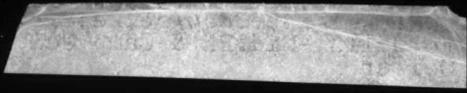


CONTRACT NBy-3884/56 Repair
to wells -Mid.Pk & Camp
Geiger



REPAIRS TO WELLS, MIDWAY PARK AND CAMP GETGER

at the

Marine Corps Base, Camp Lejeune, N. C.

SECTION 4. WELL CONSTRUCTION

4-05. Materials.-

" (b) Well screen.- In the third line after "bronze," insert "or stainless steel."

SECTION 5. WELL PUMPING EQUIPMENT

5-01. General requirements.- Add the following sub-paragraph:

"(c) Except as modified herein, the new deep well pump and its component parts shall be a regular commercial product of the manufacturer or his suppliers. The parts shall be new and unused."

5-03. Pump construction.-

(f) Impellers.- In the fourth line after the word "dynamically," delete "and hydraulically."

NOTICE

Each bidder shall refer in his bid to all addenda; failure to do so may constitute an informality in the bid.

Camp Lejeune, N. C.

22 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

Contract NBy-3884

SECRET
CONFIDENTIAL

DEPARTMENT OF THE NAVY
BUREAU OF
YARDS AND DOCKS

NAVDOCKS
SPECIFICATION
NO. 3884/56
ADDENDUM NO. 1

REPAIRS TO WELLS, MIDWAY PARK AND CAMP GEIGER

at the

Marine Corps Base, Camp Lejeune, N. C.

SECTION 1. GENERAL CLAUSES.

1-14. Rates of wages at the site.- Line 4, delete "Secretary of Labor No. R-962," and insert "Secretary of Labor No. R-5216."

Delete from the specification "LIST OF WAGE RATES, DECISION R-962, 20 July 1956, CAMP LEJEUNE, ONSLOW COUNTY, NORTH CAROLINA," and attach "LIST OF WAGE RATES, DECISION R-5216, 9 October 1956, CAMP LEJEUNE, ONSLOW COUNTY, NORTH CAROLINA," enclosed herewith.

NOTICE

Each bidder shall refer in his bid to all addenda; failure to do so may constitute an informality in the bid.

Camp Lejeune, N. C. 16 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

Contract NBy-3884

SECRET
EXCLUDED FROM AUTOMATIC
DOWNGRADING AND
DECLASSIFICATION

EXCLUDED FROM AUTOMATIC
DOWNGRADING AND
DECLASSIFICATION

SECTION 1. GENERAL PURPOSE

1.1.1. This section contains the general purpose of the program.

SECTION 2. SCOPE AND LIMITATIONS

2.1.1. This section describes the scope and limitations of the program.

2.1.2. This section describes the scope and limitations of the program.

SECTION 3. REFERENCES

3.1.1. This section lists the references used in the development of the program.

3.1.2. This section lists the references used in the development of the program.

SECTION 4. DEFINITIONS

4.1.1. This section defines the terms used in the program.

4.1.2.

4.1.3.

4.1.4. This section defines the terms used in the program.

4.1.5. This section defines the terms used in the program.

SECTION 5. APPENDICES

LIST OF WAGE RATES
 DECISION R-5216 9 OCTOBER 1956
 CAMP LEJEUNE, ONSLOW COUNTY, NORTH CAROLINA

	<u>Per Hour</u>		<u>Per Hour</u>
Air tool operators	\$	Mason tenders	\$1.00
(jackhammerman vibrator)	1.00	Mortar mixers	1.00
Asbestos workers	2.75	Painters, brush	1.65
" " improvers		Painters, structural steel	2.00
1st year	1.25	Piledrivermen	1.65
2nd "	1.64	Pipe layers (concrete & clay)	1.00
3rd "	1.85	Plasterers	2.00
4th "	2.07	" tenders	1.00
Asphalt rakers	1.00	Plumbers	2.50
Boilermakers-Blacksmith	2.975	Roofers	1.50
" helpers	2.725	Sheet metal workers	1.75
Bricklayers	2.50	Soft floor layers	1.65
Carpenters	1.65	Steam fitters	2.50
Cement masons	1.625	Stone masons	2.50
Electricians	2.40	Sprinkler fitters	2.95
Elevator constructors	2.20	Terrazzo workers	2.00
" " helpers	1.54	" " helpers	1.00
Glaziers	1.50	Tile setters	2.00
Ironworkers, structural	2.50	" " helpers	1.00
" ornamental	2.50	Truck drivers	1.00
" reinforcing	2.25	Welders - receive rate prescribed	
Laborers	1.00	for craft performing operation	
Leathers	1.75	to which welding is incidental.	
Marble setters	1.75		
" " helpers	1.00		
Power equipment operators:		Power equipment operators: (cont)	
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
Boom hoist	2.125	Fireman	1.55
Draglines	2.125	Hoist, double drum	1.875
Dredges or other		" one drum	1.625
floating equipment	2.25	Finishing machine	1.875
Pile drivers	2.25	Mixers (larger than 10-S)	1.75
Pavers	2.125	" (smaller than 10-S)	1.625
Heavy duty mechanics	2.125	Motor graders	2.00
Scrapers, wheel type	2.125	Pumps over 2" discharge	1.75
Shovels	2.125	Pumps under 2" discharge	1.625
Truck Cranes	2.125	Rollers, earth	1.87
Tractors with attach-		" asphalt	2.00
ments	2.125	Apprentice engineers and	
Tractors without		oilers	1.55
attachments	1.875		
Trench machines	2.125		

Apprentice Schedule

Craft	Interval	*Period and Rate									
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Ironworkers	6 mos.	50	60								
"	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.	37½	40	45	50	55	60	67½	75		
Sprinkler fitters	6 mos.	54	58	62	66	70	74	78	82	86	90
Sheet metal workers	6 mos.	40	45	50	55	60	65	70	80		

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

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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. 3884/56

REPAIRS TO WELLS, MIDWAY PARK AND CAMP GEIGER

at the

Marine Corps Base, Camp Lejeune, N. C.

CONTRACT NBy-3884

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 wells, Midway Park and Camp Geiger complete and ready for use.

1-02. General description.-- The work includes the provision of two gravel-wall wells, repairs to one existing pumping unit, the installation of one new pumping unit to be furnished by others, the construction of new well house foundations and re-location of existing well houses together with interior well house piping and electrical work and the reconnection of piping and electrical service to existing raw water supply systems and electrical distribution systems.

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 Arthur Naval Base Area and Lisoning Providence), Communist-controlled area of Viet Nam and Communist-controlled area of Laos, Czechoslovakia, East Germany, 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 150 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>
646893	Index Sheet
646894	Site, Grading, and Drainage and Piping
646895	Plans, Sections & Details

For information and reference, the following construction drawing presents the best available record of the construction of the existing well houses. The Government assumes no responsibility for the accuracy of the information. The bidder shall satisfy himself by examination of

the premises as to existing conditions and the work to be done and is responsible therefor.

Y&D Drawing No.Title

161864

Well pump houses, Tent Camp Area and other areas. Plans, Elevations and 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 sub-contracts 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

13Ye Nov. 1955 Concrete construction, including Addendum No. 1
9Yf Oct. 1946 Electrical apparatus, distributing systems, and wiring;
including Addendum No. 1

FEDERAL

FF-B-575 May 1955 Bolts, hexagon and square
HH-G-76b May 1955 Gaskets, asbestos metallic cloth
QQ-L-156 Nov 1946 Lead, calking, including Amendment No. 1
SS-C-192a Apr 1954 Cements; portland, including Amendment No. 1
WW-P-406 June 1945 Pipe; steel and ferrous alloy (for) ordinary uses
(iron pipe size), including Amendment No. 1
WW-P-421a Mar 1955 Pipe, cast-iron, bell-and-spigot, water
WW-P-441b Dec 1953 Pipe; wrought iron (welded, black or zinc coated)
WW-P-521c June 1956 Pipe-fittings; malleable iron, wrought iron and
steel (screwed) 150-pound.
WW-V-51a June 1954 Valves, bronze; angle, check and globe, 125-and
150-pound, screwed and flanged (for land use)
including Amendment No. 2.
WW-V-54 June 1954 Valves, bronze, gate; 125-and 150-pound, screwed
and flanged (for land use) including Amendment No. 2.

MILITARY

MIL-V-18436 Jan 1955 Valves, check.

NON-GOVERNMENT

Note: Non-Government standards are not available for distribution by the Department of the Navy; application therefor should be made to the issuing organization.

AMERICAN WATER WORKS ASSOCIATION

Standard Specifications: C 100, C500-52T, C601-48

AMERICAN STANDARDS ASSOCIATION

Specification A21.10

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 of 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: Manufacturer's specifications and illustrations of deep well pump 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 re-classified 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 re-classification 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, the prevailing wages 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 and available labor supply, and as to prospective changes or adjustments of wage rates or employment conditions in the area concerned which might affect operations under the contract. Neither a 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, nor the payment of higher wage rates than those set forth therein shall 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, except when the Contracting Officer modifies the specified wage rates and when the requirements of sub-paragraph (b) below are satisfied.

(b) Modification of minimum wage rates.- The Contracting Officer reserves the right to require the contractor to pay the minimum wages set forth in the wage determination which is applicable to this contract and in effect at the time of award (irrespective of the wage rates set forth in the specification) and, if necessary, to modify the contract accordingly. The Government shall not be liable to the contractor to increase the contract price or to make any other additional payment as a result of any such modification made by the Contracting Officer in the specified wage rates, except that an equitable contract price adjustment shall be made (1) when the contractor clearly demonstrates that his investigation of the wage rates at the site did not, and that a reasonable investigation could not, disclose that wage rates higher than those previously specified would have to be paid, and (2) when the contractor clearly demonstrates that he actually and reasonably based his bid or proposal upon wage rates lower than those required to be paid by such modification.

(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. Government work and material.-The Government will furnish at the site the following equipment for installation under this contract.

(a) Midway Park Well.

(1) Deep well turbine pump, oil lubricated, with 6-inch column and 1-3/16-inch shaft, having a setting of 50 feet below foundation and having a capacity of 300 gpm against a total head of 170 feet.

(2) A re-conditioned 20 horsepower vertical hollow shaft motor.

(b) Camp Geiger Well.

(1) A re-conditioned 1,800 R.P.M. 5 horsepower vertical hollow shaft motor.

1-17. 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.

1-18. Storm protection.- Should warnings of winds of gale force or greater be issued, 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.

1-19. 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 interdependent 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 sub-contractors and suppliers, shall be solely the responsibility of the contractor; approval of submitted matter notwithstanding.

1-20. 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.

1-21. 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.

1-22. 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.

1-23. 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.

1-24. 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.

1-25. Accident reports.—The contractor and his sub-contractors 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.

1-26. 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 sub-contractors 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.

1-27. 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.

1-28. 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 sub-contractors and the work each is to perform.

(a) On this form shall appear the names of the key personnel of the contractor and sub-contractors, 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.

1-29. Lines and grades required for execution of the work shall be established by the contractor.

1-30. 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.

1-31. 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 those 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.

1-32. 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. EARTHWORK.

2-01. Elevations and obstructions.- Bids shall be based on the following:

- (a) that the surface elevations are as indicated,
- (b) that no pipes or other artificial obstructions, except those indicated, will be encountered, and
- (c) that hard material will not be encountered.

In case the actual conditions differ substantially from those stated and/or shown, the provisions of Clause 4 of U. S. Standard Form No. 23A respecting an adjustment for changed conditions shall apply, subject to the requirement of modification thereunder being given. Hard material shall be defined as solid ledge rock, boulders more than one-half cubic yard in volume, or any cemented material requiring blasting for removal.

2-02. Topsoil.- Material from the excavation suitable for topsoil shall be deposited in piles separate from other excavated material. Piles of topsoil shall be so located that the material can be used readily for the finished surface grading in the areas designated for planting, and the topsoil shall be protected and maintained until needed. Topsoil shall be spread to a uniform thickness of 4 inches over the ground in the areas where the natural soil condition has been disturbed as a result of the operations of this contract. If sufficient topsoil cannot be secured from the project area site, it shall be secured from borrow pits less than two miles distant. Where used for finished grading of the surfaces to be planted to grass, topsoil shall be spread uniformly over the designated areas.

2-03. Clearing and grubbing.- No general clearing and grubbing is anticipated, except light clearing shall be required to secure topsoil needed. Where roots, stumps or other objectionable materials are encountered, they shall be removed under foundations regardless of depth, to a depth of 12 inches below sub-grade of rock surfacing and to a depth of 6 inches below trench bottoms.

2-04. Excavation.-

(a) General.- All materials shall be excavated to dimensions and levels indicated on the drawings or in these specifications. Where roots, stumps, or other materials have been removed or excavations carried below grade, the spaces shall be filled with clean, thoroughly compacted earth except that when excavations for building foundations or concrete structures are carried below grade the spaces shall be filled with concrete of the same class as that of the structure.

(b) Trenching.-Pipe trenches shall be excavated true to line and grade and of sufficient width to afford 6 inches clearance between trench wall and extreme outside dimensions of the pipe. In the excavation of pipe trenches, beds of clean, well tamped earth shall be provided, so placed as to insure that the full length of the pipe barrel is supported by a firm but slightly yielding bed.

(c) Trench backfill.-

(1) As soon as practicable after the pipe has been installed and joints have acquired a suitable degree of hardness, backfilling of the space between pipe and sides of the trench shall be packed full by hand shovel with selected sand and thoroughly compacted with hand tamper as fast as placed up to a level one foot above top of pipe. The fill shall be placed uniformly on both sides of the pipe and neither horizontal nor vertical alignment of the pipe shall be disturbed.

(2) The remainder of the trench shall be filled with clean earth free from vegetation or other objectionable material, and compacted as directed, either by puddling, rolling or mechanical tamping dependent upon the method best suited to the materials, sufficiently to prevent subsequent settlement.

(3) Puddling.- If backfill material is compacted by puddling, it shall be done by depositing the material in water. Where dams or dikes are constructed in trench to hold back water used for puddling, they shall be compacted by mechanical tamping as described below.

(4) Rolling.- If backfill material is compacted by rolling, a satisfactory roller or a tractor with caterpillar tread shall be used after the trench has been filled, care being exercised to compact thoroughly the material close to the bank as well as that in all other portions of the trench.

(5) Mechanical tamping.- Where impractical to compact by other methods and under all roadways, service drives, sidewalks, and other travelled areas, the backfill material shall be compacted by mechanical tamping. Clean, refuse-free material shall be placed in 6-inch layers and each layer thoroughly tamped with an approved mechanical tamper. If required, material shall be wet by sprinkling before rolling or tamping.

(6) Whatever method is used, care shall be taken that lumps shall not become nested and that all voids between lumps shall be completely filled with fine material. No large masses of backfilling material shall be dropped into the excavation, as from a grab bucket, in such manner as to disturb pipe or structure.

(d) Drainage during construction.- During excavation operations, the work shall be kept shaped and drained at all times. Drains and ditches to insure proper drainage shall be installed as required.

2-05. Shoring and pumping.- Excavations shall be shored and braced by numbers of suitable sizes and arrangement where necessary to prevent danger to persons or structure, injurious caving or erosion. Shoring, bracing, and sheeting shall be removed, as the excavations are back-filled, in a manner such as to prevent injurious caving. Excavations shall be kept free from water while construction therein is in progress.

2-06. Fill.- Grading shall be done to meet the finished grades indicated and to provide surfaces sloping away from the buildings in a manner to divert water from the new construction and provide proper drainage. Materials used for fill shall be clean earth, free from vegetation or other objectionable material and shall be placed in thoroughly compacted layers not more than 6 inches in depth.

2-07. Borrow.- If borrow is required, it shall be taken only from approved locations. Borrow pits shall be so excavated that drainage is provided and shall not be left in unsightly or unsanitary condition. Maximum soil borrow haul shall not exceed two miles.

2-08. Disposal of surplus material.- Surplus material not required or unsuitable for fill, backfill, or grading shall be wasted as directed; waste haul shall not exceed two miles.

2-09. Seeding.- Areas specified to receive topsoil shall be seeded. The quality of all fertilizers, lime and seed and all operations in connection with the furnishing of this material shall comply with the requirements of the North Carolina Fertilizer, Lime and Seed Law; and with the rules and regulations adopted by the North Carolina Board of Agriculture in accordance with the provisions of said law.

(a) Seeding operations shall not be done if the completion of the work should occur after November 15 and before March 1; in this event the seeding shall be done by Government forces during the next planting season and adjustment in the contract price will be made in accordance with Clause 3 of Standard Form 23-A.

(1) Lime and fertilizer shall be uniformly spread over the area and thoroughly disced, harrowed or raked into the top 1-1/2 inches of surface, and watered. The lime will be applied at the rate of 20 pounds per 1,000 square feet and fertilizer at the rate of 12 pounds per 1,000 square feet at least three days before seeding. The lime shall be an approved hydrated agricultural lime. The fertilizer shall be a ready-mixed fertilized or organic base bearing analysis of a recognized authority. Formula for the fertilizer shall be 6 per cent nitrogen, 8 per cent phosphoric acid, and 6 per

cent potash. Both lime and fertilizer shall be delivered on the job in the manufacturer's container, plainly marked and unopened.

(2) The seed shall be delivered to the job in original containers showing the guaranteed seed mixture, which shall contain the following percentages by weight:

80% Bermuda Grass
20% Red Top (Herd Grass)

No seed in the mixture shall show a purity of less than 90 per cent or germination equality of less than 85 per cent. The seed shall be uniformly sown, at the rate of seven pounds per 1,000 square feet of area, by hand or approved seeding equipment. The surface of the seed bed shall be lightly raked or otherwise worked to cover the seed with a layer of soil not more than 1/4-inch in depth, after which it shall be rolled with an approved lawn roller, weighing not more than 210 pounds per foot of width, and watered with a fine spray.

(3) No lime, fertilizer or seed shall be applied when the wind is strong or when the soil is extremely wet or otherwise workable. No rolling shall be done if precipitation after seeding should make the operation detrimental to the seed bed. The contractor shall notify the officer in charge and receive his approval before performing any planting operation. All seeded areas shall be maintained by watering, mowing, and weeding for a period of thirty days after rolling has been completed.

SECTION 3. GENERAL CONSTRUCTION.

3-01. General description.--The work includes the construction of well house foundations, floor slab and pump and engine foundations, as indicated and as hereinafter specified, and the moving of the existing wood frame well houses from their present foundations to the new foundations.

(a) The contractor shall take all necessary precautions to protect the existing construction during the moving operations and shall make all necessary repairs required to leave the well houses in as good a condition as when the work was started.

(b) After the well houses have been moved, the contractor shall remove the existing concrete floor slab, pump, engine and building foundations and cap off the existing wells as indicated.

3-02. Concrete.-- Concrete shall conform to the requirements of Specification No. 13Ye, Class D-1. The earth under foundations and slab on grade shall be wetted before placing concrete. Ready-mixed concrete may be used. Forms shall conform to paragraph 4-02 of Specification No. 13Ye. Concrete interior floor shall be given a dusted-on-finish in accordance with paragraph 9-04 of Specification No. 13Ye. Suitable chamfers shall be provided at edges of machinery foundations. Miscellaneous fastenings shall be placed and secured in position when concrete is poured.

SECTION 4. WELL CONSTRUCTION.

4-01. General requirements.- The work includes the provision of two test wells and two 8-inch permanent gravel-wall wells as indicated and as hereinafter specified. It is intended that the new well at Midway Park and the new well at Camp Geiger will produce 300 gpm and 150 gpm, respectively, of potable water continuously.

4-02. Depth and capacity of wells.- Bids shall be based on the wells being constructed in accordance with the typical section shown and with the following construction details.

	<u>Midway Park</u>	<u>Camp Geiger</u>
(a) Total depth of test well	200 ft.	140 ft.
(b) Total depth of permanent well	150 ft.	140 ft.
(c) Total length of 18-inch outer casing	30 ft.	58 ft.
(d) Total length of 8-inch inner casing	90 ft.	112 ft.
(e) Total length of 8-inch screens	60 ft.	30 ft.

In case the actual conditions differ substantially from those given, an adjustment in the contract price and/or time for completion of the work will be made in accordance with Clause 4, U. S. Standard Form No. 23A.

4-03. Test Well.

(a) The contractor shall drill a test well at each site before construction of the permanent well is started. The test well shall be of sufficient size to obtain the necessary information required for the construction of the permanent well. The location, size of well and method of drilling must be approved before work is started.

(b) The contractor shall keep an accurate log and record of all materials drilled through and the depths at which changes in formation occur.

(c) Samples of the type of material found in each stratum shall be taken by the contractor and preserved in approved containers furnished by the contractor. Samples shall be appropriately labeled to show depth below ground surface and thickness of the stratum from which the sample was obtained.

(d) All water bearing strata must be described in detail as to whether material is loose or compact, it's color, and if gravel, whether it is water-worn or angular. The presence of clay must be noted.

(e) The contractor shall collect and have analyzed samples of water from all water bearing strata encountered so as to accurately show the quality of water from each stratum. These preliminary tests shall show in P.P.M. the phenolphthalein alkalinity, total alkalinity, chlorides, carbon dioxide, carbonates, bicarbonates, turbidity, odor and PH.

(f) Test wells not incorporated in the finished construction shall be sealed in an approved manner to prevent contamination of the underlying ground water.

4-04. Permanent gravel-wall well.-

(a) A pit casing shall be installed by drilling a 24-inch diameter hole to the first hard clay or rock stratum and placing an 18-inch diameter outer casing of the type hereinafter specified.

(b) The area between the outer well casing and the native formation shall be thoroughly washed out and filled with Portland cement grout, by pumping with approved equipment. The grout shall be pumped under pressure through a temporary down feed pipe in the well so arranged that the grout will be forced into the bottom of the annular space between the casing and the hole. Grout shall be pumped continuously, in one operation, until the annular space and all voids and fissures are completely filled, as evidenced by the grout overflowing on the surface. The grout shall be allowed 48 hours to set up before drilling operations are resumed.

(c) A 17-1/2-inch hole shall be drilled below the bottom of the pit casing and concentrically with it for a distance which shall be determined by the officer in charge. All sand strata encountered shall be mechanically or hydraulically underreamed by an approved method. An 8-inch screen line composed of casing and screen as hereinafter specified shall be installed and completely enveloped by gravel. The location and length of screens installed shall be as directed. The gravel shall be pumped into place under pressure, through a temporary pipe line, extending to the bottom of the screen. The pipe line shall be raised as the gravel fills the hole so that the lower end of the pipe shall always be 2 feet to 6 feet below the gravel level. It is intended that the gravel shall completely fill the space provided for it, without voids which would allow the infiltration of sand. The contractor must satisfy the officer in charge that the methods and equipment for placing the gravel, which he proposes to use, will achieve this result, and the officer in charge shall approve such methods and equipment before gravel placing is begun.

(d) Water level testing device.- A 1/4-inch wrought iron pipe shall be provided in the well at the proper elevation for measuring the water level in the wells. The pipe shall be tapped or brazed

into the top section of the screen and extended on the outside of the well casing to the pump foundation. Pipe shall be fitted with an air valve, for connection to air pump, and an altitude gauge. The entire installation shall be air tight. Altitude gauge and pipe shall be in accordance with piping section.

(e) When the well has been completed, the contractor shall install a temporary pump, and pump the well until it is free of all sand, mud, drillings, or other foreign matter.

4-05. Materials.

(a) The 18-inch outer casing shall be standard weight black steel pipe conforming to Specification No. WW-P-406, Class A. The 8-inch inner casing shall be genuine wrought iron pipe, conforming to Specification No. WW-P-441b, Class A. Joints shall be either threaded and coupled, with heavy recessed-type couplings in which the ends of the pipe shall butt, or they may be field-welded.

(b) Well screen shall have an inside diameter of not less than 8 inches and be of not less than six gauge material and shall be of silicon manganese bronze, with openings of proper size and design to hold back and support the gravel used in the gravel envelope around the screens. Joints shall be made with heavy butt-type couplings of the same material, or by brazing.

(c) All gravel used for the gravel envelope around screens shall be round, hard, water-worn gravel of such size as will allow free flow of water in the well and positively prevent the infiltration of sand. It shall be of siliceous material, reasonably smooth and round, and shall be free of flat or elongated pieces as well as of dirt, vegetable matter, or other foreign matter. The gravel shall be thoroughly sterilized with hypochlorite before being placed.

(d) Cement grout for sealing the space between the casing and the drilled hole, shall be composed of Portland cement, Type I, conforming to Specification No. SS-C-192a, and water. The mixed grout shall weigh not less than 14 pounds per gallon.

4-06. Sterilizing.— The well shall be sterilized by adding chlorine or hypo-chlorite solution to the water used for placing the gravel. Sufficient chlorine or solution to give the water a chlorine content of 50 P.P.M. shall be fed into the water continuously during the gravel placing operation.

4-07. Testing.

(a) Upon completion of the permanent well, the contractor shall provide a temporary turbine test pump having a capacity of at

least 400 gpm with approved equipment for measuring the rate of flow and the water level in the well. After measuring the static water level in the well, test shall begin at a rate of 100 gpm and the draw-down determined at 15 minute intervals until the level becomes stabilized. Pumping shall then be continued at the same rate for one hour and the water level determined at 15 minute intervals. The rate of pumping shall then be increased to 125 gpm and the procedure above repeated, followed by similar tests at rates increased in increments of 25 gpm until the capacity of the well is determined.

(b) After the above test has been completed and the safe maximum yield of the well determined by the contractor and approved, a continuous 36 hour test shall be run and the draw-down recorded at hourly intervals to confirm that the safe maximum yield as determined above can be produced continuously.

(c) Water levels and rates of pumping shall be determined and recorded for all tests and the contractor shall submit after testing has been completed, a characteristic curve in triplicate for the well showing the draw-down level in feet for various rates of pumping in gpm.

(d) When the test has been satisfactorily completed, the contractor shall secure samples of water in suitable containers, and of sufficient quantity, to have bacterial and chemical analyses made by a recognized testing laboratory, except that the bacterial analyses may be made by the State Board of Health if desired. The results of the analyses shall be furnished to the officer in charge.

SECTION 5. WELL PUMPING EQUIPMENT.

5-01. General requirements.-The work includes the provision of a new deep well turbine pump, less motor, in the new well at Camp Geiger and the installation in the new well at Midway Park, a deep well turbine pump, right angle gear drive, motor and auxiliary gasoline engine of which will be furnished by the Government. The installation shall be complete, as indicated and hereinafter specified.

(a) Midway Park Well.-The pumping equipment other than the right angle gear drive and the auxiliary gasoline engine has been removed from the existing well. The Government has on hand and will deliver to the contractor at the site one new Layne & Bowler deep well turbine pump and a re-conditioned 20 horsepower vertical hollow shaft motor. The pump has a capacity of 300 gpm against a total head above impeller of 170 feet. It is oil lubricated and has a 6-inch-column and 1-3/16-inch shaft. Depth of setting is 50 feet below pump base. The contractor shall install at the new well this pumping equipment together with the right angle gear drive and gasoline engine now located in the existing well house.

(b) Camp Geiger well.- The contractor shall provide for the new well a deep well turbine pump, less motor, as hereinafter specified. The Government has on hand and will deliver to the contractor at the site a re-conditioned 5 horsepower, 1,800 R.P.M. vertical hollow shaft electric motor. The motor was previously used on a Peerless deep well turbine pump, Serial No. 14976, and shall be adapted for use with the new well pump to be provided under this contract.

5-02. Pumping conditions.-The new pump for the Camp Geiger well shall operate under the following pumping conditions.

(a) The deep well pump shall be designed to deliver 150 gpm against a head of 30 feet above the pump discharge. The final pump setting shall be 10 feet below the water level in the well when the pump is discharging at well capacity. Pump speed shall not exceed 1,800 R.P.M. Final pumping conditions shall be determined by the contractor and approved by the officer in charge after testing of the permanent gravel-wall well.

(b) Bids shall be based on the pump producing 150 gpm at a speed of 1,800 R.P.M. against a total discharge head above impellers of 80 feet and a depth of setting below foundation of 60 feet. If final pumping conditions differ substantially from that stated, an adjustment in the contract price and/or the time for completion will be made in accordance with Clause 4 of U. S. Standard Form 23A.

5-03. Pump construction.

(a) Pump head.- Pump head shall be constructed from close grained cast iron and shall be of the heavy duty type designed for hollow shaft drive. Pump shall have flanged, above ground, discharge.

(b) Pump column.- The column shall be genuine wrought iron conforming to Specification No. WP-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 shall be 1-3/16 inches in diameter. 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 shaft. 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 of 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 by-passing 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.

5.04. Suction pipe and strainer.- A suction pipe of suitable diameter and 10 feet long shall be provided for the 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.

SECTION 6. PIPING.

6-01. General requirements.- This section covers pipe, fittings, valves, and appurtenances for water piping. The intent of this specification is that the piping will be of new and unused materials of any of the types specified and installed as shown except as follows:

(a) Any existing pipe, fittings, and valves which are indicated to be removed may, when cleaned, inspected and approved be installed in the new work.

6-02. Pipe and fittings.-

(a) All pipe 4 inches and larger shall be cast iron pipe, Class 150, in accordance with Specification No. WW-P-421a, except that where indicated, flanged pipe shall be Class 150 pipe provided with ASA Class 125 flanges.

(b) Pipe 3 inches and smaller shall be standard weight, with threads and couplings, zinc-coated wrought iron pipe, in accordance with Specification WW-P-441b.

(c) Fittings and specials for use with pipe 4 inches and larger shall be flanged, bell and spigot or mechanical jointed as specified herein or indicated on the plans.

(1) Fittings for bell and spigot pipe shall be Class "D" in accordance with AWWA Specification C 100.

(2) Fittings for mechanical jointed pipe and flanged jointed pipe shall be short-body fittings in accordance with American Standards Association Specification No. A21.10 and flange fittings provided with ASA Class 125 flanges.

(d) Fittings for use with pipe three inches and smaller shall be zinc-coated malleable iron conforming to Specification No. WW-P-521c.

(e) Existing piping.-All existing piping which is installed in the new location shall have all tapped holes or openings, which have no function in the new position, appropriately plugged or sealed with a blind flange.

6-03. Placing and laying.

(a) Cast iron pipe.

(1) Pipe laid underground shall be inspected in the sling before lowering into the trench, and tapped with a light hammer to detect cracks. Defective, damaged, or unsound pipe will be rejected.

Deflections from a straight line or grade, as required by vertical or horizontal curves or off-sets shall not exceed $6/D$ inches per lineal foot of pipe, where D is the nominal diameter of the pipe in inches, between the center lines extended, of any two connecting pipes. If the alignment requires deflection in excess of that limitation, the contractor shall provide special bends or a sufficient number of shorter lengths of pipe to conform to the limitation specified. Except where necessary in making connections with other lines, pipe shall be laid with the bells facing in the direction of laying. Except at closures, not less than two lengths of pipe shall be in position ahead of each joint, with packing installed and earth fill tamped alongside the pipe, before the joint is poured. Where cutting of pipe is necessary, it shall be done with approved mechanical cutters in a manner that will not damage the pipe. Where coatings are damaged, they shall be touched up with material similar to that used for the original coating.

(2) All flanged pipe shall have unwarped flange surfaces and shall be worked into place without springing or forcing.

(b) Zinc-coated wrought iron piping shall be accurately cut, shall be worked into place without forcing or springing, and shall be free of burrs or fins. Each valved connection shall be provided with a union.

(c) All water pipe laid underground shall be installed at an average depth of 3 feet to the top of pipe unless otherwise indicated and not less than 2 feet of cover shall be provided.

6-04. Pipe supports.- All piping shall be supported in a manner to adequately carry the weight of the lines and maintain proper alignment. Exposed piping shall be adequately supported from floor. Pipe laid underground shall have the bottom third of the barrel supported on firm soil. All 1/16 and sharper cast iron bends shall be securely blocked in the direction of flow. For pipe laid underground, this shall be accomplished with poured-in-place concrete bearing solidly against the pipe and affording a minimum of 3 square feet of bearing against undisturbed soil for 4-inch pipe and 8 square feet for larger pipe. This includes connections to existing mains and services indicated. Plugs shall be secured similarly except that concrete bracing shall be poured in a manner that affords easy removal of the concrete without disturbing the piping.

6-05. Joints.-

(a) Bell and spigot joints.- Before jointing, all lumps, blisters and excess coating material shall be removed from the bell and spigot ends of the pipe. All oil or grease shall be removed.

The outside of the spigot and inside of the bell shall be wire brushed and wiped clean and dry. Spigots shall be adjusted in the bells so as to give uniform space all around and if any pipe does not allow sufficient space for proper caulking, it shall be replaced with one of proper dimensions. Adjacent lengths of pipe shall be adjusted with reference to each; blocking or wedging between hub and spigot will not be permitted. Molded or tubular rubber, asbestos, or especially prepared paper rings treated to prevent deterioration or support of bacteria shall be used as gaskets. The gasket shall be driven or caulked tightly into the annular spaces between the pipes, and shall be of proper size to seal the joint tightly and leave sufficient space for lead as specified. Where rubber rings are used as gaskets, a braided or twisted hemp or jute ring shall be caulked into the joint after the rubber ring is placed to prevent contact of the molten lead with the rubber. Gaskets shall not project into the bore of the finished joint. When the joints are approved for pouring, the joints shall be cleaned and the remaining space filled at one pouring with lead which shall be caulked in a manner that will assure tight joints without overstraining the bells. The depth of lead shall be not less than 2-1/4 inches measured from the face of the bell. After caulking, the lead shall be practically flush with the face of the bells. The lead shall conform to Specification No. QQ-L-156.

(b) Roll-on-joints shall be made with the standard materials furnished with the pipe, and in accordance with the recommendations of the manufacturer, subject to approval of the officer in charge.

(c) Mechanical joints.-- The jointing shall be in accordance with the recommendations of the manufacturer of the joint except as specified otherwise. Installation shall conform to the procedure recommended in Specification No. WW-P-421a. Bolts, nuts and exposed threads shall be coated with asphalt varnish after installation.

(d) Flanged joints.-- The joints shall be firmly bolted with machine bolts. Bolts shall be regular hexagon bolts conforming to Specification FF-B-575, Type II. Gaskets shall be made of asbestos metallic cloth conforming to Specification HH-G-76b, and shall be full-faced.

(e) Screwed joints shall have the threads cut full and not more than 3 threads on the pipe shall remain exposed. Pipe lubricant shall be applied to the male threads only.

6-06. Valves.--

(a) Gate valves for use with pipe 4 inches and larger shall be double disc type with non-rising stems unless indicated or specified otherwise, and shall conform to American Water Works Association Standard AWWA C500-52T. Stem shall have nuts similar to those on valves of

the existing system, except exposed flanged valves in well houses shall have standard size wheels. Gate valves shall open by a counter-clockwise rotation of the valve stem for non-rising stems; valves with rising stems shall open by a counter-clockwise rotation of the operating wheel.

(b) Gate valves for use with pipe 3 inches and smaller shall be bronze wedge disc in accordance with Specification WW-V-54, Type I, Class A.

(c) Check valves for use with pipe 4 inches and larger shall be cast iron body, bronze mounted, tilting disc, Class 150, non-slamming type, and shall conform to the applicable requirements of Specification No. MIL-V-18436, Type II, Style A.

(d) Check valves for use with pipe 3 inches and smaller shall be bronze and shall conform to Specification No. WW-V-51a, Class A.

(e) Altitude gauges shall be installed where indicated and shall have a 4-1/2 -inch polished brass case with a white dial. All altitude gauges shall be graduated in increments of one foot and shall have a measuring range of 0 to 70 feet when used on water level device and 0 to 150 feet when used on the discharge side of the pump.

6-07. Tests.—Before being covered, the completed pressure piping shall be subjected to a hydrostatic pressure test of 200 pounds per square inch maintained for 2 hours. All pipe, joints, valves, and fittings in the test section shall be examined. Defective material disclosed as a result of the test shall be replaced and the test repeated; any joint showing visible leakage shall be made watertight.

6-08. Sterilization.—Before being placed in service, the new piping shall be flushed and sterilized by chlorination in accordance with the American Water Works Association Standard AWWA C601-48. The chlorine solution shall remain in the system at least 24 hours. After final flushing, the quality of the water shall be approved by the officer in charge before acceptance.

SECTION 7. ELECTRICAL WORK.

7-01. General requirements.-The work includes the provision of a complete and operating existing interior electrical system in each re-located well house, together with a new underground service to each well house. All electrical work shall be done as specified herein, as shown on drawings, and, unless otherwise specified or shown, in accordance with Specification No. 9Yf and other standard specifications listed therein.

7-02. Description of system.- Each well house has a complete and operating four wire, three phase, 120/208 volts interior electrical system and a underground service with metering equipment located on service poles.

7-03. Description of work.- The contractor shall disconnect, protect, adjust, and reconnect all existing electrical wiring and equipment affected by re-location of the well houses. A new underground electrical service shall be installed from the new well sites to their respective service poles complete with conduit sleeves into buildings and up poles to new weatherheads. The existing metering equipment on service poles shall be used in new service to well houses.

7-04. Wires and cables shall conform to the following requirements under the applicable conditions:

(a) Line wires shall be medium hard drawn bare copper having 98 per cent conductivity sized as indicated on drawings.

(b) The underground drop to building shall consist of new 3/C-600 volt, Type RHW, non-metallic sheathed cable of the direct burial type and one No. 4 bare wire in conduit sleeve at building and pole ends.

7-05. Conduit.-Conduit shall be of the rigid type and shall be zinc-coated for both inner and outer surfaces. Standard lengths shall be threaded previous to treatment. All conduit shall be cut with a hacksaw and reamed to size. No bends shall be made of greater than 90 degrees and manufactured elbows shall be used on one-inch size and above.

SECTION 8. BIDS.

8-01. 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 Wells, Midway Park
and Camp Geiger, Specification No.
3884/56.

Public Works Officer
Building No. 1005
Marine Corps Base
Camp Lejeune, N. C.

8-02. Bid guarantee will be required as stipulated on the reverse side of U. S. Standard Form No. 20.

8-03. 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.

8-04. 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 Wells, Midway Park and Camp Geiger, Specification No. 3884/56," should be forwarded immediately to the office to which the written bids were submitted.

8-05. 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.

10 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 (jackhammerman vibrator)	.935	Mason tenders	1.00
Asbestos workers	2.75	Mortar mixers	1.00
Asbestos workers improvers:		Painters, brush	1.65
1st year	1.25	Painters, structural	
2nd year	1.64	steel	2.00
3rd year	1.85	Piledriverman	1.65
4th year	2.07	Pipe layers (concrete 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 helpers	1.54	Sprinkler fitters	2.95
Glaziers	1.50	Terrazzo workers	2.00
Iron workers, structural	2.50	Terrazzo workers helpers	.85
Iron workers, ornamental	2.50	Tile setters	2.00
Iron workers, reinforcing	2.25	Tile setters helpers	.85
Laborers	.90	Truck drivers	.85
Lathers	1.75	Welders - receive rate prescribed for craft performing operation to which welding is incidental	
Marble setters	1.75		
Marble setters helpers	.85		
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- ing equipment	2.25	Hoist, one drum	1.625
Pile drivers	2.25	Finishing machine	1.875
Pavers	2.125	Mixers (Larger than 10-S)	1.75
Heavy duty mechanics	2.125	Mixers (Smaller than 10-S)	1.625
Scrapers, wheel type	2.125	Motor graders	2.00
Shovels	2.125	Pump over 2" discharge	1.75
Truck cranes	2.125	Pump under 2" discharge	1.625
Tractors with attach- ments	2.125	Rollers, earth	1.87
Tractors without attachments	1.875	Rollers, asphalt	2.00
Trench machines	2.125	Apprentice engineers and oilers	1.55

STATE OF TEXAS
COUNTY OF [illegible]
[illegible]

[illegible text]

[illegible text]

APPRENTICESHIP SCHEDULE
PERIOD AND RATE*

Craft	Interval	1st	2nd	3rd	4th	5th	6th	7th	8th
Iron workers	6 mos.	.50	.60						
Iron workers	Year		$66\frac{2}{3}$						
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.

