

Completed

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION, NAVAL FACILITIES ENGINEERING COMMAND
NAVAL STATION, NORFOLK, VIRGINIA

NOTICE:

N62470-82-B-2319

Bids to be opened at 2:00 p.m.
2 AUG 1983
at the office of the
Officer in Charge of Construction
Jacksonville, North Carolina Area
Building 1005, Marine Corps Base
Camp Lejeune, North Carolina 28542

NAVFAC
SPECIFICATION
No. 05-82-2319

Appropriation: OMMC

CLEAN WATER MAINS

AT THE

MARINE CORPS AIR STATION (HELICOPTER), NEW RIVER, NORTH CAROLINA

(Station Project 12E82)

DESIGNED BY:

Henry von Oesen and Associates, Inc.
Consulting Engineers & Planners
Wilmington, North Carolina

*Review & Return
to MSCSS*

SPECIFICATION PREPARED BY:

Civil-Structural: J. R. Benson, Jr., P. E.

Submitted By: J. R. Benson, Jr., P. E. Date: 15 May 1983

SPECIFICATION APPROVED BY:

Specification Branch Head: *CAN* C. R. ROSE, P.E.
Design Director: J. M. DAVIS, P.E.
For EFD for Commander, NAVFAC: *[Signature]*
Date: 25 May 1983

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BIDDING INFORMATION

1. CONTENTS: This Invitation for Bids, IFB No. N62470-82-B-2319, consists of the following documents:

(a) Bid Instruction Documents

- (i) Invitation for Bids (Standard Form 20, Jan. 1961, Ed.).
- (ii) Bidding Information
- (iii) Instructions to Bidders, dated March 1979.

(b) Bid Submittal Documents

- (i) Bid Form (Standard Form 21, Dec. 1965 Ed.)
- (ii) Representations and Certifications (Standard Form 19-B, Jun. 1976 Ed.) (Rev. 1980 Aug.), including Appendix "A" dated August 1980.
- (iii) Bid Guaranty (Standard Form 24, Jun. 1964 Ed.) (See Instructions to Bidders.)

(c) Contract Documents

- (i) Construction Contract (Standard Form 23, Jan. 1961 Ed.)
- (ii) Performance Bond (Standard Form 25, Jun. 1967 Ed.) (See Instructions to Bidders).
- (iii) Payment Bond (Standard Form 25A, Jun. 1964 Ed.) (See Instructions to Bidders).
- (iv) Labor Standards Provisions, dated November 1979.
- (v) General Provisions dated March 1981 (Rev. 12-81).

a. Clause 43. ACCIDENT PREVENTION (1977 JUN): Change the date of the Corps of Engineers Manual, EM 385-1-1 from "1 June 1977" to "1 April 1981".

b. **Clause 63. VALUE ENGINEERING INCENTIVE (1977 AUG):** Delete this clause and substitute the following therefor:
"63. VALUE ENGINEERING INCENTIVE--CONSTRUCTION (1980 DEC)

(a) Applicability. This clause applies to any Contractor developed, prepared, and submitted Value Engineering Change Proposal (VECP).

(b) Definitions.

(1) "Contractor's development and implementation costs" means those costs incurred on a VECP Government acceptance and those costs the Contractor incurs specifically to make the changes required by Government acceptance of a VECP.

(2) "Government costs" means those agency costs that result directly from developing and implementing the VECP and any net increases in the cost of testing, operations, maintenance, and logistic support. They do not include the normal administrative costs of processing the VECP.

(3) "Instant contract savings" means the estimated reduction in Contractor cost of performance resulting from acceptance of the VECP, minus allowable Contractor's development and implementation costs (including subcontractors' development and implementation costs). (See paragraph (g).)

(4) "Value Engineering Change Proposal (VECP)" means a proposal that:

- (i) requires a change to this, the instant contract, to implement; and
- (ii) results in reducing the contract price or estimated cost without impairing essential functions or characteristics, provided that it does not involve a change in deliverable end-item quantities only.

(c) VECP Preparation. As a minimum, the Contractor shall include the information described in (1) through (6) in each VECP. If the proposed change affects contractually required configuration management procedures, the instructions in the procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:

(1) A description of the difference between the existing contract requirement and that proposed, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, and the effect of the change on the end item's performance.

(2) A list of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.

(3) A separate, detailed cost estimate for both the affected portions of the existing contract requirement and the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (g). The Contractor shall also include a description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.

(4) A projection of any effects the proposed change would have on collateral costs to the agency.

(5) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.

(6) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.

(d) Submissions.

(1) The Contractor shall submit VECPs to the Resident Engineer at the worksite, with a copy to the Contracting Officer. The Contracting Officer shall notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required because of extenuating circumstances, the Contractor shall be notified within the 45-day period and provided the reason for the delay and the expected date of the Contracting Officer's decision. VECPs shall be processed expeditiously; however, the Government shall not be liable for any delay in acting upon a VECP.

(2) If the VECP is not accepted, the Contracting Officer shall provide the Contractor written notification fully explaining the reasons for rejection. The Contractor may withdraw, in whole or in part, any VECP not accepted by the Government within the period specified in the VECP. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.

(e) Acceptance. Any VECP may be accepted in whole or in part by the Contracting Officer's award of a modification to this contract citing this clause. The Contracting Officer may accept the VECP, even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a notice to proceed is issued or a contract modification applies a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The Contracting Officer's decision to accept all or part of any VECP shall be final and not subject to the Disputes clause.

(f) Sharing.

(1) Rates. The Contractor's share of savings is determined by subtracting Government costs from instant contract savings and multiplying the result by 55 percent for fixed-price contracts and 25 percent for cost-reimbursement contracts.

(2) Payment. Payment of any share due the Contractor for use of a VECP on this contract shall be authorized by a modification to this contract to:

- (i) accept the VECP;
- (ii) reduce the contract price or estimated cost by the amount of instant contract savings; and
- (iii) provide the Contractor's share of savings by adding the amount calculated in (f)(1) to the contract price or fee.

(g) Subcontracts. The Contractor shall include appropriate VE clauses in any subcontract of \$50,000 or more and may include them in subcontracts of lesser value. To compute any adjustment in the contract price under paragraph (f), the Contractor's VECP development and implementation costs shall include any subcontractor's development and implementation costs that clearly result from the VECP, but shall exclude any VE incentive payments to subcontractors. The Contractor may choose any arrangement for subcontractor VE incentive payments, provided that these payments are not made from the Government's share of the savings resulting from the VECP.

(h) Data. The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

"These data, furnished under the Value Engineering Incentive--Construction clause of Contract _____, shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a VECP submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations."

If a VECP is accepted, the Contractor hereby grants the Government unlimited rights in the VECP and supporting data, except that, with respect to data qualifying and submitted as limited rights technical data, the Government shall have the rights specified in the contract modification implementing the VECP and shall appropriately mark the data."

c. Clause 97. AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION (1978 SEP): Change the date of this clause to "(1982 FEB)."

- (vi) NAVFAC Specification No. 05-82-2319.
- (vii) Drawings identified in Section 01011, Division 1 of the Specifications.
- (viii) Wage Determination Decision, Secretary of Labor Decision No. NC81-1148, with Modification No. 1.

2. BIDS:

2.1 Instructions to Bidders: Instructions to Bidders, and Invitation for Bids, Standard Form 20, January 1961 edition, shall be observed in the preparation of bids. Bidders shall affix their names and return addresses in the upper left corner of bid envelope. Envelopes containing bids must be sealed.

2.2 Bid Guaranty: For bids of \$25,000 or greater, a bid guaranty will be required as stipulated in the Instructions to Bidders.

2.3 Items of Bids: Bids shall be submitted, in duplicate, on Standard Form 21, Bid Form, and shall be accompanied by Standard Form 19B, Representations and Certifications, including Appendix "A" thereto, and by Bid Guaranty, all in accordance with the Bid Instruction Documents listed in paragraph 1(a) hereinbefore upon the following item(s):

Base Bid:

- (a) Price for the entire work, complete in accordance with the drawings and specifications, but excluding the price for cleaning, flow testing, and leak testing the existing water piping.
- (b) Price for cleaning, flow testing and leak testing the existing water piping, complete in accordance with the drawings and specifications and in accordance with the following schedule:

<u>Item</u>	<u>Unit</u>	<u>Unit Price</u>	<u>No. Units</u>	<u>Extension</u>
6-inch pipe	Linear feet	\$ _____	15,620	\$ _____
8-inch pipe	Linear feet	\$ _____	5,970	\$ _____
10-inch pipe	Linear feet	\$ _____	5,650	\$ _____
12-inch pipe	Linear feet	\$ _____	1,580	\$ _____
14-inch pipe	Linear feet	\$ _____	1,490	\$ _____
16-inch pipe	Linear feet	\$ _____	3,750	\$ _____
18-inch pipe	Linear feet	\$ _____	1,290	\$ _____
			Total	\$ _____

- NOTES: 1. The unit and lump sum prices for various items in the schedule above shall be deemed to include all costs required for the specified work, complete in accordance with the drawings and specifications, including all materials, labor, equipment, tools, supervision, and related items.
2. The bid amount for the Base Bid will be determined by the sum of the lump sums bids under Base Bid (a) and the sum of the extensions under Base Bid (b). For Base Bid (b), bidders shall enter the unit prices and the extended totals in the spaces provided. Should there be a discrepancy between the unit prices and the extended totals, the unit prices shall govern."

2.4 Telegraphic Modifications of Bids: Telegraphic modifications of bids may be made in accordance with the Instructions to Bidders. Two signed copies of the telegram in a sealed envelope marked "Copies of telegraphic modification of bid for Clean Water Mains, Specification No. 05-82-2319," should be forwarded immediately to the office to which the written bids were submitted.

2.5 Telegraphic Modifications or Withdrawal of Bids: Telegraphic modifications or withdrawal of bids will be considered as specified herein. TELEPHONIC RECEIPT OF TELEGRAPHIC MODIFICATIONS OR WITHDRAWAL OF BIDS WILL NOT QUALIFY THE TELEGRAM AS TIMELY. The telegram must be received at the place specified for receipt of bids prior to the exact time set for receipt of bids.

2.6 Hand Delivered Bids: All hand delivered bids must be deposited in the bid box at the office of the Officer in Charge of Construction, Marine Corps Base, Camp Lejeune, North Carolina, prior to the time and date set for bid opening. Any bids submitted by hand after the time set for receipt will not be accepted.

3. PRE-BID SITE VISITATION: To inspect the site of the work prior to bid opening, prior appointment must be made with the Assistant Resident Officer in Charge of Construction, Jacksonville, North Carolina Area, Marine Corps Base, Camp Lejeune, North Carolina, telephone: 919/451-2581. Bidders are urged and expected to inspect the site where services are to be performed and to satisfy themselves as to all general and local conditions that may affect the cost of performance of the contract to the extent such information is reasonably obtainable. In no event will a failure to inspect the site constitute grounds for withdrawal of a bid after opening or for a claim after award of the contract.

4. CONTROLLED MATERIALS DATA: The Contracting Officer will issue a D0-C2 priority rating for procurement of critical materials. See provision entitled, "Priorities, Allocations and Allotments" of the General Provisions.

5. INQUIRIES:

5.1 Plans and Specifications: Questions regarding the plans and specifications occurring prior to bid opening shall be presented to the Public Works Design Division, Building 1005, Marine Corps Base, Camp Lejeune, North Carolina 28542, telephone 919-451-5507. Questions requiring interpretation of drawings and specifications must be submitted at least ten days before bid opening. Interpretations or modifications to specifications made as a result of questions will be made by amendment only, and unless so done, all bidders should base their bids on the plans and specifications as issued.

5.2 Bidding Procedures: All questions concerning the bidding procedures shall be presented to OICC-ROICC Contract Branch, Room 26, Building 1005, Marine Corps Base, Camp Lejeune, North Carolina, telephone 919-451-2581.

6. AVAILABILITY OF SPECIFICATIONS, STANDARDS AND DESCRIPTIONS (1977 JUN): Specifications, standards and descriptions cited in this solicitation are available as indicated below:

(a) Unclassified Federal, Military and Other Specifications and Standards (Excluding Commercial), and Data Item Descriptions. Submit request on DD Form 1425 (Specifications and Standards Requisition) to:

Commanding Officer
U. S. Naval Publications and Forms Center
5801 Tabor Avenue -- Philadelphia, PA 19120

The Acquisition Management Systems and Data Requirements Control List, DoD Directive 5000.19-L, Volume II, may be ordered on the DD form 1425. The Department of Defense Index of Specifications and Standards (DODISS) may be purchased from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C., 20402. When requesting a specification or standard, the request shall indicate the title, number, date and any applicable amendment thereto by number and date. When requesting a data item description, the request shall cite the solicitation. When DD Form 1425 is not available, the request may be submitted in letter form giving the same information as listed above, and the solicitation or contract number involved. Such request may also be made to the activity by Telex No. 834295, Western Union No. 710-670-1685, or telephone (area code 215, 697-3321) in case of urgency.

(b) Commercial Specifications, Standards and Descriptions: These specifications, standards and descriptions are not available from Government sources. They may be obtained from the publishers.

(c) Availability for Examination of Specifications, Standards, Plans, Drawings, and Other Pertinent Documents: The specifications, standards, plans, drawings, and other pertinent documents cited in this solicitation may be examined at the following location:

Officer in Charge of Construction
Marine Corps Base
Camp Lejeune, North Carolina 28542

7. RECOVERED MATERIAL: The Contractor certifies by signing this bid/proposal/quotation that recovered materials, as defined in DAR 1-2500.4 will be used as required by the applicable specifications.

8. NORTH CAROLINA STATE AND LOCAL SALES AND USE TAX (1977 JAN):

(a) As used throughout this clause, the term "materials" means building materials, supplies, fixtures and equipment which become a part of or are annexed to any building or structure erected, altered, or repaired under this contract.

(b) If this is a fixed-price type contract as defined in the Defense Acquisition Regulation, the contract price includes North Carolina State and Local sales and use taxes to be paid with respect to materials, notwithstanding any other provision of this contract. If this is a cost-reimbursement type contract as defined in such regulation, any North Carolina State and Local sales and use taxes paid by the Contractor with respect to materials shall constitute an allowable cost under this contract.

(c) At the time specified in paragraph (d) below:

(i) The Contractor shall furnish the Contracting Officer certified statements setting forth the cost of the materials purchased from each vendor and the amount of North Carolina State and Local sales and use taxes paid thereon. In the event the Contractor makes several purchases from the same vendor, such certified statement shall indicate the invoice numbers, the inclusive dates of the invoices, the total amount of the invoices and the North Carolina State and Local sales and uses taxes paid thereon. Such statement shall also include the cost of any tangible personal property withdrawn from the Contractor's warehouse stock and the amount of North Carolina State and Local sales or use tax paid thereon by the Contractor. Any local sales or use taxes included in the Contractors' statements may be shown separately from the State sales or use tax. The Contractor shall furnish additional information as the Commissioner of Revenue of the State of North Carolina may require to substantiate a refund claim for sales or use taxes.

(ii) The Contractor shall obtain and furnish to the Contracting Officer similar certified statements by its subcontractors.

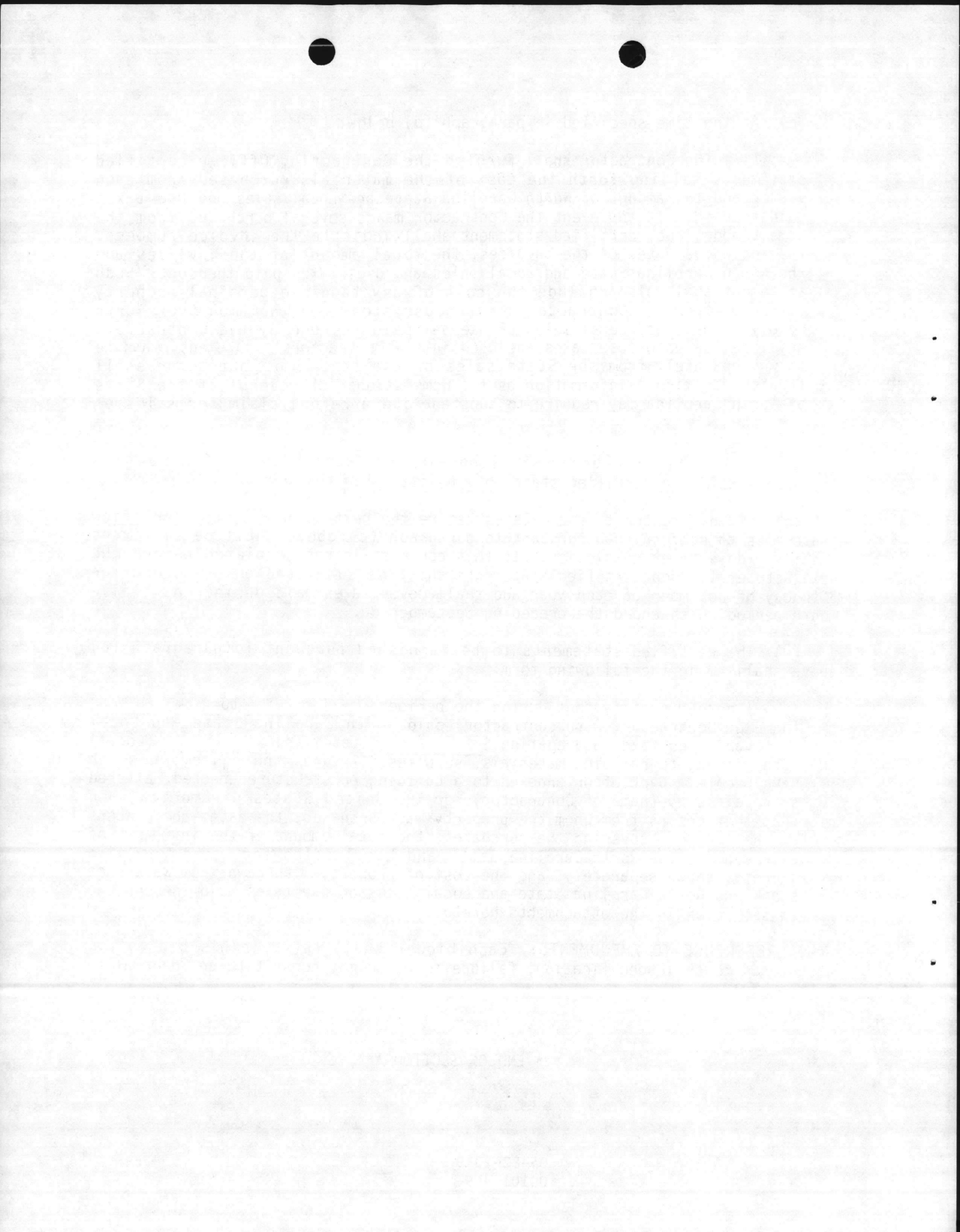
(d) If this contract is completed before the next October 1, the certified statements to be furnished pursuant to paragraph (c) above shall be submitted within 60 days after completion. If this contract is not completed before the next October 1, such certified statements shall be submitted on or before the 30th day of November of each year and shall cover taxes paid during the twelve month period which ended the preceding September 30.

(e) The certified statements to be furnished pursuant to paragraph (c) above shall be in the following form:

I hereby certify that during the period _____ to _____, (name of Contractor or subcontractor) paid North Carolina State and Local sales and uses taxes aggregating \$ _____ (State) and \$ _____ (Local) with respect to building materials, supplies, fixtures and equipment which have become a part of or annexed to a building or structure erected, altered or repaired by (name of Contractor) for the United States of America; and that the vendors from whom the property was purchased, the dates and numbers of the invoices covering the purchases, the total amount of the invoices of each vendor, the North Carolina State and Local sales and use taxes paid thereon, shown separately, and the cost of property withdrawn from warehouse stock and North Carolina State and Local sales or use taxes paid thereon are as set forth in the attachments hereto.

9. REFERENCE TO AMENDMENTS: Each bidder shall refer in his bid to all amendments to this specification; failure to do so may constitute an informality of the bid.

*** END OF SECTION ***



SECTION 01011

GENERAL PARAGRAPHS

1. GENERAL INTENTION: It is the declared and acknowledge intention and meaning to provide and secure Cleaning of Water Mains, complete and ready for use. This is a fixed-price contract awarded on a lump sum basis.

2. GENERAL DESCRIPTION: The work includes cleaning and testing underground potable water mains and incidental related work.

3. LOCATION: The work shall be located at the Marine Corps Air Station (Helicopter), New River, N. C., approximately as shown. The exact location will be indicated by the Contracting Officer.

4. COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK: The Contractor will be required to commence work under the contract 15 calendar days after the date of "Notice of Award", to prosecute said work diligently, and to complete the entire work ready for use within 180 calendar days. The time stated for completion shall include final cleanup of the premises. The contract completion date will be computed starting 15 calendar days after the date of the Notice of Award. This 15 day period is to allow or mailing of the Notice of Award and the Contractor's submission of required bonds.

5. LIQUIDATED DAMAGES: In case of failure on the part of the Contractor to complete the work within the time fixed in the contract or any extensions thereof, the Contractor shall pay to the Government as liquidated damages pursuant to clause entitled, "Termination for Default - Damages for Delay - Time Extensions," and clause entitled, "Damages for Delay - Defense Materials System and Priorities" of the General Provisions the sum of \$35.00 for each day of delay.

6. 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.

EFD Dwg. No.	NAVFAC Dwg. No.	Title
195647	4095647	Location and Vicinity Maps
195648	4095648	Water System Plan

7. PRINTS FURNISHED TO CONTRACTOR: Six copies of the project specifications, and six sets of the drawings accompanying the specifications, will be furnished the Contractor. Additional sets of the specifications and drawings can be obtained, if required, by application to the Contracting Officer, provided that the need therefor is justified to the satisfaction of the Contracting Officer.

8. SCHEDULE OF PRICES: A schedule of prices shall be furnished in accordance with Clause entitled, "Schedule of Prices" of the General Provisions. The original and seven copies of the schedule of prices shall be submitted to the Contracting Officer, via the Resident Officer in Charge of Construction, for approval in accordance with Clause entitled, "Schedule of Prices" of the General Provisions. Pursuant to Clause entitled "Payments to Contractor" of the General Provisions, payments will not be made until the schedule of prices has been submitted and approved.

9. CONTRACTOR'S INVOICE AND CONTRACT PERFORMANCE STATEMENT: Requests for payment in accordance with the terms of the contract shall consist of:

(a) Contractor's Invoice on form NAVFAC 10-7300/30 (10/81), which shall show, in summary form, the basis for arriving at the amount of the invoice.

(b) Contract Performance Statement on form NAVFAC 10-7300/31 required by Clause entitled "Contractor's Invoice and Contract Performance Statement" of the General Provisions is deleted.

(c) Contractor's Monthly Estimate for Voucher.

(d) Affidavit to accompany invoice (5ND LANTDIV form 4-4235/4 (Rev 5/81).

(e) Updated copy of progress schedule. (See clause entitled "Progress Charts and Requirements for Overtime Work" of the General Provisions).

Forms will be furnished by the Contracting Officer. Monthly invoices and supporting forms for work performed through the 20th of the month shall be submitted to the Contracting Officer by the 25th of the month in the following quantities.

(a) Contractor's Invoice (NAVFAC 10-7300/30) - Original and five copies.

(b) Contractor's Monthly Estimate for Voucher (5ND GEN 4265/1) - Original and two copies shall be required on all jobs where there is a schedule of prices.

(c) Affidavit (LANTDIV 4-4235/4) - Original

(d) Progress Schedule - Two copies.

10. MATERIALS AND EQUIPMENT TO BE SALVAGED: Clause entitled "Salvage Materials and Equipment" of the General Provisions is hereby deleted. Except where specifically specified otherwise herein, all existing materials and equipment which are required to be removed or disconnected to perform the work, but are not indicated or specified for use in the new work, shall become the property of the Contractor and shall be removed from Government property.

11. AVAILABILITY OF UTILITIES SERVICES: Clause entitled "Availability and Use of Utility Services" of the General Provisions applies. Reasonable amounts of utilities will be made available without charge.

12. AS-BUILT RECORD OF MATERIALS USED IN BUILDINGS: A record of materials used, in accordance with clause entitled "As-Built Record of Materials Used in Buildings" of the General Provisions is not required.

13. TRAILER OR STORAGE BUILDINGS: In accordance with clause entitled "Operations and Storage Areas" of the General Provisions, trailers or storage buildings will be permitted on the job site, where space is available, subject to the approval of the Contracting Officer. The trailers or buildings shall be suitably painted and kept in a good state of repair. Failure of the Contractor to maintain his trailers or storage buildings in good condition will be considered sufficient reason to require their removal from the job site.

14. SAFETY PROGRAM: The Contractor shall implement a safety program conforming to the requirements of Federal, State and Local laws, rules and regulations. The program shall include, but is not limited to, the following:

a. "Occupational Safety and Health Standards", which can be examined at the office of the Contracting Officer or be ordered from the Superintendent of documents, U.S. Government Printing Office, Washington, DC 20402.

b. Department of the Army, Corps of Engineers "General Safety Requirements", which may be examined at the office where bids are being received or may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

c. General Provisions clause entitled "Accident Prevention".

d. NFPA 241-1975, Safeguarding Building Construction and Demolition Operations, which may be examined in the office where bids are being received or may be purchased from the National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

15. EMERGENCY MEDICAL CARE: Emergency medical care only is available at Government facilities at Marine Corps Base, Camp Lejeune for Contractor employees who suffer on-the-job injury or disease. Emergency care will be rendered at the prevailing rates established in BUMEDINST 6320.4 series. Reimbursement will be made by the Contractor to the Naval Regional Medical Center Collection Agent upon receipt of a monthly statement.

16. PROPRIETARY NAMES: Names indicated for colors, textures and patterns of materials are for the purpose of color, texture and pattern selection only. Other manufacturers materials are acceptable provided they closely approximate colors, textures and patterns indicated and provided they conform to all other requirements.

17. SCHEDULING THE WORK:

17.1 General Scheduling Requirements: Notwithstanding the requirements of clause entitled "Progress Charts and Requirements for Overtime Work" of the General Provisions, immediately after award the Contractor shall meet with the Contracting Officer and present a schedule of work, prepared in accordance with said clause, for review by the Contracting Officer. The schedule will be reviewed at this meeting and will be retained by the Contracting Officer for

final review and approval. The normal working hours are 7:45 AM to 4:15 PM, Monday through Friday.

17.2 Special Scheduling Requirements:

17.2.1 Operation of System: The Station water system will remain in operation throughout the contract period, except as noted otherwise herein. All operation of the system, including opening and closing valves will be done by the Government. Any such operations required for performance of the work will be requested by the Contractor not less than 14 days in advance and performed by the Government.

17.2.2 Service Outages: Water service shutdowns shall be kept to a minimum. Downtime for each segment of pipeline shall not exceed 10 hours. Water service shall be restored at the close of each working day. All requests for shutdowns shall be submitted not less than 14 days in advance with the Station water plant operator.

18. FORWARDING OF SAMPLES AND SUBMITTALS: Notwithstanding the requirements of clause entitled "Shop Drawings" of the General Provisions, the quantity of submittals required shall be as specified hereinafter.

18.1 Samples Required of the Contractor: As soon as practicable, and before installation, submit to the Architect-Engineer: Henry von Oesen and Associates, Inc., Consulting Engineers & Planners, P. O. Drawer 2087, Wilmington, N. C. 28402, for approval, samples of materials and equipment as may be requested, including all samples required in the technical sections of this specification.

18.2 Shop Drawings, Manufacturers Data and Certifications Required of the Contractor: As soon as practicable after award of the contract, and before procurement or fabrication, submit, except as specified otherwise to the Architect-Engineer: Henry von Oesen and Associates, Inc., Consulting Engineers & Planners, P. O. Drawer 2087, Wilmington, N. C. 28402, all the shop drawings, manufacturers data and certifications required in the technical sections of this specification. Seven copies of all submittals to be approved by the Contracting Officer shall be forwarded. The Architect-Engineer for this project will review and approve for the Contracting Officer if the submittal complies with the contract requirements. One copy of the transmittal form of all submittals shall be forwarded to the Resident Officer in Charge of Construction. Plans for environmental protection shall be submitted to the Commander, Atlantic Division, Naval Facilities Engineering Command (Code 05), Naval Station, Norfolk, VA 23511. Specification DOD-D-1000B shall be used as a guide and its use is encouraged for all drawings and data submitted by the Contractor. Conformance to the provisions of specification DOD-D-1000B is not mandatory for maps, sketches, presentation drawings, perspectives, renderings, and all other drawings not requiring Naval Facilities Engineering Command drawing numbers.

19. QUARANTINE FOR IMPORTED FIRE ANT (CLNC 2/82): All of Onslow, Jones and Carteret Counties and portions of Duplin and Craven Counties, have been declared a generally infested area by the United States Department of Agriculture for the imported fire ant. Compliance with the quarantine regulations established by this authority as set forth in USDA Quarantine No. 81 dated 9 October 1970, and USDA Publication 301.81-2A of 23 July 1976, is required for operations hereunder.

19.1 The quarantine applies to materials originating from Camp Lejeune and the Marine Corps Air Station (Helicopter), New River, which are to be transported outside the Onslow County or adjacent suppression areas.

19.2 Certification is required for the following articles, and they shall not be moved from the reservation to any point outside the Onslow County and adjacent designated areas unless accompanied by a valid inspection certificate issued by an officer of the Plant Protection and Quarantine Program, USDA:

(1) Bulk soil.

(2) Used mechanized soil-moving equipment.

(3) Any other products, articles, or means of conveyance if it is determined by an inspector that they present a hazard of spread of the imported fire ant and the person in possession thereof has been so notified.

19.3 Authorization for movement of equipment outside the imported fire ant regulation area shall be obtained from USDA, APHIS, PPQ, Rural Route 6, Box 53, Wilmington, NC 28405; telephone (919) 343-4667. Requests for inspection shall be made at least two days in advance of the date of movement to permit arrangements for the services of authorized inspectors. All soil on or attached to equipment, supplies and materials, shall be removed by washing with water and/or such other means as necessary to accomplish complete removal. Resulting spoil shall be washed as directed.

*** END OF SECTION ***



SECTION 01012

ADDITIONAL GENERAL PARAGRAPHS

1. 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 Contracting Officer is called to the noncomplying 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 Contracting Officer shall not be construed as a complete check or approval of the detailed dimensions, weights, gauges and similar details of the proposed articles. The conformance of such details with the contract requirements, together with the necessary coordination of dimensions and details between the various elements of the work and between the various subcontractors and suppliers, shall be solely the responsibility of the Contractor, approval of submitted matter notwithstanding.

2. OPERATION OF STATION UTILITIES: The Contractor shall not operate nor disturb the setting of any control devices in the station utilities system, including water, sewer, electrical and steam services. The Government will operate the control devices as required for normal conduct of the work. The Contractor shall notify the Contracting Officer giving reasonable advance notice when such operation is required.

3. CHANGED CONDITIONS: Wherever changed conditions as defined in Clause 4 of the General Provisions are encountered, and wherever conditions exposed during the course of the work necessitate a change from quantities indicated or specified as either estimated quantities or as a basis for bids, whether or not provision for a change in price for such variation is specified, the Contracting Officer must be notified in writing and written directions to do so must be obtained before quantities stated in the contract documents are exceeded.

4. SUBCONTRACTORS AND PERSONNEL: Promptly after the award of the contract, the Contractor shall submit to the Contracting Officer, in triplicate, a list of his subcontractors and the work each is to perform. On this form shall appear the names of the key personnel of the Contractor and subcontractors, together with their home addresses and telephone numbers, for use in event of any emergency. 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.

(7/81)

5. AS-BUILT DRAWINGS: During the progress of the work one full-size 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. The as-built drawings shall be kept up-to-date at the work site at all times during the contract, and shall be available for inspection by the Contracting Officer upon request. The Contractor shall also mark the drawings to indicate the exact location of any underground utility lines discovered in the course of the work. Where a choice of materials or methods, or both, is permitted herein, and where variations in the scope or character of the work indicated or specified are 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 of the Contracting Officer before acceptance. Upon completion of the work, the completed as-built drawings shall be presented to the Contracting Officer.

6. Location of Underground Utilities: Where existing piping, utilities, and underground obstructions of any type are indicated in locations to be traversed by new piping, ducts, and other work provided hereunder, and are not indicated or specified to be removed, the elevations of the existing utilities and obstructions shall be determined before the new work is laid closer than the nearest manhole or other structure at which an adjustment in grade could be made. For any additional work required by reason of conflict between the new and existing work, an adjustment in contract price will be made in accordance with General Provisions clause entitled "Differing Site Conditions (1968 FEB)." The Base Telephone Officer, telephone 451-2531, will show the Contractor approximate locations of all buried telephone and fire alarm cables after receiving 10 days notice. The locations of underground utilities shown is only approximate and the information is incomplete.

SECTION 01401

CONTRACTOR INSPECTION SYSTEM

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

1.1.1 American Society for Testing and Materials (ASTM) Publications:

- D 3666-78 Inspection and Testing Agencies for Bituminous Paving Materials
- D 3740-78 Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Construction
- E 329-77 Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction
- E 543-76 Nondestructive Testing Agencies, Rec. Practice for Determining the Qualifications of
- E 548-79 Testing and Inspection Agencies, Rec. Practices for Generic Criteria for Use in Evaluation of

1.2 QUALITY CONTROL: Quality Control of this contract will be administered under the General Provisions Clause entitled "Contractor Inspection System."

1.3 DEFINITIONS:

1.3.1 Factory Tests: Tests made on various products and component parts prior to shipment to the job site, including but not limited to such items as transformers, boilers, air conditioning equipment, electrical equipment, and precast concrete.

1.3.2 Field Tests: Tests or analyses made at, or in the vicinity of the job site in connection with the actual construction.

1.3.3 Product: The term "product" includes the plural thereof and means a type or a category of manufactured goods, constructions, installations, and natural and processed materials or those associated services whose characterization, classification, or functional performance determination is specified by standards.

1.3.4 Person: The term "person" means associations, companies, corporations, educational institutions, firms, government agencies at the Federal, State and local level, partnerships, and societies, as well as divisions thereof, and individuals.

1.3.5 Testing Laboratory: The term "testing laboratory" means any "person," as defined above, whose functions include testing, analyzing, or inspecting "products," as defined above, and/or evaluating the designs or specifications of such "products" according to the requirements of applicable standards.

1.3.6 Certified Test Reports: Test reports signed by an authorized official stating that tests were performed in accordance with the test method specified, that the results reported are accurate, and that items tested either meet or fail to meet the stated minimum requirements. These test reports include those performed by Factory Mutual, Underwriters Laboratories, Inc. and others.

1.3.7 Certified Inspection Reports: Reports signed by approved inspectors attesting that the items inspected meet the specification requirements other than any exception included in the report.

1.3.8 Manufacturer's Certificate of Conformance: A certificate signed by an authorized manufacturer's official attesting that the material or equipment delivered meets the specification requirements.

1.4 SUBMITTALS: Prepare in accordance with the General Provisions and submit for approval. Each submittal shall be accompanied with a cover letter signed by the Contractor. Clearly mark each item proposed to be incorporated into the contract and identify in the submittals, with cross-references to the contract drawings and specifications so as to identify clearly the use for which it is intended. Stamp each sheet of submittal with the Contractor's certification stamp. Data submitted in a bound volume or on one sheet printed on two sides, may be stamped on the front of the first sheet only. The Contractor's certification stamp shall be worded as follows:

"It is hereby certified that the (equipment) (material) shown and marked in this submittal is that proposed to be incorporated into Contract Number _____, is in compliance with the Contract drawings and specifications, can be installed in the allocated spaces, and is submitted for Government approval.

Certified by _____ Date _____ "

The person signing the certification shall be one designated in writing by the Contractor as having that authority. The signature shall be in original ink. Stamped signatures are not acceptable.

1.4.1 Submittal Status Logs: Within 15 calendar days after receipt of the "Notice of Award" the Contractor shall submit to the Resident Officer in Charge of Construction a copy of a submittal status log listing all submittals required in this contract. The Contractor shall maintain at the job site the submittal status log showing the status of all submittals. A sample format of an acceptable log is attached at the end of this section. While the use of this sample format is not required, any other format must contain the same information as shown on the sample. The submittal status log shall be made available for review by the Contracting Officer at all times.

1.4.2 Shop Drawings: These submittals shall be in accordance with the requirements of the General Provisions Clause entitled "Shop Drawings."

1.4.3 Manufacturer's Data: Catalog cuts, technical data sheets, and descriptive literature, shall be in accordance with the General Provisions Clauses entitled "Catalog Data" and "Proposed Material Submittals Required of the Contractor."

1.4.4 Samples: Prepare and submit in accordance with the General Provisions Clause entitled "Samples."

1.4.5 Certified Test Reports: Before delivery of materials and equipment, four certified copies of the reports of all tests listed in the technical sections shall be submitted and approved. The testing shall have been performed in a laboratory meeting the requirements specified herein. The tests shall have been performed within 3 years of submittal of the reports for approval. Test reports shall be accompanied by the certificates from the manufacturer certifying that the material and equipment proposed to be supplied is of the same type, quality, manufacture, and make as that tested.

1.4.6 Manufacturer's Certificates of Conformance: Before delivery, manufacturer's certifications shall be furnished by the Contractor as required on items of materials and equipment indicated in the technical sections. Pre-printed certifications will not be acceptable. All certifications shall be in the original. The original of all manufacturer's certifications shall name the appropriate item of equipment or material, specification, standard, or other document specified as controlling the quality of that item and shall have attached thereto certified copies of test data upon which the certifications are based. All certificates shall be signed by the manufacturer's official authorized to sign certificates of conformance.

1.4.7 Laboratory Reports: Reports shall cite the contract requirements, the test or analysis procedures used, the actual test results, and include a statement that the item tested or analyzed conforms or fails to conform to the specification requirements. Each report shall be conspicuously stamped on the cover sheet in large red letters "CONFORMS" or "DOES NOT CONFORM" to the specification requirements as the case may be. All test reports shall be signed by a

representative of the testing laboratory authorized to sign certified test reports. The Contractor shall arrange for immediate and direct delivery of the signed original of all reports, certifications, and other documentation to the Contracting Officer.

1.4.8 Tabulation of Tests: Prior to final payment the Contractor shall obtain from each laboratory a tabulation of all tests it has performed in connection with the construction contract. Conforming, nonconforming, and retesting shall be tabulated. The tabulation(s) shall be certified as complete, and signed by the authorized representative of the laboratory, and shall be delivered to the Contracting Officer.

PART 2 - EXECUTION

2.1 QUALITY CONTROL REQUIREMENTS: In accordance with the General Provisions Clause entitled "Contractor Inspection System," the Contractor shall inspect and test all work under the contract and maintain records of the inspections and tests; however, the Government will perform testing when so stated in the specifications. Approvals, except those required for field installations, field applications, and field tests, shall be obtained before delivery of materials and equipment to the project site. Surveillance of the inspection system will be performed by the Contracting Officer.

2.1.1 Factory Tests: Unless otherwise specified, the Contractor shall arrange for factory tests when they are required under the contract.

2.1.2 Factory Inspections by the Contractor: Unless otherwise specified, the Contractor shall arrange and perform all factory inspections specifically required in the technical sections of the specifications. These inspections shall be reported in the Daily Report to Inspector.

2.1.3 Field Inspections and Tests by the Contractor: The Contractor shall furnish all equipment, instruments, qualified personnel, and facilities necessary to inspect all work and perform all tests required by the contract. All inspections and tests performed and test results received each day shall be included in the Daily Report to Inspector.

2.1.4 Field Inspections and Tests by the Government: If deemed necessary by the Contracting Officer, field inspections and tests will be made in accordance with the General Provisions Clause entitled "Inspection and Acceptance."

2.1.5 Approval of Testing Laboratories: All laboratory work under this contract shall be performed by a laboratory approved by the Government, whether the laboratory is employed by the Contractor, or is owned and operated by the Contractor. The basis of approval includes the following:

- a. Testing laboratories performing work in connection with concrete, steel, and bituminous materials shall comply with ASTM E 329 and ASTM D 3666, respectively.
- b. Testing laboratories engaged in the testing and inspection of soils and rock or performing non-destructive testing shall comply with ASTM D 3740 and ASTM E 543, respectively.
- c. Testing laboratories performing work not in connection with concrete, steel, bituminous materials, soils and non-destructive testing shall comply with ASTM E 548.

2.1.5.1 Laboratory Inspection: Prior to approval the laboratory shall submit in writing the following:

- a. Functional description of the laboratories organizational structure, operational departments, and support departments and services.
- b. A list and resume of the personnel assigned to the proposed testing, including the person charged with engineering managerial responsibility.
- c. Affidavit of compliance with the applicable ASTM publication and certification that the laboratory performs work in accordance with technical requirements as required by the contract specifications.
- d. A list of test and inspection equipment for each of the proposed test procedures and certification that the equipment is calibrated at prescribed intervals to insure the validity of the test and inspection data.
- e. A copy of any recent certification of inspection report of the laboratory by a nationally recognized agency, including a statement of corrections made based on the findings of the agency. In the absence of inspection by a nationally recognized agency, the laboratory will be subject to inspection by the Contracting Officer upon receipt of all the above information 30 days before the required approval of the testing laboratory.

2.1.6 Repeated Tests and Inspections: The Contractor shall repeat tests and inspections after each correction made to nonconforming materials and workmanship until tests and inspections indicate the materials, equipment, and workmanship conform to the contract requirements. The retesting and reinspections shall be performed at no additional cost to the Government.

2.1.7 Daily Report to Inspector: The signed "Daily Report to Inspector" Form NAVFAC 4330/34 shall be submitted to the Contracting Officer by 10:00 AM on the working day following the day the work was performed.

- a. Testing laboratories performing work in connection with concrete, steel, and bituminous materials shall comply with ASTM E 329 and ASTM D 3666, respectively.
- b. Testing laboratories engaged in the testing and inspection of soils and rock or performing non-destructive testing shall comply with ASTM D 3740 and ASTM E 543, respectively.
- c. Testing laboratories performing work not in connection with concrete, steel, bituminous materials, soils and non-destructive testing shall comply with ASTM E 548.

2.1.5.1 Laboratory Inspection: Prior to approval the laboratory shall submit in writing the following:

- a. Functional description of the laboratories organizational structure, operational departments, and support departments and services.
- b. A list and resume of the personnel assigned to the proposed testing, including the person charged with engineering managerial responsibility.
- c. Affidavit of compliance with the applicable ASTM publication and certification that the laboratory performs work in accordance with technical requirements as required by the contract specifications.
- d. A list of test and inspection equipment for each of the proposed test procedures and certification that the equipment is calibrated at prescribed intervals to insure the validity of the test and inspection data.
- e. A copy of any recent certification of inspection report of the laboratory by a nationally recognized agency, including a statement of corrections made based on the findings of the agency. In the absence of inspection by a nationally recognized agency, the laboratory will be subject to inspection by the Contracting Officer upon receipt of all the above information 30 days before the required approval of the testing laboratory.

2.1.6 Repeated Tests and Inspections: The Contractor shall repeat tests and inspections after each correction made to nonconforming materials and workmanship until tests and inspections indicate the materials, equipment, and workmanship conform to the contract requirements. The retesting and reinspections shall be performed at no additional cost to the Government.

2.1.7 Daily Report to Inspector: The signed "Daily Report to Inspector" Form NAVFAC 4330/34 shall be submitted to the Contracting Officer by 10:00 AM on the working day following the day the work was performed.

SAMPLE FORM (REDUCED FROM 15 1/2" X 10 1/2")
 SUBMITTAL STATUS LOG

"SEE INSTRUCTIONS ON REVERSE BEFORE FILLING IN"

CONTRACT NUMBER		SHORT TITLE						LOCATION				CONTRACTOR			
SUBMITTAL/ TRANSMITTAL NO.	DESCRIPTION OF ITEMS	SPECIFICATION SECTION REQUIRING SUBMITTAL	SUBMITTAL REQUIRES			CONTRACTOR ACTION		DATE FORWARDED TO ROICC	ROICC ACTION		DATE		REMARKS		
			SHOP DWGS. CATALOG DATA	SAMPLE	CERTIFICATION	TEST DATA	CONTRACTOR APPROVED GOV'T. APPROVED		INSERT ACTION CODE	DATE OF ACTION	DATE OF ACTION	RECEIVED FROM ROICC		MATERIAL/EQUIP RECEIVED ON SITE	APPROVED BY CONTRACTOR

INSTRUCTIONS

1. This form may be used by the Contractor for listing all material submittals that require action by either the Contractor or the Government.
2. Columns (a) through (e) should be completed by the Contractor and must include all submissions that are required by the specifications.
3. As submittals are received and processed, the remaining columns are to be completed by the Contractor.
4. In column (f) for those items requiring ROICC action (action code "D"), THE REASON FOR FORWARDING TO THE ROICC should be entered in the column (l), the remarks column; e.g., Government approval required; waiver requested because of variance, substitution, etc.
5. Column (j) is completed when material or equipment is delivered to the project. Column (k) is completed only after verification that the delivered item is that represented by the approved submittal.

ACTION CODE: To be used when completing columns (f) and (h)

A - Approved as submitted	D - Forwarded to ROICC for action
B - Approved as noted	E - Forwarded to ROICC for record purpose
C - Disapproved	



1977 (1978)

This document is a copy of the original document and is not to be used for legal purposes.

The information contained herein is confidential and should be kept confidential.

It is the policy of the Department to disseminate information widely.

However, certain information is exempt from disclosure under the Freedom of Information Act.

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SECTION 01560

ENVIRONMENTAL PROTECTION

1. ENVIRONMENTAL PROTECTION PLAN: The Contractor shall be responsible for the preparation and submission of the environmental protection plan. After the contract is awarded, but prior to the commencement of the work, the Contractor shall meet with the Contracting Officer, or his representative, and discuss the proposed environmental protection plan. The meeting shall develop mutual understanding relative to details of environmental protection, including required reports and measures to be taken should the Contractor fail to provide adequate protection in an adequate and timely manner. Not more than 14 days after the meeting, the Contractor shall submit for approval his proposed environmental protection plan.

2. GENERAL REQUIREMENTS: The Contractor shall provide and maintain environmental protection during the life of the contract as defined herein. The Contractor's operations shall comply with all Federal, State, and Local regulations pertaining to water, air, solid waste, and noise pollution.

3. DEFINITIONS OF POLLUTANTS:

3.1 Non-hazardous Wastes: Solid or liquid substances that are to be discarded by the Contractor and that normally do not constitute a hazard to man or to the environment. This includes, but is not limited to, paper, metal (other than toxic metals such as lead and mercury), masonry, wood, brick, stone, asphaltic concrete, plastics, rubber, rubbish and concrete.

3.2 Hazardous Wastes: Solid and liquid substances that are to be discarded by the Contractor and that constitute a significant active or potential hazard to man and/or to the remainder of the environment. This includes, but is not limited to, asbestos, glass, lead, mercury, pesticides, herbicides, other toxic chemicals and waste, liquid, petroleum products, human excrement, garbage, sediment, and radioactive materials.

3.2.1 Sediment: Soil and other debris that has been eroded and transported by running water.

3.2.2 Garbage: Waste foodstuffs.

3.2.3 Human Excrement: Solid or liquid wastes produced by the human body.

4. PROTECTION OF NATURAL RESOURCES:

4.1 General: It is intended that the natural resources within the project boundaries and outside the limits of permanent work performed under this contract shall be preserved in their existing condition or restored to an equivalent or improved condition upon completion of the work. The Contractor shall confine his construction activities to areas defined by the work schedule, drawings, and specifications.

4.2 Land Resources: The Contractor shall not remove, cut, deface, injure, or destroy trees or shrubs without special permission from the Contracting Officer.

No ropes, cables, or guys shall be fastened to or attached to any existing nearby trees for anchorages unless specifically authorized. Where such special emergency use is permitted, the Contractor shall be responsible for repairing or replacing any damage resulting from such use.

4.2.1 Protection Plan: Where trees which may possibly be defaced, bruised, injured, or otherwise damaged by the Contractor's activity, equipment, or by his dumping, or other operations, the Contractor shall submit a plan for protecting such trees. Monuments, markers and works of art shall be protected before beginning operations.

4.2.2 Repair or Restoration: Any trees or other landscape features scarred or damaged by the equipment or operations shall be repaired and/or restored to their original condition at the Contractor's expense. The Contracting Officer shall approve the repair and/or restoration planned prior to its initiation.

4.2.3 Temporary Construction: The Contractor shall obliterate all signs of temporary construction facilities such as work areas, structures, stockpiles of excess or waste materials, and any other vestiges of construction as directed by the Contracting Officer.

4.3 Water Resources: It shall be the responsibility of the Contractor to investigate and comply with all applicable Federal, State, and Local regulations concerning the discharge (directly or indirectly) of pollutants to the underground and natural waters. All work under this contract shall be performed in such a manner that any adverse environmental impacts are reduced to a level acceptable to the Contracting Officer.

4.4 Oily Substances: At all times, special measures shall be taken to prevent oily or other hazardous substances from entering the ground, drainage areas, or local bodies of water in such quantities as to affect normal use, aesthetics or produce a measurable ecological impact on the area.

4.5 Historical and Archeological Resources: All items having any apparent historical or archeological interest which are discovered in the course of any construction activities shall be carefully preserved and reported immediately to the Contracting Officer for determination of actions to be taken.

5. EROSION AND SEDIMENT CONTROL MEASURES:

5.1 Burn-off: Burn-off of ground cover is not permitted.

5.2 Reduction of Exposure of Unprotected Erodible Soils: Earthwork which has been brought to final grade shall immediately be paved or otherwise finished as indicated or specified. All earthwork shall be planned and conducted in such a manner as to minimize the area and duration of exposure of unprotected soils.

5.3 Temporary Protection of Erodible Soils: Such methods as may be necessary shall be utilized to effectively prevent erosion and control sedimentation, including, but not limited to, the following:

5.3.1 Mechanical Retardation and Control of Runoff: The rate of runoff from the construction site shall be mechanically retarded and controlled. This

includes construction of diversion ditches, benches, and berms, to retard and divert runoff to protected drainage courses.

5.3.2 Sediment Basins: Sediment shall be trapped in temporary or permanent sediment basins. The basins shall be designed (sized) to accommodate the runoff of a local 10-year storm and shall be pumped dry and all sediment removed after each storm. Overflow shall be by paved weir or by vertical overflow pipe, draining from the surface. The collected sediment shall, for example: (1) be returned to the source of erosion, (2) be used as fill on the construction site, or (3) be used as fill at other sites. The Contractor shall institute effluent quality monitoring programs as required by State and Local environmental agencies.

5.3.3 Buffer Zones: No land-disturbing activity shall be permitted in proximity to a lake or natural watercourse unless a buffer zone is provided along the margin of the watercourse of sufficient width to confine visible siltation within the twenty-five percent of the buffer zone nearer the land-disturbing activity, provided, that this paragraph shall not apply to a land-disturbing activity in connection with the construction of facilities to be located on, over, or under a lake or natural watercourse.

5.3.4 Angle for graded slopes and fills shall be no greater than the angle which can be retained by vegetative cover or other adequate erosion control devices or structures. In any event, slopes left exposed will, within 30 working days of completion of any phase of grading, be planted or otherwise provided with ground cover, devices, or structures sufficient to restrain erosion.

5.3.5 Revegetation: Whenever land-disturbing activity is undertaken on a tract comprising more than one acre, if more than one contiguous acre is uncovered, a ground cover sufficient to restrain erosion must be planted or otherwise provided within 30 working days on that portion of the tract upon which further active construction is not being undertaken.

6. CONTROL AND DISPOSAL OF HAZARDOUS AND NON-HAZARDOUS WASTES:

6.1 Non-hazardous wastes, except rubble, shall be picked up and disposed of daily or placed in containers which are emptied on a weekly schedule. All handling and disposal shall be so conducted as to prevent contamination of the site any other areas. The Contractor shall transport all such waste and dispose of it in the Base Sanitary Landfill, unless otherwise approved. If transporting any material off Government property, the Contractor shall provide the Contracting Officer a copy of State and/or Local permit which reflects the responsible agency's approval of the disposal area and proposed waste disposal methods. Rubble such as masonry, stone, concrete without reinforcing steel, and brick shall be deposited as directed near Building 1317 or at the site of the old Camp Geiger Sanitary Landfill. Upon completion, the work and disposal areas shall be left clean and natural looking. All signs of temporary construction and activities incidental to construction of the required permanent work in place shall be obliterated.

6.2 Hazardous Wastes:

6.2.1 Garbage Disposal: The Contractor shall transport his garbage to the Base Sanitary Landfill. The preparation, cooking and disposing of food are strictly prohibited on the project site.

6.2.2 Sewage, Odor, and Pest Control: Chemical toilets or comparably effective units shall be used with wastes periodically emptied into municipal, district, or Base sanitary sewage systems. Provisions shall be included for masking or elimination of odors and pest control. Compliance with Federal, State, and Local regulations shall be established by the Contractor providing the Contracting Officer with a copy of the permit or license when applicable.

6.2.3 Liquid wastes shall be stored in corrosion-resistant containers, removed from the project site, and disposed of not less frequently than monthly unless directed otherwise. Disposal of liquid waste shall be in accordance with Federal, State, and Local requirements. Fueling and lubricating of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spills and evaporation. For oil and hazardous material spills which may be large enough to violate Federal, State, and Local regulations, the Contracting Officer shall be notified immediately.

*** END OF SECTION ***

SECTION 02200

EARTHWORK

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

1.1.1 American Society for Testing and Materials (ASTM) Publications:

D 1556-64 Density of Soil in Place by the Sand Cone Method
(R 1974)

D 698-78 Moisture Density Relations of Soils and Soil-Aggregate
Mixtures Using 5.5-lb. (2.49 kg) Rammer and 12-in.
(305-mm) Drop

1.2 SUBMITTALS:

1.2.1 Dewatering Plan: Before starting work, submit a dewatering plan describing the basic components of the dewatering system proposed and its planned method of operation. Submit the dewatering performance records weekly.

1.3 DELIVERY AND STORAGE: Deliver and store materials in a manner to prevent contamination or segregation.

1.4 PROTECTION:

1.4.1 Dewatering: Include in dewatering the collection and disposal of all forms of surface and subsurface water that may be encountered in the course of construction.

1.4.1.1 Dewatering Plan: Base on site surface and subsurface conditions, available soil, and hydrological data. Remove water by pumping or other methods to prevent the softening of surfaces exposed by excavation. Provide and place into operation prior to excavation below ground water level the dewatering system in order to lower the water levels at least one foot below the bottom and side slopes of the excavation. Use filters on the dewatering devices to prevent the removal of fines from the soil.

1.4.1.2 Operation and Performance: Operate the dewatering system continuously until such time as construction work below existing water levels is complete, unless directed otherwise. Measure and record the performance of the dewatering system at the same time each day by use of suitable observation wells or piezometers installed in conjunction with the dewatering system. After placement of initial backfill, the water level may be allowed to rise but at no time allow it to be higher than one foot below the prevailing level of excavation or backfill.

1.4.1.3 Drainage of Construction Sites: It shall be the Contractor's responsibility to adequately and completely drain construction sites as required to keep subgrades and subsoils sufficiently dry to permit all construction

operations to successfully progress during all periods in which work is in progress. In addition to permanent drainage features required, the Contractor shall provide all necessary additional temporary ditches, swales, and other drainage features and equipment required to maintain the soils dry during construction. Where the Contractor's operations or failure to comply with the above requirements results in the development of unsuitable working platforms for equipment operation, and unsuitable soil support for subsequent construction features, the Contractor shall, at his expense, remove the unsuitable material to whatever depth is required to restore suitable working platforms and soil support and replace it with suitable material from sources outside the station.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS: In general, shall be free of debris, roots, wood, scrap material, vegetable matter, refuse, soft unsound particles, frozen deleterious, or objectionable materials.

2.1.1 Backfill and fill shall conform to the general requirements for soil materials above and shall be an unclassified soil material from the site or borrow, submitted for approval by the Contractor as possessing the characteristics required for compaction to the specified values of soil density herein specified for the location of intended use.

2.1.2 Borrow shall be materials conforming to the requirements backfill. Take borrow materials from the source directed on Government property within haul distance of 10 miles.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION:

3.1.1 Topsoil: Strip existing topsoil to a depth of 4 inches, stockpile separately from other excavated materials, and reuse for finished surface grading. Topsoil shall be free of stones, wood matter, cuttings, excessive quantities of vegetation, and debris of every kind. Locate piles of topsoil so that the material can be used readily for finished surface grading; protect topsoil and maintain until needed. The top 4-inch thickness of all newly graded earth surfaced areas shall consist of topsoil. If there is insufficient topsoil available to form the 4-inch thickness, utilize that available as directed. The Contractor will not be required to haul in additional topsoil if all requirements specified are complied with. Placing of topsoil is specified in Section 02821, Turf.

3.1.2 Unsuitable Material: Remove vegetation, sod, muck, and rubbish under embankments which are less than 4 feet in thickness and under pavements or concrete slabs.

3.2 EXCAVATION shall be to the contours and dimensions required for pipe cleaning operations. Keep excavations free from water while construction is in progress. Notify the Contracting Officer immediately in writing in the event that it becomes necessary to remove hard, soft, weak, or wet material to a depth

greater than indicated and an adjustment in contract price will be considered in accordanced with "Differing Site Conditions" paragraph of the General Provisions. Refill excavations cut below the depths required, unless otherwise specified, with fill and compact to 95 percent of ASTM D 698 maximum density. Excavate and refill soil disturbed or weakened by the Contractor's operations and soils permitted to soften from exposure to weather with fill and compact to 95 percent of ASTM D 698 maximum density. All additional work of this nature will be at the Contractor's expense.

3.3 FILLING AND BACKFILLING:

3.3.2 Backfill: Place in lifts of 6 inches thick and compact as specified herein, before the overlaying lift is placed. In all areas not accessible to rollers or compactors, compact the fill with mechanical hand tampers. If the mixture is excessively moistened by rain, aerate it by means of blade graders or harrows until the moisture content of the mixture is satisfactory. Finish the surface of the layer by blading or rolling with a smooth roller, or a combination thereof; surface shall be smooth.

3.4 COMPACTION OF SUBGRADE:

3.4.1 Road Shoulder Area: Compact subgrade to 95 percent of ASTM D 698 maximum density in the upper 12 inches of the subgrade.

3.4.2 General Site: Compact area and embankment subgrades under vegetation to 85 percent of ASTM D 698 maximum density.

3.5 FINISH OPERATIONS:

3.5.1 Grading shall be to restore existing grades within one tenth of a foot. Grade areas to drain water away from structures and to provide suitable surfaces for mowing machines. Grade as directed existing grades which are disturbed by the Contractor's operations.

3.5.2 Spreading Topsoil: Areas indicated to receive topsoil for the finished surface shall be free of materials that would interfere with planting and maintenance operations. Do not place topsoil when the subgrade is frozen, extremely wet or dry, or in other conditions detrimental to seeding, planting, or grading. Comply with the requirements of Section 02821, "Turf".

3.5.3 Borrow Areas: Grade to drain properly. Maintain and restore borrow pits as specified in Section 01560, "Environmental Protection".

3.5.4 Disposition of Surplus Materials: Waste by disposition at the Station borrow pit within 10 miles of the site of the work surplus or other soil material not required or suitable for filling, backfilling, or embankment. Comply with the requirements of Section 01560, "Environmental Protection".

3.5.5 Protection of Surfaces: Protect newly graded areas from traffic, erosion, and settlements that may occur and as required in Section 01560, "Environmental Protection." Repair or re-establish damaged grades, elevations, or slopes.

3.6 FIELD SAMPLING AND TESTING: Perform density tests in randomly selected locations and in accordance with ASTM D 1556 as follows: one test per 400 square feet in each layer of lift.

*** END OF SECTION ***

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SECTION 02690

PAVEMENT REMOVAL AND REPLACEMENT

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

1.1.1 American Association of State Highway and Transportation Officials (AASHTO):

- M81-75 Cut-Back Asphalt (Rapid-Curing Type).
- M82-75 Cut-Back Asphalt (Medium Curing Type).
- M140-70 Emulsified Asphalt.
- M208-72 Cationic Emulsified Asphalt.
- M226-78 Viscosity Graded Asphalt Cement.
- T96-77 Resistance to Abrasion of Small Size Coarse Aggregate by Use of the Los Angeles Machine.

1.1.2 American Society for Testing and Materials (ASTM) Publications:

- D977-77 Emulsified Asphalt.
- D1557-78 Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb (4.54 kg) Rammer and 18-inch (457 mm) Drop.

1.1.3 North Carolina Department of Transportation and Highway Safety (NCDOT):

Standard Specifications for Roads and Structures, dated July 1, 1978.

1.2 SUBMITTALS:

1.2.1 Certificates of Conformance or Compliance: Submit the following for approval:

- a. Base Materials
- b. Asphalts and Asphalt Cement
- c. Bituminous Concrete Mix

1.2.2 Materials Tests and Test Reports: The testing requirements for materials incorporated in referenced documents will be waived provided the manufacturer submits certificates stating: previously manufactured materials have been tested by recognized laboratories; such materials meet testing requirements specified; and the materials furnished for this project are of the

same type, quality, manufacturer and make as that tested. Do not submit copies of the test reports unless specifically requested by the Contracting Officer.

PART 2 - PRODUCTS

2.1 MATERIALS:

2.1.1 Stone Base Course: NCDOT "Standard Specifications for Roads and Structures", Sections 905 and 910 for Aggregate Base Course, Standard Size No. ABC. When tested in accordance with AASHTO T96, Test Grading A, aggregate shall show a loss not greater than 55 percent.

2.1.2 Bituminous Prime Coat: Grade MC-70 cut-back asphalt conforming to AASHTO M82; or RC-30 cut back asphalt conforming to AASHTO M81; HFMS-2 or HFMS-2h emulsified asphalt conforming to ASTM D977.

2.1.3 Bituminous Tack Coat: Grade RC-70 or RC-250 cut-back asphalt conforming to AASHTO M81; Grade SS-1 emulsified asphalt conforming to AASHTO M140; CSS-1, Cationic emulsified asphalt conforming to AASHTO M208; HFMS-1, emulsified asphalt conforming to ASTM D977 or AC-20 asphalt cement conforming to AASHTO M226. The SS-1, emulsified asphalt and the CSS-1, cationic emulsified asphalt shall be diluted at the minimum of one part water to one part emulsified asphalt.

2.1.4 Bituminous Concrete: Materials and mix shall be in accordance with the NCDOT "Standard Specifications for Road and Structures", Section 645, Type I-1 or I-2 Surface Course. Asphalt cement shall be AC-20 viscosity grade conforming to AASHTO M226.

PART 3 - EXECUTION

3.1 CONSTRUCTION:

3.1.1 Existing Surface Treatments: Where trenches, pits or other excavations are made in existing roadways and other areas of pavement where surface treatment of any kind exists, restore such surface treatment to the same thickness specified. Restored areas shall match and tie into the adjacent and surrounding existing surfaces in a neat and acceptable manner.

3.1.2 Pavement Removal: Make a straight line cut 12 inches beyond the edge of the excavation to permit proper replacement. Where bituminous concrete is overlaid on concrete paving, remove the bituminous concrete along straight lines to at least 6 inches beyond the edge of the concrete removal. Using a saw, score edges of concrete to a depth of 1.50 inches unless bounded by joints. Cut reinforcing bars or mesh through the center and bend to edge of cut to provide work clearance. At cuts which are to become expansion joints and at locations where the broken edge of the concrete cannot be effectively concealed in the finished work, grind the break smooth or saw cut clear through the concrete. Removed pavement, debris and spoil material shall be deposited on the Station, directed by the Contracting Officer, within a haul distance of 10 miles from the site of the work.

3.1.3 Backfilling and Tamping: Replace soil materials under pavement in layers not to exceed 8 inches of loose depth and compact to at least 95 percent of the maximum dry density determined in accordance with ASTM D1557, Method D.

3.1.4 Bituminous Surface: Except as otherwise specified, provide in accordance with the NCDOT "Standard Specifications for Roads and Structures". Provide a stone base course a minimum of 6 inches thick. Apply a prime coat on the base course at the rate of 0.25 gallon residual asphalt per square yard. Paint the cut edge of bituminous pavement with a bituminous tack coat and provide bituminous concrete pavement.

END OF SECTION



SECTION 02821

TURF

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

1.1.1 Federal Specifications (Fed. Spec.):

O-F-241D Fertilizers; Mixed, Commercial

1.1.2 American Society for Testing and Materials (ASTM) Publications:

D977-77 Emulsified Asphalt

D2028-76 Liquid Asphalt (Rapid-curing Type)

1.1.3 U. S. Department of Agriculture (USDA) Publication:

Federal Seed Act of January 17, 1967, Reprinted September, 1975: 53 Stat. Rules and Regulations

1.2 EXTENT OF WORK: Provide seedbed preparation, topsoiling, liming, fertilizing, seeding, and mulching of all newly graded finish earth surfaces, unless indicated otherwise, and at all areas inside or outside the limits of construction that are disturbed by the Contractor's operation.

1.3 SUBMITTALS:

1.3.1 Certificates of Conformance or Compliance: Submit three certificates attesting that the following materials meet specified requirements.

- a. Seed
- b. Fertilizer
- c. Topsoil
- d. Lime

1.3.2 Manufacturer's Literature: Submit manufacturer's literature specifying physical characteristics and installation instructions on the following:

- a. Hydraulic Mulch Material

1.4 DELIVERY:

1.4.1 Material Delivery Schedule: Submit the schedule in advance of delivery so material may be inspected upon arrival at the job site. Remove rejected material from Government property.

1.4.2 Fertilizer and Lime: Deliver materials to the site in the original, unopened containers bearing the manufacturer's chemical analysis, name, trade name, trade mark, and indication of conformance to State and Federal laws. In lieu of containers, furnish fertilizer and lime in bulk with a certificate indicating the above information accompanying each delivery.

1.4.3 Seed: Deliver seed to the site in original sealed packages bearing the producer's guaranteed analysis for percentages of mixtures, purity, germination, weedseed content, and inert material labeled in conformance with U. S. Department of Agriculture rules and regulations under the Federal Seed Act and applicable State seed laws. Seed that has become wet, moldy, or otherwise damaged will be rejected.

1.5 STORAGE AND HANDLING: Store lime, fertilizer, and seed in dry locations away from contaminants. Protect seed from drying out. When handling materials, do not drop or dump from vehicles.

1.6 ENVIRONMENTAL PROTECTION: All work and Contractor operations shall comply with the requirements of Section 01560, "Environmental Protection".

PART 2 - PRODUCTS

2.1 MATERIALS: Provide the following materials for turf establishment.

2.1.1 Seed: Provide State-certified seed of the latest season's crop. Mix seed on site only in the presence of the Contracting Officer. Proportion seed mixtures by weight as follows:

<u>Planting Season</u>	<u>Variety</u>	<u>% Weight</u>
Spring	Fescue (Ky31)	80
	Common Bermuda (Hulled)	20
Fall	Fescue (Ky31)	83
	Common Bermuda (Unhulled)	17

2.1.2 Topsoil: Use existing on-site topsoil, stripped and stockpiled on the site, provided the topsoil is free of subsoil, stumps, rocks larger than one inch diameter, brush, weeds, toxic substances, and other material or substance detrimental to plant growth. Topsoil shall be a natural, friable soil representative of productive soils in the vicinity.

2.1.3 Lime: Provide a commercial agricultural limestone containing not less than 94 percent of total carbonates, 52 percent calcium, and 42 percent magnesium and ground to such fineness that at least 80 percent will pass a 100 mesh sieve and at least 95 percent will pass a 60 mesh sieve.

2.1.4 Fertilizer: Provide a commercial grade, free flowing and uniform in composition. Provide granular fertilizer conforming to Fed. Spec. O-F-241, Type I, Class 2, and bearing the manufacturer's guaranteed statement of analysis. Granular fertilizer shall contain a minimum percentage by weight of 10 percent nitrogen of which 50 percent shall be organic, 10 percent available phosphoric acid, and 10 percent potash.

2.1.5 Mulch: Provide one or a combination of the following mulch materials.

2.1.5.1 Grain Straw From Oats, Wheat, Rye, Barley, or Rice: Provide grain straw in an air-dry condition that is free from noxious weeds, mold, or other objectionable material and suitable for placing with commercial mulch blowing equipment.

2.1.5.2 Wood Cellulose Fiber: For use with hydraulic application of grass seed and fertilizer, provide wood cellulose fiber, processed to contain no growth or germination-inhibiting factors and dyed and appropriate color to facilitate visual metering during application of materials. On an air-dry weight basis, provide wood cellulose fiber containing not more than 12 percent moisture, plus or minus three percent at the time of manufacture, with a pH range from 3.5 to 6.0. Provide wood cellulose fiber manufactured so that:

a. After addition and agitation in slurry tanks with fertilizers, grass seeds, and water, the fibers in the material will become uniformly suspended to form a homogenous slurry;

b. When hydraulically sprayed on the ground, the material will form a blotterlike cover impregnated uniformly with grass seed;

c. The cover will allow the absorption of moisture and allow rainfall or applied water to percolate to the underlying soil.

2.1.6 Asphalt Adhesive For Application With Straw Mulch: Provide liquid asphalt conforming to ASTM D 2028, Designation RC-70, or emulsified asphalt conforming to ASTM D 977, Grade RS-1.

2.1.7 Water: Provide water of suitable quality for irrigation. Water for irrigation may be obtained from the Station water distribution system.

PART 3 - EXECUTION

3.1 INSTALLATION:

3.1.1 Tillage: After the areas required to be seeded have been brought to the required subgrade, thoroughly till to a depth of at least 6 inches by scarifying, disking, harrowing, or other approved methods. Remove debris and stones larger than one inch remaining on the surface after tillage.

3.1.2 Topsoiling: Prior to placing topsoil, scarify the subgrade to a 2-inch depth for bonding of topsoil with subsoil. Spread the topsoil evenly to a minimum depth of 4 inches. Do not spread topsoil when frozen or excessively wet or dry. Correct irregularities in finished surfaces to eliminate depressions. Protect finished topsoil areas from damage by vehicular or pedestrian traffic.

3.1.3 Fertilizer and Lime: Apply fertilizer at the rate of 23 pounds per 1,000 square feet. Apply dolomitic lime at the rate of 70 pounds per 1,000 square feet. Incorporate fertilizer and lime into the soil to a depth of at least 6 inches; this may be done as part of the tillage operation specified herein.

3.1.4 Seeding Seasons and Conditions: Sow seed between 1 March and 15 May for spring planting or 1 September and 30 October for fall planting. Immediately before seeding, restore soil to the proper grade. Do not seed when the ground is frozen, snow covered, or in any unsatisfactory condition for seeding. If special conditions exist that may warrant a variance in the above seeding dates or conditions, submit a written request to the Contracting Officer stating the special conditions and proposed variance.

3.1.5 Seeding: Accomplish seeding by one or a combination of the following methods at the rate of 240 pounds per acre. When using other than hydroseeding method of application, use maximum seeding depth of 1/4 inch in clayey soils and 1/2 inch in sandy soils.

a. Sow seed by approved sowing equipment. Sow one-half of the seed in one direction, and sow the remainder at right angles to the first sowing. Cover the seed by means of spike-tooth harrow, cultipacker, or other approved device.

b. Perform drill seeding using approved equipment such as cultipacker seeders and grass seed drills. Drill the seed to a depth not exceeding the specified maximum depth.

c. When hydroseeding, mix the seed and fertilizer in the required amount of water to produce a homogenous slurry. After the seed and fertilizer have been thoroughly mixed, and wood cellulose fiber mulch to the slurry mix. Uniformly apply the slurry, under pressure, at the specified rates per acre, dry weight, for seed and fertilizer and at the rate of 1,000 pounds per acre, dry weight, for the mulch.

d. Immediately after seeding, firm the entire area, except for slopes in excess of 3 to 1, with a roller not exceeding 90 pounds for each foot of roller width. If seeding is performed with a cultipacker-type seeder or if seed is applied in combination with hydro-mulching, rolling may be eliminated.

3.1.6 Mulch: Spread the straw mulch evenly at the rate of 1.5 tons per acre. Anchor the mulch by using a light serrated disc, spraying asphalt emulsion on the mulched surface at the rate of 5 gallons per 1,000 square feet, or manually securing. When asphalt emulsion is used, apply either simultaneously or in a separate application. Take precautionary measures to prevent asphalt materials from marking or defacing structures, pavements, utilities, or plantings.

3.1.7 Protection of Seeded Areas: Immediately after seeding, protect the area against traffic or other use by erecting barricades, as required, and placing approved signs at appropriate intervals until final acceptance.

3.1.8 Equipment: Furnish and maintain all equipment necessary for the performance of the specified work. Operate equipment in a proper and efficient manner at all times to cause the least possible annoyance and disturbance. Equip all engine powered equipment with suitable noise abatement mufflers.

3.1.9 Restoration and Clean-up: Where existing turf areas have been damaged during turfing operations, restore the areas to their original condition. Keep at least one paved pedestrian access route and one paved vehicular access route to each building clean at all times. Clean other paving when work in adjacent areas is complete.

3.2 FINAL ACCEPTANCE:

3.2.1 Replanting: In areas which do not have a satisfactory stand of turf, replant within planting dates as directed by the Contracting Officer.

END OF SECTION



SECTION 13510

CLEANING WATER MAINS

PART 1 - GENERAL

1.1 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

1.1.1 Federal Specification (Fed. Spec.):

WW-P-421D Pipe, Cast Gray and Ductile Iron, Pressure (For Water and Other Liquids).

1.1.2 American Waterworks Association (AWWA) Publications:

C 110-82 Gray-Iron and Ductile Iron Fittings 3 In. Through 48 In. for Water and Other Liquids.

C 111-80 Rubber Gasket Joints for Ductile-Iron and Gray Pressure Pipe and Fittings.

C 151-81 Ductile-Iron Pipe, Centrifugally Cast In Metal Molds or Sand-Lined Molds, For Water or Other Liquids.

1.1.3 Underwriters' Laboratories, Inc. (UL) Standards:

UL 194-80 Gasketed Joints for Ductile Iron and Gray Iron Pressure Pipe and Fittings for Fire Protection Service.

1.1.4 American National Standards Institute (ANSI) Publications:

A21.1-1967 Thickness Design of Cast-Iron Pipe.
(R 1972)

A21.15-1975 Flanged Cast-Iron and Ductile-Iron Pipe With Threaded Flanges.

1.2 EXTENT OF WORK: Provide cleaning of all water mains 6 inches and larger in the Facility water distribution system, except that mains in the Troop Dormitory area and raw water mains shall not be cleaned. Service lines from street mains to buildings shall not be cleaned. The existing water treatment plant is of the cold lime softening type. It is anticipated that the major portion of the material to be cleaned from the system consists of calcium carbonate sediments and deposits, although the tuberculation, scale, and other material normally occurring in water distribution systems should be anticipated.

1.2.1 All piping in the existing system is cast iron. Most joints are poured lead type, although some mechanical type are present. For restoration of disturbed areas, see Section 02200, "Earthwork," Section 02690, "Pavement Removal and Replacement," and Section 02821, "Turf."

1.3 SUBMITTALS: Shop drawings, manufacturer's data for equipment, materials and procedures shall be submitted and approved before procurement, fabrication, or delivery of such items to the job site. Partial submittals will not be acceptable. Descriptive data shall be annotated to show the specific model, type, and size of each item the Contractor proposes to provide. Submittals are required for the following items:

1.3.1 Manufacturer's Data:

- a. Line cleaning devices
- b. Launchers and receivers
- c. Description of cleaning operation

1.3.2 Shop Drawings:

- a. Work sequence and schedule
- b. Launching and retrieving station locations and configuration

1.3.3 Final Report:

- a. Flow test data
- b. Hazen-Williams "C" factor
- c. Static and residual pressures
- d. Leakage tests

1.4 ENVIRONMENTAL PROTECTION: All work and Contractor operations shall comply with the requirements of Section 01560, "Environmental Protection."
PART 2 - PRODUCTS

2.1 MATERIALS: Provide all materials and devices required for pipe cleaning.

2.1.1 Cleaning devices shall be hydraulically driven and shall remove incrustations, sediments, deposits, scale, and other particulate matter. Clear opening after completion of cleaning shall be not less than 95 percent of the nominal pipe inside diameter. The device for cleaning of the lines shall be a plastic foam pig or cleaning device which is propelled forward by water pressure and which will accomplish cleaning as specified. The cleaning process shall not scar, scratch, scrape, or damage the pipeline. The device shall be capable of passing standard 45 degree and 90 degree elbows, crosses, tees, gate

valves, and corporation taps. The device shall be hydraulically driven by water pressure not exceeding sixty (60) pounds per square inch. Process shall flush the deposits ahead of the cleaning device, and water behind the device shall be clear and potable, with only minimal flushing required. The precise location of the device within the piping system shall be detectable at all times by a signal transmitter on the cleaning device.

2.1.2 Launching and retrieving devices shall be provided as required to introduce cleaning devices into the water system and retrieve them after cleaning. Cutting of existing pipelines shall be avoided as much as possible. Devices shall be launched and retrieved at hydrant legs and other openings into the system where practical. Any piping, fittings, or other accessories that are installed into the existing piping system in connection with the cleaning process that are left in place shall be of similar and compatible materials to the existing, shall be left in a secure and serviceable condition, and shall conform to the following:

a. Pipe: Water piping shall be either cast-iron or ductile iron.

(1) Cast-iron pipe shall conform to the applicable requirements of WW-P-421 for Grade C, as modified herein. Pipe shall be thickness Class 52 for cast ductile iron pipe, except as otherwise specified for flanged pipe. Pipe shall have cement-mortar lining and shall have ends suitable for joints specified hereinafter.

(2) Ductile-iron pipe shall conform to the applicable requirements of AWWA C151 except as modified by WW-P-421, and except that flanged pipe shall conform to ANSI A21.15, minimum 150 psi working pressure, outside coated, cement-mortar lined.

b. Fittings:

(1) Fittings for cast iron and ductile iron pipe shall conform to the applicable requirements of AWWA C110 and may be either cast gray or ductile iron; fittings with push-on joint ends shall be as specified for bell-and-spigot joint ends except that bell design shall be modified, as approved, for push-on joints. Fittings shall have pressure rating at least equivalent to that of the pipe. Fittings shall have cement mortar lining equivalent to that of the pipe lining.

(2) Sleeves and Couplings: Sleeves for reconnecting piping sections removed for launching pits, retrieving pits, and other purposes shall be mechanical joint cast iron sleeves conforming to AWWA C 110, or may be bolted cast iron couplings with mechanical joints and rubber gaskets.

c. Joints and Jointing Materials:

Ductile Iron Pipe:

(a) Push-on Joints: Shape of pipe ends shall conform to the applicable requirements of WW-P-421 for Type II pipe. Conformation of ends for fittings shall conform to the applicable requirements of AWWA C111. Gaskets and lubricants for pipe and fittings shall

conform to the applicable requirements of AWWA C111. Drawings of the joint and gasket shall be furnished. Push-on joints shall also meet the applicable requirements of UL 194.

(b) Mechanical Joints: Dimensional and material requirements for pipe ends, glands, bolts and nuts, and gaskets shall conform to the applicable requirements of AWWA C111 or to the applicable requirements specified for Type III pipe in WW-P-421. Mechanical joints shall also meet the applicable requirements of UL 194.

(c) Flanged Joints: Ends of pipe and fittings shall be provided with cast-iron flanges conforming to the applicable requirements of ANSI A21.15. Bolts, nuts, and gaskets for flanged connections shall conform to the recommendations in the Appendix to ANSI A21.15. Gaskets shall be plain rubber, 1/8-inch thick.

(d) Adapters: Adapters shall be provided for connections of cast-iron pipe or to flanged accessories.

2.1.3 Water will be furnished by the Government from the existing station water plant and distribution system. No outside source of water will be used. The Contractor shall provide all temporary connections, pumps, piping, and accessories as required to utilize the water in the process.

PART 3 - EXECUTION

3.1 SEQUENCE AND SCHEDULE: Prior to beginning work, the Contractor shall submit to the Contracting Officer for approval a sequence of work and schedule for accomplishing the work. The sequence shall indicate the location of all excavations and shall include a description of the cleaning process, the anticipated need for water, and the anticipated periods of service outages.

3.2 CLEANING:

3.2.1 General: All water lines shall be cleaned to remove all dirt sludge, tuberculation, and other foreign matter build-up from the interior walls of the lines down to the surface of the interior pipe coatings. The equipment selected shall be capable of performing such cleaning. Satisfactory precautions shall be taken to prevent damage to pipes that might be inflicted by the improper use of cleaning equipment.

3.2.2 Pigging: Prior to the use of the plastic foam type pigs, a piping swab pig made of soft plastic foam shall be sent through the piping to insure that the piping systems fittings, valves and interior dimensions will allow the initial cleaning pig to pass through it without being trapped within the piping system. If any cleaning devices are trapped within the piping system, the Contractor shall locate the trapped device and remove it from the piping system before commencing with further operations. The cleaning operation shall be accomplished in such a manner that the cast iron pipe is not damaged. The Contractor shall perform as many cleaning operations on each section of pipe being cleaned as are necessary to obtain the required degree of cleaning. Each section of piping being cleaned shall be isolated from the remainder of the

water distribution system and all service lines located and the valves thereon closed prior to beginning the cleaning operations. The Contractor shall provide adequate means for tracing of cleaning devices in the water lines so as to indicate the location of the cleaning devices at all times.

3.2.3 Solids and Water Removal: All materials accumulating in the cleaning work shall be removed at the exit end of the section being cleaned, and shall not be passed from one section being cleaned to another section to be cleaned. A barricade of sand bags around the locations where the pigs are retrieved or some other method shall be used which effectively contains the solids removed from the interior of the piping system within a small area. The solids shall be cleaned up immediately upon completion of cleaning operations on a section of water distribution piping. Fire hydrant laterals shall be backwashed into the cleaned main piping to clear the fire hydrant piping of foreign materials from the cleaning operation. The piping mains shall be flushed with water until clean, prior to closing up the section. All solid or semisolid materials and other foreign materials removed from the lines shall be disposed of at the Government landfill. Water existing in the lines shall not be permitted to flood the areas and shall be pumped or otherwise disposed of in the nearest storm drainage structure.

3.2.4 Disinfection: Water piping affected by Contractor's operations shall be disinfected in accordance with AWWA C601 using the slug method. The piping system shall be exposed to a minimum of 300 mg/l of available chlorine for a minimum of 3 hours. Solution shall be flushed from system with clean water until maximum residual chlorine content is not greater than 0.2 parts per million.

3.3 EXCAVATIONS for launching and retrieving cleaning devices and other procedures required for the cleaning process shall be kept to a minimum and shall be located to avoid cutting or disturbing existing paving, shrubbery, trees, utilities, and other improvements. No existing improvements shall be disturbed without specific written approval. All excavations shall be backfilled after completion of cleaning, and the surface restored. Earthwork shall conform to Section 02200, "Earthwork." Pavement repair shall conform to Section 02690 "Pavement Removal and Replacement." Grassing shall conform to Section 02821, "Turf."

3.4 FLUSHING: Water flushed from the system shall be discharged into the Station storm drainage system following solids removal as specified herein. The Contractor shall provide all piping, trenching, and other facilities required to transport the flushing water to the point of discharge, and shall repair any erosion or damage to existing facilities resulting from his operations to original conditions.

4. TESTING: After pipes have been cleaned, they shall be tested to determine the new flow carrying capacity, Hazen-Williams "C" factor, the static and residual pressures and leak testing. All such testing shall be performed under the direct supervision of a registered professional engineer; all expenses for such testing shall be borne by the Contractor. The testing organization shall be approved by the Contracting Officer. All sections of lines which show a new Hazen-Williams "C" factor of less than 100 shall be recleaned and retested at the expense of the Contractor.

4.1 Leak Testing: The Contractor shall conduct a leak detection survey on all pipelines specified to be cleaned after cleaning the lines. Leak detection shall be performed using electronic equipment which will detect and locate the leaks. Equipment shall not be used which would cause any interruption to the water distribution systems, and the leak detection shall be performed with the water lines under normal system pressure. The costs of all leak detection testing shall be borne by the Contractor.

4.1.1 Leak Detection Equipment: Equipment shall be of the electronic type which will detect and locate leaks 3/64-inch and larger. Equipment shall be capable of receiving acoustical impulses transmitted by the leak; it shall receive this signal and emit the signal to both an audio and visual indicator. Interpretation of both the audio and visual shall be precise enough to pinpoint the leak within one foot, plus or minus, of the leak.

5. FINAL REPORT: Provide a final report at the expense of the Contractor certified and sealed by a registered professional engineer with the following information:

5.1 Flow Test: Chart form and drawing showing new pipe flow carrying capacity, Hazen-Williams "C" factor, and static and residual pressures for each run and size of pipe.

5.2 Leak Test: A log of all leaks and suspect areas shall be submitted to the Contracting Officer; the log shall include such defects in all lines as well as at all valves, hydrants, and other appurtenances. All defects shall be reported in writing daily to the Contracting Officer, and a final written report shall show the results of the complete leak detection survey. Drawings shall be furnished with the final report, and shall show the location of all such defects.

5.3 Records: In addition to the records required in the paragraphs titled "Flow Testing" and "Leak Testing," records shall be kept of all cleaning performed. These records shall be on printed form showing date, section cleaned, location, line size, length of the section, type of cleaning performed, disinfection performed, and any special remarks concerning the condition of the line.

*** END OF SECTION ***

05-82-2319
13510-6

SUPSEDES DECISION

STATE: NORTH CAROLINA
 DECISION NUMBER: NC81-1148
 Supersedes Decision No.: NC79-1125, September 7, 1979, 44 FR 52577
 DESCRIPTION OF WORK: Water and Sewer construction projects and Heavy construction projects excluding Gas construction projects

COUNTIES: Statewide
 DATE: Date of publication

	Basic Hourly Rates	Fringe Benefits Payments			
		M & V	Pensions	Vocation	Education and/or Appr. Tr.
Bricklayers	\$4.47				
Carpenters	5.16				
Cement masons	5.01				
Fence erectors	4.04				
Ironworkers:					
structural	4.81				
Laborers:					
asphalt makers	3.95				
pipelayers	3.98				
powdermen	5.95				
unskilled	3.37				
Manhole builders	4.00				
Millwrights	4.00				
Painters	5.50				
Piledrivers	6.29				
Plumbers & Pipefitters	5.25				
Power Equipment Operators:					
asphalt paver	3.98				
backhoe	4.99				
boom operator	4.00				
bulldozer	4.50				
compactor	3.75				
crane	5.87				
dragline	5.50				
drills:					
air	4.81				
well	4.50				
loader	4.48				
mechanic	5.16				
motor grader	4.25				
oiler	3.75				
pump operator	3.75				
roller	3.35				
scraper (pan)	4.25				
screed	4.08				
tractor	4.75				
trenching machine	5.00				
Truck drivers	3.67				
*ELECTRICIAN	6.50				

Unlisted classifications needed for work not included within the scope of this classification may be added only after award as provided in the labor standards contract clauses (29 CFR, 5.5 (c) (1) (ii)).

85200

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*MODIFICATION NO. 1 (45 FR 86200 - DECEMBER 30, 1980)

WAGE DETERMINATION

05-82-2319



Date	Description	Amount	Balance
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