ea.	Hightower, Baseplate, 17" X-Pole
1	Ea.	Assembly, 4.5" Foil Clamps, Indexed, Hightower
1	Ea.	Foil 4.5" X 96" Indexed
1	Ea.	Weld Down Sub Plate W/ Hardware, Ht/Mt
1	Ea.	Gear Drive Kit, Hightower

205345 - Interceptors / Ride Control System	1	Ea.	Capstan			
	1	Ea.	Kinematics - 6" Hydraulic Capstan.			
	1	Ea.	Flame Spraying			
	1	Ea.	Hoses & fittings Shipset			
	1	Ea.	Miscellaneous Installation Materials			
	1	Ea.	205345 - Interceptors / Ride Control System			
	1	Ea.	Humphree Interceptor package			
	1	Ea.	2 ea 030082 Interceptor HAE0750-M-L			
	1	Ea.	2 ea 020264 Long shaft kit SS. (H, HA, HE, HAE)			
	1	Ea.	2 ea 030083 Interceptor HAE0750-M-R			
205351 - HVAC	1	Ea.	2 ea 020264 Long shaft kit SS. (H, HA, HE, HAE)			
	1	Ea.	4 ea 020165 Servo unit - SU501			
	1	Ea.	4 ea 020180 Servo cable 4m			
	1	Ea.	2 ea 023785 Ride Control Unit RCU 561 (incl. power cable)			
	1	Ea.	1 ea 023668 RCU cable, no power supply (20m)			
	1	Ea.	1 ea 020146 RCU Adapter (Molex/Deutsch)			
	1	Ea.	1 ea 023686 Control panel CPS12, LCD display			
	1	Ea.	1 ea 023661 Control panel cable halogen free (30m)			
	1	Ea.	1 ea 021869 NMEA 2000 drop cable 2.5m (GPS, rudder pos.)			
	1	Ea.	1 ea 020367 Remote Key Switch Cable 2.5 m			
205353 - Engine Room Ventilation	1	Ea.	1 ea 020258 Interceptor installation kit HC35 English			
	1	Ea.	Dynamic Stabilization			
	1	Ea.	205351 - HVAC			
	1	Ea.	Forward Void, Vents Check-valves installed on Frame 26, Outboard of Fuel Fills			
	1	Ea.	Air Pipe Head 2" Aluminum Model 2-APH-A-F-R			
	1	Ea.	Pipe 3" Sch 40 x 20ft 6061 Weight 3.547 Lbs Per Ft			
	1	Ea.	205351 - HVAC			
	1	Ea.	AC Infinity CLOUDLINE SA, QUIET INLINE DUCT FAN SYSTEM WITH SPEED CONTROLLER, 4-INCH #AL-CLSA - TrimLeaf.com			
	1	Ea.	Dayus DANVA-A-16x4-Silver-STD Non Vision Door Grilles with Hinge Frame on both sides			
	1	Ea.	AC Infinity Flexible 4-Inch Aluminum Ducting, Heavy-Duty Four-Layer Protection, 8-Foot			
205355 - Engine Room Ventilation	1	Ea.	Tamarack Premium 4 in. Back Draft Damper			
	1	Ea.	Sea-Dog Line Hose Vent with Flange - for 3" or 4" Hose, White 4" (3" Flange) Item #: SDL 337415			
	1	Ea.	Sea-Dog Line Hose Vent with Flange - for 3" or 4" Hose, White 4" (3" Flange) Item #: SDL 337415			
	1	Ea.	Prime premium adjustable diffuser, 4 inch size, White color, #: WGX4S			
	1	Ea.	Bunk Room Ventilation Fan Shipset			
	1	Ea.	205351 - HVAC - Interior Climate Control Equipment			
	1	Ea.	PilotHouse - Webasto -16,000 BTU FCF Platinum Air Conditioner, 230V Webasto 5011401A Marinepartsource.com SKU WEBASTO-5011401A			
	1	Ea.	Wet Lab - Webasto -16,000 BTU FCF Platinum Air Conditioner, 230V Webasto 5011401A Marinepartsource.com SKU WEBASTO-5011401A			
	1	Ea.	Dry Lab - Webasto -16,000 BTU FCF Platinum Air Conditioner, 230V Webasto 5011401A Marinepartsource.com SKU WEBASTO-5011401A			
	1	Ea.	STBD Berthing Areas - Webasto -6,000 BTU FCF Platinum Air Conditioner, 230V Webasto 5011395A Marinepartsource.com SKU WEBASTO-5011395A			
205355 - Engine Room Ventilation	1	Ea.	Port Berthing Areas - Webasto -6,000 BTU FCF Platinum Air Conditioner, 230V Webasto 5011395A Marinepartsource.com SKU WEBASTO-5011395A			
	1	Ea.	Pump March, AC-SC-MD-115V			
	1	Ea.	Pump Relay 5 Station 115/230v - 5011395A			
	1	Ea.	1773K611 Standard Duct, Aluminum, Open, Trade Size 6 5ft			
	1	Ea.	Vents, Piping, Ducting & Hardware Shipset			
	1	Ea.	Flagship Marine, Inc. / ITR Marine - Pilot House Defroster			
	1	Ea.	20090-102 - Heat Unit, Electric, FMCH2E, TOP, 6842 BTU/2kw, 230v			
	1	Ea.	(1) Thermostat w/ Blue plate, 20515-001 (included)			
	1	Ea.	KIT-D-FMCH2E... Deluxe Installation, FMCH2E (20090) black grills			
	1	Ea.	- (1) discharge plenum, up to (5) 4" discharge collars, 70199-001			
205355 - Engine Room Ventilation	1	Ea.	- (3) collar, 4" 70188-001 (shipped loose)			
	1	Ea.	- (2) Plots, plenum close out, 4", 4"x4", 70184-001 (shipped loose)			
	1	Ea.	- (3) Grill, return Air, w/ filter, white, 14x10 C/O, standard (teak available)			
	1	Ea.	- (3) Grill, discharge, 4", black			
	1	Ea.	- (1) Duct, 4", Grey fiberglass, flex, UL heat duct, 25'			
	1	Ea.	- (3) Tie, black, 120lb, 18", 60551-001			
	1	Ea.	- (4) plenum 1/4-20 bolts, 60623-001			
	1	Ea.	- (4) plenum 1/4-20 nuts, 60523-001			
	1	Ea.	- (1) plenum screws, (20) self tap, 60528-002			
	1	Ea.	- (1) Installation Manual, MANUAL-SC/D/s and Don'ts			

205354 - Acoustical Insulation	1	Ea.	600-MAC Manual Control System
	2	Ea.	Moisture Eliminators - Custom
	2	Ea.	Electrical Control Fire Dampers, Includes Manual Overrides
	2	Ea.	Intake Fans, Adjustable Speeds
	2	Ea.	Intake Fan Guards, Aluminum
	2	Ea.	AC Temperature Control Systems
	1	Ea.	Damper Mounting Hardware, Shipset
	9	Ea.	205354 - Acoustical Insulation
	54	Ea.	1lb Wavebar Quinzaro Non-Lite IMO / USCG Approved M.V. Roll Size 54" x 30" - 135 ft2
	6	Ea.	Isover Ultimate Insulation with Foil Face USP, ALU1 36kg x 60mm, Roll Size 1.2m x 5.5m (7.6m2)
205357 - Safety equipment	1	Ea.	MAST22151M 22-15 (1) MON-ECO HANGER GRIP ADHESIVE
	8	Ea.	Insulation Adhesive 1 Gallon
	4	Ea.	Insulation Caps 12ga 304SS - Box of 1000
	4	Ea.	Insulation Caps 12ga Aluminum - Box of 1000
	4	Ea.	Insulation Pins 12ga x 3-1/2 Galvanized Steel - Box of 1000
	4	Ea.	Insulation Washers 12ga x 1-1/2" Galvanized Steel - Box of 1000
	32	Ea.	AGC Tape 17059506-3 TAPE AGC 75 MM x 45 M
	1	Ea.	DecDamp Sheet/Tile Shipset
	1	Ea.	205357 - Safety equipment
	1	Ea.	Rafts & Life Floats
205360 - Hand rails / ladders	1	Ea.	16 person IBA life raft with container, cradle and lashing
	1	Ea.	IBA Self Launching Cradle
	1	Ea.	IBA Adjustable Lashing - Complete with Quick Pull
	10	Ea.	Life Jackets
	10	Ea.	Adult sized Type-I life vests
	1	Ea.	Stenciling/Silk Screening, Life Vests
	1	Ea.	Life Rings
	1	Ea.	Jim-Buoy GX-24-OI Life Rings, Orange
	1	Ea.	Jim-Buoy 1123-24 SS 24" Roughneck Life Ring Bracket
	1	Ea.	Main Overboard Light - ACR 3947 SW-3 Lifebuoy Self-Igniting Marker Light, Ultra-Bright LED
205373 - Galley equipment	1	Ea.	Stearns Ring Buoy Rope 90ft with Bag - 1023
	1	Ea.	EP1RB
	1	Ea.	ACR 2830 GlobalFIX V4 406 GPS EPIRB, CAT I Auto.
	2	Ea.	Emergency signals
	2	Ea.	Orion 814 SOLAS Red Handheld Flare
	2	Ea.	Orion 938 Handheld Marine Orange Smoke Signals pack of 3
	1	Ea.	Orion 514 Orange Ammo Box
	1	Ea.	Pelican 3610 PLC LED flashlight
	1	Ea.	Ships bell
	1	Ea.	Whitcap S-0813 (Or Equal) Chrome Plated Brass Ship's Bell - 12"
205360 - Hand rails / ladders	2	Ea.	Orion 811 Life Boat First Aid Kit
	2	Ea.	Bernard P-227 MARPOL Pollution / Garbage Prevention Plaque
	2	Ea.	Fire Axe w/Bracket - FECZW - See Section 205333 Fire Suppression
	1	Ea.	Placards - Safety & Pollution
	1	Ea.	2 x MARPOL Oil Discharge Placard
	1	Ea.	1 x MARPOL No Dumping Placard
	1	Ea.	1x Personnel to Remain Clear When Electronics Are in Operation
	1	Ea.	3 x Sink Drain and Pollution
	1	Ea.	2 x Hearing Protection Required for Engine Rooms
	1	Ea.	SWT and SWL marked on A-frame and Winch
205373 - Galley equipment	1	Ea.	Load chart posted at Crane Controls
	1	Ea.	Winch, A-frame and Crane controls shall be labeled
	1	Ea.	205360 - Hand rails / ladders - Shipset
	1	Ea.	See 205058 - Hand Rails & Ladders & Dive Ladders
	1	Ea.	205373 - Galley equipment
	1	Ea.	Refrigerator / Bottom Freezer - Summit 24" Wide, 11.7 Cu. With Fresh Zone Deli Drawer Model:FFB181ES2 "Build With Ferguson"
	1	Ea.	Microwave, Whirlpool 1.9 Cu Ft, 1800 Watt, Over The Range, Convection, Item #5283392
	1	Ea.	Model #WMH78519LZ "Loves"
	1	Ea.	Force 10, Three Burner Electric Cooktop, Model # 325090 Mfg. # F75321, "West Marine"
	1	Ea.	Regency 10" x 14" x 5" 16-Gauge Stainless Steel One Compartment Drop-In Sink with 8" Gooseneck Faucet
205360 - Hand rails / ladders	1	Ea.	Garbage Disposal, Kohler 28361-QJR or Equal ... 3/4 HP
	1	Ea.	Magnetic Dry Grease Board, 36" X 24", Aluminum Frame, Silver/White
	1	Ea.	205360 - Hand rails / ladders
	1	Ea.	205373 - Galley equipment
	1	Ea.	205360 - Hand rails / ladders
	1	Ea.	205373 - Galley equipment
	1	Ea.	205360 - Hand rails / ladders
	1	Ea.	205373 - Galley equipment
	1	Ea.	205360 - Hand rails / ladders
	1	Ea.	205373 - Galley equipment

205410 - Engine Raw Water	2	Ea.	Engine Raw Water	205420 - Genset Raw Water	1	Ea.	Parker Quick Coupling 8H6-61
	2	Ea.	Arctic Steel 70WS-BISO-300-S Raw Water Strainer 3" NPT Ports; Male Bottom Inlet, Female Side Out...		2	Ea.	Arctic Steel 70WS-BISO-300-S Raw Water Strainer 2" NPT Ports; Male Bottom Inlet, Female Side Out...
	2	Ea.	Groco Aluminum Water Scoop / Strainer		2	Ea.	Groco Aluminum Water Scoop / Strainer
	2	Ea.	48S-K32 316 Stainless Steel Flow-Adjustment Lug Valve with Lever Handle, 3 Pipe Size, for Water ...		2	Ea.	48S-K32 316 Stainless Steel Flow-Adjustment Lug Valve with Lever Handle, 3 Pipe Size, for Water ...
	1	Ea.	Ball Valve 3" 316SS Full Flow NPT		1	Ea.	Ball Valve 3" 316SS Full Flow NPT
	1	Ea.	Misc Piping, Fittings & Materials		1	Ea.	Misc Piping, Fittings & Materials
	1	Ea.	Genset Raw Water - Shipped		1	Ea.	Genset Raw Water - Shipped
	2	Ea.	Arctic Steel 70WS-BISO-200-S Raw Water Strainer 2" NPT Ports; Male Bottom Inlet, Female Side Out...		2	Ea.	Arctic Steel 70WS-BISO-200-S Raw Water Strainer 2" NPT Ports; Male Bottom Inlet, Female Side Out...
	2	Ea.	Groco Aluminum Water Scoop / Strainer		2	Ea.	Groco Aluminum Water Scoop / Strainer
	6	Ea.	CE-3 Complete Aluminum Pencil Anode 2" with 3/4" SS Plug		6	Ea.	CE-3 Complete Aluminum Pencil Anode 2" with 3/4" SS Plug
	1	Ea.	Misc Piping, Fittings & Materials Shipped		1	Ea.	Misc Piping, Fittings & Materials Shipped
205425 - Bilge System			205425 - Bilge System - Shipped				205425 - Bilge System - Shipped
			Electrical parts Bilge pump system				Electrical parts Bilge pump system
	1	Ea.	Safiran Electrical & Power 8550K9 Switch, Toggle, 1 Pole, ON-NONE-OFF, 15A, 115VAC, IP68 Sealed, Screw Terminal		1	Ea.	Safiran Electrical & Power 8550K9 Switch, Toggle, 1 Pole, ON-NONE-OFF, 15A, 115VAC, IP68 Sealed, Screw Terminal
	1	Ea.	Safiran Electrical & Power 8497K1 Accessory Switch Guard, Phenolic, Red, Fib 2 Position Toggles, OHM Mount, MS3224-1		1	Ea.	Safiran Electrical & Power 8497K1 Accessory Switch Guard, Phenolic, Red, Fib 2 Position Toggles, OHM Mount, MS3224-1
	1	Ea.	ILDR103/24V Livewell LED Light, Red, 24V		1	Ea.	ILDR103/24V Livewell LED Light, Red, 24V
	1	Ea.	Carlton E9801 FD Weatherproof Box, 1-Gang, Non-Metallic		1	Ea.	Carlton E9801 FD Weatherproof Box, 1-Gang, Non-Metallic
	1	Ea.	Carlton E980N-CAR Weatherproof Cover, 1-Gang, Non-Metallic		1	Ea.	Carlton E980N-CAR Weatherproof Cover, 1-Gang, Non-Metallic
	2	Ea.	Nylon Cable Glands with Washer and Nut, NPT 1/2"		2	Ea.	Nylon Cable Glands with Washer and Nut, NPT 1/2"
	1	Ea.	Automation Direct pushbutton, 22mm, push ON - push OFF, LED illuminated, (1) N.O. contact(s), plastic base, plastic bezel, plastic ring, Operator: red, flush, 30mm, round, plastic, 24 VAC/VDC; full voltage. P/N: GOC3191-24L		1	Ea.	Automation Direct pushbutton, 22mm, push ON - push OFF, LED illuminated, (1) N.O. contact(s), plastic base, plastic bezel, plastic ring, Operator: red, flush, 30mm, round, plastic, 24 VAC/VDC; full voltage. P/N: GOC3191-24L
			House keeping bilge system				House keeping bilge system
	4	Ea.	RULE 2000 GPH Bilge Pump - 24V, Non-Automatic (1-1/8" Hose) Item ID: RUL 12		4	Ea.	RULE 2000 GPH Bilge Pump - 24V, Non-Automatic (1-1/8" Hose) Item ID: RUL 12
	4	Ea.	ULTRA SAFETY SYSTEMS Ultra Alarm Switch Only - Large, Normally Closed Contacts, 12/24V DC, 100mA Max Load Item ID: USS UPS-03-NC		4	Ea.	ULTRA SAFETY SYSTEMS Ultra Alarm Switch Only - Large, Normally Closed Contacts, 12/24V DC, 100mA Max Load Item ID: USS UPS-03-NC
			Custom control panel				Custom control panel
	4	Ea.	Blue Sea 8171 LED - 12/24V Red		4	Ea.	Blue Sea 8171 LED - 12/24V Red
	4	Ea.	Blue Sea 8093 LED - 12/24V Amber		4	Ea.	Blue Sea 8093 LED - 12/24V Amber
	4	Ea.	Blue Sea 794S Contura III Switch SPDT - (ON)-OFF-ON		4	Ea.	Blue Sea 794S Contura III Switch SPDT - (ON)-OFF-ON
	4	Ea.	Blue Sea Push Button Reset Only Screw Terminal Circuit Breaker - 15 Amps Item: 2133		4	Ea.	Blue Sea Push Button Reset Only Screw Terminal Circuit Breaker - 15 Amps Item: 2133
	4	Ea.	Blue Sea 8257 Mounting Bracket - End		4	Ea.	Blue Sea 8257 Mounting Bracket - End
	1	Ea.	ILDR103/24V Livewell LED Light, Red, 24V		1	Ea.	ILDR103/24V Livewell LED Light, Red, 24V
			Systems parts Bilge system				Systems parts Bilge system
	1	Ea.	Jabco 18330-0001 Electric Clutch Pump, Belt Driven, 24 VDC 2A Pulley Belt Grooves		1	Ea.	Jabco 18330-0001 Electric Clutch Pump, Belt Driven, 24 VDC 2A Pulley Belt Grooves
	1	Ea.	Bilge pump bracket 3/8" steel cut parts		1	Ea.	Bilge pump bracket 3/8" steel cut parts
	11	Ea.	Full Flow Ball Valve 1-1/2" 316SS		11	Ea.	Full Flow Ball Valve 1-1/2" 316SS
	2	Ea.	6146K143 V-Belt, Trade Number M43, 45" Outer Circumference, EPDM		2	Ea.	6146K143 V-Belt, Trade Number M43, 45" Outer Circumference, EPDM
	2	Ea.	Bushing 2" MNPT x 1-1/2" FNPT Brass		2	Ea.	Bushing 2" MNPT x 1-1/2" FNPT Brass
	2	Ea.	Close nipple 1-1/2" NPT Brass		2	Ea.	Close nipple 1-1/2" NPT Brass
	2	Ea.	90 Degree elbow 1-1/2" NPT Brass		2	Ea.	90 Degree elbow 1-1/2" NPT Brass
	2	Ea.	King Nipple 1-1/2" NPT Brass		2	Ea.	King Nipple 1-1/2" NPT Brass
	240	Feet	Pipe 1-1/2" Sch 40 6061		240	Feet	Pipe 1-1/2" Sch 40 6061
	1	Ea.	Bosworth 74-9 Check Valve 1-1/8" - CV-0400D		1	Ea.	Bosworth 74-9 Check Valve 1-1/8" - CV-0400D
	3	Ea.	3230T36 Strut Channel, Low-Profile, Solid, Aluminum, 1-5/8" wide x 13/16" tall x 10ft		3	Ea.	3230T36 Strut Channel, Low-Profile, Solid, Aluminum, 1-5/8" wide x 13/16" tall x 10ft
	20	Feet	Pipe 1-1/2" Sch 40 6061		20	Feet	Pipe 1-1/2" Sch 40 6061
	6	Feet	Pipe 3" Sch 10 316SS		6	Feet	Pipe 3" Sch 10 316SS
	1	Ea.	Full Flow Ball Valve 1-1/2" 316SS		1	Ea.	Full Flow Ball Valve 1-1/2" 316SS
	12	Ea.	King Nipple 1-1/2" 316SS NPT		12	Ea.	King Nipple 1-1/2" 316SS NPT
	50	Feet	Parker 1-1/2" Armada Hose SW569-1500		50	Feet	Parker 1-1/2" Armada Hose SW569-1500
	100	Ea.	AWAB #24 Hose Clamp Solid 316SS		100	Ea.	AWAB #24 Hose Clamp Solid 316SS
	28	Ea.	King Nipple 1-1/2" Sch 40 6061 Buttweld		28	Ea.	King Nipple 1-1/2" Sch 40 6061 Buttweld
	40	Ea.	90 Elbow 1-1/2" Sch 40 6061 Buttweld		40	Ea.	90 Elbow 1-1/2" Sch 40 6061 Buttweld
	1	Ea.	Flange 1-1/2" 150 lb 316 SS NPT		1	Ea.	Flange 1-1/2" 150 lb 316 SS NPT
	6	Ea.	90 Degree elbow 1-1/2" NPT 316 SS		6	Ea.	90 Degree elbow 1-1/2" NPT 316 SS
	8	Ea.	Close Nipple 1-1/2" NPT 316 SS		8	Ea.	Close Nipple 1-1/2" NPT 316 SS
	1	Ea.	MMC 9472K63S Garlock Flange gasket 1/16" thick		1	Ea.	MMC 9472K63S Garlock Flange gasket 1/16" thick
	50	Ea.	32625T13 Strut-Mount Vibration-Damping Routing Clamp with TPE Rubber Cushion, 304 Stainless Steel, 1-7/8" ID		50	Ea.	32625T13 Strut-Mount Vibration-Damping Routing Clamp with TPE Rubber Cushion, 304 Stainless Steel, 1-7/8" ID
	2	Ea.	Dixon N-FVLTST-20S Aluminum 2" NPSH Barrel Strainer w/foot Valve #BSZ0PFV		2	Ea.	Dixon N-FVLTST-20S Aluminum 2" NPSH Barrel Strainer w/foot Valve #BSZ0PFV
	8	Ea.	Mercedes 70R1P22P5 2" NPSH Foot Valve Strainer S9 (sub for Dixon)		8	Ea.	Mercedes 70R1P22P5 2" NPSH Foot Valve Strainer S9 (sub for Dixon)
	8	Ea.	MMC 44705K288 2" to 1-1/2" NPT Aluminum Reducer Bushing		8	Ea.	MMC 44705K288 2" to 1-1/2" NPT Aluminum Reducer Bushing
	1	Ea.	Beckson FH-1-1/4X6 Flexible Wire Reinforced Hose FH, 1-1/4" x 6 ft Length		1	Ea.	Beckson FH-1-1/4X6 Flexible Wire Reinforced Hose FH, 1-1/4" x 6 ft Length
	1	Ea.	Beckson 124PF6 Thirsty-Mate Manual Pumps, 24" Pump w/5 ft. Flexible Hose		1	Ea.	Beckson 124PF6 Thirsty-Mate Manual Pumps, 24" Pump w/5 ft. Flexible Hose

1	Ea.	Beckson CP-1-1/4 Coupler for R1 Wire-Reinforced Hose, 1-1/4" Hose
1	Ea.	MMC 94905K159 One piece hook and loop, 5'
2	Ea.	MMC 1171A75 Hand bilge pump clips
2	Ea.	MMC 44705K288 2" to 1-1/2" NPT Aluminum Reducer Bushing
HOUSEKEEPING PUMPS		
4	Ea.	Flange 2" 150lb 316SS NPT
4	Ea.	MMC 9472X636 Garlock Flange gasket 1/16" thick 2" Pipe
8	Ea.	Close Nipple 2" NPT 316 SS
4	Ea.	90 Degree elbow 2" NPT 316 SS
4	Ea.	Bell Valve 2" Full Flow 316SS NPT
4	Ea.	Male adapter 2" sch40 PVC 2" MNPT x 2" SOC
4	Ea.	Swing Check Valve 2" Sch 40 PVC SOC x SOC
40	Feet	Pipe 2" sch 40 PVC
8	Ea.	90 Degree elbow 2" sch40 PVC SOCSOC DWV
4	Ea.	Hose Barb 2" SOC x 2" Hose Barb sch 40 PVC
16	Ea.	AWAB hose clamps #28 (2" Hose)
20	Feet	5796K14 Suction Water Hose, 2" ID, 2 3/8" OD, Clear, 15' Length
4	Ea.	Hose Barb 2" SOC x 2" Hose Barb sch 40 PVC MMC 4880K418
1	Ea.	Fire Pump System - Shipset Not Required on Vessels Under 65 Feet
1	Ea.	Obenforfer N13HDM-E24 1-1/2" Bronze Gear Pump with 24V Clutch
1	Ea.	1-1/2" Brass Kunkle Relief Valve 20G02-80ps
1	Ea.	Arctic Steel 70WVS-9150-150-S Raw Water Strainer 1-1/2" NPT Ports; Male Bottom Inlet, Female Side...
1	Ea.	3-Way Ball Valve 1-1/2" 316SS, L-port, NPT, JFW BY002-3LP-T
1	Ea.	1555508UL White 1.5" x 50' Single Jacket USCG / UL Hose (Brass NH / NST Couplings)
1	Ea.	Fire Cabinet Door
1	Ea.	Miscellaneous Piping, Fittings & Materials Shipset
205435 - Black Water System, shipset		
Toilet to Tank Piping - Shipset		
1	Ea.	Sarrifo SanitMARIN 48 Comfort Size Electric Marine Toilet 24V
1	Ea.	Headhunter - Tortuga Diaphragm Pump 1.5" NPT Connections
1	Ea.	Roxtec SPN4-103
1	Ea.	Ronco 120 Gallon Polypropylene Tank
1	Ea.	Ronco Tank Fittings & Inspection Plate
1	Ea.	Ronco - Freight
20	Pt	Pipe 1-1/2" Sch 40 PVC DWV
8	Ea.	90 Elbow Short Sweep 1-1/2" Sch 40 PVC DWV HUB x HUB
8	Ea.	45 Elbow 1-1/2" Sch 40 PVC DWV HUB x HUB
3	Ea.	1-1/2" Sch 80 Tank Fitting MMC # 36885K845
40	Pt	Pipe 1-1/2" CL200 QJN1 90/10
3	Ea.	Roxtec SPM-87 SPM seal 1-1/2"
3	Ea.	1-1/2" Straight Clamp-on Connector MMC # 4693K73
205440 - Fresh Water System - Shipset		
2	Ea.	Shurflo 4158-169-E75 24 Volt Aqua King II Supreme Water Pump - 5.0 GPM, 55 PSI
1	Ea.	Headhunter PF-102 Purifier Pressure Accumulator Tank, 1.2 gallon drawdown @40-60 psi range, NSF certified,
1	Ea.	American Water Heater ELK2JUS015V Tiny Titan 2.5 Gallon Point-of-Use Specialty Electric Water Heater
1	Ea.	Head Sink - Scandvik Rectangular Sinks - 18/10 Stainless Steel 12-3/4" X 6-3/8" X 6" deep SKU: 54879
1	Ea.	Faucet - head sink
1	Ea.	Galley Sink - Regency 10" x 14" x 5" 16-Gauge Stainless Steel One Compartment Drop-In Sink with 8" Gooseneck Faucet
2	Ea.	Wet Lab Sinks - Regency 10" x 14" x 5" 16-Gauge Stainless Steel One Compartment Drop-In Sink with 8" Gooseneck Faucet
Aluminum Fresh Water Tank & Fittings - Shipset		
Aluminum Plate		
Water pressure system		
100	Lbs.	MMC # 1798T11 Pressure Gauge 0-100 psi
2	Ea.	Pentair WFFH12 Single Cartridge Filter Housing, Clear, 10"
2	Ea.	Pentek 10CART Fibrillated Polypropylene Water Filter
2	Ea.	TINY Titan Hot Water Heater
FILL/VENT PIPING		
1	Ea.	Wager vent check Alum 1701.5
2	Ea.	90 Degree elbow 1-1/2" butt weld sch40 6061
1	Ea.	2084T54 Anodized Aluminum Cam-and-Groove Hose Coupling, Size 1-1/2, Plug, 1-1/2 NPT Female End
1	Ea.	2084T84 Anodized Aluminum Cam-and-Groove Hose Coupling, Size 1-1/2, Socket Cap with Nonlocking Levers
300	Pt	Pipe 1-1/2" sch40 PVC

MMC 239K59 Male Adapter 1-1/2" DWV SOC x NPT
MMC 4880K325 90 Degree elbow 1-1/2" NPT sch40 PVC
MMC 4880K625 90 Degree elbow 1-1/2" NPT sch40 PVC
Union 1-1/2" Sch 40 PVC SOC x SOC
Female Adapter 1-1/2" Sch 40 PVC SOC x FPT
MMC 32625T13 Strut Clamps 1-1/2" Pipe
MMC 4880K354 Bushing 1-1/2" MNPT x 1/2" FNPT
Pressure Piping Shipset

205445 - Gray Water
Valvework 1-1/2" Electric Actuated 3 pc SS Ball Valve 24 VDC Stock #: 565351C Brand: Valvework Series: 5653
Miscellaneous, Includes Piping, Maretron Sender

205446- Wash Down/Bait tank
Jabco 50200 Clutched Pump, 24VDC, 1.5" outlets
Hose - Flexon FA58100CN Farm and Ranch Garden Hose, 100 ft, Red AMAZON
6 Inch Brass Garden Water Hose Nozzle Jet, 3/4 Inch Thread Inlet, 7 GPM 80 PSI,
Threaded On/Off Valves with Garden Hose Outlet - McMaster-Carr #47315K72
Miscellaneous Fittings (Seawater Connection)

205448- Deck Drains - Shipset

Deck Drain Shipset

205450- Hydraulics - Shipset

All Tech Hydraulic Services - Hydraulic Systems- Per MFCP quote 5.16.24

Petro-Canada Envrion MV-346 Hydraulic Oil 55 Gal Drum

Miscellaneous Hydraulic Materials, Includes Freight

BOW Thruster Hydraulic Circuit

205500 Electrical - Other

Shipset

205505 - DC Systems, Note: Make/Models/Quantities Are Subject to Change

Battery chargers

Victron Energy Skylla-1 Battery Charger 24V/100A (1+1), 230VAC P/N: SK024100000

Victron Energy Phoenix Charger 120-240V- 24V/25A P/N: PCH024025001

Port Hull, Main Engines/Generator battery Start bank - 2 Batteries

LIFELINE 12V Group 31 AGM Starting Battery - 105 Ah 810CCA P/N: GPL-3100T

DYNO BATTERIES M30HH Battery Box - 14-3/4" L x 8-3/16" W x 10-13/16" H

14X12X6" Polycarbonate Wall Mount Electrical Enclosure with Solid Cover | AMP1426L

Aluminum Back Panel for 14x12" Allied Moulded Electrical Enclosures | PLA142

16x14x8" Polycarbonate Wall Mount Electrical Enclosure with Solid Cover | AMP1648L

Aluminum Back Panel for 16x14" Hammond Electrical Enclosures | 14A1513 (sub for PA164)

Blue Sea 600A Heavy Duty Series Battery Switch P/N: 3000

2557763 Multipurpose 110 Copper Bar with Rounded Edges, 1/4" Thick, 1"W x L 3'

BLUE SEA SYSTEMS MiniBus 100 Ampere Common Buses - without Cover, MiniBus 5x 8-32 Screw Terminal Item ID: B/S 2304

BLUE SEA SYSTEMS 500A ML-ACR Automatic Charging Relay w/ Manual Override - 24V, Retail

Class T Fuse Block with Insulating Cover - 225 to 400A P/N: 5502100

Class T Fuse - 350 Amp P/N: 5120

STBD Hull, Main Engines/Generator battery Start bank - 2 Batteries

LIFELINE 12V Group 31 AGM Starting Battery - 105 Ah 810CCA P/N: GPL-3100T

DYNO BATTERIES M30HH Battery Box - 14-3/4" L x 8-3/16" W x 10-13/16" H

14X12X6" Polycarbonate Wall Mount Electrical Enclosure with Solid Cover | AMP1426L

Aluminum Back Panel for 14x12" Allied Moulded Electrical Enclosures | PLA142

16x14x8" Polycarbonate Wall Mount Electrical Enclosure with Solid Cover | AMP1648L

Aluminum Back Panel for 16x14" Hammond Electrical Enclosures | 14A1513 (sub for PA164)

Blue Sea 600A Heavy Duty Series Battery Switch P/N: 3000

2557763 Multipurpose 110 Copper Bar with Rounded Edges, 1/4" Thick, 1"W x L 3'

BLUE SEA SYSTEMS MiniBus 100 Ampere Common Buses - without Cover, MiniBus 5x 8-32 Screw Terminal Item ID: B/S 2304

BLUE SEA SYSTEMS 500A ML-ACR Automatic Charging Relay w/ Manual Override - 24V, Retail

Class T Fuse Block with Insulating Cover - 225 to 400A P/N: 5502100

Class T Fuse - 350 Amp P/N: 5120

Bonding and Negative bus

Blue Sea Systems 2104 PowerBar BusBar with Four 3/8", 600A

Welding Lug, 4/0 AWG, 3/8" Stud, Tinned Copper, Crimp or Soldered, Seamless 100% Copper Tube, 825 ID Stock No 76-4039-25

Welding Lug, 4/0 AWG, 1/2" Stud, Tinned Copper, Crimp or Soldered, Seamless 100% Copper Tube, 825 ID Stock No 76-4013-25

4 AWG, 1/4" Stud, Tinned Copper, Crimp or Soldered, Seamless 100% Copper Tube

House battery bank - 4 Batteries

Lifeline 6 volt GPL-6CT Group GCT AGM Deep Cycle Battery 300Ah P/N: GPL-6CT

2	Ea.	DYNO BATTERIES L16 Battery Box - for (2) L16 Batteries - 15-3/4" L x 13-9/16" W x 18-15/16" H
1	Ea.	16x14x8" Polycarbonate Wall Mount Electrical Enclosure with Solid Cover AMP1648L
1	Ea.	Aluminum Back Panel for 16x14" Hammond Electrical Enclosures 14A1513 (sub for PA164)
1	Ea.	24x20x10" ABS Plastic Wall Mount Electrical Enclosure with Solid Cover NEF-32042
1	Ea.	Blue Sea 600A Heavy Duty Series Battery Switch P/N: 3000
1	Ea.	m-Series Mini On-Off Battery Switch with Knob - Red P/N: 6006
3	Ea.	Class T Fuse Block with Insulating Cover - 110 to 200A P/N: 5007100
2	Ea.	Class T Fuse Block with Insulating Cover - 225 to 400A P/N: 5502100
4	Ea.	Fuse A3T / Class T 110 Amp P/N: 5112
1	Ea.	Fuse A3T / Class T 125 Amp P/N: 5117
2	Ea.	Class T Fuse - 350 Amp P/N: 5120
1	10 pk	Konnect-It screw fuse terminal block, accepts wire size 26-8 AWG, gray, 6.3A, 300V rated (UL), 35mm DIN rail mount, 100kA SCOR. Package of 10. KNF10-10
2	100 pk	Konnect-It screw single level feedthrough terminal block, accepts wire size 26-12 AWG, gray, 20A, 600V rated (UL), 35mm DIN rail mount, 100kA SCOR. Package of 10. KNF10-10
2	10 pk	Bussmann GMA Series Glass Fuses, 5 Amp, 5mm x 20mm Stock No 70-5106
2	10 pk	Bussmann GMA Series Glass Fuses, 10 Amp, 5mm x 20mm Stock No 70-5110
1	Ea.	NEWMAR APS-160 Automatic Power Selector, 12 - 48 VDC 160 Amps Max SKU: 184152 Item ID: NMR APS-160
1	Ea.	BLUE SEA SYSTEMS 500A ML Remote Solenoid Switch w Backup Manual Control - 24 volt DC Item ID: B/S 7702100B
1	Ea.	BLUE SEA SYSTEMS 500A ML Remote Solenoid Switch w Backup Manual Control - 24 volt DC Item ID: B/S 7702100B
1	Ea.	Blue Sea Systems 360 panel Item # ZZ013067006024
1	Ea.	Blue Sea Systems 360 panel Item # ZZ013067006003
1	Ea.	Blue sea system custom 360 panel Item # ZZ013067006001
1	Ea.	Blue sea system custom 360 panel Item # ZZ013067006005
1	Ea.	NEWMAR APS-160 Automatic Power Selector, 12 - 48 VDC 160 Amps Max SKU: 184152 Item ID: NMR APS-160
1	Ea.	Dimmer 24VDC
1	Ea.	24 VDC LED Dimmer PWM DC Lighting Dimmer Controller for LED Incandescent Auto RV Marine Aircraft Interior Lighting -
2	Ea.	DC Outlets
1	Ea.	BLUE SEA SYSTEMS 12 Volt Dash Socket SKU: 205564 Item ID: B/S 1011
1	Ea.	Orion DC/DC Converter 24-12V, 25A P/N: OR1241225020
1	Ea.	BLUE SEA SYSTEMS 360 PANEL 360 Panel - 12V DC Socket and Dual USB Charger SKU: 393718 Item ID: B/S 1478
24	Ea.	DC LIGHTING
24	Ea.	Infra IL8040 F-28 LED, Clear, Cool White, 10-30VDC Surface-Mount Utility Light
5	Ea.	EuroLED Touch Lamp - Warm White/Red, White Bezel Item ID: HLA 980630102
8	Ea.	EuroLED Touch Lamp - Warm White/Red, Stainless Item ID: HLA 980630112
2	Ea.	Lunasea ILB-33JW-91-OT Elegant Wall Mount LED Light 33JW, Warm White, 10-30V DC
2	Ea.	BLUE SEA SYSTEMS CONTURA Gray Water Resistant Contura Rocker Switches, SPDT - (ON) - OFF - (ON) SKU: 128512 Item ID: B/S 8234
2	Ea.	BLUE SEA SYSTEMS Contura Water Resistant SPST LED III Switch, OFF-ON, Gray # 8230
2	Ea.	BLUE SEA SYSTEMS Contura Water Resistant SPST LED III Switch, OFF-ON, Gray # 8230
4	Ea.	BLUE SEA SYSTEMS Contura Switch Mounting Panels, End Mounting Panel # 8267
4	Ea.	BLUE SEA SYSTEMS Contura Switch Mounting Panels, Center Mounting Panel # 8266
11	Ea.	HELLAEASY FIT White LED Easy Fit Step Lamp - Chrome Plated Plastic Cap SKU: 1011588 Item ID: HLA 958126001
1	Ea.	Edison fuse, T1N series, Class T, current-limiting, extremely fast-acting, 70A, 300 VAC, knife blade, feeder/branch, semiconductor protection applications. T1N70-1
1	Ea.	Edison fuse, T1N series, Class T, current-limiting, extremely fast-acting, 350A, 300 VAC, knife blade, feeder/branch, semiconductor protection applications. T1N350
4	Ea.	Work Lights, FWD Main Deck - Vision X DURA-680 Duralux 6 LED Work Light 60 Degrees
1	Ea.	Exterior Work Light Switch Shipset
1	Ea.	Helm Work Light Switch
4	Ea.	Work Lights, AFT Main Deck - Vision X DURA-680 Duralux 6 LED Work Light 60 Degrees
1	Ea.	Exterior Work Light Switch Shipset
1	Ea.	Helm Work Light Switch
1	Ea.	Work Lights, AFT Upper Deck - Vision X DURA-680 Duralux 6 LED Work Light 60 Degrees
2	Ea.	Exterior Work Light Switch Shipset
1	Ea.	Helm Work Light Switch
1	Ea.	Work Lights, BOW/Gunwale Deck - Vision X DURA-680 Duralux 6 LED Work Light 60 Degrees
2	Ea.	Exterior Work Light Switch Shipset
1	Ea.	Helm Work Light Switch
1	Ea.	A-frame Lights - Sea Section 205075 A-Frame
24	Ea.	Machinery Spaces - Infra IL8040 F-28 LED, Clear, Cool White, 10-30VDC Surface-Mount Utility Light
8	Ea.	Propulsion Room Infra IL8040 F-28 LED, Clear, Cool White, 10-30VDC Surface-Mount Utility Light
4	Ea.	Lazarette - Infra IL8040 F-28 LED, Clear, Cool White, 10-30VDC Surface-Mount Utility Light
8	Ea.	Tank Spaces - Infra IL8040 F-28 LED, Clear, Cool White, 10-30Vdc Surface-Mount Utility Light
2	Ea.	Focals - EuroLED Touch Lamp - Warm White/Red, White Bezel Item ID: HLA 980630102
2	Ea.	Pilot Hous - EuroLED Touch Lamp - Warm White/Red, White Bezel Item ID: HLA 980630103
1	Ea.	Galley - EuroLED Touch Lamp - Warm White/Red, White Bezel Item ID: HLA 980630104
2	Ea.	Main Cabin - EuroLED Touch Lamp - Warm White/Red, White Bezel Item ID: HLA 980630105
4	Ea.	Head - EuroLED Touch Lamp - Warm White/Red, White Bezel Item ID: HLA 980630106
1	Ea.	Wet Lab - EuroLED Touch Lamp - Warm White/Red, White Bezel Item ID: HLA 980630107
1	Ea.	Dry Lab - EuroLED Touch Lamp - Warm White/Red, White Bezel Item ID: HLA 980630108

205510 - AC	4	Ea.	Bunk Lights - Helia 343720622 LAMP INT Flex SPOTLED BLK WHT/RED 400MM
	1	Ea.	Map Light - Lunasea LLB-49WR-21-CR 15" LED 1W Red - 3W White Chart / Map Light - Multi-Voltage
	1	Ea.	Miscellaneous - IDC Materials
205510 - AC System, Shipset	1	Ea.	Light Switched & Connectors
	1	Ea.	Shore power in
	1	Ea.	Shore power in breaker - Blue Sea 3120 Surface Mount System Panel Enclosures, 240V AC / 50A ELCI Main - For Isolation Transformer
	1	Ea.	Shore power in breaker - Blue Sea 3120 Surface Mount System Panel Enclosures, 240V AC / 50A ELCI Main - For Isolation Transformer
	2	Ea.	Shore transformer - Bridgeport Magnetics Dual MPE 12kVA 240 to 120 Toroidal Transformer
	4	Ea.	Freight, Bridgeport Transformers
	4	Ea.	interconnections - Terminal Blocks - 65 Ampere, 8 Circuit SKU: 69454 Item ID: BSS 2608 8 Circuit
	1	25 pk	interconnections - Heavy Duty Lugs 6 - 10 Stud (25) SKU: 00621 Item ID: ANC 242243 25 6 / #10
	1	Ea.	50 foot shore cord - SMARTPLUG 50 Amp Dual Configuration Cordset, 50 ft. SKU: 1006198 Item ID: SPL C50604
	2	Ea.	Shore power inlet - SMARTPLUG 50A 125/250V Boarside Shore Power Inlet (Male) Assembly SKU: 386340 Item ID: SPL BM50S
	2	Ea.	Soft Start Unit 240V coil
	2	Ea.	Transformer Disconnects
	2	Ea.	ABB Molded Case Circuit Breakers, FORMULA Series - Circuit Breaker, 2P, 50A, UL489 Item# A1A050TW-2
	2	Ea.	AMP1088L Polycarbonate Wall Mount Electrical Enclosure with Solid Cover 10x8x6"
	2	Ea.	PLA108 Aluminum Back Panel for 10x8" Allied Moulded Electrical Enclosures
	1	Ea.	Ground fault system
	1	Ea.	M-194-GF Instrument transformer, Ground Fault Sensor, 0-1000 A
	1	Ea.	PC&S Meter, ST90 DC 1mA to 1000mA, ST90DC1MA1000
	1	Ea.	ABB CP1-10G-10 22mm Assembled Pushbutton, Flush, Green, Compact
	1	Ea.	Power distribution panel
	3	Ea.	ABB CL2-623G Compact Pilot Light - Pilot light head - Green - Illuminated - Lamp type: LED 230V AC
	1	25 pk	Konnect-It screw fuse terminal block, blown fuse indicator, accepts wire size 26-8 AWG, gray, 6.3A, 300V rated (UL), 110 VAC LED indicator(s), 35mm DIN rail mount,
	2	Ea.	Bussmann fuse, GMA series, small dimension, fast-acting, 5A, 125 VAC, glass tube, Package of 5, Supplemental, electronic protection applications. Manufacturer part
	1	Ea.	ABB Molded Case Circuit Breakers, FORMULA Series - Circuit Breaker, 2P, 200A UL489 Item# A2A200TW-2
	1	Ea.	ABB Molded Case Circuit Breakers, FORMULA Series - Circuit Breaker, 2P, 200A UL489 Item# A2A200TW-2
	1	Ea.	ABB Molded Case Circuit Breakers, FORMULA Series - Circuit Breaker, 2P, 50A, UL489 Item# A1A050TW-2
	1	Ea.	ABB Molded Case Circuit Breakers, FORMULA Series - Circuit Breaker, 2P, 50A, UL489 Item# A1A050TW-2
	2	Ea.	Blue Sea 2104 PowerBar 600 Ampere Cable Connector, PowerBar 4 x 3/8" Stud Terminals
	2	Ea.	Transtler Power Meters, APM Series 100-277AC MOD RTU POS LCD, Item Number APM-PWR-APO
	4	Ea.	Instrument Transformer, CT, Indoor, Model: A, Ratio: 200:5 A, Single Phase, 10 kV 9L, 60 Hz, Single Ratio, Metering Class: 1% 4 Div of GE Current Transformers, A
	2	Ea.	MMC# 6723K12 Low-Profile Sleeve Bearing Carriage for 40mm Wide Rail
	2	Ea.	MMC# 62935K11 Nylon Ribbed Knob with M4 x 0.7mm Thread 10mm Long Stud
	2	Ea.	MMC# 92510A776 Aluminum Unthreaded Spacer, 5/8" OD, 1/2" Long, for Number 10 Screw Size
	1	pkg	100 pk of Button Head Hex Drive Screw, Black-Oxide Alloy Steel, M4 x 0.70 mm Thread, 10 mm Long, MMC# 91239A144
	1	pkg	25 pk of Black-Oxide Steel Oversized Washer for M4 Screw Size, 4.3 mm ID, 10 mm OD, MMC# 98035A10225
	1	Ea.	Saffran Electrical & Power Switch, Toggle, 1 Pole, ON-NONE-OFF, 15A, 115VAC, IP68 Sealed, Screw Terminal PIN: 8530K93
	1	Ea.	Saffran Electrical & Power Switch, Toggle, 1 Pole, ON-NONE-OFF, 15A, 115VAC, IP68 Sealed, Screw Terminal PIN: 8530K93
	2	Ea.	MMC# 6723K12 Low-Profile Sleeve Bearing Carriage for 40mm Wide Rail
	2	Ea.	MMC# 62935K11 Nylon Ribbed Knob with M4 x 0.7mm Thread 10mm Long Stud
	2	Ea.	MMC# 92510A776 Aluminum Unthreaded Spacer, 5/8" OD, 1/2" Long, for Number 10 Screw Size
	2	Ea.	House Power distribution panel
	1	Ea.	Blue Sea 3515531 Custom 360 Panel 120V-240V 5x2 - House AC C291021
	1	Ea.	Machine space panel
	1	Ea.	Eaton CHP32L225X5 Load Center, Main Lug, 225A, 120/240V, 1P, 32/64
	1	Ea.	Eaton CHPX5LS Plug-On Neutral Surface Cover For Loadcenter X5
	2	Ea.	Eaton CHF140 Breaker, 40A, 1P, 120/240V, 10 kAIC, Type CH
	2	Ea.	Eaton CHF250 Breaker, 50A, 2P, 120/240V, 10 kAIC, Type CH
	1	Ea.	Eaton CHF235 Breaker, 35A, 2P, 120/240V, 10 kAIC, Type CH
	1	Ea.	Eaton CHF230 Breaker, 30A, 2P, 120/240V, 10 kAIC, Type CH
	2	Ea.	Eaton CHF120 Breaker, 20A, 1P, 120/240V, 10 kAIC, Type CH
	2	Ea.	Eaton CHF220 Breaker, 20A, 2P, 120/240V, 10 kAIC, Type CH
	1	Ea.	Eaton CHF225 Breaker, 25A, 2P, 120/240V, 10 kAIC, Type CH
	1	Ea.	Eaton CHF215 Breaker, 15A, 2P, 120/240V, 10 kAIC, Type CH
	7	Ea.	AC Outlets - shipset
	1	Ea.	Lighting
	2	Ea.	All-Pro Lighting APEL Emergency Light, 2 Head, LED
	36	Ea.	Lithonia Lighting WF4 LED 30K40K50K MW 4" LED Wafer Light 4 inch Diameter, 10.5 Watt, Selectable Color Temperature: 3000K/4000K/5000K, 90 CRI, 120 Volt,
	26	Ea.	Dimmable, Matte White
	7	Ea.	Lithonia Lighting WFE9XC10 SW3PIN FT4 LIT WFE9XC10 SW3PIN FT4
	7	Ea.	Walstopper RH703PTUTC Dimmer, CFL/LEDIncandescent/Halogen
	4	Ea.	Lithonia Lighting WF4 LED 30K40K50K 90CRI MB MB 4" LED Wafer Light, LED Wafer Module, 4" Diameter, 10.5W, 120V, Switchable Color Temperature: 3000K, 4000K, 5000K, CRI: 90, Color: Matte Black

2	Ea.	Lithonia Lighting WFEXC10 SW3PIN FT4 LT WFEXC10 SW3PIN FT4	
2	Ea.	Intira IL3MMW07202PSE Offshore 20-LED Marine Deck Light 110-277VAC, 140W, 25", White Finish, IP68/69K	
1	Ea.	Leviton CS120-2E 1-Pole Switch, 20 Amp, 120/277V, Black	
1	Ea.	Leviton 80701-E Toggle Switch Wallplate, 1-Gang, Nylon, Black	
1	Ea.	Leviton 1463-2E 3-Way Toggle Switch, 15A, 120VAC, Black, Residential Grade	
1	Ea.	Safraan Electrical & Power Switch, Toggle, 1 Pole, ON-NONE-ON, 15A, 115VAC, IP68 Sealed, Screw Terminal p/n: 8530K4	
1	Ea.	Leviton 1463-2W 3-Way Toggle Switch, 15A, 120VAC, Residential, White	
1	Ea.	Leviton 3-Way Decora Switch, 15A, 120/277V, Black, Residential Grade Item #: 0035095 Cat #: 5603-2E	
1	Ea.	Safraan Electrical & Power Switch, Toggle, 1 Pole, ON-NONE-ON, 15A, 115VAC, IP68 Sealed, Screw Terminal p/n: 8530K4	
4	Ea.	CARLON Switch/Outlet Box, 3-Gang, Depth: 3.89", Ear Brackets, Non-Metallic Item #: 0414880	
2	Ea.	LEVITON 15A, 120V, Comb. Decora Rocker (2) Switch, White Item #: 0035157 Cat #: 5634-W UPC: 078477516386	
1	Ea.	Wattstopper RH703PTUTC Dimmer, CFL/LED/Incandescent/Halogen	
2	Ea.	LEVITON 3-Way Decora Switch, 15A, 120/277V, Residential, White #: 5603-2W	
205515 - Electronics, Shipset			
1	Ea.	MG05 VHF Marine Transceiver with color display w/Rear Mic connector	
2	Ea.	HM155 CommandMic IV VHF Radio Microphone	
1	Ea.	MS10 VHF fixed mount, class D DSC, NO AIS SN	
1	Ea.	TZ1288 - NavNet TZtouch2 Black Box Chart Plotter/Fish Finder	
1	Ea.	Nobeltec Time Zero Professional V5	
1	Ea.	Second Station License for TimeZero	
1	Ea.	Nobeltec PB6 Module	
1	Ea.	Nobeltec Furuno Radar Module P/N-TZ101	
2	Ea.	Mini PC I7, 16GB RAM, 256GB SSD, Display Port & HDMI	
2	Ea.	Displays" PHT-24W-1080 24" Wide Screen 1920x1080 Pilothouse touch screen display, 9-36vdc, 1 HDMI, 1 DVI-D, 1 VGA, 1	
2	Ea.	Composite, wide dimming range (23.57 x 15.07 x 2.40)	
1	Ea.	Non-Touchscreen Monitor - See 205522- Scientific Equipment	
2	Ea.	Logitech K360 Wireless Keyboard - Glossy Black	
2	Ea.	Track Ball Mouse	
2	Ea.	Actisense QNB-1-PMW NEMA 2000 Quick Network Block (HARD WIRE/PLUG)	
21	Ea.	Actisense NGX-3-USB N2K to USB Gateway w/PC Interface (USB)	
1	Ea.	xSonic SS60 20" Tilt Thru-Hull Dual Frequency Transducer	
1	Ea.	Furuno 165T-PM542LM Pocket Mount 3kW CHIRP Transducer	
1	Ea.	Furuno DR54D-NXT 24" 25w Solid State Radar	
1	Ea.	Radar Cable Shipset - Fits DR54D-NXT	
1	Ea.	6' open array antenna - Antenna Included	
1	Ea.	200WX Ultrasonic Weather Station (NMEA2000 and NMEA 0183)	
1	Ea.	Furuno GP39 GPS/AAAS Navigator	
1	Ea.	Em-Trak A200 Class A AIS Transceiver	
1	Ea.	AP70 IMO Pack Solenoid (AP70, AC205, RS45X,	
1	Ea.	Furuno SC70 Satellite Compass W/O Cable	
1	Ea.	Alimar U57850 Smart - NMEA 2000 - Stainless Housing	
1	Ea.	Globemaster 5" Flush Mount with Hood (FD-500)	
1	Ea.	Furuno LH5000 Loudhailer and Intercom	
1	Ea.	Transducer - 1Kw	
Starlink Internet Service & System			
3	Months	3 months Airtime (Dock Time, Seatrials & Delivery)	
1	Ea.	Starlink Shipset	
1	Ea.	Data Logger	
205522- Scientific Equipment			
1	Ea.	Frigidaire - FFPE4531UM 4.5 cu. ft. Compact Refrigerator	
1	Ea.	Eaton 9PX3000RT 9PX UPS, 2U, 3000 VA, 2700 W, L5-30P Input,	
1	Ea.	Eaton 9PX G2 1000VA 1000W 120V Line-Interactive UPS	
1	Ea.	Beetronics 24" Monitor, Model: 24HD7M	
		1. 1920 x 1080 resolution (Full HD)	
		2. Input: HDMI, VGA, BNC, RCA	
		3. Mounting: Flush, embedded, wall, desktop	
		4. External dimensions: 22.1 x 13.3 x 1.6 inches	
1	Ea.	10" Server Rack Open Frame 10U Half Rack	
1	Ea.	Wet Lab Sinks Included In Section 205440 - Fresh Water System	
1	Ea.	Bow - Seawater Spigot Shipset	
		BHD & Wall Penetrations	
1	Ea.	Pipe 2" Sch 80 x 20ft 6063	
3	Ea.	Pipe 4" Sch 80 5086 120'	
1	Ea.	Hinged Aluminum Pipe Cap Shipset	

1	Ea.	1	Roxtec Cable Pass Through Shipset	
1	Ea.	205530 - Wire & Cable		
1	Ea.	Shipset		
1	Ea.	205535 - Wireways & Penetrations		
1	Ea.	Shipset		
1	Ea.	205540 - Navigational Electronics		
1	Ea.	Navigation Lighting		
1	Ea.	DHR40 Port Red LED, Base-Mount, Black, 24V (3.2W), 2NM, IP66, 112.5°	Item:DH40020000	
1	Ea.	DHR40 Starboard Green LED, Base-Mount, Black, 24V (4.2W), 2NM, IP66, 112.5°		
1	Ea.	Item:DH40010000		
1	Ea.	DHR40 Stern Light, White LED, Base-Mount, Black, 24V (4.1W), 2NM, IP66, 135°		
1	Ea.	Item:DH40040000		
1	Ea.	DHR60 Masthead White LED, Base-Mount, Black, 24V (11.7W), 5NM, IP66, 225° (Upside Down Mount)	Item:DH60030000-UD	
1	Ea.	DHR40 All-Round White LED, Base-Mount, Black, 24V (4.1W), 2NM, IP66, 360°		
1	Ea.	Item:DH40060000		
1	Ea.	DHR40 All-Round Red LED, Base-Mount, Black, 24V (3.2W), 2NM, IP66, 360°		
1	Ea.	Item:DH40070000		
1	Ea.	Blue sea systems Comura Switch SST Gray - OFF-ON P/N: 8230		
1	Ea.	Blue sea systems Comura Switch DPOT Gray - ON-OFF-ON P/N: 8220		
1	Ea.	Searchlight system		
1	Ea.	DHR230-Remote Controlled Searchlight 230mm 90-305VAC, 75W, White Powder Coated Aluminum P/N: DH230RCL21		
1	Ea.	DHR PAN2019-NE Control Panel for RCN Searchlights (non-focusable) P/N: DHPAN2019NF		
1	Ea.	LED Converter: 90-284VAC to 24VDC, 60W P/N: IL-LED60WDC24V		
1	Ea.	205545 - A/V Electronics		
1	Ea.	Intercom		
1	Ea.	NEWMAR Single Intercom Phone for Multistation System - 10 Call Buttons, White 10 Station Phone SKU: 158965 Item ID: NMR PLOWHITE		
6	Ea.	Att Deck - 220SW Haller Horn		
1	Ea.	Furuno INTERCOM SPEAKER ISP-5000		
1	Ea.	Sound system		
1	Ea.	1 Fusion Electronics MS-RA670 - Apollo Marine Entertainment System will be fitted with 3 zones (head unit located in pilot house)		
1	Ea.	Exterior		
1	Ea.	4 ea. Fusion XS Series 4" (MS-05420) 120-watt Exterior will be supplied as follows:		
1	Ea.	2 x Main Deck aft		
1	Ea.	1 x Upper Deck aft		
1	Ea.	1 x Foredeck		
1	Ea.	Pilot House		
1	Ea.	2 ea. Fusion XS-Series 4" 100-watt ceiling speaker (black)		
1	Ea.	Main Cabin, Galley, and Lab spaces		
1	Ea.	4 ea. Fusion XS-Series 4" 100-watt ceiling speaker (white)		
1	Ea.	1 Fusion Electronics Apollo Marine Amplifier - 4 channels		
1	Ea.	Two (2) Victron Energy 24/12-70 DC-DC converters, 70A (one for the header and one for the amp)		
1	Ea.	CCTV System		
1	Ea.	Multi-camera display at main helm - 8-Channel 4K NVR and 8 Outdoor 4K (8MP) IP Fixed 30FPS Real-Time Format Nocturnal Cameras with Color Night Vision, includes a 3TB Hard Drive, Lorex Technology or equal		
1	Ea.	8 Port POE switch		
1	Ea.	Electronics 22" standard format Marine Display, 800 NIK LED Backlit, AR Glass, (2) Signal Inputs, VGA/D, HDMI DVI/D, Resolution 1920 x 1080		
1	Ea.	2 x one (1) ea. Port and Starboard engine rooms		
1	Ea.	2 x aft deck		
1	Ea.	2 x foredeck		
1	Ea.	2 x upper deck facing aft		
1	Ea.	205554 - Sandblast Prep Expense		
1	Ea.	Shipset		
1	Ea.	Sandblast Material Shipset includes		
1	Ea.	#30/60 Grit Garnet - 2200lb Bulk Bags		
1	Ea.	375 Cfm Compressor, 150 Psi - Weekly Rentals		
1	Ea.	205555 - Sandblasting Materials/Supplies		
1	Ea.	Sand Blasting Materials Shipset		
1	Ea.	205556 - Sandblast Clean-up Expense		
1	Ea.	Shipset - 4 bags x bag haul away fees		
1	Ea.	Not Included		
1	Ea.	205570 - Bottom Paint, Shipset		
1	Ea.	Interlux 2000EKT-1 Interprotect 2000E/2001E Underwater Primer & Barrier Coat Gray		
1	Ea.	Interlux YBA063-1 Trilux 33 Antifouling Paint, black 1 Gal		

205572 - Bilge Paint	8	Ea.	2316N Interlux solvent Gal
	1	Ea.	205572 - Bilge Paint, Shipset, Includes Freshwater and Ballast Shipset
205575 - Deck Paint	1	Ea.	Blue Seal Shipset
	14	Ea.	205575 - Deck Paint - 1840 Square Feet. International Deck Paint 3.5 Gallon Kit
	14	Ea.	Intershield 300 Bronze 3.5 Gallon Kit
	19	Ea.	Intershield 300 Aluminum 3.5 Gallon Kit
	14	Ea.	Broadcast No. 2/16 Silica Sand @ 0.5 lb/sq ft
	10	Ea.	Intershield 300 Bronze 3.5 Gallon Kit
	5	Ea.	990 Mild Tone Colors 5 Gallon kit
	2	Ea.	GTA415 Thinner (for 300) 5 gallons 1x5 gal pail)
			GTA056 Thinner (for 990) 2 gallons 2x1 gal pail)
205585 - Paint Supplies	1	Ea.	205585 - Paint Supplies Shipset

Interior

205605 - Interior Insulation				205605 - Interior Insulation, Shipset	
				Shipset	
205610 - Interior Hardware				Add Thermal Insulation to Berthing & HVAC Unit Areas	
205615 - Paneling/Trim				Shipset	
205620 - Interior - Doors				Berthing Areas - Ayres Panel, Fabricated Doors	
				Storage Doors, Frame N - Ayres Panel, Fabricated Doors	
				Pantry Doors, Frame N - Ayres Panel, Fabricated Doors	
205640_Bunks				205640 Bunks, Shipset per GA	
				Cumper Mattress - Foam Rush 4-Inch Bunk Cooling Gel Memory Cotton, Cover Not Included, Medium Firm,	
				Comfort, Pressure Relief Support - Vendor: Amazon	
205650 - Laminata & Formica				RV 6 Sided Zippered Mattress Protector with Secure Locking Zipper for 30x80 Split Queen. Creates a Natural Seal Around Your Mattress from Dust, Pet Dander, Pollen, Liquids & More. Oeko-Tex	
205655 Flooring				Certified - Vendor Amazon	
				205650 - Laminata & Formica, Shipset	
				Flooring - Shipset - 615 FT	
				Main Accommodations Floor - Roppe 991 100 Black Rubber Tile Low Profile Thickness .125, Length 19.8875" Width 19.875" SLATE DESIGN	
				Pilothouse Floor - Roppe 991 100 Black Rubber Tile Low Profile Thickness .125, Length 19.8875" Width 19.875" SLATE DESIGN	
				Bunk Spaces Floor - Roppe 991 100 Black Rubber Tile Low Profile Thickness .125, Length 19.8875" Width 19.875" SLATE DESIGN	
				excelsior PS-525 Modified Pressure Sensitive Adhesive	
205660 - Headliner				205660 - Headliner - Shipset Dampa Tiles	
				Shipset	
				Dampa Tile White 4747-2, Beveled Edge, Perforated 600 x 600	
				Dampa Tile Black 0443-P, Beveled Edge, Perforated 600 x 600	
				Dampa Edge Trim #11 x 4m - 4747 White	
				Dampa Edge Trim #11 Black 0443-P - 3 Meter Length	
				Dampa Carrier #4 - 4 meter length	
				Dampa Carrier #4 Splice - each	
				Invent Caddy M24 Flange Clip, Type Hammer-On, Fits 1/8 to 1/4" Flange	
205663 - Windows & Glass				205663 - Windows & Glass - Bomar Or Equal	
				Windows- Shipset "Clamp In" Bomar or Equal	
				Shipset - Myla Shades or Equal	
205666 - Exterior Doors				205666 - Exterior Doors, Shipset	
				Door, Main Deck STBD Hinged, Bomar	
				Door, Main Deck CL, Bomar	
				Door, Pilothouse PS + STBD Hinged, Bomar	
205669 - Seating				205669 - Seating	
				Llebrock Tradewinds Series 2 Helm Chair	
				48RTWC01-BLK - TRADEWINDS CX-HB W/HR HELM CH BLK	
				48OP-S2CHRI-BLK - SERIES 2 CUPHOLDER OPT RH SIDE ULL-	
				BLK-PWD	
				48OP-MAL - LUMBAR MANUAL AIR PUMP UP INSTALLED ON	
				ABOVE ITEM	
				48RTWC01-BLK - TRADEWINDS CX-HB W/HR HELM CH BLK	
				PWD base4 yds acct 1.5 yds	
				48OP-MAL - LUMBAR MANUAL AIR PUMP UP INSTALLED ON ABOVE ITEM	
				48OP-S2CHRI-BLK - SERIES 2 CUP HOLDER OPT LH SIDE ULL	
				48OP-ATLFRZ-BLK - SZ ATL FR EZ ADJ W/RUBBER MAT BLACK PWD	
				Norsap 800 Chairs	
205672 - Tables				205672 - Tables, Shipset	
205675 - Helm Station				Helm Station Shipset	
				Shipset	
205680 - Heads Interior Finished				205680 - Heads Interior Finished	
				*205680 Interior Head Furnishings	
				Mirror with Frame 22" High x 16" Wide - 2859K3	
				Bobrick 2840 304 Stainless Steel Toilet Tissue Dispenser with Utility Shelf, Satin Finish, 16" Width x 4" Height x 5" Depth	
				11-1/4" High White Dispenser for Lotion and Gel Gojo Soap Cartridge 7143T16	
				8luStorm Bolt HD0924-09 Fast Dry Hand Dryer ADA, 220-240V, Brushed Stainless Steel	

2	Ea.	Grab bar hand SS 1 1/4" X 24" 2873K35
2	Ea.	*205680 Interior, Head Venting
2	Ea.	VIVOSUN 4 inch 190 CFM Inline Duct Ventilation Fan with Variable Speed Controller for Grow Tent
2	Ea.	Allvent 4 inch ABS Adjustable Air Vent White Round Soffit Exhaust Vent for Inline Duct Fan Outlet Vent(ø100mm)
2	Ea.	Leviton 5694-W 15A, 120V, Comb. Decora Rocker (2) Switch, White
2	Ea.	Tamarack Premium 4 in. Back Draft Damper
2	Ea.	Primex 4 inch surface mounted wall cap. Includes spring, screen and round damper. WHITE color. SM44-01
2	Ea.	AC Infinity Flexible 4-inch Aluminum Ducting, Heavy-Duty Four-Layer Protection, 25-Foot
2	Ea.	SEA-DOG LINE Hose Vent with Flange - for 3" or 4" Hose, White 4" (3" Flange) SKU: 74743 Item ID: SDL 337415
2	Ea.	TURBRO Air Supply ES4, 4 Inch Inline Duct Fan with Solid Metal Case, 195 CFM Quiet Vent Fan
2	Ea.	*205680 Interior, Head Sinks
1	Ea.	Faucet, American Standard Selectronic Model 6955.202 Or Equal
1	Ea.	Thermostatic Mixing Valve - American Standard 605XTMV1070 Or Equal
1	Ea.	Sink Standard 10212 Stainless Steel, Rectangular Sink Width: 6.375" Length: 11.875" Depth 6.00" Drain Opening 2.0625"
1	Ea.	Sinks Drain, Elkay LX8 Or Equal, Stainless Steel, Fits 2.0625" Drain Opening, Includes Drain Pipe
1	Ea.	P-Trap Slip-On PVC Pipe, 1-1/4" X 1-1/4"
1	Ea.	90° Elbow 1-1/4" Slip-On PVC
1	Ea.	Pipe, 1-1/4" CPVC Sch 40 Length 2.00'
1	Ea.	*205680 Interior, Head Sinks
1	Ea.	Faucet, American Standard Selectronic Model 6955.202 Or Equal
1	Ea.	Thermostatic Mixing Valve - American Standard 605XTMV1070 Or Equal
1	Ea.	American Standard Wheelchair 20" Wall Mounted Porcelain Bathroom Sink Model 9140047.02 Or Equal
1	Ea.	Sinks Drain, Elkay LX8 Or Equal, Stainless Steel, Fits 2.0625" Drain Opening, Includes Drain Pipe
2	Ea.	P-Trap Slip-On PVC Pipe, 1-1/4" X 1-1/4"
2	Ea.	90° Elbow 1-1/4" Slip-On PVC
2	Ea.	Pipe, 1-1/4" CPVC Sch 40 Length 2.00'
2	Ea.	Under Sink P-Trap Cover Shipset
1	Ea.	*205680 Interior Head Floor Drains.
2	Lbs.	Floor Drain- Aluminum Plate 5083
2	Ea.	*205680 Interior Head - Shower
1	Ea.	Speakman S-1495-2-AF Sentinel Mark II Exposed Shower, 2.5 GPM, Polished Chrome
1	Ea.	Delta T17294-SS-1 Linden Stainless 1-Handle Shower Faucet
1	Ea.	2160K6 Plastic Shower Drain with Stainless Steel Strainer

Miscellaneous Materials

Welding Supplies	1	Ea.	Shipset
Argon and Wire (greater than normal u	1	Ea.	Shipset
Misc Fasteners	1	Ea.	Shipset
Misc Supplies	1	Ea.	Shipset

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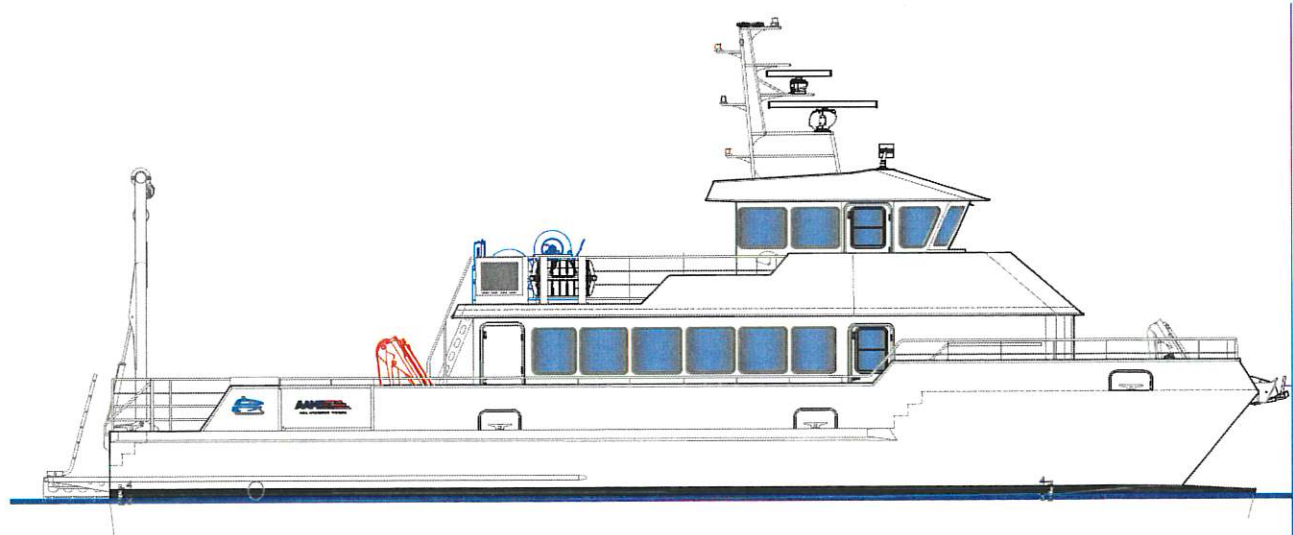


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Specification for Construction of a **73' Ocean Sampling Vessel**



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1.GENERAL**1.1 General Description**

The vessel shall be a twin engine, propeller driven aluminum catamaran outfitted for scientific research.

The vessel will operate as a multipurpose ocean sampling and survey vessel in the Southern California Waters and Offshore on an Oceans Route. The vessel shall be designed to Lloyds SSC G2 standards for service in waters where the range to refuge is 150 nautical miles or less. The vessel shall be complete in all respects, except as specifically noted in sections herein. It shall be fully equipped and fitted out by the Contractor, constructed in accordance the following regulations and standards, complying with best marine practices and the required rules and regulations of the United States Coast Guard and other regulatory requirements, as applicable.

Principal dimensions shall be approximately as follows:

- Length (hull) 72.5'
- Length (overall) 78.1'
- Beam (molded) 26.7'
- Beam (extreme) 28'
- Draft (navigation) 6.1'
- Engines 2 x MAN D2862LE438 EPA Tier 4 with DPF
- Power 882 kW (1,182 bhp)/2100 rpm*
- Transit Speed ~25 knots @ 85%
- Propulsion Propeller
- Minimum speed 1.5 Knots (survey operation)
- Fuel capacity 1600 gal
- Construction Marine grade aluminum
- Complement (Live aboard) 6
- Complement (Day) 10
- Crew 2, as determined by USCG.

• Construction Standard

USCG Subchapter T***

** Estimated Service Speed is approximate and is based on sea trial speed at 85% of rated power, with a deadweight of 17,400 lbs. **, operating in calm seas and a clean bottom. Seawater, and ambient temperatures should not exceed the standard engine rating test conditions.*

** Based on engine and propulsion manufacturer's recommendations, the vessel is designed to be operated in conditions within air temperatures from 0° F to 90°F, and seawater temperatures 30°F to 90°F. MAN Max Limit. Engine may de-rate at higher temperatures.*

*** The deadweight conditions and vessel performance are based on the following values:*

• Passengers and Crew (185 lbs. x 10)	1,852 lbs.
• Fuel (1600 gallons)	11,216 lbs.
• Water (200 gallons)	1,752 lbs.
• DEF (100 gallons)	910 lbs.
• Scientific equipment & Stores	1,754 lbs. **
Total	17,400 lbs. **

*** Deadweight is subject to final engineering mass calculations. This preliminary calculation is conservative and may be able to increase. It is imperative to follow the final deadweight calculations to reach the stated cruising speed specification. Care must be taken to not exceed final deadweight survey numbers or vessel performance will be impacted.*

**** Refer to section 1.3 for further clarification regarding Subchapter T standards*

1.2 Documents

The vessel construction shall be in accordance with the following primary documentation:

- Teknicraft supplied construction drawings.
- Specification: Doc. no T18WCSD-DOC-001, including any revisions
- USCG 46CFR, Subchapter T, as applicable for service for vessels limited to operate on "Oceans" route not more than 150 nm from a harbor of safe refuge. ***

The builder shall fit, by way of welding it to the hull structure inside the Port Lazarette, an inscribed plate with the vessel's Official number.

An inscribed plaque will be fitted in an appropriate position in the passenger or wheelhouse areas, depicting the names of the builder, designer, vessel, and the launch date.

All manuals, warranties and technical documentation as supplied by the manufacturers of equipment shall be provided to the Purchaser upon delivery of the vessel.

As-Built drawings for the purpose of maintenance of the vessel will be supplied following delivery of the vessel. The set of drawings will be as follows:

- General Arrangement
- Docking Plan
- AC & DC Electrical One Line Diagram
- Bilge & Fire Piping Diagram
- Fire System
- Fuel System Diagram
- Seawater System Diagram
- Fresh, Grey, and Black Water Systems
- Electrical System Load Analysis Calculations
- Hydraulic System Diagrams
- Fire and Safety Plan
- A-Frame, Davit, Hydraulic Winch and Spool Arrangements, including Safe Working Tensions (SWT), safe working load (SWL) information and weight handling scenarios. This information may be provided by the manuals, and technical documentation as supplied by the equipment manufacturers.

1.3 Certifications

Following completion of successful sea-trials and completion of any outstanding work, the vessel shall be delivered to the Purchaser via its own hull in San Diego.

The vessel shall be designed to operate as a Research Vessel for all trips, both day and overnight. The vessel shall be built to USCG Subchapter T standards for a vessel on an Oceans Route where the range to safe refuge is not more than 150 nautical miles with a stability criterion for Exposed Waters. ***The vessel will be built to USCG Subchapter T standards but shall NOT be inspected by the USCG unless otherwise specified by the Purchaser prior to contract signing.

A provisional stability calculation shall be performed following initial engineering and weight & balance calculations. Such calculation shall confirm if all USCG criteria could be met in the stated vessel loading scenario, or if required, limitations to any of the loading conditions to be implemented.

The vessel as built will comply with regulation 46 CFR part 69 Subpart E Simplified Measurement System for less than 100 gross tons.

Following completion of successful sea-trials and completion of any outstanding work, the vessel shall be operationally accepted by the Purchaser, ready for work, at the All American Marine dock in Bellingham, WA. AAM will construct the vessel having met all construction requirements for obtaining a USCG Certificate of Inspection. The vessel shall be subject to a final inspection, crew safety demonstrations and official acceptance and issuance of the Certificate of Inspection by the Purchaser's local OCMI IF the purchaser decides to obtain a USCG Certification. ***If the Purchaser decides to obtain a USCG Certification, this shall be agreed upon in writing prior to the signing of a vessel building agreement, otherwise the vessel will be built to these standards but will not receive a USCG Stability Letter or USCG Construction Oversight Letter.

Builder shall furnish to the Purchaser the following certificates and/or documents:

- FCC Bridge-to-Bridge Radiotelephony Certificate
- FCC Communications ACT Safety Radiotelephony Certificate
- Life raft certificates

- **Stability Calculations:** If the purchaser decides to have a USCG inspected vessel, the Purchaser shall supply to All American Marine all purchaser furnished equipment information for completion of stability calculations.

Purchaser shall furnish to the Builder the following information prior to starting the vessel design work:

A detailed list of all purchasers furnished equipment, together with individual weights and proposed locations on the vessel

1.4 Tests and Trials

Once the vessel's detailed design is complete the Builder shall work with the Purchaser to develop a detailed test and trials plan that is suitable for the vessel design and its diverse operational profile.

On completion of the vessel, and prior to launching, the vessel shall be weighed on calibrated load cells, and the measurements recorded. Thereafter, a series of wharf tests and sea-trials shall be carried out at the Builder's yard to confirm that all systems are in proper working order, and that the vessel and its equipment perform in accordance with the contract.

A representative of the Purchaser may witness all equipment commissioning. A detailed test procedure will be developed and approved by all parties at least two weeks before tests are to be commenced.

The Builder shall conduct the sea trials and shall provide all the necessary personnel, fuel, lubricating oils, fresh water, testing equipment and all other items required for the operation of the vessel on trials. The Builder shall be responsible for collecting all data on the trials.

The Builder shall be responsible to arrange for the attendance of representatives of the equipment suppliers/manufacturers at each of the trials where necessary. Suppliers of main engines, drive shafts, painting, electronic equipment, etc, must sign their approval of the installation and proper working order of the respective systems.

All underwater surfaces shall be in a clean state prior to commencement of sea trials.

The sea trials will include, but not be restricted to, a series of measurements listed below, which will be done throughout the engine speed range at intervals not exceeding 100 rpm. The sea trials will be done in sea state 1, or otherwise at the discretion of the Designer.

- Engine power output and average speed over ground (measured by GPS in opposite directions).
- Fuel consumption. The engine manufacturer's ECM supplied data will be used for calculating consumed fuel.
- Dynamic trim angle

1.5 Design

All American Marine Inc. shall be responsible to procure Teknicraft Design's drawings and information. Teknicraft Design Ltd will retain the copyright to the design and contents of all technical material and information supplied. No part shall be used in any way whatsoever, reproduced or modified in whole or in part without their written permission.

1.6 U.S.C.G. Surveys

The boat shall be constructed and outfitted to meet the regulations of the US Coast Guard, Subchapter T, for vessels operating on a "Oceans" route not more than 150 nautical miles from a harbour of safe refuge. Stability shall meet the criteria of the US Coast Guard, Subchapter T for "Exposed Waters". However, the vessel shall not be inspected by the USCG unless otherwise noted as mentioned in section 1.3.

The Builder shall ensure that all equipment necessary for compliance with the requirements of the USCG, be fitted to the vessel.

The Builder shall perform a deadweight survey. Based on the deadweight measurements, the Designer shall calculate and compile stability calculations for the vessel in various conditions of loading.

1.7 Alternatives

The Builder may wish to propose alternative materials, equipment, or methods, which would be more economical and/or practical for them to supply and fit. In such case they should discuss alternative solutions with the Designer and Purchaser's representative for approval prior to implementation.

The Purchaser shall have the right to make changes, alterations, and additions to the specification, but changes must be requested in writing.

Any variation to the drawings or specification that is proposed by the Builder or the Purchaser, shall be documented on an Engineering Change Proposal (ECP) document, and signed by all parties, prior to implementation.

1.8 Materials, Equipment and Workmanship

All materials shall be of good quality and suitable and fit for the purpose intended.

It is intended that machinery components shall be selected that shall give best service with the least amount of maintenance. The machinery and equipment shall be installed complete and ready for operation.

The Builder shall construct the vessel in a manner consistent with best trade practices and in accordance with best commercial quality finishing, consistent with the industry standards which

would be applied for the construction of similar hull vessels using modern technology.

The Builder shall ensure that only suitably skilled and experienced employees or sub-Contractors be engaged to work on the vessel.

All materials and equipment used on the vessel shall be in accordance with the specification and drawings supplied unless alternatives are approved. For other materials and minor items of equipment not specified, the Builder shall ensure that they comply with the requirements of USCG and are in accordance with good shipbuilding practice and lightweight in design, suitable for use in medium speed craft.

1.9 Cleanliness

The vessel is to be maintained in a clean state throughout the building process. At regular intervals the entire vessel is to be cleaned and the tanks and bilges be cleared of all debris, filings, and waste.

All equipment, including engines are to be properly covered with protective material to ensure that its original clean state is maintained throughout.

Special care is to be taken to ensure that all soft fabrics and materials are completely covered with fixed plastic sheeting.

Before handing over, the vessel shall be completely and thoroughly cleaned in every detail.

1.10 Ambient conditions

The systems shall be designed and installed to operate in moderate conditions, commensurate with the ambient conditions prevalent in Southern California and Northern Mexico.

2. STRUCTURE

2.1 Construction General

The vessel hull shall be of all welded alloy construction in accordance with the requirements of USCG and shall conform to the scantlings as shown on the plans. All aluminium and filler material to be of shipbuilding quality, with appropriate mill certificates.

Limber holes shall be provided in the structure of the hull to prevent accumulation of condensation water in the hull, other than at bilge suction points.

Scuppers shall be fitted through the gunwale and side plating to drain deck water from the aft deck directly overboard. The scupper arrangement shall be approved by the Purchaser's representative prior to construction.

Scuppers and drains shall have suitable fairings to prevent spray from entering the boat via the openings.

2.2 Aluminium Alloys

The designer specifies the aluminium alloys used for construction of structural and non-structural portions of the vessel. Plating shall be AA5083 H116, or approved equivalent. Extrusions shall be AA6082-T6, AA6061-T6, AA6063-T6, and AA6005-T6 or approved equivalent. Welding filler wire shall be AA5183. These alloys shall be high quality marine grade as required by USCG.

2.3 Welder qualifications

All welders shall be certified to the All American Marine weld procedure as required by the USCG.

2.4 Welding

All welding shall be electric arc type using either MIG or TIG process. All welding shall meet the requirements of the USCG. All welding shall be graded to ISO 10042 Level D.

2.5 Grinding

High spots in weld beads on exterior hull plate welds below waterline shall be ground to be flush with surrounding welding. Deck plating welds shall have high spots removed on the external side of the plating. Grinding shall not be done to the detriment of the required strength at the joint.

5000 FABRICATION

5028 Fendering and Guards

Each side of the vessel will be fitted with a fabricated fender and rub rail system extending approximately 50' forward of the transom. The forward and aft ends shall be neatly faired into the hull. The fenders shall be of a design to permit the vessel to lay alongside pilings and prevent shell plating from contacting the pilings.

There shall be an additional fendering system that extends from the dive platform. The dive platform will be fitted with a fabricated 3" Schedule 40 (must be schedule 40 to control weight) half-pipe fender extending approximately 30' forward of the transom. This shall be located approximately 14" above the waterline.

Fendering shall be installed around the edge of the dive platforms with additional mooring protection installed as per section 5070.

5031 Foils

A main foil, fabricated in aluminium plate will be fitted at approximately amidships. The main foil will be adjustable and shall on each side be fitted to a pivot at the hull side. Suitable stiffening shall be fitted inside the hull structure. The foil shall also be fitted with a centrally mounted lever arm, attached to a hydraulic ram and hydraulic system to be able to adjust the foil angle via an

electronic display mounted at the helm. The control system will be able to adjust the foil angle whilst underway at speed with feedback of foil position and 4 adjustable pre-set points.

Humphree Interceptors shall be fitted to the transom. Please refer to section 5345 for further details.

5034 Spray Rails

The vessel shall be fitted with spray rails as required.

5040 Deck

External and internal decks shall be fabricated from aluminum deck extrusion.

All decks will have camber to eliminate standing water except those areas in the vicinity of the deck sockets. Those areas shall be flat. The foredeck and wheelhouse roof will have camber.

Decks shall be reinforced in way of all machinery, deck fittings, deck sockets, etc. that require direct load carry connections to deck girders and frames.

5041 Deck Sockets

Tie down points should be provided for any clear deck space that might be used for the installation of equipment including the main aft weather deck and portion of 01 deck aft of the pilothouse.

40 recessed deck sockets inserts shall be fabricated in the aft deck as per the GA drawing. Each socket will have a countersunk 3/4" -10 NC stainless insert. The depth of the countersunk area will allow a blanking bolt to be installed leaving the deck flush. A 3/4" – 10 threaded synthetic or non-ferrous plugs shall be provided for each deck socket to prevent debris accumulation in sockets while maintaining a flush deck. Each installed assembly shall be tested with a 750 lb. vertical pull test and the socket stamped accordingly with the SWL.

Approximately 20 recessed deck sockets inserts shall be fabricated in the upper deck as per the GA drawing. Each socket will have a countersunk 3/4" - 10 NC stainless insert. The depth of the countersunk area will allow a blanking bolt to be installed leaving the deck flush. A 3/4" - 10 threaded synthetic plugs shall be provided for each deck socket to prevent debris accumulation in sockets while maintaining a flush deck. Each installed assembly shall be tested with a 300 lb. vertical pull test and the socket stamped accordingly with the SWL.

There shall be additional recessed deck sockets installed on the bow as per the G.A. drawing. Each socket will have a countersunk 3/4" - 10 NC stainless insert. The depth of the countersunk area will allow a blanking bolt to be installed leaving the deck flush. A 3/4" - 10 threaded synthetic plugs shall be provided for each deck socket to prevent debris accumulation in sockets while maintaining a flush deck. Each installed assembly shall be tested with a 300 lb. vertical pull test and the socket stamped accordingly with the SWL.

Any additional attachment hardware shall be supplied by the Purchaser.

5043 Fuel Tank

Two integral fuel tanks shall be fabricated and fitted. Total Capacity shall be ~1600 gallons.

Each tank shall be inspected during construction and witnessed by the Purchaser. Pressure testing shall be done per the USCG regulations 46 CFR 182.435 and witnessed by the Purchaser.

Fuel tanks shall be thoroughly cleaned of all debris, weld spatter and other foreign matter prior to initial filling and shall be kept closed thereafter until ready for use.

The filling of the fuel tanks shall be affected through a single port side filler located on the main deck. The filling station for each tank will enable spilt fuel to be contained in a cofferdam. The cofferdam shall have a minimum of 2.5-gallon capacity. Fuel filler caps to be camlocks with cap attachment chain.

Each fuel tank shall be fitted with a vent/overflow pipe fitted at the forward end of each fuel tank.

The vent pipe shall be fitted with a vent to atmosphere (with anti-flash gauze). Each tank will have a connection for draining water in the lowest part of the tank.

5058 Handrails and ladders

Ladders shall be located as described below. All ladders shall be bolted in place with 316 stainless steel bolts in such a way that the ladders can be easily removed and replaced. The interior inclined ladders shall be constructed with folded aluminum steps and 1.25" aluminum pipe handrails.

One (1) fold-down (removable) ladder shall be provided on the dive platforms for boarding divers from the water. The ladder shall be custom designed and fabricated from Schedule 80 aluminum pipe. There shall be a mounting bracket for this ladder on either side so it can be moved depending on the mission.

Interior vertical ladders shall be fitted to provide access below each hatch. Ladders with handrails shall be fitted to provide access to the engine rooms.

An inclined ladder will be provided between the main deck and the upper deck located on the aft cabin bulkhead. The exterior inclined ladder shall be constructed with folded aluminum steps and 1.25" aluminum pipe handrails.

Cabin top rails and all main deck rails mounted on the bulwark cap shall be fixed and meet USCG regulations, § 46 CFR 177.900. The top of the uppermost course shall be at least 36" above the deck. Stanchions shall be aluminium plate and intermediate rails shall be ¾" aluminium pipe and be spaced at intervals not exceeding 12" with the lower course no higher than 9". Stanchions shall be no more than 5'-0" apart.

Grab rails shall be installed throughout the interior/exterior of the vessel, including the pilothouse overhead, to ensure safe handholds in any location. Transom grab rails shall be provided for the swim platform. Rails shall be 1.25" standard aluminum pipe. The ends of the rails shall be faired into the mounting surface. Grab rails as approved by the Purchaser to assist in entry and exit from spaces shall be fitted.

5061 Hatches and Port Lights

The vessel shall be fitted with flush, quick acting, hinged and dogged watertight hatches. The hatches shall be "rebate mounted" to minimize tripping hazards and sit as flush as possible with the deck. The hatches shall be *Freeman Marine* or equal aluminum hatches with drain tubes. Three (3) *Freeman* removable "Tee" handles shall be included. Hatches shall be located clear of main deck traffic areas whenever possible.

Freeman Hatches shall be fitted in the following places:

- Port forepeak 15 x 24
- Starboard forepeak 15 x 24
- Port lazarette 15 x 24
- Starboard lazarette 15 x 24
- Port Tank Compartment 30 x 30
- Starboard Tank Compartment 30 x 30

Welded on soft patches to assist with the long-term maintenance and upkeep of the vessel will be fitted in the following areas:

- Port aft deck (genset and main engine removal)
- Starboard aft deck (genset and main engine removal)

Exterior hatches shall be fitted with drains in the coaming gutter to minimize water entering voids when opening the hatches.

5067 Stairwells

Inclined ladders shall be provided for passengers and crew to move between the cabin and the port and starboard focsle. An interior stairwell will lead up to the pilot house.

Exterior stairways will be fitted as shown on the General Arrangement Drawings, leading up to

the foredeck.

The stairways shall be fabricated from folded aluminum plate. The stair tread plates shall be finished with non-skid tread noses.

Each stairway shall be fitted with a handrail.

5070 Dive Platform

A dive platform shall be fitted across the transom of each hull, approximately 12" above the loaded waterline. The platform shall be slotted for drainage, and sufficiently strong to withstand the vessel backing up gently against a dock. The inboard sides of the dive platforms shall be curved as per the G.A. drawing to facilitate ease of mooring maintenance.

Aluminum plate shall be welded to the exterior edge of the curved dive platform cutout. A *Buoyant Works* or similar rubberized fender system shall be bolted to the plate for long term maintenance. Aluminum pipe shall be welded to the plate to prevent the mooring from getting trapped under the dive platform while working on it. The pipe will extend downward below the waterline while the vessel is at rest but not far enough below the waterline to be in the water creating drag while underway. The pipe shall be coated in a two part epoxy system and have bottom paint extending up to the dive platform.

5073 Arch and Radar Tower

An aluminum radar arch and mast shall be mounted on the housetop port and starboard and secured to the inboard sides of the flying bridge. The arch shall support mounts for the two radar antennas on centerline and mounts for the antennas including radio and GPS port and starboard.

The mast shall be mounted to the arch on centerline and shall carry the masthead and anchor lights. A ladder or suitable equivalent shall be included in the mast design to allow ready access to the upper mast for equipment installations and repairs.

The mast shall be fitted with a crosstree, mounted with two (2) port and two (2) starboard flag halyard blocks. Halyard cleats shall be mounted on the radar arch near the base of the mast. Halyards, complete with snaps shall be provided. In addition to standard navigational lights, RAM

(restricted ability to maneuver) lights and day shapes in accordance with the COLREGS shall be furnished by Purchaser. A flag flying system shall be installed.

The arch will be fitted with a universal mount for fitting a Starlink antenna. The universal mount will be oversized by 2" to allow for future equipment upgrades. The mount will be a folded plate welded to the top of the arch structure. The location will be determined in the radar arch and equipment arrangement drawing.

See section 5357 for safety placard information.

5074 Bow Thrusters

Two retractable hydraulic bow thrusters shall be installed in the forward void space below the bunks. The thrusters shall be *Max Power* R300/21 series retractable thrusters or similar. The bow thrusters will be installed per the manufacturers' recommendation and shall have the ability to integrate with the *Glendenning* ProPosition 2 controls.

The *Dometic Optimus* steering system and *MaxPower* R300 bow thrusters integrate with the *Glendenning* control system to provide basic station keeping. The *MaxPower* thrusters were chosen to mitigate historical underperformance issues of fixed bow thrusters in catamaran applications. While underway, the *MaxPower* thrusters shall retract for a flush fit in the hull. Once the vessel speed is below the manufacturer's recommended speed, the thrusters may be deployed for station keeping purposes or for docking maneuvers. These bow thrusters are for basic station keeping capabilities and are not a certified dynamic positioning system. Performance will vary depending on sea state, currents, and cross wind conditions.

5075 Main Deck A-Frame

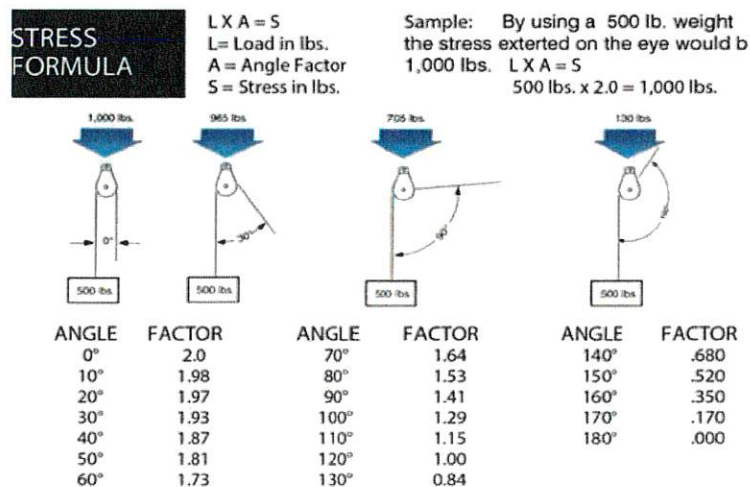
An A-frame will be mounted on the main deck level on centerline at the stern of the vessel. It will be used to deploy and retrieve overboard scientific equipment such as towed nets and deployment and retrieval of buoys, moorings, ROV's and AUV's. The A-frame is both for lifting and for towing astern. Lifting operations will either make use of the A-frame mounted winch, or

a deck mounted Hydraulic winch via a cross member mounted sheave. Towing operations may be performed from the cross-member sheave. A Safe Working Tension Load rating shall be posted in plain view of the operator station on the upper deck.

The A-Frame design shall include hydraulic cylinders with internal stops. The frame and cylinders foundation pads shall be mounted directly to the deck frames using insert plates with full penetration welds.

The frame shall have 14.5 feet clearance above deck. Clearance will be at least 14 feet between uprights. The A-frame shall extend at least 10' feet aft and 8' feet forward of transom.

The SWL of the A-Frame shall be based on a 5,000 lbs total load, vertically suspended, and hooked onto the sheave mounting points, through the full travel arc of the frame. The SWL stress shall be based on a safety factor of 3 on the yield strength of the materials from which it is fabricated. The 5,000 lbs total load is measured from the pick point on the A-Frame, not to be confused with the pulling load from the winch.



The A-frame shall have a cross member mounted winch for lifting on centerline. The winch will be **4,500 lb.** load rated. The winch will be loaded with synthetic line, *Amsteel Blue* or equal, with a soft eye in the tail end and a weak link of 4,500 lbs. The A-frame will be outfitted with a PL5

Pull Master (4,500lb WLL) cross-member mounted winch for lifting on centerline. The PL5 will have controls at the main deck and upper control station.

The A-frame and A-frame winch shall be controlled at the upper deck level, aft facing control station. An emergency stop button for the hydraulic system shall be provided in the control station. Every effort shall be made to limit the impact of the A-frame footprint and hydraulic cylinders mounting locations on the function of the working deck area.

The customer shall provide two electronic sheaves for the A-Frame. One of the sheaves shall be of sufficient diameter for use with either 3/8" wire or 3/8" synthetic cable for use with the Scientific Winch towing/lifting spool. It shall have a minimum safety factor of 3. Please refer to section 5339 for scientific winch specifics. The second sheave shall have sufficient diameter for use with the Scientific Winch CTD spool and a single conductor 0.316" cable. The sheaves shall be designed in accordance with the requirements of UNOLS recommendations for sheave size and load rating. They shall have a minimum safety factor of 3. Please refer to section 5339 for scientific winch specifics.

The cross member shall have four attachment points with the same working load limit, two port, and two starboard of centreline on the upper level, within the optimum operating angles of the *Okeanus* scientific winch.

The legs of the A-frame shall be provided with foldable ladder rungs to provide access to the top of the frame. Flood lights shall be mounted on the A-frame to illuminate the water's surface below the frame when deployed. Eight (8) line cleats, four per side, two mounted on inboard and two mounted on the outboard verticals, shall be installed to assist with lifting operations.

Hydraulic lines will be connected through quick connect deck fittings.

All weight handling appliances shall be provided with markings and means to protect personnel from injury at pinch points.

A safe working load rating shall be posted in plain view of the operator station.

5079 Gates

Chain gates shall be installed in the following locations.

- Main deck rails at head of dive platform ladders.
- Main deck transom opening between the A-frame legs and removable handrail sections as noted below.
- Between the upper deck rails at the top of the aft ladder leading from the upper deck to the main, aft deck.
- At the top of the interior stairs leading from the pilot house down into the main cabin.

Two 4-foot removable handrail sections shall be fabricated and installed, extending from the vertical leg of the A-frame inboard on either side. This shall leave a 7 foot clear opening between the removable handrail sections that shall be secured via chain gates when not in use.

These chain gates shall be made with 316 SS 3/16" proof coil chain. Each end of the chain will have 316 SS carabineer.

Sliding gates will be fitted in the bulwarks below the cap rail between frames C & E on both the port and starboard side. The gates will be secured closed with latches and vertical barrel bolts on each gate. These gates shall have a means to secure open.

5082 Bollards and Cleats

Four mooring cleats shall be installed on each side of the vessel parallel to the bulwark. The forward cleats shall be located to lead through the port and starboard scupper holes. The aft cleat will be on the outboard corner transom. They shall be mounted parallel to the gunwale. All mooring cleats will be 18" cast aluminum weld on deck cleats. The cleats shall be installed on suitable deck inserts and supported by under deck structure. All welds shall be ground smooth to eliminate snags which will damage synthetic lines. Fairleads to be provided as needed to prevent damage to mooring lines.

Four 12" cleats shall be installed on the dive platforms, two each port and starboard. One of these cleats will be outboard of the dive ladder on the outboard corner. The other cleat shall be

mounted vertically on the transom, at the inboard, outer edge of the dive platform.

Eight 7.5" cleats to be installed in way of the aft A-frame at customer directed locations.

There shall be a fabricated anchor bollard installed on the starboard side of the foredeck as illustrated on the G.A. drawing.

5085 Seats and Stowage

The Vessel shall provide permanent storage for 14 life jackets and 8 work vests as per the G.A drawing.

Stowage shall be provided in the pilothouse sitting settee desks, the lab drawers, under the interior inclined ladder, in the bunkrooms, as well as other areas shown in the GA.

5300 Systems

5303 Engines

2 Electronic, high efficiency, Tier 4 low emission diesel engines with SCR system that meet or exceed all federal emission standards shall be reverse mounted with a remote mounted gear box. In accordance with the current California Commercial Harbor Craft Regulations, the Purchaser shall be responsible and obtain approval or exemption from the California Air Resources board for the use of the engines specified for use in the vessel.

Make	MAN
Model	D2862LE438V12-1200 EPA4
Rating	882 kW (1,182 bhp) @ 2100 rpm*
Gearing	Twin Disc MGX-6599RV Gear Box

* Medium Duty Operation: Up to 4000 operating hours per year with an average load <60%.

- Exhaust Turbocharger, water cooled
- Fuel filter, flame proof piping and hosing
- Lube oil filter and oil cooler, combined, standard.
- Exhaust manifold water-cooled
- Sea-water pump
- 24 volt 120-Amp alternator
- Isolated (above ground) DC electrical
- Unit Mounted Fuel Primer assembly and 3/4-37 JIC (male) Connections
- Engine Oil Drain Valve (service) kit (1ea port and starboard).
- Two Marine power displays, one in each Engine Room
- Two Marine power displays for flybridge (7" dual engine monitor)
- Twin Engine Shipset Custom Harness Package
- Start and Stop Panels for Wheelhouse
- Initial Coolant Fill
- Initial Oil Fill

Gear Box

- Twin Disc MGX-6599RV
- Raw Water Cooled for MAN
- Electric Shift 24v (FTN - fail to neutral)
- Electric Troll
- Bell Housing SAE1
- MAN Smart Command Kit
- Prop Flange up to 125mm shaft

The main engines shall be installed as per the recommendations and requirements of and under the supervision of the manufacturer's technical representatives.

The main engines shall be arranged for start and stop from the helm station and in the engine rooms.

The main engines will be supplied with standard manufacturer's warranty.

5312 Props and Shafts

The Contractor shall provide and install VEEM NiBrAL propellers. The propellers shall be right and left hand, turning outboard when going ahead. The propellers shall be designed for maximum efficiency and shall be matched to available transmission gear ratios. They shall be mounted with a tip clearance of ~20% of the propeller diameter.

Diameter TBD"

Pitch TBD" (pitch needs to be finalized after engineering)

Material NiBrAL

A close-fitting clamp-on type propeller rope cutter shall be fitted on the aft end of the stern tube so as to prevent lines from wrapping on the shaft between the propeller hub and aft end of the stern tube.

The gear coupling will be connected directly to an *Aquamet* 22 HS propeller shaft. Shaft diameter will comply with USCG requirements.

The shaft couplings and propellers will be blue fit to the shaft tapers in order verify no less than 80% contact has been achieved.

The shaft will be fit with two shaft bearings. The stern bearing will be housed in a fabricated A-bracket. The intermediate bearing will be fit in the stern tube.

The stern tube will be fit with a *PYI* PSS drip less shaft seal that is cooled with water from the main engine raw water-cooling circuit.

The shaft bearings shall be *Johnson Duramax*.

The ends of the shaft shall be machined to standard SAE tapers and fitted with keys. The shaft coupling shall be machined to match the propeller shafts. The bearings shall be locked in place with SS grub screws.

5315 Rudders

Two stainless steel 316 fabricated profiled rudders complete with shafts, seals, bearings, and tillers will be supplied and fitted.

Each rudder will be fitted with a safety stop to keep the rudder from falling out in case of a steering failure.

The high efficiency balanced rudders will be fabricated from 316 stainless steel. The rudders shall be welded to Aquamet 22HS rudderstocks and shall be mounted to allow removal of the propeller shafts without removing the rudders. A water-tight flush drain fitting shall be provided at the bottom of each rudder to allow for inspection and condensation removal during haul outs.

The rudder bearing shall be precision-machined from UHMW-PE, an ultra-high molecular weight polyethylene. UHMW is extremely durable, abrasion resistant and does not absorb water. The upper bearing shall be fitted with a seal. The rudder bearings will be fitted with a rudder tube and chocked into place.

5318 Gensets

Two diesel generator sets will be fitted with one port and one starboard. Output will be 120/240 VAC 60 Hz, single phase. The engine will be fitted with a 24V DC starting system. A preliminary electrical load analysis has been carried out and all systems can be powered from the combined output of the generators. To assist with load management, the HVAC system shall primarily be powered via one generator while the standard hotel load and electronics

package shall be run via the other. An emergency crossover will be installed to allow for redundant power options.

The gensets will be fitted with sound shields.

The engine will be heat exchanged cooled.

- Make Northern Lights
- Model M844LW3G
- Rating 20 kW / 60Hz
- Voltage 120/240 VAC
- Phase Single Phase

Generator features will include:

- Heavy duty engine - Tier 3 compliant.
- Oil drain system with shut-off valve plumbed to base pan.
- Cleanable air filter element with intake silencing system.
- Heat exchanger cooled models include water cooled stainless steel exhaust elbow & high temperature safety shutdown switch. Keel cooled models include dry exhaust elbow with heat shield.
- Fresh water cooling system with integral cast iron exhaust manifold / heat exchanger and expansion tank, raw water pump or connections to keel cooler.
- Coolant recovery system.
- Engine mounted spin-on fuel filter.
- 12 volt negative ground marine grade electrical system with battery charging alternator.
- USCG A-1 / ISO 7840 Fuel lines plumbed to connections on base pan.
- Northern Lights brushless generator with voltage regulator.
- Automatic safety shutdown system for low oil pressure, high coolant temperature and high exhaust temperature.
- S-1B remote engine control panel with control switch, shutdown bypass/preheat switch, engine hour meter and wire harness. 20 foot wire harness extension.
- Belt guard.
- Steel base pan with integral drip sump.
- Marine quality, corrosion-resistant gloss white finish.

- Shipped with oil.
- Load tested at factory.
- Stainless steel fasteners.
- Operator's and parts manuals.
- Lloyd's Register of Shipping Type Approval.
- US EPA Tier 3 compliant

5321 Engine Exhaust

The main engines shall be fit with a dry / wet exhaust system and incorporate the MAN SCR equipment. Each engine shall have its own individual exhaust system.

The engine exhaust gas will discharge the engine through SS 316 schedule 10 piping to the MAN SCR equipment before running through a spray ring and connect via a flexible hose to an aluminum pipe welded to the side of the vessel outboard. The dry exhaust sections and SCR equipment will be fitted with high temperature thermal insulation lagging. Each engine room will have a 50-gallon Diesel Exhaust Fluid (DEF) tank to feed the MAN SCR system. The DEF tanks shall be fabricated out of stainless steel.

Filling of the DEF tanks shall be affected through fillers located on the port main deck forward of the engine room exhaust ventilation trunk. The filling station shall enable spilt DEF to be contained in a cofferdam with a minimum of 2.5-gallon capacity. The DEF fill plumbing shall be fabricated with SS 316L pipe. The interior of the cofferdam shall be sealed with a *BlueSeal* two-part epoxy system to mitigate aluminum acidic corrosion from the DEF. Care shall be made when filling the DEF to avoid and immediately neutralize and clean up any spills or splashes on the deck. The bilge and hull below the DEF tank shall be sealed with *BlueSeal* epoxy.

Each DEF tank filler pipe shall be fitted with cam lock type fuel filler caps. Each DEF tank shall be fitted with a vent/overflow pipe at the aft end of each tank. The vent shall be the same size as the fill to allow quick fueling. The vent pipe shall be fitted with a vent to atmosphere (with anti-flash gauze). Each tank shall have a connection for draining water in the lowest part of the tank. A *Maretron* tank sender shall be installed for each DEF tank and a local display shall be installed

inside the engine room entrance to facilitate filling of the tanks.

A resilient mounting/hanging system shall be employed to hang the engine exhaust system in order to isolate and minimize sympathetic vibrations and noises. *Christie & Grey* captive rubber mountings and hangers or similar shall be used.

The systems shall be installed to be within the engine manufacturer's backpressure requirements. Engine cooling water shall be plumbed with water dumps to control the amount of water going to the exhaust system. The systems shall be installed to protect the engines from back filling with seawater.

5324 Genset Exhaust

The generator engine shall be fitted with a water-lock silencer wet exhaust system.

A mixer shall be fit to the generator engine to mix seawater-cooling water with the exhaust gas. The wet exhaust gas will discharge through heat resistant wet exhaust hose, muffler, and connect to an aluminum pipe welded to the side of the vessel in the engine compartment. Mufflers will have drains.

The systems shall be installed to be within the generators manufacturer's backpressure requirements. The systems shall be installed to protect the engines from back filling with seawater.

5327 Steering System

A 4-station electric hydraulic power steering system will be installed. The power system will consist of a *Dometic Optimus EPS 5000* power unit with two electric driven hydraulic pumps (EP1600). Provisions shall be made to provide overcurrent protection for steering-gear systems. The main helm control station will be fitted with an electronic Helm and a large diameter steering wheel.

- Maximum rudder angle +/- 35 degrees
- Rudder speed (+35 degrees to -35 degrees) 10 seconds (Engine Driven)

The main helm station will be fitted with a rudder angle indicator. The main helm station dash will be fitted with *Simrad AP70 Mk2* autopilot remote that will provide follow up jog steering and rudder position indication.

The wing stations both port and starboard shall be fitted with an electronic helm and full follow up jog levers. Rudder angle indicators shall be incorporated into the wing station arrangement. The aft facing control station shall be fitted with an electronic jog lever and rudder angle indicator.

Each tiller will be fitted with mechanical stops. Prior to launching the steering rudders will be perfectly aligned by measurements taken behind the transom. The position of the tiller arms will then be permanently marked on the inside of the transom for later reference. The system will be plumbed with SS hydraulic tubing.

There shall be two (2) hydraulic, retractable bow thrusters. They shall be *Max Power R300* or similar and shall have the ability to integrate with the Glendenning ProPosition 2 controls for basic station keeping capabilities.

The *Dometic Optimus* steering system integrates with the Glendenning control system and bow thruster controls to provide basic station keeping capabilities.

The control system shall be served by two sources of uninterruptible DC power.

5330 Controls

A 4-station control system will be fitted to the vessel with dual lever control heads or equivalent.

- Make Glendinning or Equivalent
- Model Complete Controls 2
- Special Modes System will come with the ProPosition 2 controller allowing:
 - Heading hold when drifting

- Position hold if allowed to adjust heading.
- Control interface for this system will be provided at all control stations.

The following areas will be fitted with controls:

- Main helm
- Port side wing station
- Starboard side wing station
- Upper deck aft station

The control system will provide troll speed control of the reduction gear. It shall be served by two independent sources of DC power.

There shall be two *Glendenning* ProPosition control heads, one in the pilot house and one at the aft control station. These control heads will allow the operator to switch into a ProPosition "Station Keeping" mode thus allowing the *Glendenning* system to take control of the *Dometic* Optimus steering controls and the *MaxPower* bow thruster controls. Glendenning will only have control of these systems while the vessel is actively in the ProPosition mode. When the ProPosition mode is deactivated, control of the *Dometic* steering shall revert back to the *Dometic* steering controls and the *MaxPower* shall revert back to the provided controls.

5333 Fire Suppression

Each engine room shall be fitted with a *Stat-X* fixed fire suppression system of suitable capacity. The system shall be capable of automatic discharge upon heat detection. The manual release controls shall be fitted outside of the engine room space.

The system shall be installed to control the ventilation system and shut down the main engine and genset in that space upon fire detection.

A *Maretron* smoke and heat detection system panel will be fitted in the pilot house. It will be a 10 zone system with annunciation in the PH.

The following zones will be monitored:

- Port engine room (Heat and manual pull)
- Starboard engine room (Heat and manual pull)
- Port focsle (Smoke)
- Starboard focsle (Smoke)
- Main cabin (Smoke and manual pull)
- Pilothouse (Smoke)
- Tank Voids (Smoke x2)
- Lazarettes (Smoke and Heat x2)

The following additional equipment will be supplied and fitted:

- 1 x 2 1/2 lb ABC fire extinguisher will be fitted in the pilot house.
- 1 x 10 lb ABC fire extinguisher will be fitted in main Cabin.
- 1 x 5 lb ABC fire extinguishers will be fitted in each focsle.
- 1 x 5 lb ABC fire extinguisher will be fitted near galley.
- 2 x 5 lb ABC Corrosion proof fire extinguishers will be fitted at each engine room entrance (1 ea. Port and Starboard).
- 2 x 2.5 lb Halon fire extinguishers, one in the pilot house and one in the dry lab.

5336 Anchor System

One anchor, chain and line shall be supplied and fitted. The anchor line end shall be permanently connected to the vessel

A *Windline* anchor roller shall be fit into a hawse hole through the foredeck.

One Rocna 55kg anchor, shall be shackled to 50 ft of 3/8 inch diameter galvanized anchor chain and 150 feet of 3/4 inch Yale 8 strand braid nylon anchor line. This anchor is intended for

emergency use only. If the City of San Diego intends to anchor frequently overnight, AAM would recommend increasing the amount of chain and size of the anchor for windy/stormy conditions.

The anchor windlass will be a hydraulic Maxwell RC1212HD with capstan. Control will be by tethered remote stowed in anchor locker. (See Section 5450 for Hydraulic details)

5339 Cranes, Scientific Winches, Bow Winch, Universal Sonar Mount

A boom type Morgan Marine Crane 510L.4, hydraulic and marinized with a 6,393 lb. capacity at 5'9" feet, 2,469 lbs. at 14'7" and the max reach of this crane is 22'5" feet with a lifting capacity of 1,543 lbs. The crane will be fitted with a canvas all-weather, removable cover. The crane will have a manual control station with stand on crane. A belly pack is included in the design.

A boom type Morgan Marine Crane (200.3), hydraulic and marinized with a 3,300 lb. capacity at 4'1", 1,848 lbs at 7'5", and the max reach of this crane is 10'6" with a lifting capacity of 1,276 lbs. The crane will be fitted with a canvas all-weather, removable cover. The crane will have a manual control station with stand on crane. A belly pack is included in the design. The SWL capacity of the crane shall be clearly marked at the crane control station. This capacity shall be based on final engineering and shall be limited to comply with stability requirements.

The vessel shall be supplied with an *Okeanus* dual drum scientific winch set up in a "waterfall" style configuration. The winch shall have a SWL of 5,000lbs located on the upper deck facing aft and shall have the following features:

- Conducting Wire (CTD) Drum
 - 1000' of .316 single conductor wire
- Hydro drum
 - 5,000' of 1/4" stainless wire
- Canvas all weather, removable cover.
- Control will be via touch screen and joystick at station on upper deck facing aft with weather cover.

A secondary *Okeanus* CTD winch shall be installed on the upper deck, adjacent to the *Okeanus* waterfall style primary winch. The winch shall have a drum capacity of 1,000 feet of .186" conducting wire. The winch shall be locally controlled, have an additional control station at the upper deck hydraulic control station, and shall come with a remote control belly pack.

The A-Frame shall have a cross member mounted *PullMaster* (PL-5) Winch or equivalent for lifting on centerline. The winch will be 4,500 lb. load rated for the 1st layer. The winch will be loaded with synthetic line, with a soft eye in the tail end. (See section 5075 A-Frame for more details).

A Morgan 200.2 shall be fitted on the port foredeck to facilitate launching and recovery of the ROV as well as loading and offloading the ROV tether spool. See above for the lifting specifications. The vessel shall be supplied with a *Kinematics* (14x12) hydraulic bow winch, located on the foredeck. It shall be mounted behind and to the side of the anchor tackle and be arranged such that the winch and capstan can operate simultaneously without interference and shall also be located to not interfere with the ROV tether spool during ROV operations. The foundation pad shall be mounted directly to the deck frames using insert plates with full penetration welds. The bow winch shall have the following features:

- SWL of 800 lbs. on the first layer
- 1000' of 5/16" Amsteel synthetic line*
- Fairlead / Roller
- Control will be by tethered remote stowed in anchor locker.
- Canvas all weather, removable cover for winch.

**Please note that due to Amsteel's low elasticity, care should be used to avoid shock loading the bow winch when in use. If the bow winch is used in a manner similar to an anchor windlass, premature wear may ensue.*

A Universal Sonar Mount shall be installed on the port side of the vessel. It shall be the *USM Hightower* assembly that is capable of being rotated aft and stowed on a hinged bracket alongside the vessel, parallel to the bulwarks, when not in use. This bracket will be stowed flat and secured against the hull when not in use. The bulwarks shall have an opening that allows for the pole mount assembly to pass through when it is installed. A cover plate will be provided

to reduce spray on deck when the pole mount assembly is not installed and will be fastened in place with three (3) J-Bolts. The pole assembly arm will be 17" to extend beyond the hull fendering and allow for clear sonar mount rotation.

An additional, hydraulic capstan rated for up to 2,000 lbs. mounted to a backing plate with 2' x 2' bolting pattern shall be provided. The capstan shall get its power from main deck mounted hydraulic quick connect fittings. The capstan assembly shall be able to be manipulated and moved for various deck operations once it is bolted into the deck socket mounting grid. A storage cofferdam shall be fabricated and fit in the lazarette for the capstan to be stowed in while not in use to catch any residual hydraulic fluid leakage.

5345 Ride Control System

Vessel shall include a ride and trim control system, using the *Humphree* Interceptor System or equivalent. The *Humphree* control panel will be located at the pilothouse helm station.

The HE-Series Interceptors are designed for heavy duty use. The Interceptors will be paired with the *Humphree* Dynamic Stabilization software suite. This is an advanced ride control option and provides an effective ride control system that will automatically drive the Interceptors to counteract wave induced roll and pitch motion. It includes Automatic Trim and List Control also compensating for cross winds or uneven loading.

The Interceptor system will include:

- 4 x Interceptors
- 2 x Ride Control Unit
- Control Panel
- Cabling for installation and networking

5351 HVAC

The forepeaks, tank voids and lazarette will have pipes fitted to allow for natural ventilation. Ventilation pipes will terminate with a vent check.

The wheelhouse shall be fitted with a 2kW electric defroster/blower for the bridge windows. The defrosters shall be mounted below the windows with the heat blowing up towards the windows. The defroster ducts shall be fitted with adjustable louver to control of the direction of air flow.

The vessel shall be fitted with *Webasto* 230 VAC air conditioning systems. The system shall be arranged as follows:

- 1 x 16,000 BTU for the pilot house.
- 3 x 16,000 BTU for the labs and galley
- 1 x 6,000 BTU for the Port below deck berths
- 1 x 6,000 BTU for the Stbd below deck berths

Each unit will have an individual thermostat and have the respective sea water pump turned on as needed via relay control box. Adequate air flow per manufacture's specifications will be confirmed after installation.

The galley will be fitted with a range hood to provide galley ventilation.

The head shall be fitted with a 4" ventilation exhaust fan rated for 190 CFM.

5353 Machinery Ventilation

Engine rooms shall be fitted with ventilation systems comprising of ventilation fans of suitable capacity. Fans shall be fitted on rubber mountings. and the casings shall be aluminium. The ventilation shall be controlled at the helm.

Each engine room shall be fitted with air inlet and discharge openings. The openings shall be oriented and shrouded to minimize spray induction into the engine room. All air inlets and outlets shall be fitted with *Zazz* or equivalent fire dampers and salt-water spray diffusers. Fire dampers will be remote controlled and electrically operated.

5354 Acoustical Insulation

The noise level in passenger spaces shall be kept as low as possible to enable the public address system to be heard. Furthermore, noise levels shall meet the OSHA permissible noise exposure regulations 29 CFR Part 1910.95, and any interior spaces occupied by passengers shall not exceed an 8-hour time-weighted average of 85 decibels measured on the A-scale, when the vessel is travelling at normal cruise speed. Noise levels shall be measured during sea trials.

The engine rooms shall be insulated on the deck heads, ventilation trunks, as well as engine room sides and forward bulkhead. Insulation on the sides shall extend down to the lower chine.

Engine room shall be fitted with acoustical insulation as follows:

- Overhead
 - 30 mm Air Gap
 - Layer 1 - USP, ALU1 36kg/60mm Roll ALU1 facing.
 - Layer 2 - 2.5 mm Wavebar Quadzero NL 1lb-ft²
- Forward USP, ALU1 36kg/60mm Roll ALU1 facing.
- Aft USP, ALU1 36kg/60mm Roll ALU1 facing.
- Inboard USP, ALU1 36kg/60mm Roll ALU1 facing.
- Outboard USP, ALU1 36kg/60mm Roll ALU1 facing.
- Ventilation Trunk and Engine Room Entrance
 - Layer 1 - USP, ALU1 36kg/60mm Roll ALU1 facing.
 - Layer 2- 2.5 mm Wavebar Quadzero NL 1lb-ft²

The insulation shall be installed with pins and caps glued directly to bare aluminium plate. All seams shall be taped.

Insulation shall generally be installed with pins and caps glued directly to bare aluminium plate. All seams shall be taped.

The interior bulkhead and partitions directly adjacent and aft of the stairs leading to the below decks accommodations port and starboard as well as the surfaces directly above and aft of the bow thrusters shall be acoustically insulated with 2.5 mm Wavebar Quadzero NL 1lb-ft² where practical.

The exterior walls of the bow thruster boxes only shall have *Decidamp Tile*, a vibration damping tile, installed directly to the aluminum.

5357 Life Saving Equipment

The restricted in ability to maneuverability day shapes and mast lights will be provided.

Safety equipment should be marked per 46CFR196.37.

The following equipment shall be supplied and fitted:

- 1 x 16 person IBA life raft with container, cradle, and lashing (installed upper deck starboard side as per the G.A. drawing).
- 14 x Adult sized Type-I life vests permanently stowed aboard the boat.
- 1 x ACR 2830 Satellite-3 406 Cat 1 EPIRB
- 1 x 24" life ring (mounted on the aft deck)
- 1 x Man overboard light
- 1 x Life ring throw rope
- 12" bell
- 1 x Fire Axe
- 2 x Orion 802 Red Flare kit (3ea) – current within 90 days
- 2 x Orion 958 Orange Smoke kit (3ea) – current within 90 days
- 1 x Orion 4267 Orange Ammo Box

The following placards and signage will be provided:

- 2 x MARPOL Oil Discharge Placard
- 1 x MARPOL No Dumping Placard
- 1x Personnel to Remain Clear When Electronics Are in Operation

- 3 x Sink Drain and Pollution
- 2 x Hearing Protection Required for Engine Rooms
- SWT and SWL marked on A-frame and Winch.
- Load chart posted at Crane Controls
- Winch, A-frame, and Crane controls shall be labeled.

(All items will be required for the deadweight survey and will always remain on board the vessel.)

5373 Galley Equipment

The galley will be fit with the following equipment:

- 1 x Bottom-Freezer Full Size Refrigerator, *Summit* FFBF181ESIMLHD or Equal
- 1 x *Whirlpool* 1.9 cu. ft. Over the Range Convection Microwave/Hood in Stainless Steel with Sensor Cooking
- 1 x 3 Burner Electric Range, *Force 10* or equal
- Sink with Garbage Disposal
- 1 x White Board in hallway
- 2 x Undercounter Refrigerators (*Frigidaire* FFPE4533UM 4.5 cu. ft.) in lab space

5375 Lines and Buoys

The following shall be provided:

- 4 x 7/8" x 70' 2-1 double braid nylon deck line w/ 24" eye splice one end
- 6 x Polyform F10 Fender w/ 8' tag line

5376 Anodes

The vessel shall be fitted with 8 x *Divers Dream* Aluminum anodes. Each anode shall be 6" x 12" x 1/2". Two shall be located on each transom. Two shall be located in the forward tunnel. Two mounted on the port hull and 2 mounted on the starboard hull.

The rudders shall have teardrop anodes on their bottom plates.

A separate earth bonding system, which will not be normally current conducting, shall be installed. Metal casings of all machinery and equipment shall be commonly bonded to the hull and the anodes.

Piping shall be protected with zinc anodes or with isolation as necessary.

The vessel will be fit with a Digital logging hull potential meter to monitor the condition of the anodes.

Bonding: See 5500 Electrical.

5381 Driveline Shrouds

All rotating machinery, such as drive shafts and remote mounted pumps, will have aluminum fabricated safety guards fitted to adequately protect crew from injury.

The guards shall be lightweight and easily removable to facilitate inspection and servicing.

5400 Plumbing

Runs of pipework will, as far as possible, be kept clear of work or access areas, etc. Pipes shall be secured to the vessel's structure by suitable blocks. Pipe runs shall be connected with short runs of suitable hose to facilitate removal. Where aluminum pipes pass through shell, bulkheads or deck, a short length of the pipe with suitable flange doublers shall be welded into the structure.

All plumbing shall be installed with accessible low point drains.

Unless otherwise specified, copper alloy (such as brass or bronze) equipment or fittings will not be fitted below the main deck. All systems' piping shall be labeled with system identification and flow direction.

Conveniently sized and properly labeled access panels shall be provided for access to all wiring, valves, and pipe connections.

Where possible, ducts, pipes, etc., in the accommodation spaces, shall be installed behind linings, or shall be boxed in. Panels covering ducts, pipes, wire ways, etc., shall be removable.

Cable trays and pipes for scientific instrumentation shall be placed in easily accessible locations and not be covered or boxed in.

Plumbing systems with dissimilar metals which are threaded together shall be lubricated with either Tefgel or Eck or similar as a dielectric lubricant. Dissimilar metals with flanges shall have plastic shoulder isolation washers to insulate from each other.

All system piping will be color coded and labeled for the system served.

All piping shall be installed per applicable USCG regulations.

5405 Fuel System

Each fuel tank shall be fitted with sight gauges. The sight glass on each tank will have self-closing 316 stainless steel valves at both the upper and lower end of the glass. The sight glass shall be protected with a slotted aluminum guard, which shall be marked to indicate tank content in increments of 50 gallons.

SS ball valves and hose tails shall be used for all fuel lines outside the tanks. Piping inside the tanks shall be per USCG requirements. The port tank shall supply fuel to the port engines, and the starboard tank to the starboard engines. Each supply line will have a shut off valve inside the engine room, with a remotely controlled cable to enable the valve to be shut from outside of the engine room space. Cable levers shall be properly labeled. Long straight runs shall be plumbed in 316 SS tubing.

Each main engine supply line shall be fitted with a single *Racor 75/1000MAX10* Duplex fuel filter. Each filter shall be fitted with a drain valve and a drip pan under each filter assembly to contain fuel spilled during servicing.

Each generator supply line shall be fitted with *Racor 75/1000MAX10* Duplex filter and shall be fitted with a drain valve and a drip pan under the filter assembly to contain fuel spilled during servicing.

5407 Oil Change System

Each main engine, gear and generator will be connected to a common pipe plumbed to each ER entrance. Two (2) *Reverso GP-3023* 3-valve 24 VDC FLOCS transfer pumps shall be installed, one on each side, for rapid oil changing.

5410 Engine Cooling

The main engines will be equipped with its own raw water pump, which shall take suction from a dedicated sea chest thru a 3" SS butterfly valve and *Arctic Steel 3"* bottom in and side out stainless steel strainer. The strainers will be installed to allow easy inspection and cleaning of the strainers. Piping to the engine will be 5086 Aluminum. The raw water shall be discharged from the engines through the exhaust system. The piping from the engine discharge to the exhaust connection shall be CuNi.

A suitable hard wall hose will be used for flexibility. All flexible connections will be double clamped.

Zincs are to be installed in strainers and in aluminum piping every 4~6 ft.

5420 Genset Cooling

The generator engines will be equipped with their own raw water pump, which shall take suction from a dedicated sea chest thru a 2" SS butterfly valve and *Arctic Steel 2"* bottom in and side out stainless steel strainer. The strainers will be installed to allow easy inspection and cleaning of the strainers. The raw water shall be discharged from the engines through the exhaust system. This sea strainer will also provide raw water to the Fire Pump. (see 5430 Fire Pump System)

A suitable hard wall hose will be used for flexibility. All flexible connections will be double clamped.

Zincs are to be installed in strainers and in piping every 4~6 ft.

5425 Bilge System

The bilge system shall consist of one engine driven *Jabsco* pump in the Port engine room, and the vessel's main fire/bilge pump in the Stbd engine room. Both pumps will be electromagnetic clutched. The pumps shall be mounted, one on each main engine, and shall be driven via a V-belt. The suction side of the pumps shall be connected to a bilge manifold in each engine room. The bilge manifold shall have feed pipes from the lazarette, engine room, tank void and forward void spaces in the respective hulls. The system shall be fitted with crossover plumbing. The discharge shall be overboard.

Each pump will have a local and pilot house control fit with a prominent pump running indicator light.

All bilge piping shall be plumbed with aluminium pipe with aluminium flanges where necessary (when transitioning to stainless steel). A check valve with intake screen will be installed as a foot valve.

Each watertight compartment aft of the collision Bulkhead shall have a *Rule* 2000 GPH 24 VDC bilge pump, plumbed to overboard drain(s). The bilge system shall be connected to a 24-hour power supply.

The bilge pickups shall be mounted at the lowest point in the compartments with bows slightly trimmed up.

An audible and visual alarm shall be fitted at the helm station operated from float switches. Alarm-silence switches shall be fitted in the helm area.

The following points shall be monitored:

- Port Forepeak High Bilge
- Stbd Forepeak High Bilge
- Port Focsle Bunkroom High Bilge
- Stbd Focsle Bunkroom High Bilge
- Port Engine room High Bilge
- Stbd Engine room High Bilge
- Port Lazarette High Bilge
- Stbd Lazarette High Bilge

Forepeak voids shall be serviced with a manual bilge pump, *Beckson 136P*, with a flexible suction hose terminating at the bottom of the void and a flexible discharge hose with enough length to clear vessel side. This will have storage provided in Port Forepeak.

5430 Fire Pump System

The fire pump shall be an *Oberdorfer* electromagnetic clutched pump, sized to meet USCG requirements. The fire pump shall be mounted onto the main engine and shall be driven via a V-belt. The suction side of the pump shall be connected to the genset raw water strainer. The discharge shall be to the fire main and pressure relief overboard. This pump shall be controlled from the bridge and engine room.

One fire hydrant with 50' lay-flat hose and suitable nozzle shall be fitted. The fire station shall be located as per the GA drawing.

The fire pump system shall be plumbed with aluminium pipe with suitable corrosion protection

when transitioning to dissimilar metals.

5435 Black Water System

One (1) SANIMARIN-48 24VDC marine toilet shall be fitted to the vessel. The toilet flushing water will be plumbed from the raw-water pressure system (*Headhunter Stingray*). The toilet discharge shall be plumbed directly to the black water tank. All sanitary piping will be PVC.

The vessel will be fitted with one (1) 200-gallon polypropylene wastewater tank. The tank will have an outlet that will be plumbed to the *Headhunter Tortuga* 115VAC diaphragm pump to allow discharging of the tank overboard. The tank will also have an outlet that will be plumbed to a cam lock style shore side pump out line located on the aft deck. The cam lock size will be 1 ½". A saltwater back flush line will be fitted to each tank outlet. The tank shall be fitted with an inspection hatch and drainage facility. The black water tank will be fit with a 1 ½" vent line plumbed into the tunnel. The tank shall be located on the starboard tank void. The tank shall be vented between the hulls with a check valve to prevent back flushing when underway at high speeds.

A Maretron tank pressure monitor will be fitted to monitor the level of the black water tank with the display located in the wheelhouse at the operator's station.

5440 Fresh Water System

Freshwater shall be supplied from an integral freshwater tank with a total capacity of 200 gallons, located in the lazarette. The freshwater supply line shall be fitted with 2 ea. *Shurflo* Aqua King II Supreme 24VDC water pumps. The tank shall be vented through a 1-1/2" vent check with protective screen. . The tank shall be filled through a standpipe located on the STBD side of the vessel.

The fresh-water pump shall be powered by the vessels DC electrical systems.

All freshwater piping shall be CPVC and have drains at the low points.

A 120 VAC 2.5 gallon Tiny Titan electric tankless hot water heater will be fit.

Hot and cold freshwater will be plumbed to the following:

- Sink in head.
- Shower stall in head.
- Sink in the galley.
- Sink in the wet lab.

Cold Fresh water will be plumbed to the following:

- Hose bib on back of cabin
- Hose bib on upper deck
- Window washer system
- Galley Refrigerator

See placard requirements under safety (section 5357)

5446 Wash Down

The fire pump system will supply sea water to a wash down faucet located on the aft cabin bulkhead.

An engine driven, 24 VDC Jabsco 50200, self-priming 1 ½" electromagnetic clutched pump shall provide wash down water. The pump shall be mounted onto the main engine and shall be driven via a V-belt. The suction side of the pump shall be connected to the Main Engine raw water strainer. The discharge shall be to wash down spigots on the aft and foredeck, the fire station main, and a pressure relief overboard. This pump shall be controlled from the bridge and engine room.

The fire pump system shall be plumbed with 316 Stainless pipes with suitable corrosion protection when transitioning to dissimilar metals.

- Four (4) manifolded aft deck spigots.
- Bow spigot

5448 Deck Drains

Exterior Deck drains will be welded into the deck of the following spaces to provide drainage to the next deck down.

- PH roof aft corners P & S
- Upper Deck Aft corners P & S

Interior Deck drains will be welded into the deck of the following spaces to provide overboard drainage. Drains will be sealed to the flooring.

- Head
- Galley
- Wet Lab

5450 Hydraulics

The Vessel shall be fitted with an engine driven hydraulic system. The pumps shall be suitably sized axial piston pumps, *Kawasaki* or similar, using a direct PTO through drive arrangement. The system shall have a load sensing pump and control manifold. The system will provide a minimum of 32 GPM at 3850 psi. In order to minimize passive hydraulic noise when not in operation, the pumps shall be fitted with an unloader valve to put the pumps at zero output when not in use. The pressure system shall be manifolded and share a common 70-gallon reservoir. The system shall be fitted with two heat exchangers, one on the supply and one on the return lines. The system will provide a minimum of 60 GPM at 3850 psi and be able to provide hydraulic power for simultaneous maximum operation of the bow thrusters and the Okeanus hauling winch or crane. The hydraulic oil used MUST be a mineral oil and NOT a biodegradable oil as the use of a biodegradable oil will cause coagulation in the system. There shall be hydraulic oil filters on the oil return line back into the reservoir.

The vessels hydraulic system shall power the following:

- Deck cranes
- A-Frame cylinders
- A-Frame Winch (connection available as auxiliary power if needed)
- Scientific Winch.
- Anchor Windlass.
- Bow Winch
- Bow Thrusters

The hydraulic system shall have emergency shut offs at the transom, Aft cabin area and aft upper deck control station. Port or Stbd control valves can be selected for use from the PH. An alarm switch will be installed in the header tank above the shutoff to provide notification to the crew of low oil before shutdown. Two (2) thirty five (35) gallon hydraulic reservoir tanks shall be fitted, one each port and starboard. These tanks shall share a 5 gallon common header to retain header and priming pressure on the hydraulic pumps. The hydraulic system shall be heat-exchanger cooled.

There shall be hydraulic quick-connect fittings on the aft deck for use with auxiliary, owner furnished gear. Final placement shall be agreed upon by the owner's representative and the AAM project manager.

The system shall be hard plumbed with ASTM A269 / A213 seamless SS hydraulic tubing. The fitting for this system shall be *Parker* Triple-Loc fittings meeting SAE J514 and ISO 8434-2 industry standard for 37 deg flare fittings or commonly known as JIC fittings. The flexible hoses shall be SAE 100 R2 AT. Dry-disconnect Quick connect fittings shall be fit for all removable equipment. Disconnects will be shielded from physical damage.

5500 Electrical

All cables shall be adequately protected against mechanical damage, chaffing, heat, corrosion, and wherever possible be installed clear of bilges. The cables between engine rooms and wheelhouse shall be neatly fastened to aluminum cable trays fitted below deck.

Cable penetrations through bulkheads and decks must have adequate sealing arrangements to maintain water and, where appropriate, fire integrity.

All cable voltage ratings must be suitable for the circuit voltage. Conducting wire must be stranded copper. All sub-circuits shall be double insulated cables.

Cabling and installation will comply with the USCG regulations.

The Contractor will supply a complete set of as-built wiring diagrams of the vessel's electrical system on delivery of the vessel.

Electrical control panels must be provided containing all necessary controls and starters for the proper control and running of all systems. Circuit breakers shall be mounted on the panel and to be used for switching of circuits. Provision must be made for at least four spare circuit breakers on each of the AC and DC panels.

Cables shall be identified at the origin and the termination.

Each electrical cable will have an identification label at the origin and the termination. The labeling system will be a *Brady* wire labeling system using self-laminating vinyl thermal transfer labels. Cable numbers shall be devised by the Contractor and on the electrical drawings.

Care shall be taken to not mount electrical equipment under the exhaust, engine room vents and in way of soft patches.

5505 DC

The DC system will be a 2 wire with an earthed negative buss. A separate Bonding circuit will be used as needed to ensure a single point of connection between the electrical system and the hull. Multimeter and Battery Monitor with Ammeter should be integrated into the DC panel.

All batteries shall be extra heavy duty low-maintenance type. Battery banks shall be installed in vented, non-metal lined, plastic boxes. The battery boxes will have lids and be strapped into

place.

An isolating switch shall be placed as close as practicable to each battery set.

Automatic Charge Relays will be installed between the engine start batteries and the house services battery. When the Automatic Charge Relay senses a charging source from any engine alternator or battery charger it will close and charge both battery banks. The Automatic Charge Relay can be manually closed to provide emergency parallel starting.

Provision is to be made to supply power to the bilge pumps when the normal service distribution is isolated.

Each main engine will have a 24V starting battery bank, consisting of a Lifeline GPL XT starting batteries. The electrical system will allow engines to be started from either bank of batteries. Batteries shall be charged from the main engine fitted alternators.

Each generator will start from the 24V main engine starting banks. Each generator will be isolated thru a battery switch.

A 24V house services battery bank, consisting of 4 x 6 Lifeline GPL-6CT batteries, shall be installed to supply the vessel's DC consumers. The batteries shall be in series to have 24V. The generator or shore power via a dedicated charger will charge the Services battery bank.

A load analysis will be completed prior to electrical system installation.

The 24V DC electrical system will supply power to the following equipment:

- DC Circuit breaker/switch panels
- DC Electronics Circuit breaker/switch panels
- Engine room ventilation dampers
- Main engines start and monitoring.
- Main engine controls
- Gensets start and monitoring.
- Housekeeping bilge pumps system
- (3) Carbon Monoxide detectors (Honeywell or similar)- 1 in each bunkroom, 1 in main cabin.

- Wipers with a pentagraph wiping arrangement and window washing system.
- Horn (Buell 15" Air Horn)
- Newmar PI-10 intercom system with Handsets at
 - PH
 - Port ER
 - Stbd ER
 - Lab Space
 - Galley
 - Stbd Bunk Room
 - Port Bunk Room
- 2 x 12 VDC outlets w/ USB ports in dash
- Navigation lights (individually controlled from the wheelhouse switch panel)
 - Steaming light
 - Port light
 - Starboard light
 - Stern light
 - 3x all around lights (Red over White over Red) to signal Restricted Ability to Maneuver or vessel anchored as required by COLREGS.
- Vessel Alarm System (Maretron or equal)
 - Bilge High levels
 - Main Engine Exhaust High Temperature
 - Engine Room High Temperature
 - Genset Exhaust High Temperature
 - Grey Water Tank High Level
 - Black Water
 - Port and Starboard fuel levels
 - Fresh Water level
- DC Lights
 - Floodlights
 - 4 x Vision-X DURA660 LED work light (Fwd. Deck Lights)
 - 4 x Vision-X DURA660 LED work light (Aft Deck Lights)
 - 4 x Vision-X DURA660 LED work light (A-Frame Lights)

- 2 x Vision-X DURA660 LED work light (Aft Upper Deck Lights)
- 2 x Vision-X DURA660 LED work light (Bow gunwale)
- 4 x Bunk Lights, 1 at each berth
- 24 x F-28 LED or equal machinery/below deck lighting.
 - 4 x each Propulsion Room
 - 2 x each Lazarette
 - 4 x each Tank Space
 - 2 x each Forepeak
- 10 x LED Red and White ceiling lights
 - 1 x each Focsle
 - 2 x Pilot House
 - 1 x Galley
 - 4 x Main Cabin
 - 1 x Head
 - 1 x Lab space

A 24V DC to 12V DC converter shall be installed to power 12V electronic components, if required.

5510 AC

The AC installation shall be 120/240 V, Single phase, 60 Hz, with Neutral Earth but non hull return. Supplies shall be from the diesel generators (see 5318 genset) or the shore power connection.

The shore power inlet shall be two (2) 50 Amp 120/240 V, Single phase, receptacles thru isolation transformers for galvanic protection and be located on the port side of the vessel next to the Lazarette entrance. The isolation transformers shall be *Bridgeport Magnetics* (Dual Marine-Puck MP6 12kva) or similar toroidal transformers. Two 50' long, shore power leads complete with inlet cord connectors, will be provided with storage in the Port Laz. There will be three (3) AC distribution panels with source selections of: Genset(s)/Shore power.

One generator will primarily be used for HVAC and battery charging purposes while the other generator shall be primarily used for the rest of the AC hotel loads. An emergency cross over

switch shall be included to allow each generator to power the entire AC system if the other generator experiences a mechanical issue. In this event, care must be taken to manage electrical load to prevent overloading the single generator.

The switchboards shall have sufficient reserve electrical capacity and physical space to support 10% future growth.

Double conversion UPS Modules for Clean and uninterrupted power sensitive equipment shall be installed.

One (1) *Eaton* UPS (9PX3000RT 120VAC configuration or similar) system shall be installed in the server rack in the dry lab to provide clean, uninterrupted 120VAC power to the lab and pilot house to prevent power dropouts to City of San Diego furnished science and pilot house equipment.

One (1) *Eaton* UPS (9PX3000RT 208/240VAC configuration or similar) system shall be installed in the server rack in the dry lab to provide clean, uninterrupted 240VAC 1Ø power to the aft main deck and 240VAC 1Ø to the wet and dry lab.

The AC electrical system will supply power to the following equipment to be installed:

- AC Circuit breaker/switch panel
- Air Conditioning
- Hot water tank
- Engine room ventilation fans
- Lab and rack UPS systems
- Window Wiper Motors
- Imtra DHR230 Remote controlled Searchlight - with remote panel in PH
- Under Counter sample refrigerator in the wet lab (*Global Industrial* 2.4 Cu Ft).
- Galley equipment
 - Galley refrigerator
 - Microwave Oven and Hood
 - Force 10 electric range

- Coffee Maker
- AC Lighting (Dimmable, max color temperature of 3000K)
 - 2 x 4" Lithonia LED in head
 - 4 x 6" Lithonia LED in P.H.
 - 2 x 6" Lithonia LED in Galley
 - 6 x 6" Lithonia LED in Dining Area
 - 8 x 6" Lithonia LED in Lab Space
 - 1 x 6" Lithonia LED in Port Focsle
 - 1 x 6" Lithonia LED in Stbd Focsle
- AC Outlets
 - 2 x Duplex (with USB and USB-C jacks) power outlets in wheelhouse
 - 1 x Power strip (with USB and USB-C Jacks) power outlets Dry lab from dedicated UPS
 - 2 x power strips (with USB and USB-C jacks) power outlets Wet lab from dedicated UPS
 - 1 x duplex power outlet under the wet lab counter for sample refrigerator
 - 1 x Duplex (with USB and USB-C jacks) power outlets Sette Area
 - 2 x Quad GFCI Galley area
 - 1 x Duplex power outlet in each lazarette
 - 1 x Duplex power outlet in each engine room
 - 1 x Duplex power outlet in each void space
 - 1 x Duplex (with USB and USB-C jacks) power outlet in each bunk (4 total)
 - 2 x Duplex power outlet upper deck
 - 1 x Duplex power outlet foredeck in storage locker
 - 1 x Duplex GFCI power outlet in the head
 - 1 x 240V 50-amp single phase outlet on aft cabin bulkhead (survey scientific)

- 2 x 120V outlets mounted on the aft deck at the engine room exhaust plenums in watertight enclosures and service from a single 20-amp breaker.

Power panels ratings will be sufficient to allow for 10% growth in power demand and in spare breaker slots.

5515 Electronic Equipment

The navigation and communication at the helm shall include a Multifunction Navigation display and two (2) 24" computer displays. One computer display shall be cabled to a server computer in the lab space, the other to a computer running navigation software. The DGPS output in NMEA format shall be provided to the dry lab workstation desk by means of a labeled serial cable or serial bus bars.

The following list includes electronic items that shall be fit on the vessel:

- (1) VHF radios with DSC in pilot house- (*ICOM M605*)
- (2) VHF radios (*HM195*)- one for aft control station and one near aft door, both connected to *M605*.
- (1) VHF radio (secondary)- *ICOM M510* in pilot house.
- (1) *Furuno "NavNet TZTouch" System*
 - (1) *Furuno TZT16X*
 - (1) *TXT9F* for aft control station
 - *US West Coast & Baja California C-Map Media Vector Charts*
- Professional V5 *Nobeltec Time Zero Professional V5*
- *Nobeltec* Second Station License for Time Zero
- *Nobeltec* PBG Module
- *Nobeltec* Radar Module
- *Lenovo Mini PC i7-13700K, 16 GB DDR4 RAM, 512GB SSD, Nvidia Graphics Card*
- 2 x 24" Wide Screen Touchscreen Displays (Pilot House)- 1920x1080 dimmable to dark.
- 1 x 24" Non touch, wide screen display, lab space.
- *Logitech K360 Wireless Keyboard - Glossy Black*
- *Logitech Wireless Trac Ball Mouse*
- 2 ea. *QNB-1-PMW NEMA 2000 Quick Network Block*

- 2 ea. IF-NMEA2K2 NMEA0183 format to NMEA2000
- *Airmar Tilted Element "Chirp Ready" 60/100 kHz 1000W transducer (B175MW)*
- Furuno 600W Mix & Match Cable w/Furuno 10pin.
- Transducer- *Furuno "165T-PM542 with DFF3D and DI-FFAMP boxes to run dual transducer unit with TZTouch systems.*
- Furuno- DRS4D-NXT- radar dome
- *Furuno DRS12ANXT – 100-watt solid state doppler radar.*
- 6' open array antenna
- Ultrasonic Weather Station- *Furuno 200WX*
- GPS – *Furuno "GP39"*
- AIS – *Furuno "FA 170"*
- Doppler Speed Log – *Furuno DS85*
- EPIRB – *ACR "GlobalFix V4"*
- Autopilot – *SIMRAD "AP70 Mk2 system"*
- Ultrasonic speed through water- *UST 850*
- Follow up autopilot jog lever (Aft station) – *SIMRAD FU80*
- Satellite Compass – *Furuno "SC70"*
- 5" Magnetic Compass – *Ritchie "FD-500"*
- Loudhailer/sound signaling/internal communication – *Furuno "LH5000."*
- Four (4) Rudder Angle Indicators – *Dometic "Optimus"*
- Maritime *Starlink* assembly
 - 1 month of service for testing.
- Multi-camera display at main helm – 8-Channel 4K NVR and 8 Outdoor 4K (8MP) IP Fixed 30FPS Real-Time Format Nocturnal Cameras with Color Night Vision, includes a 3TB Hard Drive, Lorex Technology or equal.
 - 8 Port POE switch
 - *Beetronics 22" standard format Marine Display, 800 Nit LED Backlit, AR Glass, (2) Signal Inputs, VGAX1, HDMI DVIX1, Resolution 1920 x 1080*
 - 2 x one (1) ea. Port and Starboard engine rooms
 - 2 x aft deck
 - 2 x foredeck
 - 2 x upper deck facing aft.

- 1 Fusion Electronics MS-RA670 – Apollo Marine Entertainment System will be fitted with 3 zones (head unit located in pilot house)
 - Exterior
 - 4 ea. *Fusion XS Series 4"* (MS-0S420) 120-watt Exterior will be supplied as follows:
 - 2 x Main Deck aft
 - 1 x Upper Deck aft
 - 1 x Foredeck
 - Pilot House
 - 2 ea. *Fusion XS-Series 4"* 100-watt ceiling speaker (black)
 - Main Cabin, Galley, and Lab spaces
 - 4 ea. *Fusion XS-Series 4"* 100-watt ceiling speaker (white)
- 1 Fusion Electronics Apollo Marine Amplifier – 4 channels
 - Two (2) Victron Energy 24/12-70 DC-DC converters, 70A (one for the header and one for the amp)

A Compass shall be fitted at the main helm station. Deviation cards will be posted in pilot house.

The vessel must be fitted with a wired intercom system that allows the broadcast of general alarm signals and voice commands from the main console. (See Section 5505 for speaker locations). The system must allow the base station to broadcast to all speakers, or any one speaker.

The Purchaser will assist with the placement of the above equipment to suit the Purchaser's requirements and operation. The final arrangement will be agreed upon 30 days prior to the start of electrical work on the vessel.

A Compass shall be fitted at the main helm station. Deviation card will be posted in pilot house.

The Purchaser will assist with the placement of the above equipment to suit the Purchaser's requirements and operation.

5520 Mission Specific Equipment

A computer half height rack for network systems shall be located in the Lab Space. The rack will be mounted as per the GA drawings, with final orientation subject to Purchaser approval.

A scientific washdown service via a pump taking water from Stbd genset seawater intake will provide sea water to:

- Wet lab Sink faucet.
- Bow spigot

Fresh water will be provided to the scientific sea water pump suction to allow flushing of the system.

Wet lab sink will be single basin 316 SS with two faucets, one for fresh water and one for raw water. Drain will have valves to select dumping into the grey water tank or directly overboard.

Two under counter refrigerator (Frigidaire FFPE4533UM 4.5 cu. ft. or equal) will be supplied for the wet lab area.

Wire chases shall be routed from the dry lab directly to the following locations, Pilot House, Mast above Pilot House, Wet Lab, Transducer Pole Mount.

Cable trays and pipes for scientific instrumentation shall be placed in easily accessible locations and not be covered or boxed in.

A plastic conduit will be run from Lab overhead to Radar Arch temporary penetration.

Penetrations for temporary gear:

Lab Aft Bulkheads: 1 x Port 4" standard aluminum pipe, extending ~2" outboard, capped with a hinged aluminum pipe cap on the outboard end. They shall be located as directed by the Purchaser.

Lab Side Bulkheads: 1 x Port/Stbd 2" standard aluminum pipe, extending ~2" outboard, capped with a hinged aluminum pipe cap on the outboard end. They shall be located as directed by the Purchaser.

Pilothouse Top: 1 x 2" standard aluminum pipe, goosenecked, extending ~16" above the housetop, capped with a reusable watertight wire penetration. Located adjacent to the starboard base of the radar arch and shall be accessible through removable ceiling panels.

- Over the side pole foundation structure provided. Port side wire way to Lab provided.

The vessel is to be fitted with a universal sonar mount. Mounting location on the starboard side for the future installation and deployment of multibeam transducers, sonars, or hydrophones that can be lowered below the keel depth for profiling and animal tracking (see section 5339).

The vessel shall be equipped with multiple systems providing internet access while underway and in port. The vessel internet system bandwidth shall support office activities (email, file transfer, web browsing, video conferencing), streaming video and HD or 4K video bursts. Internet access should be available in the Pilothouse, Dry lab, Wet lab, Galley, and Berths. A two tiered system shall be provided in this order of priorities:

- A Marine 5G/4G Cellular Data System
- A Fixed Satellite System

The system shall use land based WIFI Access Points when available. It will automatically switch from marina Wi-Fi to cellular data once the WIFI signal is lost. The Marine System will be the primary internet access solution for operations occurring within 10 nm from shore. The system shall operate using land-based commercial cellular phone infrastructure and support multiple (up to 14) users using the internet.

The Fixed Satellite System (FSS) shall provide high bandwidth internet access throughout the vessels operating range and will be the primary internet access solution when operating >10 nm offshore. The FSS will utilize a Starlink High power flat panel or equivalent antenna mounted on the mast or pilothouse roof to ensure good connectivity and bandwidth. System bandwidth should support download and upload speeds of at least 50mbps and 5mbps respectively. The system should utilize a data plan with unmetered/unlimited data usage (e.g., Starlink or equivalent).

(The builder shall provide and install this equipment. The Purchaser is financially responsible for providing the data plan and associated account needed to operate this equipment.)

Additionally, Cat 6 cables and jacks shall be routed from the rack location to the Dry Lab (2 above countertop jacks), Wet Lab (2 above countertop jacks), Wheelhouse (2), Galley/Mess (1 near the dining table) and a single drop to a central location in the main deckhouse for the installation of a wireless router. Ethernet cables should be run separately from power cables to avoid signal interference.

5530 Wire and Cable

Electrical cable used shall meet USCG requirements. Conductor sizing will be calculated to prevent more than 10% voltage drop>

5535 Wireway and Penetrations

Wireways will be installed throughout vessel for electric cables. Penetrations thru watertight boundaries will be with a rated system such as Roxtec or equal.

5550 COATINGS

All paints shall be applied in accordance with the manufacturer's recommendations and specifications. All surfaces not intended to be painted shall be carefully masked and protected during painting. After painting, any extraneous paint and masking shall be removed.

5555 Sandblast / Clean-up

The Contractor shall remove or seal off machinery, equipment, and interior openings whenever sandblasting is done nearby to prevent possible damage to any machinery or equipment from

any abrasive grit, filings, or dust. All surfaces below the water line to be painted shall be abrasive blasted to Sa 2½ ISO 8501-1 and shall be immediately coated with the first primer coat.

5565 Top Side Paint

The topside of the boat shall not be painted. The City's crest shall be printed on marine grade, high quality vinyl and applied on either side of the vessel. Final artwork and placement shall be decided by the city at least 30 days prior to vessel rollover.

5570 Bottom Paint

The bottom shall be painted with anti-fouling paint to approximately 4" above the loaded waterline.

General paint application schedule:

- 2 x coats Interprotect 2001E/2001E epoxy primer
- 2 coats Trilux 33 anti-foul paint

The bottom paint color shall be blue for the first coat and black for the topcoat.

The propellers, rudders, shafts, and struts shall be coated with Propspeed.

5572 Bilge Paint

Bilges plate will be painted from the keel to the first stiffeners inboard and outboard of the keel. Paint will go 2" up keel and stiffeners. The area directly under the shaft seal will also be painted.

Paint application schedule:

- Prepare by sanding with 36 grit.
- 2 x 6 mils dry coats international 300 epoxy primer

5575 Deck Paint

Decks and walkways shall be coated with an *Alexseal* deck coating system. *Alexseal* course

nonskid will be broadcast into the deck coating system.

- 1 coat of Alexseal 135 Core Spec Primer (2.5-3 wft 1 dft)
- 1-2 coats of Alexseal 161 Protective Primer (8-12 wft 3-5 dft)
- 1 coat *Alexseal 501 Urethane Topcoat* (2-3 wft 3-5 dft)
- Broadcast 30/60 Grit Garnet Nonskid
- 1-2 coats *Alexseal 501 Urethane Topcoat* (2-3 wft 3-5 dft)

Deck paint shall have a border around all topcoat paint. The deck paint color shall be light grey.

The stairs will be fitted with *Corvex* stair tread, dark grey non-slip fiberglass with safety yellow nose edge.

The 12" along the transom between the A-frames and the 12" along the bow between the A-frames will have aggressive peel and stick tiles. "Danger Zones" will be identified with 4" safety yellow tape. The arrangement of the "danger zones" will be approved by the purchaser.

The edges of the peel-and-stick tiles/tape will be sealed.

5600 Interior

The interior layout shall be as per the general arrangement drawings.

All corners of furnishings shall be well rounded and there shall be no sharp protrusions in the cabin area.

Work surfaces shall be provided with *Tec-Lock* tie-down rails for securing equipment. Two *Tec-Lock* tie-down rails will be fit on top of each of the counters in the lab. The purchaser shall approve final locations.

Counter tops in the Labs shall be $\frac{3}{4}$ " Plywood to accommodate mounting of monitor arm stands.

5605 Interior Insulation

50mm fiberglass of density of 24 kg/m³ with aluminum face thermal insulation shall be fit at all HVAC boundaries of the accommodation areas of the cabin. This will also include the overheads in those spaces. For below deck accommodation spaces, the HVAC boundary shall be determined as the bunk's spaces and the ayres paneling around the bunk entrances. The insulation shall be installed on the exterior of these bunk accommodations prior to final fitment, to insulate the accommodation area and minimize unnecessary vessel mass.

All seams shall be taped to form moisture barriers. All insulation shall be secured in place by pins and caps. Foil-bubble foil insulation shall be fit around exposed frames in the accommodation areas of the HVAC boundary area.

5610 Interior Hardware

All hardware shall be synthetic or SS and of good marine quality unless otherwise specified in the specification.

5615 Panelling and Trim

In general, 10 mm and 20 mm Ayres Aluminum honeycomb panels covered with laminate will be used on the cabin walls. Aluminum skins of 0.5 mm front 0.3 mm back per aluminum sheet, with 0.71 mm vertical grade laminate applied to both sides of the panel. Tables shall have 1 mm aluminum skin on the top and 0.5 mm aluminum skin on the bottom.

10 mm *Ayrlite 2052* laminate covered aluminum cored panel shall be used to finish the cabin interior.

20 mm *Ayrlite 2052* laminate covered aluminum cored panel shall be used for interior partitions.

Trim shall be aluminium extrusions from Ayres.

All joints shall be bonded using *Sika 292i* white adhesive compound.

5630 Cabinets

The cabinets will be constructed out of 10 mm and 20 mm *Aluminum honeycomb* panels covered with laminate. Frames will be made of aluminum. Aluminum extrusions will be used for Trim. The assembly of the cabinets will be glued and fastened with *Sika 292i* structural adhesive compound.

Cabinet locations will be as shown on the General Arrangement Drawings.

There shall be two open-faced cabinets in each bunkroom with a combined minimum capacity of 3 cu. ft. These cabinets will be fabricated and installed such that they can be removed with a series of thumb screws and double as access ports. Additionally, each bunk shall have its own open faced cubby that can also be removed for behind panel access to electrical chases and plumbing.

5635 Drawers

The drawers will be constructed out of 10 mm *Aluminum honeycomb* panels covered with laminate. Aluminum extrusions will be used for Trim. The assembly of the drawers will be glued and fastened with *Sika 292i* structural adhesive compound. The drawers will be installed with 150 lbs. SS drawer slides. The drawers will be retained in the closed position by push button latches.

The lab space islands shall have two, *Vidmar* (200 Series) lockable, heavy duty storage cabinets installed underneath an *Ayres* laminate countertop. An additional *Vidmar* (200 series) storage cabinet shall be installed under the counter in the wet lab area as per the G.A. drawing.

5640 Bunks

The Bunk bases will be made from 20 mm *Aluminum honeycomb* panels covered with laminate.

The assembly of the bunk will be glued and fastened with *Sika 292i* structural adhesive compound.

Bunks will be built to use standard rectangular mattresses as shown in the GA.

All Berths shall have additional storage compartments as depicted on the GA drawing.

Privacy curtains will be installed at the landing of the ladders leading to the focsle bunkrooms. The curtains shall be equipped with a snapped holdback to retain it in the open position. Fabric and color shall be as selected, from supplier's standard charts, by the Purchaser.

The Builder shall install fabric privacy curtains on each of the upper and lower bunks. Fabric and color shall be as selected, from supplier's standard charts, by the Purchaser.

Care shall be taken that there is adequate room between the mattress and the ceiling to accommodate an averaged sized person. See General Arrangement Plans.

5645 Dinette

The dinette will be constructed out of aluminum honeycomb panels. Aluminum extrusions will be used for the trim. The assembly of the dinette will be glued and fastened with *Sika 292i* structural adhesive compound.

Storage will be provided as per the general arrangement drawings.

Removable covers will be provided for cushions and shall be 10-14 ounce material with plastic zippers.

5650 Laminate

The color and texture of the laminate shall be selected by the Purchaser. Builder to supply color-board of recommended materials at least 30 days prior to selection deadline.

5655 Flooring

All interior cabin flooring shall be *Roppe* #991 Charcoal, raised finish, 50 cm tiles. Final color and texture to be decided by Purchaser 30 days prior to selection deadline. Stairs shall be fit with stair tread noses of contrasting color.

5660 Headliner

The ceiling system will be 600x600 *Dampa Tiles*, 0.7 mm, beveled edge aluminum folded plate sections fitted to an overhead structure. The individual aluminum tiles will be removable.

The headliner in the lower bunkrooms shall be 10mm Ayres paneling in order to minimize weight and maximize headroom clearance. The final arrangement shall be approved by the purchaser.

The system will incorporate all edge trimmings, end closures and finishing. Interior lighting will be flush mounted into the ceiling panels.

5663 Windows and Glass

All windows shall be single pane, clamp-in style windows. All Pilothouse windows shall be clear glass. All other glass on vessel shall be tinted except for the drop down window in the head, which shall be opaque.

All the windows in Wheelhouse will be fitted with Mylar shades.

The exterior door for the amidships head shall include an opaque window with a privacy curtain.

The thickness of the glass shall be as required by USCG rules.

5666 Exterior Doors

The cabin doors shall be weather tight, *Diamond Seaglaze* or equal, aluminum doors and

frames. The doors shall have stainless locks and be keyed alike. Hinged doors will have 2 dogs and round corners. The perimeter of the doors shall be equipped with a replaceable neoprene gasket.

The hinged interior entrance door into the head shall be made from 20 mm *Aluminum* honeycomb panel covered with laminate and *Ayres* aluminum Extrusions. The hinged exterior door shall have a half-drop sliding window. The glass shall be opaque for privacy. This door will have a 3" coaming.

The tops of doors shall be at least 6'-6" above the finished deck surface unless otherwise specified.

All door hardware shall be good quality aluminum or stainless steel.

5669 Seating

Two *Liebrock* Tradewinds Series 2 Helm Chair with a pedestal mount with slider and footrest will be installed in the pilot house.

Four *Norsap* 800 (or equivalent) shock absorbing chairs on swivel mounts shall be installed in the main cabin lab area. One will be mounted in front of the dedicated computer/workstation and the other three shall be installed on mounts in the dry lab area. The mounts shall be such that the chairs can be removed, and inserts placed in the holes for a flush deck.

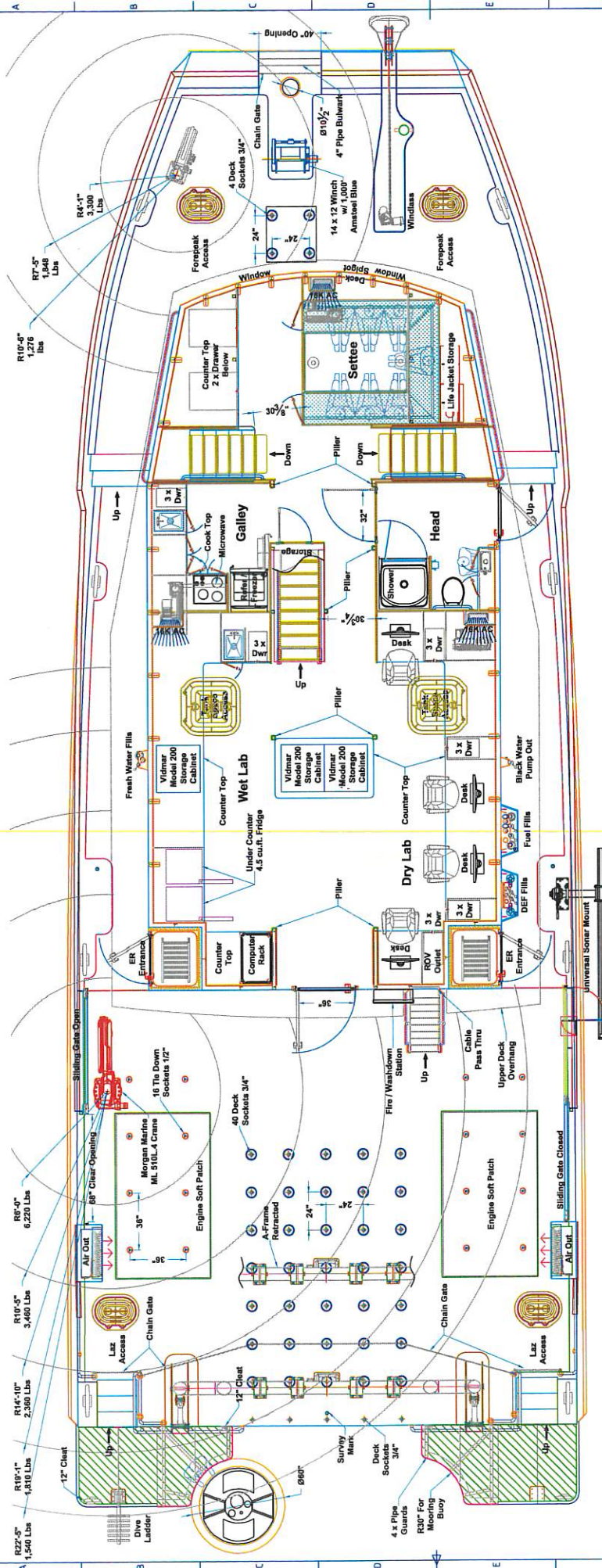
The pilothouse will have a built-in bench seat with a tabletop located on the starboard side. Built in bench seating shall also be installed in the main cabin settee.

5670 Galley

The galley will be made out of 10 mm and 20 mm *Aluminum honeycomb* panels covered with laminate. Frames will be made out of aluminum. Aluminum extrusions will be used for Trim.

The assembly of the cabinets will be glued and fastened with *Sika 292i* structural adhesive

Confidential Information



ALL AMERICAN MARINE

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PO Box 189, Beachlands
Auckland, New Zealand
Tel: 09 276 1000
design@teknicraft.com
www.teknicraft.com

PROJECT: 73' Ocean Sampling Catamaran - City Of San Diego

TITLE: General Arrangement-Main Deck

DRAWING NO: T22WCS0-100-012

REV: A

SCALE: 1:60

PLOT SIZE: 11x17

CONFIDENTIAL

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Rev	Date	Description	Init.	Checked
A	13 May 24	Issue to San Diego for Review	GQ	-
-	02 May 24	Issue to Solicitation Number 1009032-24-M	GQ	-

This technical drawing illustrates the upper deck layout of the Ocean Sampling Catamaran. The deck is rectangular with a central area containing a Pilot House, Chart Table, and various equipment. The layout includes numerous ventilation fans, air inlets, and structural supports. A scale bar at the bottom indicates dimensions from 0 to 16 meters. The drawing is labeled with 'A' through 'F' along the top and '1' through '16' along the bottom.

Confidential Information

ALL AMERICAN MARINE

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design@teknicraft.com
www.teknicraft.com

PROJECT: 73' Ocean Sampling Catamaran - City Of San Diego
TITLE: General Arrangement-Upper Deck

DRAWING NO: T22WCSD-100-013
REV: -
SCALE: 1:60
PLOT SIZE: 11x17

CONFIDENTIAL

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Note:
General Arrangement and Provisional Main Particulars
may change upon final specification and engineering.

13 May 24
Date
Issue to San Diego for Review

Rev
Description
Init.
Checked

ALL AMERICAN
MARINE

PROJECT: 73' Ocean Sampling Catamaran - City Of San Diego
TITLE: General Arrangement-Upper Deck

DRAWING No:	REV:	SCALE:	PLOT SIZE:
T22WCSD-100-013	-	1:60	11x17

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Note;
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-	13 May 24	Issue to San Diego for Review	GQ	-
Rev	Date	Description	Init.	Checked



ALL AMERICAN
MARINE



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design@teknicraft.com
www.teknicraft.com

PROJECT: 73' Ocean Sampling Catamaran - City Of San Diego
TITLE: General Arrangement-Below Deck - Hull Lines

DRAWING No:	REV:	SCALE:	PLOT SIZE:
T22WCSD-100-014	-	1:60	11x17

CONFIDENTIAL

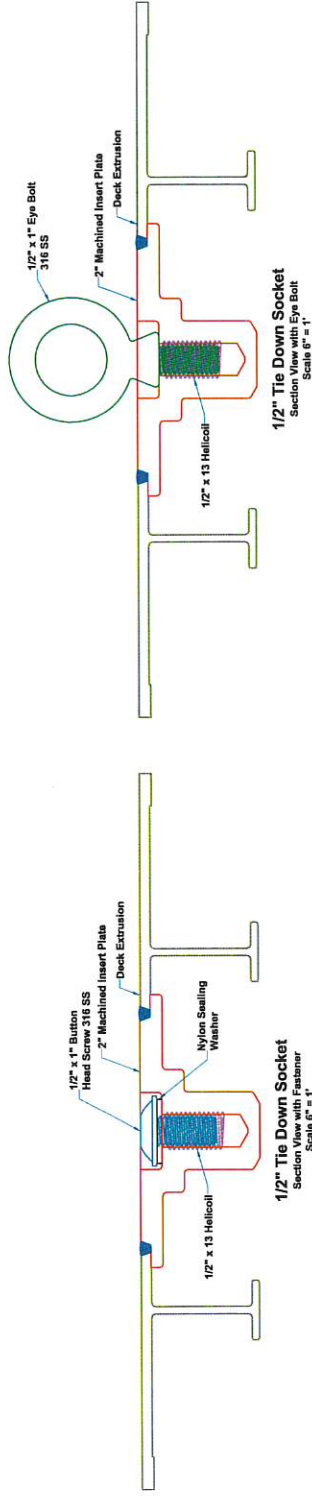
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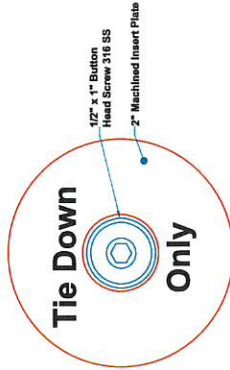
Note; General Arrangement and Provisional Main Particulars may change upon final specification and engineering.

-	13 May 24	Issue to San Diego for Review	GQ	-
Rev	Date	Description	Init.	Checked

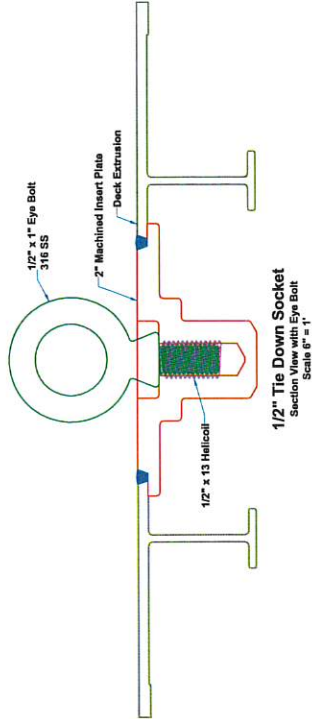
Confidential Information



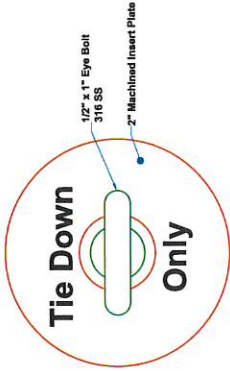
1/2" Tie Down Socket
Section View with Fastener
Scale 6" = 1'



1/2" Tie Down Socket
Plan View with Fastener
Scale 6" = 1'



1/2" Tie Down Socket
Section View with Eye Bolt
Scale 6" = 1'



1/2" Tie Down Socket
Plan View with Eye Bolt
Scale 6" = 1'



Scale 6"=1'

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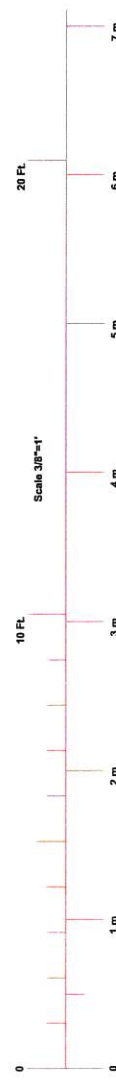
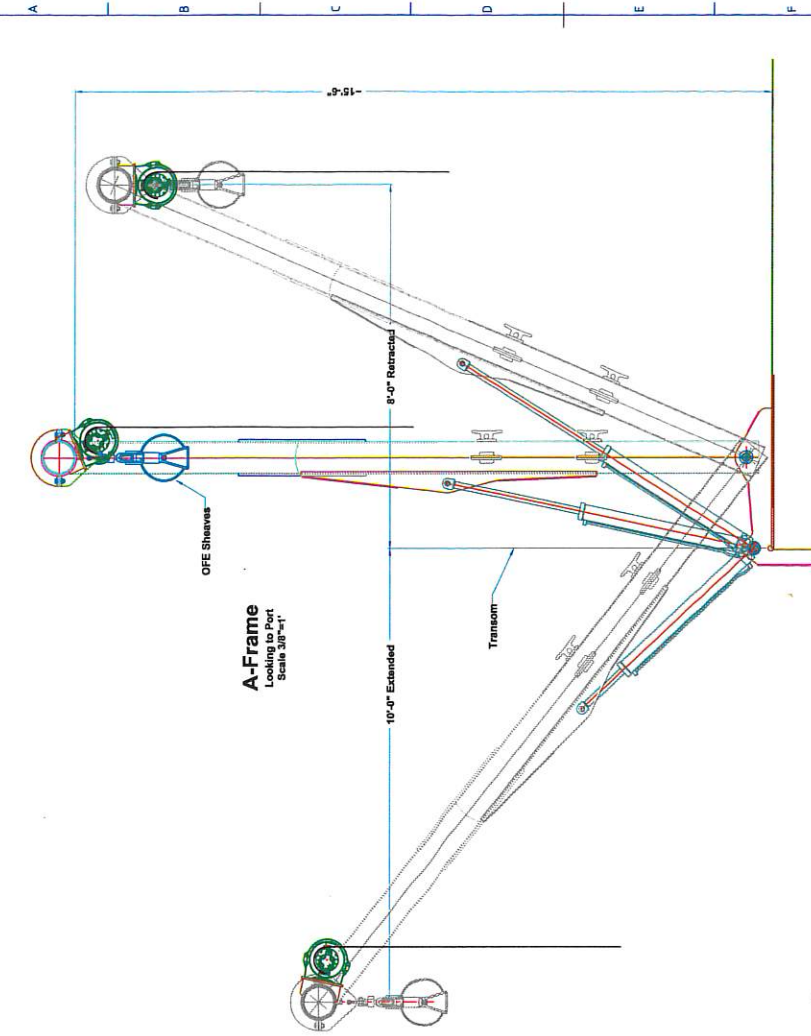
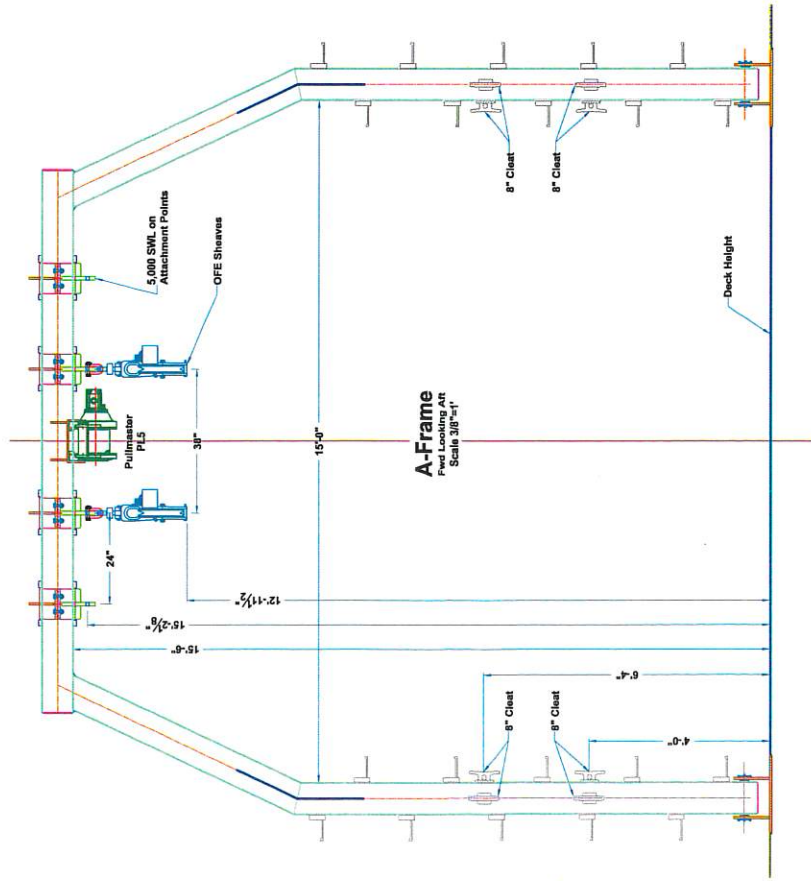
PROJECT: 73' Ocean Sampling Catamaran - City Of San Diego
TITLE: General Arrangement-Deck Tie Downs
DRAWING No: T22WCSD-100-015
REV: -
SCALE: 1/2"=1'
PLOT SIZE: 11x17

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Note;
This Tie Down Socket Arrangement is concept only and may change upon final specification and engineering.

Rev	Date	Description	Int.	Checked
-	13 May 24	Issue to San Diego for Review	GQ	-

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PROJECT: 73' Ocean Sampling Catamaran - City Of San Diego

TITLE: General Arrangement-A-Frame

DRAWING NO: 722WCSD-100-016

REV: -

SCALE: 1:60

PLOT SIZE: 11x17

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Note:
General Arrangement and Provisional Main Particulars
may change upon final specification and engineering.

Rev	Date	Description	Init.	Checked
-	13 May 24	Issue to San Diego for Review	GQ	-

RESOLUTION NUMBER R- 315836

DATE OF FINAL PASSAGE NOV 06 2024

A RESOLUTION OF THE COUNCIL OF THE CITY OF
SAN DIEGO AUTHORIZING THE AWARD OF A CONTRACT
WITH ALL AMERICAN MARINE INC. TO BUILD A
REPLACEMENT OCEAN MONITORING VESSEL AND
RELATED ACTIONS.

RECITALS

The Council of the City of San Diego (Council) adopts this Resolution based on the following:

A. The City of San Diego's (City) Ocean Monitoring Program evaluates the environmental impacts of treated wastewater discharged from Point Loma and South Bay Ocean Outfalls. Covering an expansive area of more than 340 square miles from San Diego to northern Baja California, Mexico, and extending from the coastline to 10 miles offshore, the program collects data on water quality and health of marine organisms. This data is crucial for analyzing the impact of wastewater discharges on marine ecosystems and to determine compliance with the City's National Pollutant Discharge Elimination System Permit requirements for the Point Loma Wastewater Treatment Plant and South Bay Water Reclamation Plant. The City also provides contracted ocean monitoring services to the South Bay International Wastewater Treatment Plant, which is owned and operated by the U.S. Section of the International Boundary and Water Commission.

B. The City's 40-year old monitoring vessel has exceeded its useful life. An independent assessment conducted by marine surveyors Todd and Associates Inc. determined that a new vessel is the most cost-effective option due to reduced maintenance costs, increased fuel efficiencies, and the ability to accommodate larger and more complex ocean monitoring

equipment and comply with the 2025 California Air Resource Board (CARB) requirements for fuel efficiency and air emissions.

C. In September 2023, the City issued a Request for Proposal to solicit boat design and building services. All American Marine (AAM) Inc. was the only company that submitted a cost proposal. City staff selected AAM after determining it was qualified to provide the services.

D. The City now desires to enter into a contract with AAM to provide a new 73' ocean monitoring vessel that meets CARB's new emission requirements for an amount not to exceed \$9,292,678.10 and a maximum duration of five years (Contract).

E. The Office of the City Attorney prepared this Resolution based on the information provided by City staff (including information provided by affected third parties and verified by City staff), with the understanding that this information is complete and accurate.

ACTION ITEMS

Be it resolved by the Council of the City of San Diego:

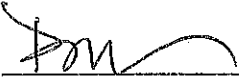
1. The Council approves the Contract.
2. The Mayor or designee is authorized, on the City's behalf, to sign the Contract.

When signed by both parties, the Contract will be placed on file in the Office of the City Clerk as Document No. RR- **315836**

3. The Chief Financial Officer is authorized to expend an amount not to exceed \$9,292,678.10 from the Metro Sewer Utility Fund 700001 for the purpose of funding the Contract, contingent upon the Council appropriating funds for any payments to All American

Marine, Inc. in each applicable fiscal year and the Chief Financial Officer first certifying that the funds necessary for expenditure are, or will be, on deposit with the City Treasurer.

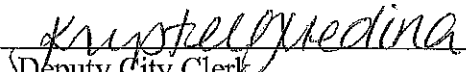
APPROVED: MARA W. ELLIOTT, City Attorney

By 
Bonny Hsu
Deputy City Attorney

BH:cw
October 14, 2024
Or.Dept: Engineering & Capital Projects
CC No.: 3000017170
Doc. No. 3836030

I certify that the Council of the City of San Diego adopted this Resolution at a meeting held on
OCT 29 2024

DIANA J.S. FUENTES
City Clerk

By 
Deputy City Clerk

Approved: 11/4/24
(date)


TODD GLORIA, Mayor

Vetoed: _____
(date)

TODD GLORIA, Mayor

The City of San Diego
COMPTROLLER'S CERTIFICATE

CERTIFICATE OF UNALLOTTED BALANCE

ORIGINATING

CC 3000017170
DEPT. NO.: 2000

I HEREBY CERTIFY that the money required for the allotment of funds for the purpose set forth in the foregoing resolution is available in the Treasury, or is anticipated to come into the Treasury, and is otherwise unallotted.

Amount: _____

Purpose: _____

Date: _____ By: _____

COMPTROLLER'S DEPARTMENT

ACCOUNTING DATA									
Doc. Item	Funded Program	Fund	Grant Number	G/L Account	Functional Area	Business Area	Fund Center or Cost Center	Internal Order or WBS Element	Original Amount
TOTAL AMOUNT									

FUND OVERRIDE ☐

CERTIFICATION OF UNENCUMBERED BALANCE

I HEREBY CERTIFY that the indebtedness and obligation to be incurred by the contract or agreement authorized by the hereto attached resolution, can be incurred without the violation of any of the provisions of the Charter of the City of San Diego; and I do hereby further certify, in conformity with the requirements of the Charter of the City of San Diego, that sufficient moneys have been appropriated for the purpose of said contract, that sufficient moneys to meet the obligations of said contract are actually in the Treasury, or are anticipated to come into the Treasury, to the credit of the appropriation from which the same are to be drawn, and that the said money now actually in the Treasury, together with the moneys anticipated to come into the Treasury, to the credit of said appropriation, are otherwise unencumbered.

Not to Exceed: \$3,252,437.34

Vendor: All American Marine, Inc.

Purpose: To authorize the expenditure of funds, not to exceed \$3,252,437.34, for the Contract with All American Marine Inc. to Build a Replacement Ocean Monitoring Vessel.

Date: October 1, 2024 By: Elizabeth Warnock *Elizabeth Warnock*
COMPTROLLER'S DEPARTMENT

ACCOUNTING DATA									
Doc. Item	Funded Program	Fund	Grant Number	G/L Account	Functional Area	Business Area	Fund Center	IO or WBS Element	Original Amount
001	Non-Program	700001	N/A	560040	OTHR-00000000-SU	2000	2000161311	N/A	\$3,252,437.34
TOTAL AMOUNT									\$3,252,437.34

FUND OVERRIDE ☐

CC 3000017170

Passed by the Council of The City of San Diego on OCT 29 2024, by the following vote:

Councilmembers	Yeas	Nays	Not Present	Recused
Joe LaCava	☒	☐	☐	☐
Jennifer Campbell	☐	☐	☒	☐
Stephen Whitburn	☒	☐	☐	☐
Henry Foster, III	☒	☐	☐	☐
Marni von Wilpert	☒	☐	☐	☐
Kent Lee	☒	☐	☐	☐
Raul A. Campillo	☒	☐	☐	☐
Vivian Moreno	☒	☐	☐	☐
Sean Elo-Rivera	☒	☐	☐	☐

Date of final passage NOV 06 2024

(Please note: When a resolution is approved by the Mayor, the date of final passage is the date the approved resolution was returned to the Office of the City Clerk.)

AUTHENTICATED BY:

TODD GLORIA
Mayor of The City of San Diego, California.

(Seal)

DIANA J.S. FUENTES
City Clerk of The City of San Diego, California.

By Kristine Medina, Deputy

Office of the City Clerk, San Diego, California

Resolution Number R- 315836

Passed by the Council of The City of San Diego on October 29, 2024, by the following vote:

YEAS: LACAVA, WHITBURN, FOSTER III, VON WILPERT, LEE, CAMPILLO,
MORENO & ELO-RIVERA.

NAYS: NONE.

NOT PRESENT: CAMPBELL.

RECUSED: NONE.

VACANT: NONE.

AUTHENTICATED BY:

TODD GLORIA

Mayor of The City of San Diego, California

DIANA J.S. FUENTES

City Clerk of The City of San Diego, California

(Seal)

By: Linda Irvin, Deputy

I HEREBY CERTIFY that the above and foregoing is a full, true, and correct copy of
RESOLUTION NO. R-315836 approved on October 29, 2024. The date of final
passage is November 6, 2024.

DIANA J.S. FUENTES

City Clerk of the City of San Diego, California

(Seal)

By: Linda Irvin, Deputy