

PROCUREMENT DEPARTMENT
Rm 120 Municipal Services Building
Philadelphia, PA 19102-1685
FAX: (215) 686-4716

CITY OF PHILADELPHIA

Hugh Ortman
Procurement Commissioner

November 20, 2012

BID NUMBER: S3XT7000
TITLE: Fire Rescue Boat 40' OAL
DEPARTMENT: OFM
DATE TO OPEN: December 17, 2012 at 10:30 a.m.

Addendum #1

TO ALL BIDDERS:

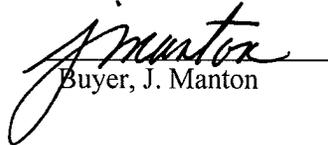
You are hereby notified of the following changes to the above mentioned bid:

1. Section 2.2 Specific Requirements OFM Spec Code 89005A.13 attached.
2. Section 3.2.4 Insurance is revised to include the following language.

Boat Builders Risk Insurance

The Bidder shall maintain, for the period during construction through the final delivery of the boat to the Purchaser, an "All Risk" insurance policy in an amount equal to the full replacement cost of the boat. This coverage shall include, but shall not be limited to, collision liability, protection & indemnity, in transit, latent defect and faulty design of the boat and/or any part thereof; including the cost or expenses of repairing, modifying, replacing and renewing such part or parts and costs or expenses of betterment or alteration in design, failure to launch and sea trials coverage.

Please sign, date and return this addendum with your bid to the Procurement Department, 1401 J.F.K Boulevard, Bid Room 170A, Philadelphia, PA 19102-1685 as it now becomes a part of the proposal.


Buyer, J. Manton

AUTHORIZED SIGNATURE

FIRM NAME (PRINT)

DATE

40' OAL Fire Rescue Boat SPEC: 89005a.13

TABLE OF CONTENTS

Intent	1-2
OR Approved Equal	2
Single Line Responsibility.....	2
1.0 General Information	2-4
2.0 Applicable Specifications	4-6
2.1 Vessel Dimensions	4
2.2 Paint	4
2.3 Letters and Striping	5-6
3.0 Construction	6-19
3.1 Hull	6
3.1.1 Metal Thickness	6
3.1.2 Ice Deflector	6
3.1.3 Stiffeners	6
3.1.4 Corrosion	6
3.1.5 Rub Rail	6
3.1.6 Push Bumper	7
3.1.7 Hull, Deck and Pilot House	7
3.1.8 Dive Doors	7
3.1.9 Davit	7
3.1.10 Bilge System	7
3.1.11 Flotation	7
3.1.12 Protection Devices	8
3.1.13 Boat Identification Plate	8
3.1.14 Hatches / Access Covers	8
3.1.15 Engine Room Walk Ways	8
3.2 Deck	8-9
3.3 Pilot House	9-11
3.3.1 Structure	9
3.3.2 Seating	9
3.3.3 Control Consoles	9
3.3.4 Heater, Defroster, and Air Conditioning	9-10
3.3.5 Instruments, Gauges and Controls	10
3.3.6 Interior Lighting	10
3.3.7 Lower Cabin	10
3.3.8 Pilot House	10
3.3.9 Visors	10-11
3.4 Engines	11-13
3.4.1 Main Propulsion	11
3.4.1.1 Full Flow Oil Filters	11
3.4.1.2 Engine Governor	11
3.4.1.3 Engine Protection / Alarms	11

	3.4.1.4 Engine Block Heater	11
	3.4.1.5 Engine Starter	11
	3.4.1.6 Magnetic Fill Drain Plugs	12
	3.4.1.7 Engine Start Stop Control	12
	3.4.1.8 Exhaust	12
	3.4.1.9 Exhaust Heat Shield	12
	3.4.1.10 Diagnostics	12
	3.4.2 Fire Pump Engine	12-13
	3.4.2.1 Full Flow Oil Filters	12
	3.4.2.2 Engine Protection / Alarms	12-13
	3.4.2.3 Engine Block Heater	13
	3.4.2.4 Diagnostics	13
3.5	Propulsion	13
3.6	Fuel System	13
3.7	Steering	13
3.8	Cooling System	14
3.9	Electrical System	14-16
	3.9.1 Vessel Wiring	14
	3.9.2 Engine Alternators	14
	3.9.3 Batteries	14
	3.9.3.1 Converter / Charger	15
	3.9.4 Shore Power Connection	15
	3.9.5 120/240 Volt A.C. Electrical & Generator	15-16
	3.9.5.1 Generator	15
	3.9.5.2 Generator Monitoring Display	15
	3.9.5.3 Load Center	15
	3.9.5.4 Electrical Receptacles	16
3.10	Fire Fighting System	16
3.11	Electronics & Navigation	17
3.12	Non-Warning Light	17
3.13	Warning Lights and Devices	17-18
3.14	Engine Room	18
3.15	Loose Equipment	18
3.16	Warranties	19
4.0	Fire Suppression System	19
5.0	Trailer – Option	20
6.0	Pre-Production and Inspections	20
	6.1 Pre-Construction Meeting	20
	6.2 Inspection Trip, 1 st Milestone Inspection	20
	6.3 Mid-Production, 2 nd Milestone Inspection	20
	6.4 Final Inspection and River Trials	20
7.0	Milestone Payments	21
8.0	Bidder’s Questionnaire	22-24
9.0	Service Ability Form	25
10.0	Engineer Drawings	26
11.0	Parts and Service	26-27

12.0	Quality and Workmanship	27
13.0	Delivery Responsibility	27-28
	13.1 Delivery Information	28
14.0	Certifications and Manuals	28-30
	14.1 Necessary Documents	28
	14.2 Operation, Maintenance & Repair Data	28-29
	14.2.1 Manuals	29
	14.3 Preventive Maintenance Instructions	30
	14.4 Recommended Spare Parts	30
	14.5 Service	30
15.0	Instruction and Training	30-31
16.0	Engineering Responsibility & Chronic Complaint/Failures	31-32
17.0	Communication Equipment Specifications	33
18.0	General Notes	34-38
	18.1 Construction	34
	18.2 Materials	34
	18.2.1 Stainless Steel Ice Deflector	34
	18.2.2 Aluminum	34
	18.2.3 Wood	34
	18.3 Workmanship	35-36
	18.4 Welding	35
	18.5 Weld Test and Inspection.....	36
	18.6 Welder Qualifications and Standards	36
	18.7 Engine Raw Water Intake & Screen	36
	18.8 Fire-Fighting Raw Water Intake & Screen	36
	18.9 Swim Grid	37
	18.10 Hull Appendages	37
	18.10.1 Transducer Housing	37
	18.11 Pilot House	37
	18.12 Independent Tanks	37
	18.13 Seatings and Foundations	37-38
	18.13.1 General	37
	18.13.2 Main Machinery Foundations	37
	18.13.3 Auxiliary Machine Foundations	37-38
19.0	Tests and Trials	38-40
	19.1 Delivery	38
	19.2 Consumables	38
	19.3 Travel Expenses and Delivery	39
	19.4 Tests and Trials	39
	19.5 In Process and Equipment Testing	40
	19.6 Lightship Survey	40
	19.7 Commissioning Tests and Sea Trials Program	40
20.0	Spares	40-41
21.0	Guarantee	41-42
22.0	Third Party Inspection	42

23.0	Post Delivery Inspection	42
ANNEX A – TESTS AND TRIALS	43-54	
A1.0	General	43
A2.0	Shop Tests	43-44
A3.0	Construction Testing	44
A4.0	Shipbuilder’s Trials (Dock Trials)	44-46
A4.1	General	44
A4.2	Machinery and Equipment Trials	45-46
A4.3	Lightship Survey	46
A5.0	Acceptance Trials (Sea Trials)	46-54
A5.1	General	46
A5.2	Compass Adjustment	46
A5.3	Radar Adjustment	47
A5.4	Radio(s)	47
A5.5	Sound Level Survey	47
A5.6	Speed Trials, Graphs	47-50
A5.7	Endurance Trial	51
A5.8	Steering Trials	52
A5.9	Manoeuvring Trials	53
A5.10	Crash Stop	53
A5.11	Fire Fighting Equipment	53
A5.12	Conclusion of Trials	53
A5.13	Miscellaneous Items Required for Sea Trials	53-54

This specification is **not meant to be restrictive. It is recognized that manufacturers may have used different methods to insure integrity if their system. Bidders may substitute, for evaluation, alternate systems and the testing programs or protocols they have conducted to demonstrate compliance of their product. ("Or Approved Equal" Clause)**

"OR APPROVED EQUAL"

The mention in the specifications of vessel, equipment or material by brand name or by such specified description of the same as is hereby made, is intended to convey to the bidder's understanding, the degree of excellence required. Any article, equipment, or material which will conform to the standards and excellence so established, and is of equal merit, strength, durability and appearance to perform the desired function, and are in service with other major municipalities in the United States. The Bidder is deemed eligible for offer as a substitute. The qualifications of the offering will be judged as to their conformance with these specifications. Any equipment offered other than herein specified will be subject to a competitive demonstration and evaluation by the using department. This demonstration is to be provided on request within ten (10) working days after the receipt of bids. The result of that demonstration and evaluation will be of prime importance in the recommendation to the governing body for the final contract award.

Single-Line Responsibility

Since it is the Purchaser's desire to eliminate divided responsibility on the part of the manufacturers, the fire rescue boat that is bid must be from manufacturers who build their own vessels. The vessel that is bid must have its hull, pilot house and dive doors built by the bidding manufacturer of record. It is expected that the bid unit will be the bidders top of the line. At least five (5) similar fire / rescue vessels must have been sold and delivered of the type described herein. The hull, pilot house and dive doors **MUST** be manufactured in the United States of America.

1.0 General Information

Information Required with Bid

Each Bidder will provide with his bid:

- a. These General Instructions, Requirements, and Specifications sheets as a part of the Bidder's bid proposal. All questions and fill-in blanks **MUST** be filled out completely. **FAILURE TO DO SO WILL CAUSE IMMEDIATE REJECTION OF THE PROPOSAL AT TIME OF OPENING.**

These specifications will indicate size, type, model, and make of all parts, components, and equipment.

- b. A list of exceptions to the Purchaser's specifications, under the following rules:

The following fire / rescue boat specifications will be strictly adhered to. Exceptions will only be allowed if they are equal or superior to that specified, in the sole opinion of the Purchaser, and provided they are listed and fully explained on a separate page entitled: "EXCEPTIONS TO SPECIFICATIONS." The Bidder's exception list will refer to the Purchaser's specifications by page and paragraph to prevent misinterpretation.

Any deviation from the following specification should be considered as an "exception" and listed as such.

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All exceptions not taken will be assumed by the Purchaser to be included in the Bidder's proposal, and the Bidder will conform to the Purchaser's specifications, regardless of cost to the Bidder.

PROPOSALS TAKING "TOTAL EXCEPTION" TO THE PURCHASER'S SPECIFICATIONS WILL NOT BE ACCEPTED.

- c. The number of calendar days required to deliver an apparatus from the time of contract acceptance.
- d. State the time frame for which the Bidder's price will remain valid.

IMPORTANT NOTE:

Any Bidder who does not understand any of the specifications and/or requirements, or who wishes to present a question on the same, will do so in writing to the Purchaser. Verbal answers will not be binding.

Performance Tests and Requirements

The vessel must meet the Dock and River Trials spelled out in detail in section labeled ANNEX A

Failure to Meet Tests

In the event the vessel fails to meet the test requirements of these specifications on the first trials, second trials may be made at the option of the Bidder within 30 days of the date of the first trials. Such trials will be final and conclusive, and failure to comply with these requirements will be cause for rejection. Failure to comply with changes as the Purchaser may consider necessary to conform to any clause of the specifications within 30 days after notice is given to the Bidder of such changes will also be cause for the rejection of the vessel.

Permission to keep or store the vessel in any building owned or occupied by the Purchaser or its use by the Fire Department during the above specified period with the permission of the Bidder will not constitute acceptance.

Technical Evaluation

Technical evaluation will be based upon the ability of the Bidder to meet or exceed the minimum requirements set forth in the specifications during the expected life of the apparatus bid. Estimates concerning the ability of the fire / rescue boat to perform accordingly will be made by the Purchaser.

- 1. Quality of workmanship, materials, and components that are used in construction of fire / rescue boat.
- 2. Functional design of fire / rescue boat.
- 3. Warranties.
- 4. Any other factors the Purchaser deems to be relevant.

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FIRM (VENDORS) NAME _____ BID NUMBER _____

Addenda and Interpretations

No interpretation of the meaning of the specifications or other contract documents will be made to any Bidder verbally. Every request for such interpretation will be in writing and addressed to the Purchaser, and must be received at least ten (10) days prior to the date fixed for the opening of the bids to be given consideration. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be mailed by certified mail to all prospective Bidders not later than five (5) days prior to the date fixed for the opening of bids. Failure of any Bidder to receive any such addendum or interpretation will not relieve any Bidder from any obligation under his bid as submitted. All addenda so issued will become a part of the contract documents.

User's List

The Bidder will provide the Name, Address, and Telephone Number of at least five (5) similar fire / rescue boats that have been manufactured and delivered to Fire Departments in the United States. The Bidder will also indicate the full name of a responsible person to contact at each Fire Department.

2.0 Applicable Specifications

The fire/rescue boat shall be manufactured in accordance with the applicable United States Coast Guard (USCG), National Fire Protection Agency (NFPA 1925), National Marine Manufacturers Association (NMMA) and the American Boat & Yacht Council (ABYC) guidelines and regulations on Marine Fire Fighting Vessels (NFPA 1925) for Type IV Fireboat standards, as well as the parameters listed below.

The Rescue fireboat shall be designed to conform to the Intent of the City of Philadelphia Specification herein. Harbor Guard Firehawk 37 as reference

2.1 VESSEL DIMENSIONS

Hull Length:	37 Feet 6 Inches
Length Overall:	40 Feet 3 Inches
Beam:	10 Feet 3 Inches
Overall Height On Trailer:	13 Feet 6 Inches
Min Draft, (drive up)	27 Inches
Max Draft, (drive down)	35 Inches
Dead Rise:	18 Degrees
Dry Weight	17,500 lbs approx.
Clear air space, measured from Water line to top most point on pilot House roof	13 feet MAX

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FIRM (VENDORS) NAME _____ BID NUMBER _____

2.2 PAINT

The vessel shall be painted a total of three colors. The waterline paint break line shall be approximately 3” above the actual waterline. The keel to three inches above water line shall be painted with a final coat of Ameron # 235 Black or approved equal. Anti-fouling paint is not required, the boat will remain in fresh water. Draft measurements shall be welded in numerals and painted white, Benjamin Moore Iron Clad Safety white (07108) or approved equal. From the waterline to the cap rail, the hull shall be painted one finish coat Dupont shade #12-93-11 (Chinese Red.) The break line / cap rail shall be described as the Rub rail, black in color.

The deck and pilot house structure shall be a gloss white, Manufactures standard

One (1) pint of each color paint for touch-up purposes will be supplied when the vessel is delivered to the end user.

The vessel will be finish and prepared for final paint in accordance with Paint manufactures specification. Upon completion of final preparation, the vessel exterior and pilot house will be painted in accordance with paint manufacturer’s instructions. The manufacturer shall apply primer coats as needed. Finish paint will be applied in multiple coats to ensure proper paint coverage with a high gloss finish.

The vessel exterior will be finish painted by the manufacturer to match the customer requested color

2.3 LETTERING AND STRIPING

SCOTCHLITE LETTERING

Although the vessel name and numerical identification has not yet been determined the awarded vendor is informed that the following requirements shall be met.

Lettering and striping will be computer generated 3M "ScotchLite", reflective acrylic vinyl appliqué with a black drop shadow. Lettering shall match existing PFD vessels.

Up to sixty (60), three (3) inch computer generated vinyl letters and 20 six (6) to eight (8) computer generated vinyl letter will be provided on each side of the hull for the vessels’s name. Fire Department shall provide photos of lettering style to coincide with the Fire Departments existing lettering.

Two (2) Philadelphia Fire Department seals will be affixed. City to provide seals

UNIT NUMBERING

Up to four (4) 12" white **Scotchlite** numerals will be provided to affix to the vessel sides.

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

Up to six (6) 2” block style white **Scotchlite** numbers for City assigned property number shall be affixed to a location TBD.

MANUFACTURERS LETTERING

NO manufactures name or emblems may be affix to the vessel.

3.0 CONSTRUCTION

3.1 HULL

Provide a deep Vee Mono-hull built from Aluminum with a patented thermal loaded welding process certified by ABS, Veritas and Llyods.The hull structure shall be of 5086-H116 grade aluminum to the following specifications.

3.1.1 Metal Thickness

- Hull Bottom 5/16”
- Hull Sides 3/16”
- Bulkheads 3/16”
- Longitudinals 1/4”
- Transom ¼”
- Rear Dive Platform over drives, 3/16”

3.1.2 Ice Deflector

Provide a Stainless steel bow wrap ice deflector plate of 316 series SS. This shall act as a doubler and be affixed by special mechanical fasteners w/ isolators to prevent corrosion of dissimilar metals. Hull Structure to be strengthened to accept forces from ice breaking at this section.

3.1.3 Stiffeners

Provide 5086-H116 flat bar and 6061-T6 extruded internal stiffening

3.1.4 Corrosion

Provide corrosion prevention measures to include Galvanic Isolator and Fresh Water Sacrificial Anodes sufficient for hull size and to include stern drives, cooling system piping, Fire Fighting pump intake and piping. Shall be of sufficient size to last two (2) years. Shall be bolt on type to a doubler welded plate. Cannot be affixed directly to hull or any piping etc. Aluminum anodes are required.

3.1.5 Rub Rail

Provide weatherproof, UV protected black rub rail fastened with Stainless Steel screws and adhesive.

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

3.1.6 Push Bumper

Provide Heavy Duty bow Crown push bumper all rubber construction

3.1.7 Hull, Deck and Pilot house

Shall be welded together. All weld material and filler shall be 5356 alloy.

3.1.8 DIVE DOORS

Provide one each, port and starboard, shall be provided measuring eight feet in width, three feet in height. Each door when open and in down position shall be capable of 2000 pound capacity. When closed, doors form integral part of hull, gunwale and handrail. Doors shall be capable of opening to allow ingress and egress of divers or for emergency rescue. Provide tethering eye, anchor point, for restraint harness capable of 500 pounds minimum, one each side at dive doors.

Doors shall be electrically controlled with manual override. Doors are to be constructed to aid in flotation of vessel and restrained in open position by cables. Provide Stainless Steel chafe plate at opening, deck level

3.1.9 DAVIT

Provide two (2) galvanized steel davits with hand winches rated for 500 pound lift capacity minimum, to be mounted on both port and starboard side rear gunwale aft of dive door opening. Davit winches shall be equipped with 28 feet of 3/16 inch (7 x 19) type 304 stainless steel cable and swivel type, heat treated, drop forged 304/316 stainless steel hooks. Thern Model # 5122M1GAL or approved equal.

3.1.10 BILGE SYSTEM

Provide bilge pump system consisting of four (4) automatic bilge pumps capable of removing 1000 to 2000 gallons of water per hour. There shall be two (2) pumps located aft (engine compartment), one (1) mid ship and one (1) in bow section. Bilge pumps must be placed where ever there is a watertight compartment. Provide manual operation switches at helm. System to be all automatic with high bilge alarms. Rule Brand or approved equal.

3.1.11 FLOTATION

Provide an unsinkable hull design . Deck shall be self bailing. Boat hull voids to be filled with a closed cell, non absorbent foam which shall remain stable with age and not be affected by petro –chemicals.

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

3.1.12 PROTECTION DEVICES

The boat bow eye shall be protected by a heavy duty stainless steel plating shaped to fit the keel in the bow eye location. Provide a heavy duty stainless steel cutwater shaped to fit the boat keel to protect the boat keel. Provide a stainless steel cap that covers the aft edge of the transom. Provide heavy duty stainless steel chafe corner plates installed on transom from rub rail to water line.

3.1.13 BOAT IDENTIFICATION PLATE

A boat identification plate shall be attached to the fire rescue boat. This engraved plate shall contain required information such as boat size, model, serial number, capacity, persons, and manufacturer’s information and if possible vessel name.

3.1.14 HATCHES / ACCESS COVERS

Provide structural support to install water tight hatches with gas shocks for access or removal of main engines, fire pump engine, fire pump and generator. Provide man way hatch in deck for access to engine room with ladder. Hatches shall be flush with the deck and open from above or below deck.

3.1.15 ENGINE ROOM WALK WAYS

Provide adequate grip strut type walkways in engine room to access machinery.

3.2 DECK

- 3.2.1** Provide deck thickness 3/16”
 - 3.2.1.1** Provide dark grey removable rubber diamond plate pattern floor covering for entire deck, dive doors and pilot house floor. (Lewmar Treadmaster or approved equal)
- 3.2.2** Provide self bailing deck
- 3.2.3** Provide non skid floor entire deck and dive doors
- 3.2.4** Provide 1-5/8” tubular Polished Anodized Aluminum gunwale handrails
- 3.2.5** Provide eight (8) powder coated cleats, cleat areas to be reinforced for added strength. Include up to eight additional 3” cleats to be mounted on deck for bumpers etc.
- 3.2.6** Provide stainless steel tow post, location TBD at Pre-construction
- 3.2.7** Provide water tight built in storage compartments
 - 3.2.7.1** Two Gunwale lockers
 - 3.2.7.2** Bow anchor locker
 - 3.2.7.3** Stern anchor locker
 - 3.2.7.4** Below Deck storage
- 3.2.8** Provide back board storage on inner dive door
 - One back board per dive door. Stored on the door itself. Secured with straps and (4) small small hooks. (hooks not to be a tripping hazard). Alternate - Backboards could also be secured from the rear gunwale hand rails TBD.

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

- 3.2.9** Provide rear dive platform over drives
 - 3.2.9.1** Provide fourteen inch (14”) ladders, retractable four (4) step, on both sides of rear dive platform

3.3 PILOT HOUSE

3.3.1 STRUCTURE

Shall be constructed of 1/8” 5086-H116 aluminum of 1/8” thickness both sides and top, ambulance style.

- 3.3.1.1 Provide rear Aluminum French type doors.
- 3.3.1.2 Provide aluminum knurled type grab handles for Pilot house roof, exterior (4) and internal pilot house 8 handles.

3.3.2 SEATING

Minimum inside seating shall be for eight (8) people and will include the following items.
 Provide two padded Captain’s Chairs, high back, along with two (2) Padded Bunks / Bench Seats with under seat storage, to include rubber liners, in pilot house. These bunks can be used as patient areas.

All Upholstery for upper and lower seating, benches, to be heavy duty marine grade custom vinyl charcoal in color with UV inhibitor protection

3.3.3 CONTROL CONSOLES

Provide two distinct and separate consoles in the pilot house. The navigation console (Pilot’s) will be located on the port side of the vessel and contain all controls necessary to pilot the boat. This includes but is not limited to throttle, steering and navigation electronics. The fire fighting console (Engineer’s) will be located on the starboard side of the vessel and contain all controls necessary for fire fighting. This shall include but is not limited to fire pump engine throttle, roof & bow remote monitor controls (includes nozzle) and all discharge valves. Preliminary Drawings shall be provided at preconstruction

3.3.4 HEATER, DEFROSTER AND AIR CONDITIONING

Provide Dometic Marine Air VCD30 Self-Contained Heat /AC Unit – Seawater cooled - 30,000 BTU/hr or greater to be able to maintain, in Pilot house and Lower cabin, 68 degrees Fahrenheit temperature on a 25 degree ambient temperature winter day for heat and a 70 degree Fahrenheit temperature for A/C on a 90 degree ambient temperature with 70% humidity.

Provide Dometic Marine Air I/O Passport digital thermostat control panel on dash
 Two (2) windshield defrost fans shall be provided in pilot house
 Provide both acoustic and thermal insulated walls, deck and roof

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

Two (2) cuddy air vents in lower cabin
Provide engine room heater to prevent freezing and provide adequate working environment

3.3.5 INSTRUMENTS, GAUGES AND CONTROLS

Provide two (2) self parking, multi-speed windshield wipers, one each side port and starboard along with an integral windshield washer system. Install a central appropriately sized polyethylene washer fluid tank for all wipers.

All electronics displays shall be flush mounted. Provide overhead helm compartment for radios and other electronics. Provide all engine displays and remote diagnostic plugs. Provide generator control and FROG display at a minimum.

3.3.6 INTERIOR LIGHTING

Two Whelen 8 inch diameter red/white overhead LED 3 position lights (Red/White Hi/Lo)

White Lower Cabin Light

3.3.7 LOWER CABIN

Provide two air vents and two (2) ventilation fans
Provide two (2) padded Bench style seats with built in storage compartments.
Provide removable rubber liners for storage compartments, black in color.
Provide Tinted, lockable, Plexiglass entrance door to lower cabin, fold away style
Provide one (1) Whelen 8 inch diameter red/white overhead LED 3 position light
Install RARITAN PHEII Electric Head – 12 volt with 5 gallon waste holding tank and pump out fitting on bow gunwale.

Provide pressurized potable water system for domestic use to include tank & Ambassador half sphere stainless steel sink with faucet or approved equal. Also include 120 volt AC EEMAX instant hot water heater # EX3012M or approved equal. Hot water heater to have a 21 degree F rise @ 1 GPM.

3.3.8 PILOT HOUSE GLASS

Provide the following: split inclined windshield, six (6) aluminum sliding side windows and two (2) aluminum corner windows. All tinted to prevent heat buildup in pilot house. (Type & amount of tint to be discussed at Pre-construction)

3.3.9 VISORS

Provide pilot house brow visor on aft portion extending approximately four feet to prevent rain from entering pilot house and reduce cabin temperatures.

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

Provide forward and side overhang visors designed to minimize glare on windows and reduce temperatures.
Provide fold up plexiglass tinted visors at the top of interior windshield forward facing only.

3.4 ENGINES

3.4.1 MAIN PROPULSION

The vessel shall be equipped with two (2) Cummins six (6) cylinder QSB 5.9 liter electronically controlled (12 volt) diesel engines developing a minimum of 380 horsepower at 3000 rpm each. The engines are to be the Cummins Commercial Application version. Provide SmartCraft/Vessel View digital display upgrades in lieu of standard gauges, one per engine.

3.4.1.1 FULL FLOW OIL FILTERS

Engine oil filters shall be engine manufacturer branded or approved. Engine oil filters shall be accessible and easily serviced or replaced.

3.4.1.2 ENGINE GOVERNOR

Top governed speed will be approximately 37 knots.

3.4.1.3 ENGINE PROTECTION / ALARMS

The engine shall be equipped with an alarm system for low oil pressure, high coolant temperature, and low coolant level. The system shall warn the pilot and engineer of a potentially damaging engine operating condition. This warning system shall not shut down the engine. The system may reduce power to protect the engine. System shall be provided by the Cummins engine control unit, SmartCraft/Vessel View . Alarms shall be audible and show on pilot house engine readout panels.

3.4.1.4 ENGINE BLOCK HEATER

Provide Engine block heater, 1,000 watts minimum. They shall be connected to the shore power circuit and switched separately to allow shut off during summer months.

3.4.1.5 ENGINE STARTER

The engine starter shall be a Cummins standard component installed on the QSB engine with over crank protection (OCP) and thermal protection, controlled by a dash mounted switches.

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FIRM (VENDORS) NAME _____ BID NUMBER _____

3.4.1.6 MAGNETIC FILL/DRAIN PLUGS

The engine fill and drain shall be equipped with magnetic plugs.

3.4.1.7 ENGINE START STOP CONTROL

The vessel shall be equipped with ignition switches. Each ignition shall have a key switch with two (2) push buttons: START and STOP.

3.4.1.8 EXHAUST

Provide EPA emission approved wet exhaust system.

3.4.1.9 EXHAUST HEAT SHIELD

Heat shields shall be provided in the engine room compartment in an effort to minimize engine compartment temperatures and provide protection for technician working around engines.

3.4.1.10 DIAGNOSTICS

Provide Diagnostic plug(s) at engine, plus install remote diagnostic plug(s) in pilot house, one per engine.

3.4.2 FIRE PUMP ENGINE

The vessel shall be equipped with a third Cummins engine; six (6) cylinder QSB 5.9 liter electronically controlled diesel engines developing a minimum of 230 horsepower at 3000 rpm each. The engine shall be the Cummins Commercial Application version. This engine shall be self sustained. Provide SmartCraft/Vessel View digital display upgrades in lieu of standard gauges. Please provide an electronic throttle control for this engine either through SmartCraft/Vessel View or an FRC Throttlexcel Model ELA200. A cable operated throttle for the fire pump engine is not acceptable. The fire pump engine throttle control shall be mounted in the pilot house on the fire pump control console (Engineer’s Control Console).

3.4.2.1 FULL FLOW OIL FILTERS

Engine oil filters shall be engine manufacturer branded or approved. Engine oil filters Shall be accessible and easily serviced or replaced.

3.4.2.2 ENGINE PROTECTION / ALARMS

The engine shall be equipped with an alarm system for low oil pressure, high coolant temperature, and low coolant level. The system shall warn the pilot and engineer of a potentially damaging engine operating condition.

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

This warning system shall not shut down the engine. The system may reduce power to protect the engine. System shall be provided by the Cummins engine control unit, SmartCraft/Vessel View. Alarms shall show on pilot house engine readout panels

3.4.2.3 ENGINE BLOCK HEATER

Provide Engine block heater, 1,000 watts minimum. It shall be connected to the shore power circuit and switched separately to allow shut off during summer months.

3.4.2.4 DIAGNOSTICS

Provide Diagnostic plug at engine, plus install remote diagnostic plug in pilot house.

3.5 PROPULSION

Provide two (2) transmissions, “ZF” ZF280-1, Ratio .814:1
Provide two (2) Stern Drives, “Konrad” 680HDTP, Ratio 1.743:1
Provide two (2) propellers Stainless Steel twin set 23.5”P
Provide Electronic Controls, single station/twin engine

3.6 FUEL SYSTEM

Provide a 300 gallon fuel tank constructed of Aluminum, to include a bolted cleanout and baffles if required. Provide ¼ turn valves for fuel shut off for fuel lines at tank. Must be compatible with Bio diesel fuels up to 5% blend.

Provide Fuel fill with spill area containment, capable of receiving fuel through a 2” cam and groove coupling device. Additional information to be provided at Pre- Construction.

Provide a DAVCO SEA PRO 8 heated fuel water separator with water-in-fuel sensor system and isolation valves mounted for easy access for service. One per engine & location to be determined at Preconstruction.

Provide fuel gauge in Pilot house at operator’s console.

3.7 STEERING

Provide a Stainless Steel steering wheel.
Provide stern drive power steering.

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

3.8 COOLING SYSTEM

It is required that all engines, reverse/reduction gears, oil coolers, and any peripheral engine equipment components be cooled by closed systems filled with extended life coolant meeting component manufacturers requirements. Provide five (5) dedicated sea strainers: one for each propulsion engine; the fire pump engine; the generator and HVAC unit. Strainers to have a clear top with removable stainless steel screen basket. Provide raw water shut off ball valves on either side of sea strainer to allow for cleaning Strainer must have clear cap. Provide one spare stainless steel sea strainer basket upon delivery. **All sea strainer assemblies shall be of the same type and size.** Valves shall be ball type with hand wheel, no butterfly type valves.

3.9 ELECTRICAL SYSTEM

3.9.1 VESSEL WIRING

Marine grade, must meet ABYC compliance standards. Shall be routed to eliminate chaffing and exposure to elements. See “Intent of Specification” for additional electrical requirements. All switches shall be illuminated, labeled of the rocker style, waterproof in design. Provide two (2) 12 volt power points at helm for operation of accessory equipment..

3.9.2 ENGINE ALTERNATORS

The three (3) Cummins QSB 5.9 Liter engines shall each be equipped with the standard 130 amp alternator that is offered with the engines.

3.9.3 BATTERIES

Provide Marine Series 34 style, highest reserve and CCA, Odyssey Brand # 34M-PC1500

Batteries shall be secured to hold in place. Total of six (6) two (2) batteries per engine.

Battery banks are to be cross-connected with a battery selector switch to permit selection between banks for starting or operation of all batteries in parallel. Provide a battery cut off switch for each set of batteries.

Provide a Marine Series 34 style, highest reserve and CCA, Odyssey Brand # 34M-PC1500 dedicated battery for the diesel generator in **Section 3.8.5.1**. Battery shall be secured to hold in place. One (1) battery per generator for a total of one (1).

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

3.9.3.1 CONVERTER/CHARGER

Provide two (2) Progressive Dynamics Model Number PD2150 (50 Amp) Marine Converter / Chargers. Wire units in parallel to charge three banks of batteries, generator battery, Streamlight Flashlights plus any back up batteries for electronics. Further discussion for configuration at Pre-construction.

3.9.4 SHORE POWER CONNECTION

Provide shore power connection to adapt to City of Philadelphia Shoreline connections. Provide 50 feet of three/four stand cord with twist type plugs on each end (RUSJRSA633F). Shore power shall feed on-board battery converter/chargers, radio battery chargers, Engine heaters, engine compartment heater, electronic support batteries and lights as required. Shore power connections shall be waterproof. Shore power connection on vessel shall be 24 inches above deck. Provide two (2) Plug receptacles to be RUSJPS633F. One mounted on vessel, second ship loose. Further discussion at Pre-Construction

3.9.5 120/240 VOLT A.C. ELECTRICAL AND GENERATOR SECTION

3.9.5.1 GENERATOR

Provide One (1) Cummins QD MDKBH Diesel Generator rated at 5,000 watts. Controls and gauges shall be located at the generator with a second set of controls and gauges located at the helm. The generator shall be self sustained with a dedicated battery and shore power connection with automatic switch over when plugged into shore power line. Battery shall be connected to on board battery charger.

Provide optional SmartCraft network data link with Onan Digital Display at Helm console.

3.9.5.2 GENERATOR MONITORING DISPLAY

Upgrade controls. The FROG (Frequency Regulation of Generator) monitoring display kit shall be installed in the helm gauge panel.

3.9.5.3 LOAD CENTER

There shall be an electrical load center furnished and installed in a protected environment easy access to engineer. The load center shall have provisions for 24 manual reset type circuit breakers minimum. Provide power to A/C unit, and Davit receptacles plus minimum receptacles mentioned below. Blue Seas Brand Load Center or approved equal.

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

3.9.5.4 ELECTRICAL RECEPTACLES

Provide GFI protected circuits for each of the receptacles required. Provide properly label electrical receptacles with weatherproof spring loaded covers. Location to be determined at Preconstruction:

- Two (2) NEMA L5-15R 125V 15amp on deck. Allow for additional receptacles in:
 - Wheel house
 - Engine Room
 - Crew’s quarters

3.10 FIRE FIGHTING SYSTEM

Provide fire fighting system fully controlled from the Helm with a full flow rate of 3,000 GPM at 150 lbs pressure. System shall have foam capability supplying a bow and roof mounted monitors.

- 3.10.1 Provide a Hale 80FC-M 3,000 GPM, bronze centrifugal fire pump or approved equal, with Hale oil-less priming system
- 3.10.2 Provide #5086 aluminum 6” pipe to bow monitor and 4 inch aluminum pipe for roof monitor
- 3.10.3 Provide Bow mounted deck monitor, flush mounted remote controlled from helm, RC Akron #3570 Streammaster or approved equal. Provide Bow nozzle, # 5170 Pyrolite Akromatic 2000 electric or approved equal
- 3.10.4 Provide 4” Butterfly Valve manually operated mounted between Storz discharge and monitor base
- 3.10.5 Provide 4” NHT auxiliary discharge with TFT 4”NHT x 5” Storz Adapter and TFT 5” Storz cap
- 3.10.6 Provide Roof mounted Deck monitor, flush mounted remotely controlled form helm, RC Akron #3440 Deckmaster or approved equal
- 3.10.7 Provide Roof nozzle, Akron straight bore Quad stack tip with stream shaper
- 3.10.8 Provide Akron brand 4” electric shut off valve. Helm mounted 9313 valve controller (to shut off flow to roof monitor).
- 3.10.9 Provide helm mounted main line pressure gauge
- 3.10.10 Provide Discharge Pressure Relief Valve, Elkhart Elk-O-Lite 40 or approved equal
- 3.10.11 Provide Elkhart B-95AWye 5” Storz x (3) 2.5” NHT gated outlets
- 3.10.12 Provide foam proportioning system, Foam Pro 2002 or approved equal
 - 3.10.12.1 Must be capable for exact proportioning in .1 increment
 - 3.10.12.2 Provide helm mounted display with usage and flow readings, Foam Pro or approved equal
 - 3.10.12.3 Provide 100 gallon poly tank
- 3.10.14 Provide 12 inch screened intake with stainless steel strainer basket for fire fighting water pump inlet, to include shut off valves on either side of sea chest. Strainer to have clear cap.

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

The fire pump intake will be plumbed through a 12” butterfly valve with manual handle or gear wheel prior to entering the fire pump. Hayward BY41120EG Butterfly Valve Mastergear or approved equal.

3.11 ELECTRONICS and NAVIGATION

The below mounted electronic packages shall be mounted at Helm area. Location to be determined at Preconstruction

- 3.11.1 Provide ICOM M604 VHF Radio w/Shakespeare VHF antenna
- 3.11.2 Garmin 5012e GPSMAP – touch screen multi-function display
- 3.11.3 Garmin GSD-22 Sonar image enhancing module
- 3.11.4 Garmin GMR-18, 18” diameter radar- 24 NM w/radar stump
- 3.11.5 Hummingbird 1198c SI Combo Unit, multifunction display, GPS, Forward facing sonar function
- 3.11.6 FLIR M324 XP, Night Vision Inferred Camera w/pan/tilt feature
- 3.11.7 Provide and install a Motorola APX 6500 two way radio per Section 36.0.
- 3.11.8 Provide Firecom FHW-51 Headset system – two (2) hardwired outlets for pilot and engineer and four (4) wireless for crew
- 3.11.9 Provide oneoff 6” Binacle mount w/compass light, movable sun shields. Full internal gimbells black finish Ritchie Globemaster D-615 6” face or equal
- 3.11.10 Depth Finder: The above units in 3.10.4 & 3.10.5 will provide depth finder functions.

3.12 NON-WARNING LIGHTS

- 3.12.1 Provide navigation lights as require
- 3.12.2 Provide rear deck Halogen (LED) lights (2) mounted to roof line of pilot house
- 3.12.3 Provide Remote controller search lights with helm mounted controls, joysticks, 2020 GoLight or approved equal
- 3.12.4 Provide two (2) forward looking Scene lights (LED) 14,000 lumens, brow mounted each side port and starboard, Whelen Pioneer or approved equal
- 3.12.5 Provide four (4) hand held rechargeable flashlights: Streamlight Fire Vulcan LED Part # 44451. Mounting location to be determined at Preconstruction.

3.13 WARNING LIGHTS AND DEVICES

- 3.13.1 Provide High Bilge Alarm
- 3.13.2 Provide four (4) automatic, electric bilge pumps with helm switch, fused and wired directly to battery, two (2) 2,000 GPH pumps in engine compartment, one (1) 1000 GPH midship and one (1) 1000 GPH in the bow.
- 3.13.3 Provide Whelen LED lights around perimeter of Pilot House as follows

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

- 3.13.3.1 Front:
 - Middle – Two Whelen M7 clear LED, black bezel
 - Sides – Two Whelen M2, one white, one red lens LED, black bezel
 - Corners – Two Whelen M4 LED 1 per corner – Red lens, black bezel

- 3.13.3.2 Port and Starboard sides:
 - Two Whelen M4 – Red lens / LED – flashing, black bezel
 - Two Whelen M4 – Clear Lens, LED, flashing, black bezel

- 3.13.3.4 Back:
 - Two Whelen Micro Pioneer LED – Clear lens / Flash Red

- 3.13.4 Provide Whelen Model WPA112 with WPA2 Control Head 100w Siren/Hailer/PA System, controls at helm.
- 3.13.5** Provide Whelen SA-314p Waterproof speaker mounted on roof forwarded facing
- 3.13.6** Provide # SX4RPFDFB Whelen Liberty series 44 inch light bar to be flush mounted on the pilot house roof.

3.14 ENGINE ROOM

Provide engine room compartment heater with thermostat control, connected to shore power. Provide adequate lighting & ventilation system.

3.15 LOOSE EQUIPMENT

- 3.15.1 Provide floatable Backboards, two (2), yellow in color, Najo Redi-board or approved equal
- 3.15.2 Provide two (2) Fire Extinguishers, Halotron I, 9-15’ range, 11lbs
- 3.15.3 Provide two (2) mounting brackets for Halotron I, 11lb to 15.5lb fire extinguishers, location to be determined at preconstruction
- 3.15.4 First Aid Kit, Adventure Medical Marine series 1000
- 3.15.5 Personal Floatation Device (PFD) U.S.Coast Guard Type V commercial
 - Provide six (6) PFD’s with HIT (Hydrostatic Inflator Technology), pressure valve that will inflate the PFD if immersed in four (4) inches or more of water pressure, Mustang Law Enforcement MD3183LE or approved equal.
- 3.15.6 Anchors and attaching chain and lengths of line
 - 3.15.6.1 Provide two (2) Danforth S1300 for 31-36 “boats, 16lbs is this too small
 - 3.15.6.2 Provide two (2) PVC Coated Anchor Chain, Red, 5/16” X 5’ in length connected to anchors
 - 3.14.6.3 Provide two (2) premium Anchor line 5/8”, 300 feet each
 - 3.15.6.4 Provide Lewmar Heavy Duty H2 Gypsy/Drum, 9/16" to 5/8" Line dia., 5/16" Chain Ht. 1433 lb Max pull, 43 ft/min Speed, 12V DC, 80 Amp Draw
- 3.15.7 Provide equipment required for commissioning and compliance with applicable USCG and NFPA. Shall include but not be limited to items listed above, throw cushions, boat hooks, air horn, flare kit for this size vessel

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

3.16 WARRANTIES

- 3.16.1 Complete hull and complete superstructure, unlimited Warranty two (2) years, 100 % parts and labor, to include travel time
- 3.16.2 Complete hull and superstructure Limited Warranty Ten (10) years
- 3.16.3 Cummins Engines (3), 5.9 QSD, 5 years 100 % parts and labor , to include travel time
- 3.16.4 Generator, two (2) years 100 % parts and labor, to include travel time
- 3.16.5 Fire Pump, seals, piping and monitors all controls five (5) years 100 % parts and labor to include travel time
- 3.16.6 Electronic Accessories, one year or manufacturers warranty which ever is greater, 2 year installation warranty
- 3.16.7 Emergency lighting, Whelen LED, 5 year 100 % parts and labor
- 3.16.8 Accessories, (2) two years 100% parts and labor.

4.0 FIRE SUPPRESSION SYSTEM

Equip vessel with a USCG approved systems and components for detection and extinguishing of shipboard fires in accordance with National Authority requirements. Fit a simple design fire detection system for protection of machinery spaces. Design system to:

- detect abnormal air temperature
- detect abnormal smoke concentration

Provide a continuously supervised system, indicating on a main alarm panels in pilot house, and incorporate a supervised electrical trouble circuit to indicate electrical fault in circuit. Detectors in each space to be:

- ionized type smoke detector at generator location
- rate of rise/final temperature type; one near genset, one near each engine
- smoke detector in lower cabin, machinery space and pilot house

Calibrate rate of rise thermostats at 15degrees F/minute with final temperature trip set at 180 degrees F + or – 5 degrees F.

Provide Fireboy Total Flooding HFC-227, 250 cu ft Automatic Engine Compartment Fire Extinguishing System or approved equal for machinery space.

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

5.0 TRAILER - OPTION

Provide custom built, roller bunk aluminum triple axle trailer (21,000 lb. GVWR minimum) with brakes and mounted spare tire properly sized for length and weight rating of vessel. Trailer shall be designed and fitted for the specific vessel and shall ensure proper hull support, balance and safety when towing on highway as well as launching and retrieving boat from waterway. Include an electric winch for loading and unloading of vessel from trailer and optional electric over hydraulic surge brake actuator. All trailer lighting shall be LED. Final weight and dimensions will be determined when built. West Coast ABT Brand or approved equal.

6.0 PRE-PRODUCTION AND INSPECTIONS

6.1 PRE-CONSTRUCTION MEETING

Provide a pre-construction conference, for six (6) City representatives, at the manufacturer’s factory prior to any metal being cut, or the acquisition of any major components being locked in. The successful vendor shall incur all expenses for owner representatives for lodging, meals and transportation. (transportation shall be via air if more than 125 miles one way – direct flights only) Provide cost per person. (Assume a minimum of three overnight stay leaving on fourth day)

6.2 INSPECTION TRIP, 1ST MILESTONE INSPECTION

Provide inspection trip, for six (6) City representatives, at the manufacturer’s factory to inspect initial build of hull / keel. Shall also be a milestone visit for payment of all materials on site, to include aluminum sheets, or cut outs, aluminum extrusions, engines, transmissions and final drive units. The successful vendor shall incur all expenses for owner representatives lodging, meals and transportation. (transportation shall be via air if more than 125 miles one way - direct flights only) Provide cost per person. (Assume a minimum of two overnight stay leaving on third day)

6.3 MID-PRODUCTION, SECOND MILESTONE INSPECTION

Provide inspection trip for six (6) City representatives, at the manufacturer’s factory to inspect build of hull, Pilot house, installation of major components to include wiring and shall also be used as the second milestone payment inspection. The successful vendor shall incur all expenses for owner representatives lodging, meals and transportation. (transportation shall be via air if more than 125 miles one way - direct flights only) Provide cost per person. (Assume a minimum of two overnight stay leaving on third day)

6.4 FINAL INSPECTION AND RIVER TRIALS

Provide inspection trip for six (6) City representatives, at the manufacturer’s factory to inspect final build. Perform dock and river trials to meet tests listed in Annex A. The successful vendor shall incur all expenses for owner representatives lodging owner representative, meals and transportation. (transportation shall be via air if more than 125 miles one way - direct flights only) Provide cost per person. (Assume a minimum of three overnight stay leaving on fourth day)

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

7 MILESTONE PAYMENTS

The City of Philadelphia, Office of Fleet Management agrees to provide milestone payments for this project.

- 7.1 The first milestone payment shall be upon the shipyard receiving on their site all metal (aluminum) sheets or cut outs, and all major components. A list of all major components, all engines (3), transmissions (2), Stern Drives (2), Propellers (2), Generator, Fire Pump serial numbers along with a copy of the invoice must be provided to the OFM designee upon arrival at the shipyard to verify purchases. The vendor is required to provide the same copies of invoices when submitting for milestone payment. Shipyards cost may be blocked out. Invoices must list serial numbers. **This milestone shall be 30% of contract for boat only.** Shall not include Inspection trips, transportation, boat trailer or Third Party over-site for build.
- 7.2 The second milestone payment shall be upon the mid-production inspection where as the hull, pilot house and all other structural, including wire runs and hydraulics build is 85% completed and all major components are installed. OFM designee shall verify the installation of said major units by serial unit numbers received on first milestone payment visit. **This milestone shall be 25% of contract for boat only.** Shall not include Inspection trips, transportation, boat trailer or Third Party over-site for build.

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MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

8.0 Bidder's Questionnaire

YES NO

- 1. The unit offered is manufactured entirely in the United States? () ()
- 2. The fireboat offered is not a prototype; and there are at least five (5) fire boats of similar design in service in the United States? () ()
- 3. The capacity and performance tests will be satisfactorily performed in compliance with the information contained in this package? () ()
- 4. The manufacturer fabricates and assembles the fire boat entirely in the same factory complex? If no, attach explanation. () ()
- 5. A full-time local representative of the manufacturer is maintained: () ()
 Name: _____
 Address: _____
 Phone: _____
- 6. Said representative maintains factory trained and certified mechanics? () ()
- 7. The manufacturer maintains a Factory Service School at the factory? () ()
- 8. All pages of the General Instructions, Requirements, and Specifications have been received and reviewed? () ()
- 9. Has the Bidder completed all the questions and filled in the blanks in the specifications? () ()
- 10. Is the Bid Security attached? () ()
- 11. Does the Bidder comply with Purchaser's specifications without exception? () ()
- 12. Are all requested engineering diagrams and drawings included with the proposal? () ()
- 13. Does the proposed apparatus comply with dimensional requirements of the specifications? () ()
- 14. Does the manufacturer maintain a Service Center and Parts Depot? () ()

MUST BE FILLED IN
 FIRM (VENDORS) NAME _____ BID NUMBER _____

- | | | | |
|-----|---|------------|-----------|
| 15. | Does the manufacturer provide a program of Factory training for the Fleet Department's technicians? | () | () |
| | | YES | NO |
| 16. | Are all specified warranties in compliance with the specifications? | () | () |
| 17. | Are all proposed warranties in compliance with the specifications? | () | () |
| 18. | Will the boat hull and structure be covered by a ten year warranty? | () | () |
| 19. | Will the engines be covered by a five year warranty? | () | () |
| 20. | Will the entire boat be manufactured in the United States? | () | () |
| 21. | Has a list of five (5) in-service vessels similar design been included with the proposal? | () | () |
| 22. | Are the proposed Fire Rescue boat and equipment new in all respects? | () | () |
| 23. | Have you provided an accurate statement of vessels dimensions? | () | () |
| 24. | Have you included a copy of your own detailed Bidder's specifications? | () | () |
| 25. | Have you included a separate list of exceptions? | () | () |
| 26. | Are you taking total exception? | () | () |
| 27. | Are you proposing component substitutions which you feel exceed the specification? | () | () |
| 28. | Does weight and occupancy comply with the recommendations of the NFPA? | () | () |
| 29. | Does the vessel comply with the appropriate requirements of the United States Coast Guard Safety Standards? | () | () |
| 30. | Will the vessel have a certified ID plate / sticker? | () | () |
| 31. | Does the manufacturer meet all specified criteria and code conformance? | () | () |
| 32. | Will the local representative's Field Service Technician deliver the apparatus? | () | () |

MUST BE FILLED IN
 FIRM (VENDORS) NAME _____ BID NUMBER _____

- | | YES | NO |
|---|-----|-----|
| 33. Will the local representative's Field Service Technician train the Fire Department in the use and maintenance of the vessel, and components, for a four (4) day period? | () | () |
| 34. Has your company / manufacturer ever been banned or currently banned from Federal Contracts? | () | () |
| 35. State the dimensions of your proposed apparatus? | | |
| a. Overall Height on water:_____ | | |
| b. Hull Length:_____ | | |
| c. Overall Length:_____ | | |
| d. Beam Width:_____ | | |
| e. Dead Rise:_____ | | |
| f. Draft:_____ | | |
| g. Overall height on trailer: _____ | | |
| 35. Delivery of the fire Rescue boat shall take place within _____ calendar days after the execution of the contract. | | |

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FIRM (VENDORS) NAME _____ BID NUMBER _____

9.0 Service Ability Form

Service Center Location:

Distance in miles (one way) from Service Center Location to the Purchaser's Location is: miles. _____

Please answer the following questions:

Is this shop an authorized warranty center for the apparatus builder? Yes No

Is the Service Center enclosed and heated? Yes No

Number of full time Service Center Employees:

Number of fully equipped service vans:

Is your shop equipped to handle, without subletting, the following:

- | | | |
|------------------------------|------------------------------|-----------------------------|
| Hull and Structure Repairs | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Paint Work / repair | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Tank Repairs | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Fire Fighting System Repairs | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Welding | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Power Train Repairs | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

This form was completed and submitted by:
(Please print or type full name)

Title of Individual: _____

Signature of Individual: _____

Subscribed and sworn before me

Notary's Stamp

this __ day of _____, 19

Notary Public
Commission Expires

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

10. Engineering Drawings

An approximate scale drawing of the proposed fire / rescue boat will be submitted with each bid.

The scaled drawings submitted with the bid will include the following:

- a. Overall height to the highest point of the vessel from the waterline.
- b. Sizes of all compartments; width, height, and depth, including clear opening dimensions.
- c. Overhang front and rear.
- d. Overall Length, and Overall Width of vessel.
- e. Draft line.
- f. Pilot House , interior, exterior.
- g. Pilot house console panels, pilot (Helm) and Engineer (FIFI) with all gauges, controls, diagnostic panels etc.

The drawing must show, but not be limited to, such items as the vessel being utilized, lights, horns, sirens, all compartment locations and dimensions, etc. In actuality, this blueprint will be a visual interpretation of the unit as it is to be supplied.

A blueprint must be approved by the Purchaser prior to any metal being sheared or cut for the unit. The Purchaser, the Manufacturer's Representative and the vessel Manufacturer will each have a copy of this blueprint. This blueprint will then become a part of the total contract.

11. Parts and Service

Service Center and Parts Depot

Each Bidder must be able to display that they have in recent times and are currently maintaining an established service center and a parts depot capable of satisfying the warranty service requirements and parts requirements for the model vessel bid. Service Center must have supplied parts to at least ten (10) fire departments and serviced at least five (5) fire / rescue type vessel within the past year.

The Bidder must state the location of an authorized service center, with a staff of factory-trained technicians, well versed in all aspects of service for all major components, of the apparatus within a reasonable distance of the Purchaser. This service center must be not more than 60 (sixty) miles away from the delivery point. In addition, the successful Bidder must maintain a separate service facility at the manufacturing site, in order to satisfy the need for possible major emergency service work.

Local Representation

In order to assure the Purchaser that prompt, knowledgeable, professional representation is made on behalf of the manufacturer, the manufacturer must maintain a representative within a reasonable distance

MUST BE FILLED IN

FIRM (VENDORS) NAME _____ BID NUMBER _____

from the Purchaser. This representative must be competent and knowledgeable with respect to the service of fire /rescue boats and fire fighting equipment.

The representative must make available factory-trained technicians who are completely trained in the servicing and maintenance of the product offered and must be equipped to offer prompt service on the product in the Purchaser's in-service location. These technicians must hold current and valid certifications from the manufacturer.

12.0 Quality of Workmanship

Quality and Workmanship

The design of the vessel must embody the latest approved Navel and Marine engineering practices.

The workmanship must be of the highest quality in its respective field. Special consideration will be given to the following points: accessibility of the various components which require periodic maintenance, ease of operation, drive-ability, turning radius, and symmetrical proportions.

Construction must be rugged, and ample safety factors must be provided to carry loads as specified and to meet requirements and speed conditions as set forth under "Performance Tests and Requirements."

Welding will not be employed in the assembly of the vessel in a manner that will prevent the ready removal of any component part for service and/or repair.

All wiring will be loomed, braided, bundled as necessary, and grommet installed to prevent wear and deterioration

General Construction

The complete vessel, assemblies, subassemblies, component parts, etc., will be designed and constructed with the due consideration to the nature and distribution of the load to be sustained and to the general character of the service to which the vessel is to be subjected when placed in service. All parts of the vessel will be designed with a factor of safety, which is equal to or greater than that which is considered standard and acceptable for this class of equipment in fire/rescue service. All parts of the vessel will be strong enough to withstand general service under full loads. The vessel will be so designed that the various parts are readily accessible for lubrication, inspection, adjustment and repair. Bidders' specifications must meet minimum requirements of N.F.P.A. Pamphlet #1925, Underwriters Laboratories Inc. standards and all United States Coast Guard and American Boating Association regulations at the time of the sale of the unit.

The vessel will be designed and constructed, and the equipment mounted, with due consideration to proper distribution of the load including a full complement of Fire Department specified and loose equipment plus crew to be carried without overloading or injuring the vessel.

Additional General notes in section 18.

13.0 Delivery Responsibility

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

Delivery of the vessel will be completed within 300 calendar days after the award of the contract. All pricing will be as specified in milestone payments with a final payment upon delivery and satisfaction of all river trials and acceptance by the Purchaser's designees.

Delivery will be made by the manufacturer's representative, who will transport vessel from manufacturing plant to the port of Philadelphia. Vessel shall be placed in the water and taken to the Philadelphia Fire Department location at 100 Washington Avenue Philadelphia Pa 19137. Unloading of the vessel and any labor, equipment required for it shall be the responsibility of the awarded bidder. River Trials shall be conducted from this location.

A certified Field Service Technician will pilot the vessel from the entrance ramp or marina under its own power to the in-service location, the PFD port, and provide at least four (4) days of on-site training to the members of the Fire Department and Fleet Management in the use and maintenance of the vessel.

- 13.1** Delivery Information - Final Delivery shall be made between the hours of 8:00 AM and 3:30 PM, Monday through Friday, except City Holidays. Each unit shall be accompanied by a Delivery Slip, which will contain the City's Bid Number, Item Number, Purchase Order Number, and Serial Number of the Unit.

VENDOR MUST NOTIFY OFM THIRTY (30) DAYS PRIOR TO MAKING ANY DELIVERY.

DELIVERY CONTACT PERSON:

OFFICE OF FLEET MANAGEMENT
100 S. BROAD STREET, 3RD FLOOR
PHILADELPHIA, PA 19110
215-686-1877 (VOICE MAIL)

DELIVERY LOCATION:

United States Coast Guard Station
Philadelphia Fire Department
1 Washington Avenue
PHILADELPHIA, PA 19147
PHONE (215) 685 - 1232

14.0 CERTIFICATIONS & MANUALS (PER ORDER)

- 14.1** Provide the **necessary documents** for the City to take Title to the vessel in accordance with Pennsylvania law. **ALL THE ITEMS, INVOICE and USCG ‘CERTIFICATE OF DOCUMENTATION’ ISSUED BY NATIONAL VESSEL DOCUMENTATION CENTER. ARE TO BE HAND DELIVERED FOURTEEN (14) DAYS PRIOR TO DELIVERY TO:**

**CITY OF PHILADELPHIA
OFFICE OF FLEET MANAGEMENT
FREDERICK HARRISON
100 S. BROAD STREET, 3RD FLOOR
PHILADELPHIA, PA 19110**

14.2 OPERATION, MAINTENANCE AND REPAIR DATA

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

Prior to the delivery of the first unit, the vendor shall forward directly to the Office of Fleet Management, Maintenance, Operating and Repair manuals and Parts Lists as specified below. The manuals shall be shipped separately to OFM 100 S. Broad Street 3rd Floor, Phila, Pa. 19110 and not with the units. All manuals shall be in the form of neatly bound books, with durable covers, and shall be properly identified with the manufacturer's name, model and serial number of the equipment.

The operating and maintenance or shop manuals shall be the latest manufacturer's handbook, covering in detail the recommended operating, maintenance and service procedures.

Where components or equipment of several manufacturers have been used in manufacturing the unit, the manuals shall include operating, maintenance and repair information and parts lists of all manufacturers covering all of the components used. Where the vendor or manufacturer uses components manufactured by other in building equipment which he sells under his own trade name, he shall furnish the parts numbers and full data of the original manufacturers of all components used, where possible, as well as the part numbers he may assign to these components as being parts of his product.

14.2.1 **MANUALS**

Two (2) sets of manuals shall be furnished for each vessel delivered.

Each manual shall cover superstructure, engines, transmission, stern drives, hydraulic systems, fire pump, generator set and all other added equipment. Operating Instructions and schematics including but not limited to:

- | | |
|--------------------------|-------------------------------------|
| Vessel Operator’s Manual | Hale Fire Pump Manual |
| Repair Instruction | Electric Wiring Diagrams (as built) |
| Parts Information | Maintenance Instructions |

Provide a CD of the above listed manuals.

Provide an eight-year subscription to all manufacturers issued Service Bulletins:

Provide two (2) sets of the following Cummins Onan 5 KW QD MDKBH Generator Set Manuals:

- | | |
|--------------------------------|-------------------------------------|
| Operator’s Manual # 981-0180 | Parts Manual # 981-0282 |
| Installation Manual # 981-0647 | Generator Service Manual # 981-0542 |

NOTE:

Provide two (2) additional sets of all operators manuals, these manuals are to be delivered one month prior to delivery.

Provide one (1) CD per vessel which includes all operators’ manuals information.

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

14.3 PREVENTIVE MAINTENANCE INSTRUCTIONS

In addition to the manuals specified above, the vendor shall furnish an equal number of condensed Preventive Maintenance Instructions for all parts of the vessel. These instructions shall consist of manufacturers' recommendations for periodic lubrication, cleaning and other preventive maintenance services, and shall be made up in a compact form covering the particular unit delivered.

14.4 RECOMMENDED SPARE PARTS

The vendor shall furnish with each service manual a list of recommended spare parts. The list shall include all necessary data for ordering the parts, even if originally furnished by other manufacturers.

The vendor warrants that they shall maintain or have maintained a stock of repair parts within the Philadelphia Metropolitan area at inventory levels for the period described hereafter:

The manufacturer shall supply, through a dealer, a published price list for spare parts required to support the units to be manufactured hereunder for ten (10) years from the date of delivery of the last unit.

The vendor, if necessary shall provide technical and field service support. This support shall be by personnel qualified to advise on training, repair and maintenance of the equipment. The technical representatives shall be available in the Philadelphia Metropolitan area when required by the City.

The repair or shop manuals shall include but not be limited to detailed drawings, electric, pneumatic and/or hydraulic schematics, piping diagrams and other pertinent information.

14.5 SERVICE

Due to the importance of keeping this vital piece of fire / rescue vessel in service with a minimum of downtime, the manufacturer of the vessel will maintain a network of service centers with factory trained personnel.

15.0 INSTRUCTIONS & TRAINING

The vendor shall furnish three (3) video training DVR's, covering the following subjects (if available):

- Pilot and Engineer Training
- Routine Maintenance
- Preventive Maintenance

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

In addition, the vendor shall instruct City employees in the operation, servicing and maintenance of the units or equipment mounted therein at the two Marine operation units of the PFD at such times as the PFD Apparatus Officer may designate, all within thirty days after final acceptance of the first unit.

TRAINING PROGRAM

The Contractor shall provide training on site at Owner’s facility to instruct OFM and Fire Department personnel in the operation, preventative maintenance and repair and care of the fire / rescue vessel, this training program shall be oriented towards a hands-on approach utilizing the new vessel.

1. Review personnel training level and determine specific training requirements.
2. Explain operations of the entire vessel. Each participant shall actually use the vessel and be taught the necessary steps of safe operation.
3. Troubleshooting will be emphasized and reinforced continually throughout the training period.
4. Preventative maintenance procedures shall be setup and definite schedules developed to assure proper maintenance of the vessel.
5. Instruction in the use of tools and how to replace minor assemblies, as applicable.
Equally important in this training will be when to call appropriate personnel for assistance.
6. How to order parts through the local service center by utilizing parts manual.

ON-SITE PREVENTATIVE MAINTENANCE & OPERATIONAL TRAINING PROGRAM

PROGRAM OUTLINE

An on-site program for training of Fire Department and OFM personnel shall be provided. This program shall be designed to assure complete understanding of all aspects of the aerial device in the operating environment.

After the unit has been accepted, a factory trained, qualified Field Service Technician shall be provided for a minimum of four (4) days of training.

Training shall be provided to train each of the four platoons which will use this Fire/Rescue Boat. The training program shall be designed to instruct the individual who has never utilized a vessel of this type before. The individuals will be thoroughly taught the operating systems of the unit, including emergency operation. Introductory service skills utilizing the vessel shall also be taught.

16.0 ENGINEERING RESPONSIBILITY & CHRONIC COMPLAINTS/FAILURES

The term **CHRONIC COMPLAINTS/FAILURES**, as used herein, shall mean that the same component, sub-component, assembly or part, such as an engine, transmission, outdrives, hydraulic system, pumps, etc. including valves, controls, water pumps, high pressure water systems, etc. develops repeated defects, breakdowns, and/or malfunctions.

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

The responsibility for the design of this equipment shall rest upon the successful vendor, and they shall consider all elements of operation for which the warranty shall apply. The successful vendor shall be responsible for the compliance and performance of each subcontractor, including all suppliers.

Where the equipment, units and/or sub-components develop **CHRONIC COMPLAINTS /FAILURES** during service operations, the successful vendor will be required to make any engineering design changes, repairs, alterations, retrofits or to make an adequate heavy duty redesign of any component so as to properly correct and continue to render continuous, durable and safe performance. Warranty periods shall be for an additional one year, measured from the completion date of any corrective measures. This additional warranty shall not expire at the end of the initial warranty period even when the correction is performed in the last days of the original, stated, warranty period.

Minor items or ordinary service adjustments are not included nor considered under this scope of **CHRONIC COMPLAINTS/FAILURES**. Conditions caused by other factors such as operational damage due to accidents, vandalism, misuse, or lack of proper maintenance, service, lubrication as prescribed or recommended by the Original Equipment Manufacturer (OEM), are also excluded.

Records and reports will be maintained by the Office of Fleet Management and will be made available for the successful vendors periodic examination relative to **CHRONIC COMPLAINTS/FAILURES**.

The successful vendor shall provide written reports to the City, detailing the action taken as a result of a notice of complaint describing the failure.

Any written notices of complaints or field action with corrections made, shall be forwarded directly to the Office of Fleet Management, 100 S. Broad Street, 3rd Floor, Philadelphia, PA 19110, Tel. (215) 686-1825, FAX (215) 686-1829, in numbered report identifying the vessel's property number, part or serial number of the failed component, with copies to the Engineering Section, same address.

For a fair and equitable evaluation of the **CHRONIC COMPLAINT/FAILURE**, the successful vendor, when notified of service difficulties, will be permitted to make detailed studies, analyze operational conditions and will have access to the equipment in order to make recommendations for corrections so as to obtain the desired safe and durable mechanical performance.

To reduce or eliminate **CHRONIC COMPLAINTS/FAILURES** on equipment, the City, as part of this contract, shall designate a Technical Review Committee, consisting of the Fleet Manager, Deputy Fleet Manager and PFD Operations Manager of the affected equipment, to review, analyze and evaluate any successful vendor's remedies.

In the event the successful vendor fails to address, or make the proper changes, repairs, modifications, retrofits, or does not render field service after written notice, or unnecessarily delays any actions, the Office of Fleet Management shall have the option of seeking appropriate restitution for loss of production.

The successful vendor shall also be subject for Loss of Use, in the form of rental, lease payments, or a \$200.00 per day fee, while a vessel is rendered unserviceable or out-of-service.

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

17.0 COMMUNICATION EQUIPMENT SPECIFICATIONS

Provide and install the following Motorola **ENCRYPTED** APX6500 TYPE 05 City Of Philadelphia Radio Package:

ITEM	MODEL/DESCRIPTION	QTY	SPECIAL NOTES
APX6500 MOBILE RADIOS			
APX6500 TYPE 05	ENCRYPTED MODEL-REMOTE MOUNT		
M25URS 9PW1 N	APX6500 MOBILE 10-35 WATT, 764-870 MHZ	1	Required with basic radio
G 806	SOFTWARE ASTRO DIGITAL CAI OPERATION	1	Required with basic radio
G 51	SMARTZONE OPERATION	1	Required with basic radio
QA01648	ADVANCED SYSTEM KEY -HARDWARE KEY	1	Required with basic radio
G 361	ASTRO PROJECT 25 TRUNKING SOFTWARE	1	Required with basic radio
G 996	PROGRAMMING OVER P25	1	Required with basic radio
W 947	RS 232 & IV&D PACKET DATA INTERFACE	1	Required with basic radio
G 625	DES, DES -XL, DES -OFB ENCRYPTION	1	Required with basic radio
G 298	ENCRYPTION P25 AND MDC OTAR	1	Required with basic radio
G 335	ANTENNA 1/4 WAVE 764-870MHz	1	Required with basic radio
G 442	APX6500 O5 CONTROL HEAD	1	Required with basic radio
G 444	CONTROL HEAD SOFTWARE	1	Required with basic radio
W 22	PALM MICROPHONE	1	Required with basic radio
W 432	SPEAKER INCREASED AUDIO POWER 13W	1	Required with basic radio
G 67	REMOTE MOUNT WITH 17' CABLE	1	Required with basic radio
	Note: Other Cable Lengths Available-See Below		
Programming	Radio Programming at Wireless	1	Required with basic radio
QA00631	DVRS PSU ACTMATION	0	Required if the Mobile needs to communicate to the P25 system via DVRS.
G 67	REMOTE MOUNT WITH 17' CABLE	0	Required with basic radio
G 618	REMOTE MOUNT CABLE (10 FT)	0	Optional Cable
G 628	REMOTE MOUNT CABLE (17 FT)	0	Optional Cable
G 610	REMOTE MOUNT CABLE (30 FT)	0	Optional Cable
G 609	REMOTE MOUNT CABLE (50 FT)	0	Optional Cable
G 607	REMOTE MOUNT CABLE (75 FT)	0	Optional Cable
G 879	REMOTE MOUNT CABLE (115 FT)	0	Optional Cable
	INSTALLATION		

Radio must be purchased via the City’s Vendor for warranty and programming issues. Please

Contact: Motorola Inc,
 Joe Papania
 Senior Account Manager
 8 Ternberry Court
 Turnersville, NJ 08012
 Phone 1-856-228-3137
 E-Mail joe.papania@motorola.com

MUST BE FILLED IN
 FIRM (VENDORS) NAME _____ BID NUMBER _____

18. GENERAL NOTES

18.1 CONSTRUCTION

- Construct vessel in accordance with this Specification to a standard reflecting modern, efficient shipbuilding practice, specifically as related to high speed, high-performance vessels of lightweight construction
- Use only new materials free from defect in construction of vessel. Where required by this Specification, present material test certificates and/or welder certificates for approval
- Perform all work on the vessel in accordance with the following standard:
 - *American Bureau of Shipping Guide for Building this specific type of vessel*

18.2 Materials

- Provide new materials, free from lamination, surface scratches, corrosion or other defects

18.2.1 Stainless Steel Ice Deflector

Bow Wrap Ice Deflector Plate-316 Series

18.2.2 Aluminum

Structure, Hull, Deck & Pilot House

Hull Bottom, 5/16 Inch 5086-H116

Hull Sides, 3/16 Inch 5086-H116

Pilot House Sides & Top, 1/8 Inch 5086-H116

Decks, 3/16 Inch 5086-H116

Bulkheads, 3/16 Inch 5086-H116

Longitudinals, 1/4 Inch 5086-H116

Rear Dive Platform Over Drives, 3/16 Inch 5086-H116

Transom, 1/4 Inch 5086-H116

5086-H116 Flat Bar & 6061-T6 Extruded Internal Stiffening

Hand rails

Gunwale, 1 5/8 Inch Tubular Polished Anodized

Push Bumper

Bow Crown Heavy Duty Aluminum with Rubber Pads

18.2.3 Wood

- Ensure any wood for cabinet work, lining, trim, and other purposes is properly seasoned, free of objectionable flaws, and of a species suitable for marine environment. Provide edge moldings and any other cosmetic trim specified as "hardwood" of oiled teak. Any plywood to be exterior grade, GIS, pressure treated for vermin and rot resistance

18.3 Workmanship

- Do not cut holes or openings in structural members for pipes, cables, access, or other purpose unless authorized on approved Drawings
- Take care the structural integrity of the hull structure is preserved.

MUST BE FILLED IN

FIRM (VENDORS) NAME _____ BID NUMBER _____

- Neatly and carefully execute all plate edges and holes cut in structure. Make all cuts regular in outline without notches
- Openings cut in shell, deck, or other main strength members to be circular or have well- rounded corners. Grind edges of such cuts smooth
- Remove sharp or jagged edges of exposed structural work
- Remove all erection clips or bridges and grind any projections smooth. Avoid removal of material from plate
- Provide limber holes for drainage where necessary to permit total drainage to lowest point of compartment or tank. Cut limber holes on a smooth radius where practicable. In general, do not cut limber holes or mouse holes unless there is adequate access to provide a good quality fillet weld through the hole, and back along both sides of plate for 3"
- Construct bulkheads below decks to a watertight standard with scantlings as shown on Plans. Ensure bulkheads are flat without buckling

18.4 Welding

Patented thermal loaded welding process, preventing material distortion and reducing stress
Certified by ABS, BureauVeritas and Lloyds

- Inspect all aluminum structural work prior to welding for proper edge preparation, gap, and alignment
- Use American Bureau of Shipping *Non-Destructive Inspection of Hull Welds*, 1986, as the standard of acceptance for non-destructive examination
- Contractor and OFM designee to carry out a complete visual inspection of all butt and fillet welds. Thoroughly clean all welds, and provide staging for access as required. Welds to be visually inspected for proper size, good appearance, contour, and porosity. Any defect(s) found will be brought to Contractor' attention for appropriate corrective action
- Provide the services of a certified radiographer for a total of twelve (12) radiographs of shell welds at suitable stages of construction. Position on hull for radiographs to be defined by Owner's Representative as required. Provide safe access and assistance as required
- Base all welding details and dimensions on ABS Rules for vessels of this type, size, and service.
- Carefully prepare and fair up all plate edges before welding
- Leave finished work clean and smooth with all projections and rough welds chipped flush and ground smooth. Grind smooth on crown, but not flush with plating, all welds which will be on exposed underwater portions
- Ensure surface of all parts to be welded is clean, dry, and free from scale and grease. All welds to be sound, uniform, and substantially free from slag inclusion and porosity. Take care to ensure thorough penetration and fusion; avoid undercutting. Before a sealing run is applied to a butt weld, expose the clean metal of the original root run. Cut and reweld all welds not meeting these conditions
- Do not carry out welding in ambient temperatures less than 32/ F, or when surfaces are wet. If Contractor wishes to weld in adverse conditions, erect suitable weather tight covers and use heaters to provide reasonable temperature and humidity conditions

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

18.5 Weld Testing and Inspection

- Ensure each radiograph is clearly identified to be traceable to the weld, or weld seam, and the vessel, so it can be related to the "as fitted" shell expansion or construction section. Radiographs to bear date and radiographer's initials. If a radiograph reveals unacceptable discontinuity extending off either film end, Contractor will perform at his expense overlapping radiographs (additional to the 12 specified above), until the extent of discontinuity is established. If two overlapping radiographs reveal unacceptable discontinuities, the entire weld will be considered unacceptable
- When a weld is rejected in accordance with the weld acceptance criteria specified due to isolated defects not extending to either radiographic film end, one (1) additional new location shall be radiographed at the Contractor's expense, with the Owner's Representative selecting the new location. All welds found unacceptable shall be identified, adequately repaired, and x-rayed again at Contractor's expense. Radiographs to become property of Owner

18.6 Welder Qualifications and Standards

- Ensure all welders employed in the construction of this vessel are certified in accordance with Classification Society standards
- Provide Owner's Representative with copies of current welding certificates prior to Construction of hull / 1st Milestone Payment

18.7 Engine Cooling Raw Water Intake and Screen

- Construct raw water intakes for main engines, Fire Pump Engine and Genset in machinery space
- Thoroughly coat all 6000 aluminum alloy components with Belzona to prevent corrosion
- Provide
 - intake grating, bolted attachment - to internal brackets
 - stainless steel bolts; "Never Seize" applied to threads
 - bolts drilled and locked with stainless steel wire
 - open area - minimum 5 times combined area of all connected services or manufacturers' standard
 - attachment - to internal brackets and hinges
 - suction/recirculation - all valves flange-mounted
 - anodes - one bolt-on anode, pencil type in inlet pipe

18.8 Fire-Fighting Raw Water Intake and Screen

- Construct raw water intake in machinery space for fire-fighting as follows:
 - increase thickness of all contiguous plating locally
 - intakes:
 - area - at least 4 times combined area of all connected services or manufactures standard
 - material - 6061 T6 aluminum perforated aluminum complete with
 - bolted attachment - to internal brackets
 - stainless steel bolts; "Neverseize" applied to threads
 - bolts drilled and locked with stainless steel wire
 - hinges - provide hinges along inboard side
 - suction/recirculation - all valves flange-mounted
 - anodes - one bolt-on anode, pencil type in inlet pipe

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

18.9 Swim Grid

Construct a robust working platform across transom. Platform to provide a safe area for crew to work over stern. Provide handholds and a secure non-slip footing surface.

18.10 HULL APPENDAGES

18.10.1 Transducer Housings

- Fit one transducer pod to one side of hull centerline with position, geometry, and construction. Grind all external edges smooth and fair. Construct separate watertight seating for transducer in location, leaving room for additional future transducers. Install transducers for all electronics fitted on vessel. Streamline pod for efficient functioning of transducers. Design to withstand ice impact

18.11 PILOT HOUSE

- Construct wheelhouse of aluminum alloy to dimensions and scantlings described herein
- Emphasize maximum visibility for helmsman while retaining maximum structural rigidity. Take every precaution to avoid resonant vibration in pilot house structure
- Locally stiffen wheelhouse top to support searchlights, whistle, and other fittings

18.12 INDEPENDENT TANKS

- Supply and install independent tanks and secure to vessel over floors or fabricated foundations with wear plates or pads in contact areas as follows:
 - foam tank- linear polyethylene, rotary moulded
 - freshwater tank (1) - linear polyethylene, rotary moulded
 - grey /black water tank (1) - linear polyethylene, rotary moulded
 - alternatively, above tanks may be constructed of "welded" polypropylene
 - fuel tank (1) - welded aluminum
- Fit tanks with fill, vent, and sounding equipment

18.13 SEATINGS AND FOUNDATIONS

18.13.1 General

- Provide welded or bolted seats for equipment to attach to ship's structure as appropriate, with no struts, braces, or hangers attached directly onto plate panels

18.13.2 Main Machinery Foundations

- Design, fabricate and install seatings for propulsion machinery in relation to machinery selected with due consideration to rigidity, maintenance of alignment, avoidance of unacceptable level of vibration, and minimization of noise
- Fabricate and install main engine girders and main pump engine girders in accordance with the manufacturer's instructions

18.13.3 Auxiliary Machinery Foundations

- Mount all items of auxiliary machinery on adequate individual seatings integrated with ship's structure with no struts, braces, or hangers attached directly onto plate panels

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

- Pay special attention to seatings for reciprocating machinery in order to minimize noise transmission, deflection, and vibration

19. TESTS AND TRIALS

19.1 Delivery:

Delivery of vessel will be accomplished in two stages:

- At Builders premises – for purposes of ensuring the vessel is thoroughly completed and has satisfactorily completed all trials and
- By final acceptance after delivery to Owner’s (City of Philadelphia) dock at City’s home port

In both instances, ensure vessel is complete, fully operational in every aspect, and thoroughly cleaned to “new” condition

Any defects listed by Owners representative will be rectified, or an arrangement for rectify them will be agreed upon with owners representative , prior to final delivery.

Hand over all required certificates with the vessel, and post those certificates required in place, suitably framed

All tests and trials will have been successfully concluded.

19.2 Consumables:

Deliver vessel with the following consumables:

- For final Inspection trials builders premises
 - all systems fully charged
 - all tanks except gray water pressed
 - foam tanks filled with “practice foam”
- For delivery trials
 - all systems fully charged
 - all tanks except gray water pressed
 - foam tanks filled with “practice foam”
- On arrival in Philadelphia
 - all systems fully charged
 - all fuel, water, and oil storage tanks pressed full
 - foam tanks rinsed and filled after final outfitting and training with AFFF foam. Delivered by truck to City home port

Cost of all fuel, foam, oil, etc. will be Contractors account.

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

19.3 Travel Expenses, Delivery

Include in the contract price the cost associated with delivering the vessel from the Contractors Shipyard to owner’s home port. Include all costs for travel, food and lodging for delivery personnel, for as long as it takes to deliver vessel from Contractors Shipyard to owner’s home port.

The contracts shall also include all cost for fuel, oil and any provisions and supplies required during the delivery of vessel to Owner’s home port as described in Item 13

19.4 Tests And Trials

- Perform a comprehensive set of tests and trials of vessel in accordance with recommendations of the Society of Naval Architects and Marine Engineers (SNAME) T&R Bulletin 3-47 *Guide for Sea Trials*, 1989, NFPA 1925 Standard on Marine Fire-Fighting Vessels Chapter 17 Tests and Trials, and Annex A of this Specification, at or near Shipyard, to Contractor's account.

Prepare the tests and trials agenda and documents and present to Owner's Representative for approval prior to commencing tests and trials. Conduct all trials to approval of Owner's Representative to satisfy but not limited to the following:

1. Satisfy Regulatory Authorities that vessel and all systems and equipment are fit for purpose, and in compliance with all applicable regulations.
2. Prove that execution of all work is in accordance with Specification and Drawings.
3. Prove the full and satisfactory operation of all shipboard systems.
4. Establish and record performance benchmarks of all shipboard systems as a baseline for future monitoring.
5. Identify any aspects of workmanship, material, or equipment defect which require rectification prior to acceptance of vessel.
6. Document vessel performance in terms of free running speed, fuel consumption, controllability, and maneuverability.

- Record test configurations, test procedures, and test results, and submit report on all tests conducted to Owner as specified in Annex A
- Thoroughly test all portions of vessel, its fittings, machinery, piping systems, fire pumps, deck fittings, mooring arrangements, anchoring arrangement, etc., to demonstrate satisfactory workmanship, adequate strength, tightness, freedom from vibration, and general suitability for the purpose intended, having in mind accessibility for operation and maintenance as well as ability to carry out function as efficiently as practicable
- At the shop test, conduct a thorough inspection of the equipment and verify the suitability of all interface connections to ship and ship systems. Acceptance of equipment at the shop test will indicate Contractor's acceptance of the equipment for vessel as presented, and all additional material and labor to complete the installation to be to Contractor's account. Report any deficiencies in writing to Owner's Representative at the shop test, and do not accept delivery of equipment until such defects are rectified

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

19.5 In Process and Equipment Testing

- Prepare a shop and installation testing program in accordance with the recommendations of the Society of Naval Architects and Marine Engineers (SNAME) *T&R Bulletin 3-89, Guide for Shop and Installation Tests, 1985* (or equivalent) and Appendix A, and present to the Owner designee
- Certify and test materiel and/or systems for compliance with Specification requirements

19.6 Lightship Survey

- The lightship survey certification shall be provided to Owner designee
- Ensure that stability tests and documentation comply with requirements of NFPA 1925

19.7 Commissioning Tests and Sea Trials Program

- Carry out in a systematic manner, all trials, tests, and checkouts in connection with inspection and acceptance of vessel to satisfaction of Owner's Representative. **Supply qualified personnel and all equipment required for operation of vessel or machinery.** Perform and record all tests and trials in accordance with the approved tests and trials program
- Prior to acceptance trials, prove all systems operational and perform such Builder's trials as may be necessary to ensure proper function
- Before starting up any major item of equipment, perform a thorough inspection in the presence of a representative of the manufacturer to establish cleanliness, tightness, correctness of connections, proper lubrication, and fuel supply. etc.
- Supply all instrumentation considered necessary by Owner's Representative to supplement that installed in accordance with relevant clause of this Specification to obtain minimum data required to assess performance
- After preliminary start up, and on receipt of approval from manufacturer's representative, carry out a basin trial on main engines and propulsion units in accordance with the approved tests and trials program. Contractor is responsible for securing vessel during this trial
- Oils and lubricants required for the initial charging of all systems, and completion of all trials, and filling of tanks prior to trials, is Contractor's responsibility
- Any defects found during trials to be rectified to the satisfaction of Owner's Representative before delivery will be accepted. If considered necessary by Owner and / or Manufacturer's representative(s), further trials shall be carried out to prove items corrected

20.0 SPARES

- Provide spare parts and tools as specified below and in individual Sections of the Specification. Package all parts individually and label with proper part number and description on outside of box, bag, or crate. Provide a master packing list with part number and description of all parts provided. Provide only new parts—exchange or rebuilt parts are not acceptable:

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

Engines:

- fuel filters -1 shipset
- oil filters-1 ship set
- rubber pump impellers-1 ship set

Fuses

- one package of each size (amp rating)

Light bulbs

- 1 of each size in control panels
- 1 spare lamp per fixture type for all interior and exterior lights including floodlights, searchlights, and navigation lights

Fire Pump seals

- 1 shipset

• Store spares and spare parts in a dry, secure area during construction period of vessel, before handing over to Owner. Inventory all spare parts indicating what parts are in which boxes, including quantities, and parent machine or engine

21. GUARANTEE

• Contractor to guarantee vessel, its systems, and all components free of defects of material or workmanship for a period of one (1) year after placing of vessel in service at the vessel's home port, subsequent to satisfactory completion of all tests and trials. In addition, the following items, including their installation, shall be guaranteed for one (1) additional consecutive year (or manufacturer's warranty, if that be greater): see section 3.15 for specific warranty requirements

- main engines
- fire pump engine
- fire pump
- generator set
- outdrive components
- fire pump drive components
- engine controls
- generator assembly
- gear controls

• This guarantee to include 100% parts, labor, delivery, travel, and expenses required to repair or replace defective component(s)

- In case of failure of any structure, system or components, immediately, upon being notified of same, take steps to rectify the fault with the utmost dispatch
- In case of work of a minor nature, make available services of competent personnel and facilities

MUST BE FILLED IN
 FIRM (VENDORS) NAME _____ BID NUMBER _____

at the vessel's home port at a time agreeable to Owner

- The Owner may, in case of defects not considered vital to continuance of operation, postpone correction to a time mutually agreeable; but prior to expiration of Guarantee Period, and notify Contractor in writing of all such claims that they may be examined and action determined
- **Drydock the vessel to Contractor's account 12 months after acceptance of the vessel**, or at a time and place mutually agreeable to the Owner and Contractor, for inspection of underwater body of the vessel by Owner, full test of all systems for condition and performance, and defect correction as required by the Contractor
- Identify the facility on contract with the Owner's for Boat maintenance and repair which shall be used for this inspection (At the time of Bid, General Ship Repair Corp., located in Baltimore)

22. THIRD PARTY INSPECTION

- Provide as part of this bid a budgeted amount of \$40,000.00 to be used for a third party inspector, of the City of Philadelphia's choice, to perform inspections at the owners request during the construction of the vessel. Third party inspector shall also be in attendance for the four visits as described in Section 6, Preproduction and Inspection. The third party inspector shall act in place as Owner designee during field inspection and together with City representative on inspection trips. The third party inspector shall be responsible to provide all expenses for travel, lodging, food and time to awarded vendor. Awarded vendor shall be responsible to reimburse third party expenses, keeping an accurate record and original copies of all expense records. At completion of the project provide an invoice with original expense records attached for reimbursement up to the dollar amount spent. A mark up of 5% shall be allowed.

23. POST DELIVERY INSPECTION

- Approximately one hundred and fifty (150) days after placing vessel in service, but not later than one hundred and eighty (180) days after delivery, on date agreed upon as compatible with availability of vessel, carry out an inspection jointly with Owner's Representatives at Owner's depot, to determine whether the vessel has suffered any failure of structure or detail, malfunction of machinery or electrical device, failure of paint coating, failure or leakage in piping systems, etc.
- When extent of such defects has been duly noted and agreed upon, and if correction is required, arrange for the necessary work to be carried out at Owner's depot or at a convenient facility in Owner's home port, or City's current vendor on contract location depending on the nature and extent of work
- Carry out work as expeditiously as practicable in order to minimize loss of vessel use. Such work to be carried out free of charge to Owner will be accepted subject to satisfactory performance in a further trial period of not less than ninety (90) days. Should an additional inspection be required, Contractor is responsible for time and expenses of Owner's Representative to attend and witness satisfactory completion

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

ANNEX A - TESTS AND TRIALS

A1.0 GENERAL

- Carry out, in a systematic manner, all trials, tests, and checkouts in connection with inspection and acceptance of vessel to satisfaction of Owner's Representative. Supply qualified personnel from component manufacturer's and all equipment for operation of vessel or machinery
- Before starting up any major item of equipment, perform a thorough inspection in the presence of the representative of the manufacturer, to establish cleanliness, tightness, and correctness of connections, proper lubrication, and fuel supply, etc.
- Supply all instrumentation necessary to supplement that installed in accordance with relevant clause(s) of this Specification, in order to obtain minimum data required to assess performance
- Provide oils and lubricants required for the initial charging of all systems, and completion of all trials, and filling of tanks to 95% capacity prior to trials. Lubricants subject to approval of equipment manufacturer
- Before delivery is accepted, any defects found during trials must be rectified. Repeat any test or trial that was not successfully completed due to defect or other problem, to prove defective item is corrected
- Conduct trials according to the outline given herein (which is not necessarily all-inclusive), and comprises the following distinct phases, described in detail below:
 - Shop Tests
 - Construction Testing
 - Shipbuilders Trials (Dock Trials)
 - Acceptance Trials (Sea Trials)
- Develop test plans for each phase, to demonstrate that the systems and equipment being tested meet the requirements of this Specification and submit them to the Owner's Representative for approval prior to start of testing. Maintain a complete and accurate record of all testing and trials conducted. Upon completion, provide three (3) bound copies of the Trials Report to Owner's Representative
- Record all trials information, defects, remarks of inspection, etc., in the Trials Report. Obtain signatures for the satisfactory completion of all tests and trials from Owner's Representative and Component manufacturer's representatives

A2.0 SHOP TESTS

- Provide to Owner's representative copies of all factory test reports, for all components, inspect all equipment upon arrival at builders facility. To include but limited to:
 - main engines
 - generator sets
 - fire pump engine
 - fire pump
 - gear sets
 - HVAC
- Prepare a shop and installation testing program in accordance with recommendations of the Society of Naval Architects and Marine Engineers (SNAME) T&R Bulletin No. 3-89, *Guide for Shop and Installation Tests, 1985* (or equivalent)

MUST BE FILLED IN
FIRM (VENDORS) NAME _____

BID NUMBER _____

- At the shop test, conduct a thorough inspection of the equipment and verify the suitability of all interface connections to the ship and ship systems. Acceptance of the equipment at the shop test indicates acceptance of the equipment for the vessel as presented, and all additional material and labor to complete the installation will be to the Contractor's account. Report any deficiencies in writing to the Owner's Representative

A3.0 CONSTRUCTION TESTING

- Throughout the process of construction of the vessel, Contractor is responsible for maintaining an accurate record of the satisfactory completion of various critical components of the hull and systems.
- Thoroughly test all portions of the vessel, its fittings, machinery, piping systems, Fi-Fi systems, deck fittings, mooring arrangements, anchoring arrangements, etc., to demonstrate satisfactory workmanship, adequate strength, tightness, freedom from vibration, and general suitability for the purpose intended, having in mind accessibility for operation and maintenance as well as ability to carry out function as efficiently as practicable
- Record all trials information, defects, and remarks
- Hydrostatically test all hull compartments and tanks and record the pressures and date. (Where hydrostatic testing of compartments is impractical, test the hull using air pressure and bubble leak indicators.) Owner's Representative to witness
- Upon completion of test, drain compartments and tanks, wipe up, blow out, or otherwise clean and inspect to ensure no foreign matter remains
- Test the following systems using air, water, or oil as appropriate, to approximately 50% in excess of working pressure:
 - bilge system
 - engine cooling system
 - fi-fi systems
 - fuel system
 - hot and cold fresh water system
 - hydraulics
 - grey water system

A4.0 SHIPBUILDER'S TRIALS (DOCK TRIALS)

A4.1 General

- Prior to the commencement of formal acceptance sea trials, demonstrate the functionality and proper operation of all systems to satisfaction of Owner's Representative
- Conduct a series of systematic dock-side trials of onboard systems in accordance with approved tests and trials program to the satisfaction of Owner's Representative. Ensure all tests are witnessed by the Owner's Representative and carefully record results to include with the final Trials Report
- Provide any test equipment or instrumentation required
- Correct any deficiencies arising during dock trials. Prior to subsequent sea trials, repair or replace equipment, or address deficiencies arising during dock trials to satisfaction of Owner's Representative

MUST BE FILLED IN
 FIRM (VENDORS) NAME _____ BID NUMBER _____

A4.2 Machinery and Equipment Trials

• Specific tests and trials to be performed include but are not limited to the following:

1. Main engine controls - test controls to ascertain governors and drive units are fully synchronized for all movements
2. Water systems - prove the following systems for satisfactory operation and record results:
 - fi-fi
 - bilge
 - hot and cold fresh water
 - grey water
 - engine cooling systems
3. Sanitary systems - demonstrate satisfactory operation of port-a-pottie
4. Electrical systems - check and prove the electrical balance of the system under full load. If requested, trip breakers
 - record output voltage and lag
 - Megger test all circuits and provide test sheet
5. Bilge system - demonstrate all bilge suctions utilizing all pumps
6. Fuel system - prove suction from fuel tank
7. Fire Fighting System
 - demonstrate
 - record system pressure
 - monitor throw
8. Electronic equipment - check all electronic equipment for satisfactory operation
 - run up radar units and set provisional headings
9. Doors, hatches, windows - demonstrate all exterior doors, windows and hatch covers are weather tight or watertight by hose testing as appropriate
10. - Demonstrate sink with hot/cold water & lavatory,
11. Pumps - check the following pumps for satisfactory operation. Record capacities, voltage, current, vacuum and/or pressure readings:
 - bilge pumps
 - fire pumps
 - fresh water pump
 - jacket water circulating pumps:
 - main engines
 - generators
 - grey sump pump
12. Main engines and auxiliaries - start and check to satisfaction of Owner's and manufacturer's representatives. Recheck and set controls
 - demonstrate engine compartment ventilation fan operation
13. Alarms - where practicable, activate and prove all alarms
14. Steering system - check steering in all positions
15. Anchor winches - complete operational test
16. Demonstrate Davit operation
17. Miscellaneous items to check - all labels and warning signs posted

MUST BE FILLED IN

FIRM (VENDORS) NAME _____ BID NUMBER _____

- battery box covers secured and vented
- Fireboy HFC-227 , 250 cu ft automatic engine compartment fire extinguishing system
- communications
- fire-fighting appliances
- floodlights
- general illumination, exterior and interior
- heaters and exhaust fans
- lifesaving appliances
- navigation lights
- pipe markings
- searchlights
- whistle
- windshield wipers and washers
- check spares, list inventory, and obtain Owner's Representative's signature

- Prepare data sheets for all systems as outlined above for recording capacity along with defined test criteria

A4.3 Lightship Survey

- Conduct the lightship survey in accordance with NFPA 1925
- Lightship survey to be provided to owner’s representative.

A5.0 ACCEPTANCE TRIALS (SEA TRIALS)

A5.1 General

- Sea trials to be conducted only upon satisfactory completion of all dock trials, in presence of Owner's Representative
- Perform a comprehensive set of tests and trials of the vessel in accordance with recommendations of the Society of Naval Architects and Marine Engineers (SNAME) T&R Bulletin No. 3047 *Guide for Sea Trials, 1989*
- Ensure certificates, instruction manuals, and drawings are available onboard for reference and, on completion, turn over all such information to Owner
- Provide fuel, lubrication oil, and other lubricants sufficient for charging of systems tests and trials. At conclusion of Home Port trials, sound the fuel oil storage tanks; inform Owner of the fuel oil remaining in the tanks after successful completion of trials
- Provide an appropriately certified captain and crew for manning vessel during sea trials, and also the services of all skilled technicians and supervisory personnel required to make observations, correct, or adjust machinery or systems
- Perform various specific trials as outlined below, accurately record performance and witness as necessary

A5.2 Compass Adjustment

Adjust compass and post deviation card (Must be completed at home port!)

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 FIRM (VENDORS) NAME _____ BID NUMBER _____

A5.3 Radar Adjustment

- Adjust radar in conjunction with compass adjustment. Compass and radar adjusters to be landed on completion of their respective tasks

A5.4 Radio(s)

- Demonstrate radio(s) receive and transmit. Note and correct any land-based interference

A5.5 Sound Level Survey

- On completion of the vessel, conduct a thorough sound level survey aboard the vessel using recognized monitoring equipment
- Record sound level readings on the dBA scale at the following locations at 1,500 rpm power during speed trials and/or endurance trials:
 - pilothouse
 - fireman's quarters/lower cabin
- Ensure all doors and windows are closed during measurement periods

A5.6 Speed Trials

- Run vessel over measured mile, or utilize GPS at the given engine speeds. Run the course in both directions to obtain average speed. Note general weather conditions.
- Record the following data during the speed trials:
 - loaded draft forward and aft at start and completion
 - fuel consumption
 - engine rpm all engines
 - shaft rpm all engines
 - jacket water temperature
 - lube oil temperature
 - ship's speed
 - trim angle compared to "at rest"
- During the measured mile runs in the ahead direction, record the following machinery data:

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

Date: _____

Time: _____

Location: _____

Speed Trials							
Engine	Direction	RPM	Wind	Tide	Course	Time	Speed

AHEAD

Port	Out	1400					
Port	In	1400					
Starboard	Out	1400					
Starboard	In	1400					
Both	Out	1400					
Both	In	1400					
Port	Out	1700					
Port	In	1700					
Starboard	Out	1700					
Starboard	In	1700					
Both	Out	1700					
Both	In	1700					
Port	Out	2000					
Port	In	2000					
Starboard	Out	2000					
Starboard	In	2000					
Both	Out	2000					
Both	In	2000					
Port	Out	2300					
Port	In	2300					
Starboard	Out	2300					
Starboard	In	2300					
Both	Out	2300					
Both	In	2300					

MUST BE FILLED IN
 FIRM (VENDORS) NAME _____ BID NUMBER _____

• During the measured mile runs, record the following machinery data:

RPM	Exhaust Temperature			
	Run No 1		Run No 2	
	Out	Back	Out	Back
PORT ENGINE				
1,400				
1,700				
2,000				
2,300 (full power)				
STARBOARD ENGINE				
1,400				
1,700				
2,000				
2,300 (full power)				

measured mile runs, record machinery data
 out
 back

MUST BE FILLED IN
 FIRM (VENDORS) NAME _____ BID NUMBER _____

Main Engine Temperature

RPM	MAIN ENGINE OPERATIONS					
	Lube Oil		Cooling Water		Engine Intake Air Temp.	
	Pressure	Temperature	Engine Temperature	Overboard Temperature		
PORT						
1,400						
1,400						
1,700						
1,700						
2,000						
2,000						
2,300 (full power)						
2,300 (full power)						
STARBOARD						
1,400						
1,400						
1,700						
1,700						
2,000						
2,000						
2,300 (full power)						
2,300 (full power)						
Seawater Temperature						
Outside Air Temperature						

measured mile runs, record machinery data
out
back

Provide full print out from any alarm/monitoring system for each condition

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

A5.7 Endurance Trial

- On completion of the speed trials, operate the vessel, generally proceeding ahead, with the engines at rated rpm for a period of 1 hour. During this period, record any fluctuations of pressure or temperature
- Continue for an additional 1 hour, run the engines at manufacturer's recommended continuous rating, and note any pressure or temperature fluctuations

Endurance Test

SPEED/RPM Engine Manufactures recommended continuous rating	MAIN ENGINE OPERATIONS					
	Lube Oil		Cooling Water			
	Pressure	Temperature	Engine Temperature	Overboard Temperature		Engine Intake Air Temp.
	PORT					
15 minutes						
30 minutes						
45 minutes						
60 minutes						
75 minutes						
90 minutes						
105 minutes						
120 minutes						
STARBOARD						
15 minutes						
30 minutes						
45 minutes						
60 minutes						
75 minutes						
90 minutes						
105 minutes						
120 minutes						
Seawater Temperature						
Outside Air Temperature						

Proceed in a generally straight course, record machinery data

MUST BE FILLED IN
 FIRM (VENDORS) NAME _____ BID NUMBER _____

Provide full print out from any alarm/monitoring system for each condition

- Provide full printout from alarm/monitoring system for each condition

A5.8 Steering Trials

- Conduct a thorough examination of the vessel's turning capability and record the results for inclusion in the Trials Report
- The steering trials include steering ahead and astern. During the tests, check out drive operation for smooth operation. Demonstrate proper steering gear operation.
- Record times to change steering at 45 degree course changes, generally as per the Tables shown, at engine rpms of 1,400, 1,700, 2,000, and 2,300 while running ahead, and at 1,200 rpm while running astern

AHEAD / ASTERN STEERING TRIAL					
Date:					
Weather:					
Wind:	Speed:				
	Direction:				
Ship Speed:					
RPM:					
			Compass Heading		
Test No.	Manoeuvre	Steering System Hydraulic Pressure	Start	End	Manoeuvre Time
	Midships to Hard-a-Port				
	Hard-a-Port to Midships				
	Midships to Hard-a-Starboard				
	Hard a Starboard to Midships				
	Midships to Hard-a-Port				
	Hard-a-Port to Hard-a-Midships				
	Hard-a-Midships to Hard-a-Port				
	Hard-a-Port to Midships				
Notes:					

Make appropriate copies, record headings and time to complete

MUST BE FILLED IN
 FIRM (VENDORS) NAME _____ BID NUMBER _____

A5.9 Manoeuvring Trials

• Demonstrate the capacity of the vessel to execute slow speed and tight manoeuvres using the various steering control system available, and the various steering components available on the vessel.

1 STARBOARD TURN

Port drive full ahead

Starboard drive full astern

2 PORT TURN

Port drive full astern

Starboard drive full ahead

A5.10 Crash Stop

• With the main engines at full rpm, perform a preliminary crash stop. Carry out this manoeuvre with caution and with approval from the engine, gear, and drive suppliers. When certain the control gear is correctly adjusted, carry out the crash stop. With the ship at full ahead, move the controls from full ahead to full astern with delay acceptable to all interested parties, and record the following data:

- time from control movement until vessel is stopped - _____

- time from control movement until vessel starts astern - _____

- estimated distance of advance from control movement until vessel is stopped - _____

A.5.11 Fire-Fighting Equipment

• Develop a comprehensive series of tests and trials for all Fi-Fi equipment and services to fully demonstrate and document satisfactory performance. Consulting equipment manufacturer in developing comprehensive tests and trials procedure for all fi-fi equipment including defined test criteria

A5.12 At Conclusion of Trials

• Check main engine lube oil, fuel and air filters, and replace as necessary

- **Inspect structure in machinery room, mounts, brackets etc. for issues**

A5.13 Miscellaneous Items Required for Sea Trials

• Clearance for vessel:

- radio license

- draft of vessel

- adequate provisions for light meal for all aboard

- charts of area where trials to be run

- coffee

- drawings of vessel

- hydrometer

- lifejackets for all persons onboard

- NUC shapes

MUST BE FILLED IN

FIRM (VENDORS) NAME _____ BID NUMBER _____

- paper towels
- rags for engine room
- sound level meter
- stop watch
- tank soundings

- thermometers; 0/ to 120/ F (4)
- tide tables
- toilet paper
- water

MUST BE FILLED IN
FIRM (VENDORS) NAME _____ BID NUMBER _____

PROCUREMENT DEPARTMENT
Rm. 120 Municipal Services Building
Philadelphia, PA 19102-1685
FAX: (215) 686-4716

CITY OF PHILADELPHIA

Hugh Ortman
Procurement Commissioner

December 10, 2012

BID NUMBER: S3XT7000
TITLE: FIRE/RESCUE BOAT 40' OAL
DEPARTMENT: FIRE
DATE TO OPEN: December 17, 2012 at 10:30 AM

ADDENDUM # 2

TO ALL BIDDERS:

You are hereby notified of the following changes to the above mentioned bid:

Please add under Section 3.2.1:

3.2.1.1 Basis of award for this bid will be on the unit price in Section 5, "Pricing", plus all options. The cost of items 5.1.2 Pre-Construction Meeting, 5.1.3 First Milestone Inspection, 5.1.4 Mid-Production Inspection and 5.1.5 Final Inspection and River Trial trips shall not be considered for the basis of award.

Page 8, Para. 3.2.2 shall read as follows:

The contract award will be in the amount of the total amount bid for the items plus a 5% Contingency amount (Contingency amount based on Items 5.1 and 5.1.1 only) to allow and provide for technological changes, improvements or amplifications as the result of the pilot inspections, etc.

QUESTIONS (Spec Code 89005A.13)

Question 1. SCG Certificate of Documentation is covered by the manufacturers Certificate of Origin.

Answer 1. **USCG Certificate of Documentation is required if not listed on the manufacturers Certificate of Origin must be on secured paper.**

Question 2. Spec Code 89005A.13, Page 6 of 54, Item 3.1 Regarding the welding process, (and any other location where this is referenced) ABS, Veritas and Lloyds is not CERTIFIED. They do not actually provide certifications. It should state that the welding and structure process has been APPROVED by ABS, Veritas and Lloyds.

Answer 2. **The City will accept the welding as approved by ABS, Veritas and Lloyds.**

Question 3. Spec Code 89005A.13, Page 8 of 54 Item 3.2.8 - Due to the Aluminum structure needed in the dive door, we can't compromise the thickness to accommodate a backboard. Backboard/s need to get stored along the rear gunwales or another location that can be determined during a pre-construction meeting. Is this acceptable?

Answer 3. **Yes, this is acceptable; the back board can be relocated to another location to be determined during a pre-construction meeting.**

Question 4. Spec Code 89005A.13, Page 10 of 54 Item 3.3.7 - Due to the space needed in the lower cabin for the electric toilet and sink, can the second bench seat be deleted from the spec?

Answer 4. **The vessel is acceptable with one bench seat.**

Question 5. Spec Code 89005A.13, Page 12 of 54, Item 3.4.2 & Page 16.10 - Fire Pump System: the rated flow @ 150 psi utilizing a 5.9L is 2250 GPM. The system will flow over 3000 GPM between 110 – 135 psi. The engine HP will be moved to 380 HP to achieve max psi. Can the spec be changed to the rated flow of 2250 @ 150psi?

Answer 5. **The vessel is acceptable with a rating of 2250 GPM @ 150 psi utilizing a 5.9L with, an increased horsepower of 380 on the fire pump engine.**

Question 6. Spec Code 89005A.13, Page 38 of 54, Item 19.2c - Upon delivery of the vessel all the fluids shall be filled, responsibility of the contractor. Since the vessel cannot ship with a full tank of fuel and transport of the vessel to a fuel dock may not be feasible. Will the City be able to fill the tank from the City's fuel service truck (at the cost of the contractor)? As far as refilling the foam tank with 100 gallons of *Universal Gold* foam; will the City be able to fill the foam tank with their standard *Universal Gold* foam (at the cost of the contractor)?

Answer 6. **The awarded vendor will need to make arrangements with a local vendor to supply the fuel and foam as required.**

Question 7. Spec Code 89005A.13, Page 42 of 54, Item 22 - Can the \$40,000 allotted for the third party consultant is paid upon receipt of the final contract balance?

Answer 7. Yes, as per item 22.

Question 8. Spec Code 89005A.13, Page 28 of 54 Item 13 - Delivery of the vessel will be completed within 300 calendar days after the award of the contract.

Answer 8. Delivery of the vessel will be completed within 300 calendar days after the Pre-Construction meeting with City approval.

No further questions will be entertained at this time.

Please sign, date and return this addendum with your bid to the Procurement Department, 1401 J.F.K Boulevard, Bid Room 170A, Philadelphia, PA 19102-1685 as it now becomes a part of the proposal.


Buyer, J. Manton

AUTHORIZED SIGNATURE

FIRM NAME (PRINT)

DATE

JM/bws

PROCUREMENT DEPARTMENT
Rm 120 Municipal Services Building
Philadelphia, PA 19102-1685
FAX: (215) 686-4716

CITY OF PHILADELPHIA

Hugh Ortman
Procurement Commissioner

December 14, 2012

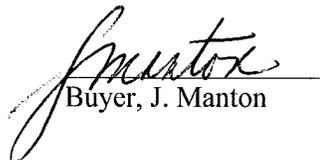
BID NUMBER: S3XT7000
TITLE: Fire Rescue Boat 40' OAL
DEPARTMENT: OFM
DATE TO OPEN: December 17, 2012 10:30 AM
Addendum #3

TO ALL BIDDERS:

You are hereby notified of the following changes to the above mentioned bid:

Bid S3XT7000 has been postponed until Friday December 21, 2012 at 10:30 a.m.

Please sign, date and return this addendum with your bid to the Procurement Department, 1401 J.F.K Boulevard, Bid Room 170A, Philadelphia, PA 19102-1685 as it now becomes a part of the proposal.


Buyer, J. Manton

AUTHORIZED SIGNATURE

FIRM NAME (PRINT)

DATE