

NOTICE
Bids to be opened at 2:00 P. M.
EST, 9 Dec 1955 at the Public
Works Office, Marine Corps Base,
Camp Lejeune, N. C.

NAVDOCKS
SPECIFICATION
NO. 47376

T B M

RAW WATER CONTROL SYSTEM

at the

Marine Corps Base, Camp Lejeune, N. C.

CONTRACT NOy-91286

Appropriation: 17X1205 PWN 1956

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 a raw water control system complete and ready for use.

1-02. General description. - The work includes all material, equipment and labor to provide a dual frequency carrier current system for controlling raw water supply wells in individual program schedules complete and ready to operate.

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 October 1954, Additional General Provisions, with the following modifications:

(a) Clause 19 of Form No. 23A is deleted and the following is substituted therefor:

"19. NONDISCRIMINATION IN EMPLOYMENT

"In connection with the performance of work under this contract, the contractor agrees not to discriminate against any employee or applicant for employment because of race, religion, color, or national origin. The aforesaid provision shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of the non-discrimination clause.

"The contractor further agrees to insert the foregoing provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials."

(b) 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.

(c) Paragraph (d) of Clause 28 NAVDOCKS 113 is deleted and the following is substituted therefor:

(1) "Accident Prevention. - In order to provide safety controls for protection to the life and health of employees and other persons; for prevention of damage to property, materials, supplies, and equipment; and for avoidance of work interruptions in the performance of this contract; the contractor shall comply with all pertinent provisions of the publication 'Safety Requirements' (Revised 1951) prepared by the Department of the Army, Corps of Engineers, U. S. Army, and published by the U. S. Government Printing Office, and as may be amended, and shall also take, or cause to be taken, such additional measures as the Officer in Charge of Construction may determine to be reasonably necessary for the purpose.

"The contractor and his subcontractors shall maintain an accurate record of and shall report to the Officer in Charge of Construction in the manner and on the forms prescribed by 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 this contract;

"The Officer-in-Charge of Construction will notify the Contractor of any noncompliance with the foregoing provisions and the action to be taken. The Contractor shall, after receipt of such notice, immediately correct the conditions. Such notices, when delivered

to the contractor or his representative at the site of the work, shall be deemed sufficient for the purpose.

"If the contractor fails or refuses to comply promptly, the Officer-in-Charge of Construction may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop order shall be made the subject of claim for extension of time or for excess costs or damages to the contractor. The contractor will be responsible for insuring that his subcontractors comply with the provisions of this Clause."

1-05. Performance and payment bonds, - executed on U. S. Standard Form Nos. 25 and 25-A, 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 240 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 \$30.00 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>
646676	Index Sheet and Camp Lejeune Reservation
646677	Water Well Locations, Electrical Distribution System, PAX Locations
646678	Lejeune Generating Plant, Schematic Dual Carrier Frequency-Coupling Details.
646679	Lejeune Generating Plant, Wiring-Partition-Equipment Layouts.
646680	Hadnot Water Treatment Plant Wiring And Equipment Layout

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For information and reference, the following drawings of typical existing conditions in raw water supply well houses and schematic plan of the electrical distribution system are included. These drawings present the best available record of existing conditions. The Government assumes no responsibility for the accuracy of the information.

<u>Y & D Drawing No.</u>	<u>TITLE</u>
162276	Well Pump Houses; Main Div. Area, Rifle Range, Amphibian Base
228771	Well Pump Houses; Main Div. Area, Rifle Range, Amphibian Base; Electrical Layout
486867	Raw Water Supply System; Well Houses
505451	Quartermaster Warehouses; Well and Well-House Details
566872	Electrical Distribution System; Schematic Plan

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

- 9 Yf Oct. 1946 Electrical Apparatus, distributing systems, and wiring; including addendum No. 1.
- 13 Yd June 1951 Concrete construction, including addendum No. 1 and errata No. 1 thereto.

FEDERAL

- WW-C-581c Oct. 1954 Conduit, steel, rigid, zinc-coated, including amendment No. 1

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 WOOD PRESERVERS ASSOCIATION

AMERICAN STANDARDS ASSOCIATION

NATIONAL ELECTRIC LIGHT ASSOCIATION

Specification No. E-209-22

NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION

Standard CAI-5.1 and 5.2

1-10. "General specification for inspection of material" (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 stated otherwise. Where "as directed", "as required", "as permitted", "approved", "acceptance", or 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. Samples. - The contractor shall submit for approval samples of such materials and equipment as may be required whether mentioned specially herein or not.

1-14. 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:

Central Control Panel and its component parts; Frequency Generator; Relay Power Unit; Coded Relays; Fused Disconnect Switch; Load Break Switch; Capacitors and Capacitor Mounting Rack.

1-15. 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. P-5334 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 on 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 office 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 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.

1-16. Work outside regular hours. - If the contractor desires to carry on work outside the regular hours or on 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.

1-17. Government work and materials. - The Government will:

(a) Provide 2 pairs of telephone lines from the location of the central control panel in the Water Treatment Plant to the location of the frequency generator in the Camp Lejeune Electric Generating Plant. The telephone pairs will be 19 gauge from the Water Treatment Plant to the Automatic Telephone Exchange in Administration Building No. 1, 19 gauge from the Automatic Telephone Exchange office in Administration Building No. 1 to the Automatic Telephone Exchange in the Shopping Center, Midway Park, and 22 gauge from the Automatic Telephone Exchange, Midway Park Shopping Center to the Camp Lejeune Electric Generating Plant.

1-18. 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 with the United States is legal.

1-19. Hurricane protection. - Should hurricane warnings 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.

1-20. 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 of-

ficier 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.

1-21. 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.

1-22. 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 the work. The contractor shall notify the officer in charge, giving reasonable advance notice when such operation is required.

1-23. 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.

1-24. 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.

1-25. 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 weather-tight 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 reinstalled 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.

1-26. 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.

1-27. 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, NOY 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.

1-28. 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.

1-29. 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 together with the sub-contract price.

(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.

1-30. Lines and grades required for execution of the work shall be established by the contractor.

1-31. 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.

1-32. 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 Department 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 tracks or cleats.

2. Nursery stock, plants and sod.

3. Scrap metal.

Authorization for movement of equipment shall be obtained from the Officer in Charge of Construction, 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.

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 No. 23A respecting an adjustment for changed conditions shall apply, subject to the requirement of notification 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. Quarantine regulations. - The entire Camp Lejeune Reservation has been quarantined for White-Fringed Beetles and in order to prevent the transportation of such insects to non-affected areas, the following regulations are prescribed:

(a) Soil, sand, gravel, clay or muck moved independently or attached to other articles such as heavy equipment including drag lines, road grading machines, ditch diggers, bulldozers and other equipment with tracks or cleats (but not including rubber-tired vehicles) shall not be removed from the infested area. Where equipment of the kind referred to above is to be removed from the infested area, all soil which may have become attached to the equipment shall be removed by a thorough washing with water. Should spoil result it shall be wasted as directed.

(b) Nursery stock, plants, and sod shall not be removed from the infested area to other areas.

(c) Authorization for the moving of affected equipment from the infested area shall be made by inspectors on the work and requests for inspection shall be made sufficiently in advance so that it can be done in an expeditious manner. The equipment which is intended to be moved shall be prepared and assembled so that it can be readily inspected by the Government.

(d) No restrictions are placed on the movement of washed or processed sand and gravel.

2-03. Trenching. - All materials shall be excavated to dimensions and levels indicated. Where excavation has been carried below grade, the space shall be filled with clean, thoroughly compacted earth. Trenches

shall be excavated by hand or with mechanical trenching equipment and shall have a minimum depth of 20 inches to top of conduit. All excavations shall be kept free of water while construction is in progress.

2-04. Trench backfill. - The backfilling of trenches shall progress immediately after the installation of the conduit. The space between the conduit and sides of the trench shall be packed full with selected material free from particles that would be retained on a 1/4-inch sieve and thoroughly compacted with hand tamper as fast as placed up to a level of 6 inches above top of conduit. The succeeding layers, not to exceed 6 inches shall be excavated material having no stones larger than would pass through a 3-inch ring, or other objectionable material, and thoroughly compacted by mechanical tamping.

2-05. Soil. - Surplus material from excavation not required or unsuitable for fill shall be wasted as directed, maximum haul not to exceed 2 miles.

2-06. Restoration. - All existing pavement or other construction through which trenches are cut, or that may be otherwise damaged as a result of the operations of the contractor, shall be restored to the original condition upon completion of the work.

SECTION 3. EXPANDED METAL PARTITION

3-01. General. - The partition shall be constructed of standard prefabricated expanded metal partition panels with a prefabricated single swing door of like material provided approximately where indicated. The door shall have a suitable locking device for which two keys shall be provided. Panels shall be 8 feet high. Door shall be approximately 3'-0" by 6'-8". Panels and door shall be constructed from 1½" No. 10 expanded metal adequately supported and braced with steel angles. The partition shall be fastened securely to the concrete floor and masonry walls in an approved manner. All necessary hardware, supports and accessories for erecting the panels and door shall be provided. Installation shall be in accordance with the manufacturer's instructions.

3-02. Painting. - Metal work shall receive 1 prime coat in accordance with the manufacturer's standard procedure and 2 field coats of approved enamel of a color to match the existing walls.

SECTION 4. CARRIER CURRENT SYSTEM

4-01. General requirements. - The work includes all material, equipment and labor to provide a two frequency carrier current system for controlling 31 raw water supply wells in 16 individual program schedules complete and ready to operate. Workmanship and materials shall be in accordance with the applicable sections of Specification No. 9Yf, except as modified hereinafter.

4-02. System operations requirements. - The system shall perform the following operations without the use of special control wiring by applying carrier frequency pulses into the electrical distribution system of the Marine Corps Base, Camp Lejeune, North Carolina. These pulses shall be available at all 110/120 volt, 60 cycle outlets, supplied by 3 KVA or larger transformers.

(a) Automatically program or manually control the operation of 31 remote deep well pumps and any number of additional deep well pumps as may be installed in the future for operation within any one of 16 individual program schedules.

(b) Design shall be such that the electronic circuit capacity may be readily expanded by the addition of suitable program units but without the addition of electronic transmission equipment.

(c) Design shall be such that only one circuit is required to initiate both an "on" function and an "off" function through the medium of remotely located dual coded relays. It shall be possible to transmit extra supervisory "on" pulses and "off" pulses to dual coded relays without changing the status of those units functioning properly. Dual coded relays shall be capable of switching remote circuits "on" and "off" and transferring or activating and inactivating remote electrical circuits as required.

4-03. Existing carrier frequency, raw water well control. - The existing well control system operates on a 720 cycle carrier current principle, using the electrical distribution system for signal transmission. The existing carrier frequency generator, control panel and electrical wiring thereto located in the Water Treatment Plant, shall be removed. The existing carrier frequency control units in the raw water well pump houses and wiring not required for the new system shall be removed. Raw water wells 30, 31, LCH-1, and LCH-2 are not now equipped with carrier frequency control units.

4-04. Existing electrical protection on raw water well pumps. - Attention is invited to special relay protective devices on the electrical wiring serving the motors of the deep well pumps. These protective devices prohibit the motors on the pumps from being energized when the

voltage is either abnormally high or abnormally low. The new carrier frequency shall in no manner nullify these protective devices.

4-05. Central control panel.

(a) The central control code transmission shall be so arranged that all codes or any combination of codes up to 8, on one frequency, may be transmitted during a cycle of not more than one minute to accomplish a simultaneous "on" or "off" function to occur. The circuits shall be so arranged that both "on" and "off" codes cannot be transmitted during the same cycle, but so that any code may be activated to "on" and "off" without affecting the status of other codes which may have been previously transmitted. The central control panel shall be capable of transmitting repetitions of previously transmitted codes to permit supervision of well pump status without causing the status to change unless it does not agree with the program set in the central control. The central control shall be capable of transmitting these supervisory pulses either automatically or at the discretion of the operator as closely spaced as not more than one minute intervals. The control panel shall be so interlocked that more than one frequency cannot be transmitted at one time, either manually or automatically. The panel shall operate from a 110/120 volt 60 cycle supply.

(b) The panel shall be installed in the Water Treatment Plant, Building 20, complete with mounting brackets, in the same location as the existing raw water well carrier frequency control panel, which is to be removed.

(c) The central control panel shall consist of the following equipment:

(1) A motor-wound, spring-driven, frequency regulated master clock movement with a minimum spring reserve power to operate for 12 hours without batteries. Recovery of reserve power following restoration of electric power shall be automatic. This movement shall also provide for the automatic correction of future clocks up to 12 hours slow time in the event of a general power outage, and in the event of a power outage on local circuits, it shall provide for the correction of future individual clocks connected to these circuits for up to 12 hours slow time. Correction range in any one hour shall be not less than 55 seconds for fast time, 59 minutes for slow time on both an individual and system basis. Correction shall be accomplished at the rate of not less than 1 hour in one minute. Only those future clocks at variance with the central control panel shall be accelerated or stopped as may be required to place them in synchronization with the central control panel time.

(2) Two program machines of the removable-drum, 24-hour, minute-interval type which shall contain calendar mechanisms for making any circuit active or inactive during any day of the week.

These machines shall be capable of automatic correction for 12 hours slow time.

- (3) Circuit activating switches for each circuit.
- (4) A signal transmission verifier unit to automatically sense the command pulses to determine if the signal is properly coded and of the required voltage level before circuit status indicating lights are turned "on" or "off", or the status of the controlled device is changed.
- (5) Circuit status indicating lights to indicate which signals have been transmitted, both automatically and manually. When an "on" command pulse has been transmitted and verified, an indicating light for that circuit shall be lighted. All circuit status lights which are lighted shall flash during the signal transmission period to indicate that pulses are being transmitted.
- (6) Power "on" indicating light to indicate that 110/120 volt power is energizing the central control panel.
- (7) Cycle lights to indicate if an "on" or an "off" command is being transmitted.
- (8) Manual controls containing a panel selector switch to provide for selecting the desired frequency; circuit selection switches for selecting circuit codes; cycle switch to transmit either "on" or "off" pulses as required.
- (9) 16 circuits of dual coded relays, each circuit of which shall provide both an "on" and an "off" function and including circuit inactivating switches and circuit status indicating lights for each circuit.

4-06. Relay power unit shall be installed with suitable brackets, adjacent to the central control panel in the Water Treatment Plant, Building No. 20. This unit shall provide appropriate power supply consisting essentially of a full wave selenium rectifier and an adequate filter for transmission of impulses from the central control panel to the signal generator over two pairs of telephone wires which are to be provided by the Government.

4-07. Frequency generator. - A dual frequency generator shall be provided with an output frequency of between 2,000 and 3,600 cycles and an output frequency of between 5,000 and 6,000 cycles. The generator shall provide adequate electronic signals at every 110/120 volt, 60 cycle outlet which is fed by a 3 KVA or larger transformer for the control of dual coded receivers at the raw water supply wells and for the correction of future indicating clocks and attendance recorders. The dual

frequency generator shall be provided with adequate foundations, in accordance with the manufacturer's recommendations, and installed in the Camp Lejeune Electric Generating Plant at the location indicated on the plans.

(a) The generator shall be complete with not less than a 40 H.P., 440 volt motor, reduced voltage motor starter and relay control to operate from appropriate current impulses received from the telephone pairs as directed by the central control panel. The output of the frequency generator shall be fed to high voltage coupling equipment by means of a two frequency coupling unit. The coupling unit shall contain the necessary components to key the output circuit of the desired frequency generator. The keying shall be arranged in such a manner that the output circuit not being keyed will be isolated from the high voltage coupling equipment to prevent loading of the generator output being keyed. Suitable test switches shall be provided to start the motor and key the desired generator frequency in the generator control unit section of the coupling unit. Series and parallel tuned inductances shall be used within the coupling unit which shall be variable by means of taps on the windings and movable cores to enable proper impedance matching operations. Sufficient range of variation shall be provided to reach a peak of resonance with the system reactance and adequate loading of the generators to obtain full rated output. Provision shall be made in these tuned circuits to limit surged voltages induced by line coupling capacitor inrush currents to a safe value. Tuned circuits shall hold 60 cycle reactive current at a minimum, and the 60 cycle voltage shall be at ground potential.

(b) A suitable ground bus within the coupling unit shall be connected to the electric generation plant substation ground by means of a solid insulated No. 4 conductor in duct as shown on drawing.

(c) The output current from the coupling unit shall be connected to the high voltage coupling equipment by a 3 conductor cable of No. 6 stranded wire with 600 volt insulation. This 3/c cable shall be of such structural design as to span 100' with a minimum amount of sag.

(d) The 3 output conductors shall be connected to a grounding switch within the coupling unit which will connect directly to the grounding bus.

(e) Control circuits. - Components shall be connected with conductor sizes as recommended by the manufacturer of the equipment.

(f) High voltage coupling equipment shall consist of a bank of low temperature type capacitors rated at 12,470 volts and so

arranged that suitable capacity can be obtained for use with required impedance matching procedures. The high voltage coupling equipment shall be mounted on the new pole structure as indicated on the plans and connected to the 12,500 volt bus. The connection shall be made through a 200 ampere, 14,400 volt gang operated oil filled load break switch and 3 separately mounted fused disconnect switches. The fuses shall be of the high voltage current limiting type, rated at 14,400 volt and capable of interrupting 9000 ampere ground fault current on the bus. The fuses shall be rated at 50 amperes. Capacitors, load break switch, and fused disconnect switch shall be of the outdoor type and mounted on an approved rack.

4-08. Dual coded relays consisting of coded receivers, relays, and terminal strips shall be installed complete with required wiring in each raw water well pump house for control of the motor starters. All wiring within well houses shall be in conduit. The motor starters are 15 H.P., single coil, 208 or 220 volt, 60 cycle, with holding circuits. The enclosure for the relays shall be mounted in such a manner that there is a minimum of one inch of air space between the enclosure and the wall upon which they are mounted.

(a) The relays shall make it possible for the pump motor to drop out and remain out during a power interruption until switched on again in individual groups either automatically or manually by the central control panel or manually by the motor starter. If the motor starter overload relay is tripped, the coded relay shall not interfere in any way and the starter shall require manual resetting.

(b) The relays shall be capable of distinguishing between "on" and "off" command pulses as transmitted by the central control panel and shall be capable of performing supervisory command impulses from the central control panel without changing the status of those units which are functioning properly. Coded relays shall be capable of field change from any one to any other program circuit on the same frequency without changing receivers. Coded relays shall have proper selectivity to differentiate between frequencies being transmitted and respond only to the desired frequency. The sensitivity of the relays shall be such that the noise levels found on 60 cycle lines will not cause false responses. The decoding device shall work in conjunction with the frequency selective unit to reject higher order noise levels occasionally found on power systems of the type upon which this installation is being made. The frequency selective unit shall respond positively to maximum and minimum levels of transmitted signal within the range as developed by the frequency generator.

4-09. Salvaged equipment and materials. - Salvaged equipment and material, including but not limited to the following, shall be delivered

to a Government warehouse or salvage yard, a distance of not more than 8 miles from the removal site:

- (a) Carrier frequency generator.
- (b) Electrical controls, wiring and associated materials serving carrier frequency generator.
- (c) Carrier frequency control panel and associated materials and equipment.
- (d) Receivers and associated materials and equipment.
- (e) High voltage coupling equipment.

4-10. Supervisory engineer. - The services of a supervisory engineer employed by the manufacturer of the equipment being furnished shall be provided for a period of five working days. This engineer shall make such final adjustments to the system as may be required and shall familiarize local maintenance forces with maintenance procedures on the equipment. Under a supplementary bidding item, bidders shall state the amount by which the contract shall be increased or decreased for each working day in excess of, or less than the working days specified that the engineer is required to remain at the site of the system upon the written direction of the contracting officer and for cause for which the Government is responsible; such amount per day shall include the salary and all living and other expenses of the engineer. The services of the engineer shall be furnished upon written notice of the contracting officer.

4-11. Instruction manuals. - Six (6) sets of Instruction Manuals shall be delivered to the Officer in Charge upon completion of the work. These manuals shall contain information relative to the operation and maintenance of the system and catalogue data, as required, for use in ordering of replacement parts.

4-12. Tests - Upon completion of the installation and final adjustment, the contractor shall test the system in the presence of the officer in charge to demonstrate that each of the 16 individual program schedules are operative and that each well within each individual group responds to the command given both automatically and manually by the central control panel. Included in this test shall be a demonstration that electronic clocks will work on outlets as follows:

Hadnot Point Area - 25 dispersed outlets
 Paradise Point Area - 5 dispersed outlets
 Midway Park Area - 5 dispersed outlets
 Montford Point Area - 5 dispersed outlets
 Camp Geiger Area - 20 dispersed outlets
 Rifle Range Area - 5 dispersed outlets

- Courthouse Bay - 5 dispersed outlets
- Onslow Beach - 3 dispersed outlets
- "C" Range - 2 dispersed outlets

Equipment for making the electronic clock portion of this test shall be furnished by the contractor.

SECTION 5. INTERIOR ELECTRICAL WIRING

5-01. General requirements. - The work shall include the provision of complete and operating electrical wiring systems in the Water Treatment Plant (Bldg. No. 20), Camp Lejeune Electric Generating Plant (Bldg. No. 45), and each of the raw water well pump houses.

5-02. Fused safety switches used for motor disconnect or manual control shall be Type "A", equipped with quick-break and quick-make mechanisms in general purpose enclosures having exterior operating and interlocked to prevent access to the interior when switch is closed. Air circuit breakers calibrated to protect associated wires or motors are acceptable. Adequate mounting brackets shall be provided.

5-03. Motor starter. - The new 40 H.P. starter at the Power Plant shall be of the auto-transformer, reduced voltage type, designed for magnetic operation for the operation of a 440 volt, 3 phase, 60 cycle squirrel cage motor (approximately 40 horsepower). The starter shall be enclosed in a heavy welded sheet steel cabinet having provision for locking. The starter shall be equipped with alternating current magnets. There shall be a time limit accelerating relay to insure that the motor will always accelerate in a definite time under varying load conditions. The auto-transformer shall be integral with the starter assembly and consist of two windings connected in open delta. The transformer shall have 50%, 65%, and 80% taps.

5-04. Magnetic motor controllers shall be of the quick-break and quick-make type, having overload and low voltage release and with hand set overload trip mechanisms in N.E.M.A. type 1 enclosure. Controllers shall conform to the latest applicable standards of N.E.M.A. for the type and class as specifically applied. Controllers shall be arranged to provide automatic or manual control as required.

5-05. Insulating transformer shall be of the dry type, single phase, 2KVA, 480/120/240 V., 60 cycle. The primary shall be connected to the load side of 200 Amp. 440 V. fused switch and the secondary to the new 2 circuit breaker panel.

5-06. Lighting panels shall consist of the number of circuits noted, single, quick-make and quick-break branch circuit breakers rated as noted on drawing feeding from a 115/230 volt, 3 phase, 3 wire bus. The breakers shall be assembled on a heavy formed steel back plate drilled for universal mounting of 50 ampere frame size breakers and shall be arranged for easy removal from the front without disturbing adjacent units. Lugs only to be furnished on the mains. Breakers to be equipped with trip free handles. The breaker mechanism shall be mounted in a hot moulded phenolic case sealed to prevent unauthorized tampering with the fixed calibration. Tripping shall be accomplished

by means of a bi-metallic thermostatic latch accurately calibrated for the specific rating. The cabinet shall be flush type made of not less than code gauge steel and shall have a turned-in flange around the outside edges for fastening the trim, and shall have a removable steel barrier. The trim shall be equipped with a hinged door having a latch and lock and a half round moulding around the edge for stiffening. Exposed surfaces of the cabinet shall be primed for finish painting. Allow for not less than two spare circuits.

5-07. Outlet boxes. - Flush outlet boxes, wherever used to terminate conduit, the equipment shall be 4-inch square, zinc-coated boxes with a cover in each case suitable for the respective purpose. All surface-mounted boxes shall have threaded hubs.

5-08. Junction boxes shall be made of galvanized, code gauge steel and sized according to the best practice in the trade. Steel junction boxes shall not be utilized in lieu of specified threaded hub fittings.

5-09. Conduit shall be rigid steel, zinc-coated on both inner and outer surfaces, and shall conform to Specification WW-C-581c. 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 more than 90 degrees and manufactured elbows shall be used on 1-inch size and above. Exposed conduit shall be secured to construction with clips manufactured for the purpose on not greater than 5-foot centers.

5-10. Control circuits between the frequency generator and motor starter shall be No. 14 conductors. Power circuits shall be No. 6 conductors.

5-11. Wires and cables shall conform to the following requirements under the applicable conditions:

- (1) No wire smaller than No. 12 AWG shall be used.
- (2) All wire installed in conduit in dry locations shall be Type RH.
- (3) All interior wiring in conduit installed wholly or in part outside of the building, in or under floor slabs or underground, shall be Type RHL.

5-12. System of wiring. - The method of installing the electrical work in each building shall be in conduit exposed on walls and buried under or in floors and floor slabs.

5-13. Grounding shall be provided for all conduit, metal casings, and motor frames. Resistance to ground shall not exceed 25 ohms.

5-14. The grounding electrode in Building No. 45 shall be the grounding bus bar of the new dual frequency tuner. The ground connection for this interior system shall be made with an insulated #4 wire in duct, to the ground side of reactor as shown on drawing.

5-15. The grounding electrode in the well houses and water plant, Building No. 20, shall be the water service main to the building. The ground connection for the interior system shall be to the service neutral wire on the service side of the service disconnecting switch.

5-16. Painting. -

(a) Electrical switch boxes, fuse boxes and control panels shall be color painted to conform to the Government Safety Code requirements as given in the Application of Color to Shore Establishment.

(b) Electrical conduit, where exposed on interior of buildings, shall be painted to match the spaces in which it occurs.

SECTION 6. EXTERIOR ELECTRICAL

6-01. General requirements. - The work shall include the provision of a complete and operating Carrier-Current coupling system for Well Control at the Camp Lejeune Electric Generating Plant Substation, Building No. 45, and the removal of all existing 720 cycle, 12.5 KV coupling devices in front of the water plant, Building No. 20.

6-02. Existing 720 cycle high voltage coupling units. - The existing 12.5 KV coupling coils, transformers, capacitors, switches, wiring, etc., located in front of the Water Plant, Building No. 20, shall be removed.

6-03. Underground electrical duct system shall consist of fiber or cement asbestos conduit of the electrical type having a wall thickness designated for encasing in concrete. The conduit shall be mechanically strong and of a chemically inert pitch filtered fiber reinforced, or of asbestos cement manufactured in such a manner that it will not abrade tar or otherwise damage the sheath of the cable. The conduit shall be joined and butted within the couplings so as to maintain the conformity of smoothness. Accurate vertical and horizontal separation shall be preserved by means of approved separators. Concrete shall be Class D-1 in accordance with Specification 13Yd.

6-04. Conduit sleeves. - At the entrances to the Electric Generating Plant and the reactor pole, the cable raceways shall consist of rigid steel zinc-coated conduit mechanically connected to the non-metallic conduit of the duct system by suitable adaptor couplings. The steel conduit shall continue down the exterior wall from the weather-head to a distance of not less than 5 feet away from the building and terminate in line with the non-metallic conduit. The concrete encasement shall continue to the ground reactor pole. Conduit sleeves shall be painted with two coats of approved rubber base paint in addition to the zinc-coating for their entire length.

6-05. Pull and junction boxes. - The contractor shall provide and install all necessary or required pull and junction boxes. Such boxes shall be constructed of code gauge of steel standard for the respective dimensions and equipped with a turned-in flange to which the cover shall be mounted by screws into treated holes.

6-06. High voltage coupling equipment shall consist of a bank of low temperature type capacitors rated at 12.5 KV, and so arranged that suitable capacity can be obtained for use with required impedance matching procedure. Coupling capacitors shall have high strength solder-sealed bushings and possess a high insulation dielectric conforming with NEMA standards CAI-5.1 and 5.2. The high voltage coupling

equipment shall be mounted on the new pole structure as indicated on the plans and connected to the 12.5 KV bus. The connection shall be made through a 200 ampere, 15 KV, gang-operated, manual control, oil filled load breaking switch complete with operating handle and vertical pipe. The connection shall also be made through 3 separately mounted fused disconnect switches. The disconnect switch shall be of the high voltage current limiting type, rated at 15 KV volts and capable of interrupting 9,000 ampere ground fault current. The fuse shall be rated at 50 amperes. Capacitors, load break switch and fuse disconnect switch shall be of the outdoor type and mounted on an approved rack.

6-07. Control circuits between the frequency generator and coupling unit shall be No. 14 conductors.

6-08. Line Wires. - Primary and secondary line wires shall be medium hard drawn bare copper having 98% conductivity sized as indicated on drawing.

6-09. Grounding. - All equipment installed at the substation shall be grounded to the existing ground girdle skirting the transformer slabs.

6-10. Ground wires. - All ground wires shall be #6 AWG, bare solid copper and shall be protected by wood moulding to a height of not less than 8 feet above ground. Attachment to ground rods shall be made by means of heavy duty solderless bronze clamps.

6-11. Suspension insulators. - There shall be two (2) 7½" diameter suspension insulators for each primary wire at every dead end. The overall flashover value of the 2 insulators in series shall not be less than 125 KV dry and 60 KV wet. The positive flash-over value shall be not less than 210 KV and the negative impulse flash-over value shall be not less than 210 KV. Insulators shall be of the wet process type.

6-12. Pin type insulators. - Shall be of the wet process type, having flash-over values not less than 85 KV dry and 55 KV wet.

6-13. Spool insulators shall be of the wet process type. The over-all flashover value of the insulators shall be not less than 36 KV dry and 26 KV wet.

6-14. Radio influence voltage shall have approximately the following values:

<u>Type of Insulator</u>	<u>Test KV RMs to Ground</u>	<u>Maximum Micro Volts at 1000 KC</u>
Suspension insulators (2 in series)	10	50
Pin type insulators (ea)	15	100
Spool insulators (ea)	10 (Approx.)	50 (Approx.)

6-15. Pole hardware and accessories shall be hot dipped zinc-coated.

6-16. Guys. - Strand shall have a minimum breaking strength of 10,000 pounds and shall be 7-wire, specification strand type. Each guy shall be made up with 3-bolt heavy duty clamps and thimble eyes. Guard shall be half round metal, bolted to guy, 8 feet in length and installed on all guys in this contract.

6-17. Strain insulators. - Shall be installed on each guy and shall have a dry flash-over of 30 KV, a wet flash-over of not less than 15 KV, minimum strength of 10,000 pounds and made by the wet process method.

6-18. Anchors may be either of the expanding type not less than 120 square inches with holding power of 10,000 lbs. in sand and equipped with 3/4 inches by 9 foot rods having thimble eye or 5 feet by 8 inches diameter logs, creosoted after cutting and framing, complete with 3/4 inches by 9 feet thimble eye rod, nut and washer. Anchor or log shall be installed 5 feet below grade.

6-19. Poles and cross arms. - Poles shall be American Standards Association, Class 1, as indicated on distribution drawing, yellow pine poles, creosoted to 12 pounds retention by the empty cell process according to the specifications of the American Wood Preservers Association. Cross arms shall be close-grained Douglas Fir (Coast). Poles shall be installed complete with "But" ground.

6-20. Double arming. - All dead ends shall be double armed, with 2 cross arms provided, one on either side of the pole; double arming bolts shall be installed.

6-21. Cross arm braces shall be 1/4 inch by 1-1/4 inch by 32 inches (flat steel bars, galvanized after punching), punched for a 1/2 inch screw at the pole end and a 3/8-inch bolt at the arm end, bolted to the front of arm after it has been carefully aligned. They shall be secured to pole with 1/4-1/2 inch drive screws. Buck arms shall be installed if required for good construction as in standard practice.

6-22. Insulator pins. - Steel pole top and cross arm pins shall have a 1-inch lead thread and a minimum strength of 1,500 pounds based on a 10 degree deflection.

6-23. Bolts and nuts shall conform to NECA specification No. E-209-22. Bolts shall be of sufficient length to accommodate the necessary nuts, washers, etc., without projecting more than 1 inch at the free end except that they shall not project more than 1/4 inch into the eye when an eye nut is installed.

6-24. Power outages. - Power outages for connection to the high voltage bus and reactor shall be limited to the period between 12:01 A. M. to 11:59 P. M. on Sunday.

SECTION 7. BASIS OF BIDS

7-01. General requirements. - Under the bidding items provided for that purpose, bidders shall state prices for each basis of bid given hereinafter. All requirements specified hereinbefore shall govern unless stated otherwise under any of the following basis of bids.

7-02. Basis of bid for item 1 shall be the entire work complete in accordance with the requirements specified hereinbefore.

7-03. Basis of bid for item 2 shall be the entire work complete in accordance with the requirements specified under basis of bid for item 1 except a single frequency generator shall be provided and the system shall automatically program or manually control the operation of 31 remote deep well raw water pumps and any number of additional well pumps as may be installed in the future for operation within any one of 8 individual program schedules, and the system shall not provide for the future installation of time clocks, attendance records and individual electronic indicating clocks. Coupling units utilized in connection with the generator shall be of the single coupling type. Under this bid item, the various components and circuits required for dual frequency control in the central control panel shall be eliminated and components and circuits required for a single frequency system shall be provided. Appropriate relays shall be installed in the well houses.

7-04. Basis of bid for item 3 shall be the amount the contract shall be increased or decreased for each working day of the supervisory engineer in excess of or less than the working days specified. The amount per day shall include the salary and all living and other expenses of the engineer.

SECTION 8. BIDS

8-01. Instructions 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 Raw Water Well Control System	Public Works Officer
Specification No. 47376	Building No. 1005
	Marine Corps Base
	Camp Lejeune, N. C.

8-02. 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 No. 20 and No. 22, upon the following items:

Item 1. - Price for the entire work, complete in accordance with drawings and specifications, as defined in basis of bid for item 1.

Item 2. - Price for the entire work, complete in accordance with the drawings and specifications, as defined in basis of bid for item 2.

Item 3. - Prices for the services of supervising engineer per day for working days in excess of or less than those specified as defined in the basis of bid for item 3.

8-03. 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 Raw Water Well Control System, Specification No. 47376", should be forwarded immediately to the office to which the written bids were submitted.

8-04. 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

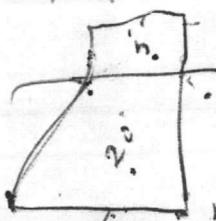
The Government forms, Bureau of Yards and Docks standard specifications mentioned and other information necessary may be obtained from the District Public Works Officer, Headquarters, Fifth Naval District, U. S. Naval Base, Norfolk 11, Virginia, or Public Works Officer, Navy Department, Building No. 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, North Carolina, 4 October 1955

W. SIHLER
RADM (CEC) USN
Officer in Charge of Construction
Fifth Naval District

FOR

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



43.00
8.60

20 - 5 1.60

25 - 5 3.75

11



0.25

43
20
4 | 8.60
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21
18

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98 - 118
98 - 123