

NOTICE:

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

CONTRACT N62470-83-B-5812

SPECIFICATION
NO. 05-83-5812

REPLACE FLOW METERS AND RECORDERS,

BUILDING RR-85

at the

MARINE CORPS BASE

CAMP LEJEUNE, NORTH CAROLINA

DESIGN BY:

Design Branch, Public Works Department
Marine Corps Base, Camp Lejeune, North Carolina

SPECIFICATION PREPARED BY:

J. H. Fitch, P.E.
and
F. E. Cone, P.E.

APPROVED BY:

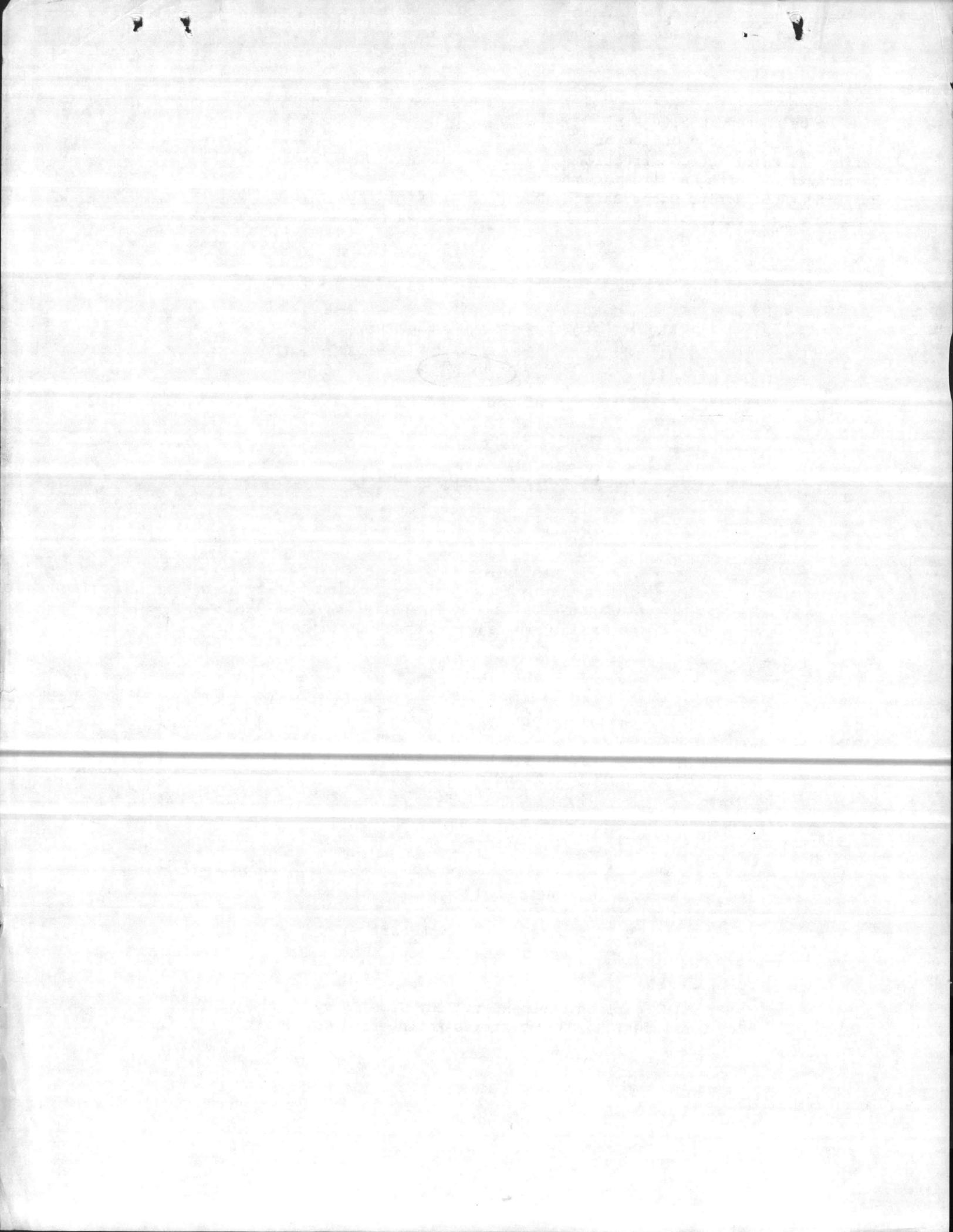
E. L. Rouse, P.E., Director
Design Branch

R. E. Carlson, Commander, CEC, U. S. Navy
for Commander, Naval Facilities Engineering Command

05-83-5812

*Review & Return to
MSCSS*

*2582
16 MAY 1983
M. J. Coyne*



CONTENTS

SECTION 00101. BIDDING INFORMATION

DIVISION

1. GENERAL REQUIREMENTS

SECTION

01011. General Paragraphs

01012. Additional General Paragraphs

01401. Quality Control

01560. Environmental Protection

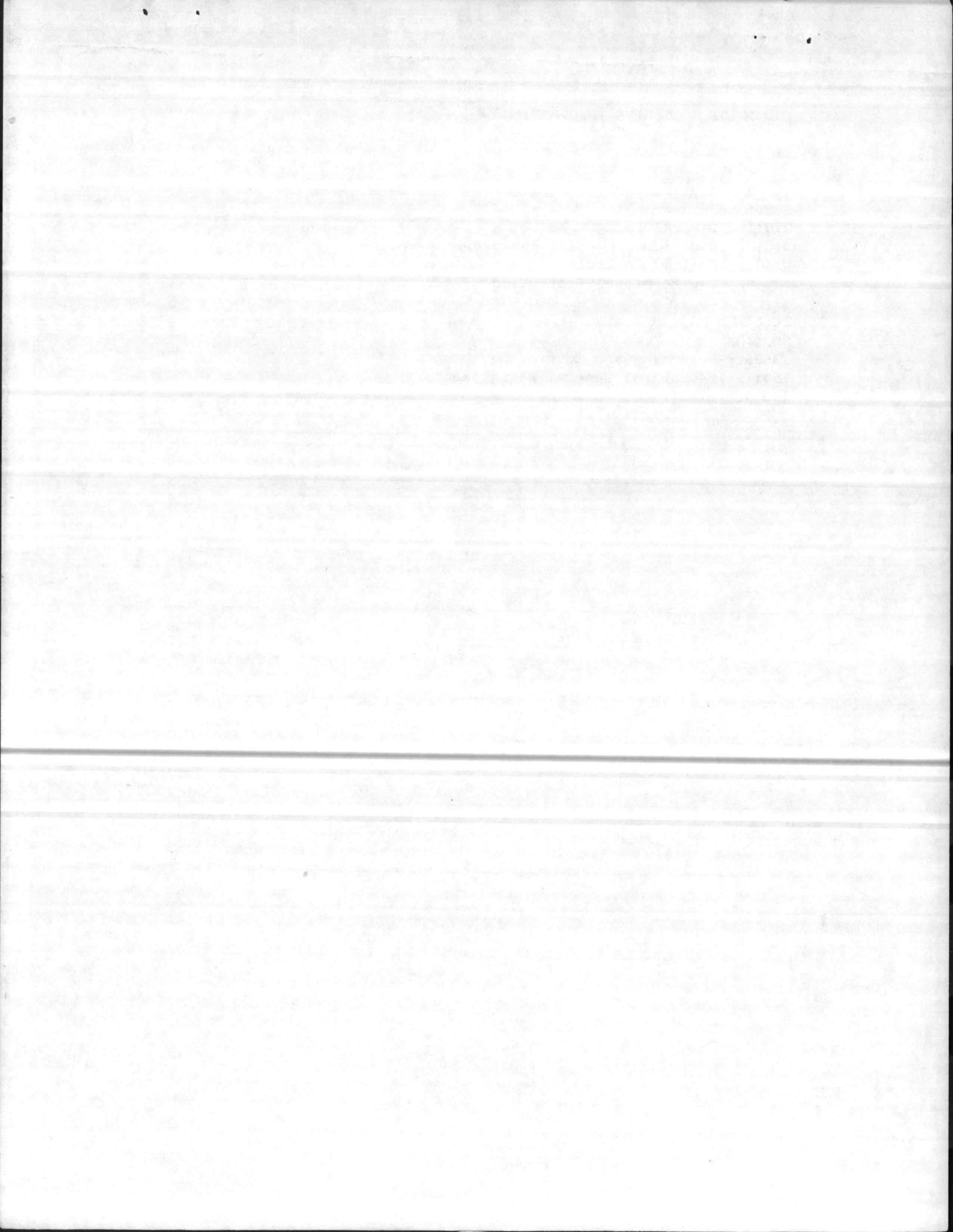
2. DETAILED REQUIREMENTS

SECTION

13625. Measuring and Control Equipment

15011. Mechanical General Requirements

16000. Electrical Work



SECTION 00101
BIDDING INFORMATION

1. CONTENTS: This Invitation for Bids, IFB NO.N62470-83-B-5812, consists of the following documents:

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

- (b) Bid Submittal Documents
 - (i) Bid Form (Standard Form 21, December 1965 Ed.)
 - (ii) Representations and Certifications, Standard Form 19-B, June 1976 Ed. (REV 1980 AUG), including Appendix "A", dated August 1980
 - (iii) Bid Guaranty (Standard Form 24, June 1964 Ed.)
(See Instructions to Bidders)

- (c) Contract Documents
 - (i) Construction Contract (Standard Form 23, Jan 1961 Ed.)
 - (ii) Performance Bond (Standard Form 25, June 1967 Ed.)
 - (iii) Payment Bond (Standard Form 25A, June 1964 Ed.)
 - (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 therefore:

"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.

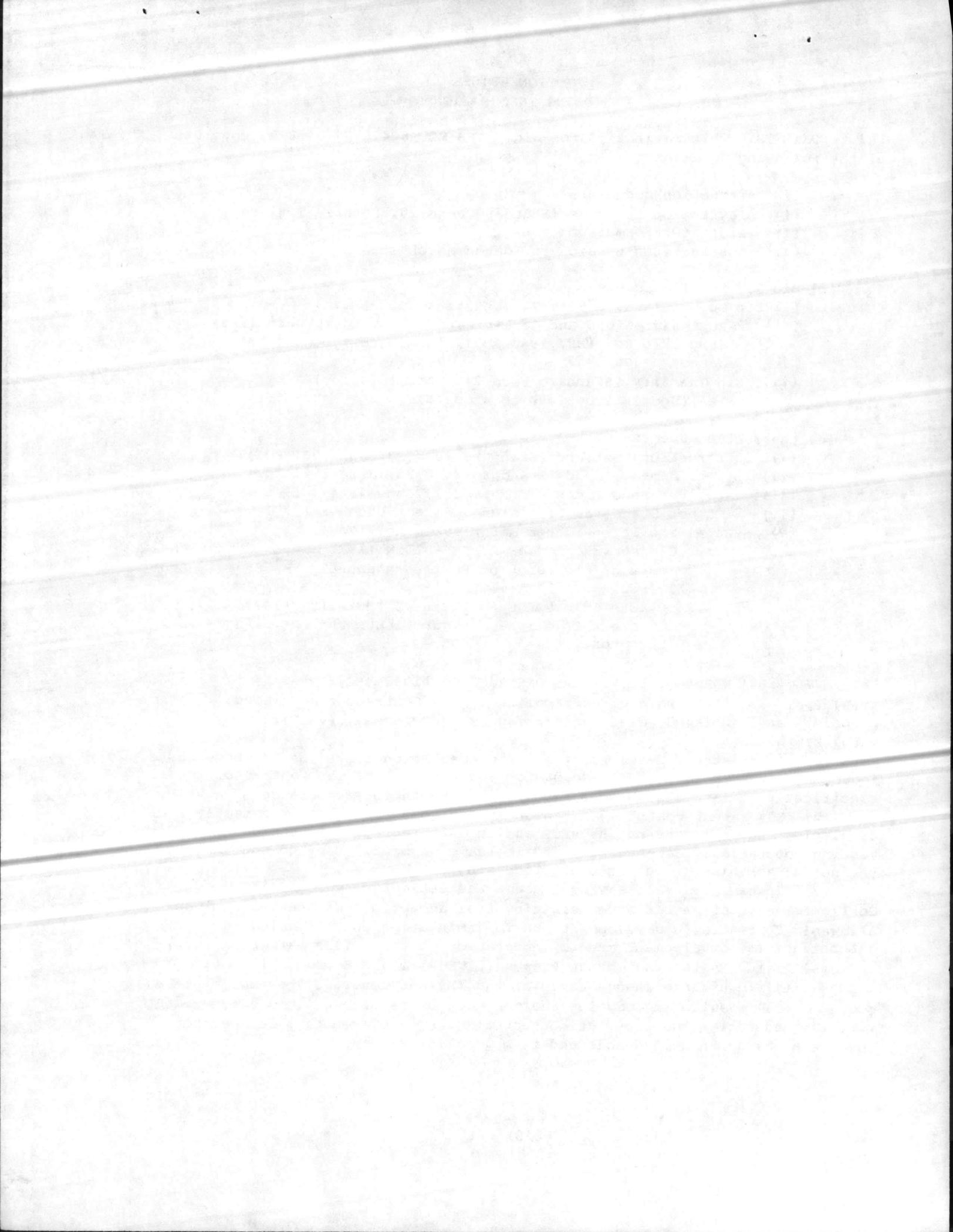
(1) "Contractor's development and implementation costs" means those costs incurred on a VECP Government acceptance and those costs the Contractor incurs specifically to make the changes required by Government acceptance of a VECP.

(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 supports 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.

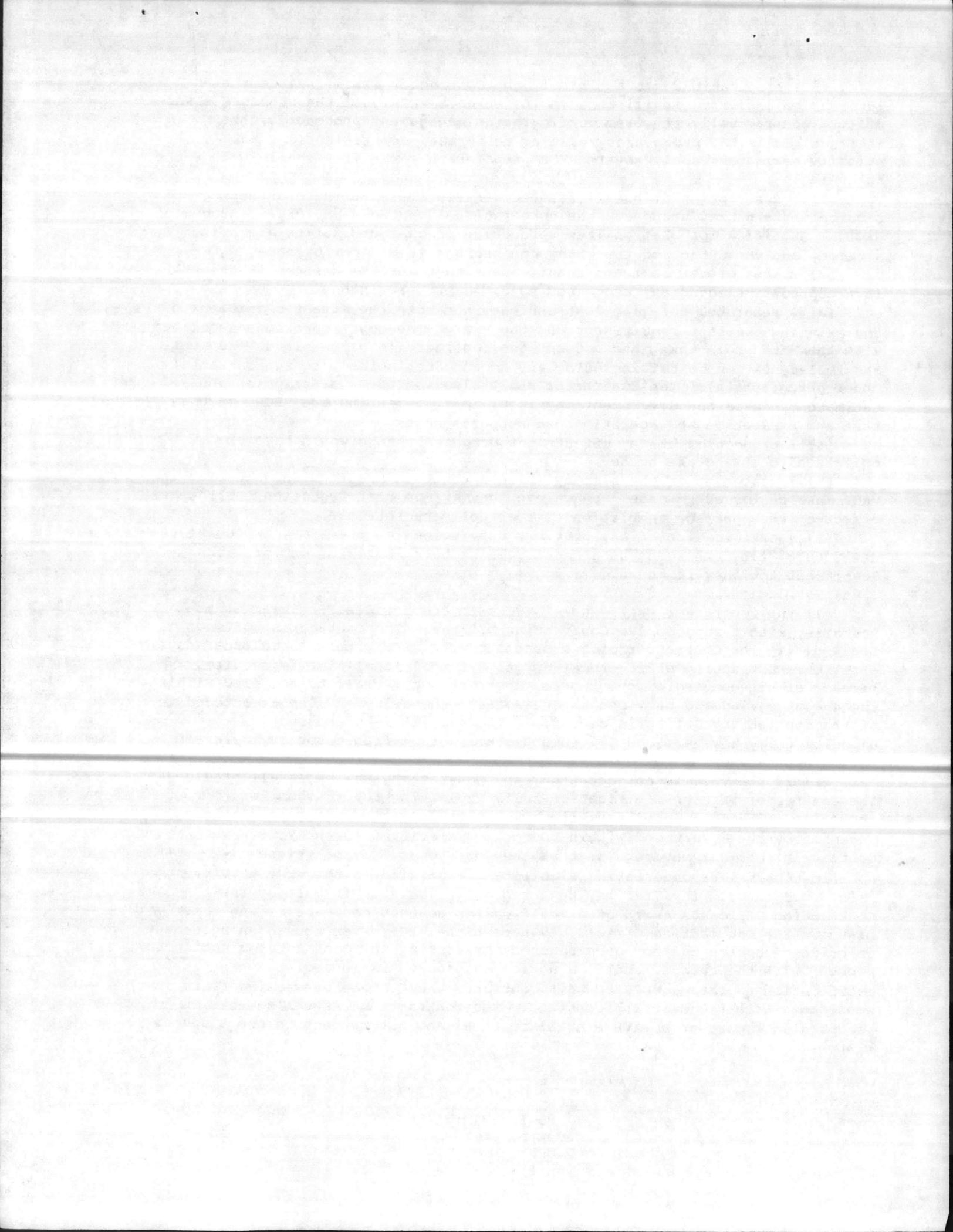
(6) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.

(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."

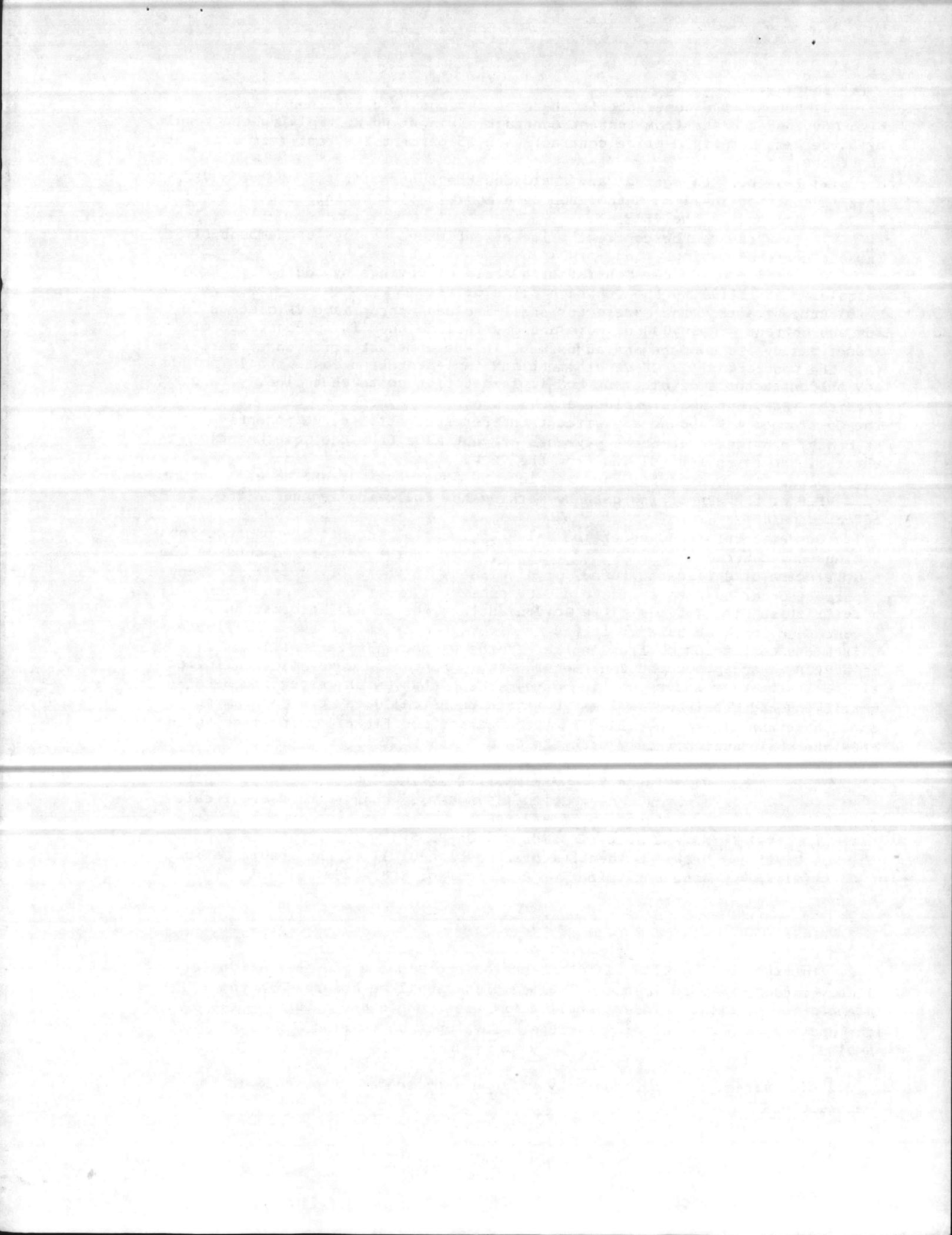
c. Clause 97. AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION (1978 SEP): Change the date of this clause to "(1982 FEB)".

- (vi) NAVFAC Specification No. 05-83-5812
- (vii) Drawings identified in Section 01011 of the specification
- (viii) Wage Determination Decision No. NC81-1201 for Building Construction

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: 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, with Appendix "A" and by Bid Guaranty, all in accordance with the Bid Instruction Documents listed in paragraph 1(a) hereinbefore upon the following item:

BASE BID: Price for the entire work, complete in accordance with the drawings and specifications.

2.4 TELEGRAPHIC MODIFICATIONS OF BIDS in accordance with the instructions to bidders may be made. Two signed copies of the telegram in a sealed envelope marked "Copies of telegraphic modification of bid for Replace Flow Meters and Recorders, Building RR-8, Marine Corps Base, Camp Lejeune, North Carolina, Specification No. 05-83-5812, should be forwarded immediately to the office to which written bids were submitted.

2.5 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.

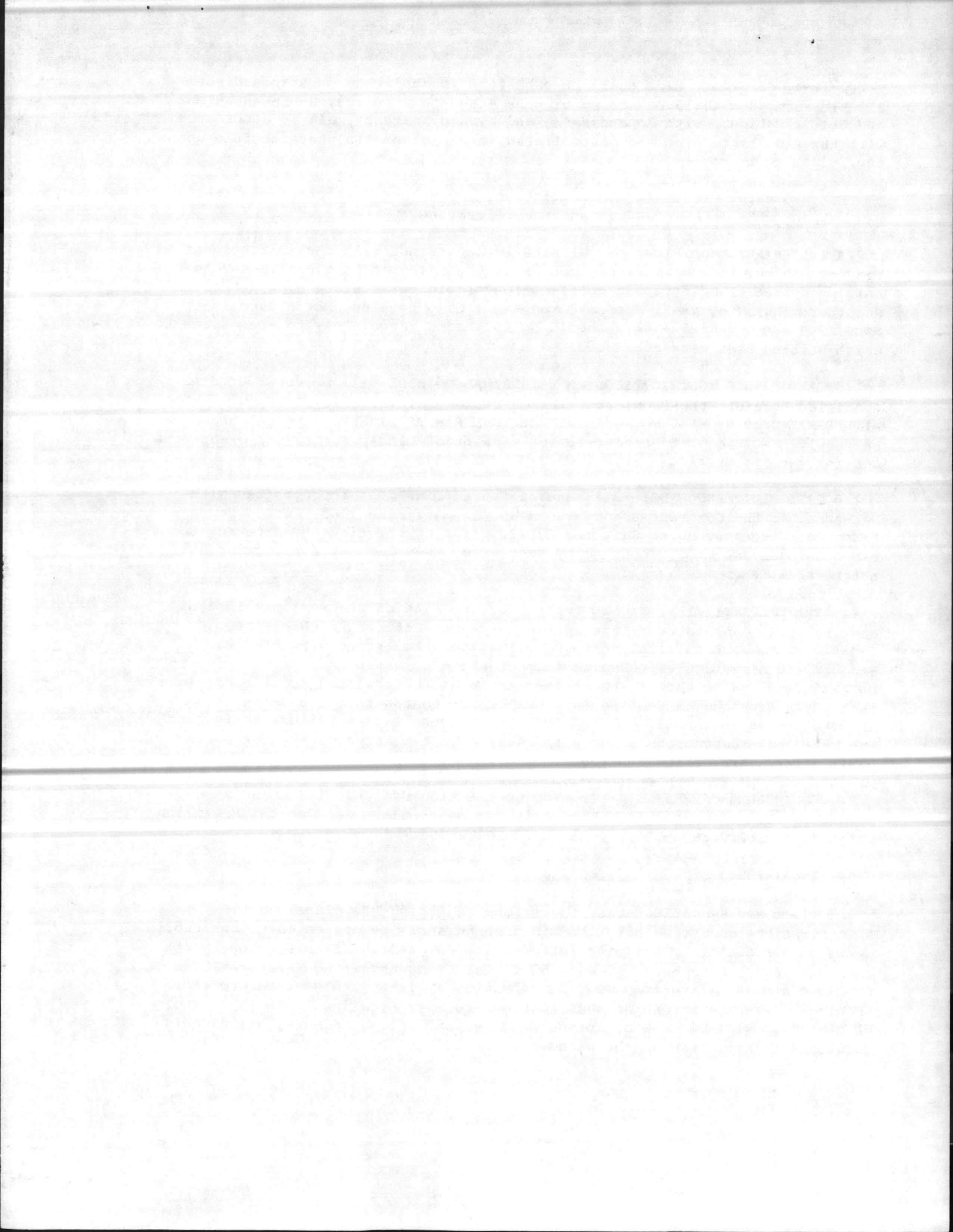
2.6 HAND DELIVERED BIDS: All hand delivered bids must be deposited with personnel in the Contract Branch, Room No. 26, Building 1005, Marine Corps Base, Camp Lejeune, North Carolina 28542, prior to the time and date set for bid opening. Any bids submitted by hand after the time set for receipt will not 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 Officer in Charge of Construction, Jacksonville, North Carolina Area, telephone 919-451-2581. Bidders are urged and expected to inspect the site where the 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 DO-C2 priority rating for procurement of critical materials. See General Provision entitled "PRIORITIES, ALLOCATIONS AND ALLOTMENTS".

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, Pennsylvania 19120

The Acquisition Management Systems and Data Requirements Control List: DOD Directive 5000.19L, 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 215-697-3321 in case of urgency.

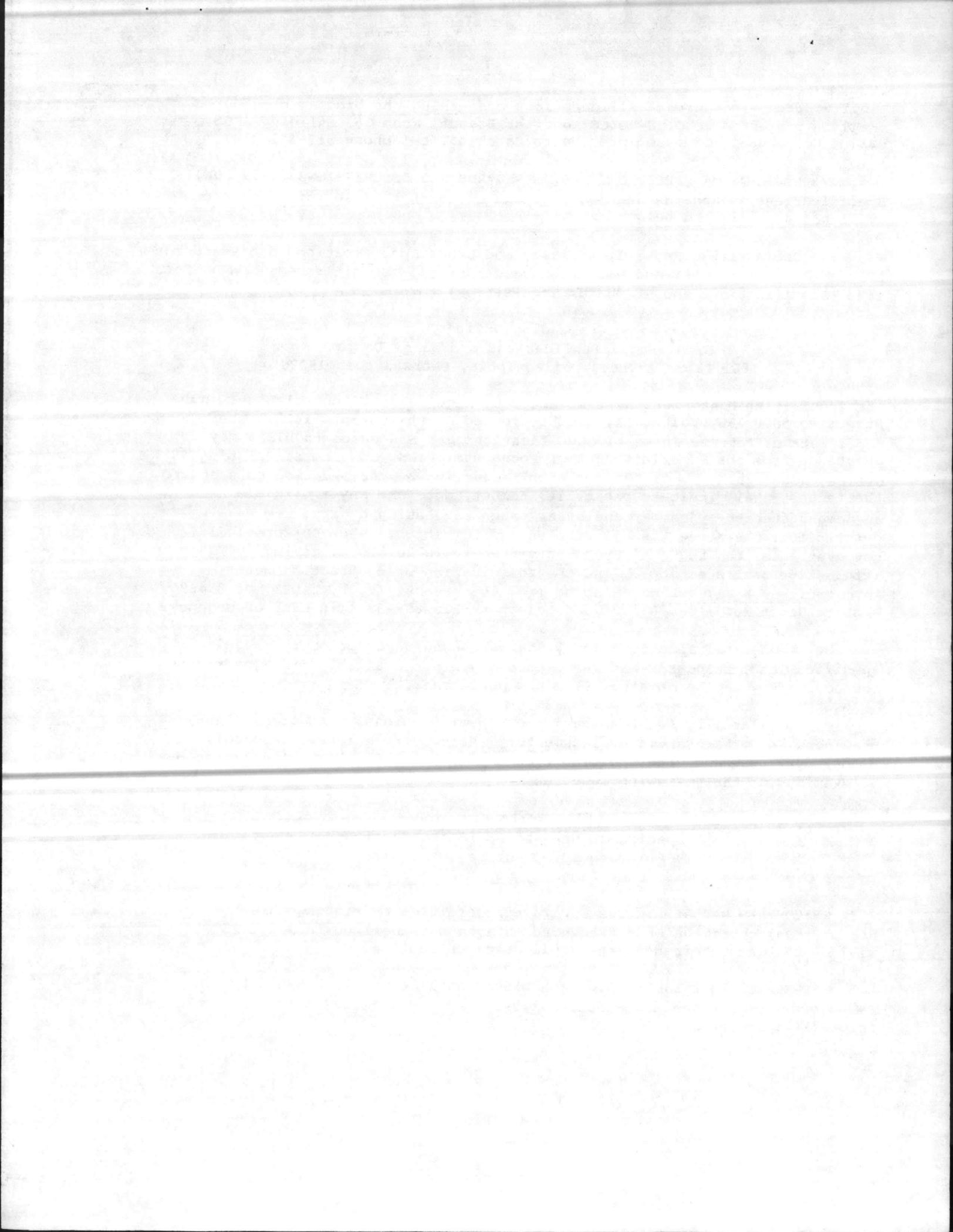
b. Commercial Specifications, Standards and Descriptions: These specifications, standards and descriptions are not available from Government sources. They may be obtained from the publishers.

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:

Public Works Division
Specifications and Estimates Section
Building 1005, Marine Corps Base
Camp Lejeune, North Carolina

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 publications.

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



9. CERTIFICATE OF CURRENT COST OR PRICING DATA: (This paragraph applies to negotiated contracts of \$100,000 or more, except where the price is based on adequate competition, and to change orders of \$100,000 or more, to any contract.) The Contractor shall submit to the Contracting Officer a certificate in the form set forth below as soon as practicable after agreement is reached on the contract price:

This is to certify that, to the best of my knowledge and belief, cost or pricing data defined in DAR 3-807.1(a)(1) submitted, either actually or by specific identification in writing (see DAR 3-807.3(a)) to the Contracting Officer or his representative in support of _____*
are accurate, complete, and current as of _____**
day month year

This certification includes the cost or pricing data supporting any advance agreement(s) and forward pricing rate agreements between the offeror and the Government which are part of the proposal.

Firm _____
Name _____
Title _____

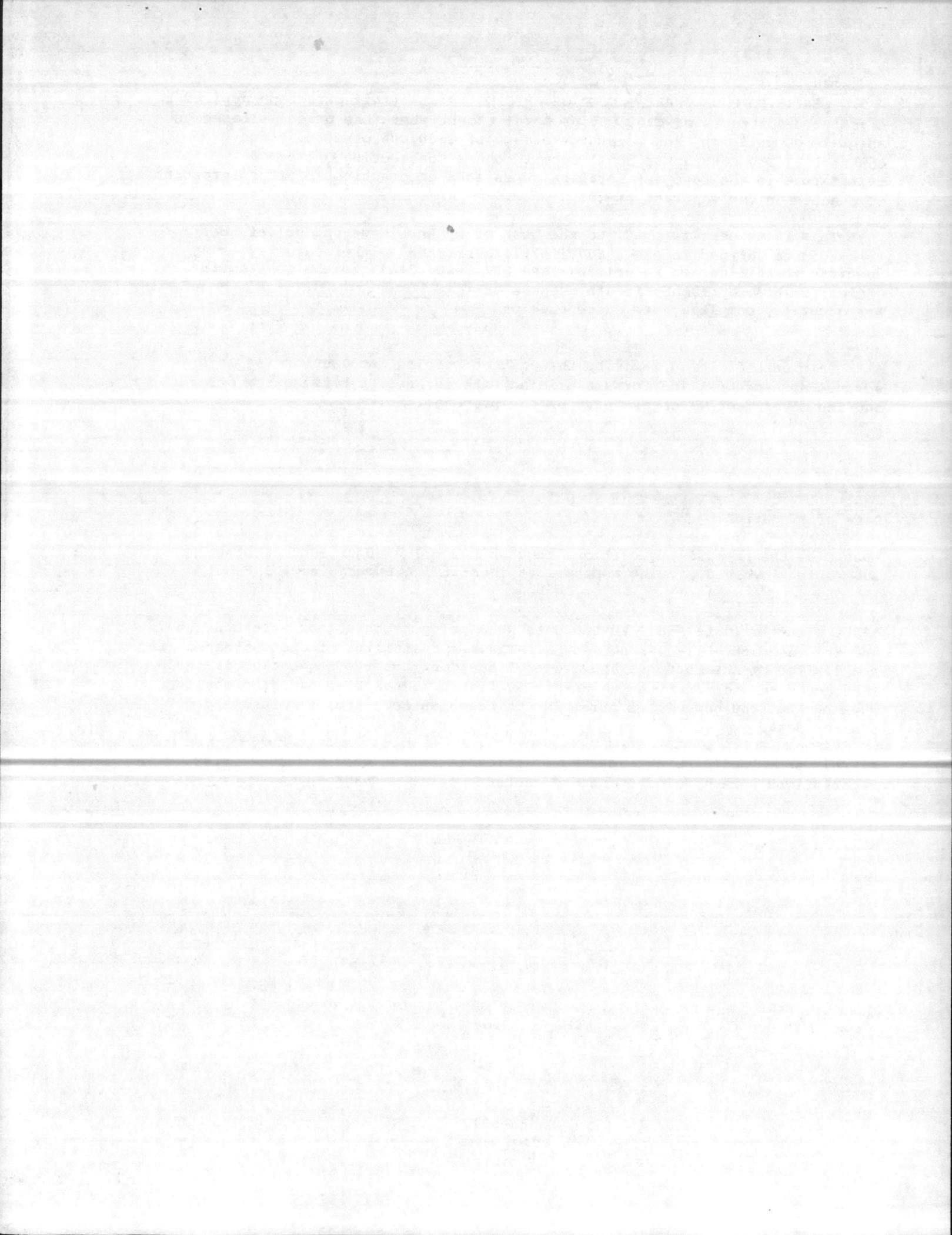
_____*
Date of Execution

*Describe the proposal, quotation, request for price adjustment or other submission involved, giving appropriate identifying number (e.g. RFP No. _____).***

**The effective date shall be the date when price negotiations were concluded and the contract price was agreed to. The responsibility of the Contractor is not limited by the personal knowledge of the Contractor's negotiator if the Contractor had information reasonably available at the time of agreement, showing that the negotiated price is not based on accurate, complete and current data.

***This date should be as close as practicable to the date when the price negotiations were concluded and the contract price was agreed to.

END OF SECTION



SECTION 01011
GENERAL PARAGRAPHS

1. GENERAL INTENTION: It is the declared and acknowledged intention and meaning to provide and secure replacement of flow meters and recorders, complete and ready for use. This is a fixed-price contract awarded on a lump sum basis.

2. GENERAL DESCRIPTION: The work includes the removal of existing flow measuring equipment and the replacement with new equipment and incidental related work.

3. LOCATION: The work shall be located at the Marine Corps Base, Camp Lejeune, approximately as shown. The exact location will be indicated by the Contracting Officer. "Contracting Officer" and "Officer in Charge of Construction (OICC)" are used interchangeably in this specification and have the same meaning.

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 receipt of Notice of Award, to prosecute said work diligently, and to complete the entire work ready for use within 120 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 Notice of Award. This 15-day period is to allow for 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 General Provisions clauses entitled "Termination for Default - Damages for Delay - Time Extensions", and "Damages for Delay - Defense Materials System and Priorities" the sum of \$20 for each day of delay.

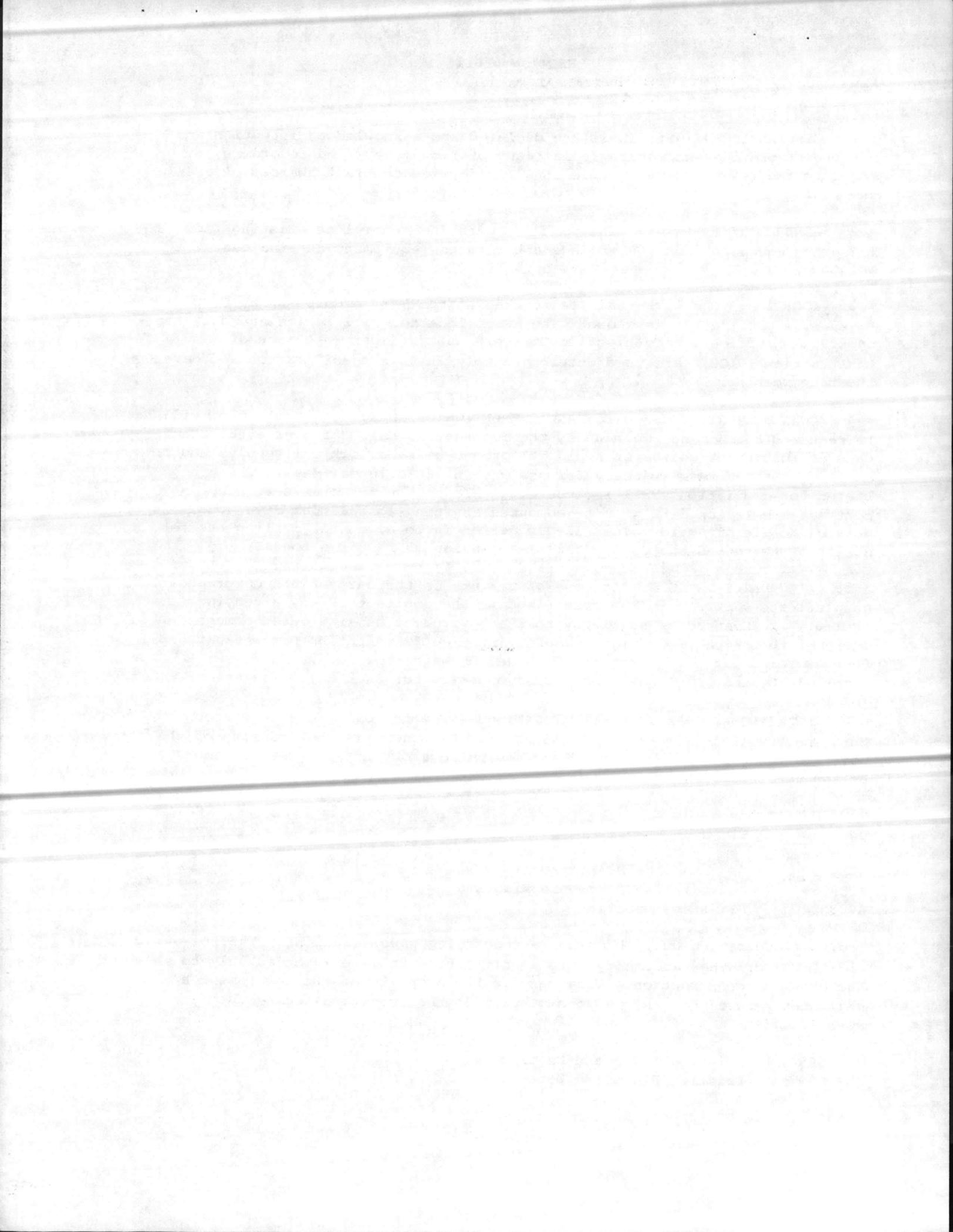
6. DRAWINGS ACCOMPANYING SPECIFICATIONS: The following drawings accompany this specification and are a part thereof. Drawings are the property of the Government and shall not be used for any purpose other than that contemplated by the specification.

NAVFAC

<u>DWG. NO.</u>	<u>TITLE</u>
4089002	Map and Site Plan
4089003	Schedule and Schematic Diagrams
4089004	Plans and Details

6.1 'Information Only' Drawings accompanying specifications: The following additional drawings accompany this specification and are intended only to show the original construction. Drawings are the property of the Government and shall not be used for any purpose other than that contemplated by the specification.

4089005	Existing Plans and Details
4089006	Existing Plans and Details



7. **FACTORY INSPECTION:** Factory inspection of material and equipment for which tests at the place of manufacture are required in referenced specifications will be waived if notarized copies of factory reports are furnished that shown compliance with the specification requirements. Factory inspection will be required only where specified herein or in the technical sections of this specification. The Government reserves the right to charge to the Contractor any additional cost of Government inspection and tests when materials and equipment are not ready at the time inspection and tests are requested by the Contractor.

8. **NORTH CAROLINA SALES AND USE TAX IS REQUIRED.** See section entitled "Additional General Paragraphs".

9. **SCHEDULING THE WORK:**

9.1 **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.

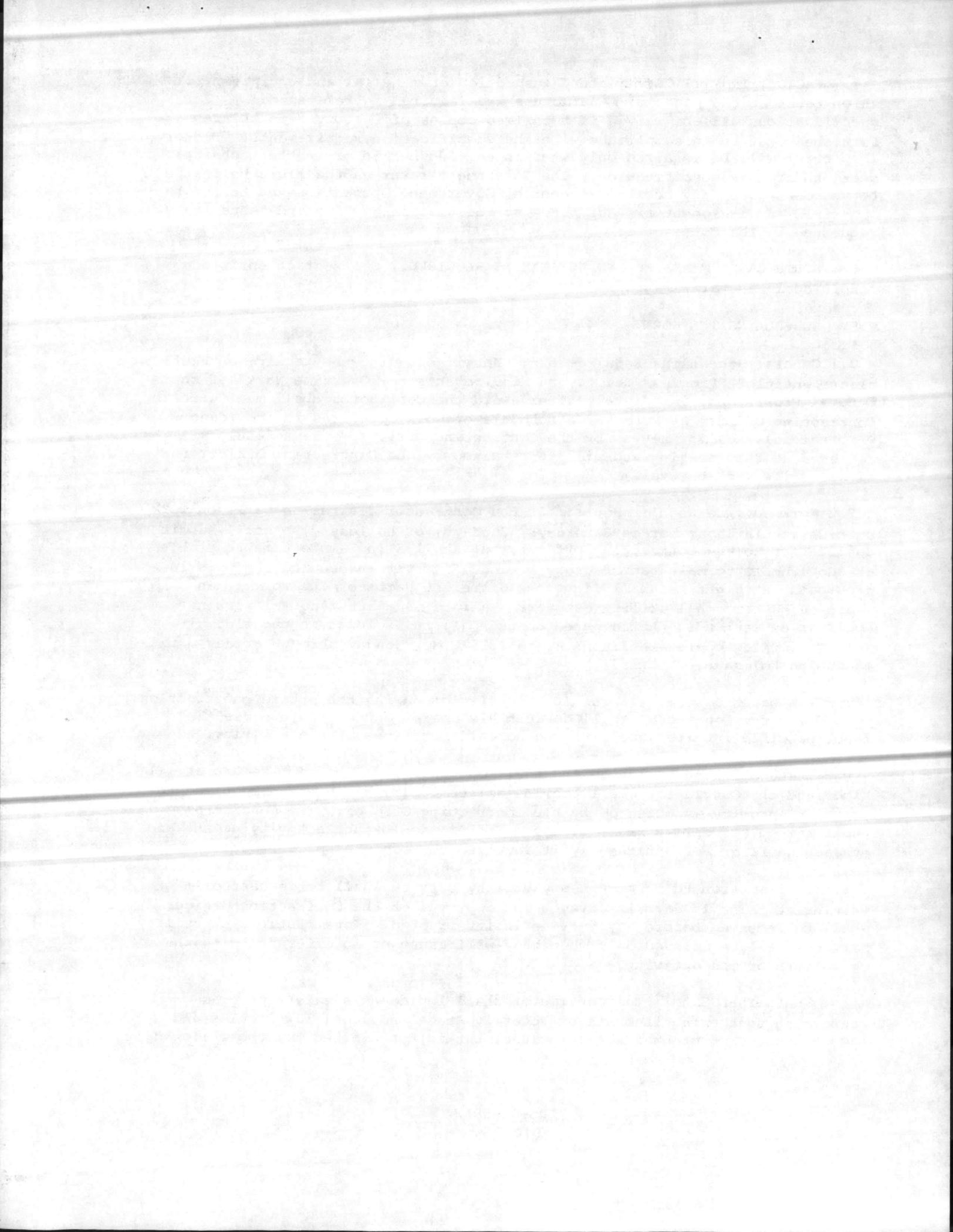
9.2 **Work Outside Regular Hours:** If the Contractor desires to carry on work outside regular hours or on Saturdays, Sundays, or holidays, he shall submit application to the Contracting Officer, but shall allow ample time to enable the Government to make satisfactory arrangements for inspecting the work in progress. At night he shall light the different parts of the work in an approved manner. All utility cutovers shall be made after normal working hours or on weekends. Anticipated costs shall be included in the bid. Regular working hours are 7:45 A.M. to 4:15 P.M., Monday through Friday, excluding holidays.

9.3 The water system will remain in operation during the entire construction period and the Contractor shall conduct his operations so as to cause the least possible interference with the normal operations of the activity.

9.3.1 The existing buildings and their contents shall be kept secure at all times and the Contractor shall provide all temporary closures as required to maintain security as directed by the Contracting Officer. The Contractor shall remove all debris from all spaces being used by the activity at the end of each shift or more frequently if required to keep the space useable.

9.3.2 Permission to interrupt any utility service shall be requested in writing at least 15 days in advance and approval of the Contracting Officer shall be received before any service is interrupted. Interruptions of utility services will be allowed only when they will cause no interference with the operations of the activity.

10. **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.

c. General Provisions clause entitled "Accident Prevention".

d. NFPA 241-1975, Safeguarding Building Construction and Demolition Operations, which may be examined in the Design Branch, Public Works Division, Building 1005, Marine Corps Base, Camp Lejeune, or may be purchased from the National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210

11. TECHNICAL PUBLICATIONS: The Contractor shall furnish to the Contracting Officer three copies each of installation, operation maintenance manuals and parts list for all Contractor-furnished mechanical and electrical equipment.

11.1 Operating instructions for the new flow metering and recording system, for use by operating personnel, shall be provided. They shall be laminated between thermoplastic sheets and affixed where directed. The instructions shall describe the function of the equipment, its proper operation, procedures to follow in the event of failure, normal maintenance practices, and caution and warning notices.

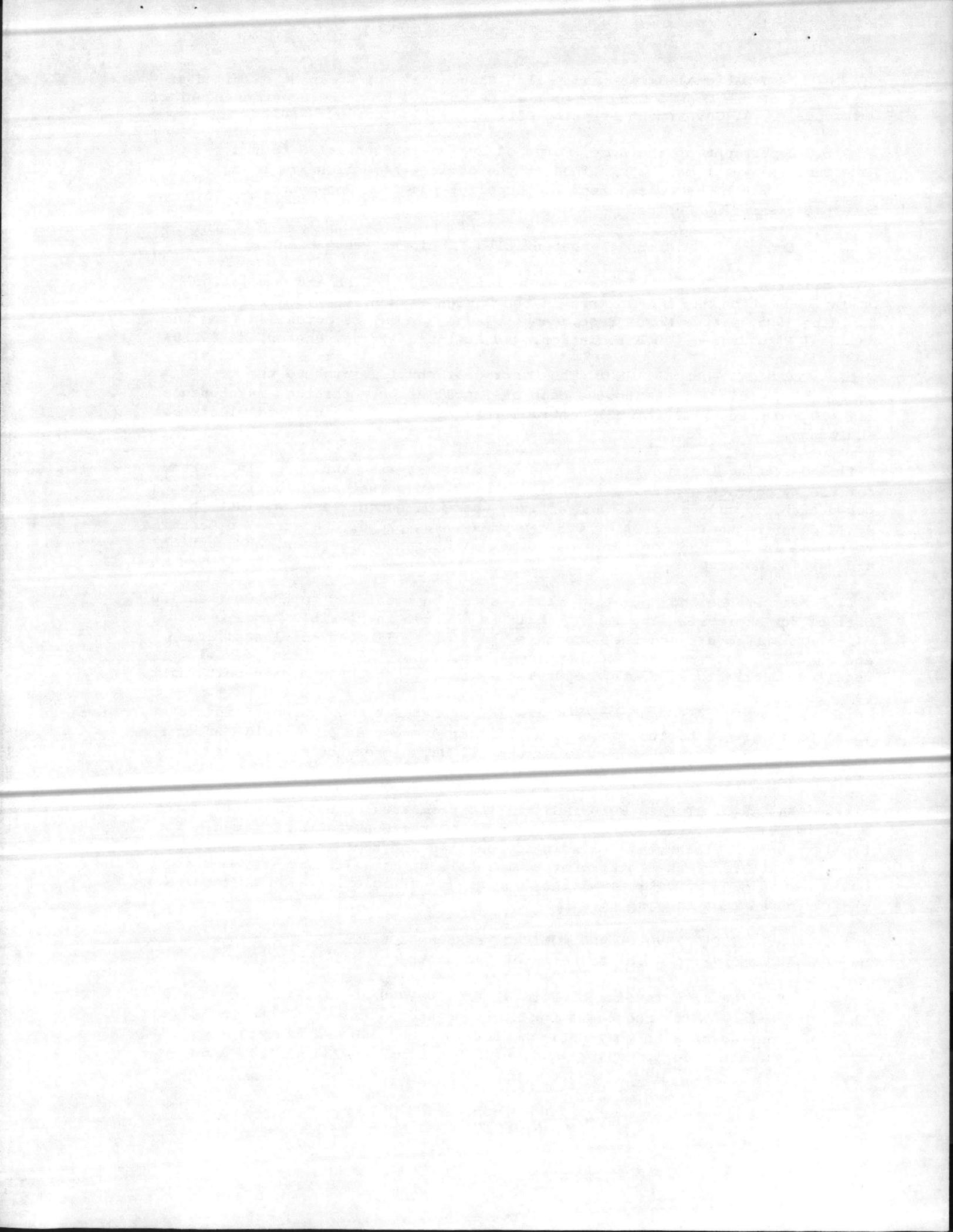
11.2 Maintenance and operation manual shall be furnished to the Contracting Officer for approval. The manual shall be mounted in flexible binders with oil-resistant covers and shall contain, but not be limited to, installation and operating instructions, maintenance procedures, illustrations, drawings, detailed descriptions, tests, adjustments, safety precautions, and parts list.

11.3 Parts list, giving part numbers and prices for the equipment furnished, shall be submitted to the Contracting Officer as soon as practicable after the award of the contract, but not later than 90 days after notice of award has been received.

12. TRAILER 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.

13. 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 (4/68), which shall show, in summary form, the basis for arriving at the amount of the invoice
- b. Contractor's Monthly Estimate for Voucher (5ND GEN 5265/1)
- c. Affidavit to Accompany Invoice (5ND LANTDIV 4-4235/4) (Rev 1/68)



Forms will be furnished by the Contracting Officer. Monthly invoices and supporting forms for work performed through the 15th of the month shall be submitted to the Officer in Charge of Construction by the 20th of the month in the following quantities:

- a. Contractor's Invoice - Original and five copies
- b. Contractor's Monthly Estimate for Voucher - Original and two copies
- c. Affidavit - Original

14. WRITTEN GUARANTIES AND GUARANTOR'S LOCAL REPRESENTATIVE: Prior to completion of the contract, the Contractor shall obtain and furnish to the Contracting Officer's designated representative, written guarantees for all equipment and/or appliances furnished under the contract. The Contractor shall furnish with each guarantee the name, address and telephone number of the guarantor's representative nearest to the location where the equipment and/or appliances are installed, who, upon request of the using service's representative, will honor the guarantee during the guaranty period and will provide the services prescribed by the terms of the guarantee. At the time of installation, the Contractor shall tag each item of warranted equipment with a durable oil and water resistant tag approved by the Contracting Officer. Leave the date of acceptance and inspector's signature blank until the project is accepted for beneficial occupancy. The tag shall show the following information:

EQUIPMENT WARRANTY TAG

Type of Equipment _____

Accepted Date _____

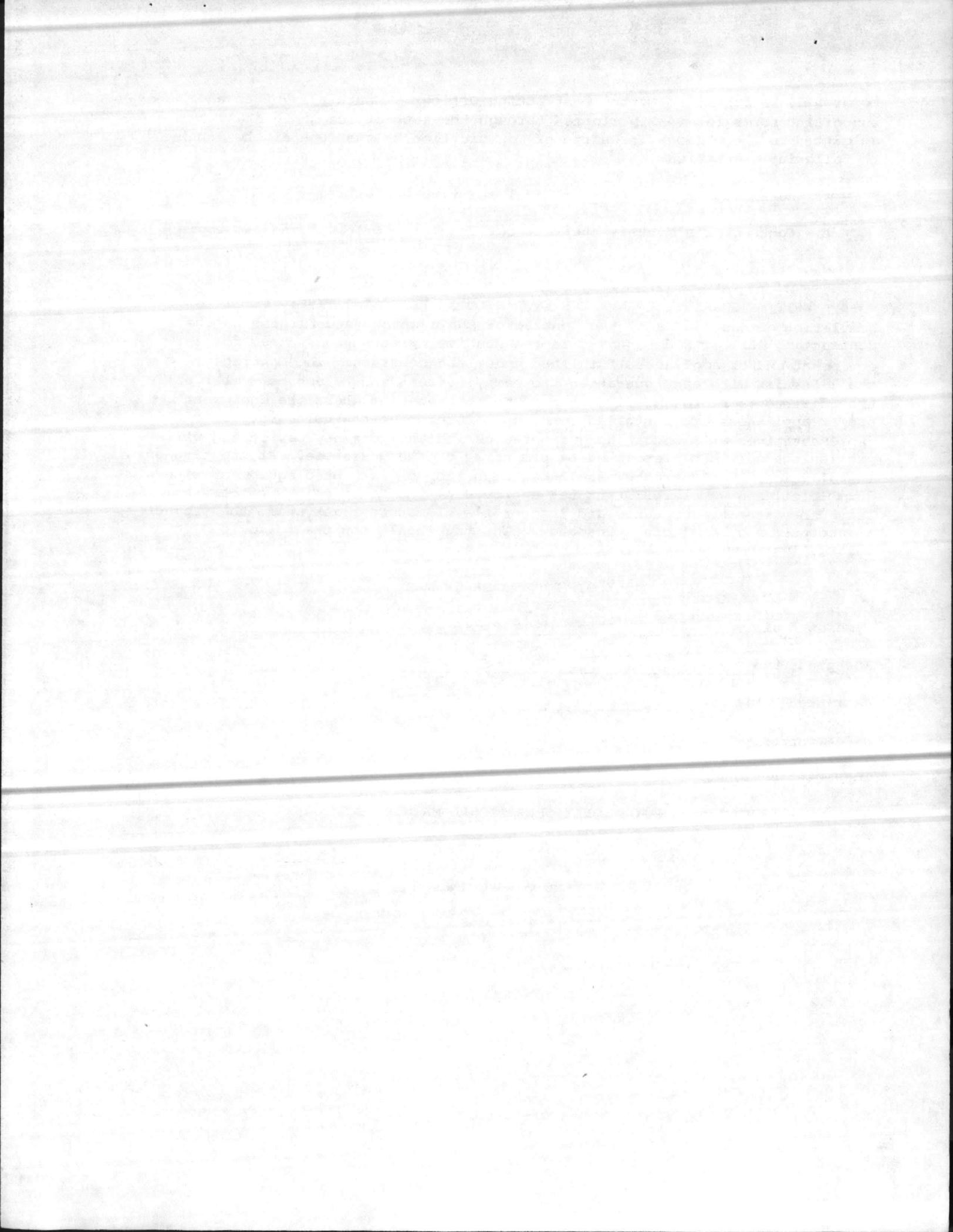
Warranted Until _____

Under Contract No. N62470-

Inspector's Signature _____

STATION PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE

END OF SECTION



SECTION 01012. ADDITIONAL GENERAL PARAGRAPHS

1. UTILITIES:

1.1 Government-Furnished Utilities: The Government will furnish water and electricity from the nearest available outlet free of charge for pursuance of work under this contract. If the nearest available outlet cannot be utilized by the Contractor because of improper voltage, insufficient current, improper pressure, incompatible connectors, etc., it shall be the responsibility of the Contractor to provide temporary utilities as required.

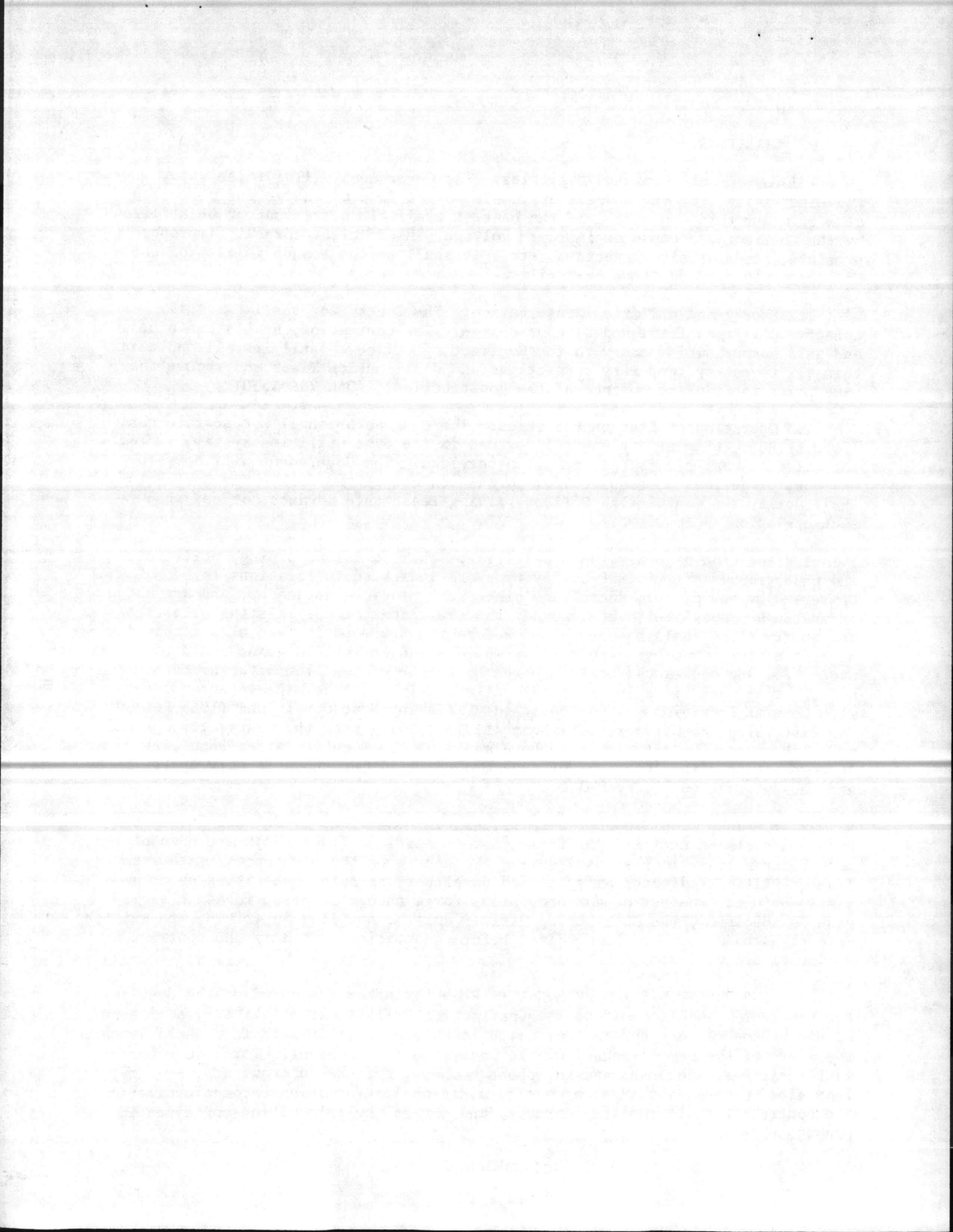
1.2 Energy and Utilities Conservation: The Contractor shall carefully conserve utilities furnished without charge. The Contractor, at his own expense and in a manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines and remove the same prior to final acceptance of the construction. (DAR 7-603.30)

1.3 Operation of Station Utilities: The Contractor shall not operate nor disturb the setting of any control devices in the Base 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.

1.4 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.

2. CHANGED CONDITIONS: Wherever changed conditions as defined in General Provisions clause entitled "Differing Site Conditions (1968 FEB)" 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 provisions 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.

3. 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 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.



4. 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.

5. SCHEDULE OF PRICES: The original and seven copies of the Schedule of Prices shall be submitted to the Contracting Officer for approval. Payments will not be made until the Schedule of Prices has been submitted and approved.

6. 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(4/68), which shall show, in summary form, the basis for arriving at the amount of the invoice

b. Contractor's Monthly Estimate for Voucher (5ND GEN 5265/1)

c. Affidavit to Accompany Invoice (5ND LANTDIV 4-4235/4)(Rev 1/68)

Forms will be furnished by the Contracting Officer. Monthly invoices and supporting forms for work performed through the 15th of the month shall be submitted to the Contracting Officer by the 20th of the month in the following quantities:

a. Contractor's Invoice - Original and five copies

b. Contractor's Monthly Estimate for Voucher - Original and two copies

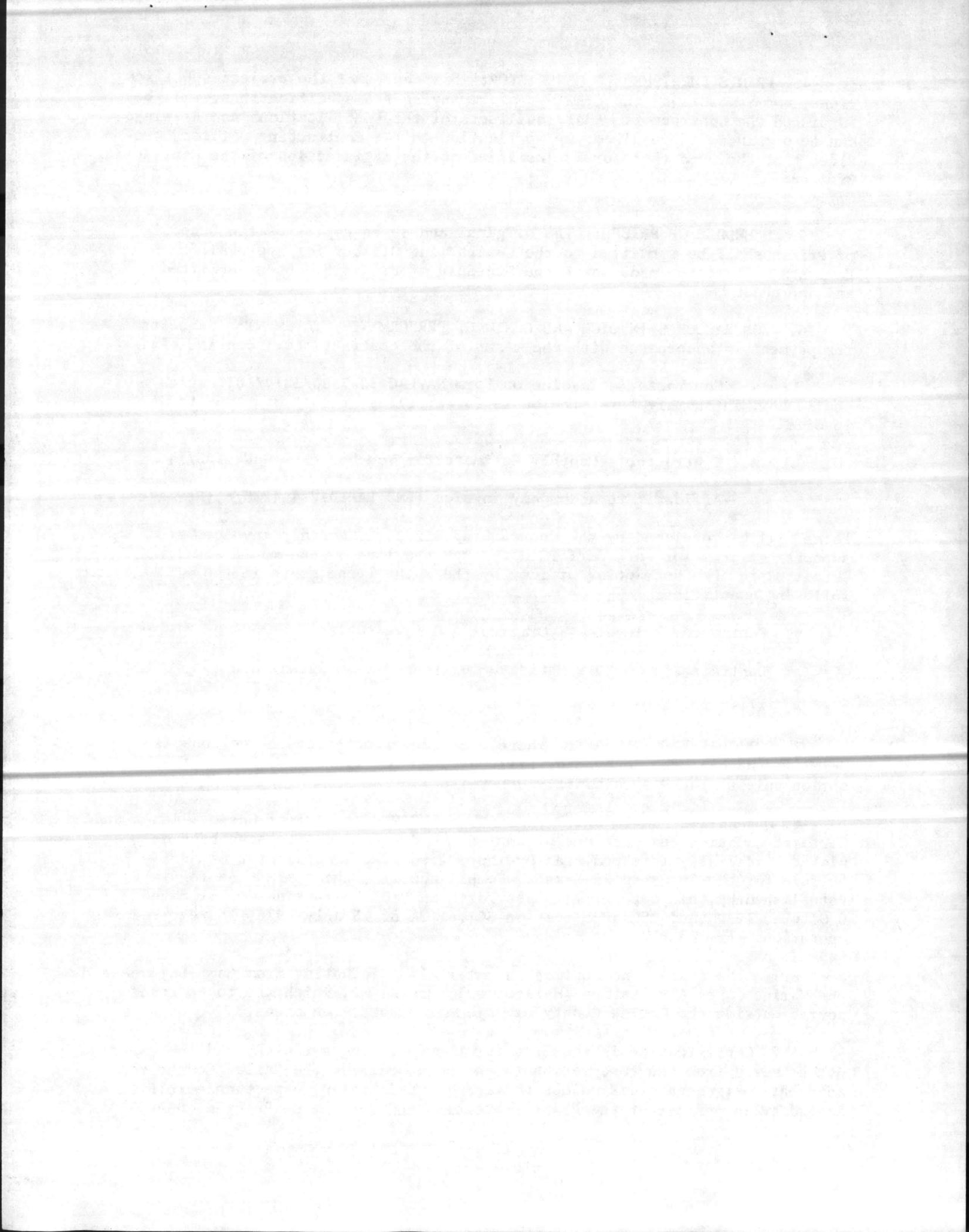
c. Affidavit - Original

7. OPTIONAL REQUIREMENTS: Where a choice of materials or methods is permitted herein, the Contractor will be given the right to exercise the option unless stated specifically otherwise.

8. 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

8.1 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.

8.2 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.

8.3 Authorization for movement of equipment outside the imported fire ant regulated area shall be obtained from USDA, APHIS, PPQ, Rural Route 6, Box 53, Wilmington, NC 28504; 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. The equipment shall be prepared and assembled so that it may be readily inspected. 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 wasted as directed.

9. EMERGENCY MEDICAL CARE: Only emergency medical care is available at Camp Lejeune Government facilities 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 shall be made by the Contractor to the Naval Regional Medical Center Collection Agent upon receipt of a monthly statement.

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

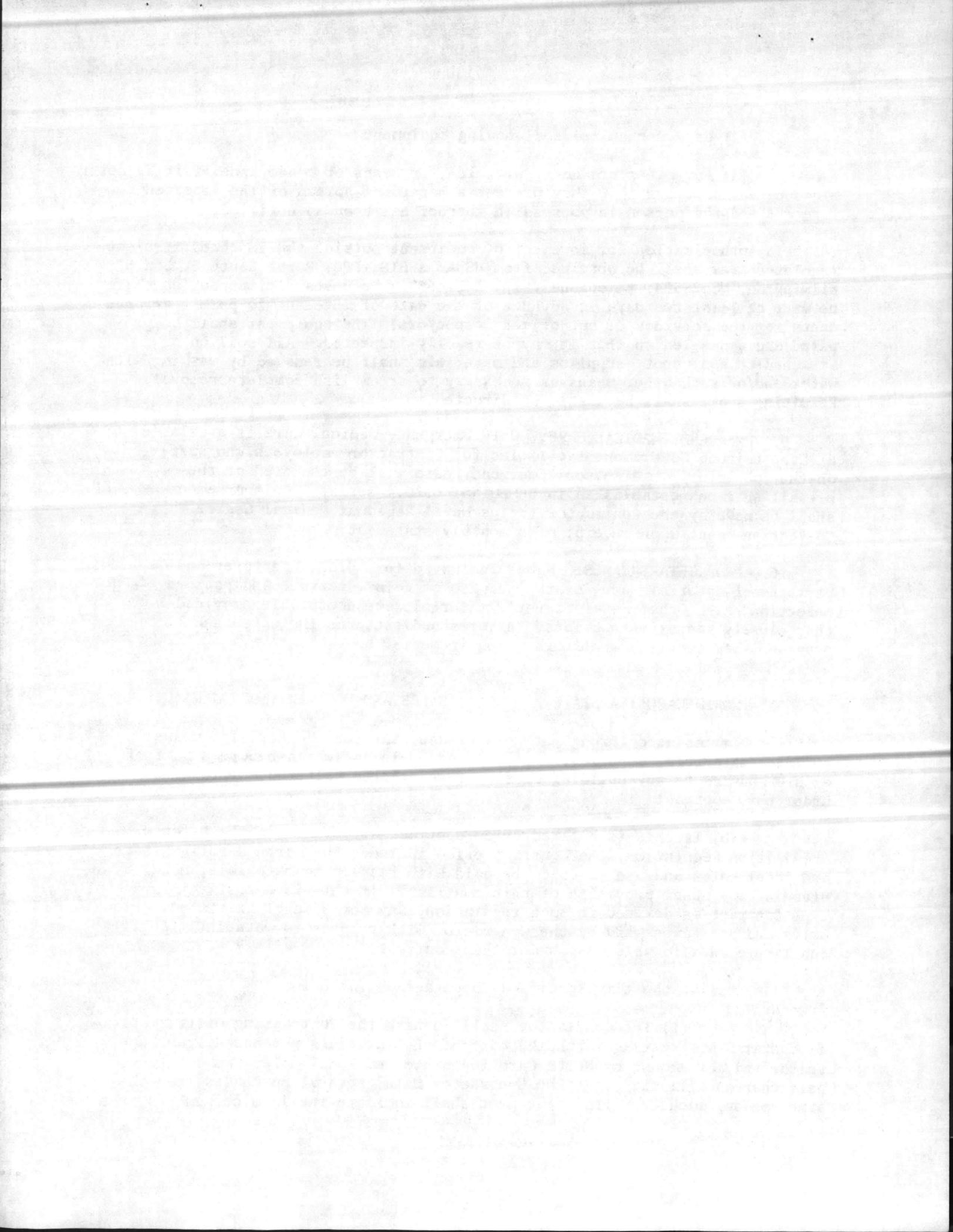
11. NORTH CAROLINA STATE AND LOCAL SALES AND USE TAX (1977 JAN):

(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 contract as defined in the Defense Acquisition Regulation, the contract price includes the 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 use taxes paid thereon by the Contractor. Any local sales or use taxes included in the Contractor's statements must be shown separately from the state sales or use tax. The Contractor shall furnish such 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.

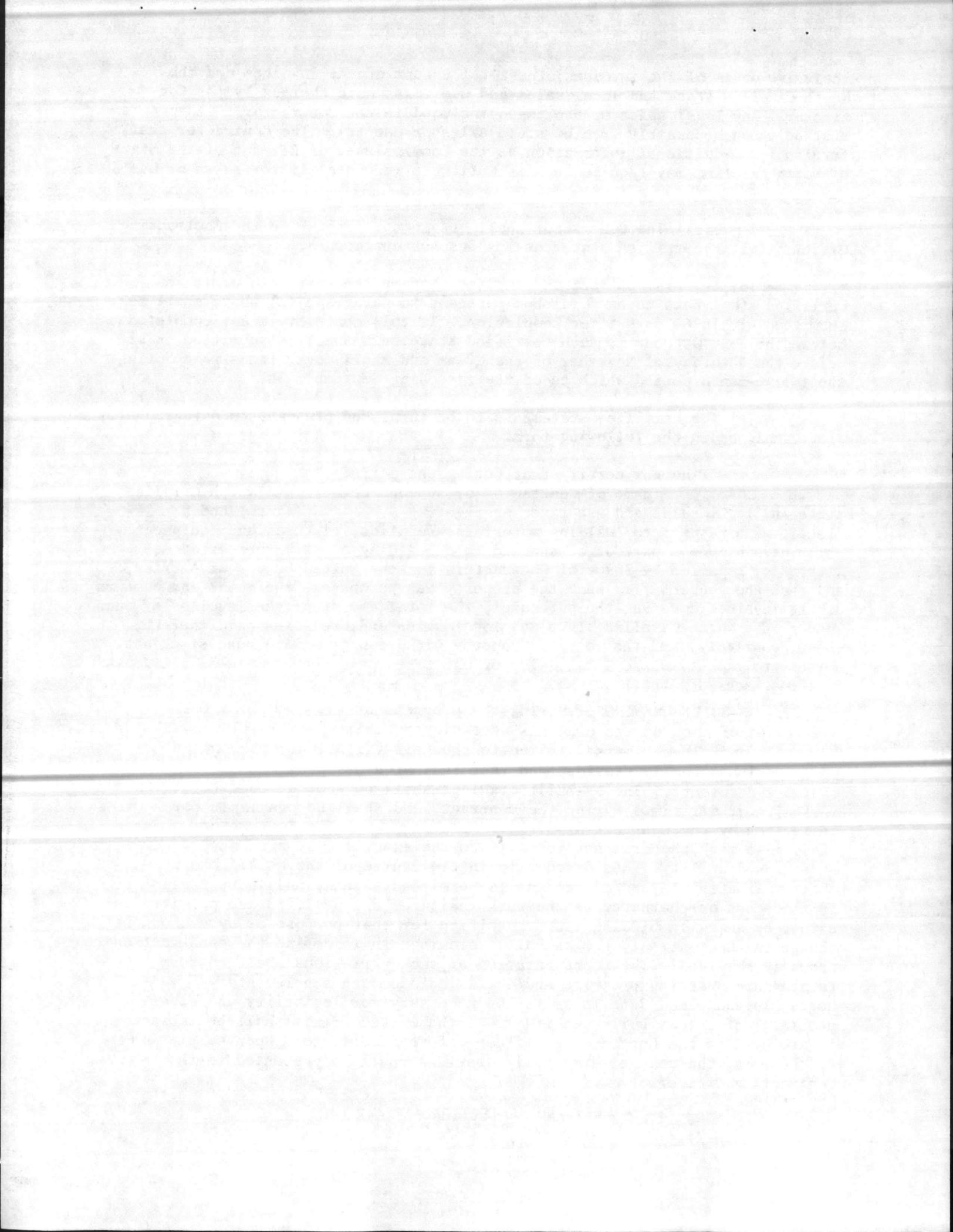
(ii) The Contractor shall obtain and furnish to the Contracting Officer similar certified statements by its subcontractors.

(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 use 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.

12. 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 and/or methods 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.



SECTION 01401. QUALITY CONTROL

1. **APPLICABLE PUBLICATION:** The following publication of the issue listed below, but referred to thereafter by basic designation only, forms a part of this specification to the extent indicated by the references thereto:

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

ASTM E329-77 Standard Recommended Practices for Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction.

2. **QUALITY CONTROL** of this contract will be administered under the General Provisions Clause entitled "Contractor Inspection System".

3. DEFINITIONS:

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.

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

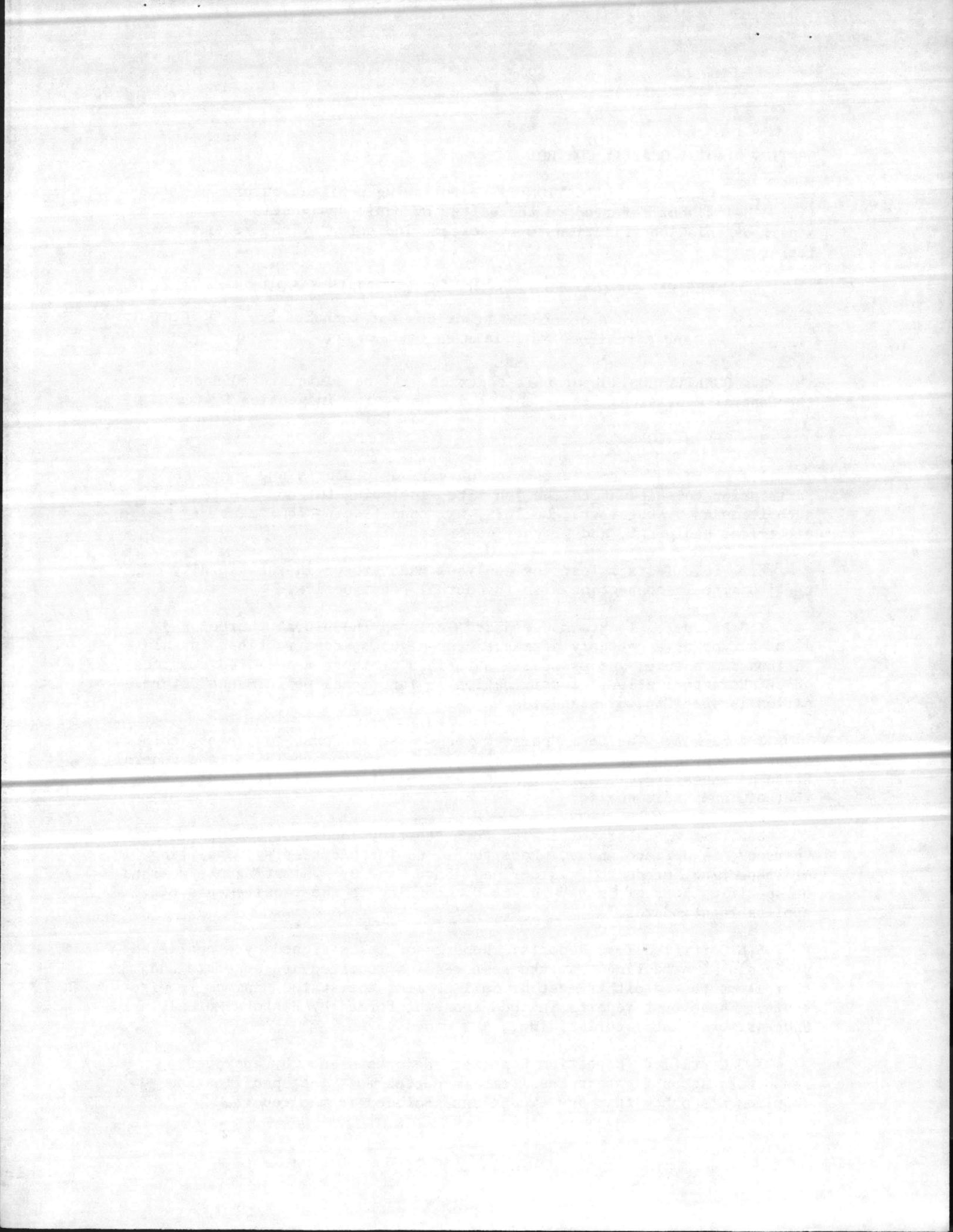
3.3 **Product:** The term "product" includes the plural thereof and means a type or a category of manufactured goods, construction, installations and natural and processed materials or those associated services whose characterization, classification or functional performance determination is specified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

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.

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.

3.6 **Certified Test Reports:** Reports of tests signed by a qualified professional attesting that the test 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.

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



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

4. SUBMITTALS shall be prepared in accordance with this specification and the General Provisions and submitted to the Contracting Officer for approval. Each submittal shall be accompanied with a cover letter signed by the Contractor. Each item proposed to be incorporated into the contract shall be clearly marked and identified in the submittals, and shall be cross-referenced to the contract drawings and specifications so as to identify clearly the use for which it is intended. Each sheet of submittal shall be stamped 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:

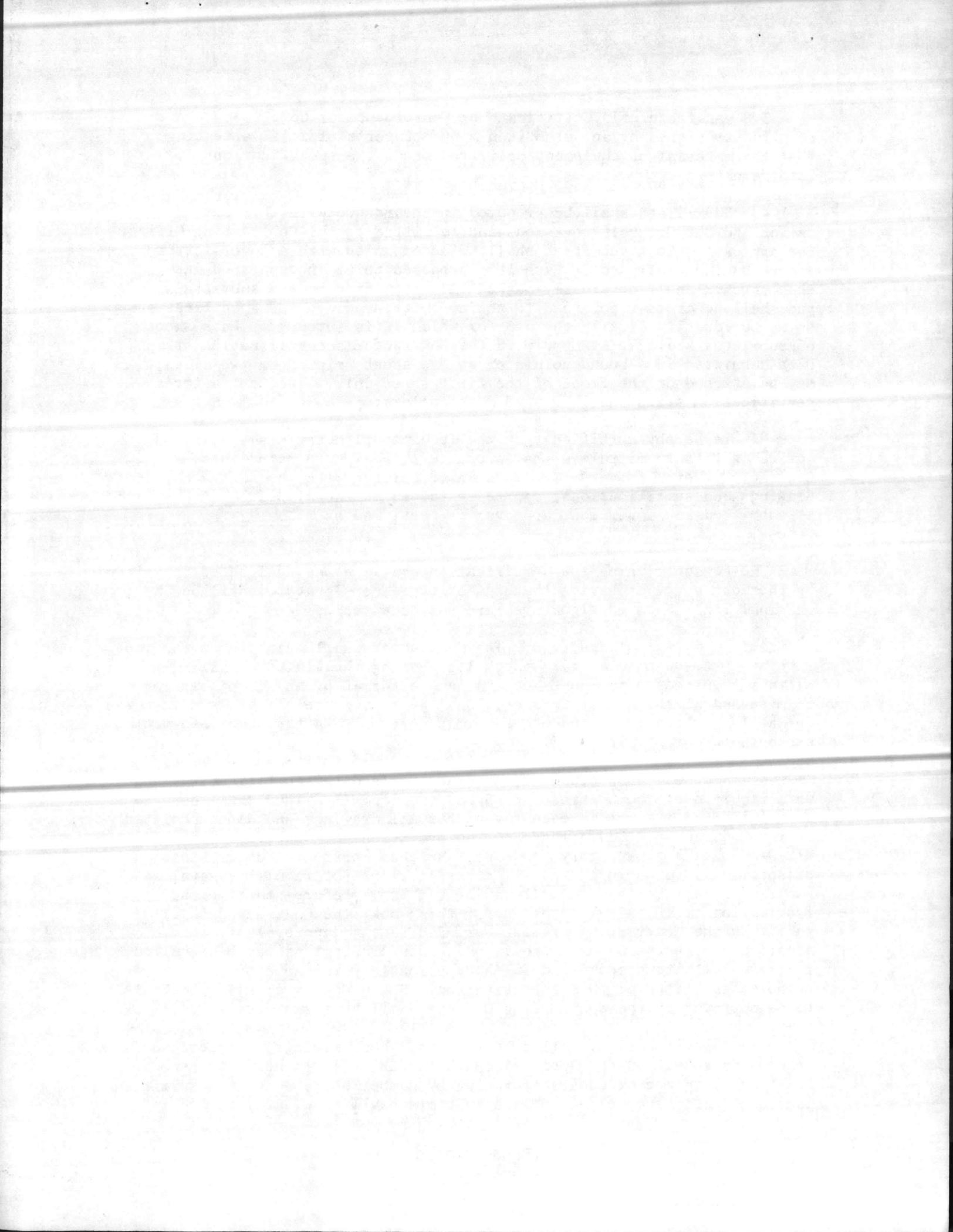
"It is hereby certified that the (equipment)(materials) shown and marked in this submittal is that proposed to be incorporated into Contract Number _____, is in compliance with the contract drawings and specifications, can be installed in the allocated spaces, and is submitted for Government approval.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

4.1 Submittal Status Logs: The Contractor shall maintain at the job site an up-to-date submittal status log showing the status of all submittals required by the contract. 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.

4.2 Samples, shop drawings, manufacturer's data, certifications and data required of the Contractor: Specification MIL-D-1000 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 MIL-D-1000 is not mandatory for maps, sketches, presentation drawings, perspectives, renderings, and all other drawings not requiring Naval Facilities Engineering Command drawing numbers. Before starting the fabrication or installation of any of this work, the Contractor shall submit to the Contracting Officer for, and receive approval of, in accordance with the General Provisions, such drawings as may be required, including all items specified in the applicable paragraphs of the technical sections of this specification. Seven copies of all submittals to be approved by the Contracting Officer shall be forwarded.

4.3 Identification: All catalog cuts, shop drawings, samples and other data submitted for approval shall specifically identify the specification paragraph or contract drawing by number where each item submitted is required to be provided. All submittals shall be clearly marked in



ink to indicate the specific item(s) submitted for approval. Samples shall be clearly labeled with strong tags, firmly affixed, or indelible markings to identify the contract number, contractor, manufacturer, and item name.

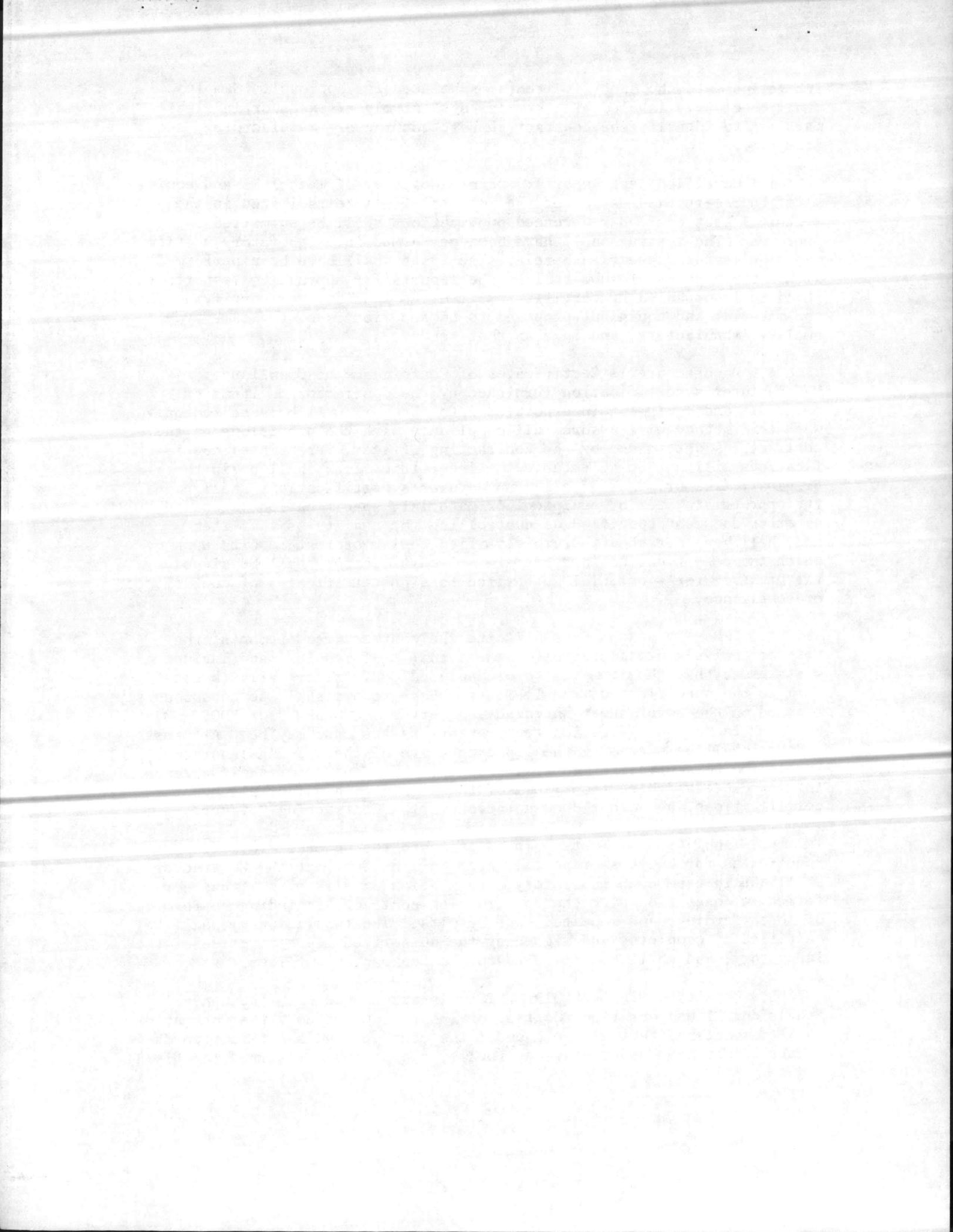
4.4 Certified Test Reports: Before delivery of materials and equipment, four certified copies of the reports of all tests listed in the technical sections and referenced publications shall be submitted and approved. The testing shall have been performed in a laboratory meeting the requirements specified herein. The tests shall have been performed within three years of submittal of the reports for approval. Test reports shall be accompanied by 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.

4.5 Manufacturer's Certificates of Conformance or Compliance: Manufacturer's certification furnished by the Contractor on items of materials and equipment incorporated into the work will be accepted only when this method will assure full compliance with the provisions of the contract, as determined by the Contracting Officer. Preprinted 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 reports upon which the certifications are based. All certificates shall be signed by the manufacturer's official authorized to sign certificates of conformance or compliance.

4.6 Laboratory 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 the 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.

4.7 Tabulation of Tests: In addition to the General Provisions requirements for CQC test reports, 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, including conforming or nonconforming, and repeated test results. 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.

5. 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. 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.

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

5.2 Factory Inspection: Unless otherwise specified, the Contractor will arrange for factory inspection when required under the contract.

5.3 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.

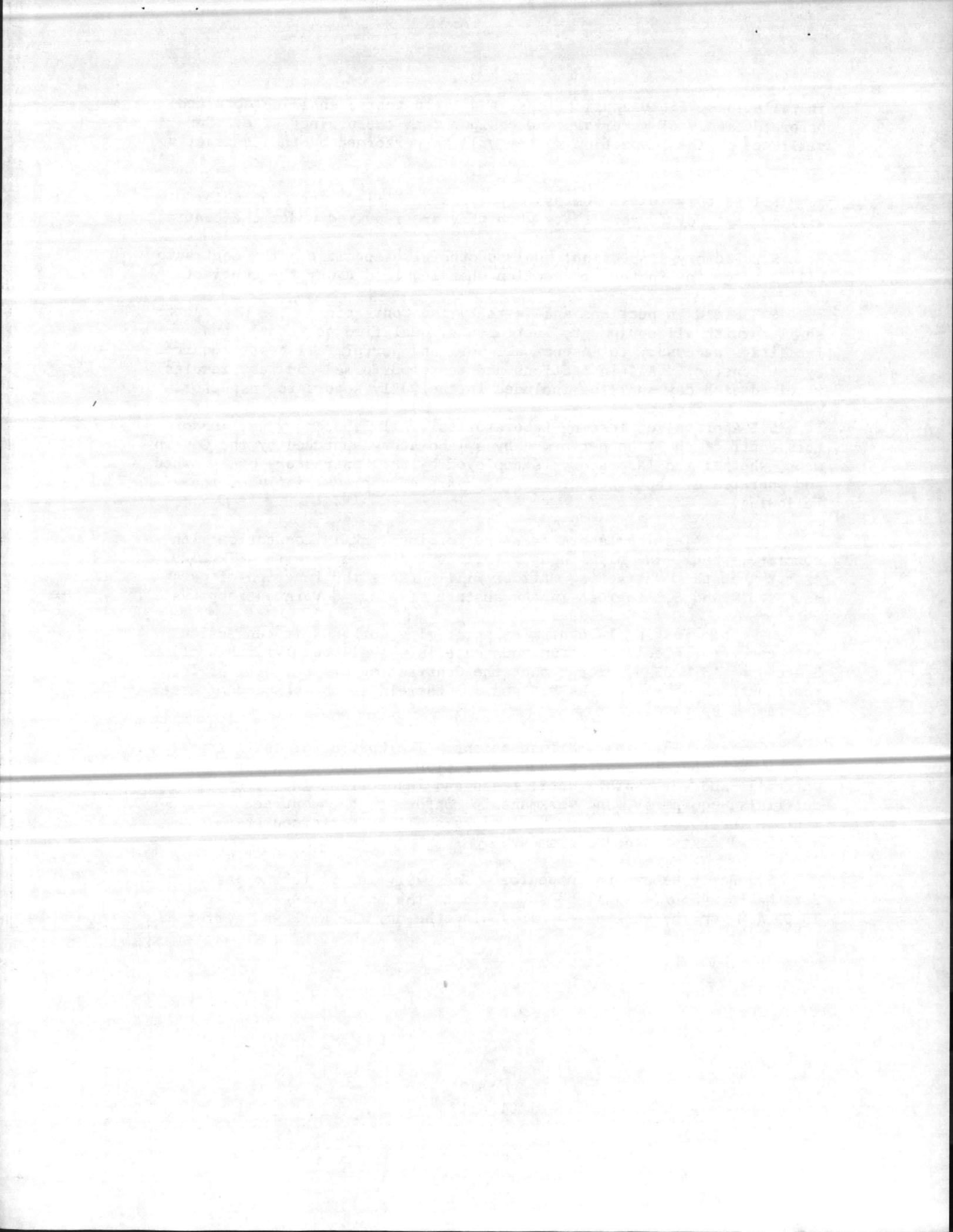
5.5 Approval of Testing Laboratories: All laboratory work under this contract shall be performed by a laboratory approved by the Government, whether the laboratory is employed by the Contractor, or is owned and operated by the Contractor. The basis of approval includes the following:

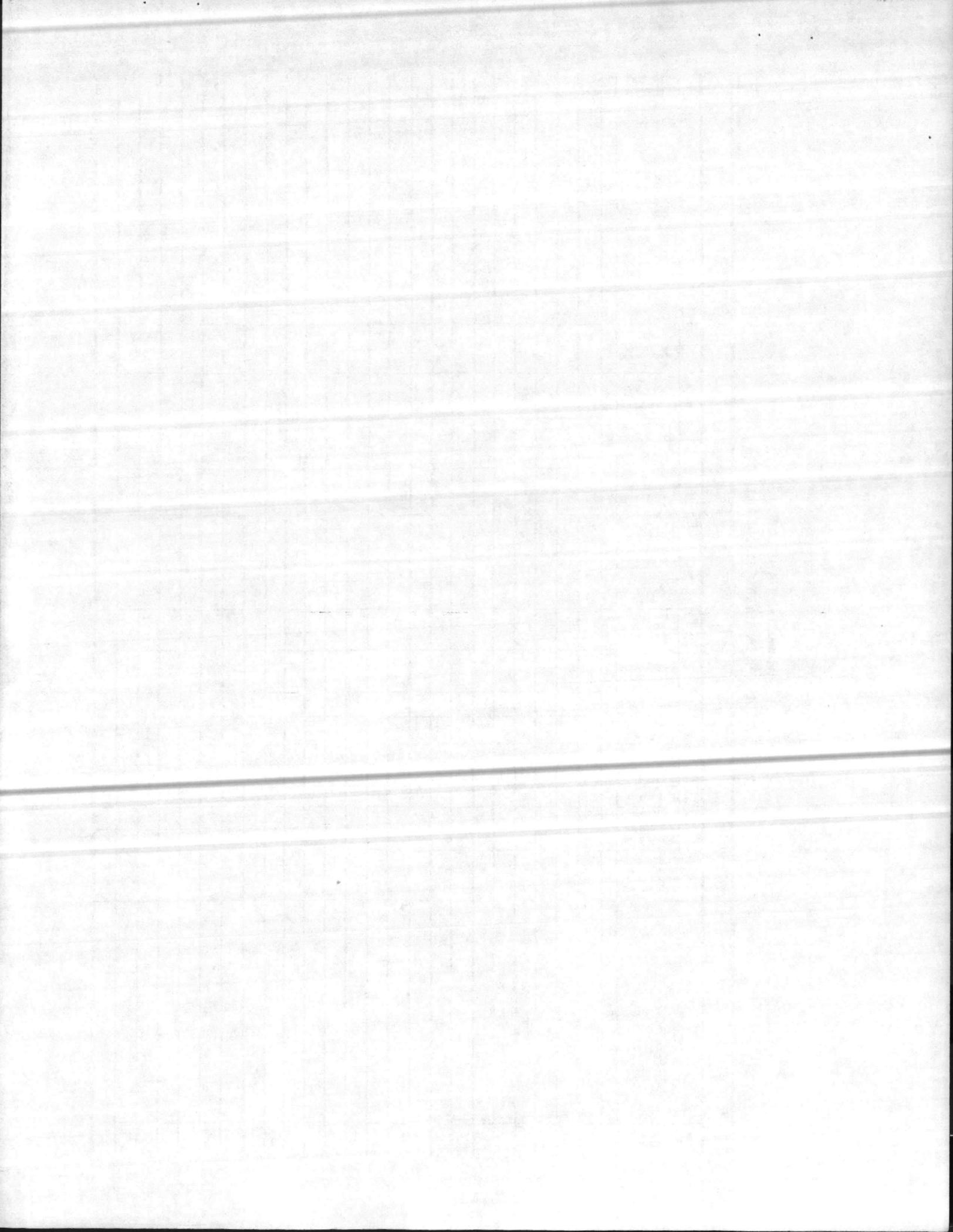
a. Testing laboratories performing work in connection with concrete, steel, and bituminous materials shall comply with ASTM E329, except that the Contracting Officer will perform the function of paragraphs 3.4 and 3.5 therein in the absence of other Government approval.

b. Testing laboratories performing work not in connection with concrete, steel, or bituminous materials shall comply with sections 3 and 4 of ASTM E329, except that the Contracting Officer will perform the functions of paragraphs 3.4 and 3.5 therein in the absence of other Government approval.

5.6 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.

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





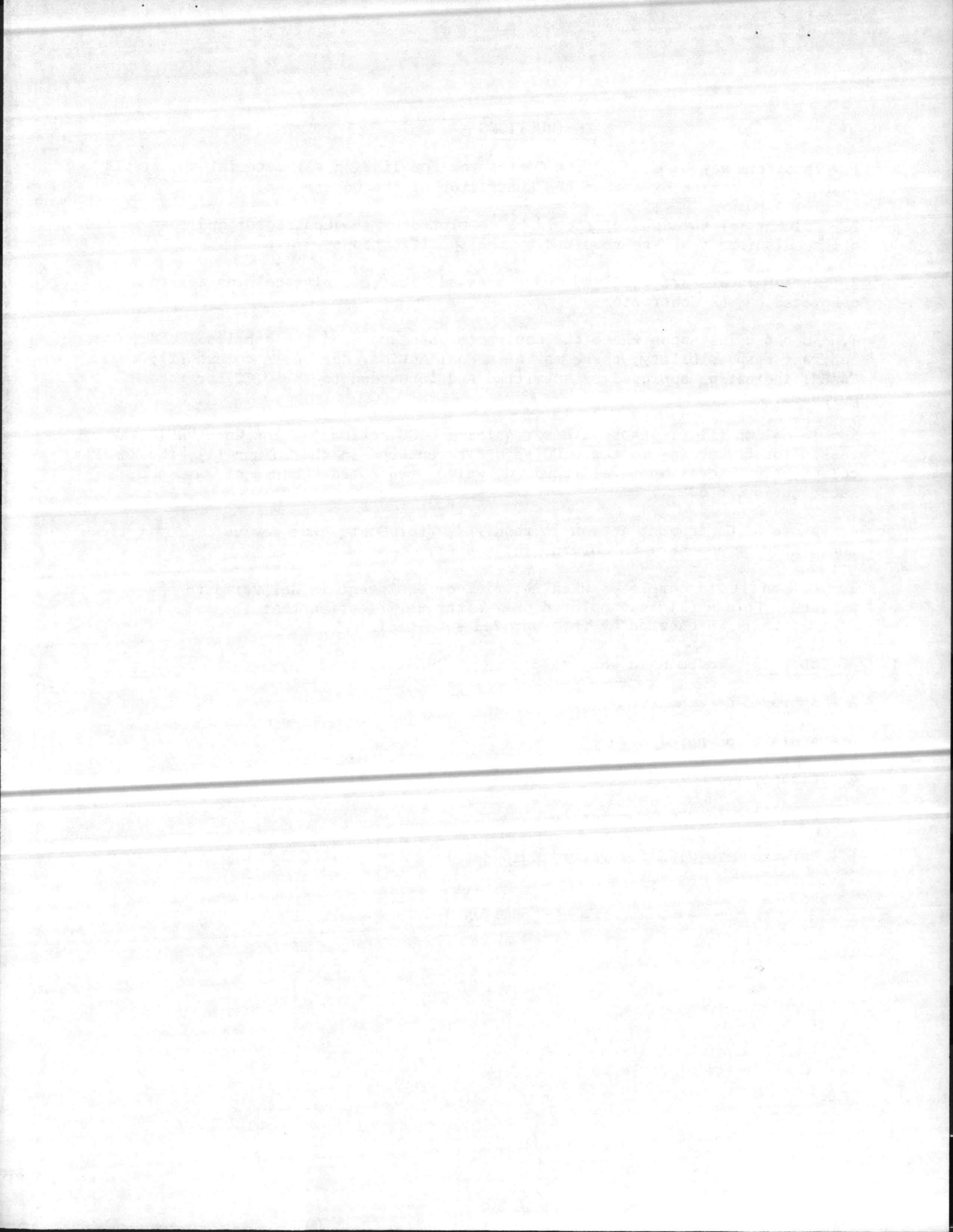
INSTRUCTIONS

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 those instances where the Contractor has approved the submittal under his contract responsibility, there may be a dual Action Code under column (f); e.g., "A/E", indicating approved as submitted and forwarded to the OICC for record purposes.
5. In column (f) for those items requiring OICC action (Action Code "D"), the reason for forwarding to the OICC should be entered in the column (1), the Remarks column; e.g., gov't approval required; waiver requested because of variance, substitution, etc.
6. Where no Government action is required, (for Contractor review/approval items), there need be no entry in columns (h) and (i).
7. 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
- B - Approved as noted
- C - Disapproved
- D - Forwarded to OICC for action
- E - Forwarded to OICC for record purposes

END OF SECTION



SECTION 01560
ENVIRONMENTAL PROTECTION

PART 1. GENERAL

1.1 ENVIRONMENTAL PROTECTION PLAN: The Contractor may be responsible for the preparation and submission of an 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, if so required.

1.2 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.

2. PRODUCTS

2.1 DEFINITIONS OF POLLUTANTS:

2.1.1 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.

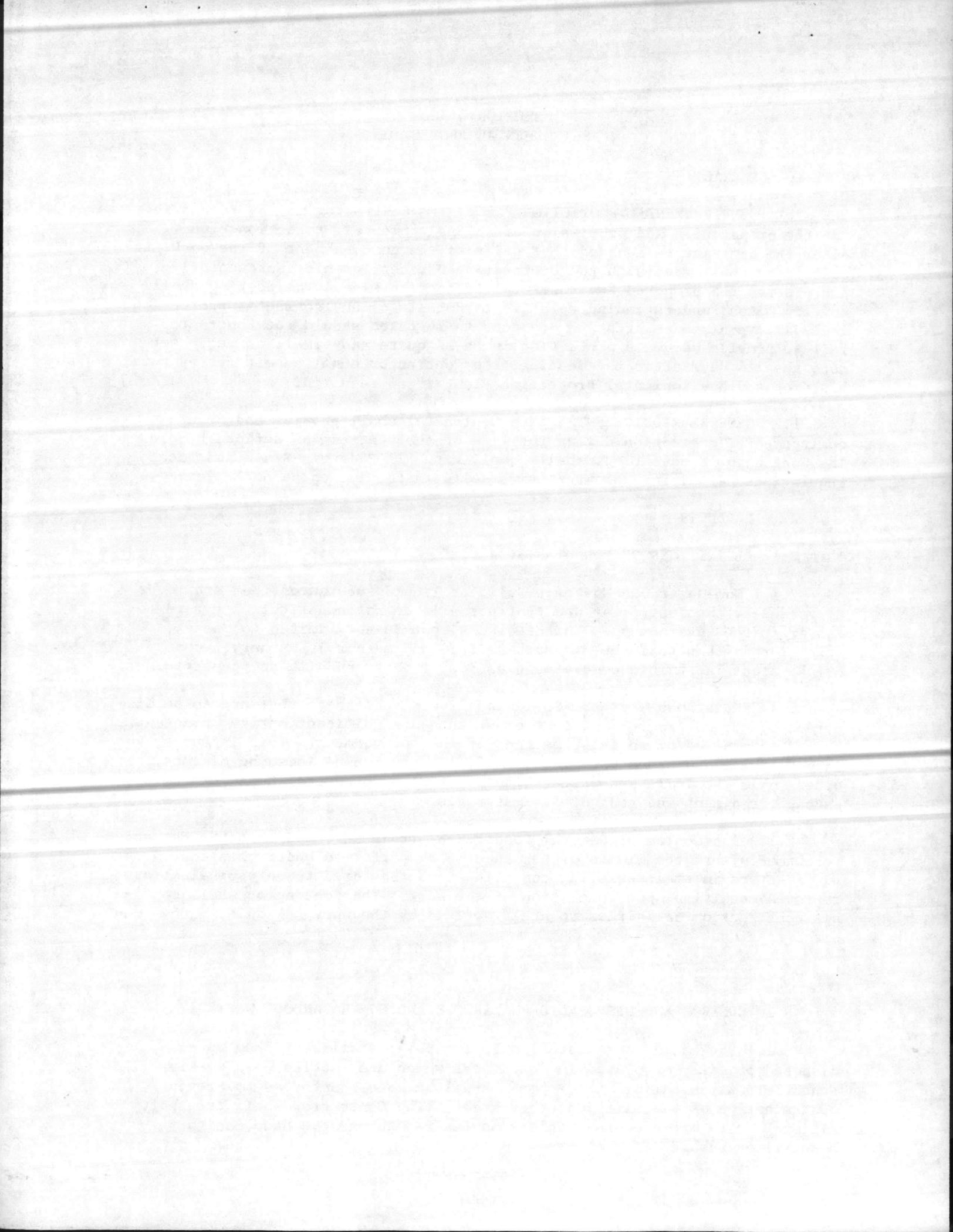
2.1.2 Hazardous Wastes: Solid and liquid substances that are to be discarded by the Contractor and that constitute a significant active or potential hazard to man and/or to the remainder of the environment. This includes, but is not limited to asbestos, glass, lead, mercury, pesticides, herbicides, other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

2.1.3 Protection of Natural Resources: It is intended that the natural resources within the limits of permanent work performed under this contract be preserved in their existing condition or be 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, plans, and specifications.

3. EXECUTION

3.1 CONTROL AND DISPOSAL OF HAZARDOUS AND NON-HAZARDOUS WASTES:

3.1.1 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 and other areas. The Contractor shall transport all such waste off the Base, unless he desires to use the Base Sanitary Landfill or rubble disposal areas.



3.1.2 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.

3.1.3 Rubble such as masonry, stone, concrete without reinforcing steel, and brick may be deposited as directed on the Base. Upon completion, the work and disposal area 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.

3.1.4 Optional use of Base Landfill shall require compliance with Landfill rules. Such rules do not allow accepting recyclable metals nor reusable wood or lumber over six feet in length.

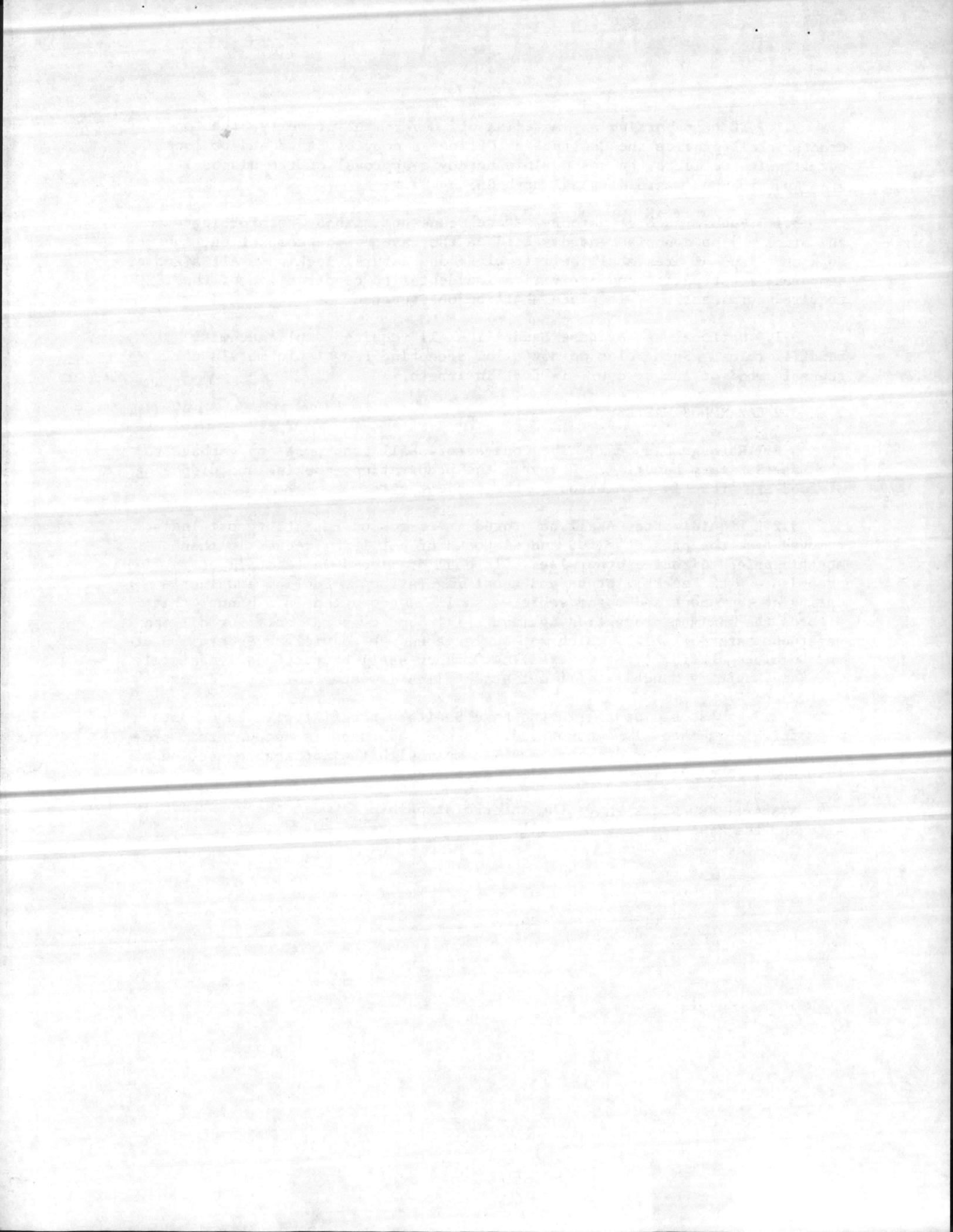
3.2 HAZARDOUS WASTES:

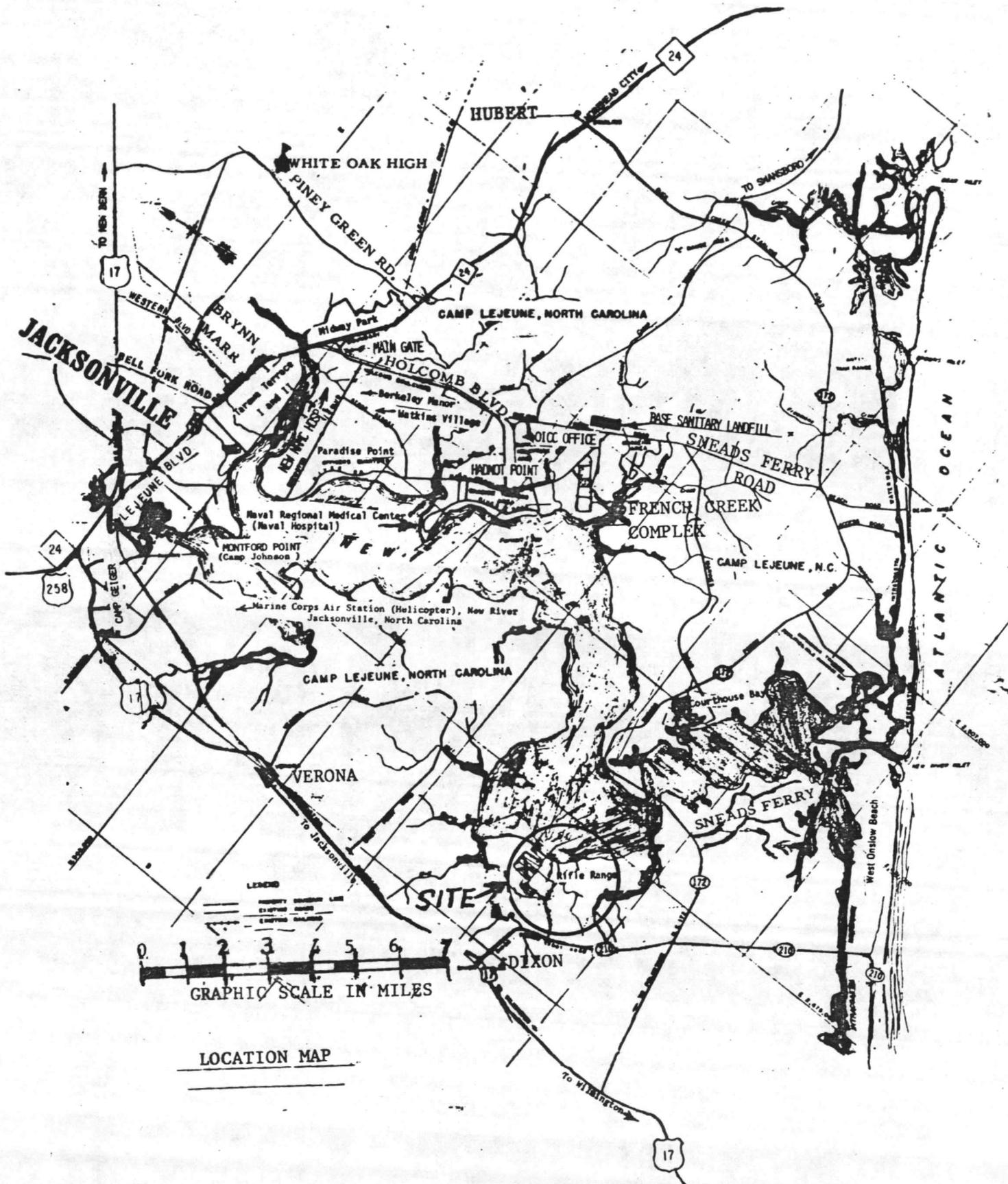
3.2.1 Garbage Disposal: The Contractor shall transport any garbage to the Base Sanitary Landfill. However, the preparation, cooking and disposing of food are strictly prohibited on the project site.

3.2.2 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 regulations. 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. The Base Sanitary Landfill will not accept liquid wastes nor empty drums.

3.2.3 Asbestos disposal in the Base Sanitary Landfill will be mandatory when friable asbestos is encountered. If such asbestos is encountered, provisions for handling or disposal shall comply with the applicable section of this specification; if not specified, such requirements shall be as directed.

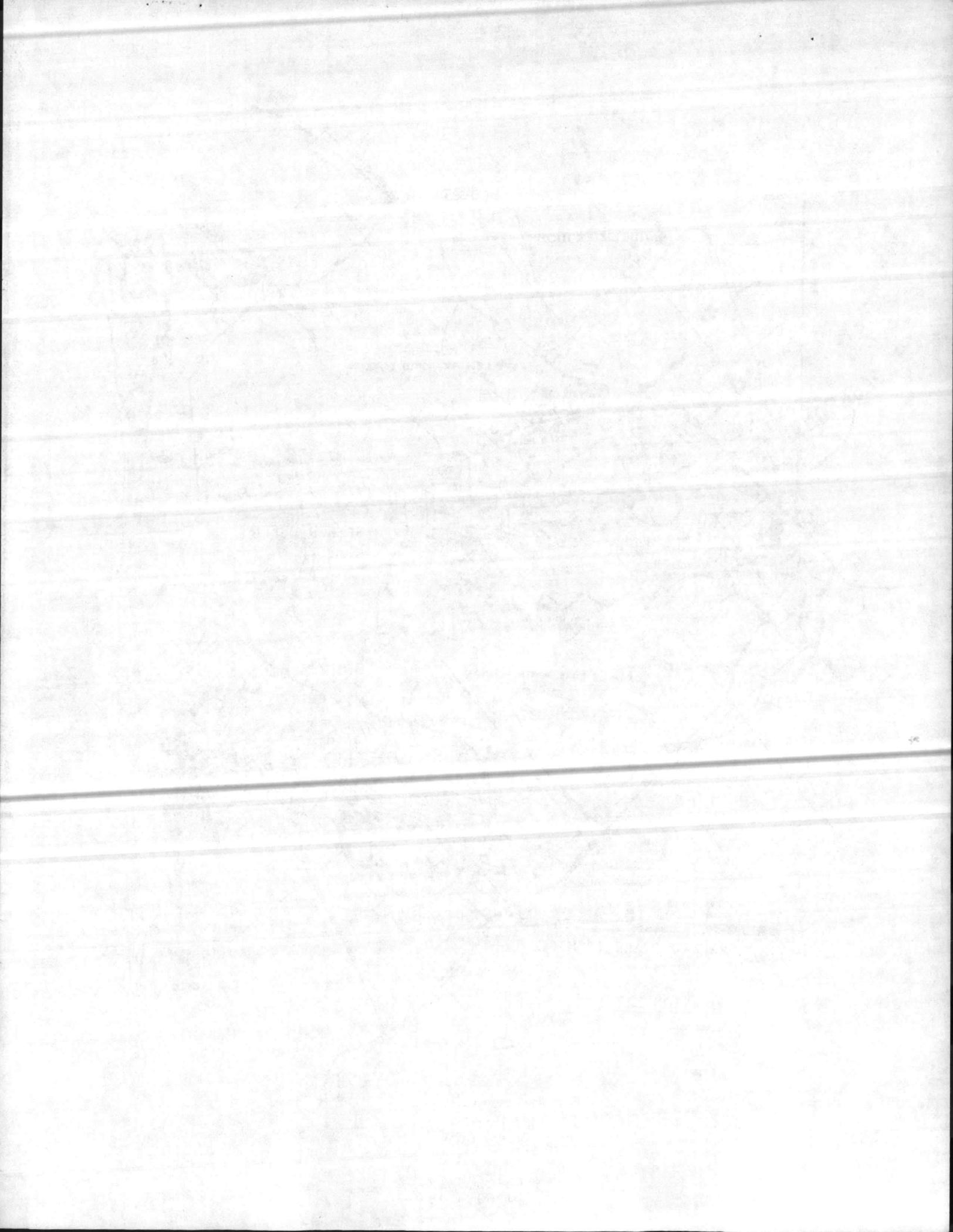
3.3 ATTACHED PLATE shows the interrelationship between the construction site and the Base Sanitary Landfill.





END OF SECTION

05-83-5812
01560 - 3



SECTION 13625
MEASURING AND CONTROL EQUIPMENT

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.

FEDERAL SPECIFICATION:

WW-V-1967 Valve, Butterfly (threaded ends), Brass or Bronze

MILITARY SPECIFICATION:

MIL-P-2441 Paint, Epoxy-Polyamide
& Am 3

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):

B16.1-1975 Cast Iron Pipe Flanges and Flanged Fittings 23, 125, 250, and
800 pounds

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

A126-73 Gray Iron Castings for Valves, Flanges, and Pipe Fittings
B61-80 Steam or Valve Bronze Castings

AMERICAN WATER WORKS ASSOCIATION (AWWA):

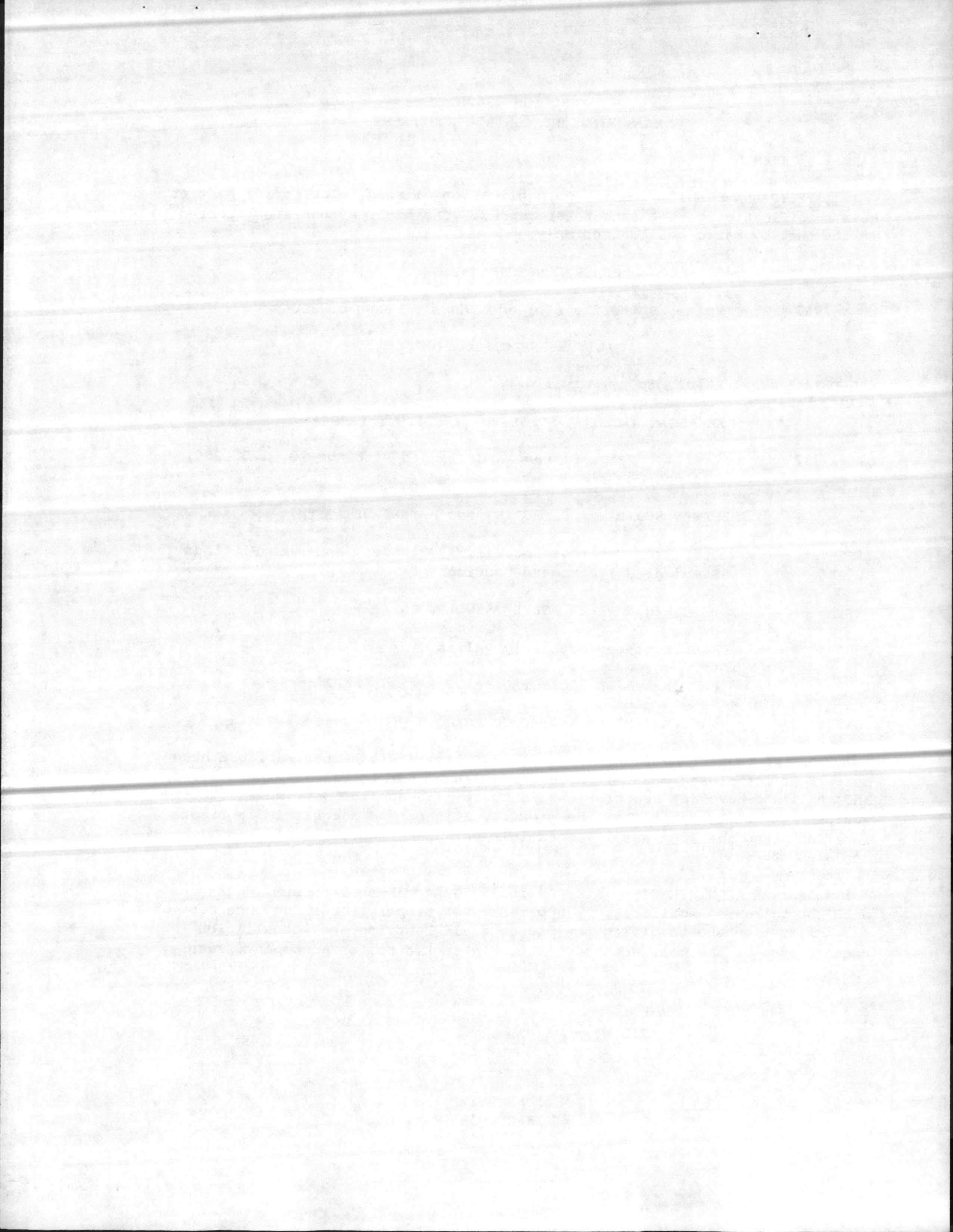
C504-80 Rubber-seated butterfly valves

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):

70-1981 National Electrical Code (NEC)

1.2 DESCRIPTION: The flow measuring equipment shall be the variable head meter type for closed channel. The design shall permit ease of installation and shall not have any features hazardous to personnel or detrimental to the equipment. Moving parts shall be properly aligned and adequately lubricated. Interior parts shall be easily accessible for adjustment, repair, and replacement.

1.3 GENERAL REQUIREMENTS: SECTION 15011, General Requirements, Mechanical, with the following modification, applies: For proper protection, one copy of all instruction sheets giving the proper field handling and installation requirements of the manufacturer shall be attached to, or accompany, each device.



PART 2 - PRODUCTS

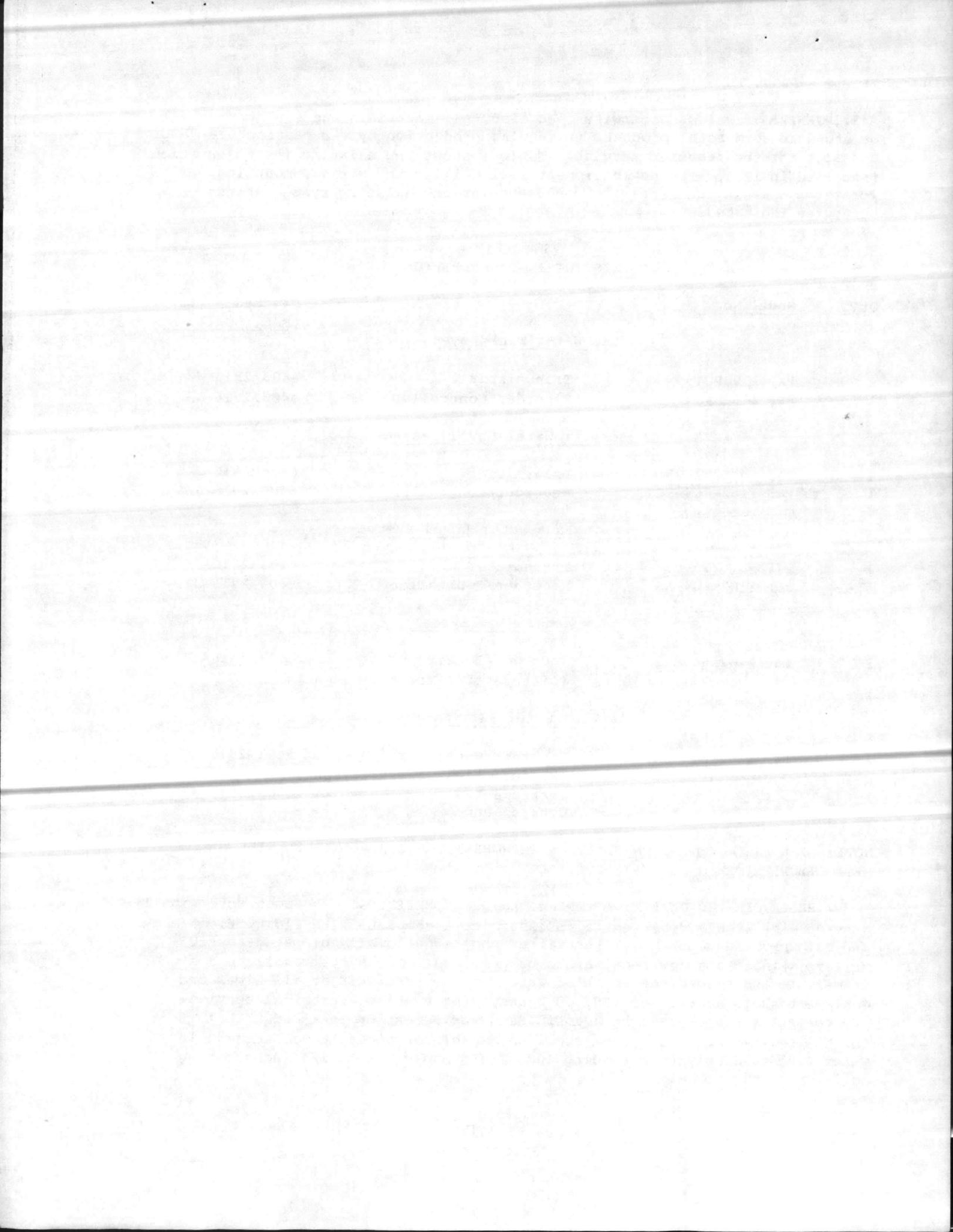
2.1 GENERAL: Unless otherwise specified, all materials and equipment shall be standard commercial products in regular production by the manufacturer and suitable for the required service. Table I shows the existing instrumentation installed in 1964. The new equipment will utilize the wiring, mounting locations, panels and remaining components of the existing system unless otherwise indicated.

TABLE I
EXISTING INSTRUMENTATION

<u>Qty.</u>	<u>Model No.</u>		<u>Fischel & Porter (F&P) Serial No.</u>
<u>Elevated Water Tank Level System</u>			
1	F&P 1103PS49	Transmitter	6403A2916-J2
1	F&P 1102MF04-NS	Recorder/Controller	6403A2916-J3
<u>Reservoir Water Level System</u>			
1	BIF No. 231-03	Transmitter	6403A2916-J4
1	F&P 1102MF04-NC	Recorder/Controller	6403A2916-J5
<u>Detention Tank Water Level System</u>			
1	BIF No. 231-03	Transmitter	6403A2916-J6
1	F&P 1102MF04-NS	Recorder/Controller	6403A2916-J7
<u>Raw Water Flow System</u>			
1	F&P 1102RB49MF20-NS	Recorder/Totalizer (Differential Pressure Input)	6403A2916-J8
<u>Service Water Flow System</u>			
1	F&P 1102RB49MF20-NS	Recorder/Totalizer (Differential Pressure Input)	6403A2916-J9
1		Instrument & Control Panel	6403A2916-J1

NOTE: ALL INSTRUMENTATION AND THE INSTRUMENT AND CONTROL PANEL WILL BE REPLACED WITH NEW UNDER THIS CONTRACT

2.2 RESERVOIR AND DETENTION TANK WATER DEPTH METERING: The Contractor shall provide each with a differential pressure cell complete with float, float cage and all appurtenances. The transmitter shall continually dispatch a 4-20 millamp signal to a new receiver to be provided. The system shall be designed to measure and record the depth of water in the reservoir at all times and the equipment shall operate on 120, 60 hertz, single phase electrical service. The operating range shall be 0 to 10 feet for detention tank and 0 to 15 feet for the reservoir. The system shall be capable of accurate measurement in water with conductivity exceeding 1000 micro mho/cm. with 1/4 inch coating build-up on the probe.



2.2.1 Transmitter: The transmitter shall be a depth differential pressure cell providing a 4-20 milliamp signal. The unit shall be provided with a direct reading, uniformly graduated, concentric scale approximately 12 inches in diameter and indicating depth in feet. The transmitter shall provide a signal to indicate the depth at all times. The equipment shall be housed in a dust tight, moisture-proof case and all working parts shall be corrosion resistant.

2.2.2 Receiver shall be an indicating and recording meter register with 24 hour chart housed in a dust tight, moisture-proof case and designed for mounting on a panelboard. All working parts shall be corrosion resistant. The instrument shall indicate the instantaneous depth at all times on a uniformly graduated direct reading scale having a diameter of approximately 12 inches and depicting depth in feet. The depth shall be recorded on a 12-inch diameter evenly spaced circular and concentrically graduated chart designed for daily removal. The recorder and chart elements shall be actuated by electric clock drives. There shall be included with the receiver a year's supply of charts, pens, ink, usual tools and accessories, together with a setting device for checking the accuracy of the meter at any time.

2.2.2.1 Detention Tank Level Switches shall be adjustable.

2.3 ELEVATED TANK WATER DEPTH METERING: The Contractor shall provide an elevated tank water depth metering system consisting of a level transmitter, telemetry system, and receiver. The system shall be designed to measure and record the depth of the water in the elevated tank within an accuracy of 3 inches at all times. The equipment shall operate on 120 volts, 60 hertz, single phase.

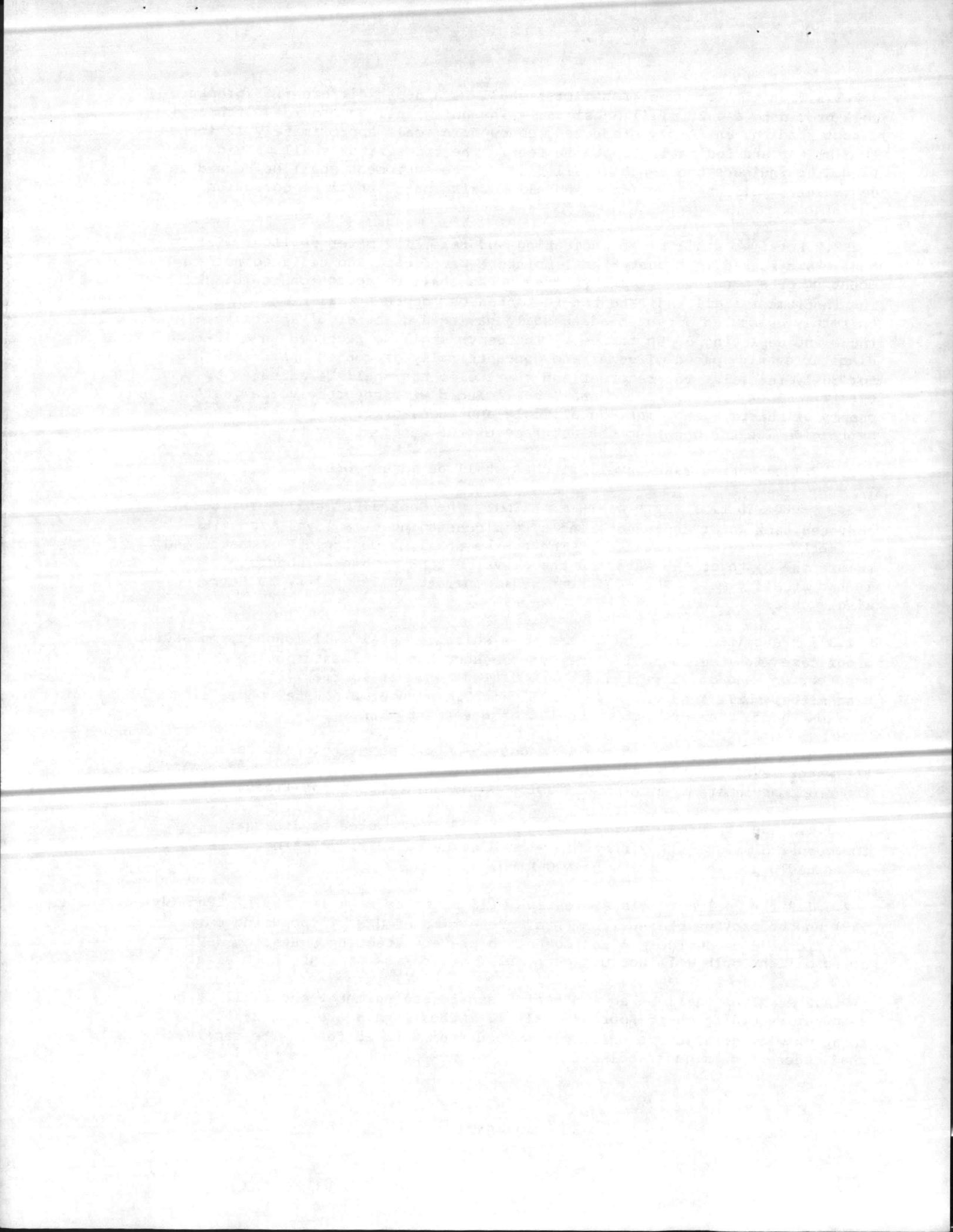
2.3.1 Transmitter shall be housed in a suitable metal wall mounted, moisture proof case with thermostatic controlled heater and shall incorporate a suppression head of 98 feet and an operating range of 25 feet. The transmitter shall send out a 4-20 milliamp signal over a new telephone line provided under the contract to the water treatment plant.

2.3.1.1 Telemetry system shall be designed to transmit signals relating to the water level in the elevated tank to the receiver in a manner that will not interrupt or interfere with transmission on adjacent telephone lines.

2.3.1.2 The topworks cover and base will be constructed of die-cast low-copper aluminum alloy finished with blue textured vinyl paint. The cover is threaded and seats on a Buna-N O-Ring.

2.3.1.3 The enclosure classification will meet the requirements of 1P65 (IEC 529) and to provide the environmental protection of NEMA 4 including an electric heating device and thermostat to prevent freezing. Heating devices using a light bulb will not be acceptable, regardless of light bulb size.

2.3.2 Receiver shall be an indicating and recording meter and shall have a circular recording chart approximately 12 inches in diameter for 24 hour rotation with graduations uniformly spaced from 0 to 25 feet. The receiver shall operate on signals telemetered on the new telephone line provided under



this contract converting them to levels for use by the recorder and indicating meter. The receiver shall have three auxiliary switches suitable for the control of three pumps and to indicate a high water level alarm and any telemetry reception outage. The receiver shall be housed in a panelboard mounted metal case and shall have doors providing easy access to all parts with glass in front of the recording chart, and in front of the indicator. The recorder and chart elements shall be actuated by electric clock drives. There shall be included with the receiver, a year's supply of charts, pens, ink, usual tools and accessories, together with a setting device for checking the accuracy of the meter at any time.

2.3.4 Telephone line work from the tank to the water treatment plant is specified in Section 16000, "Electrical Work".

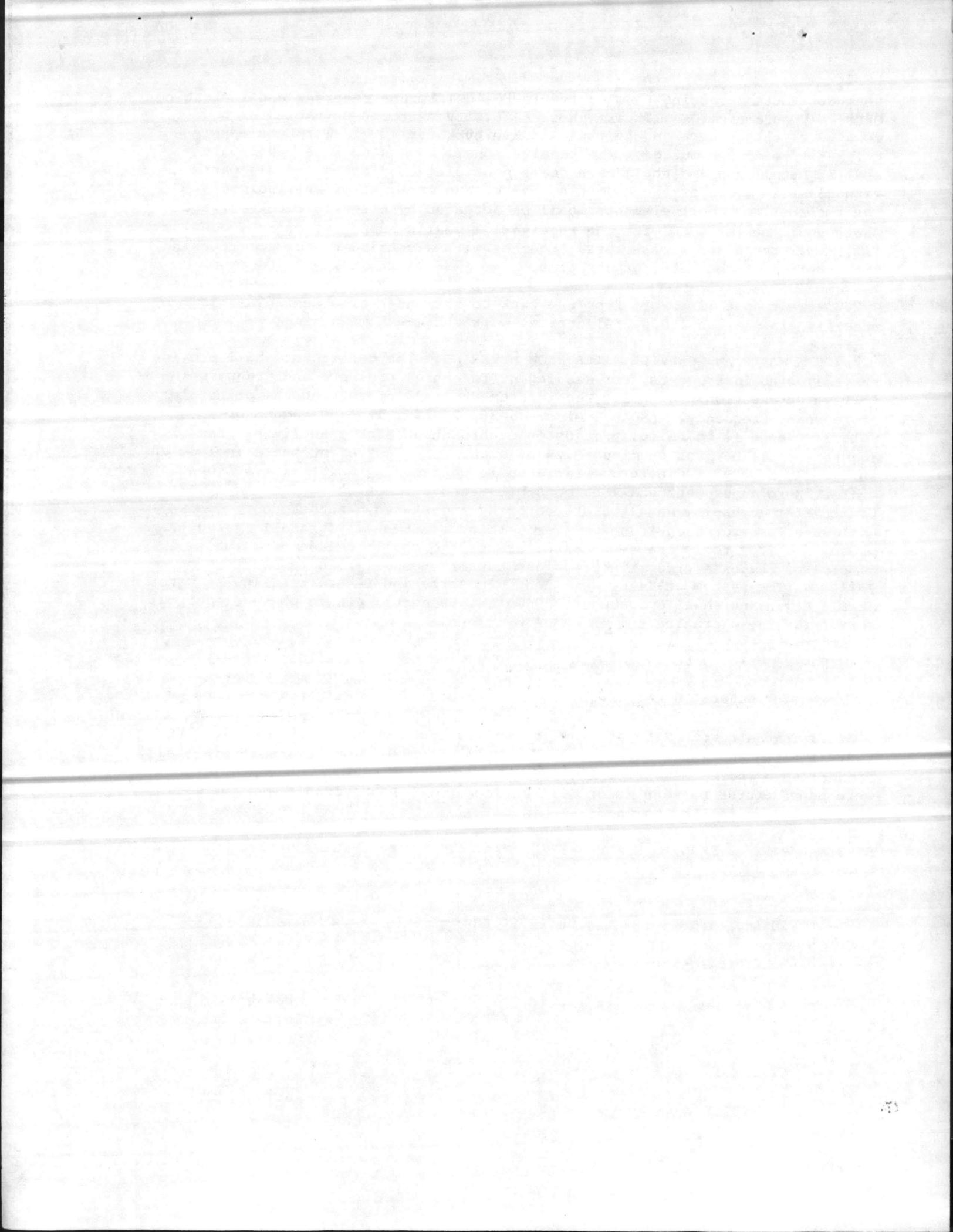
2.4 RAW WATER AND SERVICE WATER FLOW METERING: The Contractor shall provide the following instruments, for sensing differential pressure and transmitting 4-20 ma dc electronic signal. The instrument shall operate on the principle of resonant frequency. (Span Limits: 5-30, 25-150, 125-750 inches of water). Range is to be fully adjustable throughout each span limit. The accuracy shall be plus or minus 0.2% of span. The instrument shall include an integrally mounted indicator, calibrated in engineering units with a linear scale. Zero adjustment shall be possible without removing the covers. The transmitter mechanism shall be protected by a gasketed, weatherproof enclosure, providing environmental protection of NEMA 4. It shall include protection from radio frequency interference and shall include adjustable damping of response time. The recorder totalizer shall read in hundreds of gallons. The system shall be designed to measure and record the flow of water at all times and shall operate on 120 volts, 60 hertz, single phase electrical services. The operating ranges shall be:

Raw Water: 0 to 600 gpm in hundred gallon per minute increments.

Service Water: 0 to 1500 gpm in hundred gallon per minute increments

2.4.1 Transmitter: Rate of flow transmitters shall be compatible with the Venturi tubes and shall be suitable for wall mounting. The transmitters shall connect to existing measuring lines from the Venturi tube. The Venturi tube were manufactured by Penn Motor Co., Philadelphia, Pennsylvania and the following data applies to them:

<u>SYSTEM</u>	<u>PIPE</u>	<u>THROAT</u>	<u>DIFFERENTIAL</u>	<u>MAX. CAPACITY</u>	<u>STYLE</u>	<u>SERIAL NO.</u>
Raw Water						
	10 in.	4.58 in.	24.98 in.	600 gpm	PVS	AZ9593-1
Treated (Delivered) Water						
	12 in.	5.30 in.	87.62 in.	1500 gpm	PVS	B29593-1



The transmitter shall convert these hydraulic to electrical signals and transmit them to the receiver. The transmitter shall be designed for a maximum working pressure of 3000 psi and a maximum ambient temperature of 180 degrees Fahrenheit. An individual 3-valve bypass manifold shall be provided with each transmitter.

2.4.2 Receiver: The receiver shall be the indicating, totalizing and recording type and shall have circular recording charts approximately 12 inches in diameter for 24 hour rotation with graduations uniformly spaced. The signal shall operate on electrical signals from the rate of flow transmitters. The receiver shall be housed in a panelboard mounted metal case and shall have doors providing easy access to all components with glass in front of the recording chart, indicator and totalizer. The recorder and chart elements shall be actuated by electric clock drives. There shall be included with the receiver a year's supply of charts, pens, ink, usual tools and accessories, together with a setting device for checking the accuracy of the meter at any time.

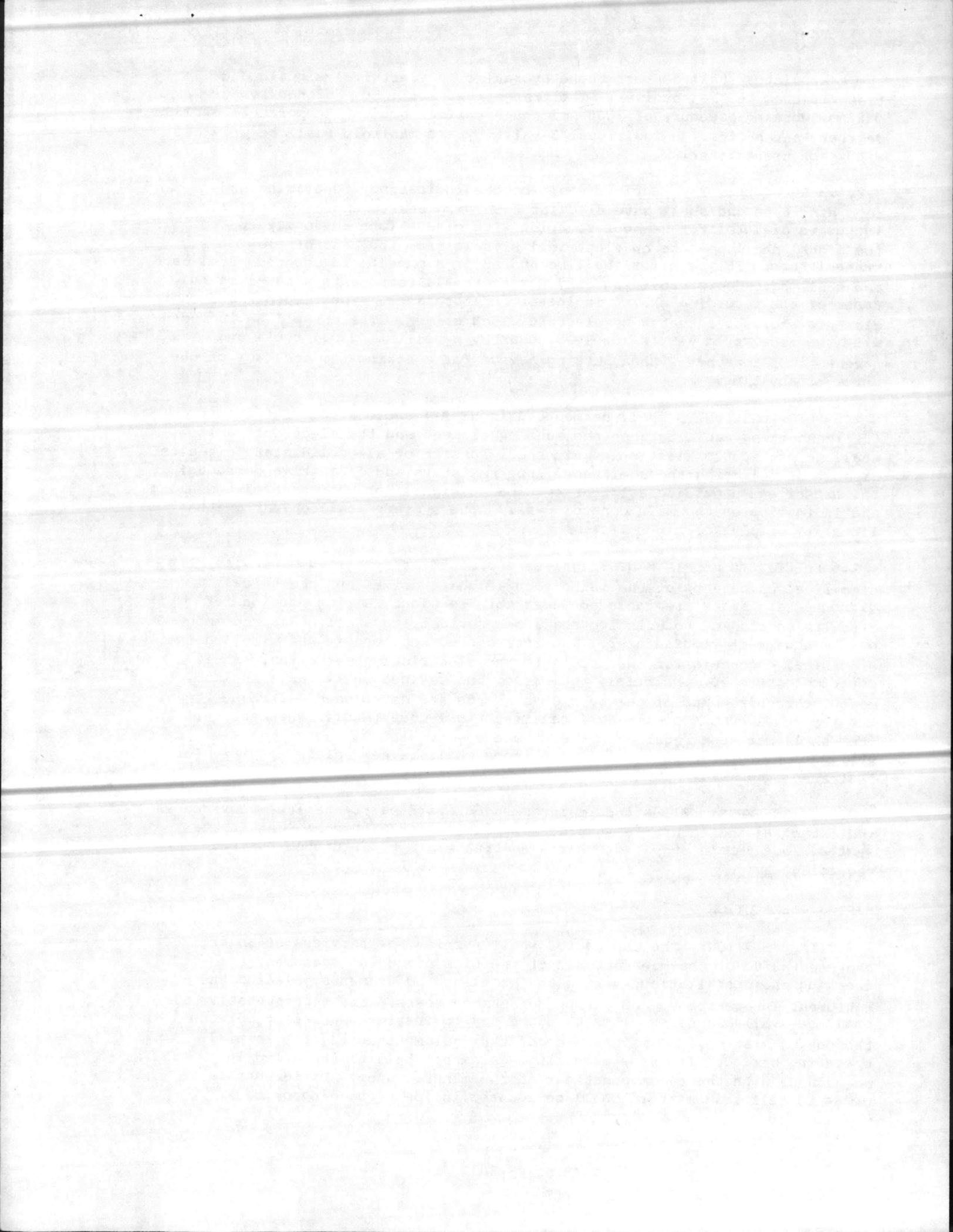
2.5 ELECTRONIC UNITS shall be mounted in NEMA-4 enclosures. Sufficient interconnecting cable between the sensing element and the electronic unit shall be provided. Electronic unit shall consist of all solid state circuits capable of measuring the admittance (the resistive and capacitive currents) of the sensor and providing a linear 4-20 ma dc signal for pump control and alarm and indication on the main control panel. The systems shall operate with a linearity of plus or minus 1/2%.

2.6 ELECTRICAL REQUIREMENTS: Unless indicated or specified otherwise, the electrical components of the meters such as chart drives and electrical disconnecting means are included under this section. Wiring portions of circuits to connect to existing shall be provided and shall be as recommended by the equipment manufacturer. The interconnecting conduit and wire and the electrical connection of the meters to the electrical power circuit shall conform to NFPA 70. Material, equipment, and devices shall, as a minimum, meet the requirements of UL where UL standards are established for those items, and the requirements of the National Electrical Code (NEC). Further, each item shall meet the requirements of these specifications and of the publications referenced herein. All items shall be new unless specified or indicated otherwise.

2.7 SPARE PARTS: All standard recommended spare parts shall be provided as indicated in manufacturer's instruction manuals for each component in the system. One year's supply of charts and ink shall be furnished for each recording device.

PART 3 - EXECUTION

3.1 INSTALLATION: The Contractor shall furnish the services of an engineer representative of the manufacturer of the flow measuring equipment for checking the installation, making the necessary adjustments, placing the equipment in operation, and during acceptance tests. The representative also shall be available for no less than one day to instruct operating personnel in the use, operation, and maintenance of the equipment during the initial operating period. All flow measuring equipment shall be installed in accordance with the recommendations of the manufacturer. Differential pressure cell transmitters shall be mounted inside a building or tank.

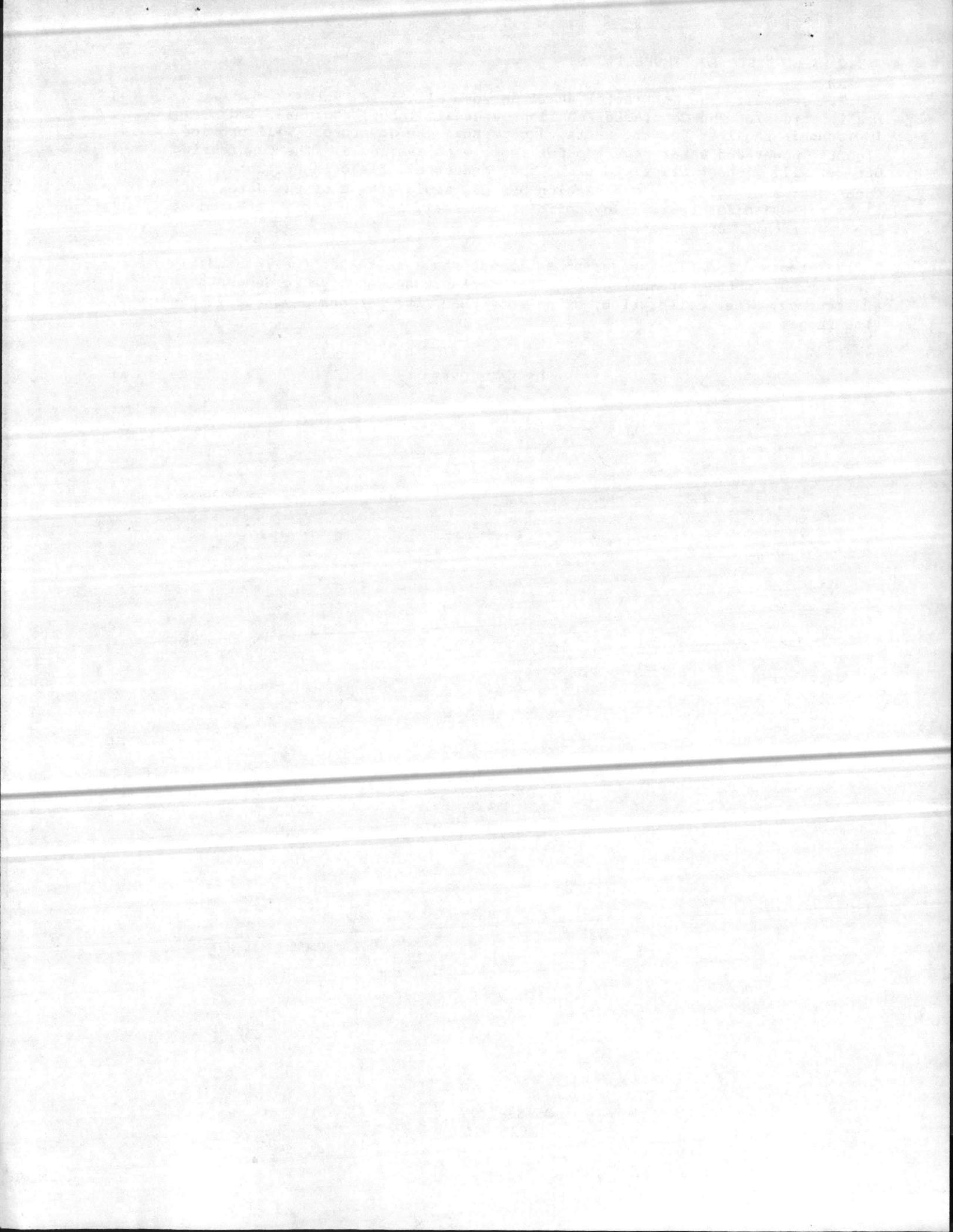


3.2 FIELD TESTS AND INSPECTIONS:

3.2.1 General: The Contractor shall perform all field tests (calibrations). The Contractor shall provide all labor, equipment and incidentals required for the tests, except that the Government will provide electric power and water required for tests when available. The Contracting Officer will witness all field tests and conduct all field inspections. The Contractor shall give the Contracting Officer ample notice of the dates and times scheduled for tests. Any deficiencies shall be completely retested at the Contractor's expense.

3.2.2 Tests: The flow measuring equipment shall be tested (calibrated) in place by the Contractor and the manufacturer's representative to demonstrate an accuracy, after calibration, of no more than five percent anywhere in the flow range.

END OF SECTION



SECTION 15011
MECHANICAL GENERAL REQUIREMENTS

PART 1 - GENERAL

1.1 APPLICATION: This section applies to Section 13625, except as specified otherwise.

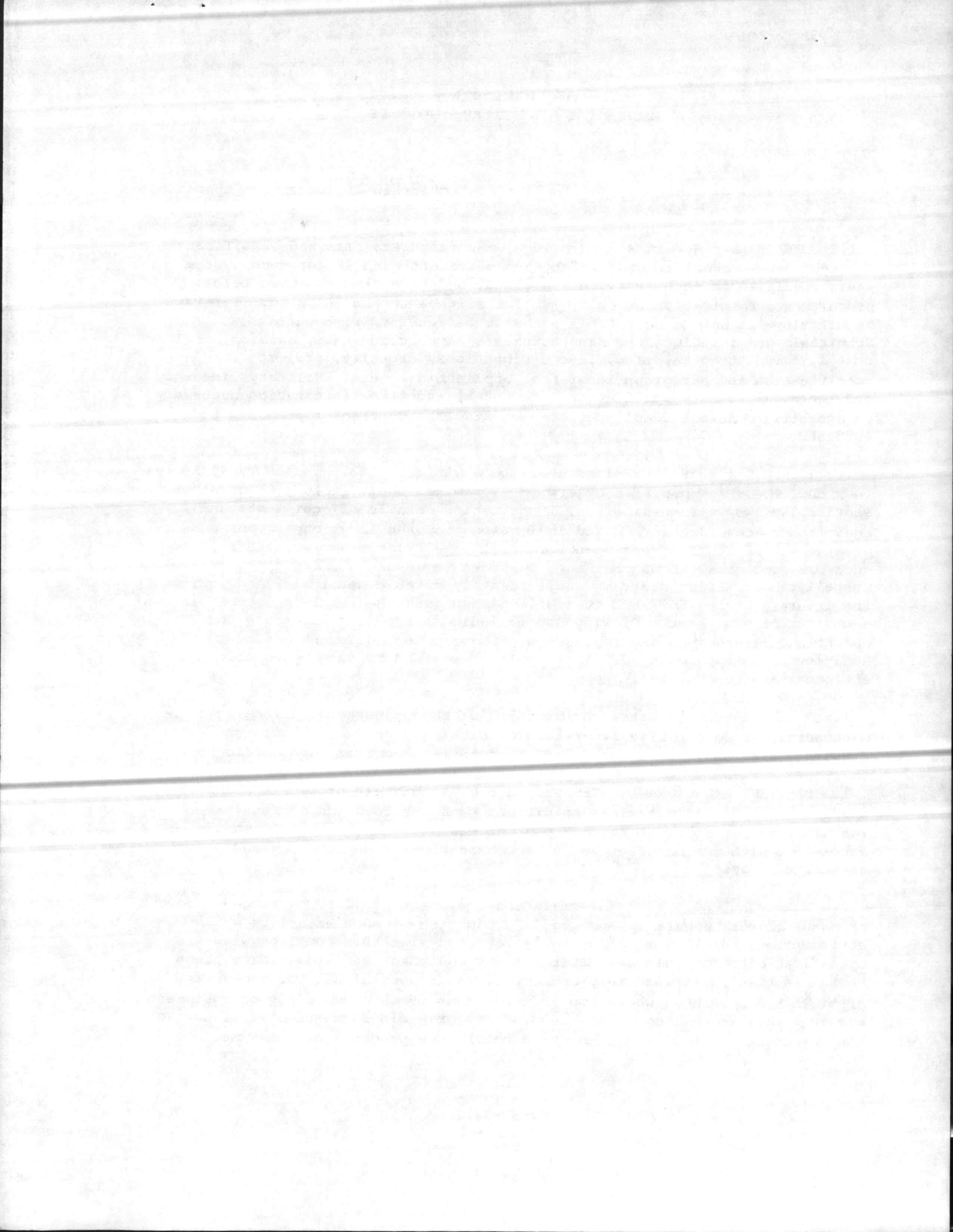
1.2 SUBMITTALS: Submit shop drawings, manufacturers data and certificates for equipment, materials and finish, and pertinent details for each system where specified in each individual section, and have them approved before procurement, fabrication or delivery of the items to the job site. Partial submittals will not be acceptable and will be returned without review. Submittals shall include the manufacturer's name, trade name, catalog model or number, nameplate data, size, layout dimensions, capacity, project specification and paragraph reference, applicable Federal, Military, industry and technical society publication references, and other information necessary to establish contract compliance of each item the Contractor proposes to furnish.

1.2.1 Shop Drawings: Drawings shall be a minimum of 8.5 inches by 11 inches in size, except as specified otherwise. Drawings shall include floor plans, sectional views, wiring diagrams, installation details of equipment; and equipment spaces identifying and indicating proposed location, layout and arrangement of items of equipment, control panels, accessories, piping, ductwork, and other items that must be shown to assure a coordinated installation. Wiring diagrams shall identify circuit terminals, and indicate the internal wiring for each item of equipment and the interconnection between each item of equipment. Drawings shall indicate adequate clearance for operation, maintenance and replacement of operating equipment devices. If equipment is disapproved, drawings shall be revised to show acceptable equipment and resubmitted.

1.2.2 Manufacturer's Data: Submittals for each manufactured item shall be manufacturer's descriptive literature of cataloged products, equipment drawings, diagrams, performance and characteristic curves, and catalog cuts.

1.3 DELIVERY AND STORAGE: Properly store, adequately protect and carefully handle equipment and materials to prevent damage before and during installation. Handle, store, and protect equipment and materials in accordance with the manufacturer's recommendations. Replace damaged or defective items.

1.4 CATALOGED PRODUCTS: Materials and equipment shall be cataloged products of manufacturers regularly engaged in production of such materials or equipment and shall be manufacturer's latest design that complies with the specification requirements. Materials and equipment shall duplicate items that have been in satisfactory commercial or industrial use for two years prior to bid opening. Where two or more items of the same class of equipment are required, these items shall be products of a single manufacturer; however, the component parts of the items need not be the products of the same

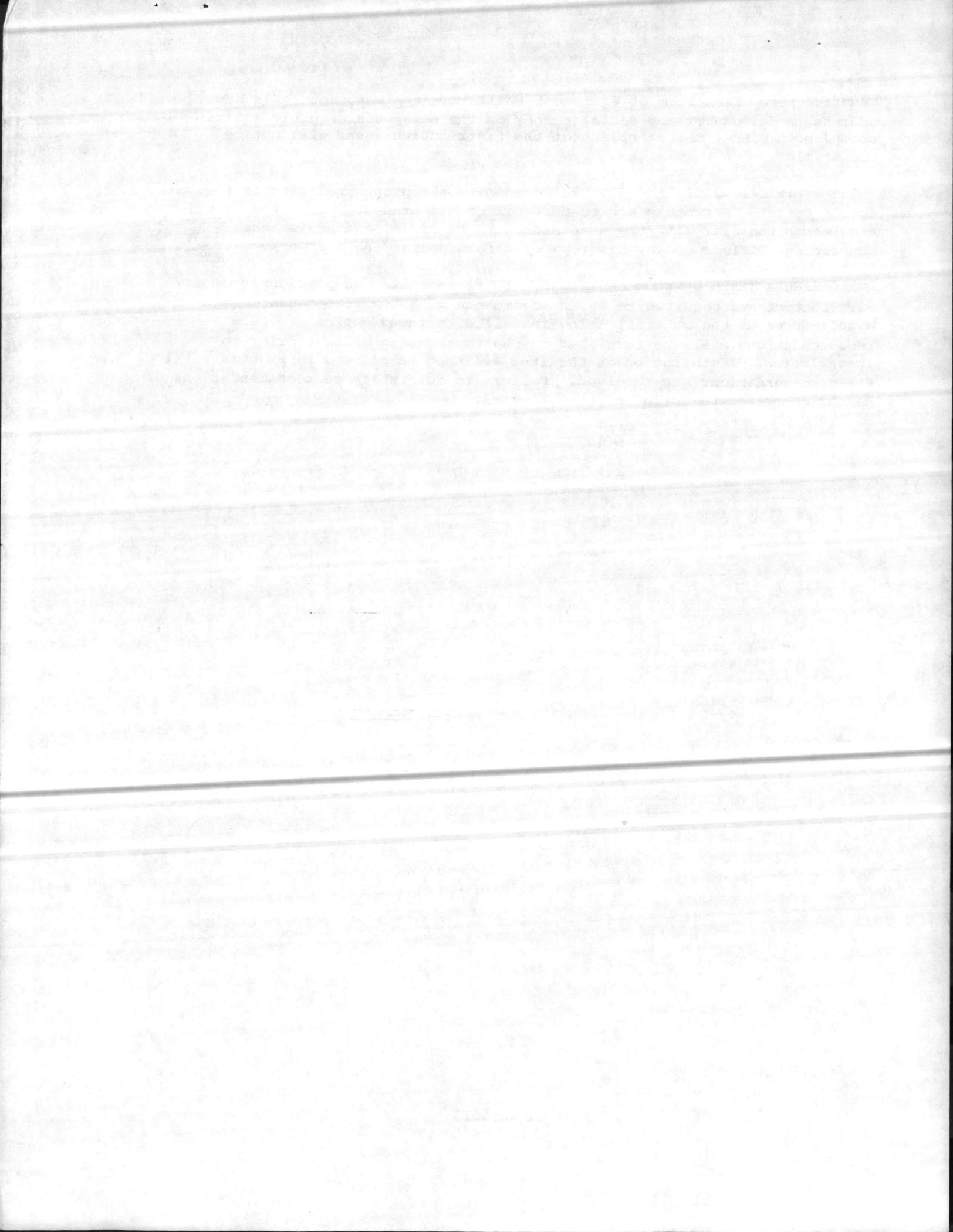


manufacturer. Each item of equipment shall have the manufacturer's name, address, model number and serial number on the nameplate securely affixed in a conspicuous place; the nameplate of the distributing agent will not be acceptable.

1.5 VERIFICATION OF DIMENSIONS: Coordinate the proper relation of the work to the building structure and to the work of all trades. Visit the premises and become familiar with the dimensions in the field, and advise the Contracting Officer of any discrepancy before performing any work.

1.6 MANUFACTURER'S RECOMMENDATIONS: Where installation procedures or any part thereof are required to be in accordance with the recommendations of the manufacturer of the material being installed, printed copies of these recommendations shall be furnished to the Contracting Officer prior to installation. Installation of the item will not be allowed to proceed until the recommendations are received. Failure to furnish these recommendations can be cause for rejection of the material.

END OF SECTION



SECTION 16000
ELECTRICAL WORK

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.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):

70-1981 National Electrical Code (NEC)

RURAL ELECTRIFICATION ADMINISTRATION (REA):

PE-39 REA Specification for Filled Telephone Cables (345-67/R74)

PART 2 - PRODUCTS

2.1 MATERIALS, EQUIPMENT AND DEVICES shall, as a minimum, meet the requirements of Underwriters' Laboratories (UL) where UL Standards are established for those items, and the requirements of the National Electrical Code (NEC) (NFPA-70). Further, each item shall meet the requirements of these specifications and of the specifications and publication referenced herein. All items shall be new unless specified or indicated otherwise.

2.2 TELEPHONE WIRE shall conform to REA PE-39 with a minimum of 6 pairs.

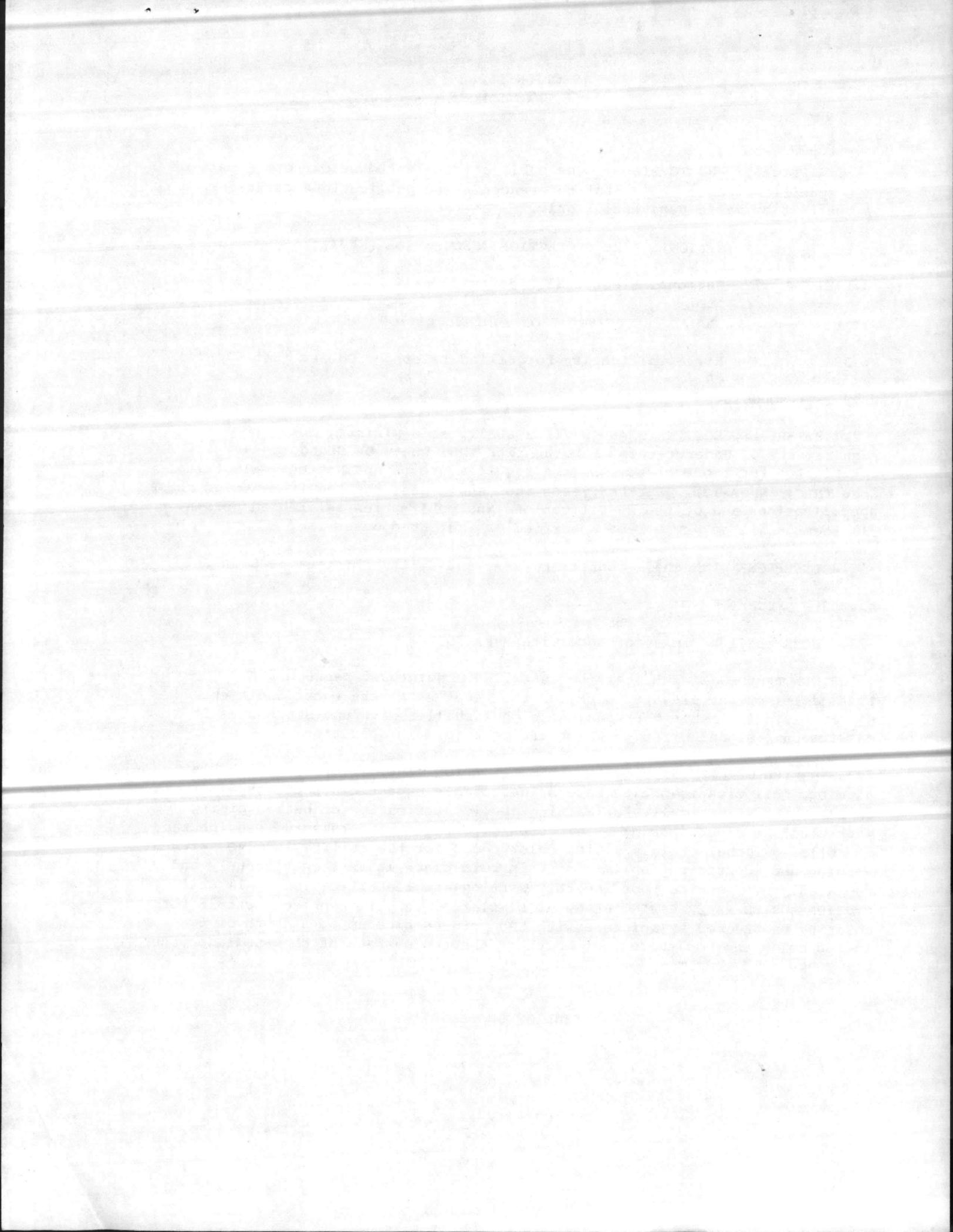
PART 3 - EXECUTION

3.1 WORK shall be in accordance with NFPA-70.

3.2 NEW TELEPHONE WIRE shall be installed underground between the transmitter on the elevated tank and the receiver at the water treatment plant. Existing cable carrying the signal shall remain undisturbed as it also carries pump signal circuits which are to remain in operation.

3.3 BURIED UTILITY WARNING AND IDENTIFICATION TAPE: Provide detectable aluminum foil plastic-backed tape or detectable magnetic plastic tape manufactured specifically for warning and identification of buried piping. Tape shall be detectable by an electronic detection instrument. Provide tape in rolls, 3 inches minimum width, color coded for the utility involved with warning and identification imprinted in bold black letters continuously and repeatedly over entire tape length. Warning and identification shall be CAUTION BURIED WATER PIPING BELOW or similar. Use permanent code and letter coloring unaffected by moisture with the printed side up at a depth of 6 inches below the top surface of earth or the top surface of the subgrade under pavements.

END OF SECTION



SUPERSEDEAS DECISION

STATE: NORTH CAROLINA

COUNTIES: BRUNSWICK, CARTERET, COLUMBUS, CRAVEN, DUPLIN, JONES, LENOIR,
NEW HANOVER, ONSLOW, PAMLICO, AND PENDER

DECISION NUMBER: NC81-1201 DATE: DATE OF PUBLICATION

Supersedes Decisions Number NC81-1181, dated January 23, 1981, 46 FR 7745;
NC81-1182, dated January 23, 1981, 46 FR 7744; Number NC81-1147, dated
December 30, 1980, 45 FR 86200.

DESCRIPTION OF WORK: BUILDING CONSTRUCTION PROJECTS (does not include single
family homes and apartments up to and including four stories).

	Basic Hr. Rate	FRINGE BENEFITS PAYMENTS			
		H&W	Pensions	Vacation	Edu and/or Appr. Tr.
Asbestos Workers	\$7.26				
Bricklayers	7.10				
Carpenters	6.02				
Cement Masons	5.68				
Drywell Mechanics	7.00				
Electricians	6.22				
Electronic Technicians	4.50				
Glaziers	5.38				
Ironworkers	6.66				
Laborers:					
Laborers - General	3.78				
Pipe Layers	4.94				
Millworkers	9.45				
Painters	5.00				
Plasters	6.00				
Plumbers & Pipefitters	6.52				
Roofers	5.91				
Sheet Metal Workers	6.38				
Soft Floor Layers	7.00				
Sprinkler Fitters	7.95				
Tile Setters	6.00				
Truck Drivers	3.90				
Welders - Rate for Craft					
Power Equipment Operators:					
Asphalt Raker	4.27				
Backhoe	5.32				
Bulldozer	5.25				
Crance	6.80				
Distributor	4.70				
Fork Lift	6.50				
Front End Loader	4.50				
Motor Grader	5.36				
Paver - Screed	4.25				
Roller	5.00				
Scraper - Pan	4.60				
Tractor	5.00				

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

