AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
	1 of 8

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO.(If applicable)
0001	15-Apr-2002	W25PHS-2028-4776	

6. ISSUED BY CODE DACW61
CONTRACTING DIVISION
WANAMAKER BUILDING
100 PENN SQUARE EAST
PHILADELPHIA PA 19107-3390

7. ADMINISTERED BY (If other than item 6) CODE E5CTCSGF
US ARMY ENGINEER DISTRICT, PHILADELPHIA
POC: SANDRA FLETCHER
WANAMAKER BUILDING
100 PENN SQUARE EAST
PHILADELPHIA PA 19107-3390

8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)

CODE FACILITY CODE

X	9A. AMENDMENT OF SOLICITATION NO. DACW61-02-B-0009
X	9B. DATED (SEE ITEM 11) 13-Mar-2002
	10A. MOD. OF CONTRACT/ORDER NO.
	10B. DATED (SEE ITEM 13)

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer [X] is extended, [ ] is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)
DESIGN, CONSTRUCT, TEST AND DELIVER A 50-FT WORKBOAT

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS.
IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

[ ] A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

[ ] B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).

[ ] C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

[ ] D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor [ ] is not, [ ] is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

The above numbered solicitation is amended as follows:

THE BID OPENING DATE IS HEREBY EXTENDED TO 30 APRIL 2002 AT 1:00 P.M.

1. Section C: Pages C-32, C-34, C-35, C-36, C-39 and C-46 are deleted in their entirety. Substitute with the attached revised pages numbered the same and annotated Amendment No. 0001.

2. Section F: Page F-4 is deleted in its entirety. Substitute with the attached revised page numbered the same and annotated Amendment No. 0001.

3. Please indicate receipt of this Amendment on Standard Form 33 (SOLICITATION, OFFER AND AWARD) as Amendment No. 0001. Failure to acknowledge all Amendments may be cause for rejection of the bid.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
15B. CONTRACTOR/OFFEROR _____ (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)	16C. DATE SIGNED

C605 PROPULSION DRIVE SYSTEM

A. MAIN ENGINE AND GEARS

The Propulsion Drive System shall consist of two, matching, marine-type, diesel engines of United States manufacture. Each engine shall be rated at a minimum of ~~**275**~~ ***250*** BHP each at their continuous rating and shall include reduction gearing ~~**(3:1 minimum ratio)**~~ rated for ***continuous*** workboat service ~~**of approximately 1500 hours per year**~~. The propulsion system shall be optimized for a 4 mph towing condition.

The main engines and gearing are to be of proven reliability and performance.

A "closed loop" cooling system is required. No raw water shall enter the vessel for the purpose of engine cooling.

Each main engine shall be provided with the following features and options:

-Same rotation
-Set up for battery start
-Set up to drive the steering system hydraulic pumps
-Provided with fuel oil and lubricating oil filters
-Equipped with a crankcase vent filter/collector system similar to a NELSON EcoVent Recirculator. The EcoVent outlet shall be connected to the engine air inlet flow. Each EcoVent shall be supplied with a manometer and the drain line shall be returned directly to the engine oil sump, below the oil level.
-Turbocharger and exhaust manifolds shall be insulated or jacketed to maintain an outer skin temperature of less than 125 degrees F.
-Engine overspeed protection shall be provided in accordance with ABS Rules.
-The water, lube, and fuel lines to all engine connections shall be fitted with USCG approved flexible connections.
-A duplex Racor primary filter – separator.
-Each main engine oil sump shall be fitted with a ball valve and quick disconnect fitting so that oil can be added to or drawn from the sumps.
-Provided with a full-length drip pan under the engine.
-Inboard access for local (engine mounted) instrumentation panel and inboard access for engine maintenance points (dipsticks, etc.).
-Supplied with lifting eyes and mounting support. The Contractor is responsible for supplying suitable foundations for the engines and marine transmissions.
-Two sets of manuals shall be supplied for the engines and the gears.

C. TORSIONAL VIBRATION ANALYSIS

The engine, reduction gear, shaft and propeller system for each main engine shall be checked for torsional critical speeds in accordance with ABS requirements. No "barred ranges" shall be present in the operating range from 600 to 2100 engine RPM. If the Contractor's analysis indicates that there are critical speeds in the operating range, the COR shall be immediately notified with documentation of the problem.

D. PROPULSION SYSTEM ALIGNMENT

All propulsion system final alignment shall be performed with the vessel completely afloat at normal load displacement.

The Contractor shall perform the alignment in accordance with the engine and gear manufacturers' requirements, ABS requirements, and in the presence of the COR.

C610 SHAFTING SYSTEM

A. PROPELLERS

The tailshafts and propellers shall be certified by ABS. Propellers shall be sized for maximum thrust at low speeds for maneuvering with barges.

Propellers shall be of opposite hand rotation outboard at the top, and of design, diameter and pitch that will give the specified performance of the towboat without overloading the propulsion engines. ***The minimum propeller diameter shall be 42 inches.*** The vessel's propeller design shall be optimized to absorb maximum continuous rated engine horsepower and RPM at a 4 mph towing condition.

Propeller material shall be ABS Type 4 NIBRAL or ABS/ASTM A-743, Grade CF-3. Propeller manufacturing tolerances shall be in accordance with ISO R484 Class II. The propellers shall be finish bored and balanced.

The propeller tips shall clear the hull plating by at least 10% of the propeller diameter.

B. PROPELLER SHAFTS

The propeller shafts shall be ABS Material and sized for the propeller and engine selected. Shaft ends shall be tapered and key seated for propellers in accordance with SAE J755, and fitted to companion flanges at the gears.

C. SHAFT SEALS

Shaft seals and stuffing box shall be provided and be similar to JOHNSON air seal.

D. SHAFT BEARINGS

Propeller shaft bearings shall be synthetic rubber, water-lubricated, with non-metallic sleeves. Bearings shall be provided at stern struts and shaft logs.

E. SHAFT STRUTS

Shaft struts shall be provided as required. Shaft struts supports shall be run through the hull plating and be welded to structural members. Doubler plates shall act as closure plates around the strut arms.

C612 RUDDERS

Two steering rudders and four flanking rudders shall be provided and installed.

Rudders shall be fabricated from steel. Each steering rudder stock shall be centered approximately 3 inches outboard of the propeller shaft centerline so that the propeller shaft may be pulled without removing the rudder. Rudder tubes ***and*** bearings, ~~**and stuffing boxes'**~~ are to be designed for the service intended.

C615 STEERING SYSTEM

The steering system shall be ~~**electronically**~~ ***electrically or mechanically*** controlled. The steering and flanking control system shall be full follow up. The steering system shall be protected from the weather and enclosed. Steering gear and rudder stock shall be ABS certified.

The Contractor shall provide and install one hydraulic power unit located in the lower engine room between the main propulsion engines. The hydraulic power unit shall service both the steering rudders and the flanking rudders. The power unit shall include redundant pumps and selector switch in the pilothouse. Either pump operating alone shall meet the rudder speed requirements stated below.

The hydraulic system pumps shall be driven off of the port and starboard main engines. See Clause C605. The pumps driving the hydraulic system shall provide sufficient power for 11- second rudder travel time from hard-over to hard-over full vessel speed, flanking and steering simultaneously.

A 2-inch deep drip pan shall be fabricated around the hydraulic reservoir.

Separate control valves shall be supplied for the steering and flanking rudders. Both the steering control valve and the flanking rudder control valve, and their respective remote follow-ups, shall be powered from the DC electrical system ***if the control system is electrical***.

C630 FUEL OIL SYSTEM

The fuel system shall be capable of being gravity filled from a fuel truck on shore. Fuel tank vents and valved fuel fill connections shall be located in outside stations, both port and starboard, on the main deck. Each fuel station shall be protected by a 21-gallon steel spill containment device having a drain plug, hinged cover and adequate ventilation for when the cover is closed.

Fuel supply and return piping shall be schedule 40 black pipe. Connections to the engines will be flexible fuel hoses to be supplied with the engines.

Each fuel tank suction connection shall be fitted with a shut-off valve remotely operable from the main deck outside the deckhouse. The valve shall be labeled “FUEL SHUTOFF.”

C640 ENGINE COOLING SYSTEM

All diesel engines shall be closed-loop, grid cooled. Raw water shall not enter the vessel for engine cooling. The contractor shall determine if an auxiliary expansion tank is required on any of the engines and provide if necessary.

C645 RAW WATER SYSTEM

The Contractor shall provide an electrically driven centrifugal pump for the raw water deck wash down system. The pump shall be similar to a Worthington Model D824 Pump with a capacity of approximately 100 GPM at 160 feet of head. The pump and motor shall be furnished as a matched set from the pump manufacturer.

The wash down system pump shall draw raw water from an intake on the sea chest located so as to be capable of drawing water in the light-ship condition. The contractor shall provide a stainless steel ball type shut off valve at the intake and a duplex strainer.

Piping shall be a minimum diameter of 1-1/2 inch I.P.S.; with welded or threaded connections with take down joints located as required for easy disassembly at fittings.

B. CO_2 SYSTEM

Provide and install an approved CO_2 system for the engine room. The system shall be equipped to shut down the engine room ventilation system when activated.

C685 HEATING, VENTILATION AND AIR CONDITIONING SYSTEM

The vessel shall be equipped with a mechanical ventilation (supply and exhaust) system for the engine room, head and storage space. The engine room ventilation shall consist of a supply fan and an exhaust fan sized to provide at least 2 air changes per minute.

A 1-ton DX type heat pump shall be provided in the Pilothouse. The vent shall be provided with an electrical resistance heating coil.

The system shall be air-source, not water-source.

Electric heat shall be provided in the engine room to provide freeze protection during periods of equipment shutdown. This heat is to maintain freeze protection within the space, and is in addition to the engine block heaters. ***All electric space heaters may be AC or DC voltage.***

Controllers arranged for automatic or remote operation shall also be provided with Hand-Auto or Local-Remote selector switch. Exterior mounted controllers shall be mounted in weathertight enclosures. Controllers for all of the motors shall be full-voltage magnetically operated type.

C760 SHORE POWER

The available shore power is 50 amp, 120/240 volt 60 Hz, 1 phase, and 3 wire.

The shore power shall be connected to the vessel through a fixed connection. There shall be one such connection ~~**in the aft**~~ ***mounted on the exterior*** bulkhead of the deckhouse. The connection shall be hard wired directly to a junction box with disconnect located adjacent to the connection. A warning sign shall be provided on the bulkhead identifying the correct sequence for connecting shore power.

F02 PLACE OF DELIVERY

The Contractor shall deliver the vessel afloat and ready for service at the following location:

U.S. Army Corps of Engineers
U.S. Army Engineer District, Huntington
Racine Lock & Dam
West Virginia
Mile number 238 on the Ohio River

F03 NOT USED