

NOTICE:
Bids to be opened at 2:00 P.M., EST,
6 November 1956, at the Public Works
Office, Marine Corps Base, Camp
Lejeune, North Carolina

NAVDOCKS
SPECIFICATION
NO. 3885/56

REPAIRS TO WELL PUMPS, MONTFORD POINT, RIFLE RANGE,
COURTHOUSE BAY AND ONSLOW BEACH (SECOND INCREMENT)

at the

Marine Corps Base, Camp Lejeune, N. C.

CONTRACT NBy-3885

Appropriation: 1771106.11 MCT&F 1957

A priority rating, in consonance with the rating system in effect at the time of award of this contract, will be issued by the Bureau of Yards and Docks.

SECTION 1. GENERAL CLAUSES.

1-01. General intention. - It is the declared and acknowledged intention and meaning to provide and secure repairs to well pumps at Montford Point, Rifle Range, Courthouse Bay and Onslow Beach, complete and ready for use.

1-02. General requirements. - Five deep well turbine pumps at Montford Point, three deep well turbine pumps at Rifle Range, two deep well turbine pumps at Courthouse Bay and two deep well turbine pumps at Onslow Beach are to be repaired. The work includes the removal of existing pumping units, cleaning and testing of wells and the renewal of all pump parts below the pump bases together with water level testing devices.

1-03. Location. - The work shall be located at the Marine Corps Base, Camp Lejeune, North Carolina, approximately as shown. The exact location will be indicated by the Officer in Charge.

1-04. Form of contract. - The contract will be executed on U. S. Standard Form No. 23 revised March 1953, and will include U. S. Standard Form No. 23A March 1953, General Provisions, and NavDocks Form 113, revised January 1956, Additional General Provisions, with the following modifications:

(a) The phrase "including connection charges" is inserted after the word 'utilities' in the fifth sentence of Clause 43, Government Utilities of Form No. NavDocks 113.

(b) At the end of Clause 17 of Form No. 23A, add the following thereto:

"No materials, supplies or manufactured products originating from sources within Soviet-Controlled countries or areas shall be used, furnished or installed under this contract. The prohibited areas presently include: Albania, Bulgaria, China, including Manchuria (and excluding Taiwan (Formosa)) (includes Inner Mongolia; The Provinces of Tsinghai and Sikang; Sinkiang, Tibet; the Former Kwantung Leased Territory, The Present Port Authur Naval Base Area and Lisoning Province), Communist-controlled area of Viet Nam and Communist-controlled area of Laos, Czechoslovakia, East Germany (Soviet Zone of Germany and the Soviet Sector of Berlin), Estonia, Hungary, Latvia, Lithuania, North Korea, Outer Mongolia, Poland and Danzig, Rumania, Union of Soviet Socialist Republics."

1-05. Performance and payment bonds, executed on U. S. Standard Form Nos 25 and 25a, respectively, will be required as stipulated in U. S. Standard Form No. 20, revised March 1953, Invitation for Bids.

1-06. Time for completion. - The entire work shall be completed within 120 calendar days after date of receipt of a notice of award or any other communication authorizing the contractor to proceed.

1-07. Damages for delay in accordance with Clause 5 of U. S. Standard Form No. 23A shall be at the rate of \$25.00 per calendar day. The Government will take no action pursuant to Clause 5, Liquidated Damages, to terminate the right of the contractor to proceed or to assess liquidated or actual damages where the failure of the contractor to complete the work within the time specified elsewhere in this contract is due solely to the operation of the priorities and allocations system and is not otherwise caused by the fault or negligence of the contractor. It is understood and agreed that such delays will be considered an act caused by the Government and as such will be excusable within the meaning of Clause 5, and the contractor will be entitled to a time extension by reason thereof.

1-08. Drawings accompanying specification. - The following drawings accompany this specification and are a part thereof. Drawings are the property of the Government and shall not be used for any purpose other than that contemplated by the specification.

<u>Y&D Drawing No.</u>	<u>Title</u>
647001	Index and Location Plan
647002	Site Plans and Well Construction Details

1-09. Standard specifications. - The standard specifications given in the following list or mentioned elsewhere herein (including the addenda, amendments, and errata listed) shall govern in all cases where references to standard specifications are made. In case of difference between these standard specifications and this specification or its accompanying drawings, this specification or its accompanying drawings shall govern. Especial care shall be exercised to refer in request for quotations, in orders, and in subcontracts to the standard specifications and to all modifications thereof. The requirements for packaging, packing, marking, and preparation for shipment or delivery included in the standard specifications shall apply only to materials and equipment which are furnished directly to the Government and not to materials and equipment which are to be installed by the contractor.

BUREAU OF YARDS AND DOCKS

WW-P-441h Dec. 1953 - Pipe, wrought iron (welded black or zinc-coated) including Amendment No. 1

1-10. "General specification for inspection of materials" (issued by the Navy Department) with such appendices thereto as may be applicable, of the issues in effect on the date of the invitation for bids, shall govern for the factory inspection of materials and equipment required under the contract including materials and equipment specified in detail herein or covered by standard specifications. (See also Clause 9 of U. S. Standard Form No. 23A). Factory inspection of material and equipment for which tests at the place of manufacture are required may be waived at the option of the Government, provided notarized copies of factory test reports are furnished which show compliance with the specification requirements. Factory inspection will not be required for lumber provided it is grade marked and trade-marked by the association under whose rules it is graded, or provided it is accompanied by certificates of inspection issued by the association under whose rules it is graded or by another inspection agency which is satisfactory to the Officer in Charge.

1-11. Optional requirements. - Where a choice of materials and/or methods is permitted herein, the contractor will be given the right to exercise the option unless stated specifically otherwise.

1-12. Definitions. - Where "as shown", "as indicated", "as detailed", or words of similar import are used, it shall be understood that reference to the drawings accompanying this specification is made unless otherwise stated. Where "as directed", "as required", "as permitted", "approved", "acceptance", or other words of similar import are used, it shall be understood that the direction, requirement, permission, approval or acceptance of the Officer in Charge is intended unless stated otherwise. As used herein, "provide" shall be understood to mean "provide complete in place", that is "furnish and install".

1-13. Drawings required of the contractor. - Before commencing the installation of any of this work, the contractor shall submit for approval and in accordance with Clause 29 (F) of NavDocks Form No. 113 such drawings as may be required, including those showing: Manufacturers' specifications and illustrations of deep well pump parts showing pump characteristic curves, maximum horsepower required, size of suction pipe, size of line shaft, type of bearings, spacing of bearings on line shafts, number of pump impellers, size of columns, type of column connection and spacing of guides between oil tube and column.

1-14. Rates of wages at the site. - (See Clause 20 of U. S. Standard Form No. 23A). The contractor shall pay mechanics and laborers employed or working directly upon the site of the work, wage rates not less than those contained in the wage determination decision of the Secretary of Labor No. R-962, which is attached hereto. Any class of laborers and mechanics not listed in the Secretary's decision, which will be employed on the contract, shall be classified or reclassified by the contractor or sub-contractor conformable to the Secretary's decision subject to the approval of the contracting officer; the classification shall be submitted on Form NavDocks 1882 to the Officer in Charge for approval, prior to their employment in any work under the contract. In the event the interested parties cannot agree on the proper classification or reclassification of a particular class of laborers and mechanics to be used, the question shall be submitted through the contracting officer to the Secretary of Labor for final determination. Where differing rates are listed for the same trades according to the type of construction on which employed, their application shall be conformable to prevailing area practice, subject to the approval of the Officer in Charge.

(a) Required by Davis-Bacon Act. - The wage determination decision of the Secretary of Labor attached hereto is made a part of this contract solely for the purpose of setting forth the minimum hourly wage rates required to be paid by the Davis-Bacon Act and is not to be considered as a guaranty, warranty, or representation as to the wage determination decision, the wage rates therein, or the availability of labor at the wage rates indicated. Bidders are advised to make their own investigations, and to rely solely upon their own information, as to local labor conditions, such as wage rates necessary to attract labor, the length of the work day and work week, overtime compensation, health and welfare contributions, available labor supply and prospective changes or adjustments of wage rates in the area concerned which might affect operations under the contract. Under no circumstances shall any mistake in attaching the wage determination decision of the Secretary of Labor or in the determination or statement of the wage rates set forth therein, or the payment of higher wage compensation than set forth therein entitle the bidder to the cancellation of his bid or contract, to an increase in the contract price, or to other additional payment or recovery.

(b) Government right to change. - The Government reserves the right to change the wage determination decision attached to the specification or addendum, either before or after the award of this contract, in accordance with the latest wage determination decision applicable at the time of award of this contract under the regulations of the Secretary of Labor. Such change shall be made without liability upon the Government for any increase in the contract price or other additional payment or recovery.

(c) Apprentices employed pursuant to this determination of wage rates must be registered in a bona fide apprenticeship program registered with a State apprenticeship council recognized by the Federal Committee on Apprenticeship, U. S. Department of Labor; or if no such recognized council exists in a State, it shall mean a program registered with the Bureau of Apprenticeship, U. S. Department of Labor.

1-15. Work outside regular hours. - If the contractor desires to carry on work outside the regular hours or on Saturdays, Sundays, or holidays, he may submit application to the Officer in Charge, but shall allow ample time to enable satisfactory arrangements to be made by the Government for inspecting the work in progress. At night, he shall light the different parts of the work in an approved manner.

1-16. Security requirements. - No employee or representative of the contractor will be admitted to the site of the work unless he furnishes satisfactory proof that he is a citizen of the United States or if an alien, his residence within the United States is legal.

1-17. Storm protection - Should warnings be issued of winds of gale force or greater, the contractor shall take every practicable precaution to minimize danger to persons, to the work, and to adjacent property. These precautions shall include closing all openings; removing all loose materials, tools, and/or equipment from exposed locations; and removing or securing scaffolding and other work.

1-18. Approval of samples, cuts, and drawings. - Matter submitted for approval shall be accompanied by complete information concerning the material, articles, and/or design proposed for use in sufficient detail to show compliance with the specification; and shall be approved before incorporation into the work. Approval thereof will not be construed as relieving the contractor of compliance with the specification, even if such approval is made in writing, unless the attention of the Officer in Charge is called to the non-complying features by letter accompanying the submitted matter. Partial submittals, or submittals of less than the whole of any system made up of inter-dependent components, will not be considered. Approval of drawings, cuts, and samples by the Officer in Charge shall not be construed as a complete check, nor approval of the detailed dimensions, weights, gauges, and similar details of the proposed articles. The conformance of such details with the contract requirements, together with the necessary coordination of

dimensions and details between the various elements of the work and between the various subcontractors and suppliers, shall be solely the responsibility of the contractor; approval of submitted matter notwithstanding.

1-19. Methods and schedules of procedure. - The work shall be executed in a manner and at such times that will cause the least practicable disturbance to the occupants of the buildings and the normal activities of the station. Before starting any work, the sequence of operations and the methods of conducting the work shall have been approved.

1-20. Operation of station utilities. - The contractor shall not operate nor disturb the setting of any valve in the station water system. The Government will operate the valves as required for normal conduct of work. The contractor shall notify the Officer in Charge, giving reasonable advance notice, when such operation is required.

1-21. Examination of premises. - Before submitting proposals, bidders are expected to visit and inspect the site of the work and satisfy themselves as to the physical conditions at the site; the general and local conditions, including availability of labor, the nature and extent of the work, the character and effect of existing adjoining and/or adjacent work; and other factors that can affect the cost of the performance of the contract to the extent that such information is reasonably obtainable.

1-22. Protection and repairs. - The contractor shall comply with the Fire Prevention Requirements, as published by the Officer in Charge of Construction, security rules and regulations of the activity, and shall provide approved means necessary for the protection of all Government and private property, including contents of buildings affected directly or indirectly by his operations. All damage to Government or private property, resulting directly or indirectly from the contractor's actions, shall be made good by him without expense to the Government.

1-23. Existing work damaged or otherwise affected by the contractor's operations shall be restored to a condition as good as existed before the work was commenced, except where indicated or specified otherwise. Where new construction adjoins, connects to, or abuts the existing work, the junction shall be made in a substantial workmanlike and weathertight manner as the case requires. All new work shall match, as nearly as practicable, the existing adjoining and/or adjacent similar work unless indicated otherwise. Except where specifically designated as being retained by the Government or to be re-installed in the new construction, all materials, fixed equipment, and/or debris resulting from demolition and removal operations shall be removed by the contractor from the limits of the Government reservation at such times during the progress of the work as directed.

1-24. Accident reports. - The contractor and his subcontractors shall maintain an accurate record of, and shall report to the Officer in Charge, exposure data and all accidents resulting in death traumatic injury, occupational disease, or damage to property, materials, supplies, and equipment incident to work performed under the contract. The report shall be in accordance with the pamphlet entitled "instructions to Contractor for Preparation of Accident Reports, NavDocks P-275" and shall be submitted on the standard form prescribed therein; the pamphlet and the required forms will be furnished by the Officer in Charge.

1-25. Payrolls and affidavits. - The prime contractor, sub-contractors, and sub-subcontractors will be required to submit a copy of each weekly payroll together with a Notarized Contractor's Weekly Payroll Affidavit covering the payroll to the Officer in Charge of Construction within seven days after the regular payment date of the payroll period. The receipt of these payrolls and affidavits is made a condition precedent to payment for any amounts due under the contract.

(a) The payroll shall be identified by the name of the contractor, NBy Contract Number and the location of the site of the work. Payrolls shall state accurately and completely for each employee, his name, classification, social security number, rate of pay, daily and weekly hours worked, wages earned, all deductions from such wages and the actual weekly wages paid. Contractors are required to submit employees addresses with the payroll on which the employee's name first appears.

(b) Contractor's Weekly Payroll Affidavit (NavDocks Form 118) (1-55) which must be used shall be reproduced by the contractor for his use. This form combines the required payroll affidavit and certification of payrolls. In order to provide uniformity with regard to information, contractors are advised to list by title; or name, all deductions made, omitting from the listing, the dollar amount of the deductions.

(c) A sworn affidavit accomplished by the contractor, stating that he and his subcontractors have complied with the Labor Standards provisions of the contract, must accompany each request for reimbursement. Affidavit form will be furnished by the Officer in Charge of Construction.

1-26. Schedule of prices. - Upon award of the contract, the contractor shall promptly prepare Y&D Form 83, "Schedule of Prices", in octuplicate and submit to the Officer in Charge of Construction. Submission of these prices shall not affect the contract terms. These forms will be furnished by the Officer in Charge of Construction.

1-27. Sub-Contractors and personnel. - Promptly after the award of the contract, the contractor shall submit to the officer in charge of construction in triplicate, a list of his subcontractors and the work each is to perform.

(a) On this form shall appear the names of the key personnel of the contractor and subcontractors, together with their home addresses and telephone numbers, for use in event of an emergency.

(b) From time to time as changes occur and additional information becomes available, the contractor shall amplify, correct and change the information contained in previous lists.

1-28. Lines and grades required for execution of the work shall be established by the contractor.

1-29. As-built drawings. - On completion of the work, one print of each of the drawings accompanying this specification shall be neatly and clearly marked in red to show all variations between the construction actually provided and that indicated or specified in the contract documents, and delivered to the Officer in Charge. Where a choice of materials and/or methods is permitted herein; and where variations in the scope or character of the work from the entire work indicated or specified is permitted either by award on bidding items specified for that purpose or by subsequent change to the contract; the as-built drawings shall define the construction actually provided. The representation of such variations shall conform to standard drafting practice and shall include such supplementary notes, legends, and details as may be necessary for legibility and clear portrayal of the as-built construction; the marked prints shall be subject to approval before acceptance.

1-30. Quarantine. - The entire Camp Lejeune reservation, including Camp Lejeune, Camp Geiger, and Marine Corps Air Facility, Peterfield Point (New River) have been quarantined by the United States and North Carolina Departments of Agriculture for the White Fringed Beetle. Compliance with the quarantine regulations established by these authorities as set forth in the U. S. D. A. Quarantine No. 72 and North Carolina State Quarantine No. 7 is required for operations hereunder. Pertinent requirements of the quarantines include the following:

(a) Certification is required for the following articles and they shall not be moved from the reservation unless accompanied by a valid inspection certificate issued by an authorized White Fringed Beetle Inspector.

1. Soil, sand, or gravel moved independently or attached to other articles, such as heavy equipment including drag lines, road grading machines, ditch diggers, bulldozers, and equipment with track or cleats.

2. Nursery stock, plants and sod.

3. Scrap metal

Authorization for movement of equipment shall be obtained from the officer in charge, and requests for inspection shall be made sufficiently in advance of the date of movement, to permit arrangements for the services of authorized inspectors. The equipment shall be prepared and assembled so that it may be readily inspected. Articles and materials requiring certification for movement shall be removed from the equipment by washing with water and such other means as are necessary to accomplish complete removal. Resulting spoil shall be wasted as directed.

1-31. Cleaning up. - Upon completion of the work, the contractor shall remove all debris from the site. All debris shall be hauled to a Government dump, a distance not exceeding two miles from the site of the work, and placed where directed and the premises shall be left free from all litter and refuse; exterior grounds shall be left in a raked, clean condition. All salvageable material, including pump parts not used in the new work, shall be delivered as directed by the officer in charge; haul not to exceed ten miles.

SECTION 2. PUMP REPAIRS

2-01. General requirements. - The work includes the removal of existing pumping units, cleaning and testing of wells; the provision of water level testing device, the provision of pump bowls, impellers, pump columns, suction pipes, strainers, shafts, bearings, oil tubes, automatic lubricators, and all other parts required below existing pump base to provide complete repairs to the existing pumping units. The pumps to be repaired are located in the following wells:

(a) Montford Point

<u>Bldg. No.</u>	<u>Well No.</u>
M-142	Z-1
M-243	Z-2
M-244	Z-3
M-627	Z-4
M-226	Z-5

(b) Rifle Range

<u>Bldg. No.</u>	<u>Well No.</u>
RR-45	"S"
RR-47	S-1
RR-227	T-1

(c) Courthouse Bay

<u>Bldg. No.</u>	<u>Well No.</u>
BB-43	"W"
BB-44	"V"

(d) Onslow Beach

<u>Bldg. No.</u>	<u>Well No.</u>
BA-109	22
BA-110	23

2-02. Existing conditions. - The pumps to be repaired are located in well houses which are approximately 12 feet square of wood frame or brick wall construction with a 3 feet by 5 feet hatch in the roof centered over the pumping unit.

(a) Drawings. - The drawings indicate construction details of the wells when drilled and present the best available record of their construction.

(b) The existing pumping units are as follows:

(1) Montford Point

Well No.	Manufacturer	Serial No.	Column Size	Shaft	Depth of Setting	Motor H. P.
Z-1	Layne & Bowler	12449	6"	1-3/16"	55°	7-1/2
Z-2	Layne & Bowler	12839	6"	1-3/16"	60°	10
Z-3	Layne & Bowler	11302	6"	1-3/16"	50°	20
Z-4	Layne & Bowler	13138	6"	1-3/16"	50°	7-1/2
Z-5	Layne & Bowler	12840	6"	1-3/16"	55°	7-1/2

(2) Rifle Range

Well No.	Manufacturer	Serial No.	Column Size	Shaft	Depth of Setting	Motor H. P.
"S"	Layne & Bowler	12116	6"	1-3/16"	90°	15
S-1	Layne & Bowler	13140	6"	1-3/16"	65°	20
T-1	Layne & Bowler	13139	6"	1-3/16"	50°	10

(3) Courthouse Bay

Well No.	Manufacturer	Serial No.	Column Size	Shaft	Depth of Setting	Motor H. P.
"W"	Layne & Bowler	12117	6"	1-3/16"	45°	10
"V"	Peerless	J7478	5"	1-3/16"	35°	15

(4) Onslow Beach

Well No.	Manufacturer	Serial No.	Column Size	Shaft	Depth of Setting	Motor H. P.
22	Layne & Bowler	13373	6"	1-3/16"	40°	10
23	Layne & Bowler	13374	6"	1-3/16"	40°	10

(c) Well Z-4 at Montford Point, Wells "S" and T-1 at the Rifle Range, Well "W" at Courthouse Bay and Well 22 at Onslow Beach are equipped with electric motors, right angle gear drives and auxiliary gasoline engines. The other wells are equipped with electric motors only.

2-03. Maintenance of service. - Cleaning and testing of wells and pump repairs shall be made at approved times and in such manner as to prevent all unnecessary interruptions to service. Not more than one well on any one water supply system shall be taken out of service at any one time unless approved by the officer in charge.

2-04. Cleaning wells. - After removal of existing pumping equipment, the wells shall be agitated and pumped off by means of an air lift until all accumulation of sand or gravel has been removed from the casing. During the cleaning operations the well shall be surged and agitated adjacent to each screen and the pumping continued until all traces of sand and turbidity have disappeared.

2-05. Testing. - After cleaning operations, a temporary gasoline driven turbine-type test pump with a capacity of at least 400 gpm shall be installed in the well, approved equipment provided for measuring rate of flow and water level in the well and the well tested to determine its safe maximum yield. After measuring the static water level in the well, the test shall begin at a rate of one-half the original capacity of the well as indicated on the drawings and the rate increased by one-tenth the original capacity at intervals. The pumping rate shall remain constant during each interval and shall be continued until the draw-down stabilizes. The draw-down shall be determined at end of each interval. The test shall continue until the maximum rate of flow at a stabilized draw-down is determined. The well shall be pumped at this rate of flow for one additional hour to confirm that the safe maximum yield of the well has been reached. The pump shall then be cut off and the draw-down measured at sufficient intervals to plot a recovery curve for the well.

(a) Water levels and rate of pumping shall be determined and recorded for all tests and the contractor shall submit a characteristic curve, in triplicate, for the well showing the draw-down level in feet for various rates of flow in gpm. Similar curves, in triplicate, showing the recovery of the well shall be provided.

2-06. Pumping conditions. -

(a) Bids shall be based on repairing the existing pumps to operate under the conditions as hereinafter specified at a speed of 1,800 rpm without overloading the existing electric motors. Final pumping conditions shall be determined by the contractor and approved by the officer in charge after testing the existing gravel wall wells. In case final pumping condition differs substantially from that specified and/or shown, an adjustment in the contract price and/or the time for completion of the work will be made in that same manner as provided by Clause 4, U. S. Standard Form No. 23A. The contractor, after determining the final pumping conditions, shall reinstall the existing pumping equipment and place the well in operation until the required pump parts can be obtained.

(b) Bids shall be based on the repaired pumps operating at an efficiency of not less than 70 per cent under the following conditions:

(1) Montford Point

Well No.	Discharge gpm	Total discharge head above impellers feet	Depth of setting feet
Z-1	100	141	55
Z-2	150	163	60
Z-3	300	170	50
Z-4	150	140	50
Z-5	130	142	55

(2) Rifle Range

Well No.	Discharge gpm	Total discharge head above impellers feet	Depth of setting feet
45 "S"	150	205	90
47 S-1	250	190	65
227 T-1	150	200	50

(3) Courthouse Bay

Well No.	Discharge gpm	Total discharge head above impellers feet	Depth of setting feet
43 "W"	150	170	45
44 "V"	200	160	35

(4) Onslow Beach

Well No.	Discharge gpm	Total discharge head above impellers feet	Depth of setting feet
109 22 GAS.M.	200	130	40
110 23	150	163	40

2-07. New pump parts. - New pump parts shall be in accordance with the following:

(a) Pump head. - The contractor at his option may replace the existing pump heads provided new heads are adapted to fit existing motor bases or right angle gear drive bases, and pipe connections. If new pump heads are furnished they shall be constructed from close grained cast iron and shall be of the heavy duty type, designed for hollow shaft drive.

(b) Column. - The column shall be genuine wrought iron conforming to Specification No. WW-P-441b and shall be in sections not to exceed 10 feet in length and of proper diameter to eliminate undue friction when pumping at pump capacity.

(c) Line shaft. - The line shafting shall be high-grade ground and polished steel and of the same diameter as that of existing pumps. The shaft shall be furnished in interchangeable sections not over 10 feet in length and fastened with threaded steel couplings having a strength of not less than 100 per cent of the strength of shaft after being assembled. The ends shall be machine finished and undercut for proper butting of the shafts. All threads shall be lathe cut.

(d) Bearings. - The pumping unit shall have sufficient guide bearing to maintain the alignment of the pump and shafting and to prevent vibration. The inner column couplings shall be bronze and shall act as bearings for the line shaft, which shall be turned and polished. Oil lubricated bearings shall be provided with oil grooves to effect passage of oil down through the entire length of oil tube and shafting. An automatic lubricator with capacity sufficient for one week or continuous operation shall be provided to feed oil to the bearings. Lubricator shall have sight glass and feed adjustment.

(e) Bowls. - The pump bowls shall be made of close grained cast iron, free from blow holes, sand holes and other defects which would impair their strength or durability for the service; accurately machined and fitted to close dimensions. Bowls shall have smooth, curved vanes to direct the flow of water efficiently and to prevent air locking. The bowls shall be of suitable thickness and strength to withstand the shut-off pressure of the unit. Bowls should be fastened together in such a manner that accurate alignment is assured and maintained. Guide passages for water shall be so designed and finished as to reduce friction to a minimum.

(f) Impellers. - Impellers shall be enclosed type, cast bronze and of heavy construction. Each impeller shall be carefully machined, finished all over, accurately fitted and perfectly balanced both dynamically and hydraulically. Impeller shaft shall be high grade chrome-nickel steel carefully ground and polished and furnished with lathe-cut threads. No keyways shall be cut into the shaft. A long skirt shall be provided to eliminate bypassing under any adjustment of the impeller. Impellers shall have non-overloading characteristics and shall have head characteristics so that an increase or decrease in the operating head above the design point will not cause an excessive decrease or increase in pump capacity. Impellers shall be attached and locked to pump shaft in such a manner that they may be easily removed, and so that they will not work loose for any reason.

(g) Suction pipe and strainer. - A suction pipe of suitable diameter and 10 feet long shall be provided for each pump. A galvanized strainer having a net inlet opening area of at least five times the area of the suction pipe shall be provided at the lower end of the suction pipe.

2-08. Water-level testing device. - A 1/4 inch wrought iron pipe 60 feet long shall be provided in each well for measuring the water level in the well. The pipe shall be extended on the outside of the pump casing to the pump foundation. Pipe shall be fitted with an air valve, for connection to air pump; and with a 4 inch dial, brass case, altitude gauge, with a range of 0 to 100 feet. The entire installation shall be air tight.

SECTION 3. BIDS.

3-01. Instruction to bidders. - U. S. Standard Form No. 22 revised March 1953, and Invitation for Bids, U. S. Standard Form No. 20 shall be observed in the preparation of bids. Envelopes containing bids must be sealed, marked and addressed as follows:

Bid for Repairs to Well Pumps, Montford Point, Rifle Range, Courthouse Bay and Onslow Beach (Second Increment), Marine Corps Base, Camp Lejeune, N. C., Specification No. 3885/56	Public Works Officer Building No. 1005 Marine Corps Base Camp Lejeune, N. C.
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3-02. Bid guarantee will be required as stipulated on the reverse side of U. S. Standard Form 20.

3-03. Items of bids. - Bids shall be submitted, in triplicate, on U. S. Standard Form No. 21 revised March 1953, Bid Form, and in accordance with U. S. Standard Form Nos. 20 and 22, upon the following items:

Item 1. Price for the entire work, complete in accordance with drawings and specifications.

Item 2. Price for the entire work, complete in accordance with the drawings and specifications based on the omission of all work in connection with the repairs to the deep well turbine pump in Well No. 22 at Onslow Beach.

Item 3. Price for the entire work, complete in accordance with the drawing and specifications based on the omission of all work in connection with the repairs to the deep well turbine pumps in Wells No. 22 and 23 at Onslow Beach.

3-04. Telegraphic modifications of bids in accordance with U. S. Standard Form No. 22 may be made. Two signed copies of the telegram in a sealed envelope marked "Copies of telegraphic modification of bids for Repairs to Well Pumps, Montford Point, Rifle Range, Courthouse Bay, and Onslow Beach (Second Increment), Marine Corps Base, Camp Lejeune, N. C., Specification No. 3885/56" should be forwarded immediately to the office to which the written bids were submitted.

3-05. Reference to addenda. - Each bidder shall refer in his bid to all addenda to this specification; failure to do so may constitute an informality in the bid.

NOTICE

The Government forms, Bureau of Yards and Docks standard specifications mentioned and other information necessary may be obtained from the District Public Works Officer, Headquarters, Fifth Naval District, U. S. Naval Base, Norfolk 11, Virginia, or Public Works Officer, Navy Department, Building No. 1005, Marine Corps Base, Camp Lejeune, N. C. The remainder of the standard specifications and other material referred to may be examined at the District Public Works Office or at the Public Works Office, or the standard government specifications may be obtained from the Superintendent of Documents, Washington 25, D. C. at their established prices.

Camp Lejeune, N. C.

2 October 1956

R. E. HARRIS
CAPT, (CEC), USN
Officer in Charge of Construction

FOR:

ROBERT H. MEADE
RADM (CEC) USN
Chief of Bureau of Yards and Docks
Department of the Navy

LIST OF WAGE RATES
 DECISION R-962, 20 JULY 1956
 CAMP LEJEUNE, ONSLOW COUNTY, NORTH CAROLINA

	<u>Per Hour</u>		<u>Per Hour</u>
	\$		\$
Air Tool Operators		Mason tenders	1.00
(jackhammerman vibrator)	.935	Mortar mixers	1.00
Asbestos workers	2.75	Painters, brush	1.65
Asbestos workers improvers:		Painters, structural	
1st year	1.25	steel	2.00
2nd year	1.64	Filedrieverman	1.65
3rd year	1.85	Pipe layers (concrete	
4th year	2.07	and clay)	.90
Asphalt rakers	1.00	Plasterers	2.00
Boilermakers-blacksmith	2.975	Plasterers tenders	.935
Boilermakers helpers	2.725	Plumbers	2.50
Bricklayers	2.50	Roofers	1.50
Carpenters	1.65	Sheet metal workers	1.75
Cement masons	1.625	Soft floor layers	1.65
Electricians	2.40	Steam fitters	2.50
Elevator constructors	2.20	Stone masons	2.50
Elevator constructors		Sprinkler fitters	2.95
helpers	1.54	Terrazze workers	2.00
Glaziers	1.50	Terrazzo workers helpers	.85
Iron workers, structural	2.50	Tile setters	2.00
Iron workers, ornamental	2.50	Tile setters helpers	.85
Iron workers, reinforcing	2.25	Truck drivers	.85
Laborers	.90	Welders - receive rate	
Lathers	1.75	prescribed for craft per-	
Marble setters	1.75	forming operation to which	
Marble setters helpers	.85	welding is incidental	
Power Equipment Operators:		Power Equipment Operators: (Cont'd.)	
Backhoes	2.125	Welding machines	2.125
Cranes	2.125	Tournapull	2.125
Cableways	2.125	Air compressors	1.75
Derricks	2.125	Bulldozers	1.875
Beam hoist	2.125	Fireman	1.55
Draglines	2.125	Hoist, double drum	1.875
Dredge or other float-		Hoist, one drum	1.625
ing equipment	2.25	Finishing machine	1.875
Pile drivers	2.25	Mixers (Larger than 10-S)	1.75
Pavers	2.125	Mixers (Smaller than 10-S)	1.625
Heavy duty mechanics	2.125	Motor graders	2.00
Scrapers, wheel type	2.125	Pump over 2" discharge	1.75
Shovels	2.125	Pump under 2" discharge	1.625
Truck cranes	2.125	Rollers, earth	1.87
Tractors with attach-		Rollers, asphalt	2.00
ments	2.125	Apprentice engineers and	
Tractors without		oilers	1.55
attachments	1.875		
Trench machines	2.125		

APPRENTICESHIP SCHEDULE
PERIOD AND RATE*

Craft	Interval	1st	2nd	3rd	4th	5th	6th	7th	8th
Iron workers	6 mos.	.50	.60						
Iron workers	Year		66-2/3						
Carpenters	Year	1.05	1.15	1.25	1.40				
Electricians	6 mos.	.45	.50	.55	.60	.65	.70	.75	.80
Plumbers and Steam Fitters	6 mos.	37-1/2	.40	.45	.50	.55	.60	67-1/2	.75
Sprinkler Fitters**	6 mos.	.54	.58	.62	.66	.70	.74	.78	.82
Sheet Metal Workers	6 mos.	.40	.45	.50	.55	.60	.65	.70	.80
	<u>9th</u>		<u>10th</u>						
Sprinkler Fitters**		.86	.90						

*The apprentice rate is by percentage of the journeyman's rate unless otherwise indicated.

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Books	100	120	150	180	200	220	250	280	300	320	350	380	400	420	450	480	500	520	550	580	600	620
Periodicals	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	
Manuscripts	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	
Reference	10	12	15	18	20	22	25	28	30	32	35	38	40	42	45	48	50	52	55	58	60	
Gifts	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Other	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
Total	187	220	277	333	365	397	435	475	500	527	557	587	617	645	675	700	727	757	787	817	847	

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