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NL62470-85-B-6407 F/Stge

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JULIUS M. TAYLOR, JR. P.E.
& MIKE TAYLOR, Owners

Taylor Bros. Marine Construction, Inc.

MARINE ENGINEERING & CONSTRUCTION

P.O. BOX 837
BEAUFORT, N.C. 28516

TELEPHONE
1-919-728-2525

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE | PAGE OF PAGES

2. AMENDMENT/MODIFICATION NO.: NO. 1

3. EFFECTIVE DATE: 19 AUG 1986

4. REQUISITION/PURCHASE REQ. NO.:

5. PROJECT NO. (If applicable): SPEC. 05-86-5504

6. ISSUED BY — CODE 406

Officer in Charge of Construction
Jacksonville, North Carolina Area
Building 1005, Marine Corps Base
Camp Lejeune, North Carolina 28542

7. ADMINISTERED BY (If other than Item 6) — CODE

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)

CODE | FACILITY CODE

(✓) 9A. AMENDMENT OF SOLICITATION NO.: X N62470-86-B-5504

9B. DATED (SEE ITEM 11): 12 AUGUST 1986

10A. MODIFICATION OF CONTRACT/ORDER NO.:

10B. DATED (SEE ITEM 13):

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers [ ] is extended, [X] is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(✓) A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).

C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor [ ] is not, [ ] is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

REPLACE SERVICE PUMP CONTROL CABLE FROM SBA-108 TO BA-138
at the MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA

WAGE RATE:
Modification Record:
Delete No. "2 Apr. 4, 1986 (Expires 10/23/86) 509"
Labor Listing/Basic Hourly Rates
Delete "Asbestos Worker (Mod. #2) 7.26"

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print):

16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print): T. L. HUGUELET, CDR, CEC, USN for COMNAVFACENGCOM

15B. CONTRACTOR/OFFEROR — (Signature of person authorized to sign)

15C. DATE SIGNED:

16B. UNITED STATES OF AMERICA — BY _____ (Signature of Contracting Officer)

16C. DATE SIGNED: 19 AUG 1986

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 N62470-85-B-6407

NAVFAC SPECIFICATION
NO. 05-85-6407

CHLORINE STORAGE NEAR BUILDINGS 20, TC-563 AND TT-36

at the

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA

(HQMC Project LE604R)

DESIGN BY:

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

SPECIFICATION PREPARED BY:

J. H. Fitch, P.E.

10 July 1986

SPECIFICATION APPROVED BY:

F. E. Cone, P.E., Director
Design Branch, Public Works Division

T. L. Huguelet, Commander, CEC, U. S. Navy
for Commander, Naval Facilities Engineering Command

April 1985

CONTENTS

This Invitation for Bids, IFB No. N62470-85-B-6407, consists of the following documents:

(I) Bidding Instructions

(1) Solicitation, Offer and Award (Standard Form 1442 (Rev. 4-85))
*(2) Instructions to Bidders (Construction Contract) April 1985

(II) Bid Submittal Documents

(1) Solicitation, Offer and Award (Standard Form 1442 (Rev. 4-85))
*(2) Representations and Certifications, April 1985
(3) Bid Guaranty (Standard Form 24 (Rev. 4-85))

(III) Contract Documents

(1) Solicitation, Offer and Award (Standard Form 1442 (Rev. 4-85))
(2) Performance Bond (Standard Form 25 (Rev. 10-83))
(3) Payment Bond (Standard Form 25A (Rev. 10-83))
*(4) Contract Clauses (Construction Contract) January 1986
(5) Labor Standards Provisions, November 1979 (Rev. 8-83)
*(6) NAVFAC Specification No. 05-85-6407
(7) Drawings identified in Section 01011 of the Specification
**(8) Wage Determination, Secretary of Labor Decision No. NC86-4, Building Construction

* These items are bound within the Specification at the front

** The Wage Determination is attached as the last page of the Specification

NOTE: All other items are attached on top of the Specification

NOTE:

INQUIRIES

PLANS AND SPECIFICATIONS: Questions regarding the plans and Specification 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 the Specification 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 Specification as issued.

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) 451-2582.

CONTENTS

SECTION 00101
Instructions to Bidders
(Construction Contract)

1. SOLICITATION DEFINITIONS - SEALED BIDDING (APR 1985)

"Offer" means "bid" in sealed bidding.
"Solicitation" means an invitation for bids in sealed bidding.
(FAR 52.214-1).

2. BIDS:

(a) Instructions to Bidders and Standard Form 1442 (Solicitation, Offer, and Award) shall be observed in the preparation of bids. Bidders shall affix their names and return addresses in the upper left corner of the bid envelope. Envelopes containing bids must be sealed.

(b) Bids shall be submitted in triplicate on Standard Form 1442 (10-83) and, for bids of $25,000 or greater, shall be accompanied by a bid guarantee as stipulated in paragraph titled Bid Guarantee of this Section. Bid security shall be in the sum of 20% of the largest amount for which award can be made under the bid submitted, but in no case to exceed 3 million dollars. The bid quaranty bond shall be accompanied by a verifax or other facsimile copy of the agent's authority to sign bonds for the surety company.

(c) The basis of bid shall be lump sum price for the following item:

Base Bid Price for the entire work, complete in accordance with the drawings and Specification.

NOTE: The lump sum price 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.

(d) 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, an appointment must be made with the Officer in Charge of Construction, Jacksonville, North Carolina Area, telephone 919-451-2581.

4. CONDITIONS AFFECTING THE WORK. Bidders should visit the site and take such other steps as may be reasonably necessary to ascertain the nature and location of the work, and the general and local conditions which can affect the work or the cost thereof. Failure to do so will not relieve bidders from responsibility for estimating properly the difficulty or cost of successfully performing the work. The Government will assume no responsibility for any understanding or representations concerning conditions made by any of its officers or agents prior to the execution of the contract, unless included in the invitation for bids, the specifications, or related documents.

5. RATED OR AUTHORIZED CONTROLLED MATERIAL ORDERS (APR 1984). Contracts or purchase orders to be awarded as a result of this solicitation shall be assigned a _____DX rating; DO-C2 rating; _____DMS allotment number in accordance with Defense Priorities System Regulation 1 and/or Defense Materials System Regulation 1. (FAR 52.212-7)

6. EXPLANATION TO PROSPECTIVE BIDDERS (APR 1984). Any prospective bidder desiring an explanation or interpretation of the solicitation, drawings, specifications, etc., must request it in writing soon enough to allow a reply to reach all prospective bidders before the submission of their bids. Oral explanations or instructions given before the award of a contract will not be binding. Any information given a prospective bidder concerning a solicitation will be furnished promptly to all other prospective bidders as an amendment to the solicitation, if that information is necessary in submitting bids or if the lack of it would be prejudicial to other prospective bidders. (FAR 52.214-6)

7. AVAILABILITY OF SPECIFICATIONS LISTED IN THE DOD INDEX OF SPECIFICATION AND STANDARDS (DODISS) (APR 1984). Single copies of specifications cited in this solicitation may be obtained by submitting a written request to the supply point listed below. The request must contain the title of the specification, its number, date, applicable amendment(s), and the solicitation or contract number. In case of urgency, telephone or telegraphic requests are acceptable. Voluntary standards, which are not available to offerors and contractors from Government sources, may be obtained from the organization responsible for their preparation, maintenance, or publication. (FAR 52.210-2)

Commanding Officer
U.S. Naval Publication and Forms Center
5801 Tabor Avenue
Philadelphia, Pennsylvania 19120
Telex Number 834295
Western Union Number 710-670-1685
Telephone Number (215) 697-3321

AVAILABILITY OF SPECIFICATIONS AND STANDARDS NOT LISTED IN DODISS, DATA ITEM DESCRIPTIONS NOT LISTED IN DOD DIRECTIVE 5000.19-L, VOLUME II, AND PLANS, DRAWINGS, AND OTHER PERTINENT DOCUMENTS (JUN 1977). The specifications, standards, plans, drawings, descriptions and other pertinent documents cited in this solicitation may be obtained by submitting request to:

Public Works Division
Specifications and Estimates Section
Building 1005, Marine Corps Base
Camp Lejeune, North Carolina 28542

NOTE: Due to budgetary restriction, it is unlikely that Public Works Division will be able to furnish more than the name and address which may be used to order these publications.

Requests should give the number of the solicitation and the title and number of the specification, standard, plan, drawing or other pertinent document requested, exactly as cited in this solicitation. (DOD FAR SUPP 52.210-7002)

AVAILABILITY FOR EXAMINATION OF SPECIFICATIONS, STANDARDS, PLANS, DRAWINGS, DATA ITEM DESCRIPTIONS, AND OTHER PERTINENT DOCUMENTS (JUN 1977). The specification, standards, plans, drawings, descriptions, and other pertinent documents cited in this solicitation may be examined at the following locations: (DOD FAR SUPP 52.210-7003)

Public Works Division
Specifications and Estimates Section
Building 1005, Marine Corps Base
Camp Lejeune, North Carolina 28542

8. NOTICE OF TOTAL SMALL BUSINESS SET-ASIDE (APR 1984).

(a) Definition.
"Small business concern," as used in this clause, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the size standards in this solicitation.

(b) General.

(1) Offers are solicited only from small business concerns. Offers received from concerns that are not small business concerns shall be considered nonresponsive and will be rejected.

(2) Any award resulting from this solicitation will be made to a small business concern.

(c) Agreement. A manufacturer or regular dealer submitting an offer in its own name agrees to furnish, in performing the contract, only end items manufactured or produced by small business concerns inside the United States, its territories and possessions, the Commonwealth of Puerto Rico, the Trust Territory of the Pacific Islands, or the District of Columbia. However, this requirement does not apply in connection with construction or service contracts. (FAR 52.219-6)

9. THE SMALL BUSINESS SIZE STANDARD APPLICABLE TO THIS CONTRACT IS AS FOLLOWS:

SIC CODE	INDUSTRY, SUBINDUSTRY OR CLASS OF PRODUCTS	ANNUAL SIZE STANDARD (MAXIMUM IN MILLIONS)
1542	General Contractor	$17.0

10. BIDDER'S QUALIFICATIONS. Before bid is considered for award, the bidder may be requested by the Government to submit a statement regarding his previous experience in performing comparable work, his business and technical organization, financial resources, and plant available to be used in performing the work.

11. BID GUARANTEE (APR 1984)

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

(b) The offeror (bidder) shall furnish a bid guarantee in the form of a firm commitment, such as a bid bond, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Contracting Officer will return bid guarantees, other than bid bonds, (1) to unsuccessful bidders as soon as practicable after the opening of bids, and (2) to the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the bid as accepted.

(c) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or give a bond(s) as required by the solicitation within the time specified, the Contracting Officer may terminate the contract for default.

(d) Unless otherwise specified in the bid, the bidder will (1) allow 60 days for acceptance of its bid and (2) give bond within 10 days after receipt of the forms by the bidder.

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference. (FAR 52.228-1)

12. PREPARATION OF BIDS - CONSTRUCTION (APR 1984).

(a) Bids must be (1) submitted on the forms furnished by the Government or on copies of those forms, and (2) manually signed. The person signing a bid must initial each erasure or change appearing or any bid form.

(b) The bid form may require bidders to submit bid prices for one or more items on various bases, including-

(1) Lump sum bidding;
(2) Alternate prices;
(3) Units of construction; or
(4) Any combination of subparagraphs (1) through (3) above.

(c) If the solicitation requires bidding on all items, failure to do so will disqualify the bid. If bidding on all items is not required, bidders should insert the words "no bid" in the space provided for any item on which no price is submitted.

(d) Alternate bid will not be considered unless this solicitation authorizes their submission. (FAR 52.214-18)

13. SUBMISSION OF BIDS (APR 1984).

(a) Bids and bid modifications shall be submitted in sealed envelopes or packages (1) addressed to the office specified in the solicitation and (2) showing the time specified for receipt, the solicitation number, and the name and address of the bidder.

(b) Telegraphic bids will not be considered unless authorized by the solicitation; however, bids may be modified or withdrawn by written or telegraphic notice, if such notice is received by the time specified for receipt of bids. (FAR 52.214-5)

14. ACKNOWLEDGMENT OF AMENDMENTS TO INVITATIONS FOR BIDS (APR 1984). Bidders shall acknowledge receipt of any amendment to this solicitation (a) by signing and returning the amendment, (b) by identifying the amendment number and date in the space provided for this purpose on the form for submitting a bid, or (c) by letter or telegram. The Government must receive the acknowledgment by the time and at the place specified for receipt of bids. (FAR 52.214-3)

15. LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF BIDS (APR 1984)

(a) Any bid received at the office designated in the solicitation after the exact time specified for receipt will not be considered unless it is received before award is made and it-

(1) Was sent by registered or certified mail not later than the fifth calendar day before the date specified for receipt of bids (e.g., a bid submitted in response to a solicitation requiring receipt of bids by the 20th of the month must have been mailed by the 15th); or

(2) Was sent by mail (or was a telegraphic bid if authorized), and it is determined by the Government that the late receipt was due solely to mishandling by the Government after receipt at the Government installation.

(b) Any modification or withdrawal of a bid is subject to the same conditions as in paragraph (a) above.

(c) The only acceptable evidence to establish the date of mailing of a late bid, modification, or withdrawal sent either by registered or certified mail is the U.S. or Canadian Postal Service postmark on the wrapper or on the original receipt from the U.S. or Canadian Postal Service. If neither postmark shows a legible date, the bid, modification, or withdrawal shall be processed as if mailed late. "Postmark" means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily identifiable without further action as having been supplied and affixed by employees of the U.S. or Canadian Postal Service on the date of mailing. Therefore, bidders should request the postal clerks to place a hand cancellation bull's-eye postmark on both the receipt and the envelope or wrapper.

(d) The only acceptable evidence to establish the time of receipt at the Government installation is the time/date stamp of that installation on the bid wrapper or other documentary evidence of receipt maintained by the installation.

(e) Notwithstanding paragraph (a) above, a late modification of an otherwise successful bid that makes its terms more favorable to the Government will be considered at any time it is received and may be accepted.

(f) A bid may be withdrawn in person by a bidder or its authorized representative if, before the exact time set for receipt of bids, the identity of the person requesting withdrawal is established and that person signs a receipt for the Bid. (FAR 52.214-7)

16. PUBLIC OPENING OF BIDS. Bids will be publicly opened at the time set for opening in the invitation for bids. Their content will be made public for the information of bidders and others interested, who may be present either in person or by representative.

17. CONTRACT AWARD - SEALED BIDDING - CONSTRUCTION (FEB 1986)

(a) The Government will evaluate bids in response to this solicitation without discussions and will award a contract to the responsible bidder whose bid, conforming to the solicitation, will be most advantageous to the Government, considering only price and the price-related factors specified elsewhere in the solicitation.

(b) The Government may reject any or all bids, and waive informalities or minor irregularities in bids received.

(c) The Government may accept any item or combination of items, unless doing so is precluded by a restrictive limitation in the solicitation or the bid. (FAR 52.214-19)

18. CONTRACT AND BONDS

(Applicable only to bids of $25,000 or more.) Within 10 days after receipt of awards the bidder to whom award is made shall furnish two bonds, each with satisfactory security; namely, a performance bond (Standard Form 25) and a payment bond (Standard Form 25A). The performance bond shall be in a penal sum equal to 100 percent of the contract price. The payment bond shall be equal to 50 percent of the contract price, except that it shall be 40 percent of the contract price if that price is more than $1,000,000 and not more than $5,000,000, and in the fixed sum of $2,500,000 if the contract price is more than $5,000,000. The bond of any surety company holding a certificate of authority from the Secretary of the Treasury as an acceptable surety on Federal bonds will be accepted. Individual sureties will be accepted in accordance with FAR 28.202-2. Options in lieu of corporate or individual sureties may be provided in accordance with FAR 28.203. The contract time for purposes of fixing the completion date, default, and liquidated damages shall begin to run 15 days from the mailing of acceptance, regardless of when performance and payment bonds are executed.

19. NOTE THE AFFIRMATIVE ACTION REQUIREMENT OF THE EQUAL OPPORTUNITY CLAUSE WHICH MAY APPLY TO THE CONTRACT RESULTING FROM THIS SOLICITATION

20. NOTE THE CERTIFICATION OF NONSEGREGATED FACILITIES IN THIS SOLICITATION

Bidders, offerors and applicants are cautioned to note the "Certification of Nonsegregated Facilities" in the solicitation. Failure of a bidder or offeror to agree to the certification will render his bid or offer nonresponsive to the terms of solicitations involving awards of contracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity clause (1978 SEP).

21. COST LIMITATION

A bid which does not contain separate bid prices for the items identified as subject to a cost limitation may be considered nonresponsive. A bidder by signing his bid certifies that each price bid on items subject to a cost limitation include an appropriate apportionment of all applicable estimated costs, direct and indirect, as well as overhead and profit. Bids may be rejected which (i) have been materially unbalanced for the purpose of bringing affected items within cost limitations or (ii) exceed the cost limitations unless such limitations have been waived by the Assistant Secretary of Defense (Installations and Logistics) prior to award. (1974 APR) (DOD FAR SUPP 52.236-7081)

22. FALSE STATEMENTS IN BIDS (APR 1984)

Bidders must provide full, accurate, and complete information as required by this solicitation and its attachments. The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

END OF SECTION

CONTRACT CLAUSES
(Construction Contract)

CLAUSES INCORPORATED BY REFERENCE (APR 1984). This contract incorporates the following clauses by reference, with the same force and effect as if they were given full text. Upon request, the Contracting Officer will make their full text available. (FAR 52.252-2)

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) CLAUSES

1. FAR 52.202-1, Definitions - Alternate I (APR 1984)
2. FAR 52.203-1, Officials Not To Benefit (APR 1984)
3. FAR 52.203-3, Gratuities (APR 1984)
4. FAR 52.203-5, Covenant Against Contingent Fees (APR 1984)
5. FAR 52.212-6, Time Extensions (APR 1984)
6. FAR 52.212-8, Priorities, Allocations, and Allotments (APR 1984)
7. FAR 52.212-11, Variation in Estimated Quantity (APR 1984)
8. FAR 52.212-12, Suspension of Work (APR 1984)
9. FAR 52.214-26, Audit-Sealed Bidding (APR 1985)
10. FAR 52.214-27, Price Reduction for Defective Cost or Pricing Data-Modifications-Sealed Bidding (APR 1985)
11. FAR 52.214-28, Subcontractor Cost or Pricing Data-Modifications-Sealed Bidding (APR 1985)
12. FAR 52.215-1, Examination of Records by Comptroller General (APR 1984)
13. FAR 52.219-8, Utilization of Small Business Concerns and Small Disadvantaged Business Concerns (APR 1984)
14. FAR 52.219-9, Small Business and Small Disadvantaged Business Subcontracting Plan - Alternate I (APR 1984)
15. FAR 52.219-13, Utilization of Women-Owned Business Concerns (APR 1984)
16. FAR 52.222-3, Convict Labor (APR 1984)
17. FAR 52.222-26, Equal Opportunity (APR 1984)
18. FAR 52.222-27, Affirmative Action Compliance Requirements for Construction (APR 1984)

19. FAR 52.222-35, Affirmative Action for Special Disabled and Vietnam Era Veterans (APR 1984)

20. FAR 52.222-36, Affirmative Action for Handicapped Workers (APR 1984)

21. FAR 52.223-2, Clean Air and Water (APR 1984)

22. FAR 52.225-5, Buy American Act - Construction Materials (APR 1984)

23. FAR 52.227-1, Authorization and Consent (APR 1984)

24. FAR 52.227-4, Patent Indemnity - Construction Contract (APR 1984)

25. FAR 52.228-2, Additional Bond Security (APR 1984)

26. FAR 52.228-5, Insurance-Work on a Government Installation (APR 1984)

27. FAR 52.229-3, Federal, State, and Local Taxes (APR 1984)

28. FAR 52.230-4, Administration of Cost Accounting Standards (APR 1984)

29. FAR 52.230-6, Cost Accounting Standards (APR 1984)

30. FAR 52.232-5, Payments Under Fixed-Price Construction Contract (APR 1984)

31. FAR 52.232-17, Interest (APR 1984)

32. FAR 52.232-23, Assignment of Claims (APR 1984)

33. FAR 52.233-1, Disputes (APR 1984)

34. FAR 52.233-3, Protest after Award (JUN 1985)

35. FAR 52.236-1, Performance of work by the Contractor (APR 1984)

36. FAR 52.236-2, Differing Site Conditions (APR 1984)

37. FAR 52.236-3, Site Investigation and Conditions Affecting the Work (APR 1984)

38. FAR 52.236-5, Material and Workmanship (APR 1984)

39. FAR 52.236-6, Superintendence by the Contractor (APR 1984)

40. FAR 52.236-7, Permits and Responsibilities (APR 1984)

41. FAR 52.236-8, Other Contracts (APR 1984)

42. FAR 52.236-9, Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements (APR 1984)

43. FAR 52.236-10, Operations and Storage Areas (APR 1984)

44. FAR 52.236-11, Use and Possession Prior to Completion (APR 1984)

45. FAR 52.236-12, Cleaning Up (APR 1984)

46. FAR 52.236-13, Accident Prevention (APR 1984)

47. FAR 52.236-14, Availability and Use of Utility Services (APR 1984)

48. FAR 52.236-15, Schedules for Construction Contracts (APR 1984)

49. FAR 52.236-17, Layout of Work (APR 1984)

50. FAR 52.236-21, Specifications and Drawings (APR 1984)

51. FAR 52.243-4, Changes (APR 1984)

52. FAR 52.245-01, Property Records (APR 1984)

53. FAR 52.245-02, Government Property (Fixed Price Contract) (APR 1984)

54. FAR 52.245-4, Government-Furnished Property (Short Form) (APR 1984)

55. FAR 52.246-12, Inspection of Construction (APR 1984)

56. FAR 52.246-21, Warranty of Construction (APR 1984)

57. FAR 52.248-3, Value Engineering-Construction (APR 1984)

58. FAR 52.249-2, Termination for Convenience of the Government (Fixed-Price) - Alternate I (APR 1984)

59. FAR 52.249-10, Default (Fixed-Price Construction) (APR 1984)

60. FAR SUPP 52.217-7122, Notice and Assistance Regarding Patent and Copyright Infringement (APR 1984)

61. FAR SUPP 52.219-7000, Small Business and Small Disadvantaged Business (APR 1984)

62. FAR SUPP 52.233-7000, Certification of Requests for Adjustment or Relief Exceeding $100,000 (FEB 1980)

63. FAR SUPP 52.236-7000, Composition of Contractor (JAN 1965)

64. FAR SUPP 52.236-7001, Modification of Proposals - Price Breakdown (APR 1968)

65. FAR SUPP 52.236-7003, Shop Drawings (OCT 1976)

66. FAR SUPP 52.236-7005, Salvage Materials and Equipment (JAN 1965)

67. FAR SUPP 52.236-7006, Misplaced Material (JAN 1965)

68. FAR SUPP 52.236-7007, Identification of Employees (JAN 1965)

69. FAR SUPP 52.236-7050(a), Patent Indemnity (JUN 1974)

70. FAR SUPP 52.227-7033, Rights in Shop Drawings (APR 1966)

71. FAR SUPP 52.243-7001, Pricing of Adjustments (APR 1984)

72. Defense Acquisition Regulations (DAR) 7-602.37, Subcontractors (1979 MAR)

73. FAR 52.247-64, Preference For Privately Owned U.S. Flag Commercial Vessels (APR 1984)

(a) When ocean transportation is required to bring supplies, materials, or equipment to the construction site from the United States either for use in performance of, or for incorporation in, the work called for by this contract, the Contractor shall use privately owned U.S.-flag commercial vessels to the extent that such vessels are available at rates that are fair and reasonable for privately owned U.S.-flag commercial vessels.

(b) The Contractor shall not make any shipment exceeding 10 measurement tons (400 cubic feet) by vessels other than privately owned U.S.-flag commercial vessels without (1) notifying the Contracting Officer that U.S.-flag commercial vessels are not available at rates that are fair and reasonable for such vessels and (2) obtaining permission to ship in other vessels. If permission is granted, the contract price shall be equitably adjusted to reflect the difference in cost.

(c) (1) The Contractor shall submit one legible copy of a rated on-board ocean bill of lading for each shipment to both (i) the Contracting Officer and (ii) the Division of National Cargo, Office of Market Development, Maritime Administration, U.S. Department of Transportation, Washington, DC 20590. Subcontractor bills of lading shall be submitted through the Prime Contractor.

(2) The Contractor shall furnish these bill of lading copies (i) within 20 working days of the date of loading for shipments originating in the United States or (ii) within 30 working days for shipments originating outside the United States. Each bill of lading copy shall contain the following information:

(A) Sponsoring U.S. Government agency.
(B) Name of vessel.
(C) Vessel flag of registry.
(D) Date of loading.
(E) Port of loading.
(F) Port of final discharge.
(G) Description of commodity.
(H) Gross weight in pounds and cubic feet if available.
(I) Total ocean freight revenue in U.S. dollars.

(d) Except for small purchases as described in 48 CFR 13, the Contractor shall insert the substance of this clause, including this paragraph (d), in all subcontracts or purchase orders under this contract.

(e) The requirement in paragraph (a) does not apply to-

(1) Small purchases as defined in 48 CFR 13;

(2) Cargoes carried in vessels of the Panama Canal Commission or as required or authorized by law or treaty;

(3) Ocean transportation between foreign countries of supplies purchased with foreign currencies made available, or derived from funds that are made available, under the Foreign Assistance Act of 1961 (22 U.S.C. 2353); and

(4) Shipments of classified supplies when the classification prohibits the use of non-Government vessels.

(f) Guidance regarding fair and reasonable rates for privately owned U.S.-flag commercial vessels may be obtained from the Division of National Cargo, Office of Market Development, Maritime Administration, U.S. Department of Transportation, Washington, DC 20590, Phone: 202-426-4610.

April 1985

REPRESENTATIONS AND CERTIFICATIONS
(Construction Contract)

Invitation Reference No:

Name and Address of Bidder:

DUNS Number:

Date of Bid:

The bidder makes the following representations and certifications, by placing a check in the appropriate spaces or otherwise as appropriate, as part of the bid identified above. (In negotiated procurements, "bid" and "bidder" shall mean "offer" and "offeror.") A completed REPRESENTATIONS AND CERTIFICATIONS is to be returned with the bid.

1. SMALL BUSINESS CONCERN REPRESENTATION (APR 1984).

The offeror represents and certifies as part of its offer that it [ ] is, [ ] is not a small business concern and that [ ] all, [ ] not all supplies to be furnished will be manufactured or produced by a small business concern in the United States, its possessions, or Puerto Rico. "Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the size standards in this solicitation. (FAR 52.219-1)

2. CONTINGENT FEE REPRESENTATION AND AGREEMENT (APR 1984).

(a) Representation. The offeror represents that, except for full-time bona fide employees working solely for the offeror, the offeror-

[Note: The offeror must check the appropriate boxes. For interpretation of the representation, including the term " bona fide employee," see Subpart 3.4 of the Federal Acquisiton Regulation.]

(1) [ ] has, [ ] has not employed or retained any person or company to solicit or obtain this contract; and

(2) [ ] has, [ ] has not paid or agreed to pay to any person or company employed or retained to solicit or obtain this contract any commission, percentage, brokerage, or other fee contingent upon or resulting from the award of this contract.

(b) Agreement. The offeror agrees to provide information relating to the above Representation as requested by the Contracting Officer and, when subparagraph (a)(1) or (a)(2) is answered affirmatively, to promptly submit to the Contracting Officer-

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(1) A completed Standard Form 119, Statement of Contingent or Other Fees, (SF 119); or
(2) A signed statement indicating that the SF 119 was previously submitted to the same contracting office, including the date and applicable solicitation of contract number, and representing that the prior SF 119 applies to this offer or quotation. (FAR 52.203-4)

3. TYPE OF BUSINESS ORGANIZATION - SEALED BIDDING (APR 1985).

The bidder, by checking the applicable box, represents that it operates as ____ a corporation incorporated under the laws of the State of _____, ____ an individual, ____ a partnership, ____ a nonprofit organization, or ____ a joint venture. (FAR 52.214-2)

4. CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1984).

(a) The offeror certifies that-
(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to (i) those prices, (ii) the intention to submit an offer, or (iii) the methods or factors used to calculate the prices offered;
(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a formally advertised solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and
(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.
(b) Each signature on the offer is considered to be a certification by the signatory that the signatory-
(1) Is the person in the offeror's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or
(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above _____ [insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization];
(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and
(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above.
(c) If the offeror deletes or modifies subparagraph (a)(2) above, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure. (FAR 52.203-2)

5. PARENT COMPANY AND IDENTIFYING DATA (APR 1984)

(a) A "parent" company, for the purpose of this provision, is one that owns or controls the activities and basic business policies of the bidder. To own the bidding company means that the parent company must own more than 50 percent of the voting rights in that company. A company may control a bidder as a parent even though not meeting the requirement for such ownership if the parent company is able to formulate, determine, or veto basic policy decisions of the offeror through the use of dominant minority voting rights, use of proxy voting, or otherwise.

(b) The bidder [ ] is, [ ] is not [check applicable box] owned or controlled by a parent company.

(c) If the bidder checked "is" in paragraph (b) above, it shall provide the following information:

Name and Main Office Address of Parent Company (Include Zip Code)	Parent Company's Employer's Identification Number

.....

(d) If the bidder checked "is not" in paragraph (b) above, it shall insert its own Employer's Identification Number on the following line _____. (FAR 52.214-8)

6. CERTIFICATION OF NONSEGREGATED FACILITIES (APR 1984)

(Applies when the amount of the contract is in excess of $10,000.)

(a) "Segregated facilities," as used in this provision, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color religion, or national origin because of habit, 'local custom, or otherwise.

(b) By the submission of this offer, the offeror certifies that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The offeror agrees that a breach of this certification is a violation of the Equal Opportunity clause in the contract.

(c) The offeror further agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) it will-

(1) Obtain identical certifications from proposed subcontractors before the award of subcontracts under which the subcontractor will be subject to the Equal Opportunity clause;

(2) Retain the certifications in the files; and

(3) Forward the following notice to the proposed subcontractors (except if the proposed subcontractors have submitted identical certifications for specific time periods):

NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENT FOR CERTIFICATIONS OF REQUIREMENT FOR CERTIFICATIONS OF NONSEGREGATED FACILITIES.

A Certification of Nonsegregated Facilities must be submitted before the award of a subcontract under which the subcontractor will be subject to the Equal Opportunity clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001. (FAR 52.222-21)

7. CLEAN AIR AND WATER CERTIFICATION (APR 1984)

The Offeror certifies that-

(a) Any facility to be used in the performance of this proposed contract is [ ], is not [ ] listed on the Environmental Protection Agency List of Violating Facilities;

(b) The Offeror will immediately notify the Contracting Officer, before award, of the receipt of any communication from the Administrator, or a designee, of the Environmental Protection Agency, indicating that any facility that the Offeror proposes to use for the performance of the contract is under consideration to be listed on the EPA List of Violating Facilities; and

(c) The Offeror will include a certification substantially the same as this certification, including this paragraph (c), in every nonexempt subcontract. (FAR 52.223-1)

8. SMALL DISADVANTAGED BUSINESS CONCERN REPRESENTATION (APR 1984)

(a) Representation. The offeror represents that it [ ] is, [ ] is not a small disadvantaged business concern.

(b) Definitions.

"Asian-Indian American," as used in this provision, means a United States citizen whose origins are in India, Pakistan, or Bangladesh.

"Asian-Pacific American," as used in this provision, means a United States citizen whose origins are in Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the U.S. Trust Territory of the Pacific Islands, the Northern Mariana Islands, Cambodia, or Taiwan.

"Native Americans," as used in this provision, means American Indians, Eskimos, Aleuts, and native Hawaiians.

"Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria and size standards in 13 CFR 121.

"Small disadvantaged business concern," as used in this provision, means a small business concern that (1) is at least 51 percent owned by one or more individuals who are both socially and economically disadvantaged, or a publicly owned business having at least 51 percent of its stock owned by one or more socially and economically disadvantaged individuals and (2) has its management and daily business controlled by one or more such individuals.

(c) Qualified groups. The offeror shall presume that socially and economically disadvantaged individuals include Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Asian-Indian Americans, and other individuals found to be qualified by the SBA under 13 CFR 124.1. (FAR 52.219-2)

9. WOMEN-OWNED SMALL BUSINESS REPRESENTATION (APR 1984)

(a) Representation. The offeror represents that is [ ] is, [ ] is not a women-owned small business concern.

(b) Definitions.

"Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominate in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria and size standards in 13 CFR 121.

"Women-owned," as used in this provision, means a small business that is at least 51 percent owned by a woman or women who are U.S. citizens and who also control and operate the business. (FAR 52.219-3)

10. DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER REPORTING (DEC 1980)

In the block with its name and address, the offeror should supply the Data Universal Numbering System (DUNS) Number applicable to that name and address. The DUNS Number should be preceded by "DUNS:". If the offeror does not have a DUNS Number, it may obtain one from any DUN and Bradstreet branch office. No offeror should delay the submission of its offer pending receipt of its DUNS Number. (FAR SUPP 52.204-7004)

11. PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (APR 1984)

The offeror represents that-

(a) It [ ] has, [ ] has not participated in a previous contract or subcontract subject either to the Equal Opportunity clause of this solicitation, the clause originally contained in Section 310 of Executive Order No. 10925, or the clause contained in Section 201 of Executive Order No. 11114;

(b) It [ ] has, [ ] has not filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards. (FAR 52.222-22)

12. PERCENT FOREIGN CONTENT (SEP 1978)

Approximately _____ percent of the proposed contract price represents foreign content or effort. (DAR 7-2003.81)

NOTE: Bids must set forth full, accurate and complete information as required by this invitation for bids (including attachments). The penalty for making false statements is prescribed in 18 U.S.C. 1001.

A completed REPRESENTATIONS AND CERTIFICATIONS is to be returned with the bid.

CHANGES TO:

LABOR STANDARD PROVISIONS, NOVEMBER 1979 (Rev. 8/83)

2. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT-OVERTIME COMPENSATION (40. U.S.C. 327-333)(1983 AUG) - Delete clauses (a) and (b) and substitute the following therefor:

"(a) Overtime requirements. No Contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborers or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(b) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the provisions set forth in paragraph (a) of this clause, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the provisions set forth in paragraph (a) of this clause, in the sum of $10 for each calendar day in which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the provisions set forth in paragraph (a) of this clause."

SECTION 01010
GENERAL PARAGRAPHS

1. GENERAL INTENTION: It is the declared and acknowledged intention and meaning to provide and secure chlorine storage buildings, complete and ready for use.

2. GENERAL DESCRIPTION: The work includes removal of equipment from existing water treatment plants, chlorine storage buildings consisting of a pre-engineered metal shed with a monorail hoist, chlorine tank scales, flow proportional controllers, flow transmitters, and incidental related work.

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

4. NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (APR 1984).

(Applies when the amount of the contract is in excess of $10,000.)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade
23.5%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor

shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Director, Office of Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the-

(1) Name, address, and telephone number of the subcontractor;
(i) Employer identification number of the subcontractor;
(2) Estimated dollar amount of the subcontract;
(3) Estimated starting and completion dates of the subcontract; and
(4) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is State of North Carolina; Counties of Columbus, Duplin, Onslow and Pender. (FAR 52.222-23)

5. REQUIRED INSURANCE: (a) The Contractor shall procure and maintain during the entire period of performance under this contract the following minimum insurance coverage.

Type of Insurance	Per Person	Per Accident	Property
1. Comprehensive General Liability		$500,000	
2. Automobile Liability	$200,000	$500,000	$ 20,000

3. Workmen's Compensation: As required by Federal and State workers' compensation and occupational disease statutes.

4. Employer's liability coverage: $100,000, except in states where workers' compensation may not be written by private carriers.

5. Other as required by state law.

(b) Prior to commencement of work, the Contractor shall furnish to the Contracting Officer a certificate or written statement of the above required insurance. The policies evidencing required insurance shall contain an endorsement to the effect that cancellation or any material change in the policies adversely affecting the interests of the Government in such insurance shall not be effective for such period as may be prescribed by the laws of the State in which this contract is to be performed and in no event less than thirty (30) days after written notice thereof to the Contracting Officer.

(c) The Contractor agrees to insert the substance of this clause, including this paragraph (c), in all subcontracts hereunder.

6. STATION REGULATIONS: The Contractor and his employees and subcontractor shall become familiar with and obey all Station Regulations, including fire, traffic, and security regulations. All personnel employed on the station shall keep within the limits of the work (and avenues of ingress and egress), and shall not enter any restricted areas unless required to do so and are cleared for such entry. The Contractor's equipment shall be conspicuously marked for identification.

7. ORDER OF WORK: The Contractor shall schedule his work as to cause the least amount of interference with Station operations. Work schedules shall be subject to the approval of the Officer in Charge of Construction. Permission to interrupt any station roads, railroads and/or utility service shall be requested in writing a minimum of 15 calendar days prior to the desired date of interruption.

8. SCHEDULE OF PRICES: Within 5 days of receipt of Award, the Contractor shall prepare and submit to the Officer in Charge of Construction seven copies of a Schedule of Prices (Construction Contract) on the forms furnished for this purpose. The Schedule of Prices shall consist of a detailed breakdown of the contract price, giving the quantities for each of the various kinds of work, the unit prices, and the total prices therefore. The Schedule of Prices shall be separated by building numbers with a Schedule and a subtotal for each building. The building numbers and subtotals shall be the first item listed and totaled on the Schedule of Prices. The required schedule must be based on the actual breakdown of the bid price. Accordingly, subcontractors who may be involved in work shall be advised of this requirement in order to furnish such data without delay. The submission of the required data shall not otherwise affect the contract terms. Each item in the Schedule of Prices shall be structured so as to identify the section of the specifications to which it applies. Further, the section number shall be listed, and then each item of work within that section shall be listed. Specification sections shall be referred to by five-digit CSI numbers which apply.

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

(a) Contractor's Invoice on form NAVFAC 7300/30 (7/83), which shall show, in summary form, the basis for arriving at the amount of the invoice.

(b) Contractor's Monthly Estimate for Voucher (LANTNAVFACENGCOM 4-4330/110 (New 7/84)).

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

(d) Updated copy of progress schedule. (See Clause entitled "Schedules for Construction Contracts" of the Contract Clauses.)

Forms will be furnished by the Contracting Officer. The Contractor has the option to use the government furnished progress schedule and record form. 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 - Original and five copies
(b) Contractor's Monthly Estimate for Voucher - Original and two copies shall be required on all jobs where there is a schedule of prices
(c) Affidavit - Original
(d) Progress Schedule - Two copies

10. PROPOSED MATERIAL SUBMITTALS, CATALOG DATA, AND SAMPLES:

(a) Proposed material submittals required of the Contractor shall be made allowing sufficient time for processing, reviews, approval, and procurement before the Contractor is ready to use the material. No material shall be used prior to written approval. Submittals shall be prepared and assembled as follows:

(1) Submit specified number of copies of each submittal.
(2) Present all submittals for each specification section as a complete bound volume, titled with project title and contract number.
(3) Provide index of included items with each volume. Title the index with applicable specification section name and number.
(4) Clearly mark each item in the volume with the specification paragraph number to which it pertains.
(5) Assemble each volume in the same numerical sequence as specifications section paragraphs.
(6) See individual technical sections for additional information.

The Contractor shall certify on all submittals that the material being proposed conforms to contract requirements. In the event of any variance, the Contractor shall state specifically which portions vary, and request approval of a substitute. The Contractor shall also certify that all Contractor-furnished equipment can be installed in the allocated spaces. Incomplete submittals and submittals with inadequate data will be rejected.

(b) When required, catalog data shall be printed pages on permanent copies of the manufacturer's catalogs.

(c) Samples in the number specified shall be shipped prepaid and delivered as directed by the Officer in Charge of Construction. Samples shall be marked to show the name of the material, name of supplier, contract number, segment of work where material represented by sample is to be used, and name of Contractor submitting the sample.

11. CONTRACTOR'S DAILY REPORT: The Contractor will be required to submit a "Daily Report to Inspector" on the form furnished for this purpose. The form shall be completed daily and delivered to the Officer in Charge of Construction. Data to be reported includes data on workers by classification, the move-on and move-off of construction equipment furnished by the prime and subcontractor or furnished by the Government, and materials and equipment delivered to the site.

If "Contractor Quality Control" is applicable to this contract, the information required by this clause shall be submitted as part of the required reports.

12. WORK OUTSIDE REGULAR HOURS: If the Contractor desires to carry on work outside regular hours or on Saturdays, Sundays, or holidays, he shall submit an application to the Officer in Charge of Construction. The Contractor shall allow ample time to enable satisfactory arrangements to be made by the Government for inspecting the work in progress. At night, he shall light the different parts of the work in an approved manner. All utility cutovers shall be made after normal working hours or on weekends. Anticipated costs shall be included in the bid.

13. EXISTING WORK:

(a) The disassembling, disconnecting, cutting, removal or altering in any way of existing work shall be carried on in such a manner as to prevent injury or damage to all portions of existing work, whether they are to remain in place, re-used in the new work, or salvaged and stored.

(b) All portions of existing work which have been cut, damaged or altered in any way during construction operations shall be repaired or replaced in kind in an approved manner to match existing or adjoining work. All work of this nature shall be performed by the Contractor at his expense and shall be as directed. Existing work shall, at the completion of all operations, be left in a condition as good as existed before the new work started.

14. EQUITABLE ADJUSTMENTS: WAIVER AND RELEASE OF CLAIMS:

(a) Whenever the Contractor submits a claim for equitable adjustment under any clause of this contract which provides for equitable adjustment of the contract, such claim shall include all types of adjustments in the total amounts to which the clause entitles the Contractor, including, but not limited to, adjustments arising out of delays or disruptions or both caused by such change. Except as the parties may otherwise expressly agree, the Contractor shall be deemed to have waived (i) any adjustments to which it otherwise might be entitled under the clause where such claim fails to request such adjustments, and (ii) any increase in the amount of equitable adjustments additional to those requested in its claim.

(b) The Contractor agrees that, if required by the Contracting Officer, he will execute a release, in form and substance satisfactory to the Contracting Officer, as part of the supplemental agreement setting forth the aforesaid equitable adjustment. The Contractor further agrees that such release shall discharge the Government, its officers, agents and employees, from any further claims, including, but not limited to, further claims arising out of delays or disruptions or both caused by the aforesaid change.

15. GOVERNMENT REPRESENTATIVES:

(a) The work will be under the general direction of the Contracting Officer, the Commander, Naval Facilities Engineering Command, who shall designate an officer of the Civil Engineer Corps, United States Navy, or other officer or representative of the Government, as Officer in Charge of Construction, referred to as the "OICC." Except in connection with the "Disputes" clause, the Officer in Charge of Construction shall be the authorized representative of the Contracting Officer, and have complete charge

of the work and exercise full supervision of the work, so far as it affects the interest of the Government. For the purposes of the "Disputes" clause, "Contracting Officer" shall mean the Commander, Naval Facilities Engineering Command, the Acting Commander, their successors, or their representatives specially designated for this purpose.

(b) The provisions of this paragraph or elsewhere in this contract regarding supervision, approval or direction by the Contracting Officer or the OICC, or action taken pursuant thereto, are not intended to and shall not relieve the Contractor of responsibility for the accomplishment of the work either as regards sufficiency or the time of performance, except as expressly otherwise provided herein.

16. ORAL MODIFICATION: No oral statement of any person other than the contracting officer or his representative, as provided in the clause in this contract entitled "Changes", shall in any manner or degree modify or otherwise affect the terms of this contract.

17. NO WAIVER BY GOVERNMENT: The failure of the Government, in any one or more instances, to insist upon the strict performance of any of the terms of this contract or to exercise any option herein conferred shall not be construed as a waiver or relinquishment to any extent of the right to assert or rely upon such terms or option on any future occasion.

18. SANITATION: Contractor's employees will be allowed to use building toilets.

19. PAYMENTS TO CONTRACTOR:

(a) Payments made in accordance with the clause entitled "Payments Under Fixed-Price Construction Contract" shall be made on submission of itemized requests by the Contractor and shall be subject to reduction for overpayments or increase for underpayments on preceding payments to the Contractor.

(b) The obligation of the Government to make any of the payments required under any of the provisions of this contract shall, in the discretion of the OICC, be subject to (1) reasonable deductions on account of defects in material or workmanship, and (2) any claims which the Government may have against the Contractor under or in connection with this contract. Any overpayments to the Contractor shall, unless otherwise adjusted, be repaid to the Government upon demand.

20. CHANGES BOARD AND ESTIMATES: In determining any equitable adjustment under the Changes Clause, the OICC shall, in those instances where the adjustment is estimated by the OICC to be $50,000 or more, convene and give full consideration to the report of an advisory board of three members, consisting of two Government representatives appointed by the OICC and one representative appointed by the Contractor. This board shall report to the OICC the amount of the change in cost, time, or both, resulting from the ordered change. In making all equitable adjustments under the Changes Clause, compensation for additions will be based upon estimated costs at the time the work is performed and credit for deductions will be based upon estimated costs at the time the contract was made. In arriving at the amount of the change in price, if any, allowance may be made for profit, overhead and general expenses, plant rental, and other similar items.

21. SECURITY REQUIREMENTS: No employee or representative of the Contractor will be admitted to the site of the work unless he furnishes satisfactory proof that he is a citizen of the United States or is specifically authorized admittance to the site of the work by the OICC.

22. 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 and 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 his 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 attachements hereto.

*** END OF SECTION ***

SECTION 01011
ADDITIONAL GENERAL PARAGRAPHS

1. COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984): The Contractor shall be required to (a) commence work under this contract within 10 calendar days, (b) prosecute the work diligently, and (c) complete the entire work ready for use within 360 calendar days.

2 LIQUIDATED DAMAGES--CONSTRUCTION (APR 1984): (a) If the Contractor fails to complete the work within the time specified in the contract, or any extension, the Contractor shall pay to the Government as liquidated damages, the sum of $100.00 for each day of delay. (FAR 52.212-5)

(b) If the Government terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned the Government in completing the work.

(c) If the Government does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

3 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. If reduced size drawings are provided, graphic scales shall be used. Full-size drawings may be inspected during regular working hours at the office of the Contracting Officer.

NAVFAC DWG. NO.	SHEET NO.	TITLE
4133089	C-1	Site Location Maps
4133090	C-2	Site and Floor Plan
4133091	C-3	Plans and Details

3.1 Drawing Verification and Control: The Contractor shall check all drawings furnished him immediately upon their receipt and shall promptly notify the Contracting Officer of any discrepancies. Figures marked on drawings shall in general be followed in preference to scale measurements. Large scale drawings shall in general govern small scale drawings. The Contractor shall compare all drawings and verify the figures before laying out the work and will be responsible for any errors which might have been avoided thereby. (FAR SUPP 52.236-7002 (c))

4 SPECIFICATIONS AND PRINTS FURNISHED TO CONTRACTOR: Six copies of the project specifications, and six sets of the drawings accompanying the specifications will be furnished the Contractor without charge. Additional sets of the specifications and drawings can be obtained, if required, by application to the Contracting Officer, provided that the need therefore is justified to the satisfaction of the Contracting Officer.

5 MATERIALS AND EQUIPMENT TO BE SALVAGED: Contract Clause entitled "Salvage Materials and Equipment" 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.

6 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.

7 UTILITIES:

7.1 Availability of Utilities Services: Contract clause entitled "Availability and Use of Utility Services" applies. Reasonable amounts of 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.

7.2 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.

7.3 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 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 Contract clause entitled "Differing Site Conditions". The Base Telephone Officer, telephone 451-2531, will show the Contractor approximate locations of all buried telephone and fire alarm cables after receiving ten days notice. The locations of underground utilities shown is only approximate and the information is incomplete.

8 TRAILERS OR STORAGE BUILDINGS: In accordance with Contract Clause entitled "Operations and Storage Areas", trailers or storage buildings will be permitted, 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. A sign not smaller than 24 inches by 24 inches shall be conspicuously placed on the trailer depicting the company name, business phone number, and emergency phone number.

9 EQUIPMENT GUARANTEES:

9.1 EQUIPMENT GUARANTEE LIST: The Contractor shall obtain and furnish to the Contracting Officer writtten guarantees for all equipment furnished by the Contractor under the contract and shall prepare a complete listing of all such equipment. This equipment list shall state the specification section applicable to the equipment, duration of the warranty therefor, start date of the warranty, ending date of the warranty, and the point of contact for fulfillment of the warranty. This listing shall be fully executed and delivered to the Contracting Officer prior to final acceptance of the facility, and such acceptable listing shall be a condition to final acceptance of the facility.

9.2 EQUIPMENT WARRANTY TAGS AND GUARANTOR'S LOCAL REPRESENTATIVE: 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 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. Tag shall be attached with copper wire and sprayed with a clear silicone waterproof coating. Leave the date of acceptance and inspector's signature blank until project is accepted for beneficial occupancy. Tag shall show the following information:

EQUIPMENT WARRANTY TAG

Type of Equipment.....
Accepted Date.....
Warranted Until.....
Under Contract N62470-.....
Inspector's Signature.....

STATION PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE

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 ordered from the Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

b. Department of the Army, Corps of Engineers, "Safety and Health Requirements Manual", which may be examined in 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. Contract Clause entitled "Accident Prevention."

d. NFPA 241-1981, 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, Batterymarch Park, Quincy, MA 02269.

11 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.

12 SCHEDULING THE WORK:

12.1 General Scheduling Requirements: Notwithstanding the requirements of Contract Clause entitled "Schedules for construction Contracts", 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 7:30 a.m. to 4:00 p.m. Monday through Friday.

12.2 The Water Treatment Plants 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.

12.3 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. Dust covers or protective enclosures shall be provided to protect existing work to remain and Government material located in the buildings during the construction period.

12.4 Permission to interrupt any utility service shall be requested in writing at least fifteen 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. All utility cutovers shall be made after normal working hours or on weekends; anticipated costs shall be included in the bid.

13 FORWARDING OF SAMPLES AND SUBMITTALS: Notwithstanding the requirements of Clause entitled "Shop Drawings" of the Contract Clauses, the quantity of submittals required shall be as specified hereinafter.

13.1 Address for Samples and Submittals:

OICC/ROICC
Jacksonville, North Carolina Area
Building 1005, Marine Corps Base
Camp Lejeune, North Carolina 28542

13.2 Samples Required of the Contractor: As soon as practicable, and before installation, submit for approval, samples of materials and equipment as may be requested, including all samples required in the technical sections of this specification.

13.3 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 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.

13.4 Submittal Drawing Guidance: 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.

14 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. The drawings accompanying this specification shall not be used as shop drawings; for example, the editing of the drawings accompanying this specification and returning these edited drawings as shop drawings is prohibited.

15 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.

16 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.

17 OMISSIONS AND MISDESCRIPTIONS: Omissions from the drawings or specifications or the misdescription of details of work which are manifestly necessary to carry out the intent of the drawings and specifications, or which are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work but they shall be performed as if fully and correctly set forth and described in the drawings and specifications.

(FAR SUPP 52.236-7002(b))

18 PRECEDENCE: In the event of conflict or inconsistency between any of the provisions of the various portions of this contract (the reconciliation of which is not otherwise provided for here), precedence shall be given in the following order, the provisions of any particular portion prevailing over those of a subsequently listed portion.

(1) Typewritten portions of the contract.

(2) The specifications referred to in Standard Form 1442 (including all addenda, and mechanical and technical but not contractual aspects of incorporated provisions) as specifically amended herein, if amended.

(3) Printed provisions of the contract form, including printed provisions of added slip sheets.

19 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 shall be made by the Contractor to the Naval Regional Medical Center Collection Agent upon receipt of a monthly statement.

20 QUARANTINE FOR IMPORTED FIRE ANT (4/82): All of Onslow, Jones and Cartaret 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.

20.1 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.

20.2 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 of the U.S. Department of Agriculture.

(1) Bulk soil.

(2) Used mechanized soil-moving equipment.

NOTE: Used mechanized soil-moving equipment is exempt if cleaned of all loose noncompacted soil.

(3) Any other products, articles, or means of conveyances, 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.

20.3 Authorization for movement of equipment outside the imported fire ant regulated area shall be obtained from USDA, APHIS, PPQ, Box 83, Goldsboro, North Carolina, 27530, Attn: Mr. Haywood Cox, Telephone (919) 735-1941, and requests for inspection shall be made sufficiently in advance of the date of movement to permit arrangements for the services of authorized inspectors. The equipment shall be prepared and assembled so that it may be readily inspected. 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 necessary and as directed.

21 GENERAL PROVISIONS CLAUSES: Wherever a reference to a clause of the General Provisions occurs in the technical sections of the specifications, it shall be taken to mean the Contract Clause having the same title as the referenced General Provisions Clause.

22 SUBMISSION OF OPERATION AND MAINTENANCE MANUALS: Operation and Maintenance Manuals required under this contract shall be submitted to the Contracting Officer at least 60 days prior to contract completion. In addition, one complete Operation and Maintenance Manual shall be submitted to the Contracting Officer for review and approval not more than 90 calendar days after an item is approved but at least 60 calendar days prior to field acceptance testing of the item.

*** END OF SECTION ***

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 3666-83	Evaluation of Inspection and Testing Agencies for Bituminous Paving Materials
D 3740-80	Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
E 329-77 (R 1983)	Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction
E 543-83	Determining the Qualification of Nondestructive Testing Agencies
E 548-79	Generic Criteria for Use in Evaluation of Testing and Inspection Agencies

1.2 QUALITY CONTROL: Quality Control of this contract will be administered under the clause entitled "Inspection of Construction" of the Contract Clauses.

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.

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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 Compliance: 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 Contract Clauses and Section 01010, "General Paragraphs," 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 tne 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. Identify each item submitted by reference to the specific technical paragraph which specifies the item. Likewise, identify each item on the Contractor's Submittal Transmittal form by reference to the specific technical paragraph which specifies the item. 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 date of Contract 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 clauses entitled "Shop Drawings" of the Contract Clauses and "Proposed Material Submittals, Catalog Data, and Samples" of Section 01010, "General Paragraphs."

1.4.3 Manufacturer's Data: Catalog cuts, technical data sheets, and descriptive literature, shall be in accordance with the clause entitled "Proposed Material Submittals, Catalog Data, and Samples" of Section 01010, "General Paragraphs."

1.4.4 Samples: Prepare and submit in accordance with the clause entitled "Proposed Material Submittals, Catalog Data, and Samples" of Section 01010, "General Paragraphs."

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 except that tests for concrete and bituminous mix designs shall have been performed within one year of submittal. 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 Compliance: 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 compliance.

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 clause entitled "Inspection of Construction" of the Contract Clauses, 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 clause entitled "Inspection of Construction" of the Contract Clauses.

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 responsiblility.

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.

SUBMITTAL STATUS LOG

"SEE INSTRUCTIONS ON REVERSE BEFORE FILLING IN"

PAGE _____ OF _____

CONTRACT NUMBER | SHORT TITLE | LOCATION | CONTRACTOR

SUBMITT/ TRANSMITT NO.	DESCRIPTION OF ITEMS	SPECIFICATION SECTION REQUIRING SUBMITTAL	SUBMITTAL REQUIRES					CONTRACTOR APPV'D	GOV'T APPROVED	CONTRACTOR ACTION		DATE FORWARDED FROM ROICC	ROICC ACTION		DATE			REMARKS
			SHOP DWGS.	CATALOG DATA	SAMPLE	CERTIFI-CATION	TEST DATA			INSERT ACTION CODE	DATE OF ACTION		INSERT ACTION CODE	DATE OF ACTION	RECEIVED FROM ROICC	MAT'L/EQUIP RECEIVED ON SITE	APPROVED BY CONTRACTOR	
(a)	(b)	(c)	(d)					(e)		(f)		(g)	(h)		(i)	(j)	(k)	

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01401 - 6

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 complted by the Contracctor.

4. In those instances where the Contractor has approved the submittal under his contraact 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 "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 deliverd to the project. Column (k) is completed only afteer verifiation that the delivered item is that represented by the approval 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 OICCC for record purposes

END OF SECTION

SECTION 01560

ENVIRONMENTAL PROTECTION

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.

ENVIRONMENTAL PROTECTION AGENCY (EPA):

40 CFR 61(Subpart B)	National Emission Standards for Asbestos (1979)
40 CFR 761	Polychlorinated Biphenyls (1979)

U. S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA):

29 CFR 1910.1001	General Industry Safety and Health Standards (1979)

FEDERAL REGULATION (FR):

Executive Order 11988	Flood Plain Management (42 FR 28951)

NAVAL ENVIRONMENTAL PROTECTION SUPPORT SERVICE (NEPSS):

PS-015	Disposal of Lead-Acid Battery Electrolyte, April 18, 1980

1.2 DEFINITIONS OF CONTAMINANTS:

1.2.1 Sediment: Soil and other debris that has been eroded and transported by runoff water.

1.2.2 Solid Waste: Rubbish, debris, garbage, and other discarded solid materials resulting from industrial, commercial, and agricultural operations, and from community activities.

1.2.2.1 Rubbish: A variety of combustible and noncombustible wastes such as paper, boxes, glass, crockery, metal, lumber, cans, and bones.

1.2.2.2 Debris: Includes combustible and noncombustible wastes, such as ashes, waste materials that result from construction or maintenance and repair work, leaves, and tree trimmings.

1.2.3 Chemical Wastes: Includes salts, acids, alkalies, herbicides, pesticides, and organic chemicals.

1.2.4 Sanitary Wastes:

1.2.4.1 Sewage: Wastes characterized as domestic sanitary sewage.

1.2.4.2 Garbage: Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.

1.2.5 Asbestos and Asbestos Materials: Asbestos means actinolite, amosite, anthophyllite, chrysotile, crocidolite, and tremolite. Asbestos material means asbestos or any material containing asbestos such as asbestos waste, scrap, debris bags, containers, equipment, and asbestos-contaminated clothing consigned for disposal. Friable asbestos material means any material that contains more than one percent asbestos by weight and that can be crumbled, pulverized, or reduced to powder, when dry, by hand pressure.

1.2.6 Oily Waste: Includes petroleum products and bituminous materials.

1.3 SUBMITTALS:

1.3.1 Environmental Protection Plan: Submit four copies of the proposed Enviornmental Protection Plan not later than 14 days after the meeting with the Contracting Officer to discuss the development of an Environmental Protection Plan.

1.3.2 Notices Pertinent to Asbestos Removal:

1.3.2.1 Notice to EPA: Submit three copies of the notice of intention to demolish asbestos insulated or fireproofed materials and equipment provided to the Administrator of EPA, and the State's Environmental Protection Agency as required in paragraph titled "Written Notice."

1.3.2.2 Preconstruction Survey Report: Submit three copies of the preconstruction survey report.

1.3.3 Solid Waste Disposal Permit: Submit one copy of State and local permit or license which reflects such agency's aproval of the disposal plan as being in compliance with their solid waste disposal regulations.

1.4 ENVIRONMENTAL PROTECTION REQUIREMENTS: Provide and maintain during the life of the contract, environment protection as defined herein. Provide environmental protective measures as required to control pollution that develops during normal construction practice. Provide also environmental protective measures required to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project. Comply with all federal, state, and local regulations pertaining to water, air, and noise pollution. Develop proposals for an environmental protection plan for the project and, prior to the commencement of the work, meet with the Contracting Officer and discuss the proposed environmental protection plan. The meeting shall develop mutual understanding relative to details of environmental protection, including measures for protecting natural resources, required reports, and measures to be taken should the Contractor fail to provide adequate protection in an adequate and timely manner. Perform a preconstruction survey of the project site and take photographs as necessary to enhance the survey.

PART 2 - EXECUTION

2.1 PROTECTION OF NATURAL RESOURCES: 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. Confine construction activities to areas defined by the work schedule, drawings, and specification.

2.1.1 Land Resources: Except in areas indicated to be cleared, do not remove, cut, deface, injure, or destroy trees or shrubs without special permission from the Contracting Officer. Do not fasten or attach ropes, cables, or guys to any existing nearby trees for anchorages unless specifically authorized. Where such special emergency use is authorized, the Contractor shall be responsible for any resultant damage.

2.1.1.1 Protection: Protect existing trees which are to remain and which may be injured, bruised, defaced, or otherwise damaged by construction operations. Remove displaced rocks from uncleared areas. Protect monuments, markers, and works of art.

2.1.1.2 Repair or Restoration: Repair or restore to their original condition all trees or other landscape features scarred or damaged by the equipment or operations. Obtain approval of the repair or restoration from the Contracting Officer prior to its initiation. Include topsoil or nutriment during the seeding operation as necessary to provide a suitable stand of grass.

2.1.2 Water Resources: Perform all work in such a manner that any adverse environmental impact on water resources is reduced to a level acceptable to the Contracting Officer.

2.1.2.1 Stream Crossings: Limit equipment fording across stream to control turbidity.

2.1.2.2 Oily Substances: Take special measures to prevent oily or other hazardous substances from entering the ground, drainage areas, or local bodies of water. Surround all temporary fuel oil, petroleum, or liquid chemical storage tanks with a temporary earth berm of sufficient size and strength to contain the contents of the tanks in the event of content leakage or spillage.

2.1.3 Fish and Wildlife Resources: During the performance of the work take such steps as required to prevent interference or disturbance to fish and wildlife. Do not alter water flows or otherwise significantly disturb native habitat adjacent to the project area which are critical to fish and wildlife except as may be indicated or specified.

2.1.4 Historical and Archeological Resources: Carefully preserve and report immediately to the Contracting Officer all items having any apparent historical or archeological interest which are discovered in the course of any construction activities.

2.2 EROSION AND SEDIMENT CONTROL MEASURES:

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

2.2.2 Borrow Pit Areas: Manage and control borrow pit areas to prevent sediment from entering nearby streams or lakes. Restore areas, including those outside borrow pit, disturbed by borrow and haul operations. Restoration includes grading, replacement of topsoil, and establishment of permanent vegetative cover. Uniformly grade side slopes of borrow pit to a slope of 30 degrees or less with the horizontal. Uniformly grade bottom of borrow pits to provide a flat bottom and drain by outfall ditches or other suitable means. Borrow locations will be as directed by the Contracting Officer.

2.2.3 Protection of Erodible Soils: All earthwork brought to final grade shall be immediately finished as indicated or specified. Protect immediately side slopes and back slopes upon completion of rough grading. Plan and conduct all earthwork in such a manner as to minimize the duration of exposure of unprotected. soils.

2.2.4 Temporary Protection of Erodible Soils: Utilize the following methods to prevent erosion and control sedimentation.

2.2.4.1 Mechanical Retardation and Control of Runoff: Mechanically retard and control the rate of runoff from the construction site. This includes construction of diversion ditches, benches, and berms, to retard and divert runoff to protected drainage courses.

2.2.4.2 Sediment Basins: Trap sediment in temporary or permanent sediment basins. Select basin size to accommodate the runoff of a local 50 year storm. Pump dry and remove accumulated sediment after each storm. Use a paved weir or vertical overflow pipe for overflow. Remove collected sediment from the site. Institute effluent quality monitoring programs as required by state and local environmental agencies.

2.2.4.3 Vegetation and Mulch: Provide temporary protection on all side and back slopes as soon as rough grading is completed or sufficient soil is exposed to require protection to prevent erosion. Such protection shall be accelerated growth of permanent vegetation, temporary vegetation, mulching, or netting. Stabilize slopes by hydroseeding, anchoring mulch in place, covering with anchored netting, sodding, or such combination of these and other methods necessary for effective erosion control.

2.3 CONTROL AND DISPOSAL OF SOLID, CHEMICAL, AND SANITARY WASTES: Pick up solid wastes and place in containers which are emptied on a regular schedule. The preparation, cooking, and disposing of food are strictly prohibited on the project site. Conduct handling and disposal of wastes to prevent contamination of the site and other areas. On completion, leave areas clean and natural looking. Obliterate signs of temporary construction and activities incidental to construction of the permanent work in place. The Base Sanitary Landfill will not accept liquid wastes or empty drums. 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.

2.3.1 Disposal of Garbage, Rubbish and Debris: Remove garbage, rubbish and debris from Government property and dispose of it in compliance with federal, state and local requirements.

2.3.2 Sewage, Odor, and Pest Control: Dispose of sewage through connection to station sanitary sewage system. Where such systems are not available, use chemical toilets or comparably effective units and periodically empty wastes into municipal or station sanitary sewage system. Include provisions for pest control and elimination of odors.

2.3.3 Chemical Waste: Store chemical waste in corrosion resistant containers labeled to identify type of waste and date filled. Remove containers from the project site, and dispose of chemical waste in accordance with federal, state, and local regulations. For oil and hazardous material spills which may be large enough to violate federal, state, and local regulations, notify the Contracting Officer immediately.

2.3.3.1 Petroleum Products: Conduct fueling and lubricating of equipment and motor vehicles in a manner that affords the maximum protection against spills and evaporation. Dispose of lubricants to be discarded and excess oil in accordance with approved procedures meeting federal, state and local regulations.

2.3.3.2 Polychlorinated Biphenyls (PCB) Control: Comply with 40 CFR 761 for removal and disposal of PCB containing articles.

2.3.3.3 Lead-Acid Battery Electrolyte: Electrolyte solution from lead-acid batteries shall be disposed of in such a manner as to ensure compliance with applicable federal, state, and local regulations. The electrolyte shall not be dumped onto the ground, into storm drains or into the sanitary sewer without neutralization. One of the following alternatives shall be used for disposal of waste electrolytes.

a. An industrial waste treatment plant, if available and approved for neutralizing and disposing of battery-acid electrolyte.

b. Transport the electrolyte to a state-approved hazardous waste disposal site. Method of transportation and equipment must comply with applicable federal and state regulations.

2.3.4 Asbestos: Comply with 29 CFR 1910.1001, 40 CFR 61, and the requirements specified herein for the disposal of material containing asbestos and demolition of materials and equipment insulated or fireproofed with friable asbestos material. Use of the Base Sanitary Landfill will be mandatory for all removal involving friable asbestos fiber.

2.3.4.1 Written Notice: Provide written notice of intention to demolish to the Administrator of EPA and the State's environmental protection agency at least 20 days prior to commencement of such demolition. Prepare reports in accordance with Section 61.22 of 40 CFR 61 and forward to EPA. The notice shall contain the following information:

a. Name of Prime Contractor
b. Address of Prime Contractor
c. Address or location and description of buildings, structures, or facilities to be demolished or renovated, including size, age, prior use, and approximate amount of friable asbestos materials to be removed
d. Schedule indicating planned start and completion of demolition or renovation
e. Method of removal to be employed
f. Procedures to be employed to meet the requirements of Sections 61.22(d) and 61.22(j) of 40 CFR 61, and Volume 1 of 29 CFR 1910.1001.
g. The address or location of the waste disposal site for the friable asbestos wasted which will be the Camp Lejeune Base Sanitary Landfill.

2.3.4.2 Use the following procedures and those required by Section 61.22 of 40 CFR 61 to prevent emissions of particulate asbestos material to outside air:

a. Unless otherwise specified, wet all friable asbestos materials before removal from any building, structure, facility, or installation. Pipe, structural members, equipment, or other items insulated or fireproofed with friable asbestos materials may be removed as units or in sections without stripping. If pipes or structural members are cut or disjointed, wet all exposed friable asbestos materials. Wet all friable asbestos debris adequately to ensure that it remains wet during all stages of demolition and removal operations.

b. Do not drop or throw to ground any pipe, structural member, equipment, or item covered with friable asbestos insulation or fireproofing material. Carefully lower all asbestos and asbestos covered materials to ground level.

2.3.5 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.

2.3.6 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.

2.4 DUST CONTROL: Keep dust down at all times, including non-working hours, weekends, and holidays. Sprinkle or treat, with dust suppressors, the soil at the site, haul roads, and other areas disturbed by operations. No dry power brooming is permitted. Instead, use vacuuming, wet mopping, wet sweeping, or wet power brooming. Air blowing is permitted only for cleaning nonparticulate debris, such as steel reinforcing bars. No sandblasting is permitted unless dust threrefrom is confined. Only wet cutting of concrete blocks, concrete, and asphalt is permitted. No unnecessary shaking of bags is permitted where bagged cement, concrete mortar, and plaster is used.

2.5 NOISE: When available, make the maximum use of "low-noise-emission products" as certified by EPA. No blasting or use of explosives is permitted without written permission of the Contracting Officer and then only during the designated times. Confine pile driving operations to the period between 8 a.m. and 4 p.m., Monday through Friday, unless specified otherwise.

END OF SECTION

SECTION 01730
OPERATION AND MAINTENANCE MANUALS

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.

DEFENSE LOGISTICS AGENCY HANDBOOK:

H 4-1 Federal Supply Code for Manufacturers; United States and Canada - Name to Code, June 1982

1.2 CONTRACTOR RESPONSIBILITY: Provide the manufacturers' information specified herein for the components, assemblies, subassemblies, attachments, and accessories required to be supplied in accordance with this contract whether the item is assembled at the site from separately purchased items or is purchased as a factory- fabricated unit. Submitted information shall pertain to the equipment and systems installed in this construction contract. Submittals containing information on equipment and systems not installed as a part of this contract will be considered incomplete.

PART 2 - PRODUCTS

2.1 SUBMITTALS:

2.1.1 Operating Instructions: Include specific instructions, procedures, and illustrations for the following phases of operation of the system resulting from combining new and existing equipment and components:

a. Safety Precautions: List personnel hazards and equipment safety precautions for all operating conditions.

b. Operator Prestart: Include requirements to set up and prepare each system for use.

c. Startup, Shutdown, and Postshutdown Procedures: Include a control sequence for each phase of operation. Note required startup precautions.

d. Normal Operations: Include control diagrams with data to explain operation and control of systems and specific equipments.

e. Emergency Operations: Include emergency procedures for equipment malfunctions to permit a short period of continued operation or to shut down the equipment to prevent further damage to systems and equipment. Include emergency shutdown instructions for fire, explosion, spills, or any contingency. Provide guidance on emergency operations of all utility systems including valve locations and portions of systems controlled.

f. Operator Service Requirements: Include instructions for services to be performed by the operator such as lubrication, adjustments, and inspection.

2.1.2 Preventive Maintenance: Include the following information for preventive and scheduled maintenance to minimize corrective maintenance and repair.

2.1.2.1 Lubrication Instructions (Other Than Services Performed by the Operator): Include:

a. A table showing recommended lubricants for specific temperature ranges and applications;

b. Chart(s) with schematic diagram of the equipment showing lubrication points, recommended types and grades of lubricants, and capacities; and

c. A lubrication schedule showing service interval frequency.

2.1.2.2 Preventive Maintenance Plan and Schedule: Include manufacturer's schedule for routine preventive maintenance, inspections, and adjustments required to ensure proper and economical operation and to minimize corrective maintenance and repair.

2.1.3 Corrective Maintenance: Include manufacturer's recommendations on procedures and instructions for correcting problems and making repairs on the systems including those composed of both new and existing components as follows:

2.1.3.1 Troubleshooting Guides and Diagnostic Techniques: Include step-by-step procedures to promptly isolate the cause of typical malfunctions. Indicate clearly why the checkout is performed and what conditions are to be sought. Include tests or inspections and test equipment required to determine if parts and equipment may be reused or must be replaced.

2.1.3.2 Maintenance and Repair Procedures: Include instructions and list tools required to restore equipment to proper operating standards.

2.1.3.3 Removal and Replacement Instructions: Include step-by-step procedures and list required tools and supplies for removal, replacement, disassembly, and assembly of components, assemblies, subassemblies, accessories, and attachments. Instructions should include a combination of text and illustrations.

2.1.3.4 Spare Parts and Supply Lists: Include lists of parts and supplies required for maintenance and repair to ensure continued operation without unreasonable delays. Special consideration is required for facilities at remote locations.

2.1.4 Appendices: Provide information not specified in the preceding paragraphs. Include the following:

2.1.4.1 Parts Identification: Provide identification and coverage for the parts of components, assemblies, subassemblies, and accessories of the end item subjected to replacement. Include special hardware requirements (e.g., high-strength bolts and nuts). Identify parts by make, model, serial number, and source of supply to allow reordering without further identification.

Provide clear and legible illustrations, drawings, and exploded views to enable easy identification of the items. When illustrations omit the part numbers and description, both the illustrations and separate listing shall show the index, reference, or key number which will cross-reference the illustrated part to the listed part. Parts shown in the listings shall be grouped by components, assemblies, and subassemblies with individual parts identified to the assembly.

a. Manufacturer's Standard Commercial Practice: The parts data may cover more than one model or series of equipment, components, assemblies, subassemblies, attachments, or accessories, such as a master parts catalog, in accordance with the manufacturer's standard commercial practice.

b. Other Than Manufacturer's Standard Commercial Practice: End item manufacturer may add a cross-reference to implement components' assemblies/parts requirements when implementation in manual form varies drastically from the style, format, and method of manufacturer's standard commercial practice. Use the following format:

End Item Manufacturer's Alphanumeric Sequence	Actual Manufacturer's Name and/or FSCM* From H 4-1	Actual Manufacturer Part No.
100001	John Doe & Co. 00000	2000002

* Federal Supply Code for Manufacturers

2.1.4.2 Warranty Information: List and explain the various warranties to include the servicing and technical precautions prescribed by the manufacturers or contract documents to keep warranties in force.

2.1.4.3 Personnel Training Requirements: Provide information available from the manufacturers to use in training designated personnel to operate and maintain the equipment/systems properly.

2.1.4.4 Testing Equipment and Special Tool Information: Include information on test equipment required to perform specified tests and on special tools needed for the operation, maintenance, and repair of components.

2.1.4.5 Contractor Information: Provide a list that includes the name, address, and telephone number of the general Contractor and each subcontractor installing the equipment. Include local representatives and service organizations reasonably convenient to the project site.

*** END OF SECTION ***

SECTION 02050

REMOVAL

PART 1 - GENERAL

1.1 SUBMITTALS: Submit proposed salvage, demolition and removal procedures for approval before work is started. Procedures shall provide for careful removal and disposition of materials specified to be salvaged, coordination with other work in progress, a disconnection schedule of services, a detailed description of methods and equipment to be used for each operation and of the sequence of operations.

1.2 REQUIREMENTS: The work includes removal of all equipment or construction indicated or specified. Do not begin demolition until authorization is received from the Contracting Officer; refer to paragraph "Title to Materials," hereinafter. Remove rubbish and debris from buildings after every shift, from the base daily.

1.3 DUST CONTROL: Take appropriate action to check the spread of dust to occupied portions of the building and to avoid the creation of a nuisance in the surrounding area. Dust screens will be required to separate the work area from adjacent water treatment areas. Do not use water if it results in hazardous or objectionable conditions, such as ice, flooding, or pollution. Comply with all dust regulations imposed by local air pollution agencies.

1.4 PROTECTION:

1.4.1 Existing Work: Protect existing work which is to remain in place, that is to be reused, or which is to remain the property of the Government by temporary covers, shoring, bracing, and supports. Items which are to remain and which are to be salvaged and which are damaged during performance of the work shall be repaired to their original contition or replace with new. Do not overload structural elements. Provide new supports and reinforcement for existing construction weakened by demolition or removal work.

1.4.2 Trees: Protect trees within the project site that might be damaged during demolition. Refer to Section 01560, "Environmental Protection."

1.5 EXPLOSIVES: Use of explosives will not be permitted.

1.6 BURNING: Burning will not be permitted.

PART 2 - EXECUTION

2.1 DISPOSITION OF MATERIAL:

2.1.1 Title to Materials: Except where indicated otherwise or specifically specified otherwise in other sections, all materials and equipment removed, and not reused, shall become the property of the Contractor and shall be removed from Government property. Title to all materials resulting from demolition, and all materials and equipment to be removed, is vested in the Contractor upon approval by the Contracting Officer of the Contractor's demolition and removal procedures, and authorization by the Contracting Officer to begin demolition. The Government will not be responsible for the condition or loss of, or damage to, such property after notice to proceed. Materials and equipment shall not be viewed by prospective purchasers or sold on the site.

2.1.2 Reuse of Materials and Equipment: Carefully remove and store materials and equipment indicated to be reused or relocated to prevent damage, and reinstall as the work progresses.

2.1.3 Salvaged Materials and Equipment: Carefully remove materials and equipment that are indicated to be removed by the Contractor and that are to remain the property of the Government, and deliver to a storage site, as directed within 10 miles of the work site.

2.2 CLEANUP:

2.2.1 Debris and Rubbish: Remove and transport debris and rubbish in a manner that will prevent spillage on streets or adjacent areas. Clean up spillage from streets and adjacent areas.

2.2.2 Regulations: Comply with federal, state, and local hauling and disposal regulations.

*** END OF SECTION ***

SECTION 02221

EARTHWORK FOR STRUCTURES AND PAVEMENTS

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.

American Society for Testing and Materials (ASTM):

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
D 1557-78	Moisture Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb. (4.54-kg) Rammer and 18-in. (457-mm) Drop

United States Army Corps of Engineers (COE):

EM-385-1-1 April 1981	Safety and Health Requirements Manual

1.2 DESCRIPTION: The work includes performing site preparation, excavation, borrow, filling, backfilling, compacting, and finished grading necessary to construct the finished grades indicated for on-grade slabs or site work and underground lines. Includes providing a new underdrain system complete and ready for operation.

1.3 DEFINITIONS:

1.3.1 Backfill: Material used in refilling a cut or other excavation.

1.3.2 Capillary Water Barrier: A layer of clean, poorly graded crushed rock, stone, or natural sand or gravel having a high porosity which is placed beneath a building slab with or without a vapor barrier to cut off the capillary flow of pore water to the area immediately below a slab.

1.3.3 Compaction: The process of mechanically stabilizing a material by increasing its density at a controlled moisture condition. "Degree of Compaction" is expressed as a percentage of the maximum density obtained by the test procedure described in ASTM D 698 or D 1557 for general soil types abbreviated in this specification as "____ percent ASTM D ____ maximum density".

1.3.4 Shellrock Subgrade: A layer of compacted crushed rock that replaces the in-place existing material to provide a stable, uniform bearing foundation for further construction.

1.3.5 Excavation: The removal of soil, rock, or hard material to obtain a specified depth or elevation.

1.3.6 Fill: Specified material placed at a specified degree of compaction to obtain an indicated grade or elevation.

1.3.7 Hard Material: Weathered rock, dense consolidated deposits or conglomerate materials which are not included in the definition of "rock" but which usually require the use of heavy excavation equipment with ripper teeth or the use of jack hammers for removal.

1.3.8 Lift: A layer (or course) of soil placed on top of a previously prepared or placed soil in a fill or embankment.

1.3.9 Soil: The loose surface material of the earth's crust resulting from the chemical and mechanical weathering of rock and organic material.

1.3.10 Subgrade: The bottom layer of material (sometimes in-situ soil or rock) graded or otherwise prepared for supporting the addition of fill material, pavement courses, or a building slab.

1.3.11 Topsoil: In natural or undisturbed soil formations, the fine-grained, weathered material on the surface or directly below any loose or partially decomposed organic matter. Topsoil may be a dark-colored, fine, silty, or sandy material with a high content of well decomposed organic matter, often containing traces of the parent rock material. Gradation and material requirements specified herein apply to all topsoil references in this contract. The material shall be representative of productive soils in the vicinity.

1.3.12 Unsatisfactory Material: Existing, in-place soil or other material which can be identified as having insufficient strength characteristics or stability to carry intended loads in fill or embankment without excessive consolidation or loss of stability. Unsatisfactory materials include manmade fills, refuse, frozen material, uncompacted backfills for previous construction, unsound rock or soil lenses, or other deletorious or objectionable material.

1.4 Coordination with other work under this contract is essential. Do not trench until ready to lay pipe, do not cover until electrical conduit and pipe is inspected, and accepted, but an exterior trench shall not lay open more than five days before fully filled and covered.

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

1.6 CRITERIA FOR BIDDING: Base bids on the following criteria:

a. Surface elevations are as indicated.

b. No pipes or other manmade obstructions, except those indicated, will be encountered.

c. The character of the material to be excavated or used for subgrade is as indicated. Rock or hard material as defined in paragraph, "DEFINITIONS," will not be encountered.

d. Blasting will not be permitted. Remove material in an approved manner.

1.7 PROTECTION:

1.7.1 Shoring and Sheeting: In addition to Section XXIII A and B of COE Manual EM-385-1-1, meet the following requirements:

a. Prevent undermining of pavements and slabs.

b. Slope banks where space permits.

1.7.2 Dewatering: Include the disposal of surface water which may accumulate in open excavations, unfinished fills, or other low areas. Remove water by trenching where approved, pumping, or other methods to prevent softening of exposed surfaces. Surface dewatering plan shall include the rerouting of any storm water runnoff or natural drainage if necessary and shall comply with requirements specified in Section 01560, "Environmental Protection".

1.7.2.1 Dewatering Plan: Base on site surface and subsurface conditions and available soils and hydrological data. Remove water by pumping or other methods to prevent the softening of surfaces exposed by excavation.

1.7.3 Utilities: Contact the Contracting Officer 72 hours prior to construction for the location of all existing underground utilities and fire alarm lines. Movement of construction machinery and equipment over pipes and utilities during construction shall be at the Contractor's risk. Excavation made with power-driven equipment is not permitted within two feet of any known utility or subsurface construction. For work immediately adjacent to or for excavations exposing a utility or other buried obstruction, use hand or light equipment excavation. Start hand or light equipment excavation on each side of the indicated obstruction and continue until the obstruction is uncovered or until clearance for the new grade is assured. Support uncovered lines or other existing work as affected by the contract excavation until approval for backfill is granted by the Contracting Officer. Report damage to utility lines or subsurface construction immediately to the Contracting Officer.

1.7.4 Protection and Restoration of Surfaces: Protect newly graded areas from traffic, erosion, and settlements. Repair and reestablish damaged or eroded slopes, elevations or grades and restore surface construction prior to acceptance. Protect existing streams, ditches and storm drain inlets from water-borne soil by means of straw bale dikes

1.7.4.1 Conduct work in accordance with requirements specified in Section 01560, "Environmental Protection".

1.7.4.2 Dispose of excavated material in such a manner that it will not obstruct the flow of streams, endanger a partly finished structure, impair the efficiency or appearance of facilities, or be detrimental to the completed work.

PART 2 - PRODUCTS

2.1 Soil Materials: Provide materials free from debris, roots, wood, scrap materials, vegetable matter, refuse or frozen material. Maximum particle size permitted is 3 inches. Use excavated material from the site for the work indicated when material falls within the requirements specified herein.

2.2 Polyvinyl Chloride (PVC) Pipe and Fittings shall conform to section 15396 "Chlorinator Systems".

2.3 Electrical Conduit shall conform to section 16400 "Wiring Systems".

PART 3 - EXECUTION

3.1 SURFACE PREPARATION:

3.1.1 Clearing and Grubbing: Unless indicated otherwise, remove trees, logs, stumps, shrubs, and brush within the limits of construction. Protect from damage trees and shrubs which are to be saved or which are outside the limits of construction. Do not permit traffic, parking of equipment, and storage of material within the tree drip lines. Except where area is indicated "Clearing Only", grub out matted roots and roots over 2 inches in diameter to at least 18 inches below the existing surface. Brush, refuse, stumps, roots, and timber shall become the property of the Contractor and removed from the Government property. Conduct work in accordance with requirements specified in Section 01560, "Environmental Protection".

3.1.2 Stockpiling Topsoil: Strip approved topsoil to a depth of 6 inches from the site where excavation or grading is indicated and stockpile separately from other excavated material. Locate topsoil so that the material can be used readily for the finished grading. Protect and store in segregated piles until needed.

3.1.3 Unsatisfactory Material: Remove organic matter, sod, muck, rubbish, and unsuitable clays under embankments which are less than 3 feet in thickness.

3.2 EXCAVATION: Excavate to the contours and dimensions indicated. 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 rock, hard material, or other material defined as unsatisfactory to a depth greater than indicated and an adjustment in contract price will be considered in accordance with the clause of the General Provisions entitled "Differing Site Conditions". Refill excavations cut below the depths indicated with fill and compact as specified herein. Excavate soil disturbed or weakened by the construction operations and soils permited to soften from exposure to weather. Refill with fill and compact as specified herein at no additional cost to the Government.

3.2.1 Excavations for Slabs: Excavate to depth indicated if excavation is deeper than indicated, then fill with concrete.

3.3 FILLING AND BACKFILLING:

3.3.1 Filling and Backfilling Adjacent to Structures: Place backfill adjacent to structures and compact to prevent wedging action or eccentric loading upon or against the structures. Step or serrate slopes bounding or within areas to be backfilled to prevent sliding of the fill. Do not use equipment for backfilling operations or for the formation of embankments against structures that will overload the structure. Backfilling against concrete will be done only after approval has been obtained from the Contracting Officer.

3.3.2 Controlled Fill and Backfill.

3.3.2.1 Under Slabs: Place backfill and fill in lifts of 6 inches thick. Compact each lift as specified herein before placing the overlaying lift.

3.3.2.2 In Trenches: Backfill in 6 inch layers until more than 10 inches over pipe, then in 2 inch layers.

3.3.3 Filling and Subgrade Preparation: Scarify existing surface to a minimum depth of 6 inches if subgrade density is less than the degree of compaction specified and recompact. When the subgrade is part fill and part excavation or natural ground, scarify the excavated or natural ground portion to a depth of 12 inches and recompact as specified for the adjacent fill. Place satisfactory material in horizontal lifts not exceeding 12 inches in loose depth and then compacted. Material will not be placed on surfaces that are muddy, frozen, or contain frost. Compact with equipment well suited to the soil being compacted. Moisten or aerate material as necessary to provide the moisture content that will readily facilitate obtaining the specified compaction with the equipment used. Compact each lift as specified herein before placing the overlaying lift.

3.4 COMPACTION: Compact each layer or lift of material specified so that the in-place density tested is not less than the percentage of maximum density specified in Table 3.4:

TABLE 3.4

	Percent ASTM D 1557 Maximum Density
	Cohesive Material
Fill, Embankment and Backfill	
Under footings, building slabs, steps, and secondary pavements	90
Under sidewalks and grassed areas	85
Adjacent to structures	90
Controlled fill	95
Refill undercut materials	95
Subgrade (Top of fill or embankment)	
Under building slabs, steps and secondary pavements, top 12 inches	90
Under sidewalks, top 6 inches	85

3.5 FINISH OPERATIONS:

3.5.1 Site Grading: Grade to finished grades indicated within 0.10 foot. Grade areas to drain water away from structures and to provide suitable surfaces for mowing machines. Existing grades which are to remain but are disturbed by the Contractor's operations shall be restored.

3.5.2 Spreading Topsoil: Clear areas indicated to receive topsoil for the finished surface of materials interfering 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.

3.5.3 Disposition of Surplus Material: Surplus or other soil material not required or suitable for filling, backfilling, or embankment shall be removed from Government property. Comply with the requirements of Section 01560 "Enviromental Protection".

3.5.4 Protection of Surfaces: Protect newly graded areas from traffic, erosion, and settlements that may occur and as required in Section "Environmental Protection" and as defined in subparagraph "Protection and Restoration of Surfaces" of this section. Repair or reestablish damaged grades, elevations, or slopes prior to acceptance of work.

*** END OF SECTION ***

SECTION 02444
CHAIN LINK FENCE GATES

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.

FEDERAL SPECIFICATIONS (Fed. Spec.):

RR-F-191J/GEN	Fencing, Wire and Post Metal (and Gates, Chain-Link Fence Fabric, and Accessories) (General Specification)
RR-F-191/1C	Fencing, Wire and Post, Metal (Chain-Link Fence Fabric) (Detail Specification)
RR-F-191/2C	Fencing, Wire and Post, Metal (Chain-Link Fence Gates) (Detail Specification)
RR-F-191/3C	Fencing, Wire and Post, Metal (Chain-Link Fence Posts, Top Rails and Braces) (Detail Specification)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

A121-81	Barbed Wire

1.2 SUBMITTALS:

1.2.1 Shop Drawings: Submit shop drawings or catalog cuts showing all fencing components, and details of fencing, gates, post tops, tension bands and bars, sleeves, ties, and clips. These drawings or cuts shall be accompanied by a layout drawing showing spacing of posts and location of gate, corner, end, and pull posts.

1.2.2 Certificates of Conformance or Compliances: Submit a certificate from the manufacturer attesting that all materials meet requirements specified herein.

1.3 DELIVERY, STORAGE, AND PROTECTION: Deliver materials to the site in an undamaged condition. Carefully store materials off the ground to provide protection against oxidation caused by ground contact.

PART 2 - PRODUCTS

2.1 GENERAL: Products shall conform to RR-F-191/GEN and detailed specifications as referenced herein and other requirements as specified herein. All materials shall be new.

2.2 CHAIN-LINK FENCING FABRIC shall conform to RR-F-191/1, Type I, zinc-coated steel, 9 gage coated wire. Mesh size shall be two inches. Mimimum weight of zinc-coated steel shall be 1.2 ounces per square foot of uncoated wire. Selvage shall be knuckled at one selvage and twisted and barbed at the other.

2.3 FENCING GATES: Fed. Spec. RR-F-191/2; Type III, single cantilever sliding, wheel sliding gate. Shape and size of the gate frame shall be as indicated. Framing and bracing members shall be round or square of steel. Steel member finish shall be zinc-coated. Gate frames and braces shall be the minimum sizes listed in RR-F-191/3 for each class and grade except that steel pipe frames shall be 1.90 inches o.d. x 0.120 inches minimum wall thickness and aluminum pipe frames and intermediate braces shall be 1.869 inches o.d. x 0.940 lb/ft of length. Gate fabric shall be as specified herein for chain-link fencing fabric. Gate leaves shall have intermediate members as necessary to provide rigid construction, free from sag or twist. Attach gate fabric to the gate frame in accordance with the manufacturer's standards, except that welding will not be permitted.

2.4 BARBED WIRE: ASTM A121, zinc-coated.

PART 3 - EXECUTION

3.1 INSTALL gate in accordance with the fence manufacturer's written installation instructions except as modified herein.

*** END OF SECTION ***

SECTION 03302

CAST-IN-PLACE CONCRETE

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.

American Concrete Institute (ACI):

211.1-81	Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete
301-84	Specifications for Structural Concrete for Buildings
304-73 (R83)	Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete

American Society for Testing and Materials (ASTM):

A 185-79	Welded Steel Wire Fabric for Concrete Reinforcement
A 615-82	Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
A 616-82a	Rail-Steel Deformed and Plain Bars for Concrete Reinforcement
C 31-84	Making and Curing Concrete Test Specimens in the Field
C 33-84	Concrete Aggregates
C 94-83	Ready-Mixed Concrete
C 143-78	Slump of Portland Cement Concrete
C 150-84	Portland Cement
C 171-69(R80)	Sheet Materials for Curing Concrete
C 172-82	Sampling Freshly Mixed Concrete
C 173-78	Air Content of Freshly Mixed Concrete by the Volumetric Method
C 231-82	Air Content of Freshly Mixed Concrete by the Pressure Method
C 260-77	Air-Entraining Admixtures for Concrete
C 309-81	Liquid Membrane-Forming Compounds for Curing Concrete

1.2 DESCRIPTION OF WORK: The work includes the provision of cast-in-place concrete. In the ACI publications referred to herein, the advisory provisions shall be considered to be mandatory, as though the word "shall" has been substituted for "should" wherever it appears; reference to the "Building Official," the "Structural Engineer," and the "Architect/Engineer" shall be interpreted to mean the Contracting Officer.

1.3 SUBMITTALS:

1.3.1 Contractor Mix Design: Thirty days minimum prior to concrete placement, submit a mix design for each strength and type of concrete. Include a complete list of materials including type; brand; source and amount of cement, fly ash, pozzolan, ground slag, and admixtures; applicable reference specifications; and copies of test reports showing that the mix has been successfully tested to produce concrete with the properties specified and will be suitable for the job conditions. Obtain approval prior to concrete placement. An identical concrete mix design previously approved within the past 12 months by the Altantic Division, Naval Facilities Engineering Command, may be used without further approval, provided that copies of the previous approval are submitted. Obtain acknowledgement of receipt prior to concrete placement. Submit additional data regarding concrete aggregates if the source of aggregate has changed.

1.3.2 Manufacturer's Certificate of Compliance:

a. Cement
b. Aggregates
c. Admixtures
d. Reinforcement

1.4 DELIVERY: Do not deliver concrete until ready for concrete placement.

PART 2 - PRODUCTS

2.1 CONCRETE:

2.1.1 Contractor-Furnished Mix Design: ACI 211.1 and ACI 301. Concrete shall have a 28-day compressive strength of 2500 psi. Slump shall be between 2 and 4 inches. Provide ASTM C 33 aggregate Size No. 57 67 and 5 to 8 percent air entrainment for concrete exposed to the weather. Accomplish air-entrainment using an air-entraining admixture.

2.1.2 Ready-Mixed Concrete: ASTM C 94, except as modified herein. Ready-mixed concrete is defined in this specification as concrete produced regularly by a commercial establishment and delivered to the purchaser in the plastic state. Ready-mixed concrete may be used provided that:

a. The plant has sufficient capacity and transportation equipment to deliver the concrete at the rate desired.

b. The plant meets the requirements specified herein for equipment, measurement of materials, and mixing.

2.2 MATERIALS:

2.2.1 Cement: ASTM C 150, Type I or II.

2.2.2 Water: Water shall be fresh, clean, and potable.

2.2.3 Aggregates: ASTM C 33. Obtain aggregates for exposed concrete surfaces from one source. Aggregates shall not contain any substance which may be deleteriously reactive with the alkalies in the cement.

2.2.4 Admixtures: ASTM C 260, for air-entrained concrete. ASTM C 494 for water reducing (Type A, E, or F), accelerating (Type C), and retarding (Type B, D, or G), to be used only when approved.

2.2.5 Reinforcement:

2.2.5.1 Reinforcing Bars: ASTM A 615, Grade 60; or ASTM A 616, Grade 60.

2.2.5.2 Welded Wire Fabric: ASTM A 497 or ASTM A 185, 6 by 6, W2.9 by W2.9, unless otherwise indicated.

2.2.6 Materials for Curing Concrete:

2.2.6.1 Impervious Sheeting: ASTM C 171; waterproof paper, clear or white polyethylene sheeting, or polyethylene-coated burlap.

2.2.6.2 Liquid Membrane-Forming Compound: ASTM C 309, white-pigmented, Type 2, free of paraffin or petroleum. Do not use where finished appearance is important. Use where approved only.

2.2.6.3 Liquid Chemical Sealer-Hardener Compound: Compound shall not contain petroleum resins or waxes. Avoid use on exterior slabs where exposed to freezing conditions. Compound shall not reduce the adhesion of resilient flooring, tile, paint, roofing, waterproofing, or other material to be applied to the concrete.

2.2.7 Vapor barrier: ASTM 171, Min. 6 Mil thickness

PART 3 - EXECUTION

3.1 FORMS: ACI 301. Set forms true to line and grade and make mortar-tight. Chamfer above grade exposed joints, edges, and external corners of concrete 3/4 inch unless otherwise indicated. Before concrete placement, coat the contact surfaces of forms with a nonstaining form coating compound. Do not use mineral oil on formed surfaces to be painted. Prevent concrete damage during form removal. Concrete for footings may be placed in excavations without forms upon inspection and approval by the Contracting Officer. Excavation width shall be a minimum of 4 inches greater than indicated.

3.2 PLACING REINFORCEMENT AND MISCELLANEOUS MATERIALS: ACI 301. Provide bars, wire fabric, and other reinforcing materials, including wire ties, supports, and other devices necessary to install and secure the reinforcement.

3.2.1 Cover and Splicing: ACI 301, unless otherwise indicated.

3.2.2 Setting Miscellaneous Material: Place and secure anchors and bolts, pipe sleeves, conduits, and other such items in position before concrete placement. Plumb anchor bolts and check location and elevation. Temporarily fill voids in sleeves with readily removable material to prevent the entry of concrete.

3.2.3 Vapor Barrier: Provide beneath the on-grade concrete floor slab. Use the greatest widths and lengths practicable to eliminate joints wherever possible. Lap 12 inches minimum. Remove torn, punctured, or damaged vapor barrier material and provide with new material prior to placing concrete. Place concrete to prevent damage to the vapor barrier material.

3.2.4 Construction Joints: ACI 301. Continue reinforcement across joints unless otherwise indicated. Fusion weld waterstop splices.

3.3 MEASURING, MIXING, TRANSPORTING, AND PLACING CONCRETE: ACI 301 and ACI 304, except as modified herein. ASTM C 94; machine mix concrete and provide mandatory batch ticket information for each load of ready mix concrete. Begin mixing within 30 minutes after the cement has been added to the aggregates. Place concrete within 90 minutes of either addition of mixing water to cement and aggregates or addition of cement to aggregates if the air temperature is less than 85 degrees F. Reduce mixing time to 60 minutes if the air temperature is greater than 85 degrees F. Additional water may be added, provided that both the specified maximum slump and water-cement ratio are not exceeded. If the entrained air content falls below the specified limit, add a sufficient quantity of admixture to bring the entrained air content within the specified limits. Do not place concrete when weather conditions prevent proper placement and consolidation; in uncovered areas during periods of precipitation; or in standing water. Prior to placing concrete, remove dirt, construction debris, water, snow, and ice from within the forms. Consolidate concrete slabs greater than 4 inches in depth with high frequency, internal, mechanical vibrating equipment supplemented by hand spading and tamping. Consolidate concrete slabs 4 inches or less in depth by tamping, spading, and settling with a heavy leveling straight edge.

3.3.1 Cold Weather: Provide and maintain 50 degrees F minimum concrete temperature. Do not place concrete when the ambient temperature is below 40 degrees F. Cover concrete and provide with a source of heat sufficient to maintain 50 degrees F minimum while curing.

3.3.2 Hot Weather: Provide and maintain 90 degrees F maximum concrete temperature. Cool ingredients before mixing, or substitute chip ice for part of required mixing water or use other suitable means to control concrete temperature to prevent rapid drying of newly placed concrete. Shade the fresh concrete and start curing as soon as the surface of the fresh concrete is sufficiently hard to permit curing without damage.

3.4 SURFACE FINISHES: ACI 301 for repair and finish unless otherwise specified. Slope floors uniformly to drains where drains are provided. After troweling is completed, apply a liquid chemical sealer-hardener to interior slabs only.

3.4.1 Defects: Repair formed surfaces by removing minor honeycombs, pits greater than 1 square inch surface area or 0.25 inch maximum depth, or otherwise defective areas. Provide edges perpendicular to the surface and patch with nonshrink grout. Patch tie holes and defects when the forms are removed. Concrete with extensive honeycomb (including exposed steel reinforcement, cold joints, entrapped debris, separated aggregate, or other defects) which affect the serviceability or structural strength will be rejected, unless correction of defects is approved. Obtain approval of corrective action prior to repair. The surface of the concrete shall not vary more than the allowable tolerances of ACI 301. Exposed surfaces shall be uniform in appearance and finished to a smooth form finish unless otherwise specified.

3.4.2 Floated Finish: Place, consolidate, and immediately strike off concrete to obtain proper contour, grade, and elevation before bleedwater appears. Permit concrete to attain a set sufficient for floating and supporting the weight of the finisher and equipment. If bleedwater is present prior to floating the surface, drag the excess water off or remove by absorption with porous materials. Do not use dry cement to absorb bleedwater. Surface shall be level to within 1/4 inch in 10 feet where floor drains are not provided.

3.5 CURING AND PROTECTION: ACI 301. Protect concrete from injurious action by sun, rain, flowing water, frost, mechanical injury, tire marks, and oil stains. Do not allow concrete to dry out from time of placement until the expiration of the curing period. Forms may be removed 48 hours after concrete placement.

3.5.1 Moist Curing: Provide for the removal of water without erosion or damage to the structure.

3.5.1.1 Ponding or Immersion: Continually immerse the concrete throughout the curing period. Water shall not be more than 20 degrees F less than the temperature of the concrete. For temperatures between 40 and 50 degrees F, increase the curing period by 50 percent.

3.5.1.2 Fog Spraying or Sprinkling: Provide uniform and continuous application of water throughout the curing period. For temperatures between 40 and 50 degrees F, increase the curing period by 50 percent.

3.5.1.3 Pervious Sheeting: Cover the entire surface of the concrete with two thicknesses of wet sheeting. Mats shall be at least as long as the width of the surface to be cured. During application, do not drag the mats over the finished concrete nor over mats already placed. Completely cover surface and edges of the concrete, with a 6-inch overlap over adjacent mats. Wet mats thoroughly and keep continuously wet throughout the curing period.

3.5.2 Impervious-Sheeting Curing: Wet the entire exposed surface thoroughly with a fine spray of water and cover with impervious sheeting throughout the curing period. Lay sheeting directly on the concrete surface and overlap edges 12 inches minimum. Provide sheeting not less than 18 inches wider than the concrete surface to be cured. Secure edges and transverse laps to form closed joints. Repair torn or damaged sheeting or provide new sheeting.

3.5.3 Liquid Membrane-Forming Compound Curing: Seal or cover joint openings prior to application of curing compound. Prevent curing compound from entering the joint. Provide and maintain compound on the concrete surface throughout the curing period. Do not use this method of curing where the use of Figure 2.1.5, ACI 305R indicates that hot weather conditions will cause an evaporation rate exceeding 0.2 pound of water per square foot per hour. Provide a continuously wetted, permeable cover as specified in paragraph herein entitled "Hot Weather."

3.5.3.1 Application: Unless the manufacturer recommends otherwise, apply compound immediately after the surface loses its water sheen and has a dull appearance, and before joints are sawed. Mechanically agitate curing compound thoroughly during use. Use approved power-spraying equipment to uniformly apply two coats of compound in a continuous operation. The total coverage for the two coats shall be 200 square feet maximum per gallon of undiluted compound unless otherwise recommended by the manufacturer's written instructions. The compound shall form a uniform, continuous, coherent film that will not check, crack, or peel. Immediately apply an additional coat of compound to areas where the film is defective. Respray concrete surfaces subjected to rainfall within 3 hours after the curing compound application.

3.5.3.2 Protection of Treated Surfaces: Prohibit foot and vehicular traffic and other sources of abrasion for not less than 72 hours after compound application. Maintain continuity of the coating for the entire curing period and immediately repair any damage.

3.5.4 Liquid Chemical Sealer-Hardener Curing: Provide for interior floors that do not receive a floor covering, or in lieu of liquid membrane-forming compound curing for other surfaces. Apply sealer-hardener in accordance with manufacturer's recommendations. Seal or cover joints and openings in which joint sealant is to be applied as required by the joint sealant manufacturer.

3.5.5 Curing Periods: Allow 7 days.

3.6 SAMPLING AND TESTING:

3.6.1 Sampling: ASTM C 172. Collect samples of fresh concrete to perform tests specified. ASTM C 31 for making test specimens.

3.6.2 Air Content: ASTM C 173 or ASTM C 231. Test air-entrained concrete for air content at the same frequency as specified for slump tests.

3.6.3 Testing:

3.6.3.1 Slump Tests: ASTM C 143. Take samples during concrete placement. The maximum slump may be increased as specified with the addition of an approved admixture provided that the water-cement ratio is not exceeded. Perform tests at commencement of concrete placement, when test cylinders are made, and for each batch (minimum) or every 10 cubic yards (maximum) of concrete.

3.6.3.2 Temperature Tests: Test the concrete delivered and the concrete in the forms. Perform tests in hot or cold weather conditions (below 50 degrees F and above 80 degrees F) for each batch (minimum) or every 10 cubic yards (maximum) of concrete, until the specified temperature is obtained, and whenever test cylinders and slump tests are made.

3.6.3.3 Air Content: ASTM C 173 or ASTM C 231. Test air-entrained concrete for air content at the same frequency as specified for slump tests.

*** END OF SECTION ***

SECTION 05120

STRUCTURAL STEEL

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.

Federal Specifications (Fed. Spec.):

TT-C-490B	Cleaning Method and Pretreatment of Ferrous Surfaces for Organic Coatings
TT-P-645A	Primer, Paint, Zinc Chromate, Alkyd Type

Military Specifications (Mil. Spec.):

DOD-P-15328D & Am 1	Primer (Wash), Pretreatment (Formula No. 117 for Metals) (Metric)
DOD-P-21035A	Paint, High Zinc Dust Content, Galvanizing Repair (Metric)

U.S. Army Corps of Engineers (COE) Waterways Experiment Station:

CRD-C-621-83	Handbook for Concrete and Cement, Specification for Nonshrink Grout, Volume II (1949 Ed.)

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

1983	Standard Specifications for Highway Bridges (Thirteenth Edition)

American National Standards Institute (ANSI):

B18.22.1-65 (R81)	Plain Washers

American Institute of Steel Construction (AISC):

1980	Manual of Steel Construction (Eighth Edition) (Includes "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings," "Code of Standard Practice for Steel Buildings and Bridges," and "Structural Joints Using ASTM A 325 or A 490 Bolts")
1983	Detailing for Steel Construction
1984	Engineering for Steel Construction

American Society for Testing and Materials (ASTM):

A 36-81a	Structural Steel
A 123-78	Zinc (Hot-Galvanized) Coatings on Products Fabricated From Rolled, Pressed, and Forged Steel Shapes, Plates, Bars, and Strip
A 143-74 (R84)	Safeguarding Against Embrittlement of Hot-Dip Galvanized Structural Steel Products and Procedure for Detecting Embrittlement
A 153-82	Zinc Coating (Hot-Dip) on Iron and Steel Hardware
A 307-84	Carbon Steel Externally Threaded Standard Fasteners
A 325-84	High-Strength Bolts for Structural Steel Joints
A 490-83a	Heat-Treated Steel Structural Bolts, 150 ksi Minimum Tensile Strength
A 563-84	Carbon and Alloy Steel Nuts
A 780-80	Repair of Damaged Hot-Dip Galvanized Coatings
C 827-82	Early Volume Change of Cementitious Mixtures

American Welding Society, Inc. (AWS):

D1.1-84	Structural Welding Code - Steel

Steel Structures Painting Council (SSPC):

PS 8.01-82	One-Coat Rust Preventive Painting System With Thick-Film Compounds
SP 6-82	Commercial Blast Cleaning

1.2 DESCRIPTION OF WORK: The work includes the fabrication, erection, and shop painting of structural steel. Provide in accordance with AISC "Manual of Steel Construction" except as specified herein. In the AISC "Manual of Steel Construction" referred to herein, the "Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings," the "Code of Standard Practice for Steel Buildings and Bridges," and "Structural Joints Using ASTM A 325 or A 490 Bolts" shall be considered a part thereto. Field painting of structural steel is specified in Section 09910, "Painting of Buildings."

1.3 SUBMITTALS:

1.3.1 Shop Drawings: Submit for approval by the Contracting Officer prior to fabrication. Prepare in accordance with the AISC "Detailing for Steel Construction" and AISC "Engineering for Steel Construction." Shop drawings shall not be reproductions of contract drawings. Include complete

information for the fabrication and erection of the structure's components, including the location, type, and size of bolts, welds, member sizes and lengths, connection details, blocks, copes, and cuts. Use AWS standard welding symbols.

1.3.2 Erection Plan: Submit for record purposes. Indicate the sequence of erection, temporary shoring and bracing, and a detailed sequence of welding, including each welding procedure required.

1.3.3 Manufacturer's Certificates of Compliance:

a. Steel
b. Bolts, nuts, and washers
c. Shop painting materials
d. Welding electrodes and rods
e. Nonshrink grout
f. Galvanizing

1.3.4 Welder, Welding Operation, and Tacker Qualification:£ Prior to welding, submit certification for each stating the type of welding and positions qualified for, the code and procedure qualified under, date qualified, and the firm and individual certifying the qualification tests.

1.4 DELIVERY AND STORAGE: Handle, store, and protect materials in accordance with the manufacturer's recommendations. Replace damaged items with new items, or repair as approved by the Contracting Officer.

PART 2 - PRODUCTS

2.1 Structural Steel: ASTM A 36.

2.2 BOLTS, NUTS, AND WASHERS: Provide the following unless indicated otherwise.

2.2.1 Bolts: ASTM A 307, Grade A; ASTM A 325, Type 1 or 2.

2.2.2 Nuts: ASTM A 563, Grade A, heavy hex style, except nuts under 1-1/2 inch may be provided in hex style.

2.2.3 Washers: ANSI B18.22.1, Type B.

2.3 SHOP PAINTING:

2.3.1 Pretreatment: Mil. Spec. DOD-P-15328 or Fed. Spec. TT-C-490, Type I, II, or IV.

2.3.2 Primer: Fed. Spec. TT-P-645.

2.3.3 Rust Preventive: SSPC PS 8.01, suitable for temporary protection.

2.4 GALVANIZING: ASTM A 123 or A 153, as applicable, unless specified otherwise.

2.4.1 Galvanizing Repair Paint: Mil. Spec. DOD-P-21035.

2.5 STRUCTURAL STEEL ACCESSORIES:

2.5.1 Welding Electrodes and Rods: AWS D1.1.

2.5.2 Nonshrink Grout: COE CRD-C-621, with no ASTM C 827 shrinkage.

PART 3 - EXECUTION

3.1 FABRICATION:

3.1.1 Markings: Prior to erection, members shall be provided with a painted erection mark. In addition, connecting parts assembled in the shop for reaming holes in field connections shall be match marked with scratch and notch marks. Do not locate erection markings on areas to be welded. Do not locate match markings in areas that will decrease member strength or cause stress concentrations.

3.1.2 Shop Painting: Shop paint structural steel, except as modified herein. Do not paint steel surfaces embedded in concrete, galvanized surfaces, bearing surfaces, or surfaces within 1/2 inch of the toe of the welds prior to welding (except surfaces on which metal decking or shear studs are to be welded). Prior to assembly, paint surfaces which will be concealed or inaccessible after assembly. Do not apply paint in foggy or rainy weather; when the ambient temperature is below 45 degrees F or over 95 degrees F; or when paint may be exposed to temperatures below 40 degrees F within 48 hours after application, unless approved otherwise.

3.1.2.1 Cleaning: SSPC SP 6, except as modified herein. In addition, maintain steel surfaces free from rust, dirt, oil, grease, and other contaminants through final assembly.

3.1.2.2 Pretreatment: Immediately after cleaning, provide the metal surfaces with one coat of Mil. Spec. DOD-P-15328 pretreatment to a dry film thickness of 0.3 to 0.5 mil. Fed. Spec. TT-C-490 pretreatment may be applied to SSPC SP 6 cleaned surfaces, in accordance with Fed. Spec. TT-C-490.

3.1.2.3 Priming: Immediately after the pretreatment coating has dried, apply primer to a minimum dry film thickness of 2.0 mil. Repair damaged primed surfaces with an additional coat of primer.

3.1.3 Galvanizing: Provide for all structural steel. Galvanize after fabrication where practicable.

3.1.3.1 Galvanizing Repair: ASTM A 780, using galvanizing repair paint for galvanizing damaged by handling, transporting, cutting, welding, or bolting. Do not heat surfaces that repair paint has been applied to.

3.1.4 Bearing Surfaces and Friction Type Joints: In the shop, coat with a temporary rust preventive. Remove coating, as recommended by the coating manufacturer, immediately prior to field erection.

3.2 ERECTION: Calibration wrenches shall be calibrated every two working days on a minimum of three typical bolts of each diameter. Provide for drainage in structural steel.

3.2.1 Base Plates and Bearing Plates: After final positioning of steel members, provide full bearing under plates using nonshrink grout. Place nonshrink grout in accordance with the manufacturer's instructions.

3.3 CONNECTIONS: Connections not detailed shall be designed in accordance with AISC "Manual of Steel Construction." Build connections into existing work. Do not tighten anchor bolts set in concrete with impact torque wrenches. Punch, subpunch and ream, or drill bolt and pin holes.

3.4 WELDING: AWS D1.1 Grind exposed welds smooth. Provide AWS D1.1 qualified welders, welding operators, and tackers.

3.4.1 Removal of Temporary Welds, Run-Off Plates, and Backing Strips is not required.

3.5 TESTS AND INSPECTIONS:

3.5.1 Welds:

3.5.1.1 Visual Inspection: AWS D1.1, Section 6. Provide AWS-certified welding inspectors for fabrication/erection inspection and testing and verification inspections. Welding inspectors shall visually inspect and mark welds, including fillet weld end returns.

3.5.1.2 Nondestructive Testing: AWS D1.1. Test locations shall be selected by the Contracting Officer. If more than 20 percent of welds made by a welder contain defects identified by testing, then all welds made by that welder shall be tested by radiographic or ultrasonic testing, as approved by the Contracting Officer. When all welds made by an individual welder are required to be tested, magnetic particle testing shall be used only in areas inaccessible to either radiographic or ultrasonic testing. Retest defective areas after repair.

3.5.1.2.1 Testing Frequency: Provide the following types and number of tests:

Test Type	Number of Tests
Radiographic or Ultrasonic	Five
Magnetic Particle or Dye Penetrant	Thirty

3.5.2 Testing for Embrittlement: ASTM A 143 for steel products hot-dip galvanized after fabrication.

*** END OF SECTION ***

SECTION 07920

CALKING & SEALANTS

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.

American Society for Testing and Materials (ASTM):

C 920-79 Elastomeric Joint Sealants

1.2 SUBMITTALS:

1.2.1 Certificates of Compliance: Submit certificates from the manufacturers attesting that materials meet the specified requirements.

1.2.2 Manufacturers' Descriptive Data: Submit complete descriptive data for each type of material. Clearly mark data to indicate the type the Contractor intends to provide. Data shall state conformance to specified requirements. Data for sealant shall include:

a. Application instructions
b. Shelf life
c. Mixing instructions for multicomponent sealants
d. Recommended cleaning solvents

1.2.3 Colors: Submit one sample of each color for each sealant type to verify that products match the colors indicated. Where colors are not indicated, submit not less than five different samples of manufacturers' standard colors for selection by the Contracting Officer.

1.3 ENVIRONMENTAL CONDITIONS: The ambient temperature shall be within the limits of 40 and 100 degrees F when sealant is applied.

1.4 DELIVERY AND STORAGE: Deliver materials to the job site in unopened manufacturers' external shipping containers, with brand names, date of manufacture, color, and material designation clearly marked thereon. Containers of elastomeric sealant shall be labeled as to type, class, grade, and use. Carefully handle and store materials to prevent inclusion of foreign materials or subjection to sustained temperatures exceeding 100 degrees F or less than 40 degrees F.

PART 2 - PRODUCTS

2.1 SEALANTS: Provide sealant that has been tested and found suitable for the substrates to which it will be applied. Apply in the new workings indicated or specified and wherever alterations to the existing work leave an opening between exterior and interior avoid occurs.

2.1.1 Interior Sealant: ASTM C 920, Type S or M, Grade NS, Class 12.5, Use NT. Locations of sealant shall be as follows:

a. Voids 1/4 inch and less between walls or partitions and adjacent frames, built-in or surface-mounted equipment and fixtures, and similar items.

b. Interior locations, not otherwise indicated or specified, where small voids exist between materials specified to be painted.

2.1.2 Exterior Sealant: For joints in vertical surfaces, provide ASTM C 920, Type S or M, Grade NS, Class 25, Use NT. For joints in horizontal surfaces, provide ASTM C 920, Type S or M, Grade P, Class 25, Use T. Locations of sealant shall be as follows:

a. At both exterior and interior surfaces of exterior wall penetrations.

b. Voids where items pass through exterior walls.

c. Metal-to-metal joints where sealant is indicated or specified.

d. Joints between ends of gravel stops, fascias, copings, and adjacent walls.

2.2 PRIMER FOR SEALANT: Provide a nonstaining, quick-drying type of consistency recommended by the sealant manufacturer for the particular application.

2.3 BOND BREAKERS: Provide the type and consistency recommended by the sealant manufacturer for the particular application.

2.4 BACKSTOPS: Provide glass fiber roving or neoprene, butyl, polyurethane, or polyethylene foams free from oil or other staining elements as recommended by sealant manufacturer. Backstop material shall be compatible with sealant. Do not use oakum and other types of absorptive materials as backstops.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION: Surfaces shall be clean, dry to the touch, and free from frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter that would tend to destroy or impair adhesion. Where adequate grooves have not been provided, clean out grooves to a depth of 1/2 inch and grind to a minimum width of 1/4 inch without damage to the adjoining work. Grinding shall not be required on metal surfaces.

3.1.1 Steel Surfaces: Remove loose mill scale by sandblasting or, if sandblasting is impractical or would damage finish work, scraping and wire brushing. Remove protective coatings by sandblasting or using a residue-free solvent.

3.1.2 Aluminum or Bronze Surfaces: Remove temporary protective coatings from surfaces that will be in contact with sealant. When masking tape is used as a protective coating, remove tape and any residual adhesive just prior to sealant application. Use nonstaining solvents recommended by the item manufacturer.

3.2 SEALANT PREPARATION: Do not add liquids, solvents, or powders to the sealant. Mix multicomponent elastomeric sealants in accordance with manufacturer's printed instructions.

3.3 APPLICATION:

3.3.1 Backstops: Where joint cavities are constructed deeper than indicated, tightly pack the back or bottom with backstop material to provide a joint of the depth indicated. Install backstops dry and free of tears or holes.

3.3.2 Primer: Immediately prior to application of sealant, clean out loose particles from joints. Apply primer in accordance with sealant manufacturer's directions. Do not apply primer to exposed finish surfaces.

3.3.3 Bond Breaker: Provide bond breakers as recommended by the sealant manufacturer for each type of joint and sealant used.

3.3.4 Sealants: Provide a sealant that is compatible with the material to and against which it is applied. Do not use a sealant that has exceeded shelf life or has become too jelled to be discharged in a continuous flow from the gun. Apply the sealant in accordance with the manufacturer's printed instructions. Force sealant into joints with sufficient pressure to fill the joints solidly. Sealant shall be uniformly smooth and free of wrinkles.

3.4 PROTECTION AND CLEANING:

3.4.1 Protection: Protect areas adjacent to joints from sealant smears. Masking tape may be used for this purpose if removed 5 to 10 minutes after the joint is filled.

3.4.2 Cleaning: Immediately scrape off fresh sealant that has been smeared on masonry and rub clean with a solvent as recommended by the sealant manufacturer. Upon completion of sealant application, remove remaining smears and stains and leave the work in a clean and neat condition.

*** END OF SECTION ***

SECTION 10440

BUILDING ENUMERATION

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.

Federal Specifications (Fed. Spec.):

TT-P-489 Paint, Alkyd, Air Drying

U. S. Department of Transportation:

Standard Alphabets, 1966

1.2 BUILDING ENUMERATION shall appear at one point on each exterior wall of each building upon completion.

1.3 New Building near existing building TC-563 shall be building number G-546.

1.4 New Building near existing building TT-35 shall be building number TT-29.

1.5 New Building near existing building 20 shall be building number 55.

PART 2 - PRODUCTS

2.1 NEW PLACARD shall be made of aluminum conforming to 6063-T58 which is 1/8-inch thick and of size adequate to provide 1-1/2-inch clear area outside all enumeration.

2.2 THE ENTIRE SIDE shall be surfaced with a reflective white finish.

2.3 NUMERALS AND LETTERS shall be solid black, five inches high, conforming to Department of Transportatino Standard Alphabets Series C.

2.4 PAINT shall conform to TT-P-489.

PART 3 - EXECUTION

3.1 MOUNTING shall be rigid when placed no wall. Four holes 1/4-inch in diameter shall be provided in each sign and used for mounting. Mounting height shall be a minimum of four feet above ground level.

END OF SECTION

SECTION 11260
SCALES FOR CHLORINE CYLINDERS

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.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

A48-76 Gray Iron Castings

NOTE: NEED ONE CYL. EACH SCALES.

PART 2 - PRODUCTS

2.1 CHLORINE CYLINDER SCALES shall be hydraulic load cell type. Provide a two-cylinder scale at each installation, complete with dual 12-inch dial readouts, minimum 0-3,000 pounds, hydraulic piping, and accessories as required for a complete system. Provide ASTM A 48, Class 30 cast iron trunnions for cylinders. Chlorine piping and valves shall conform to Section 15396, "Chlorinator Systems".

PART 3 - EXECUTION

3.1 INSTALL SCALES in accordance with manufacturer's printed instructions. Cnnect piping and valves under Section 15396, "Chlorinator Systems". Attacn dial scales to angle iron in a rigid manner and connect dials to scale assembly.

3.2 TEST SCALES by lifting each cylinder with hoist to see if reading decreases. If reading does not decrease when cylinder is moistened, scale system shall be repaired or replaced.

3.3 CALIBRATE in accordance with manufacturer's printed instructions.

END OF SECTION

SECTION 13121

PREENGINEERED METAL BUILDINGS

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.

Federal Specifications (Fed. Spec.):

TT-C-520B	Coating Compound, Bituminous, Solvent Type, Underbody (For Motor Vehicles)
TT-C-1796A	Calking Compounds, Metal Seam and Wood Seam

Military Specifications (Mil. Spec.):

MIL-S-4174B	Steel Sheet and Strip, Flat, Aluminum Coated, Low Carbon
DOD-P-15328D	Primer (Wash), Pretreatment (Formula No. 117 for Metals) (Metric)

American Institute of Steel Construction (AISC):

1980	Manual of Steel Construction

American Iron and Steel Institute (AISI):

1980	Specification for Design of Cold-Formed Steel Structural Members

American Society for Testing and Materials (ASTM):

A 446-76 (R81)	Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality
B 117-73 (R79)	Salt Spray (Fog) Testing
D 523-80	Specular Gloss
D 822-80 (R81)	Operating Light- and Water-Exposure Apparatus (Carbon-Arc Type) for Testing Paint, Varnish, Lacquer, and Related Products

Metal Building Manufacturers Association (MBMA):

1981	Metal Building Systems Manual

Aluminum Association (AA):

1980 Designation System for Aluminum Finishes

American National Standards Institute (ANSI):

A58.1-82 Minimum Design Loads for Buildings and Other Structures

1.2 SUBMITTALS:

1.2.1 Descriptive Data: Data on materials provided under this section shall be sufficient to indicate conformance to specified requirements.

1.2.2 Erection Instructions and Diagrams: Submit as necessary to erect the building and install components. Include:

a. Anchor bolt layouts and sizes
b. Structural connections
c. Roofing connections
d. Joint sealing and calking
e. Flashings
f. Monorail connection lay out and details
g. Accessory installation
h. Shop drawings as necessary to supplement the instructions and diagrams if required for the proper erection and installation of the building and components

1.2.3 Certificates of Compliance: Attest that materials comply with requirements of this specification and of referenced documents.

1.2.4 Colors: One sample of each indicated for verification that products match the colors indicated. Where colors are not indicated, submit not less than four different samples of manufacturer's standard colors for selection by the Contracting Officer.

1.2.5 Design Calculations and Stress Diagrams: For the following components, stamped with the seal of a professional engineer: Rigid frame, monorail connection and standard building frame modifications for monorail purlins, and bracing.

1.3 DELIVERY AND STORAGE: Deliver, store, and handle manufactured items so that materials remain dry and undamaged. Do not store in contact with materials that might cause staining.

1.4 DESIGN REQUIREMENTS: MBMA Metal Building Systems Manual except as specified otherwise herein.

1.4.1 Roof Dead, Live, and Snow Loads: As indicated. Loads shall be applied on the horizontal projection of the roof structure.

1.4.2 Wind Loads: Main wind-force resisting systems, building components, and cladding as defined in Appendix A shall be designed for applicable wind pressures corresponding to peak gust wind speed, V (mph), indicated. Procedures for determining and applying wind pressures shall be in accordance with Appendix A.

1.4.3 Deflection: The maximum deflection due to live load in roof panels and purlins shall not exceed 1/180th of their respective spans. The maximum deflection due to wind load in wall panels and girts shall not exceed 1/90th of their respective spans.

1.5 DESCRIPTION OF BUILDING(S): Rigid frame type utilizing tapered or uniform depth columns and beams with connections as necessary to maintain original angles between intersecting members after erection and loading. Provide rigid frames where indicated. Spacing of frames shall be as indicated. Roof slope shall be not less than that indicated. Roof slope greater than that indicated may be furnished if the required materials are provided and appropriate drawings are submitted and approved.

PART 2 - PRODUCTS

2.1 MATERIALS: MBMA Metal Building Systems Manual except as specified otherwise herein. Roof shall be completely weathertight, free of abrasions, loose fasteners, and deformations. Furnish 1-year warranties in writing, providing for repairs to roof panels, accessories, and flashings.

2.1.1 Minimum Thickness: As necessary to conform to design requirements and to the following:

Items	Minimum Thickness (Uncoated)
Steel Structural Members Other Than Roof and Wall Panels	18 MFG STD (Manufacturer's Standard) gage
Roof Panels	
Steel	26 MFG STD gage
Aluminum	0.032 inch
Plastic	0.045 inch
Gable and Eave Trim, Fascia Closure Strips, Rake Flashings, Copings, and Liner Panels	
Steel	26 MFG STD gage
Aluminum	0.032 inch
Interior Gutters	
Steel	24 MFG STD gage
Aluminum	0.040 inch
Eave Gutters and Downspouts	
Steel	26 MFG STD gage
Aluminum	0.032 inch

2.1.2 Steel Framework: In accordance with AISC Manual of Steel Construction except in accordance with AISI Specification for Design of Cold-Formed Steel Structural Members for members less than 3/16-inch thick. Structural members having cross sectional areas other than that indicated and connections that differ from the connections indicated may be used, provided they conform to design requirements, and provided shop drawings indicating such changes are submitted and approved.

2.1.3 Roof Panels: Fabricated of zinc-coated steel aluminum-coated steel aluminum/zinc-coated steel or aluminum except as specified otherwise. Roof panels shall be preformed. Finished surfaces exposed to the building exterior shall have a specular gloss value of not more than 10, at an angle of 85 degrees when measured in accordance with ASTM D 523. Aluminum surfaces shall have a mechanical embossed finish to obtain the specified specular gloss.

2.1.4 Zinc-Coated Steel Sheet: ASTM A 446, Coating Class G-90.

2.1.5 Aluminum-Coated Steel Sheet: Mil. Spec. MIL-S-4174.

2.1.6 Aluminum/Zinc-Coated Steel Sheet: Mil. Spec. MIL-S-4174, except that the coating chemical composition shall be 55 percent aluminum, 1.6 percent silicon, and 43.4 percent zinc. Total coating weight shall be not less than 0.50 ounces per square foot.

2.1.7 Aluminum Sheet: Alloy 3004 Alclad.

2.1.8 Sheet Metal Accessories: Of same material and finish as used for adjacent wall or roof panels, except as specified otherwise herein.

2.1.8.1 Caps, Strips, and Plates: Ridge caps, eave and edge strips, fascia strips, miscellaneous flashings, and miscellaneous sheet metal accessories, unless specified otherwise herein, shall be formed from the same material and gage as the roof panels. Wall plates, base angles or base channels, and other miscellaneous framing members may be standard structural steel shapes, or may be formed from steel not lighter than 18-gage.

2.1.8.2 Gutters: Of cross sectional area not less than obtained with size gutter indicated and complete with mitered corners, end pieces, and any special pieces that may be required. Form gutters in sections not less than 8 feet in length. Join ends of each length with screwed and soldered joints, screwed and sealed joints, riveted and soldered joints, or riveted and sealed joints, except that expansion-type slip joints shall be provided at the center of the runs and at intervals of not more than 32 feet for aluminum and not more than 40 feet for steel. Provide gutters below the slope line of roof, to allow snow and ice to slide clear. Provide hangers of an approved type, spaced not to exceed 36 inches on centers. Form hangers and fastenings from a metal compatible with the gutters.

2.1.8.3 Downspouts: Of cross sectional area not less than obtained with size gutter indicated and complete including elbows and offsets. Provide downspouts in approximately 10-foot lengths; end joints shall telescope not less than 1/2 inch, and longitudinal joints shall be locked. Provide gutter outlets with stainless steel wire ball strainers of a standard type. Position

downspouts not less than 1/2 inch away from walls and fasten to the walls at top, bottom, and at not to exceed 5-foot centers intermediately between with approved type leader straps, or concealed type fasteners. Form straps and fasteners from a metal compatible with the downspouts.

2.1.9 Closure Strips: Formed of approved compressed rubber, synthetic rubber, bituminous impregnated materials, or metal of the same respective type as the roof and wall panels, and as standard with the manufacturer. Molded closure strips shall be free of open voids and shall not absorb or retain water. Form closure strips to match the corrugations or configurations of the roofing or siding used. Provide closure strips where indicated and where necessary to ensure weathertight construction.

2.1.10 Joint Sealing Material: Seal side and end laps with Type II, Class B ribbon form sealant conforming to Fed. Spec. TT-C-1796, except that bituminous type materials shall not be used. Minimum sizes of ribbons shall be 3/32-inch by 1/2-inch or 3/16-inch by 1/4-inch for rectangular areas and 1/4-inch diameter for circular areas. Seal joints at doors, windows, accessories, and flashings in a manner similar to the sealing of panels.

2.1.11 Fasteners: Fasteners for attachment to structural supports and fasteners for attachment to adjoining panels shall be as approved, and in accordance with the manufacturer's recommendation. Unless specified otherwise herein, the fasteners shall be either self-tapping screws, self-drilling screws, bolts and nuts, self-locking rivets, self-locking bolts, end-welded studs, bolted or riveted studs, or step rivets held by aluminum straps. Other types of fasteners of the building manufacturer's standard type may be used if prior approval is obtained. The fastening system shall be fabricated to withstand the design loads specified herein. Fasteners shall be stainless steel, zinc-coated steel, cadmium-plated steel, aluminum, or coated steel which has comparable corrosion-resistant properties as found in zinc coating. Fasteners, with the exception of those having integral hex washer heads or aluminum drive caps, shall have composite metal and polychloroprene washers. Fasteners having integral hex washer heads or aluminum drive caps shall have polychloroprene washers. Side laps of roofing panels having configurations 3/4-inch deep or less shall be fastened at a maximum spacing of 12 inches on centers.

2.1.12 Finish:

2.1.12.1 Shop Painting: Ferrous metal work, except factory-finished work, zinc-coated work, aluminum-coated work, and work specified to be painted herein, shall be (1) cleaned of dirt, rust, scale, loose particles, grease, oil, and other deleterious substances, (2) given a coat of pretreatment primer conforming to Mil. Spec. DOD-P-15328 applied to a dry film thickness of 0.3 to 0.5 mil or chemically treated with a phosphoric type cleaner, and (3) then be given one coat of an approved rust-inhibiting primer paint of the type standard with the metal building manufacturer.

2.1.12.2 Factory Finishing: Exterior and interior exposed surfaces of metal roof and wall panels, roof ventilators, louvers, gutters, downspouts, and metal accessories shall be provided with a factory- applied, baked-on enamel finish. The finish shall consist of cleaning, pretreatment, and one

coat of baked-on finish applied to a dry film thickness of not less than 1.0 mil. Factory-finished materials of the same types and finishes as proposed for this project shall have been tested and have passed the following tests:

a. Salt Spray Test: A 12 inch by 12 inch sample with a minimum of two raw cut edges shall withstand a salt spray test for a minimum of 500 hours in accordance with ASTM B 117. Undercutting of the paint film from the score line shall not exceed 1/16 inch.

b. Accelerated Weathering Test: A 12 inch by 12 inch sample with a minimum of two raw cut edges shall withstand a weathering test for a minimum of 1000 hours in accordance with ASTM D 822 without checking, cracking, or loss of adhesion.

c. Flexibility: When formed over a conical mandrel, the film shall show no crack beyond a point where the mandrel diameter is equal to five times the metal thickness.

d. Adhesion: There shall be no film removed by pulling off sharply No. 600, 3/4-inch wide scotch cellophane tape applied to 10 parallel cuts spaced 1/16 inch apart plus 10 similar cuts at right angles. Cuts shall be made with a sharp knife.

e. Field Tests: At the discretion of the Contracting Officer, sample panels may be taken at random from each delivery or from stockpiles on the site at any time during the construction period and tests may be made to check the conformance of the materials to the requirements specified. Failure of the sample sheets to pass the required tests shall be cause for rejection of all sheets represented by the samples.

2.1.13 Grouting Mortar: Shall be a mixture of one part of blended portland cement to two parts of well-graded fine aggregate, and enough water to provide a maximum water cement ratio of 0.50. The blended portland cement shall be a mixture of cement with 1/4 ounce of aluminum powder to each sack of cement.

PART 3 - EXECUTION

3.1 ERECTION: In accordance with the manufacturer's approved erection instructions and diagrams, except as specified otherwise. Correct defects or errors in the fabrication of building components in an approved manner. If defects or errors in fabrication of components cannot be corrected in an approved manner, remove and provide nondefective components. Plumb, guy, and stay columns and rigid frames in both directions, and accurately space framing elements to assure proper fit of prefabricated wall and roof panels. When installing roof systems, install closure strips, flashing, sealing material, and other accessories in an approved manner so that the systems are weathertight, free of abrasions, loose fasteners, and deformations. After erection is complete, repair and coat abraded or damaged primed or factory-finished surfaces to match adjacent surfaces as approved.

3.1.1 Dissimilar Materials: Where aluminum surfaces come in contact with ferrous metal or other incompatible metals, keep the aluminum surfaces from direct contact by one of the following methods:

a. Paint the incompatible metal with a coating of heavy-bodied bituminous paint conforming to Fed. Spec. TT-C-520.

b. Paint the incompatible metal with a prime coat of zinc-chromate primer followed by one or two coats of aluminum metal-and- masonry paint, or other suitable protective coating, excluding products containing lead pigmentation.

c. Provide an approved nonabsorptive gasket.

d. Apply an approved calking between the aluminum and the incompatible metal.

If drainage from incompatible metal passes over aluminum, paint the incompatible metal by method (a) or (b). Paint aluminum surfaces in contact with concrete or masonry materials by method (a). Paint green or wet wood, or wood treated with incompatible wood preservatives, by method (a) or use two coats of aluminum paint.

3.1.2 Rigid Frames, Bases, and Sill Members: Set accurately, using a nonshrinking grouting mortar if needed to obtain uniform bearing on the concrete and to maintain a level base line elevation. Anchors and anchor bolts for securing rigid frames, columns, or sill members to foundations shall be unpainted steel, set accurately to templates, and of proper size to adequately resist applicable design loads at the base. Clean surfaces to receive the mortar and thoroughly moisten immediately before placement of mortar. Water cure exposed surfaces of mortar with wet burlap for 7 days.

3.1.3 Roof Construction: Apply roofing panels with the configurations parallel to the slope of the roof. Apply the roofing panels in the longest lengths obtainable with end laps occurring only at structural members. Lay side laps away from the prevailing wind, and seal side and end laps with joint sealing material. Flash and seal the roof at the ridge, at eaves and rakes, at projections through the roof, and elsewhere as necessary. Minimum side lap shall be one corrugation, configuration, or interlocking rib except 1-1/2 corrugations for standard corrugated sheets.

END OF SECTION

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 the basic designation only.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME):

(6th Edition 1971) Fluid Meters, Their Theory and Application

1.2 DESIGN: The design shall permit ease of installation and shall not have any features hazardous to personnel or detrimental to the equipment. Align and adequately lubricate moving parts. Interior parts shall be easily accessible for adjustment, repair, and replacement.

1.3 GENERAL REQUIREMENTS: Section 15011, "Mechanical General Requirements", 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.

1.4 STANDARD COMMERCIAL PRODUCTS: All materials and equipment shall be standard commercial products in regular production by the manufacturer and suitable for the required service.

PART 2 - PRODUCTS

2.1 FLOW METERING: The transmitter shall continually dispatch signals on electrical transmission lines to the receiver containing the indicating recorders. 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 service. The system shall have an accuracy of plus or minus 2 percent. Flow will range from 0 to 6000 GPM.

2.1.1 Transmitter: Rate of flow transmitter shall be compatible with existing orifice plate and shall be suitable for flange mounting. The transmitters shall connect to existing hydraulic lines from the orifice plate. The transmitter shall convert these hydraulic to 4-20 Ma. electrical signals and transmit them to the receiver.

2.1.2 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 in a metal case and shall have doors providing easy access to all components with glass in front of the recording chart, indicator and totalizer. The enclosure shall be suitable for wall mounting. Receiver shall also be supplied with additional 4-20 Ma. output

signal capability. 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.

PART 3 - EXECUTION

3.1 INSTALLATION: Furnish the services of an engineer representative of the manufacturer of the flow measuring equipment for checking the installation, making the necessary adjustments and calibrations, placing the equipment in operation, and performing the acceptance tests. The representative also shall be available for not less than one day to instruct operating personnel in the use, operation, and maintenance of the equipment during the initial operating period. Install all flow measuring equipment in accordance with the recommendations of the manufacturer. Install transmitters in accordance with the ASME publication "Fluid Meters."

3.2 FIELD TESTS AND INSPECTIONS:

3.2.1 General: The Contractor shall perform all field tests (calibrations). 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 found shall be rectified and work affected by such 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 that it meets the accuracy requirements, for the full range of flows, set forth in this section.

*** END OF SECTION ***

SECTION 14320

MONORAILS WITH ELECTRIC POWERED HOISTS

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 National Standards Institute (ANSI):

B30.11-80 Monorial Systems and Underhung Cranes

B30.16-81 Overhead Hoists

1.1.2 American Society for Testing and Materials (ASTM):

A275-82 Magnetic Particle Examination of Steel Forgings

1.1.3 Hoist Manufacturer's Institute (HMI):

MHI 400-71 Electric Chain Hoists

1.1.4 Monorail Manufacturer's Association (MMA):

1973 Underhung Cranes and Monorail Systems (MMA-UCMS)

1.1.5 National Fire Protection Association (NFPA):

70-84 National Electrical Code

1.2 GENERAL REQUIREMENTS: The work includes the provision of electric powered hoists with electric power trolleys complete, tested and ready for operation. Monorails, electric powered hoists, equipment, materials, installation, examination, inspection, and workmanship shall be in accordance with the applicable provisions of NFPA-70, ANSI B30.11 and B30.16, except as modified herein. In the publications referred to herein, the advisory provisions shall be considered to be mandaory as though the word "shall" had been substituted for "should" wherever it appears. Reference in these publications to the "authority having jurisdiction" shall be interpreted to mean "the Contracting Officer." Section 15011, Mechanical General Requirements, applies to this section.

1.3 HOIST DUTY CLASSIFICATION: Light maintenance work, where loads and utilization are randomly distributed with capacity loads, infrequently handled, where total running time of equipment does not exceed 10 percent of the work period. Provide hoist and trolley and electrification with optional features for weatherproofing; hoist, trolley, and electrification is intended for operation and storage in a location exposed to the weather.

1.4 SUBMITTALS REQUIRED: The submittal requirements of Section 15011, Mechanical General Requirements, apply to the following lists.

a. Manufacturer's Data:

Monorail tracks
Hoist and trolley assemblies
Hoist and trolley electrification

b. Shop Drawings:

Drawings and caculations for monorail track suspension
Electrical schematic of hoists, trolleys and electrification

c. Certified Test Reports: Non-destructive test of hooks.

d. Certificates of Compliance: Painting systems.

e. Operation and Maintenance Manual: Submit manual for approval no less than 45 calendar days prior to equipment field test data.

Hoist and trolley assemblies
Hoist and trolley electrification

f. Miscellaneous:

Load chain breaking strength certification
Non-destructive testing lab qualifications data

1.5 DESIGN STRESSES: Mechanical load carrying parts, except the hoisting wire roop shall be designed so that the static stress in the material, stress resulting from handling the crane rated load, shall not exceed 20 percent of the published average ultimate strength of the material. Strength requirements for hoisting wire rope are specified hereinafter.

1.6 LIMITATIONS ON CAST IRON USE: Cast iron shall not be provided in hoist power tansmission train componets including shafts, gear reducer housings, gears, couplings, keys, sheaves, or hoisting rope drums; cast iron shall not be provided in hoist components that are subjected to tensile stresses while in service.

PART 2 - PRODUCTS

2.1 MONORAIL TRACK SYSTEMS: Monorail track systems shall be suspended from supporting structures provided in and specified in Section 05120, "Structural Steel."

2.1.1 Track Suspension: Provide means of suspending the track from the supporting structure, except for cantilevered end support which is indicated. The suspension system shall be the sole responsibility of the track supplier. Complete shop drawings and calculations for the suspension system shall be

submitted to and approved by the Contracting Officer. Design of connections shall conform to design requirements specified in MMA-UCMS. The suspension system shall be designed and constructed to ensure no impairment of the strength of track. Each track splice joint shall be located on centerline of a hanger or suspension device. Provide bracing to hold track sections in rigid alignment at all joints.

2.1.2 Standard I-Beam Track System: Provide monorail track system designed and constructed in accordance with the following requirements:

2.1.2.1 Tracks: American Standard I-Beam w-shape, conforming to AISC's "Manual of Steel Construction."

2.1.2.2 Track Joints: At all track joints, provide web type couplings, which permit hoist trolley travel without binding. The maximum gap between ends of the tack beams at the joints shall not exceed 1/16 of an inch.

2.2 ELECTRIC POWERED CHAIN HOISTS:

2.2.1 Rated Capacity: Two tons. The rated capacity of the hoist shall be the maximum load for which the hoist is designed and built by the manufacturer. In determining the rated capacity, all handling devices such as buckets, magnets, load blocks, etc., shall be included as part of the load to be handled.

2.2.2 Hook Lift Range: Minimum of 8-foot lift range as measured from the finished floor.

2.2.3 Hoisting Speeds: Provide hoist capable of hoisting and lowering rated capacity load at a single speed of 20 feet per minute. Hoist motor shall be rated at 2.4 or 3.2 horsepower.

2.2.4 Controls: Pendant push button controls for hoist suspended from the hoist at a level of 4 feet above finished floor. Provide controls with the following pushbutton functions: Power on, Hoist Start-Stop (momentary contact), Hoisting, Lowering.

2.2.4.1 Pushbutton Control: Electrically operated, full magnetic, reversing type contactors shall be provided for hoist and trolley motions and be operated by a momentary contact type pushbutton station. The pushbuttons shall return to an off position when pressure is released by the operator. A separate button or a single button providing steps for each speed of multi-speed hoists or trolleys shall be provided. The magnetic contactors shall be mechanically or electrically interlocked.

2.2.4.2 Pushbutton Station: The pushbutton station shall be clearly marked to indicate the function of each button. Pushbutton control voltage shall be not more than 125 volts AC. The pushbutton station shall be grounded to the hoist. There shall be a suitable strain relief chain or cable to present a pull on the rubber covered pendant conductor cable.

2.2.5 Hoist Gear Train: Alloy steel spur gears or helical gears.

2.2.6 Hoist Brakes: Provide hoist motor brake in addition to an automatic mechanical load brake. Mechanical load brake shall be Weston type or roller clutch type. Motor brake shall be electrically operated, of the shoe, disc, or bank type, and interlocked with motor control to quickly stop the motor when power to motor is interrupted. The torque rating of the motor brake shall be not less than the rated full load torque of the hoist motor.

2.2.7 Load Chain: High strength steel links, flexible; minimum safety factor of 5 to 1 based on ratio of minimum chain breaking load to the calculated load on the chain when the hoist is assumed loaded to rated capacity. Certification from hoist manufacturer of provided chain's breaking strength shall be submitted to the Contracting Officer and approved prior to final acceptance of hoist. Do not paint or coat the load chain.

2.3 HOIST PROTECTION DEVICES:

2.3.1 Over-Current Protection: Thermostats installed as integral part of motors or thermal overload relays provided in each motor controller.

2.3.2 Over-Travel Safety: Provide hoist motor electro-mechanical upper and lower adjustable limit switches to limit travel of load block; traveling nut type or equivalent.

2.3.3 Back-Up Over-Travel Safety: Provide upper plugging limit switch to limit upward travel of load block. Provide paddle on weight to activate plugging limit switch when struck by hoist load block. Provide this upper limiting device in addition to and as a backup for limit switches specified herein.

2.4 HOIST LOAD HOOKS AND LOAD HOOK COMPONENTS:

2.4.1 Hook: Forged steel; complete with spring-loaded steel throat opening safety device.

2.4.2 Disassembly: Hook and hook nut shall be capable of complete disassembly that enables access to all surfaces of hook, including shank and hook unit for inspection purposes. Provision shall be made for the hook nut, or other hook-to-block fastener, to be keyed to hook shank by means of a set screw or similar, easily removable, securing device.

2.4.3 Hook Non-Destructive Test: Each hook, including shank and hook nut, shall be inspected over the entire surface areas by magnetic particle inspection. If hook nut is not used, any device that functions the same as the hook nut shall be inspected by magnetic particle inspection.

a. Procedure: Magnetic particle inspection shall be conducted in accordance with ASTM A275. This inspection shall be conducted at the factory of the hook manufacturer or hoist manufacturer. Alternately, a recognized independent testing organization may conduct the inspections if equipped and component to perform such a service, and if approved by the Contracting Officer.

b. Acceptance Criteria: Defects found on the hook or hook nut shall result in rejection of defective items for use on furnished hoist. For this inspection, a defect is defined as a linear or non-linear indication for which the largest dimension is greater than 1/8-inch. Weld repairs for defects on hook or hook nut will not be permitted.

c. Test Report: A test report of the magnetic particle inspection of each hook and hook nut provided shall be submitted to and approved by the Contracting Officer prior to final acceptance of hoist installation. Test reports shall be certified by the testing organization.

2.5 ELECTRIC POWERED TROLLEY: HMI 100, except as modified herein. Motorized trolley, capable of operating on provided track with hoist loaded to rated capacity.

2.5.1 Speed: Provide trolley for hoist capable of moving hoist, loaded to capacity, along monorail track beam at a speed of 65 feet per minute. Provide cushion start of soft start feature on trolley drive motor by means of ballast resistor acceleration upon starting. Provide over-current protection on trolley motor meeting the same requirements as specified for this device for the hoist.

2.5.2 Drive Train: In-line with steel spur gear or helical gear train; or right angle drive with steel worm gear train.

2.5.2.1 Drive Motor Brake: Provide motor brake for in-line drive motor or right angle worm gear drive motor.

2.5.2.2 Wheels: Forged steel or with treads hardened to minimum Brinell Hardness Number of 300.

2.5.2.3 Controls: Provide push button controls on hoist pendant control; two push buttons; trolley right, trolley left.

2.6 ELECTRICAL MOTORS AND CONTROLLERS: Electrical motors, controllers, contactors, and disconnects. Furnish motors, controllers, contactors, and disconnects with their respective pieces of equipment. Motors, controllers, contactors, and disconnects shall conform to and shall have electrical connections provided under Section 16402, "Interior Wiring Systems" except as specified otherwise. Controllers and contactors shall have a maximum of 120 volt control circuits, and auxiliary contacts for use with the controls furnished. When motors and equipment furnished are larger than sizes indicated, the cost of providing additional electrical service and related work shall be included under this section.

2.7 ELECTRICAL WORK in this section includes the provision of all apparatus, accessories and materials necessary to provide power to trolley and hoist from the junction box at the elevation of the monorail system. All electrical work up to and including the junction box shall be provided under division entitled "Electrical." Hoist and trolley electrification shall be festooned type.

2.7.1 Festooned Type: Festooned type conductors shall be rope-stranded, flexible, insulated, portable cable and conforming to NEMA WC3. Cable shall be supported by wheeled carriers running in a messenger track. The carriers and messenger track shall form an integrated system manufactured specifically for the use intended, and shall function in a manner which protects the conductor cables from abrasion, kinking, or excessive twisting. Cables shall be coiled against the lay of cable stranding so that the cable relaxes as it is extended.

PART 3 - EXECUTION

3.2 PAINTING: Paint all components of hoist specified herein in accordance with the requriements for painting of equipment specified in Section 15011, Mechanical General Requirements. Do not paint, coat or galvanize load chain, load hook, hook nut or chain load sheave.

3.2 MARKING: Each item of equipment shall bear a non-corrosive metal nameplate with clearly legible permanent lettering giving the manufacturer's name. model number, and the rated capacity, rating, and other essential information or identification. Markings shall include trolley motion direction arrows on both sides of trolley. Markings shall be visible from pendant controls and shall correspond to the pushbutton labeling on pendant controls. Pendant push button controls and load hook block shall be painted yellow. Additionally, load hook block shall have one-inch wide diagonal black strips painted on two-inch centers.

3.3 TESTS:

3.3.1 Field Tests: Upon completion and before final acceptance, each hoist, trolley and monorail shall be load tested in operation as specified hereinafter. Verify that each component of the system operates as specified, is properly installed and adjusted, and is free from defects in material, manufacture, installation, and workmanship.

3.3.1.1 Test Apparatus: The Contractor shall furnish operating personnel, instruments, electricity and all other apparatus necessary to conduct specified field tests on hoist and monorail. Test load shall be furnished by the Government. The Contractor shall receive and transport the load from a location not more than two miles from the job site and shall return it to that location when the tests have been completed.

3.3.1.2 Witnesses: The field test of the equipment shall be witnessed by the Contracting Officer and a representative of the Transportation Division (Code 12), Atlantic Division, Naval Facilities Engineering Command.

3.3.1.3 No Load Test:

a. Hoist: Raise the load hook the full operating lift distance and verify satisfactory operation of hoist, both hoist upper limit switches, lower limit switch, and the hoisting and lowering speeds.

b. Trolley: Operate trolley assembly the full length of the monorail. Verify satisfactory operation and verify trolley speed.

3.3.2 Load Test: 125 percent of rated capacity.

a. Hoist: Raise test load approximately three feet above finish floor and hold for five minutes. Observe load lowering that may occur which will indicate malfunction of hoisting component or brake. Lower the test load to the finish floor until the hoist line is slack. Hoist load again to a height of three feet above finish floor and verify proper operation of hoist brake.

b. Trolley: With test load hoisted to a height of one foot above finish floor, operate trolley the full distance of the monorail. Observe for any malfunctioning of the trolley assembly and monorail system.

c. Capacity Load Speed Tests: With the hoist loaded to rated capacity, hoist and lower the capacity load verifying that the hoisting and lowering speeds are provided as specified. With the hoist loaded to rated capacity, operate trolley along the monorail beam verifying that the trolley speed is provided as specified.

*** END OF SECTION ***

SECTION 15011
MECHANICAL GENERAL REQUIREMENTS

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.

FEDERAL SPECIFICATIONS (Fed. Spec.):

TT-E-489G	Enamel, Alkyd, Gloss (for Exterior and Interior Surfaces)
TT-E-496B(2)	Enamel, Heat-Resisting (400 Degrees Fahrenheit), Black
TT-P-28F	Paint, Aluminum, Heat Resisting (1200 Degrees Fahrenheit)
TT-P-645A	Primer, Paint, Zinc-Chromate, Alkyd Type

MILITARY SPECIFICATIONS (Mil. Spec.):

DOD-P-15328D	Primer (Wash), Pretreatment (Formula No. 117 for Metals) (Metric)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

B117-73(79)	Salt Spray (Fog) Testing, Method of

1.2 APPLICATION: This section applies to all sections of Division 11, "Equipment"; Division 13, "Special Construction"; Division 14, "Conveying Systems"; and Division 15, "Mechanical" of this project except as specified otherwise in each individual section.

1.2.1 Electrical Motors, Controllers, Contactors, and Disconnects: Furnish motors, controllers, contactors, and disconnects with their respective pieces of equipment. Motors, controllers, contactors, and disconnects shall conform to and shall have electrical connections provided under Section 16400, "Wiring Systems". Controllers and contactors shall have a maximum of 120 volt control circuits, and auxiliary contacts for use with the controls furnished. When motors and equipment furnished are larger than sizes indicated, the cost of providing additional electrical service and related work shall be included under this section.

1.3 SUBMITTALS: Submit shop drawings, manufacturer's data, publication compliance, certified test reports, and manufacturer's certificates of compliance 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 the specific technical paragraph reference which specifies each item, applicable Federal, Military, industry and technical society publication references, and other information necessary to establish contract compliance of each item to be furnished.

1.3.1 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, and 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 be resubmitted.

1.3.2 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.

1.3.3 Publication Compliance: Where equipment or materials are specified to conform to industry and technical society publications of organizations such as American National Standard Institute (ANSI), American Society for Testing and Materials (ASTM), and Underwriters Laboratories, Inc. (UL), proof of such compliance shall be submitted. The label or listing by the specified organization will be acceptable evidence of compliance. In lieu of the label or listing, submit a certificate from an independent testing organization adequately equipped and competent to perform such services, and approved by the Contracting Officer, stating that the item has been tested in accordance with the specified organization's test methods and that the item conforms to the specified organization's publication. Where equipment or materials are specified to conform to Federal Specifications (Fed. Spec.) and Military Specifications (Mil. Spec.), the manufacturer of the product shall submit a certificate of compliance stating that the equipment or materials meets or exceeds the performance, design, and product requirements of the referenced publications.

1.3.4 Certified Test Reports: The testing requirements in referenced publications for materials will be waived provided the manufacturer's original certificates are submitted stating that previously manufactured materials have been tested by approved laboratories, that such materials meet testing requirements specified, and that the materials furnished for this project are of the same type, quality, manufacture, and make as that tested; copies of the test reports need not be submitted except as specifically requested.

1.3.5 Manufacturer's Certificates of Compliance: Submit certification from manufacturer attesting that materials and equipment to be furnished for this project comply with the requirements of this specification and of the reference publications. Pre-printed certifications will not be acceptable; certifications shall be the manufacturer's original; certifications shall be not more than one year old. The certification shall not contain statements that could be interpreted to imply that the product does not meet all requirements specified, such as "as good as"; "achieve the same end use and results as materials formulated in accordance with the

referenced publications"; "equal or exceed the service and performance of the specified material". The certification shall simply state that the product conforms to the requirements specified. Certificates shall be signed by the manufacturer's official authorized to sign certificates of compliance.

1.4 OPERATION AND MAINTENANCE MANUAL: Furnish an operation and maintenance manual for each item of equipment. Furnish three copies of the manual bound in hardback binders or an approved equivalent. Furnish one complete manual prior to the time that equipment tests are performed, and furnish the remaining manuals before the contract is completed. Inscribe the following identification on the cover: the words OPERATION AND MAINTENANCE MANUAL, the name and location of the equipment or the building, the name of the Contractor, and the contract number. The manual shall include the names, addresses, and telephone numbers of each subcontractor installing equipment, and of the local representatives for each item of equipment. The manual shall have a table of contents and be assembled to conform to the table of contents with the tab sheets placed before instructions covering the subject. The instructions shall be legible and easily read, with large sheets of drawings folded in. The manual shall include: wiring and control diagrams with data to explain detailed operation and control of each item of equipment; a control sequence describing start-up, operation and shut-down; description of the function of each principal item of equipment; the procedure for starting; the procedure for operating; shut-down instructions; installation instructions; maintenance instructions; lubrication schedule including type, grade, temperature range, and frequency; safety precautions, diagrams, and illustrations; test procedures; performance data; and parts list. The parts lists for equipment shall indicate the sources of supply, recommended spare parts, and the service organization which is reasonably convenient to the project site. The manual shall be complete in all respects for equipment, controls, accessories, and associated appurtenances provided.

1.5 POSTED OPERATING INSTRUCTIONS: Furnish approved operating instructions for each principal item of equipment for the use of the operation and maintenance personnel. The operating instructions shall include wiring diagrams, control diagrams, and control sequence for each principal item of equipment. Operating instructions shall be printed or engraved, and shall be framed under glass or in approved laminated plastic and posted where directed. Operating instructions shall be attached to or posted adjacent to each principal item of equipment including start up, proper adjustment, operating, lubrication, shut-down, safety-precautions, procedure in the event of equipment failure, and other items of instruction as recommended by the manufacturer of each item of equipment. Operating instructions exposed to the weather shall be made of weather-resisting materials or shall be suitably enclosed to be weather protected. Operating instructions shall not fade when exposed to sunlight and shall be secured to prevent easy removal or peeling.

1.6 INSTRUCTION TO GOVERNMENT PERSONNEL: Furnish the services of competent instructors to give full instruction to the Government personnel in the adjustment, operation and maintenance, including pertinent safety requirements of each item of equipment and each system. Each instructor shall be thoroughly familiar with all parts of the installation and shall be trained in operating theory as well as practical operation and maintenance work. Instruction shall be given during the first regular work week after the

equipment or system has been accepted and turned over to the Government for regular operation. The number of mandays (8-hours) of instruction furnished shall be as specified in each individual section.

1.7 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.

1.8 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. 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.

1.9 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.

1.10 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.

1.11 ELECTRICAL REQUIREMENTS: Furnish motors, controllers, contactors, and disconnects with their respective pieces of equipment. Motors, controllers, contactors, and disconnects shall conform to and shall have electrical connections provided under Section 16400, "Wiring Systems". Furnish internal wiring for components of packaged equipment as an integral part of the equipment. Extended voltage range motors will not be permitted. Controllers and contactors shall have a maximum of 120 volt control circuits, and auxiliary contacts for use with the controls furnished. When motors and equipment furnished are larger than sizes indicated, the cost of additional electrical service and related work shall be included under the section that specified that motor or equipment. Power wiring and conduit for field installed equipment, and motor control equipment forming part of motor control centers or switchgear assemblies, and conduit and wiring connecting such centers, assemblies or other power sources to equipment shall be provided under and conform to the requirements of Section 16400, "Wiring Systems".

PART 2 - EXECUTION

2.1 PAINTING OF NEW EQUIPMENT: Equipment painting, factory applied or shop applied, shall be as specified herein, and provided under each individual section of this specification.

2.1.1 Factory Painting Systems: Manufacturer's standard factory painting systems may be provided subject to certification that the factory painting system applied will withstand 125 hours in a salt-spray fog test, except that equipment located outdoors shall withstand 500 hours in a salt spray fog test. Salt spray fog test shall be in accordance with ASTM B117. Immediately after completion of the test, the paint shall show no signs of blistering, wrinkling or cracking; and no loss of adhesion; and the specimen shall show no signs of rust creepage beyond 0.125 inch on either side of the scratch mark. The film thickness of the factory painting system applied on the equipment shall not be less than the film thickness used on the test specimen. If manufacturer's standard factory painting system is being proposed for use in lieu of the shop painting systems using Fed. Spec. TT-E-496 or TT-P-28, certifications that the manufacturer's standard factory painting system will conform to the heat resistance requirement of Fed. Spec. TT-E-496 or TT-P-28 as applicable, shall be submitted in addition to other certifications.

2.1.2 Shop Painting Systems: Clean, pretreat, prime and paint metal surfaces; except aluminum surfaces shall not be painted. Apply coatings to clean dry surfaces. Clean the surfaces to remove dust, dirt, rust, oil and grease by wire brushing and solvent degreasing prior to application of paint, except metal surfaces subject to temperatures in excess of 120 degrees Fahrenheit (F) shall be cleaned to bare metal. Where more than one coat of paint is specified, apply the second coat after the preceding coat is thoroughly dry. Lightly sand damaged painting and retouch before applying the succeeding coat.

2.1.2.1 Metal Surfaces Subject to Temperatures Less Than 120 Degrees F.: Immediately after cleaning, the metal surfaces shall receive one coat of Mil. Spec. DOD-P-15328 pretreatment primer applied to a minimum dry film thickness of 0.3 mil, one coat of Fed. Spec. TT-P-645 primer applied to a minimum dry film thickness of one mil; and two coats of Fed. Spec. TT-E-489 enamel applied to a minimum dry film thickness of one mil per coat.

2.1.2.2 Metal Surfaces Subject to Temperatures Between 120 and 400 Degrees F.: Surfaces shall receive two coats of Fed. Spec. TT-E-496, Type II, heat-resisting enamel applied to a total minimum thickness of 2 mils.

2.1.2.3 Metal Surfaces Subject to Temperatures Greater Than 400 Degrees F.: Surfaces shall receive two coats of Fed. Spec. TT-P-28 heat-resisting aluminum paint applied to a total minimum dry film thickness of 2 mils.

*** END OF SECTION ***

SECTION 15396
CHLORINATOR SYSTEMS

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.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

A53-83	Welded and Seamless Steel Pipe
B88-83	Seamless Copper Water Tube

CHLORINE INSTITUTE:

The Chlorine Manual

MANUFACTURER'S STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY (MSS):

SP-80-1979	Bronze Gate, Glove, Angle and Check Valves

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA):

MG1-78(82)	Motors and Generators

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):

70-1985	National Electrical Code

1.2 STANDARDS COMPLIANCE: For materials whose compliance with organizational standards or specifications is not regulated by an organization using their own listings or labels as proof of compliance, a notarized certificate from the manufacturer shall be furnished to the Contracting Officer stating that the material complies with the applicable referenced standard or specification. The statement shall be furnished prior to delivery of the material involved to the site.

1.3 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.

1.4 DELIVERY AND STORAGE: All equipment and parts shall be packaged for shipment to prevent breakage, damage or cause out-of-adjustment calibration, readings or controls. Materials delivered to the site shall be inspected for damage and shall be unloaded and stored with a minimum of handling. Only structural steel members, steel plates, boxes, channels, weirs and baffles may be stored outdoors, off the ground and under a weathertight

covering. All equipment shipped separately and not mounted on the plant shall be stored indoors, off the floor. The area shall be dry with adequate ventilation, free from dust or water, and shall permit easy access for inspection and handling. Prefabricated steel plants shall be lifted off the truck at the site and placed on the prepared concrete slab. During inclement weather, the Contractor shall cover the plant until such time that an inspection can be made of the equipment delivered to assess any damage, if any has occurred in transit. The Contractor shall be responsible for all material delivered and stored at the site or other location. Contractor shall take measures for security of the equipment and it will be his sole responsibility up to the time of acceptance of the plant by the Contracting Officer.

1.5 MATERIALS AND EQUIPMENT: All materials and equipment shall be new and be standard commercial products in regular production by the manufacturer, and suitable for the required service.

PART 2 - PRODUCTS

2.1 GENERAL: Chlorinator shall receive chlorine gas from chlorine cylinders to proportion in the water supply system. Chlorinator assembly shall include chlorinator, chlorine gas manifold, flexible connector, water piping, chlorine solution piping, housing and incidental related parts.

2.2 CHLORINATOR shall be a flow proportional electric type comprising the following parts: a flowmeter, a vacuum relief valve, a check valve, an injector or ejector, a gas filter, a chlorine pressure gage, a chlorine supply indicator, water pressure gage, a water strainer and an electric heater. The chlorinator shall be designed for proportional-automatic control. The gas shall be thoroughly mixed with water before it is discharged. The chlorinator shall function accurately within four percent of the set feed rate regardless of normal variations in the water pressure operating the machine. In case of failure of the gas supply, the chlorinator shall be protected against flooding by a ball check valve or similar device and under no condition shall it be possible for water or water vapor to enter into any dry gas lines or control parts. Permanent joints shall be in conformance with "The Chlorine Manual" of the Chlorine Institute. All component parts of the chlorinator exposed to chlorine gas or chlorine solution shall be of materials resistant to chlorine as recommended in "The Chlorine Manual" of the Chlorine Institute. The pressure-reducing or vacuum-regulating valve shall reduce the pressure of the chlorine gas to a vacuum and maintain a constant flow within plus or minus 4 percent for any given setting of rate of feed. The vacuum and pressure relief device shall limit the vacuum within the chlorine feeding-machine and provide a suitable vent to the outside atmosphere for the exscape of any chlorine gas release through improper operation of the equipment. A vacuum shut-off valve may be substituted for the vaccum relief which will seal off the chlorinator when excessive vacuum is present. The flowmeter shall be a metering device for measuring the flow of chlorine gas in pounds per 24 hours over a range of not less than 10 to 1 maximum feed and shall be mounted on the face of the chlorinator. The injector or ejector shall receive all chlorine and make-up water and discharge the resulting solution to the point of an application. A check valve which will prevent water backing into the injector suction line shall be provided. The vacuum regulator valve shall automatically close when

ejector water supply or ejector vacuum is lost. Chlorine pressure gage shall be of the diaphragm type, and shall be made of corrosion-resisting material. The gage shall indicate accurately the pressure of chlorine gas as supplied from the cylinder. Chlorine supply indicator shall be supplied with the unit to show whether chlorine is available or exhausted. The proportional-automatic control device shall be actuated by a signal from the primary element and shall be so transmitted or converted as to vary the rate of chlorine feed by electric variable orifice device in proportion to the rate of flow over the entire range of the chlorine meter in the chlorine feeding machine. Chlorine feed rate shall be controlled by a single adjustment knob operating the electric variable orifice device. The equipment shall be actuated by the flowmeter. Chlorinator shall be floor. Floor-mounted units shall have necessary components including a cabinet and shall be self-supporting.

2.3 ACCESSORIES:

2.3.1 Scales are specified in Section 11260, "Scales for Chlorine Cylinders".

2.3.2 Chlorine Gas Manifold: Chlorine gas manifold shall be of a material resistant to chlorine and suitable for the working pressure involved.

2.3.3 Flexible Connector: Flexible connector between chlorine gas manifold and the chlorinator shall be extra-heavy Type K seamless copper tube conforming to ASTM B88.

2.3.4 Water Piping: Water piping shall be schedule 80 PVC piping with solvent welded joints. Gate valve and check valve conforming to MSS SP-80 and a Y-pattern brass or stainless steel strainer shall be provided.

2.3.5 Solution Piping: Solution piping from chlorinator to diffuser shall be flexible polyethylene pipe, chlorine solution hose, rigid polyvinylchloride (PVC) pipe, or rigid acrylonitrile-butadiene-styrene (ABS) pipe, all as approved by the Chlorine Institute.

2.3.6 Vent Tubing: Vent tubing shall be any elastomer or plastic tubing resistant to chlorine or chlorine solutions. Any other material having qualities acceptable for such use, as determined by the Chlorine Institute, may be substituted in place of the elastomer or plastic tubing. Vent line shall be sloped continuously downward to outside of housing without dips or sags. Insect screen shall be provided at end of line.

2.3.7 Diffuser: Diffuser shall be of rigid PVC or ABS pipe resistant to chlorine solution. The diffuser shall be perforated and of the open channel type and shall be fastened at each end to the tank wall near the bottom in the flow stream of the influent to the chlorine contact tank.

2.3.8 Housing: The chlorinator scale, piping and controls shall be enclosed in a weatherproof housing constructed of 20 gage metal with minimum 1-inch insulation. Full access door shall be provided for easy access to equipment. The housing shall be mounted on top of treatment plant or on a concrete pad adjacent to the chlorine contact tank which shall project not

less than 6 inches beyond outside face of housing. A themostatically controlled space heater shall be provided within the housing to maintain a temperature of 70 degrees F.

2.3.9 Conduit for underground use and to protect PVC or other plastic toping or pipe shall conform to ASTM A53, Schedule 40.

2.4 ELECTRICAL REQUIREMENTS: Electrical components of mechanical equipment and systems such as motors, starters, chart drives, electrical disconnecting (isolating) means, and controls shall be provided under this Section and shall be as specified herein and as necessary for complete and operable systems. Motors shall conform to NEMA MG-1. Interconnecting wiring for factory-wired plant components shall be provided as an integral part of the plant. All interconnecting power wiring and conduit for field erected plant components and control wiring, rated over 100 volts, and conduit shall conform to the requirements of Division 16. Wiring for signal circuit shall be provided as recommended by the equipment manufacturer. The work shall be in accordance with the National Electrical Code.

PART 3 - EXECUTION

3.1 REPAIR PAINTING: All metal surfaces which require painting shall be inspected for holidays, scratches, chips or other damages. These imperfections shall be refinished by cleaning all burrs and rough surfaces and sanding to a smooth finish, after which they shall be primed and repainted.

3.2 ADJUSTMENTS: For all items of equipment involving V-belt drives, adjustment of sheave alignment and belt tension shall be carried out in accordance with product manufacturer's instructions as furnished by the plant manufacturer.

3.3 SPARE PARTS: All recommended spare parts for each item of equipment, as specified hereinbefore, shall be provided as given in the manufacturer's replacment parts list. The spare parts shall be identical and interchangeable with the original parts. The parts shall be furnished in containers with contents clearly identified. Current unit prices and a source of supply shall be furnished for all recommended spare parts.

3.4 FIELD TESTS AND INSPECTIONS:

3.4.1 General: The Contracting Officer will conduct all field inspections and witness all field tests specified in this specification. The Contractor shall perform all field tests and provide all labor, equipment and materials required for testing, except that the Government will provide water and electric power required for field test, when available. All defective equipment, materials, or workmanship disclosed as a result of the tests given herein shall be corrected by the Contractor at no cost to the Government.

3.4.2 Equipment: All mechanical and electrical units installed by the Contractor or interrelated to that installed by the Contractor shall be operated and tested as specified herein. Should any defects occur before or during the tests, they shall be remedied and changes or replacement of equipment shall be made as may be necessary to comply with these specifications.

3.4.3 Chlorinator: The unit shall be operated for a period of not less than 2 hours nor more than 6 hours. The tests to be performed shall be as follows:

(a) The unit shall be checked for leaks. The shall be done by using an aqueous ammonia solution on a cotton or cloth swab on a wooden stick held close to all connections of the chlorinator.

(b) Determine the amount of chlorine used during the test run to ascertain if the unit is functioning within the prescribed limits of 4 percent of the set feed rate.

(c) The chlorinator shall be stopped when the water supply is interrupted or shut off.

(d) When the gas supply is exhausted or shut off, there shall be no back-flow of water into the unit.

3.4.4 Flow Measuring Equipment: V-notch weir shall be tested for accuracy of flow measurements as stated by equipment manufacturer. Tests shall be made using clear water, using suitable measuring containers. Accuracy shall be plus or minus 2 percent of the actual rate over a 5-to-onerange.

3.4.5 Electrical Control System. The plant manufacturer's representative shall inspect the installation of the electrical control system with the Contracting Officer and check all circuits and connections to all motors and electrical controls. The manufacturer's representative shall, upon satisfactory operation of all circuits and controls transmit to the Contracting Officer, three copies of letter certifying that the wriing is complete in accordance with the intent of the specifications for both manual and/or automatic operation and proper functioning of the sewage treatment plant.

*** END OF SECTION ***

SECTION 16011
ELECTRICAL GENERAL REQUIREMENTS

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.

FEDERAL SPECIFICATION (Fed. Spec.):

L-P-387A(2)	Plastic Sheet, Laminated, Thermosetting (for Design Plates)

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):

C2-84	National Electrical Safety Code (NESC)
C37.20-74(R81)	Switchgear Assemblies, Including Metal-Enclosed Bus

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA):

ICS 6-78(R83)	Enclosures for Industrial Controls and Systems

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):

70-84	National Electric Code (NEC)
70B-83	Electrical Equipment Maintenance

1.2 APPLICATION: This section applies to all sections of Division 16, "Electrical," of this project except as specified otherwise in each individual section.

1.3 SUBMITTALS: Obtain approval before procurement, fabrication, or delivery of 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, place of manufacture, 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 to be furnished.

1.3.1 Shop Drawings: In addition to the requirements of the Contract Clauses, shop drawings shall meet the following requirements. Drawings shall be a minimum of 8.5 inches by 11 inches in size, except as specified otherwise. Drawings shall include wiring diagrams and installation details of equipment indicating proposed location, layout and arrangement, 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, revise drawings to show acceptable equipment and resubmit.

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

1.3.3 Publication Compliance: Where equipment or materials are specified to conform to industry and technical society publications of organizations such as American National Standards Institute (ANSI), American Society for Testing and Materials (ASTM), and Underwriters Laboratories Inc. (UL), submit proof of such compliance. The label or listing by the specified organization will be acceptable evidence of compliance. In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word "shall" had been substituted for "should" wherever it appears. Interpret references in these publications to the "authority having jurisdiction," or words of similar meaning, to mean the Contracting Officer. In lieu of the label or listing, submit a certificate from an approved independent testing organization, adequately equipped and competent to perform such services, stating that the item has been tested in accordance with the specified organization's test methods and that the item conforms to the specified organization's publication.

1.3.4 Certified Test Reports: Furnish as specified in Section 01401, "Contractor Inspection System".

1.3.5 Certificates of Compliance: Submit manufacturer's certifications as required on products, materials, finish, and equipment indicated in the technical sections. Certifications shall be documents prepared specifically for this contract. Preprinted certifications and copies of previously submitted documents will not be acceptable. The manufacturer's certifications shall name the appropriate products, equipment, or materials and the publication specified as controlling the quality of that item. Certification shall not contain statements to imply that the item does not meet requirements specified, such as "as good as"; "achieve the same end use and results as materials formulated in accordance with the referenced publications"; or "equal or exceed the service and performance of the specified material." Certifications shall simply state that the item conforms to the requirements specified. Certificates shall be printed on the manufacturer's letterhead and shall be signed by the manufacturer's official authorized to sign certificates of compliance.

1.4 OPERATION AND MAINTENANCE MANUAL: Submit as required for systems and equipment indicated in the technical sections. Furnish three copies, bound in hardback binders or an approved equivalent. Furnish one complete manual prior to performance of systems or equipment tests, and furnish the remaining manuals at least 60 days prior to contract completion. Inscribe the following identification on the cover: the words "OPERATION AND MAINTENANCE MANUAL," the name and location of the system, equipment, building, name of Contractor, and contract number. Include in the manual the names, addresses, and telephone numbers of each subcontractor installing the system or equipment and the local representatives for the system or equipment. Include a table of contents and assemble the manual to conform to the table of contents, with the tab sheets placed before instructions covering the subject. The instructions shall be legible and easily read, with large sheets of drawings folded in. The manual shall include:

a. Internal and interconnecting wiring and control diagrams with data to explain detailed operation and control of the system or equipment.

b. A control sequence describing startup, operation, and shutdown.

c. Description of the function of each principal item of equipment.

d. Installation and maintenance instructions.

e. Safety precautions.

f. Diagrams and illustrations.

g. Testing methods.

h. Performance data.

i. Parts list. The list shall indicate sources of supply, recommended spare parts, and name of servicing organization.

j. Appendix: List qualified permanent servicing organizations for support of the equipment, including addresses and certified qualifications.

1.5 POSTED OPERATING INSTRUCTIONS: Furnish approved operating instructions for systems and equipment indicated in the technical sections for use by operation and maintenance personnel. The operating instructions shall include wiring diagrams, control diagrams, and control sequence for each principal system and equipment. Print or engrave operating instructions and frame under glass or in approved laminated plastic. Post instructions as directed. Attach or post operating instructions adjacent to each principal system and equipment including startup, proper adjustment, operating, lubrication, shutdown, safety precautions, procedure in the event of equipment failure, and other items of instruction as recommended by the manufacturer of each system or equipment. Provide weather-resistant materials or weatherproof enclosures for operating instructions exposed to the weather. Operating instructions shall not fade when exposed to sunlight and shall be secured to prevent easy removal or peeling.

1.6 INSTRUCTION TO GOVERNMENT PERSONNEL: Where indicated in the technical sections, furnish the services of competent instructors to give full instruction to Government personnel in the adjustment, operation, and maintenance of systems and equipment, including pertinent safety requirements as required. Each instructor shall be thoroughly familiar with all parts of the installation and shall be trained in operating theory as well as practical operation and maintenance work. Instruction shall be given during the first regular work week after the equipment or system has been accepted and turned over to the Government for regular operation. The number of man-days (8 hours) of instruction furnished shall be as specified in each individual section.

1.7 DELIVERY AND STORAGE: Handle, store, and protect equipment and materials in accordance with the manufacturer's recommendations and with the requirements of NFPA 70B, Appendix I, titled "Equipment Storage and Maintenance During Construction." Replace damaged or defective items with new items.

1.8 CATALOGED PRODUCTS/SERVICE AVAILABILITY: Materials and equipment shall be current products by manufacturers regularly engaged in the production of such products. Products shall have been in satisfactory commercial or industrial use for 2 years prior to bid opening. The 2-year period shall include applications of equipment and materials under similar circumstances and of similar size. The 2-year period shall be satisfactorily completed by a product for sale on the commercial market through advertisements, manufacturers' catalogs, or brochures. Products having less than a 2-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6000 hours, exclusive of the manufacturers' factory or laboratory tests, is furnished. The equipment items shall be supported by service organizations which are reasonably convenient to the equipment installation in order to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract.

1.9 MANUFACTURER'S RECOMMENDATIONS: Where installation procedures or any part thereof are required to be in accordance with manufacturer's recommendations, furnish printed copies of the recommendations prior to installation. Installation of the item shall not proceed until recommendations are received. Failure to furnish recommendations shall be cause for rejection of the equipment or material.

1.10 ELECTRICAL REQUIREMENTS: Furnish motors, controllers, contactors, and disconnects with their respective pieces of equipment. Motors, controllers, contactors, and disconnects shall conform to Section 16400, "Wiring Systems." Furnish internal wiring for components of packaged equipment as an integral part of the equipment. Extended voltage range motors will not be permitted. Control voltage for controllers and contactors shall not exceed 120 volts nominal. When motors and equipment furnished are larger than sizes indicated, the cost of additional electrical service and related work shall be included under the section that specified that motor or equipment. Provide power wiring and conduit for field-installed equipment under Section 16400, "Wiring Systems." Power wiring and conduit shall conform to the requirements of Section 16400, "Wiring Systems." Provide control wiring and conduit under the section specifying the associated equipment. Control wiring and conduit shall conform to the requirements of the section specifying the associated equipment.

1.11 CODES APPLICABLE: Work and materials shall conform to NFPA 70 and/or ANSI C2 for code requirements and to the requirements of this Specification.

PART 2 - PRODUCTS

2.1 NAMEPLATES: Fed. Spec. L-P-387. Provide laminated plastic nameplates for each panelboard, equipment enclosure, relay, switch, and device. Each nameplate inscription shall identify the function and, when applicable, the position. Nameplates shall be melamine plastic, 0.125-inch thick, white with black center core. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the black core. Minimum size of nameplates shall be 1.0 inch by 2.5 inches. Lettering shall be a minimum of 0.25-inch high normal block style.

PART 3 - EXECUTION

3.1 NAMEPLATE MOUNTING: Provide number, location, and letter designation of nameplates as indicated. Fasten nameplates to the device with a minimum of two sheet-metal screws or two rivets.

3.2 WARNING SIGN MOUNTING: Provide the number of signs required to be readable from each accessible side, but space the signs a maximum of 30 feet apart.

3.3 PAINTING OF EQUIPMENT:

3.3.1 Factory Applied: Electrical equipment shall have factory-applied painting systems which shall, as a minimum, meet the requirements of NEMA ICS 6 corrosion-resistance test, except equipment specified to meet requirements of ANSI C37.20 shall have a finish as specified in ANSI C37.20.

3.3.2 Field Applied: Paint electrical equipment as required to match finish or to meet safety criteria. Painting shall be as specified in the section specifying the associated electrical equipment.

*** END OF SECTION ***

SECTION 16400
WIRING SYSTEMS

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.

FEDERAL SPECIFICATIONS (Fed. Spec.):

W-C-375B	Circuit Breaker, Molded Case, Branch Circuit and Service

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):

C80.1-1983	Specification for Rigid Steel Conduit, Zinc-Coated
C80.3-1983	Specification for Electrical Metallic Tubing, Zinc-Coated
C80.5-1983	Specification for Rigid Aluminum Conduit

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

B 1-81	Hard-Drawn Copper Wire
B 8-81	Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA):

KS1-1975(81)	Enclosed Switches
RN1-1980	PVC Externally Coated Galvanized Rigid Steel Conduit and EMT
TC2-1978(81)	Electrical Plastic Tubing (EPT) and Conduit (EPC-40 and EPC-80)
TC3-1982	PVC Fittings for Use with Rigid PVC Conduit and Tubing

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):

70-1984	National Electrical Code (NEC)

UNDERWRITERS' LABORATORIES, INC. (UL):

1-79(84)	Flexible Metal Conduit
50-80(85)	Cabinets and Boxes
67-79(85)	Panelboards
83-83(85)	Thermoplastic-Insulated Wires and Cables
486A-80(85)	Wire Connectors and Soldering Lugs for Use with Copper Conductors
486B-82(85)	Wire Connectors for Use with Aluminum Conductors
486C-83(85)	Splicing Wire Connectors
510-82	Insulating Tape
514A-83(85)	Outlet Boxes and Fittings
514B-82(85)	Fittings for Conduit and Outlet Boxes
869-84(85)	Service Equipment
886-85	Outlet Boxes and Fittings for Use in Hazardous Locations
1053-82	Ground-Fault Sensing and Relaying Equipment
1242-83	Intermediate Metal Conduit

1.2 GENERAL REQUIREMENTS: Section 16011, "Electrical General Requirements," applies to this section with additions and modifications specified herein. In each of the standards referred to herein, consider the advisory provisions to be mandatory, as though the word "shall" had been substituted for "should" wherever it appears. Interpret reference in these standards to the "authority having jurisdiction," or words of similar meaning, to mean the Contracting Officer.

1.2.1 Underground Service: The underground portion of the conduit shall be encased in a concrete envelope having a wall thickness of not less than 3 inches and shall be buried not less than 24 inches. Where a conduit enters through a concrete floor, the curved portion shall not be visible above the finished floor and the entire conduit below the floor slab shall be encased in a concrete envelope having a wall thickness of not less than 3 inches. Ends of the underground conduit shall be protected by threaded metal caps until connections are made. Underground service from 5 feet outside the building to the connection to the existing power system shall be provided under Section 16301, "Underground Electrical Work".

1.3 SUBMITTALS:

1.3.1 Manufacturers' Data:

a. Circuit breakers
b. Conduit and fittings (each type)
c. Insulated conductors
d. Junction boxes

1.3.2 Shop Drawings:

a. Panelboards

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT, GENERAL: All materials, equipment, and devices shall, as a minimum, meet the requirements of UL where UL standards are established for those items, and the requirements of NFPA 70. All items shall be new unless specified or indicated otherwise.

2.2 CONDUIT AND FITTINGS:

2.2.1 Rigid Steel Conduit (Zinc-Coated): ANSI C80.1.

2.2.2 Rigid Aluminum Conduit: ANSI C80.5.

2.2.3 Rigid Nonmetallic Conduit: PVC Type EPC-40 in accordance with NEMA TC2, or UL approved fiberglass reinforced epoxy (FRE).

2.2.4 Intermediate Metal Conduit (IMC): UL 1242, zinc-coated steel only.

2.2.5 Electrical Metallic Tubing (EMT): ANSI C80.3.

2.2.6 Plastic-Coated Rigid Steel and IMC Conduit: NEMA RN1, Type 40 (40 mils thick).

2.2.7 Flexible Metal Conduit: UL 1.

2.2.8 Fittings for Metal Conduit, Electrical Metallic Tubing, and Flexible Metal Conduit: UL 514B. All ferrous fittings shall be cadmium- or zinc-coated in accordance with UL 514B.

2.2.8.1 Fittings for rigid metal conduit and IMC shall be threaded type. Split couplings are not acceptable.

2.2.8.2 Fittings for electrical metallic tubing (EMT) shall be the compression type.

2.2.8.3 Fittings for use in Hazardous Locations: UL 886.

2.2.9 Fittings for Rigid Nonmetallic Conduit: NEMA TC3.

2.3 OUTLET BOXES AND COVERS: UL 514A, cadmium- or zinc-coated if of ferrous metal.

2.4 CABINETS, JUNCTION BOXES, AND PULL BOXES (WITH VOLUME GREATER THAN 100 CUBIC INCHES): UL 50, hot-dip zinc-coated if of sheet steel.

2.5 WIRES AND CABLES: Wires and cables shall meet the applicable requirements of NFPA 70 and UL for the type of insulation, jacket, and conductor specified or indicated. Wires and cables manufactured more than 12 months prior to date of delivery to the site shall not be used.

2.5.1 Conductors: Conductors No. 10 AWG and smaller shall be solid, and those No. 8 AWG and larger shall be stranded. Unless indicated otherwise, conductor sizes shown are based on copper. All conductors shall be copper.

2.5.1.1 Equipment Manufacturer Requirements: Where Contractor provides equipment whose manufacturer requires copper conductors at the terminations, or requires that only copper conductors be provided between components of equipment, it shall be the Contractor's responsibility to provide copper conductors, or all necessary splices, splice boxes, and other work required to satisfy manufacturer's requirements.

2.5.1.2 Minimum Conductor Sizes: Minimum size for branch circuits shall be No. 12 AWG; for Class 1 remote-control and signal circuits, No. 14 AWG; and for Class 2 low-energy remote-control and signal circuits, No. 16 AWG.

2.5.2 Color Coding: Provide for all service, feeder, branch, control, and signaling circuit conductors. Color shall be green for grounding conductors, and white for neutrals, except where neutrals of more than one system are installed in same raceway or box, the other neutral shall be white with a colored (not green) stripe. The color of the ungrounded conductors in different voltage systems shall be as follows:

a. 277/480 volt, 3-phase: Phase A - brown
Phase B - orange
Phase C - yellow

b. 120/240 volt, single phase: red and black.

2.5.3 Insulation: Unless specified or indicated otherwise, or required to be otherwise by NFPA 70, all power and lighting wires shall be 600-volt, Type THW, THWN, XHHW, or RHW, except that grounding wire may be Type TW; remote-control and signal circuits shall be Type TW, THW or TF. Conductors shall conform to UL 83.

2.5.4 Bonding Conductors: ASTM B 1, solid copper wire for sizes No. 8 AWG and smaller; ASTM B 8, Class B, stranded copper wire for sizes No. 6 AWG and larger.

2.6 SPLICES AND TERMINATION COMPONENTS: UL 486A and UL 486B, as applicable for wire connectors, and UL 510 for insulating tapes. Connectors for wires No. 10 AWG and smaller shall be insulated pressure-type in accordance with UL 486A or UL 486C (twist-on splicing connector). Provide solderless terminal lugs on stranded conductors.

2.7 DEVICE PLATES: Provide UL listed, one-piece device plates for outlets and fittings to suit the devices installed. Plates on unfinished walls and on fittings shall be of zinc-coated sheet steel or cast metal having round or beveled edges. Plates shall be satin finish stainless steel or brushed-finish aluminum, minimum 0.03 inch thick. Screws shall be machine type with countersunk heads in a color to match the finish of the plate. The use of sectional type device plates will not be permitted. Plates installed in wet locations shall be gasketed.

2.8 DISCONNECT SWITCHES: NEMA KS1. Switches serving as motor- disconnect means shall be horsepower rated. Provide heavy duty type switches where indicated, where switches are rated higher than 240 volts, and for double throw switches. Fused switches shall utilize Class R fuseholders and fuses, unless indicated otherwise.

2.9 PANELBOARDS: UL 67 and UL 50. Panelboards for use as service disconnecting means shall additionally conform to UL 869. Panelboards shall be circuit breaker equipped. Design shall be such that any individual breaker can be removed without disturbing adjacent units or without loosening or removing supplemental insulation supplied as a means of obtaining clearances as required by UL. Where "space only" is indicated, make provisions for the future installation of a breaker sized as indicated. All panelboard locks included in the project shall be keyed alike. Directories shall be typed to indicate load served by each circuit and mounted in a holder behind transparent protective covering.

2.9.1 Panelboard Buses: Support bus bars on bases independent of the circuit breakers. Main buses and back pans shall be designed so that breakers may be changed without machining, drilling, or tapping. Provide an isolated neutral bus in each panel for connection of circuit neutral conductors. Provide a separate ground bus marked with a green stripe along its front and bonded to the steel cabinet for connecting grounding conductors.

2.9.2 Circuit Breakers: Fed. Spec. W-C-375 ambient-compensated thermal magnetic type with interrupting capacity of 10,000 amperes symmetrical minimum. Breaker terminals shall be UL listed as suitable for the type of conductor provided. Plug-in circuit breakers are not acceptable.

2.9.2.1 Multipole Breakers: Provide common-trip type with a single operating handle. Breaker design shall be such that an overload in one pole automatically causes all poles to open. Maintain phase sequence throughout each panel so that any three adjacent breaker poles are connected to Phases A, B, and C, respectively.

2.9.2.2 Circuit Breaker with Ground-Fault Circuit Interrupter: UL 1053 and NFPA 70. Provide with "push-to-test" button, visible indication of tripped condition, and ability to detect a current imbalance of approximately 5 milliamperes.

PART 3 - EXECUTION

3.1 INSTALLATION:

3.1.1 General Requirements: Electrical installations shall conform to the requirements of NFPA 70 and to the requirements specified herein.

3.1.2 Hazardous Locations: Work in hazardous locations, as defined by NFPA 70, shall be performed in strict accordance with NFPA 70 for the particular "Class," "Division," and "Group" of hazardous locations involved. Provide conduit and cable seals where required by NFPA 70. All conduit shall have tapered threads.

3.1.3 Wiring Methods: Wiring method shall be insulated conductors installed in conduit, except where specifically indicated or specified otherwise, or required by NFPA 70 to be installed otherwise. An insulated equipment grounding conductor shall be provided in all feeder and branch circuits, including lighting circuits. Provide insulated, green-colored conductor for grounding conductors installed in conduit or raceways.

3.1.3.1 Aluminum Conduit: Do not install underground or encase in concrete. Do not use brass or bronze fittings.

3.1.3.2 Electrical Metallic Tubing:

Do Not:

1. Install underground
2. Encase in concrete
3. Use in areas where subject to severe physical damage
4. Use in hazardous areas
5. Use in outdoor work

3.1.3.3 Underground Conduit (Other Than Service Entrance): Plastic-coated rigid steel; plastic-coated steel IMC; PVC, Type EPC-40; or FRE. Where nonmetallic conduit is used, it shall be converted to plastic-coated rigid (or IMC) steel conduit before rising through floor slab; plastic coating shall extend at least 6 inches above floor.

3.1.4 Conduit Installation: Unless indicated otherwise, conceal conduit within finished walls, ceilings, and floors. Keep conduit at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install conduit parallel with or at right angles to ceilings, walls, and structural members where located above accessible ceilings and where conduit will be visible after completion of project.

3.1.4.1 Where conduits rise through floor slabs, the curved portion of bends shall not be visible above the finish slab.

3.1.4.2 Conduit Support: Support conduit by pipe straps, wall brackets, hangers, or ceiling trapeze. Fasten by wood screws to wood; by toggle bolts on hollow masonry units; by concrete inserts or expansion bolts on concrete or brick; by machine screws, welded threaded studs, or spring-tension clamps on steel work. Threaded C-clamps may be used on rigid steel conduit only. Do not weld conduits or pipe straps to steel structures. The load applied to fasteners shall not exceed one-fourth of the proof test load. Fasteners attached to concrete ceiling shall be vibration and shock resistant. Holes cut to a depth of more than 1-1/2 inches in reinforced concrete beams or to a depth of more than 3/4 inch in concrete joints shall not cut the main reinforcing bars. Fill holes that are not used. In partitions of light steel construction, use sheet-metal screws. In suspended-ceiling construction, run conduit above the ceiling. Do not support any conduits from the ceiling support system.

3.1.4.3 Make changes in direction of runs with symmetrical bends or cast-metal fittings. Make field-made bends and offsets with a hickey or conduit-bending machine. Do not install crushed or deformed conduits. Avoid trapped conduits. Prevent plaster, dirt, or trash from lodging in conduits, boxes, fittings, and equipment during construction. Free clogged conduits of all obstructions.

3.1.4.4 Fasten conduits to sheet metal boxes and cabinets with two locknuts where required by NFPA 70, where insulated bushings are used, and where bushings cannot be brought into firm contact with the box; otherwise, use at least a single locknut and bushing. Locknuts shall be the type with sharp edges for digging into the wall of metal enclosures. Install bushings on the ends of conduits and provide insulating type where required by NFPA 70.

3.1.4.5 Stub-Ups: Provide conduits stubbed up through concrete floor for connection to free-standing equipment with an adjustable top or coupling threaded inside for plugs, set flush with the finished floor. Extend conductors to equipment in rigid steel conduit, except that flexible metal conduit may be used 6 inches above the floor. Where no equipment connections are made, install screwdriver-operated threaded flush plugs in conduit end.

3.1.4.6 Flexible Connections: Provide flexible steel conduit between 3 and 6 feet in length for recessed and semirecessed lighting fixtures; for equipment subject to vibration, noise transmission, or movement; and for all motors. Install flexible conduit to allow 20 percent slack. Minimum flexible steel conduit size shall be one-half inch diameter. Liquid tight flexible conduit shall be used in wet locations. A separate ground conductor shall be provided across flexible connections.

3.1.5 Boxes, Outlets, and Supports: Provide boxes in the wiring or raceway systems wherever required for pulling of wires, making connections, and mounting of devices or fixtures. Boxes for metallic raceways shall be of the cast-metal hub type when located in normally wet locations, when surface mounted on outside of exterior surfaces, when installed exposed up to 7 feet above interior floors and walkways, and when installed in hazardous areas. Boxes in other locations shall be sheet steel, except that aluminum boxes may be used with aluminum conduit. Each box shall have the volume required by NFPA 70 for the number of conductors enclosed in the box. Boxes for mounting lighting fixtures shall be not less than 4 inches square (or octagonal), except that smaller boxes may be installed as required by fixture configurations, as approved. Boxes for use in masonry-block or tile walls shall be square-cornered tile-type, or standard boxes having square-cornered tile-type covers. Provide gaskets for cast-metal boxes installed in wet locations and boxes installed flush with the outside of exterior surfaces. Provide separate boxes for flush or recessed fixtures when required by the fixture terminal operating temperature; fixtures shall be readily removable for access to the boxes unless ceiling access panels are provided. Support boxes and pendants for surface-mounted fixtures on suspended ceilings independently of the ceiling supports or make adequate provisions for distributing the load over the ceiling support members in an approved manner. Fasten boxes and supports with wood screws on wood, with bolts and expansion shields on concrete or brick, with toggle bolts on hollow masonry units, and with machine screws or welded studs on steel work. Threaded studs driven in by powder charge and provided with lockwashers and nuts or nail-type nylon anchors may be used in lieu of wood screws, expansion shields, or machine screws. In open overhead spaces, cast boxes threaded to raceways need not be separately supported except where used for fixture support; support sheet metal boxes directly from the building structure or by bar hangers. Where bar hangers are used, attach the bar to raceways on opposite sides of the box and support the raceway with an approved type fastener not more than 24 inches from the box. When penetrating reinforced-concrete members, avoid cutting any reinforcing steel.

3.1.5.1 Boxes for use with raceway systems shall not be less than 1-1/2 inches deep, except where shallower boxes required by structural conditions are approved. Boxes for other than lighting-fixture outlets shall be not less than 4 inches square, except that 4 inch by 2 inch boxes may be used where only one raceway enters the outlet. Telephone outlets shall be a minimum of 4 inches square by 1-1/2 inches deep.

3.1.5.2 Pull Boxes: Construct of not less than the minimum size required by NFPA 70 of code-gage aluminum or galvanized sheet steel, except where cast-metal boxes are required in locations specified above. Furnish boxes with screw-fastened covers. Where several feeders pass through a common pull box, tag the feeders to indicate clearly the electrical characteristics, circuit number, and panel designation.

3.1.6 Mounting Heights: Mount panelboards, circuit breakers, and disconnecting switches so the height of the operating handle at its highest position will not exceed 78 inches from the floor. Measure mounting heights of wiring devices and outlets to the center of device or outlet.

3.1.7 Conductor Identification: Provide conductor identification within each enclosure where a tap, splice, or termination is made. For conductors No. 6 and smaller, color coding shall be by factory-applied color-impregnated insulation. For conductors No. 4 and larger, color coding shall be by plastic-coated self-sticking markers, colored nylon cable ties and plates, or heat-shrink type sleeves. Identify control circuit terminations.

3.1.8 Splices: Make splices in accessible locations. Make splices in conductors No. 10 AWG and smaller with an insulated pressure type connector. Make splices in conductors No. 8 AWG and larger with a solderless connector and cover with an insulation material equivalent to the conductor insulation.

3.1.8.1 Splices Involving Existing Aluminum Conductors: Make with solderless circumferential compression type, aluminum-bodied connectors UL listed for AL/CU. Remove all surface oxides from aluminum conductors by wire brushing and immediately apply an oxide-inhibiting joint compound and insert in connector. After joint is made, wipe away excess joint compound and insulate splice.

3.1.9 Resistance: The maximum resistance to ground of the grounding system shall not exceed 25 ohms under normally dry conditions. Where the resistance obtained exceeds 25 ohms, contact the Contracting Officer for further instructions.

3.1.10 Equipment Connections: Provide power wiring for the connection of motors and control equipment under this section of the specification. Except as otherwise specifically noted or specified, automatic control wiring, control devices, and protective devices within the control circuitry are not included in this section of the specifications, but shall be provided under the section specifying the associated equipment.

3.1.11 Repair of Existing Work: Lay out the work carefully in advance. Where cutting, channeling, chasing, or drilling of floors, walls, partitions, ceilings, or other surfaces is necessary for the proper installation, support, or anchorage of the conduit, raceways, or other electrical work, do this work carefully. Repair any damage to buildings, piping, or equipment using skilled mechanics of the trades involved.

3.1.12 Reworking Existing System: Work shall conform to applicable requirements of this Division of the Specifications. Remove or deenergize existing electrical equipment, conduit, conductors, etc. not in use after reworking the existing system, as indicated. Keep equipment not scheduled for replacement in operation at all times. Schedule work to be renovated, changed, or modified so as not to interfere with normal operation.

3.2 FIELD TESTS: The Contractor shall provide all test equipment and personnel and submit written copies of all test results. As an exception to requirements that may be stated elsewhere in the contract, the Contracting Officer shall be given 5 working days notice prior to each test.

3.2.1 Devices Subject to Manual Operation: Each device subject to manual operation shall be operated at least five times, demonstrating satisfactory operation each time.

3.2.2 Test on 600-Volt Wiring: Test all 600-volt wiring to verify that no short circuits or accidental grounds exist. Perform insulation resistance tests on all wiring No. 6 AWG and larger using an instrument which applies a voltage of approximately 500 volts to provide a direct reading of resistance; minimum resistance shall be 250,000 ohms.

3.2.3 Grounding System Test: Test the grounding system to assure continuity and that the resistance to ground is not excessive. Test each ground rod for resistance to ground before making any connections to the rod; then tie entire grounding system together and test for resistance to ground. Make resistance measurements in normally dry weather, not less than 48 hours after rainfall. Submit written results of each test to the Contracting Officer and indicate the location of the rods as well as the resistance and soil conditions at the time the measurements were made.

*** END OF SECTION ***

GENERAL WAGE DECISION NO. NC86-4

Supersedes General Wage Decision No. NC81-1201

State: NORTH CAROLINA

County(ies): BRUNSWICK, CARTERET, COLUMBUS, CRAVEN, DUPLIN, JONES, LENOIR, NEW HANOVER, ONSLOW, PAMLICO, AND PENDER.

Construction
Type: BUILDING

Construction
Description: BUILDING CONSTRUCTION (does not include single family homes and apartments up to and including 4 stories).

Modification Record:

No.	Publication Date	Page No.(s)

05 85 6407

Effective: 3 January 1986

	BASIC HOURLY RATES	FRINGE BENEFITS
ASBESTOS WORKERS	7.26	
BRICKLAYERS	7.10	
CARPENTERS	6.02	
CEMENT MASONS	5.68	
DRYWALL 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	
MILLWRIGHTS	9.45	
PAINTERS	5.00	
PLASTERERS	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 - Recieve rate for craft performing operation to which welding is incidental.

EQUIPMENT OPERATORS:		
ASPHALT RAKERS	4.27	
BACKHOE	5.32	
BULLDOZER	5.25	
CRANE	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 only as provided in the labor standards contract clauses (29 CFR, 5.5 (a) (1) (ii)).

05 85 6407

9-25-86

Pre-Con- $20,900.00
Contract - N62470-86-C-5504

Taylor Brothers Marine Cont. Inc,
Beaufort, N.C.
919-728-2525

Cable from SBA-108 TO
BA-138

6-29-87 - Completion Date

ROIC Paul Krug
Insp. S. Parks

Cont. Supt - J. Taylor

Start Date 2 TO 3 wks

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 N62470-86-B-5504

NAVFAC SPECIFICATION
NO. 05-86-5504

REPLACE SERVICE PUMP CONTROL CABLE FROM SBA-108 TO BA-138
at the

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA

(BMO Project 6R836)

DESIGN BY:

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

SPECIFICATION PREPARED BY:

Karen M. Foskey
27 May 1986

SPECIFICATION APPROVED BY:

J. H. Fitch, P.E., Manager,
Specifications and Estimates Section

F. E. Cone, P.E., Director
Design Branch, Public Works Division

T. L. Huguelet, Commander, CEC, U. S. Navy
for Commander, Naval Facilities Engineering Command

April 1985

CONTENTS

This Invitation for Bids, IFB No. N62470-86-B-5504, consists of the following documents:

(I) Bidding Instructions

(1) Solicitation, Offer and Award (Standard Form 1442 (Rev. 4-85))
*(2) Instructions to Bidders (Construction Contract) April 1985

(II) Bid Submittal Documents

(1) Solicitation, Offer and Award (Standard Form 1442 (Rev. 4-85))
*(2) Representations and Certifications, April 1985
(3) Bid Guaranty (Standard Form 24 (Rev. 4-85))

(III) Contract Documents

(1) Solicitation, Offer and Award (Standard Form 1442 (Rev. 4-85))
(2) Performance Bond (Standard Form 25 (Rev. 10-83))
(3) Payment Bond (Standard Form 25A (Rev. 10-83))
*(4) Contract Clauses (Construction Contract) January 1986
(5) Labor Standards Provisions, November 1979 (Rev. 8-83)
*(6) NAVFAC Specification No. 05-86-5504
(7) Drawings identified in Section 01011 of the Specification
**(8) Wage Determination, Secretary of Labor Decision No. NC86-9, Heavy Construction (including sewer and water lines)

* These items are bound within the Specification at the front

** The Wage Determination is attached as the last page of the Specification

NOTE: All other items are attached on top of the Specification

NOTE:

INQUIRIES

PLANS AND SPECIFICATIONS: Questions regarding the plans and Specification 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 the Specification 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 Specification as issued.

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) 451-2582.

CONTENTS

SECTION 00101
Instructions to Bidders
(Construction Contract)

1. SOLICITATION DEFINITIONS - SEALED BIDDING (APR 1985)

"Offer" means "bid" in sealed bidding.
"Solicitation" means an invitation for bids in sealed bidding. (FAR 52.214-1).

2. BIDS:

(a) Instructions to Bidders and Standard Form 1442 (Solicitation, Offer, and Award) shall be observed in the preparation of bids. Bidders shall affix their names and return addresses in the upper left corner of the bid envelope. Envelopes containing bids must be sealed.

(b) Bids shall be submitted in triplicate on Standard Form 1442 (10-83) and, for bids of $25,000 or greater, shall be accompanied by a bid guarantee as stipulated in paragraph titled Bid Guarantee of this Section. Bid security shall be in the sum of 20% of the largest amount for which award can be made under the bid submitted, but in no case to exceed 3 million dollars. The bid quaranty bond shall be accompanied by a verifax or other facsimile copy of the agent's authority to sign bonds for the surety company.

(c) The basis of bid shall be lump sum price for tne following item:

Base Bid Price for the entire work, complete in accordance with the drawings and Specification.

NOTE: The lump sum price 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.

(d) 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, an appointment must be made with the Officer in Charge of Construction, Jacksonville, North Carolina Area, telephone 919-451-2581.

4. CONDITIONS AFFECTING THE WORK. Bidders should visit the site and take such other steps as may be reasonably necessary to ascertain the nature and location of the work, and the general and local conditions which can affect the work or the cost thereof. Failure to do so will not relieve bidders from responsibility for estimating properly the difficulty or cost of successfully performing the work. The Government will assume no responsibility for any understanding or representations concerning conditions made by any of its officers or agents prior to the execution of the contract, unless included in the invitation for bids, the specifications, or related documents.

5. RATED OR AUTHORIZED CONTROLLED MATERIAL ORDERS (APR 1984). Contracts or purchase orders to be awarded as a result of this solicitation shall be assigned a _____DX rating; DO-C2 rating; _____DMS allotment number in accordance with Defense Priorities System Regulation 1 and/or Defense Materials System Regulation 1. (FAR 52.212-7)

6. EXPLANATION TO PROSPECTIVE BIDDERS (APR 1984). Any prospective bidder desiring an explanation or interpretation of the solicitation, drawings, specifications, etc., must request it in writing soon enough to allow a reply to reach all prospective bidders before the submission of their bids. Oral explanations or instructions given before the award of a contract will not be binding. Any information given a prospective bidder concerning a solicitation will be furnished promptly to all other prospective bidders as an amendment to the solicitation, if that information is necessary in submitting bids or if the lack of it would be prejudicial to other prospective bidders. (FAR 52.214-6)

7. AVAILABILITY OF SPECIFICATIONS LISTED IN THE DOD INDEX OF SPECIFICATION AND STANDARDS (DODISS) (APR 1984). Single copies of specifications cited in this solicitation may be obtained by submitting a written request to the supply point listed below. The request must contain the title of the specification, its number, date, applicable amendment(s), and the solicitation or contract number. In case of urgency, telephone or telegraphic requests are acceptable. Voluntary standards, which are not available to offerors and contractors from Government sources, may be obtained from the organization responsible for their preparation, maintenance, or publication. (FAR 52.210-2)

Commanding Officer
U.S. Naval Publication and Forms Center
5801 Tabor Avenue
Philadelphia, Pennsylvania 19120
Telex Number 834295
Western Union Number 710-670-1685
Telephone Number (215) 697-3321

AVAILABILITY OF SPECIFICATIONS AND STANDARDS NOT LISTED IN DODISS, DATA ITEM DESCRIPTIONS NOT LISTED IN DOD DIRECTIVE 5000.19-L, VOLUME II, AND PLANS, DRAWINGS, AND OTHER PERTINENT DOCUMENTS (JUN 1977). The specifications, standards, plans, drawings, descriptions and other pertinent documents cited in this solicitation may be obtained by submitting request to:

Public Works Division
Specifications and Estimates Section
Building 1005, Marine Corps Base
Camp Lejeune, North Carolina 28542

NOTE: Due to budgetary restriction, it is unlikely that Public Works Division will be able to furnish more than the name and address which may be used to order these publications.

Requests should give the number of the solicitation and the title and number of the specification, standard, plan, drawing or other pertinent document requested, exactly as cited in this solicitation. (DOD FAR SUPP 52.210-7002)

AVAILABILITY FOR EXAMINATION OF SPECIFICATIONS, STANDARDS, PLANS, DRAWINGS, DATA ITEM DESCRIPTIONS, AND OTHER PERTINENT DOCUMENTS (JUN 1977). The specification, standards, plans, drawings, descriptions, and other pertinent documents cited in this solicitation may be examined at the following locations: (DOD FAR SUPP 52.210-7003)

Public Works Division
Specifications and Estimates Section
Building 1005, Marine Corps Base
Camp Lejeune, North Carolina 28542

8. NOTICE OF TOTAL SMALL BUSINESS SET-ASIDE (APR 1984).

(a) Definition.
"Small business concern," as used in this clause, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the size standards in this solicitation.

(b) General.

(1) Offers are solicited only from small business concerns. Offers received from concerns that are not small business concerns shall be considered nonresponsive and will be rejected.
(2) Any award resulting from this solicitation will be made to a small business concern.

(c) Agreement. A manufacturer or regular dealer submitting an offer in its own name agrees to furnish, in performing the contract, only end items manufactured or produced by small business concerns inside the United States, its territories and possessions, the Commonwealth of Puerto Rico, the Trust Territory of the Pacific Islands, or the District of Columbia. However, this requirement does not apply in connection with construction or service contracts. (FAR 52.219-6)

9. THE SMALL BUSINESS SIZE STANDARD APPLICABLE TO THIS CONTRACT IS AS FOLLOWS:

SIC CODE	INDUSTRY, SUBINDUSTRY OR CLASS OF PRODUCTS	ANNUAL SIZE STANDARD (MAXIMUM IN MILLIONS)
1623	General Contractor	$17.0

10. BIDDER'S QUALIFICATIONS. Before bid is considered for award, the bidder may be requested by the Government to submit a statement regarding his previous experience in performing comparable work, his business and technical organization, financial resources, and plant available to be used in performing the work.

11. BID GUARANTEE (APR 1984)

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

(b) The offeror (bidder) shall furnish a bid guarantee in the form of a firm commitment, such as a bid bond, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Contracting Officer will return bid guarantees, other than bid bonds, (1) to unsuccessful bidders as soon as practicable after the opening of bids, and (2) to the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the bid as accepted.

(c) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or give a bond(s) as required by the solicitation within the time specified, the Contracting Officer may terminate the contract for default.

(d) Unless otherwise specified in the bid, the bidder will (1) allow 60 days for acceptance of its bid and (2) give bond within 10 days after receipt of the forms by the bidder.

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference. (FAR 52.228-1)

12. PREPARATION OF BIDS - CONSTRUCTION (APR 1984).

(a) Bids must be (1) submitted on the forms furnished by the Government or on copies of those forms, and (2) manually signed. The person signing a bid must initial each erasure or change appearing or any bid form.

(b) The bid form may require bidders to submit bid prices for one or more items on various bases, including-

(1) Lump sum bidding;
(2) Alternate prices;
(3) Units of construction; or
(4) Any combination of subparagraphs (1) through (3) above.

(c) If the solicitation requires bidding on all items, failure to do so will disqualify the bid. If bidding on all items is not required, bidders should insert the words "no bid" in the space provided for any item on which no price is submitted.

(d) Alternate bid will not be considered unless this solicitation authorizes their submission. (FAR 52.214-18)

13. SUBMISSION OF BIDS (APR 1984).

(a) Bids and bid modifications shall be submitted in sealed envelopes or packages (1) addressed to the office specified in the solicitation and (2) showing the time specified for receipt, the solicitation number, and the name and address of the bidder.

(b) Telegraphic bids will not be considered unless authorized by the solicitation; however, bids may be modified or withdrawn by written or telegraphic notice, if such notice is received by the time specified for receipt of bids. (FAR 52.214-5)

14. ACKNOWLEDGMENT OF AMENDMENTS TO INVITATIONS FOR BIDS (APR 1984). Bidders shall acknowledge receipt of any amendment to this solicitation (a) by signing and returning the amendment, (b) by identifying the amendment number and date in the space provided for this purpose on the form for submitting a bid, or (c) by letter or telegram. The Government must receive the acknowledgment by the time and at the place specified for receipt of bids. (FAR 52.214-3)

15. LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF BIDS (APR 1984)

(a) Any bid received at the office designated in the solicitation after the exact time specified for receipt will not be considered unless it is received before award is made and it-

(1) Was sent by registered or certified mail not later than the fifth calendar day before the date specified for receipt of bids (e.g., a bid submitted in response to a solicitation requiring receipt of bids by the 20th of the month must have been mailed by the 15th); or

(2) Was sent by mail (or was a telegraphic bid if authorized), and it is determined by the Government that the late receipt was due solely to mishandling by the Government after receipt at the Government installation.

(b) Any modification or withdrawal of a bid is subject to the same conditions as in paragraph (a) above.

(c) The only acceptable evidence to establish the date of mailing of a late bid, modification, or withdrawal sent either by registered or certified mail is the U.S. or Canadian Postal Service postmark on the wrapper or on the original receipt from the U.S. or Canadian Postal Service. If neither postmark shows a legible date, the bid, modification, or withdrawal shall be processed as if mailed late. "Postmark" means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily identifiable without further action as having been supplied and affixed by employees of the U.S. or Canadian Postal Service on the date of mailing. Therefore, bidders should request the postal clerks to place a hand cancellation bull's-eye postmark on both the receipt and the envelope or wrapper.

(d) The only acceptable evidence to establish the time of receipt at the Government installation is the time/date stamp of that installation on the bid wrapper or other documentary evidence of receipt maintained by the installation.

(e) Notwithstanding paragraph (a) above, a late modification of an otherwise successful bid that makes its terms more favorable to the Government will be considered at any time it is received and may be accepted.

(f) A bid may be withdrawn in person by a bidder or its authorized representative if, before the exact time set for receipt of bids, the identity of the person requesting withdrawal is established and that person signs a receipt for the Bid. (FAR 52.214-7)

16. PUBLIC OPENING OF BIDS. Bids will be publicly opened at the time set for opening in the invitation for bids. Their content will be made public for the information of bidders and others interested, who may be present either in person or by representative.

17. CONTRACT AWARD - SEALED BIDDING - CONSTRUCTION (FEB 1986)

(a) The Government will evaluate bids in response to this solicitation without discussions and will award a contract to the responsible bidder whose bid, conforming to the solicitation, will be most advantageous to the Government, considering only price and the price-related factors specified elsewhere in the solicitation.

(b) The Government may reject any or all bids, and waive informalities or minor irregularities in bids received.

(c) The Government may accept any item or combination of items, unless doing so is precluded by a restrictive limitation in the solicitation or the bid. (FAR 52.214-19)

18. CONTRACT AND BONDS

(Applicable only to bids of $25,000 or more.) Within 10 days after receipt of awards the bidder to whom award is made shall furnish two bonds, each with satisfactory security; namely, a performance bond (Standard Form 25) and a payment bond (Standard Form 25A). The performance bond shall be in a penal sum equal to 100 percent of the contract price. The payment bond shall be equal to 50 percent of the contract price, except that it shall be 40 percent of the contract price if that price is more than $1,000,000 and not more than $5,000,000, and in the fixed sum of $2,500,000 if the contract price is more than $5,000,000. The bond of any surety company holding a certificate of authority from the Secretary of the Treasury as an acceptable surety on Federal bonds will be accepted. Individual sureties will be accepted in accordance with FAR 28.202-2. Options in lieu of corporate or individual sureties may be provided in accordance with FAR 28.203. The contract time for purposes of fixing the completion date, default, and liquidated damages shall begin to run 15 days from the mailing of acceptance, regardless of when performance and payment bonds are executed.

19. NOTE THE AFFIRMATIVE ACTION REQUIREMENT OF THE EQUAL OPPORTUNITY CLAUSE WHICH MAY APPLY TO THE CONTRACT RESULTING FROM THIS SOLICITATION

20. NOTE THE CERTIFICATION OF NONSEGREGATED FACILITIES IN THIS SOLICITATION

Bidders, offerors and applicants are cautioned to note the "Certification of Nonsegregated Facilities" in the solicitation. Failure of a bidder or offeror to agree to the certification will render his bid or offer nonresponsive to the terms of solicitations involving awards of contracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity clause (1978 SEP).

21. COST LIMITATION

A bid which does not contain separate bid prices for the items identified as subject to a cost limitation may be considered nonresponsive. A bidder by signing his bid certifies that each price bid on items subject to a cost limitation include an appropriate apportionment of all applicable estimated costs, direct and indirect, as well as overhead and profit. Bids may be rejected which (i) have been materially unbalanced for the purpose of bringing affected items within cost limitations or (ii) exceed the cost limitations unless such limitations have been waived by the Assistant Secretary of Defense (Installations and Logistics) prior to award. (1974 APR) (DOD FAR SUPP 52.236-7081)

22. FALSE STATEMENTS IN BIDS (APR 1984)

Bidders must provide full, accurate, and complete information as required by this solicitation and its attachments. The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

END OF SECTION

January 1986

CONTRACT CLAUSES
(Construction Contract)

CLAUSES INCORPORATED BY REFERENCE (APR 1984). This contract incorporates the following clauses by reference, with the same force and effect as if they were given full text. Upon request, the Contracting Officer will make their full text available. (FAR 52.252-2)

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) CLAUSES

1. FAR 52.202-1, Definitions - Alternate I (APR 1984)

2. FAR 52.203-1, Officials Not To Benefit (APR 1984)

3. FAR 52.203-3, Gratuities (APR 1984)

4. FAR 52.203-5, Covenant Against Contingent Fees (APR 1984)

5. FAR 52.212-6, Time Extensions (APR 1984)

6. FAR 52.212-8, Priorities, Allocations, and Allotments (APR 1984)

7. FAR 52.212-11, Variation in Estimated Quantity (APR 1984)

8. FAR 52.212-12, Suspension of Work (APR 1984)

9. FAR 52.214-26, Audit-Sealed Bidding (APR 1985)

10. FAR 52.214-27, Price Reduction for Defective Cost or Pricing Data-Modifications-Sealed Bidding (APR 1985)

11. FAR 52.214-28, Subcontractor Cost or Pricing Data-Modifications-Sealed Bidding (APR 1985)

12. FAR 52.215-1, Examination of Records by Comptroller General (APR 1984)

13. FAR 52.219-8, Utilization of Small Business Concerns and Small Disadvantaged Business Concerns (APR 1984)

14. FAR 52.219-9, Small Business and Small Disadvantaged Business Subcontracting Plan - Alternate I (APR 1984)

15. FAR 52.219-13, Utilization of Women-Owned Business Concerns (APR 1984)

16. FAR 52.222-3, Convict Labor (APR 1984)

17. FAR 52.222-26, Equal Opportunity (APR 1984)

18. FAR 52.222-27, Affirmative Action Compliance Requirements for Construction (APR 1984)

19. FAR 52.222-35, Affirmative Action for Special Disabled and Vietnam Era Veterans (APR 1984)

20. FAR 52.222-36, Affirmative Action for Handicapped Workers (APR 1984)

21. FAR 52.223-2, Clean Air and Water (APR 1984)

22. FAR 52.225-5, Buy American Act - Construction Materials (APR 1984)

23. FAR 52.227-1, Authorization and Consent (APR 1984)

24. FAR 52.227-4, Patent Indemnity - Construction Contract (APR 1984)

25. FAR 52.228-2, Additional Bond Security (APR 1984)

26. FAR 52.228-5, Insurance-Work on a Government Installation (APR 1984)

27. FAR 52.229-3, Federal, State, and Local Taxes (APR 1984)

28. FAR 52.230-4, Administration of Cost Accounting Standards (APR 1984)

29. FAR 52.230-6, Cost Accounting Standards (APR 1984)

30. FAR 52.232-5, Payments Under Fixed-Price Construction Contract (APR 1984)

31. FAR 52.232-17, Interest (APR 1984)

32. FAR 52.232-23, Assignment of Claims (APR 1984)

33. FAR 52.233-1, Disputes (APR 1984)

34. FAR 52.233-3, Protest after Award (JUN 1985)

35. FAR 52.236-1, Performance of work by the Contractor (APR 1984)

36. FAR 52.236-2, Differing Site Conditions (APR 1984)

37. FAR 52.236-3, Site Investigation and Conditions Affecting the Work (APR 1984)

38. FAR 52.236-5, Material and Workmanship (APR 1984)

39. FAR 52.236-6, Superintendence by the Contractor (APR 1984)

40. FAR 52.236-7, Permits and Responsibilities (APR 1984)

41. FAR 52.236-8, Other Contracts (APR 1984)

42. FAR 52.236-9, Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements (APR 1984)

43. FAR 52.236-10, Operations and Storage Areas (APR 1984)

44. FAR 52.236-11, Use and Possession Prior to Completion (APR 1984)

45. FAR 52.236-12, Cleaning Up (APR 1984)

46. FAR 52.236-13, Accident Prevention (APR 1984)

47. FAR 52.236-14, Availability and Use of Utility Services (APR 1984)

48. FAR 52.236-15, Schedules for Construction Contracts (APR 1984)

49. FAR 52.236-17, Layout of Work (APR 1984)

50. FAR 52.236-21, Specifications and Drawings (APR 1984)

51. FAR 52.243-4, Changes (APR 1984)

52. FAR 52.245-01, Property Records (APR 1984)

53. FAR 52.245-02, Government Property (Fixed Price Contract) (APR 1984)

54. FAR 52.245-4, Government-Furnished Property (Short Form) (APR 1984)

55. FAR 52.246-12, Inspection of Construction (APR 1984)

56. FAR 52.246-21, Warranty of Construction (APR 1984)

57. FAR 52.248-3, Value Engineering-Construction (APR 1984)

58. FAR 52.249-2, Termination for Convenience of the Government (Fixed-Price) - Alternate I (APR 1984)

59. FAR 52.249-10, Default (Fixed-Price Construction) (APR 1984)

60. FAR SUPP 52.217-7122, Notice and Assistance Regarding Patent and Copyright Infringement (APR 1984)

61. FAR SUPP 52.219-7000, Small Business and Small Disadvantaged Business (APR 1984)

62. FAR SUPP 52.233-7000, Certification of Requests for Adjustment or Relief Exceeding $100,000 (FEB 1980)

63. FAR SUPP 52.236-7000, Composition of Contractor (JAN 1965)

64. FAR SUPP 52.236-7001, Modification of Proposals - Price Breakdown (APR 1968)

65. FAR SUPP 52.236-7003, Shop Drawings (OCT 1976)

66. FAR SUPP 52.236-7005, Salvage Materials and Equipment (JAN 1965)

67. FAR SUPP 52.236-7006, Misplaced Material (JAN 1965)

68. FAR SUPP 52.236-7007, Identification of Employees (JAN 1965)

69. FAR SUPP 52.236-7050(a), Patent Indemnity (JUN 1974)

70. FAR SUPP 52.227-7033, Rights in Shop Drawings (APR 1966)

71. FAR SUPP 52.243-7001, Pricing of Adjustments (APR 1984)

72. Defense Acquisition Regulations (DAR) 7-602.37, Subcontractors (1979 MAR)

73. FAR 52.247-64, Preference For Privately Owned U.S. Flag Commercial Vessels (APR 1984)

(a) When ocean transportation is required to bring supplies, materials, or equipment to the construction site from the United States either for use in performance of, or for incorporation in, the work called for by this contract, the Contractor shall use privately owned U.S.-flag commercial vessels to the extent that such vessels are available at rates that are fair and reasonable for privately owned U.S.-flag commercial vessels.

(b) The Contractor shall not make any shipment exceeding 10 measurement tons (400 cubic feet) by vessels other than privately owned U.S.-flag commercial vessels without (1) notifying the Contracting Officer that U.S.-flag commercial vessels are not available at rates that are fair and reasonable for such vessels and (2) obtaining permission to ship in other vessels. If permission is granted, the contract price shall be equitably adjusted to reflect the difference in cost.

(c) (1) The Contractor shall submit one legible copy of a rated on-board ocean bill of lading for each shipment to both (i) the Contracting Officer and (ii) the Division of National Cargo, Office of Market Development, Maritime Administration, U.S. Department of Transportation, Washington, DC 20590. Subcontractor bills of lading shall be submitted through the Prime Contractor.

(2) The Contractor shall furnish these bill of lading copies (i) within 20 working days of the date of loading for shipments originating in the United States or (ii) within 30 working days for shipments originating outside the United States. Each bill of lading copy shall contain the following information:

(A) Sponsoring U.S. Government agency.
(B) Name of vessel.
(C) Vessel flag of registry.
(D) Date of loading.
(E) Port of loading.
(F) Port of final discharge.
(G) Description of commodity.
(H) Gross weight in pounds and cubic feet if available.
(I) Total ocean freight revenue in U.S. dollars.

(d) Except for small purchases as described in 48 CFR 13, the Contractor shall insert the substance of this clause, including this paragraph (d), in all subcontracts or purchase orders under this contract.

(e) The requirement in paragraph (a) does not apply to-

(1) Small purchases as defined in 48 CFR 13;

(2) Cargoes carried in vessels of the Panama Canal Commission or as required or authorized by law or treaty;

(3) Ocean transportation between foreign countries of supplies purchased with foreign currencies made available, or derived from funds that are made available, under the Foreign Assistance Act of 1961 (22 U.S.C. 2353); and

(4) Shipments of classified supplies when the classification prohibits the use of non-Government vessels.

(f) Guidance regarding fair and reasonable rates for privately owned U.S.-flag commercial vessels may be obtained from the Division of National Cargo, Office of Market Development, Maritime Administration, U.S. Department of Transportation, Washington, DC 20590, Phone: 202-426-4610.

April 1985

REPRESENTATIONS AND CERTIFICATIONS
(Construction Contract)

Invitation Reference No:

Name and Address of Bidder:

DUNS Number:

Date of Bid:

The bidder makes the following representations and certifications, by placing a check in the appropriate spaces or otherwise as appropriate, as part of the bid identified above. (In negotiated procurements, "bid" and "bidder" shall mean "offer" and "offeror.") A completed REPRESENTATIONS AND CERTIFICATIONS is to be returned with the bid.

1. SMALL BUSINESS CONCERN REPRESENTATION (APR 1984).

The offeror represents and certifies as part of its offer that it [ ] is, [ ] is not a small business concern and that [ ] all, [ ] not all supplies to be furnished will be manufactured or produced by a small business concern in the United States, its possessions, or Puerto Rico. "Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the size standards in this solicitation. (FAR 52.219-1)

2. CONTINGENT FEE REPRESENTATION AND AGREEMENT (APR 1984).

(a) Representation. The offeror represents that, except for full-time bona fide employees working solely for the offeror, the offeror-

[Note: The offeror must check the appropriate boxes. For interpretation of the representation, including the term " bona fide employee," see Subpart 3.4 of the Federal Acquisiton Regulation.]

(1) [ ] has, [ ] has not employed or retained any person or company to solicit or obtain this contract; and

(2) [ ] has, [ ] has not paid or agreed to pay to any person or company employed or retained to solicit or obtain this contract any commission, percentage, brokerage, or other fee contingent upon or resulting from the award of this contract.

(b) Agreement. The offeror agrees to provide information relating to the above Representation as requested by the Contracting Officer and, when subparagraph (a)(1) or (a)(2) is answered affirmatively, to promptly submit to the Contracting Officer-

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(1) A completed Standard Form 119, Statement of Contingent or Other Fees, (SF 119); or
(2) A signed statement indicating that the SF 119 was previously submitted to the same contracting office, including the date and applicable solicitation of contract number, and representing that the prior SF 119 applies to this offer or quotation. (FAR 52.203-4)

3. TYPE OF BUSINESS ORGANIZATION - SEALED BIDDING (APR 1985).

The bidder, by checking the applicable box, represents that it operates as ____ a corporation incorporated under the laws of the State of _____, ____ an individual, ____ a partnership, ____ a nonprofit organization, or ____ a joint venture. (FAR 52.214-2)

4. CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1984).

(a) The offeror certifies that-
(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to (i) those prices, (ii) the intention to submit an offer, or (iii) the methods or factors used to calculate the prices offered;
(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a formally advertised solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and
(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.
(b) Each signature on the offer is considered to be a certification by the signatory that the signatory-
(1) Is the person in the offeror's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or
(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above _____ [insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization];
(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and
(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above.
(c) If the offeror deletes or modifies subparagraph (a)(2) above, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure. (FAR 52.203-2)

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5. PARENT COMPANY AND IDENTIFYING DATA (APR 1984)

(a) A "parent" company, for the purpose of this provision, is one that owns or controls the activities and basic business policies of the bidder. To own the bidding company means that the parent company must own more than 50 percent of the voting rights in that company. A company may control a bidder as a parent even though not meeting the requirement for such ownership if the parent company is able to formulate, determine, or veto basic policy decisions of the offeror through the use of dominant minority voting rights, use of proxy voting, or otherwise.

(b) The bidder [ ] is, [ ] is not [check applicable box] owned or controlled by a parent company.

(c) If the bidder checked "is" in paragraph (b) above, it shall provide the following information:

Name and Main Office Address of Parent Company (Include Zip Code)	Parent Company's Employer's Identification Number

.....

(d) If the bidder checked "is not" in paragraph (b) above, it shall insert its own Employer's Identification Number on the following line _____. (FAR 52.214-8)

6. CERTIFICATION OF NONSEGREGATED FACILITIES (APR 1984)

(Applies when the amount of the contract is in excess of $10,000.)

(a) "Segregated facilities," as used in this provision, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color religion, or national origin because of habit, 'local custom, or otherwise.

(b) By the submission of this offer, the offeror certifies that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The offeror agrees that a breach of this certification is a violation of the Equal Opportunity clause in the contract.

(c) The offeror further agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) it will-

(1) Obtain identical certifications from proposed subcontractors before the award of subcontracts under which the subcontractor will be subject to the Equal Opportunity clause;

(2) Retain the certifications in the files; and

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(3) Forward the following notice to the proposed subcontractors (except if the proposed subcontractors have submitted identical certifications for specific time periods):

NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENT FOR CERTIFICATIONS OF REQUIREMENT FOR CERTIFICATIONS OF NONSEGREGATED FACILITIES.

A Certification of Nonsegregated Facilities must be submitted before the award of a subcontract under which the subcontractor will be subject to the Equal Opportunity clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001. (FAR 52.222-21)

7. CLEAN AIR AND WATER CERTIFICATION (APR 1984)

The Offeror certifies that-

(a) Any facility to be used in the performance of this proposed contract is [ ], is not [ ] listed on the Environmental Protection Agency List of Violating Facilities;

(b) The Offeror will immediately notify the Contracting Officer, before award, of the receipt of any communication from the Administrator, or a designee, of the Environmental Protection Agency, indicating that any facility that the Offeror proposes to use for the performance of the contract is under consideration to be listed on the EPA List of Violating Facilities; and

(c) The Offeror will include a certification substantially the same as this certification, including this paragraph (c), in every nonexempt subcontract. (FAR 52.223-1)

8. SMALL DISADVANTAGED BUSINESS CONCERN REPRESENTATION (APR 1984)

(a) Representation. The offeror represents that it [ ] is, [ ] is not a small disadvantaged business concern.

(b) Definitions.

"Asian-Indian American," as used in this provision, means a United States citizen whose origins are in India, Pakistan, or Bangladesh.

"Asian-Pacific American," as used in this provision, means a United States citizen whose origins are in Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the U.S. Trust Territory of the Pacific Islands, the Northern Mariana Islands, Cambodia, or Taiwan.

"Native Americans," as used in this provision, means American Indians, Eskimos, Aleuts, and native Hawaiians.

"Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria and size standards in 13 CFR 121.

"Small disadvantaged business concern," as used in this provision, means a small business concern that (1) is at least 51 percent owned by one or more individuals who are both socially and economically disadvantaged, or a publicly owned business having at least 51 percent of its stock owned by one or more socially and economically disadvantaged individuals and (2) has its management and daily business controlled by one or more such individuals.

(c) Qualified groups. The offeror shall presume that socially and economically disadvantaged individuals include Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Asian-Indian Americans, and other individuals found to be qualified by the SBA under 13 CFR 124.1. (FAR 52.219-2)

9. WOMEN-OWNED SMALL BUSINESS REPRESENTATION (APR 1984)

(a) Representation. The offeror represents that is [ ] is, [ ] is not a women-owned small business concern.

(b) Definitions.

"Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominate in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria and size standards in 13 CFR 121.

"Women-owned," as used in this provision, means a small business that is at least 51 percent owned by a woman or women who are U.S. citizens and who also control and operate the business. (FAR 52.219-3)

10. DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER REPORTING (DEC 1980)

In the block with its name and address, the offeror should supply the Data Universal Numbering System (DUNS) Number applicable to that name and address. The DUNS Number should be preceded by "DUNS:". If the offeror does not have a DUNS Number, it may obtain one from any DUN and Bradstreet branch office. No offeror should delay the submission of its offer pending receipt of its DUNS Number. (FAR SUPP 52.204-7004)

11. PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (APR 1984)

The offeror represents that-

(a) It [ ] has, [ ] has not participated in a previous contract or subcontract subject either to the Equal Opportunity clause of this solicitation, the clause originally contained in Section 310 of Executive Order No. 10925, or the clause contained in Section 201 of Executive Order No. 11114;

(b) It [ ] has, [ ] has not filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards. (FAR 52.222-22)

12. PERCENT FOREIGN CONTENT (SEP 1978)

Approximately _____ percent of the proposed contract price represents foreign content or effort. (DAR 7-2003.81)

NOTE: Bids must set forth full, accurate and complete information as required by this invitation for bids (including attachments). The penalty for making false statements is prescribed in 18 U.S.C. 1001.

A completed REPRESENTATIONS AND CERTIFICATIONS is to be returned with the bid.

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2. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT-OVERTIME COMPENSATION (40. U.S.C. 327-333)(1983 AUG) - Delete clauses (a) and (b) and substitute the following therefor:

"(a) Overtime requirements. No Contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborers or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(b) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the provisions set forth in paragraph (a) of this clause, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the provisions set forth in paragraph (a) of this clause, in the sum of $10 for each calendar day in which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the provisions set forth in paragraph (a) of this clause."

SECTION 01010
GENERAL PARAGRAPHS

1. GENERAL INTENTION: It is the declared and acknowledged intention and meaning to provide and secure a replacement for a direct-buried control cable with new, complete and ready for use.

2. GENERAL DESCRIPTION: The work includes providing direct-burial 25 pair, 19 gauge control cabling, including crossing the Intracoastal Waterway, and incidental related work.

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

4. NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (APR 1984).

(Applies when the amount of the contract is in excess of $10,000.)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade
23.5%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each

of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Director, Office of Federal Contract Compliance Programs, within 10 working days following award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the-

(1) Name, address, and telephone number of the subcontractor;
(i) Employer identification number of the subcontractor;
(2) Estimated dollar amount of the subcontract;
(3) Estimated starting and completion dates of the subcontract; and
(4) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is State of North Carolina; Counties of Columbus, Duplin, Onslow and Pender. (FAR 52.222-23)

5. REQUIRED INSURANCE: (a) The Contractor shall procure and maintain during the entire period of performance under this contract the following minimum insurance coverage.

Type of Insurance	Per Person	Per Accident	Property
1. Comprehensive General Liability		$500,000	
2. Automobile Liability	$200,000	$500,000	$ 20,000

3. Workmen's Compensation: As required by Federal and State workers' compensation and occupational disease statutes.

4. Employer's liability coverage: $100,000, except in states where workers' compensation may not be written by private carriers.

5. Other as required by state law.

(b) Prior to commencement of work, the Contractor shall furnish to the Contracting Officer a certificate or written statement of the above required insurance. The policies evidencing required insurance shall contain an endorsement to the effect that cancellation or any material change in the policies adversely affecting the interests of the Government in such insurance shall not be effective for such period as may be prescribed by the laws of the State in which this contract is to be performed and in no event less than thirty (30) days after written notice thereof to the Contracting Officer.

(c) The Contractor agrees to insert the substance of this clause, including this paragraph (c), in all subcontracts hereunder.

6. STATION REGULATIONS: The Contractor and his employees and subcontractor shall become familiar with and obey all Station Regulations, including fire, traffic, and security regulations. All personnel employed on the station shall keep within the limits of the work (and avenues of ingress and egress), and shall not enter any restricted areas unless required to do so and are cleared for such entry. The Contractor's equipment shall be conspicuously marked for identification.

7. ORDER OF WORK: The Contractor shall schedule his work as to cause the least amount of interference with Station operations. Work schedules shall be subject to the approval of the Officer in Charge of Construction. Permission to interrupt any station roads, railroads and/or utility service shall be requested in writing a minimum of 15 calendar days prior to the desired date of interruption.

8. SCHEDULE OF PRICES: Within 5 days of receipt of Award, the Contractor shall prepare and submit to the Officer in Charge of Construction seven copies of a Schedule of Prices (Construction Contract) on the forms furnished for this purpose. The Schedule of Prices shall consist of a detailed breakdown of the contract price, giving the quantities for each of the various kinds of work, the unit prices, and the total prices therefore. The Schedule of Prices shall be separated by building numbers with a Schedule and a subtotal for each building. The building numbers and subtotals shall be the first item listed and totaled on the Schedule of Prices. The required schedule must be based on the actual breakdown of the bid price. Accordingly, subcontractors who may be involved shall be advised of this requirement in order to furnish such data without delay. The submission of the required data shall not otherwise affect the contract terms. Each item in the Schedule of Prices shall be structured so as to identify the section of the specifications to which it applies. Further, the section number shall be listed, and then each item of work within that section shall be listed. Specification sections shall be referred to by five-digit CSI numbers which apply.

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

(a) Contractor's Invoice on form NAVFAC 7300/30 (7/83), which shall show, in summary form, the basis for arriving at the amount of the invoice.

(b) Contractor's Monthly Estimate for Voucher (LANTNAVFACENGCOM 4-4330/110 (New 7/84)).

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

(d) Updated copy of progress schedule. (See Clause entitled "Schedules for Construction Contracts" of the Contract Clauses.)

Forms will be furnished by the Contracting Officer. The Contractor has the option to use the government furnished progress schedule and record form. 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 - Original and five copies
(b) Contractor's Monthly Estimate for Voucher - Original and two copies shall be required on all jobs where there is a schedule of prices
(c) Affidavit - Original
(d) Progress Schedule - Two copies

10. PROPOSED MATERIAL SUBMITTALS, CATALOG DATA, AND SAMPLES:

(a) Proposed material submittals required of the Contractor shall be made allowing sufficient time for processing, reviews, approval, and procurement before the Contractor is ready to use the material. No material shall be used prior to written approval. Submittals shall be prepared and assembled as follows:

(1) Submit specified number of copies of each submittal.
(2) Present all submittals for each specification section as a complete bound volume, titled with project title and contract number.
(3) Provide index of included items with each volume. Title the index with applicable specification section name and number.
(4) Clearly mark each item in the volume with the specification paragraph number to which it pertains.
(5) Assemble each volume in the same numerical sequence as specifications section paragraphs.
(6) See individual technical sections for additional information.

The Contractor shall certify on all submittals that the material being proposed conforms to contract requirements. In the event of any variance, the Contractor shall state specifically which portions vary, and request approval of a substitute. The Contractor shall also certify that all Contractor-furnished equipment can be installed in the allocated spaces. Incomplete submittals and submittals with inadequate data will be rejected.

(b) When required, catalog data shall be printed pages on permanent copies of the manufacturer's catalogs.

(c) Samples in the number specified shall be shipped prepaid and delivered as directed by the Officer in Charge of Construction. Samples shall be marked to show the name of the material, name of supplier, contract number, segment of work where material represented by sample is to be used, and name of Contractor submitting the sample.

11. CONTRACTOR'S DAILY REPORT: The Contractor will be required to submit a "Daily Report to Inspector" on the form furnished for this purpose. The form shall be completed daily and delivered to the Officer in Charge of Construction. Data to be reported includes data on workers by classification, the move-on and move-off of construction equipment furnished by the prime and subcontractor or furnished by the Government, and materials and equipment delivered to the site.

If "Contractor Quality Control" is applicable to this contract, the information required by this clause shall be submitted as part of the required reports.

12. WORK OUTSIDE REGULAR HOURS: If the Contractor desires to carry on work outside regular hours or on Saturdays, Sundays, or holidays, he shall submit an application to the Officer in Charge of Construction. The Contractor shall allow ample time to enable satisfactory arrangements to be made by the Government for inspecting the work in progress. At night, he shall light the different parts of the work in an approved manner. All utility cutovers shall be made after normal working hours or on weekends. Anticipated costs shall be included in the bid.

13. EXISTING WORK:

(a) The disassembling, disconnecting, cutting, removal or altering in any way of existing work shall be carried on in such a manner as to prevent injury or damage to all portions of existing work, whether they are to remain in place, re-used in the new work, or salvaged and stored.

(b) All portions of existing work which have been cut, damaged or altered in any way during construction operations shall be repaired or replaced in kind in an approved manner to match existing or adjoining work. All work of this nature shall be performed by the Contractor at his expense and shall be as directed. Existing work shall, at the completion of all operations, be left in a condition as good as existed before the new work started.

14. EQUITABLE ADJUSTMENTS: WAIVER AND RELEASE OF CLAIMS:

(a) Whenever the Contractor submits a claim for equitable adjustment under any clause of this contract which provides for equitable adjustment of the contract, such claim shall include all types of adjustments in the total amounts to which the clause entitles the Contractor, including, but not limited to, adjustments arising out of delays or disruptions or both caused by such change. Except as the parties may otherwise expressly agree, the Contractor shall be deemed to have waived (i) any adjustments to which it otherwise might be entitled under the clause where such claim fails to request such adjustments, and (ii) any increase in the amount of equitable adjustments additional to those requested in its claim.

(b) The Contractor agrees that, if required by the Contracting Officer, he will execute a release, in form and substance satisfactory to the Contracting Officer, as part of the supplemental agreement setting forth the aforesaid equitable adjustment. The Contractor further agrees that such release shall discharge the Government, its officers, agents and employees, from any further claims, including, but not limited to, further claims arising out of delays or disruptions or both caused by the aforesaid change.

15. GOVERNMENT REPRESENTATIVES:

(a) The work will be under the general direction of the Contracting Officer, the Commander, Naval Facilities Engineering Command, who shall designate an officer of the Civil Engineer Corps, United States Navy, or other officer or representative of the Government, as Officer in Charge of Construction, referred to as the "OICC." Except in connection with the "Disputes" clause, the Officer in Charge of Construction shall be the

authorized representative of the Contracting Officer, and have complete charge of the work and exercise full supervision of the work, so far as it affects the interest of the Government. For the purposes of the "Disputes" clause, "Contracting Officer" shall mean the Commander, Naval Facilities Engineering Command, the Acting Commander, their successors, or their representatives specially designated for this purpose.

(b) The provisions of this paragraph or elsewhere in this contract regarding supervision, approval or direction by the Contracting Officer or the OICC, or action taken pursuant thereto, are not intended to and shall not relieve the Contractor of responsibility for tne accomplishment of the work either as regards sufficiency or the time of performance, except as expressly otherwise provided herein.

16. ORAL MODIFICATION: No oral statement of any person other than the contracting officer or his representative, as provided in the clause in this contract entitled "Changes", shall in any manner or degree modify or otherwise affect the terms of this contract.

17. NO WAIVER BY GOVERNMENT: The failure of the Government, in any one or more instances, to insist upon the strict performance of any of the terms of this contract or to exercise any option herein conferred shall not be construed as a waiver or relinquishment to any extent of the right to assert or rely upon such terms or option on any future occasion.

18. SANITATION: Adequate sanitary conveniences of a type approved for the use of persons employed on the work, shall be constructed, properly secluded from public observation, and maintained by the Contractor in such a manner as shall be required or approved by the OICC. These conveniences shall be maintained at all times without nuisance. Upon completion of the work they shall be removed from the premises, leaving the premises clean and free from nuisance.

19. PAYMENTS TO CONTRACTOR:

(a) Payments made in accordance with the clause entitled "Payments Under Fixed-Price Construction Contract" shall be made on submission of itemized requests by the Contractor and shall be subject to reduction for overpayments or increase for underpayments on preceding payments to the Contractor.

(b) The obligation of the Government to make any of the payments required under any of the provisions of this contract shall, in the discretion of the OICC, be subject to (1) reasonable deductions on account of defects in material or workmanship, and (2) any claims which the Government may have against the Contractor under or in connection with this contract. Any overpayments to the Contractor shall, unless otherwise adjusted, be repaid to the Government upon demand.

20. CHANGES BOARD AND ESTIMATES: In determining any equitable adjustment under the Changes Clause, the OICC shall, in those instances where the adjustment is estimated by the OICC to be $50,000 or more, convene and give full consideration to the report of an advisory board of three members,

consisting of two Government representatives appointed by the OICC and one representative appointed by the Contractor. This board shall report to the OICC the amount of the change in cost, time, or both, resulting from the ordered change. In making all equitable adjustments under the Changes Clause, compensation for additions will be based upon estimated costs at the time the work is performed and credit for deductions will be based upon estimated costs at the time the contract was made. In arriving at the amount of the change in price, if any, allowance may be made for profit, overhead and general expenses, plant rental, and other similar items.

21. SECURITY REQUIREMENTS: No employee or representative of the Contractor will be admitted to the site of the work unless he furnishes satisfactory proof that he is a citizen of the United States or is specifically authorized admittance to the site of the work by the OICC.

22. 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 and 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 his 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 attachements hereto.

*** END OF SECTION ***

SECTION 01011
ADDITIONAL GENERAL PARAGRAPHS

1 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984): The Contractor shall be required to (a) commence work under this contract within 10 calendar days, (b) prosecute the work diligently, and (c) complete the entire work ready for use within 270 calendar days.

2 LIQUIDATED DAMAGES--CONSTRUCTION (APR 1984): (a) If the Contractor fails to complete the work within the time specified in the contract, or any extension, the Contractor shall pay to the Government as liquidated damages, the sum of $10.00 for each day of delay. (FAR 52.212-5)

(b) If the Government terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned the Government in completing the work.

(c) If the Government does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

3 DRAWING ACCOMPANYING SPECIFICATION: NAVFAC Drawing No. 4132975, "Plans, Maps, Elevations, Notes", accompanies this specification and is a part thereof. The drawing is the property of the Government and shall not be used for any purpose other than that contemplated by the specification.

3.1 Drawing Verification and Control: The Contractor shall check the drawing furnished him immediately upon its receipt and shall promptly notify the Contracting Officer of any discrepancies. Figures marked on the drawing shall in general be followed in preference to scale measurements. Large scale drawing shall in general govern small scale drawing. The Contractor shall compare the drawing and verify the figures before laying out the work and will be responsible for any errors which might have been avoided thereby.
(FAR SUPP 52.236-7002 (c))

4 SPECIFICATIONS AND PRINTS FURNISHED TO CONTRACTOR: Six copies of the project specifications, and six sets of the drawings accompanying the specifications will be furnished the Contractor without charge. Additional sets of the specifications and drawings can be obtained, if required, by application to the Contracting Officer, provided that the need therefore is justified to the satisfaction of the Contracting Officer.

5 MATERIALS AND EQUIPMENT TO BE SALVAGED: Contract Clause entitled "Salvage Materials and Equipment" 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.

6 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.

7 UTILITIES:

7.1 Availability of Utilities Services: Contract clause entitled "Availability and Use of Utility Services" applies. Reasonable amounts of 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.

7.2 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.

7.3 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 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 Contract clause entitled "Differing Site Conditions". The Base Telephone Officer, telephone 451-2531, will show the Contractor approximate locations of all buried telephone and fire alarm cables after receiving ten days notice. The locations of underground utilities shown is only approximate and the information is incomplete.

8 TRAILERS OR STORAGE BUILDINGS: In accordance with Contract Clause entitled "Operations and Storage Areas", trailers or storage buildings will be permitted, 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. A sign not smaller than 24 inches by 24 inches shall be conspicuously placed on the trailer depicting the company name, business phone number, and emergency phone number.

9 WRITTEN GUARANTEES 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 the equipment and 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 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. Tag shall be attached with copper wire and sprayed with a clear silicone waterproof coating. Leave the date of acceptance and inspector's signature blank until project is accepted for beneficial occupancy. Tag shall show the following information:

EQUIPMENT WARRANTY TAG

Type of Equipment.....
Accepted Date.....
Warranted Until.....
Under Contract N62470-86-B-5504.....
Inspector's Signature.....

STATION PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE

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 ordered from the Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

b. Department of the Army, Corps of Engineers, "Safety and Health Requirements Manual", which may be examined in 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. Contract Clause entitled "Accident Prevention."

d. NFPA 241-1981, 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, Batterymarch Park, Quincy, MA 02269.

11 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.

12 SCHEDULING THE WORK:

12.1 General Scheduling Requirements: Notwithstanding the requirements of Contract Clause entitled "Schedules for construction Contracts", 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 7:30 a.m. to 4:00 p.m. Monday through Friday.

12.2 The surrounding area 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.

12.3 Permission to interrupt any utility service shall be requested in writing at least fifteen 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. All utility cutovers shall be made after normal working hours or on weekends; anticipated costs shall be included in the bid.

13 FORWARDING OF SAMPLES AND SUBMITTALS: Notwithstanding the requirements of Clause entitled "Shop Drawings" of the Contract Clauses, the quantity of submittals required shall be as specified hereinafter.

13.1 Address for Samples and Submittals:

OICC/ROICC
Jacksonville, North Carolina Area
Building 1005, Marine Corps Base
Camp Lejeune, North Carolina 28542

13.2 Samples Required of the Contractor: As soon as practicable, and before installation, submit for approval, samples of materials and equipment as may be requested, including all samples required in the technical sections of this specification.

13.3 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 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.

13.4 Submittal Drawing Guidance: 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.

14 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. The drawings

accompanying this specification shall not be used as shop drawings; for example, the editing of the drawings accompanying this specification and returning these edited drawings as shop drawings is prohibited.

15 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.

16 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.

17 OMISSIONS AND MISDESCRIPTIONS: Omissions from the drawings or specifications or the misdescription of details of work which are manifestly necessary to carry out the intent of the drawings and specifications, or which are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work but they shall be performed as if fully and correctly set forth and described in the drawings and specifications. (FAR SUPP 52.236-7002(b))

18 PRECEDENCE: In the event of conflict or inconsistency between any of the provisions of the various portions of this contract (the reconciliation of which is not otherwise provided for here), precedence shall be given in the following order, the provisions of any particular portion prevailing over those of a subsequently listed portion.

(1) Typewritten portions of the contract.

(2) The specifications referred to in Standard Form 1442 (including all addenda, and mechanical and technical but not contractual aspects of incorporated provisions) as specifically amended herein, if amended.

(3) Printed provisions of the contract form, including printed provisions of added slip sheets.

19 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 shall be made by the Contractor to the Naval Regional Medical Center Collection Agent upon receipt of a monthly statement.

20 QUARANTINE FOR IMPORTED FIRE ANT (4/82): All of Onslow, Jones and Cartaret 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.

20.1 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.

20.2 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 of the U.S. Department of Agriculture.

(1) Bulk soil.

(2) Used mechanized soil-moving equipment.

NOTE: Used mechanized soil-moving equipment is exempt if cleaned of all loose noncompacted soil.

(3) Any other products, articles, or means of conveyances, 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.

20.3 Authorization for movement of equipment outside the imported fire ant regulated area shall be obtained from USDA, APHIS, PPQ, Box 83, Goldsboro, North Carolina, 27530, Attn: Mr. Haywood Cox, Telephone (919) 735-1941, and requests for inspection shall be made sufficiently in advance of the date of movement to permit arrangements for the services of authorized inspectors. The equipment shall be prepared and assembled so that it may be readily inspected. 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 necessary and as directed.

21 GENERAL PROVISIONS CLAUSES: Wherever a reference to a clause of the General Provisions occurs in the technical sections of the specifications, it shall be taken to mean the Contract Clause having the same title as the referenced General Provisions Clause.

*** END OF SECTION ***

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.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

D 3666-83	Evaluation of Inspection and Testing Agencies for Bituminous Paving Materials
D 3740-80	Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
E 329-77 (R 1983)	Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction
E 543-83	Determining the Qualification of Nondestructive Testing Agencies
E 548-79	Generic Criteria for Use in Evaluation of Testing and Inspection Agencies

1.2 QUALITY CONTROL: Quality Control of this contract will be administered under the clause entitled "Inspection of Construction" of the Contract Clauses.

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 Compliance: 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 Contract Clauses and Section 01010, "General Paragraphs," 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. Identify each item submitted by reference to the specific technical paragraph which specifies the item. Likewise, identify each item on the Contractor's Submittal Transmittal form by reference to the specific technical paragraph which specifies the item. 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 date of Contract 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 clauses entitled "Shop Drawings" of the Contract Clauses and "Proposed Material Submittals, Catalog Data, and Samples" of Section 01010, "General Paragraphs."

1.4.3 Manufacturer's Data: Catalog cuts, technical data sheets, and descriptive literature, shall be in accordance with the clause entitled "Proposed Material Submittals, Catalog Data, and Samples" of Section 01010, "General Paragraphs."

1.4.4 Samples: Prepare and submit in accordance with the clause entitled "Proposed Material Submittals, Catalog Data, and Samples" of Section 01010, "General Paragraphs."

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 except that tests for concrete and bituminous mix designs shall have been performed within one year of submittal. 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 Compliance: 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 compliance.

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 clause entitled "Inspection of Construction" of the Contract Clauses, 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 clause entitled "Inspection of Construction" of the Contract Clauses.

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 responsiblility.

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.

SUBMITTAL STATUS LOG

"SEE INSTRUCTIONS ON REVERSE BEFORE FILLING IN"

PAGE ____ OF ____

CONTRACT NUMBER | SHORT TITLE | LOCATION | CONTRACTOR

SUBMITT/ TRANSMITT. NO.	DESCRIPTION OF ITEMS	SPECIFICATION SECTION REQUIRING SUBMITTAL	SUBMITTAL REQUIRES					CONTRACTOR APPV'D	GOV'T APPROVED	CONTRACTOR ACTION		DATE FORWARDED FROM ROICC	ROICC ACTION		DATE			REMARKS
			SHOP DWGS.	CATALOG DATA	SAMPLE	CERTIFI-CATION	TEST DATA			INSERT ACTION CODE	DATE OF ACTION		INSERT ACTION CODE	DATE OF ACTION	RECEIVED FROM ROICC	MAT'L/EQUIP RECEIVED ON SITE	APPROVED BY CONTRACTOR	
(a)	(b)	(c)	(d)					(e)		(f)		(g)	(h)		(i)	(j)	(k)	

05 86 5504

01401 - 6

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 complted by the Contracctor.

4. In those instances where the Contractor has approved the submittal under his contraact 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 "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 deliverd to the project. Column (k) is completed only afteer verifiation that the delivered item is that represented by the approval 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 OICCC for record purposes

END OF SECTION

SECTION 01560

ENVIRONMENTAL PROTECTION

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.

ENVIRONMENTAL PROTECTION AGENCY (EPA):

40 CFR 61(Subpart B)	National Emission Standards for Asbestos (1979)
40 CFR 761	Polychlorinated Biphenyls (1979)

U. S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA):

29 CFR 1910.1001	General Industry Safety and Health Standards (1979)

FEDERAL REGULATION (FR):

Executive Order 11988	Flood Plain Management (42 FR 28951)

NAVAL ENVIRONMENTAL PROTECTION SUPPORT SERVICE (NEPSS):

PS-015	Disposal of Lead-Acid Battery Electrolyte, April 18, 1980

1.2 DEFINITIONS OF CONTAMINANTS:

1.2.1 Sediment: Soil and other debris that has been eroded and transported by runoff water.

1.2.2 Solid Waste: Rubbish, debris, garbage, and other discarded solid materials resulting from industrial, commercial, and agricultural operations, and from community activities.

1.2.2.1 Rubbish: A variety of combustible and noncombustible wastes such as paper, boxes, glass, crockery, metal, lumber, cans, and bones.

1.2.2.2 Debris: Includes combustible and noncombustible wastes, such as ashes, waste materials that result from construction or maintenance and repair work, leaves, and tree trimmings.

1.2.3 Chemical Wastes: Includes salts, acids, alkalies, herbicides, pesticides, and organic chemicals.

1.2.4 Sanitary Wastes:

1.2.4.1 Sewage: Wastes characterized as domestic sanitary sewage.

1.2.4.2 Garbage: Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.

1.2.5 Asbestos and Asbestos Materials: Asbestos means actinolite, amosite, anthophyllite, chrysotile, crocidolite, and tremolite. Asbestos material means asbestos or any material containing asbestos such as asbestos waste, scrap, debris bags, containers, equipment, and asbestos-contaminated clothing consigned for disposal. Friable asbestos material means any material that contains more than one percent asbestos by weight and that can be crumbled, pulverized, or reduced to powder, when dry, by hand pressure.

1.2.6 Oily Waste: Includes petroleum products and bituminous materials.

1.3 SUBMITTALS:

1.3.1 Environmental Protection Plan: Submit four copies of the proposed Enviornmental Protection Plan not later than 14 days after the meeting with the Contracting Officer to discuss the development of an Environmental Protection Plan.

1.3.2 Notices Pertinent to Asbestos Removal:

1.3.2.1 Notice to EPA: Submit three copies of the notice of intention to demolish asbestos insulated or fireproofed materials and equipment provided to the Administrator of EPA, and the State's Environmental Protection Agency as required in paragraph titled "Written Notice."

1.3.2.2 Preconstruction Survey Report: Submit three copies of the preconstruction survey report.

1.3.3 Solid Waste Disposal Permit: Submit one copy of State and local permit or license which reflects such agency's aproval of the disposal plan as being in compliance with their solid waste disposal regulations.

1.4 ENVIRONMENTAL PROTECTION REQUIREMENTS: Provide and maintain during the life of the contract, environment protection as defined herein. Provide environmental protective measures as required to control pollution that develops during normal construction practice. Provide also environmental protective measures required to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project. Comply with all federal, state, and local regulations pertaining to water, air, and noise pollution. Develop proposals for an environmental protection plan for the project and, prior to the commencement of the work, meet with the Contracting Officer and discuss the proposed environmental protection plan. The meeting shall develop mutual understanding relative to details of environmental protection, including measures for protecting natural resources, required reports, and measures to be taken should the Contractor fail to provide adequate protection in an adequate and timely manner. Perform a preconstruction survey of the project site and take photographs as necessary to enhance the survey.

PART 2 - EXECUTION

2.1 PROTECTION OF NATURAL RESOURCES: 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. Confine construction activities to areas defined by the work schedule, drawings, and specification.

2.1.1 Land Resources: Except in areas indicated to be cleared, do not remove, cut, deface, injure, or destroy trees or shrubs without special permission from the Contracting Officer. Do not fasten or attach ropes, cables, or guys to any existing nearby trees for anchorages unless specifically authorized. Where such special emergency use is authorized, the Contractor shall be responsible for any resultant damage.

2.1.1.1 Protection: Protect existing trees which are to remain and which may be injured, bruised, defaced, or otherwise damaged by construction operations. Remove displaced rocks from uncleared areas. Protect monuments, markers, and works of art.

2.1.1.2 Repair or Restoration: Repair or restore to their original condition all trees or other landscape features scarred or damaged by the equipment or operations. Obtain approval of the repair or restoration from the Contracting Officer prior to its initiation. Include topsoil or nutriment during the seeding operation as necessary to provide a suitable stand of grass.

2.1.2 Water Resources: Perform all work in such a manner that any adverse environmental impact on water resources is reduced to a level acceptable to the Contracting Officer.

2.1.2.1 Stream Crossings: Limit equipment fording across stream to control turbidity.

2.1.2.2 Oily Substances: Take special measures to prevent oily or other hazardous substances from entering the ground, drainage areas, or local bodies of water. Surround all temporary fuel oil, petroleum, or liquid chemical storage tanks with a temporary earth berm of sufficient size and strength to contain the contents of the tanks in the event of content leakage or spillage.

2.1.3 Fish and Wildlife Resources: During the performance of the work take such steps as required to prevent interference or disturbance to fish and wildlife. Do not alter water flows or otherwise significantly disturb native habitat adjacent to the project area which are critical to fish and wildlife except as may be indicated or specified.

2.1.4 Historical and Archeological Resources: Carefully preserve and report immediately to the Contracting Officer all items having any apparent historical or archeological interest which are discovered in the course of any construction activities.

2.2 EROSION AND SEDIMENT CONTROL MEASURES:

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

2.2.2 Borrow Pit Areas: Manage and control borrow pit areas to prevent sediment from entering nearby streams or lakes. Restore areas, including those outside borrow pit, disturbed by borrow and haul operations. Restoration includes grading, replacement of topsoil, and establishment of permanent vegetative cover. Uniformly grade side slopes of borrow pit to a slope of 30 degrees or less with the horizontal. Uniformly grade bottom of borrow pits to provide a flat bottom and drain by outfall ditches or other suitable means. Borrow locations will be as directed by the Contracting Officer.

2.2.3 Protection of Erodible Soils: All earthwork brought to final grade shall be immediately finished as indicated or specified. Protect immediately side slopes and back slopes upon completion of rough grading. Plan and conduct all earthwork in such a manner as to minimize the duration of exposure of unprotected. soils.

2.2.4 Temporary Protection of Erodible Soils: Utilize the following methods to prevent erosion and control sedimentation.

2.2.4.1 Mechanical Retardation and Control of Runoff: Mechanically retard and control the rate of runoff from the construction site. This includes construction of diversion ditches, benches, and berms, to retard and divert runoff to protected drainage courses.

2.2.4.2 Sediment Basins: Trap sediment in temporary or permanent sediment basins. Select basin size to accommodate the runoff of a local 50 year storm. Pump dry and remove accumulated sediment after each storm. Use a paved weir or vertical overflow pipe for overflow. Remove collected sediment from the site. Institute effluent quality monitoring programs as required by state and local environmental agencies.

2.2.4.3 Vegetation and Mulch: Provide temporary protection on all side and back slopes as soon as rough grading is completed or sufficient soil is exposed to require protection to prevent erosion. Such protection shall be accelerated growth of permanent vegetation, temporary vegetation, mulching, or netting. Stabilize slopes by hydroseeding, anchoring mulch in place, covering with anchored netting, sodding, or such combination of these and other methods necessary for effective erosion control.

2.3 CONTROL AND DISPOSAL OF SOLID, CHEMICAL, AND SANITARY WASTES: Pick up solid wastes and place in containers which are emptied on a regular schedule. The preparation, cooking, and disposing of food are strictly prohibited on the project site. Conduct handling and disposal of wastes to prevent contamination of the site and other areas. On completion, leave areas clean and natural looking. Obliterate signs of temporary construction and activities incidental to construction of the permanent work in place. The Base Sanitary Landfill will not accept liquid wastes or empty drums. 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.

2.3.1 Disposal of Garbage, Rubbish and Debris: Remove garbage, rubbish and debris from Government property and dispose of it in compliance with federal, state and local requirements.

2.3.2 Sewage, Odor, and Pest Control: Dispose of sewage through connection to station sanitary sewage system. Where such systems are not available, use chemical toilets or comparably effective units and periodically empty wastes into municipal or station sanitary sewage system. Include provisions for pest control and elimination of odors.

2.3.3 Chemical Waste: Store chemical waste in corrosion resistant containers labeled to identify type of waste and date filled. Remove containers from the project site, and dispose of chemical waste in accordance with federal, state, and local regulations. For oil and hazardous material spills which may be large enough to violate federal, state, and local regulations, notify the Contracting Officer immediately.

2.3.3.1 Petroleum Products: Conduct fueling and lubricating of equipment and motor vehicles in a manner that affords the maximum protection against spills and evaporation. Dispose of lubricants to be discarded and excess oil in accordance with approved procedures meeting federal, state and local regulations.

2.3.3.2 Polychlorinated Biphenyls (PCB) Control: Comply with 40 CFR 761 for removal and disposal of PCB containing articles.

2.3.3.3 Lead-Acid Battery Electrolyte: Electrolyte solution from lead-acid batteries shall be disposed of in such a manner as to ensure compliance with applicable federal, state, and local regulations. The electrolyte shall not be dumped onto the ground, into storm drains or into the sanitary sewer without neutralization. One of the following alternatives shall be used for disposal of waste electrolytes.

a. An industrial waste treatment plant, if available and approved for neutralizing and disposing of battery-acid electrolyte.

b. Transport the electrolyte to a state-approved hazardous waste disposal site. Method of transportation and equipment must comply with applicable federal and state regulations.

2.3.4 Asbestos: Comply with 29 CFR 1910.1001, 40 CFR 61, and the requirements specified herein for the disposal of material containing asbestos and demolition of materials and equipment insulated or fireproofed with friable asbestos material. Use of the Base Sanitary Landfill will be mandatory for all removal involving friable asbestos fiber.

2.3.4.1 Written Notice: Provide written notice of intention to demolish to the Administrator of EPA and the State's environmental protection agency at least 20 days prior to commencement of such demolition. Prepare reports in accordance with Section 61.22 of 40 CFR 61 and forward to EPA. The notice shall contain the following information:

a. Name of Prime Contractor
b. Address of Prime Contractor
c. Address or location and description of buildings, structures, or facilities to be demolished or renovated, including size, age, prior use, and approximate amount of friable asbestos materials to be removed
d. Schedule indicating planned start and completion of demolition or renovation
e. Method of removal to be employed
f. Procedures to be employed to meet the requirements of Sections 61.22(d) and 61.22(j) of 40 CFR 61, and Volume 1 of 29 CFR 1910.1001.
g. The address or location of the waste disposal site for the friable asbestos wasted which will be the Camp Lejeune Base Sanitary Landfill.

2.3.4.2 Use the following procedures and those required by Section 61.22 of 40 CFR 61 to prevent emissions of particulate asbestos material to outside air:

a. Unless otherwise specified, wet all friable asbestos materials before removal from any building, structure, facility, or installation. Pipe, structural members, equipment, or other items insulated or fireproofed with friable asbestos materials may be removed as units or in sections without stripping. If pipes or structural members are cut or disjointed, wet all exposed friable asbestos materials. Wet all friable asbestos debris adequately to ensure that it remains wet during all stages of demolition and removal operations.

b. Do not drop or throw to ground any pipe, structural member, equipment, or item covered with friable asbestos insulation or fireproofing material. Carefully lower all asbestos and asbestos covered materials to ground level.

2.3.5 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.

2.3.6 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.

2.4 DUST CONTROL: Keep dust down at all times, including non-working hours, weekends, and holidays. Sprinkle or treat, with dust suppressors, the soil at the site, haul roads, and other areas disturbed by operations. No dry power brooming is permitted. Instead, use vacuuming, wet mopping, wet sweeping, or wet power brooming. Air blowing is permitted only for cleaning nonparticulate debris, such as steel reinforcing bars. No sandblasting is permitted unless dust threrefrom is confined. Only wet cutting of concrete blocks, concrete, and asphalt is permitted. No unnecessary shaking of bags is permitted where bagged cement, concrete mortar, and plaster is used.

2.5 NOISE: When available, make the maximum use of "low-noise-emission products" as certified by EPA. No blasting or use of explosives is permitted without written permission of the Contracting Officer and then only during the designated times. Confine pile driving operations to the period between 8 a.m. and 4 p.m., Monday through Friday, unless specified otherwise.

END OF SECTION

SECTION 02200
EARTHWORK AND REMOVAL

1. GENERAL: Bids shall be based on the following:

a. That the surface elevations are as indicated

b. That no pipes or other artificial obstructions, except those indicated, will be encountered

c. That hard material will be encountered as shown.

In case the actual conditions differ substantially from those stated or shown, or both, the provisions of the contract respecting an adjustment for changed conditions shall apply, subject to the requirement of notification thereunder being given. hard material shall be defined as solid ledge rock, firmly cemented unstratified masses or conglomerate deposits possessing the characteristics of solid rock not ordinarily removed without systematic drilling and blasting, and any boulder, masonry, or concrete except pavement, exceeding 1/2-cubic yard in volume.

2. PROTECTION OF VEGETATION, TREES AND SHRUBS shall be adequate to prevent damage to them from the Contractor's operations. Upon completion, existing vegetation, trees and shrubs shall remain in the same condition as they were before the Contractor was allowed to proceed with construction on site.

3. DISPOSITION OF SURPLUS MATERIAL: Surplus soil material, rock not required, and bituminous material removed shall be delivered to an off-base location obtained by the Contractor for such disposal. All aspects of disposal shall be in conformance to Section 01560, "Environmental Protection."

END OF SECTION

SECTION 02823
RE-ESTABLISHING VEGETATION

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS: The work includes seedbed preparation, liming, fertilizing and seeding of all areas where natural soil conditions have been disturbed by this contract, including damage by Contractor vehicles.

PART 2 - PRODUCTS

2.1 TOPSOIL: If stockpiled topsoil is not enough, additional topsoil shall be obtained from off Base. Topsoil shall be free from roots, wood, or other scrap material, and other vegetable matter and refuse. Fill shall be friable sandy loam with ph 6.0 to 7.0, soluble salts less than 550 ppm, high organic matter content, which is capable of producing satisfactory agricultural crops.

2.2 LIME shall be ground dolomitic agricultural limestone.

2.3 FERTILIZER shall be standard commercial product of 10-10-10 analysis.

2.4 SEED shall be 55 percent Ky-31 fescue, 25 percent annual ryegrass, and 20 percent Bermuda (unhulled), uniformly mixed with 1/8-pound centipede grass seed per 100 square feet, and shall be certified seed or equivalent based on North Carolina Seed Improvement Association requirements for certification.

PART 3 - EXECUTION

3.1 SEEDBED PREPARATION: The areas to be vegetated shall be prepared by thoroughly loosening the soil to a depth of four inches. After loosening the soil, all surface irregularities where surface water could collect and pond shall be smoothed out. Topsoil removed shall be reinstalled and leveled.

3.2 LIMING: Limestone shall be uniformly applied at the rate of 40 pounds per 1,000 square feet to all areas to be vegetated. Limestone shall be applied after seedbed preparation, but before seeding, lime shall be throughly incorporated into the entire depth of prepared seedbed.

3.3 FERTILIZING: Fertilizer shall be uniformly applied at the rate of 35 pounds per 1,000 square feet. The fertilizer shall be incorporated into the upper three or four inches of prepared seedbed.

3.4 SEEDING: Seed shall be sown by hand or an approved seeder and distributed uniformly at the rate of one-half pound per 100 square feet. The seeder shall keep the small centipede grass seeds well distributed throughout the seeding operations. The seed shall be planted no deeper than 1/4-inch. After seeding, the seeded areas shall be compacted lightly with a hand roller. All seeding and compacting shall be done when weather conditions are favorable and not when seedbed is wet.

END OF SECTION

SECTION 16011
ELECTRICAL GENERAL REQUIREMENTS

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.

FEDERAL SPECIFICATION (Fed. Spec.):

L-P-387A(2)	Plastic Sheet, Laminated, Thermosetting (for Design Plates)

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):

C2-84	National Electrical Safety Code (NESC)
C37.20-74(R81)	Switchgear Assemblies, Including Metal-Enclosed Bus

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA):

ICS 6-78(R83)	Enclosures for Industrial Controls and Systems

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):

70-84	National Electric Code (NEC)
70B-83	Electrical Equipment Maintenance

1.2 APPLICATION: This section applies to all sections of Division 16, "Electrical," of this project except as specified otherwise in each individual section.

1.3 SUBMITTALS: Obtain approval before procurement, fabrication, or delivery of 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, place of manufacture, 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 to be furnished.

1.3.1 Shop Drawings: In addition to the requirements of the Contract Clauses, shop drawings shall meet the following requirements. Drawings shall be a minimum of 8.5 inches by 11 inches in size, except as specified otherwise. Drawings shall include wiring diagrams and installation details of equipment indicating proposed location, layout and arrangement, 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, revise drawings to show acceptable equipment and resubmit.

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

1.3.3 Publication Compliance: Where equipment or materials are specified to conform to industry and technical society publications of organizations such as American National Standards Institute (ANSI), American Society for Testing and Materials (ASTM), and Underwriters Laboratories Inc. (UL), submit proof of such compliance. The label or listing by the specified organization will be acceptable evidence of compliance. In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word "shall" had been substituted for "should" wherever it appears. Interpret references in these publications to the "authority having jurisdiction," or words of similar meaning, to mean the Contracting Officer. In lieu of the label or listing, submit a certificate from an approved independent testing organization, adequately equipped and competent to perform such services, stating that the item has been tested in accordance with the specified organization's test methods and that the item conforms to the specified organization's publication.

1.3.4 Certified Test Reports: Furnish as specified in Section 01401, "Contractor Inspection System".

1.3.5 Certificates of Compliance: Submit manufacturer's certifications as required on products, materials, finish, and equipment indicated in the technical sections. Certifications shall be documents prepared specifically for this contract. Preprinted certifications and copies of previously submitted documents will not be acceptable. The manufacturer's certifications shall name the appropriate products, equipment, or materials and the publication specified as controlling the quality of that item. Certification shall not contain statements to imply that the item does not meet requirements specified, such as "as good as"; "achieve the same end use and results as materials formulated in accordance with the referenced publications"; or "equal or exceed the service and performance of the specified material." Certifications shall simply state that the item conforms to the requirements specified. Certificates shall be printed on the manufacturer's letterhead and shall be signed by the manufacturer's official authorized to sign certificates of compliance.

1.4 OPERATION AND MAINTENANCE MANUAL: Submit as required for systems and equipment indicated in the technical sections. Furnish three copies, bound in hardback binders or an approved equivalent. Furnish one complete manual prior to performance of systems or equipment tests, and furnish the remaining manuals at least 60 days prior to contract completion. Inscribe the following identification on the cover: the words "OPERATION AND MAINTENANCE MANUAL," the name and location of the system, equipment, building, name of Contractor, and contract number. Include in the manual the names, addresses, and telephone numbers of each subcontractor installing the system or equipment and the local representatives for the system or equipment. Include a table of contents and assemble the manual to conform to the table of contents, with the tab sheets placed before instructions covering the subject. The instructions shall be legible and easily read, with large sheets of drawings folded in. The manual shall include:

a. Internal and interconnecting wiring and control diagrams with data to explain detailed operation and control of the system or equipment.

b. A control sequence describing startup, operation, and shutdown.

c. Description of the function of each principal item of equipment.

d. Installation and maintenance instructions.

e. Safety precautions.

f. Diagrams and illustrations.

g. Testing methods.

h. Performance data.

i. Parts list. The list shall indicate sources of supply, recommended spare parts, and name of servicing organization.

j. Appendix: List qualified permanent servicing organizations for support of the equipment, including addresses and certified qualifications.

1.5 POSTED OPERATING INSTRUCTIONS: Furnish approved operating instructions for systems and equipment indicated in the technical sections for use by operation and maintenance personnel. The operating instructions shall include wiring diagrams, control diagrams, and control sequence for each principal system and equipment. Print or engrave operating instructions and frame under glass or in approved laminated plastic. Post instructions as directed. Attach or post operating instructions adjacent to each principal system and equipment including startup, proper adjustment, operating, lubrication, shutdown, safety precautions, procedure in the event of equipment failure, and other items of instruction as recommended by the manufacturer of each system or equipment. Provide weather-resistant materials or weatherproof enclosures for operating instructions exposed to the weather. Operating instructions shall not fade when exposed to sunlight and shall be secured to prevent easy removal or peeling.

1.6 INSTRUCTION TO GOVERNMENT PERSONNEL: Where indicated in the technical sections, furnish the services of competent instructors to give full instruction to Government personnel in the adjustment, operation, and maintenance of systems and equipment, including pertinent safety requirements as required. Each instructor shall be thoroughly familiar with all parts of the installation and shall be trained in operating theory as well as practical operation and maintenance work. Instruction shall be given during the first regular work week after the equipment or system has been accepted and turned over to the Government for regular operation. The number of man-days (8 hours) of instruction furnished shall be as specified in each individual section.

1.7 DELIVERY AND STORAGE: Handle, store, and protect equipment and materials in accordance with the manufacturer's recommendations and with the requirements of NFPA 70B, Appendix I, titled "Equipment Storage and Maintenance During Construction." Replace damaged or defective items with new items.

1.8 CATALOGED PRODUCTS/SERVICE AVAILABILITY: Materials and equipment shall be current products by manufacturers regularly engaged in the production of such products. Products shall have been in satisfactory commercial or industrial use for 2 years prior to bid opening. The 2-year period shall include applications of equipment and materials under similar circumstances and of similar size. The 2-year period shall be satisfactorily completed by a product for sale on the commercial market through advertisements, manufacturers' catalogs, or brochures. Products having less than a 2-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6000 hours, exclusive of the manufacturers' factory or laboratory tests, is furnished. The equipment items shall be supported by service organizations which are reasonably convenient to the equipment installation in order to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract.

1.9 MANUFACTURER'S RECOMMENDATIONS: Where installation procedures or any part thereof are required to be in accordance with manufacturer's recommendations, furnish printed copies of the recommendations prior to installation. Installation of the item shall not proceed until recommendations are received. Failure to furnish recommendations shall be cause for rejection of the equipment or material.

1.10 ELECTRICAL CHARACTERISTICS: As indicated.

1.11 ELECTRICAL REQUIREMENTS: As indicated.

1.12 CODES APPLICABLE: Work and materials shall conform to NFPA 70 and/or ANSI C2 for code requirements and to the requirements of this Specification.

PART 2 - PRODUCTS

2.1 NAMEPLATES: Fed. Spec. L-P-387. Provide laminated plastic nameplates for each panelboard, equipment enclosure, relay, switch, and device. Each nameplate inscription shall identify the function and, when applicable, the position. Nameplates shall be melamine plastic, 0.125-inch thick, white with black center core. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the black core. Minimum size of nameplates shall be 1.0 inch by 2.5 inches. Lettering shall be a minimum of 0.25-inch high normal block style.

PART 3 - EXECUTION

3.1 NAMEPLATE MOUNTING: Provide number, location, and letter designation of nameplates as indicated. Fasten nameplates to the device with a minimum of two sheet-metal screws or two rivets.

3.2 PAINTING OF EQUIPMENT:

3.2.1 Factory Applied: Electrical equipment shall have factory-applied painting systems which shall, as a minimum, meet the requirements of NEMA ICS 6 corrosion-resistance test, except equipment specified to meet requirements of ANSI C37.20 shall have a finish as specified in ANSI C37.20.

3.2.2 Field Applied: Paint electrical equipment as required to match finish or to meet safety criteria. Painting shall be as specified in the section specifying the associated electrical equipment.

*** END OF SECTION ***

SECTION 16740
CONTROL CABLE 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.

RURAL ELECTRIFICATION ADMINISTRATION (REA):

345-26	Buried Plant Housings (PE-35)
PC-2(78)	Splicing Plastic Insulated Cables (Bulletin 345-6)
PE-39	Filled Telephone Cables (Bulletin 345-67)

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):

C2-1984	National Electrical Safety Code (NESC)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):

B8-81	Concentric-Lay-Stranded Copper Conductors, Hard, Medium Hard, or Soft
D1556-82	Density of Soil in Place by the Sand-Cone Method
D1557-78	Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb. (4.54-kg) Rammer and 18-in. (457-mm) Drop

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):

70-1984	National Electrical Code (NEC)

UNDERWRITER'S LABORATORIES, INC. (UL):

467-1972(82)	Grounding and Bonding Equipment

1.2 GENERAL REQUIREMENTS: Section 16011, "Electrical General Requirements", applies to this Section with additions and modifications specified herein.

1.2.1 Basic Requirements: The system described herein and shown on the drawings is basically the installation of Contractor-furnished cable and stake mounted housings. This cable shall be routed as shown on the drawings from Building No. 138, water plant, to SBA-108, elevated water tower.

1.2.2 Termination of the cable pairs at Building No. 138 and SBA-108 will be done by the Government. Provide three feet of cable slack for Government termination immediately outside both Building No. 138 and at SBA-108.

1.2.3 Laboratory Test:

1.2.3.1 Determine soil-density relationships for compaction of backfill material in accordance with ASTM D1557, Method D.

1.3 SUBMITTALS:

1.3.1 Manufacturer's Data: Control cable, splices and pedestals.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT: Provide materials and equipment listed by UL or approved by Factory Mutual (FM) System, when such equipment is listed or approved.

2.1.1 Wire conductor sizes are designated by American Wire Gauge (AWG). Conductor. Sizes indicated are for copper conductors, unless otherwise noted.

2.1.2 Connectors and terminals shall be designed and approved for use with the associated conductor material, and shall provide a uniform compression over the entire contact surface. Solderless terminal lugs shall be used on all stranded conductors. For connecting aluminum to copper, connectors shall be the circumferentially compressed, metallurgically bonded type.

2.1.3 Grounding and bonding equipment shall conform to UL 467. Ground rods shall be copperweld type copper clad steel with diameter adequate to permit driving to full length of the rod, but not less than 3/4-inch in diameter and 10 feet long unless otherwise indicated.

2.1.4 Bonding Conductors: ASTM B8, Class B, stranded insulated copper wire for size No. 6 AWG.

2.1.5 Pedestals: REA Bulletin 345-26. Provide pedestals of fiberglass channel (H) type, stake mounted, and gray-green in color. Size pedestals for the number of pairs and the cable type specified. Provide grounding bus and bond to ground rod.

2.1.6 Control Cable shall conform to REA PE-39 and shall have 25 pairs, No. 19 gauge conductors. Cable shall be suitable for 300 volts service; cable assembly shall be suitable for direct burial.

2.1.7 Submarine Control Cable: 25 pairs, No. 19 AWG insulated copper conductors with corrugated aluminum and steel-polyethylene sheath and injected waterproof filling compound in all empty spaces. Conductor insulation shall be suitable for 300 volts service; cable assembly shall be suitable for service in direct contact with seawater.

PART 3 - EXECUTION

3.1 GENERAL: Underground installation shall conform to ANSI C2 and NFPA 70 except as otherwise specified or indicated.

3.1.1 Contractor Damage: The Contractor shall promptly repair any indicated utility lines or systems damaged by his operations. Damages to lines or systems not indicated, which are caused by his operations shall be treated as "Changes" under the terms of the General Provisions of the contract. If the Contractor is advised in writing of the location of a nonindicated line or system, such notice shall provide that portion of the line or system with "indicated" status in determining liability for damages. In any event, the Contractor shall immediately notify the Contracting Officer of any such damage.

3.1.2 The Contractor and the Contracting Officer shall jointly inspect full and partial reels of cable prior to installation.

3.1.3 Trenches under water shall be backfilled by jetting or other approved methods.

3.2 PLACING CABLE: Cable shall be installed in one piece without splices between pedestals and shall be unreeled in place at the bottom of the trench or on the bottom of the river prior to jetting in place. Sufficient slack shall be provided to assure cable resting on a firm trench bottom.

3.3 THE PLOWSHARE shall be designed so that the buried cable passing through the plow shall not bind nor be bent in a radius less than ten times the outside diameter of the cable. The plowshare shall have a hinged fairlead which shall be equipped with smooth, free wheeling rollers or low friction surfaces to prevent damage to the cable or wire passing through. The plow shall be provided with a means to assure positive hold-down of the plow blade to maintain the required minimum depths.

3.4 THE EQUIPMENT AND CONSTRUCTION METHODS used by the Contractor shall cause minimum displacement of the soil. The slot made in the soil by the cable plow shall be closed immediately by driving a vehicle track or wheel over the slot or by other suitable approved means.

3.4.1 Cables crossing other cables or metal piping shall be separated from the other cables or pipe by not less than three inches of well tamped earth.

3.4.2 The Contractor shall exercise particular care in the use of trenching equipment and shovels in joining trenches to the slots made by the plow to be certain that the cable and wire are not damaged.

3.4.3 To avoid possible damage to buried cable or wire from exposure to traffic and other hazards, trenching of laterals, trenching around culverts, construction of aerial inserts and similar operations shall be completed as soon as practicable behind the plowing operation.

3.4.4 Trenches shall be promptly backfilled with earth and mechanically tamped at six-inch lifts so that the earth is restored to original grade to assure no hazard to vehicular, animal or pedestrian traffic. No trenches shall be left open overnight.

3.4.5 When placing cable or wire in a trench in rock, the cable or wire shall be cushioned by a fill of sand or selected soil at least two inches thick on the floor of the trench before placing the cable or wire in the trench. The backfill for at least four inches above the wire or cable shall be free from stones, rock or other hard or sharp materials which might damage the cable or wire.

3.4.6 Trenches for cable on land shall be excavated true to line and grade, not less than 6 inches wide. Riprap on edges of roadway fill shall be removed as required and no sharp edges shall be left in direct contact with the cable. Land type excavation shall continue from each bank until the water depth at low tide exceeds 6 inches.

3.5 CABLE OR WIRE ENDS shall be kept sealed at all times; i.e., during transportation, in storage and during cable placement to prevent moisture entry into the cable core. Acceptable cable end caps shall be used for this purpose.

3.6 CABLES AND WIRES shall be carefully inspected by the Contractor during the plowing and trenching operation prior to their installation in the project to be certain that they are free from defects.

3.7 BENDS of small radii and twists that might damage cable or wire shall be avoided. During the placing operation, cable and wire shall not be bent in a radius less than ten times the outside diameter of the cable or wire.

3.8 CARE is to be exercised during the plowing operation, to feed the cable or wire into the ground through the plow loose and at no tension. Equipment and construction methods shall be such as to assure compliance with this requirement. The Contractor shall furnish competent supervision at all times at the site of plowing operations to assure compliance with this requirement.

3.9 IF, DURING THE PLOWING OPERATION, the plow should strike a buried object or rock that stops the equipment and necessitates removal of the plow from the ground, the plow shall be removed from the ground carefully and, if practicable, without backing the plow to avoid damage to the cable or wire. Should it be necessary to back the plow to remove it from the ground, the cable or wire shall be uncovered a sufficient distance back for inspection by the Contracting Officer to determine whether the cable or wire has been damaged.

3.10 EVERY INSTANCE OF DAMAGED CABLE or wire discovered at any time whether prior to installation in plant, occurring during construction, or discovered by test or observation subsequent to installation in plant, shall be immmediately called to the attention of the Contracting Offficer. The method of repair or correction of such damage shall be in accordancae with the written instructions of the Contracting Officer. The Contractor shall promptly repair such damage or make such corrections in accordance with such written instructions of the Contracting Officer.

3.10.1 Minor damage to the outer jacket of the cable or wire observed prior to or occurring during construction shall be repaired in accordance with REA Splicing Standard PC-2.

3.10.2 Damage to cable or wire of greater severity than that set forth in the previous paragraph, observed prior to or during construction, shall be corrected as follows.

3.10.3 The damaged section of wire or cable shall be enclosed in a buried plant housing or in a buried wire or cable splice enclosure if approved by the Contracting Officer, buried to the same depth as that specified for the wire or cable. If the shield has been broken or the conductor insulation damaged, the wire or cable shall be restored to the equivalent of new condition. This may require cutting out the damaged section of wire or cable, if required by the Contracting Officer.

3.11 DEPTH OF BURIED CABLE: Unless otherwise specified or indicated, the depth of buried cable, either plowed or trenched, measured from the top of the cable to the surface of existing grade shall be as follows:

BURIED CABLE

Minimum depth in soil - 30 inches

Minimum depth at waterway crossing - As indicated

3.12 RECONDITIONING OF SURFACES:

3.12.1 Unpaved surfaces disturbed during the installation of direct burial cable shall be restored to their original elevation and condition. Sod or topsoil shall be preserved carefully and replaced after backfilling is completed. Sod that is damaged shall be replaced by sod of quality equal to that removed. Where the surface is disturbed in a newly seeded area, the restored surface shall be reseeded with the same quantity and formula of seed as that used in the original seeding. Land trenches shall be backfilled as soon as possible after placing cable. Backfill in trenches shall be thoroughly compacted in 6-inch layers. Riprap removed along edges of embankment shall be replaced immediately after installation of cable.

3.13 STAKE-MOUNTED HOUSING: The separate steel stakes of stake-mounted housings shall be driven 12 inches in undisturbed earth, below the depth of the buried cable.

3.13.1 Horizontal buried slack of approximately five feet shall be provided at each end of cable run by installing the stake-mounted housing approximately five feet distance and perpendicular to the major centerline of the cable.

3.13.2 Provide grounding electrode and bond to grounding strap of housing.

3.14 GROUNDING: Noncurrent carrying metallic parts associated with control cable distribution system shall have a maximum resistance to solid earth ground not exceeding the following values:

Noncurrent carrying metal parts associated with distribution systems and grounds not otherwise covered - 25 ohms

When work in addition to that indicated or specified is directed in order to obtain the specified ground resistance, the provisions of the contract covering "Changes" shall apply.

3.14.1 Grounding electrodes shall be cone pointed driven ground rods driven full depth plus six inches, installed when indicated to provide an earth ground of the value before stated for the particular equipment being grounded.

3.14.2 Grounding connections which are buried or otherwise normally inaccessible, shall be made by exothermic weld or by using a compatible mechanical connection and brazing over. Exothermic welds shall be made strictly in accordance with the weld manufacturer's written recommendations. Welds which have puffed up or which show convex surfaces, indicating improper cleaning, are not acceptable. No mechanical connector is required at exothermic weldments.

3.14.3 Grounding conductors shall be No. 6 AWG bare stranded copper conforming to ASTM B.

3.14.4 Ground Cable Crossing Expansion Joints: Ground cables crossing expansion joints or similar separations in structures and pavements shall be protected from damage by means of suitable approved devices or methods of installation which will provide the necessary slack in the cable across the joint to permit movement. Stranded or other approved flexible copper cable run or jumper shall be used across such separations.

3.15 FIELD TESTS: As an exception to requirements that may be stated elsewhere in the contract, the Contracting Officer shall be given five working days notice prior to each test. The Contractor shall provide all labor, equipment and incidentals required for testing. All defective material and workmanship disclosed as the result of the tests given herein shall be corrected by the Contractor at no cost to the Government.

3.15.1 The Contractor and Contracting Officer shall jointly inspect full and partial reels of filled cable and wire for the presence of filling compound prior to installation. The Contracting Officer will determine the reels of cable and wire which shall be inspected to measure mutual capacitance of the cable or wire. The mutual capacitance values must be within the applicable REA specification requirements.

3.15.2 Ground Rods: Test ground rods for ground resistance value before any wire is connected. Ground resistance measurements shall be made in normally dry weather, not less than 48 hours after rainfall. Ground resistance shall also be measured for each piece of equipment to the ground electrode. A portable ground testing megger shall be used to test each ground or group of grounds. The instrument shall be equippped with a meter reading directly in ohms or fractions thereof to indicate the ground value of the ground electrode under test. Provide one copy of the megger manufacturer's directions for use of the ground megger indicating the method to be used.

3.15.3 Operational Test: Measure mutual capacitance between each conductor to other conductors. Mutual capacitance values shall be within the applicable cable manufacturer's specification requirements.

3.15.4 Insulative resistance test of a conductor shall show a resistance to ground or any other conductor or more than 1 megaohm.

3.15.5 Compaction: Backfill shall be tested in accordance with ASTM D1556 one test per lift per 2000 square feet.

3.15.6 Test Report:

a. Grounding electrodes and Systems: Identify electrodes and systems, each test as well as the resistance and soil conditions at the time the measurements were made.

3.15.7 Dirt Bedding: In land trenches, cable shall be laid in selected earth allowing approximately 3 inches below and 3 inches above cable.

3.15.8 Trenches in water deeper than 6 inch minimum, depth of cover shall be as indicated, and shall be maintained at this depth from shore to shore. Excavation under water shall be accomplished by jetting or other approved means.

END OF SECTION

4 APR 1986

GENERAL WAGE DECISION NO. NC86-9

Supersedes General Wage Decision No. NC84-1004

State: NORTH CAROLINA

County(ies): Statewide

Construction Type: HEAVY (including Sewer and Water Lines)

Construction Description: Sewer and Water Construction Projects and Heavy Construction Projects (excluding Dam construction projects).

Modification Record:

No.	Publication Date	Page No.(s)
1	Apr. 4, 1986	509
2	Apr. 4, 1986 (Expires 10/23/86)	509

05 86 5504

4 APR 1986

NC86-9

	Basic Hourly Rates	Fringe Benefits
ASBESTOS WORKER (Mod. #2)	7.26	
BOILERMAKERS:		
Storage Tank Erection/Repair	12.96	4.105
All Other Work:	16.20	4.105
BRICKLAYERS	7.23	
CARPENTERS	6.63	
CEMENT MASONS/FINISHERS	6.11	
ELECTRICIANS	8.56	
FENCE ERECTORS	4.64	
IRONWORKERS	8.20	
LABORERS:		
Unskilled	4.41	
Air Drill Operator	5.92	
Asphalt Rakers	4.93	
Pipelayers	5.17	
MANHOLE BUILDERS	5.81	
MILLWRIGHTS	5.27	
PAINTERS	7.12	
PLUMBERS & PIPEFITTERS	7.42	
TRUCK DRIVERS	4.67	
TV & GROUTING TECHNICIANS	9.21	
POWER EQUIPMENT OPERATORS:		
Asphalt Distributor	5.77	
Asphalt Finisher	5.69	
Asphalt Paver	5.69	
Asphalt Screed	5.69	
Backhoe	6.40	
Boring Machine	5.65	
Bulldozer	5.96	
Crane	7.60	
Dragline	6.34	
Drill	7.23	
Loader	5.79	
Mechanic	7.16	
Motor Grader	6.24	
Roller	4.98	
Scraper, Pan	5.42	
Tractor	5.49	
Trenching Machine	6.58	
WELL DRILLERS	6.50	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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 clauses (29 CFR, 5.5 (a) (1) (ii)).

05 86 5504

509 (Apr. 4, 1986)

CONTR#	AR	AROI	INSP	O2SP
00399	S	MARS	MOGO	COYN
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11464	R	LYNC	HUNT	OAKE
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24669	S	MARS	WICK	OAKE
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33045	X	KRUG	HUNT	WRAY
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44087	T	KING	MOG	
44095	R	LYNC	CAN	
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865520	V	HAM	HUGH
865525	Y	JENK	WICK
865526	V	HAM	THOR

Carry -
Put in folder &
in front of Contract
Drawer

MRC: THIS SHOWS WHICH AROICC IS IN CHARGE OF EACH ONGOING CONTRACT. ALSO SHOWS INSPECTOR IN CHARGE.

"FOR YOUR INFO"

/ JR.

CONTR#	AR	AROI	INSP	O2SP
00399	S	MARS	MOGO	COYN
11454	05	HORN	THOR	WRAY
11464	R	LYNC	HUNT	OAKE
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865504	X	KRUG	PARK
865505	Y	JENK	MOGO
865511	S	MARS	SULL
865516	Z	KELL	HUGH
865520	V	HAM	HUGH
865525	Y	JENK	WICK
865526	V	HAM	THOR

MRC: THIS SHOWS WHICH AROICC IS IN CHARGE OF EACH ONGOING CONTRACT. ALSO SHOWS INSPECTOR IN CHARGE.

"FOR YOUR INFO"

/ JR.

UTILITY CONTRACTS UNDER DESIGN

8-25-86 on street 85-6400	✓	Replace Sewer Mains (MCAS-MOQ), Replace Water Main (Amphib Area), Replace Piping and Install Backflow Preventors (1700, AS4151, M230, G650, FC202, BA106, 2615)		
85-6302	✓	Replace Control Cable to Five Wells (BB)	ARONLE KRUG	INSP. PARKS
CONT. IN FORCE 85-6304	✓	Replace Auxiliary Engine (TT-39A)	KRUG	FARI
85-6326	✓	Paint Interior (AS-110)		
85-6329	✓	Paint Interior (20)	JENK	HUGH
85-6383	✓	Enclose H_2O Tanks (BB-190, RR-85)		
85-6407	✓	Install Bulk Chlorine Tanks (20, TT-35, TC-563)		
85-6425		Replace Roof, Windows; Paint Int/Ext (M-625)		
85-6439		Replace Boilers (LCH4014, LCH4022, AS3502, CG-1)		
85-6440		Replace Four Feedwater Pumps (1700)		
85-6441	✓	Replace Auxiliary Engines (RR-85, BB-221, LCH4007, 610)		
85-6445	✓	Replace Mechanical Equipment (670)		
85-6446	✓	Replace Metering Equipment (BB-190) Replace Temperature Controls (22, TT-35, TC-563)		
85-6453		Remove Asbestos (1700)		
86-5427		Replace Roof (BA106)		
86-5446		Replace Steam Pits (TC Area)		
86-5489	✓	Replace Crane (1700, 22)		
86-5504	✓	Replace Pump Control Cable (BA138)		
86-5551		Replace Gillotine Gates (1700)		
86-5554	✓	Demo Chimneys (BA106, M625) Replace Auxiliary Generators (BB190, BA160)		
86-5580	✓	Replace Drying Bed Walls (M136, BB4, SBA127, SRR-67) Pig Raw Water Lines (20, 670) Replace Trickling Filter Distributor (BA160)		

Pig RAW WATER LINE CHB

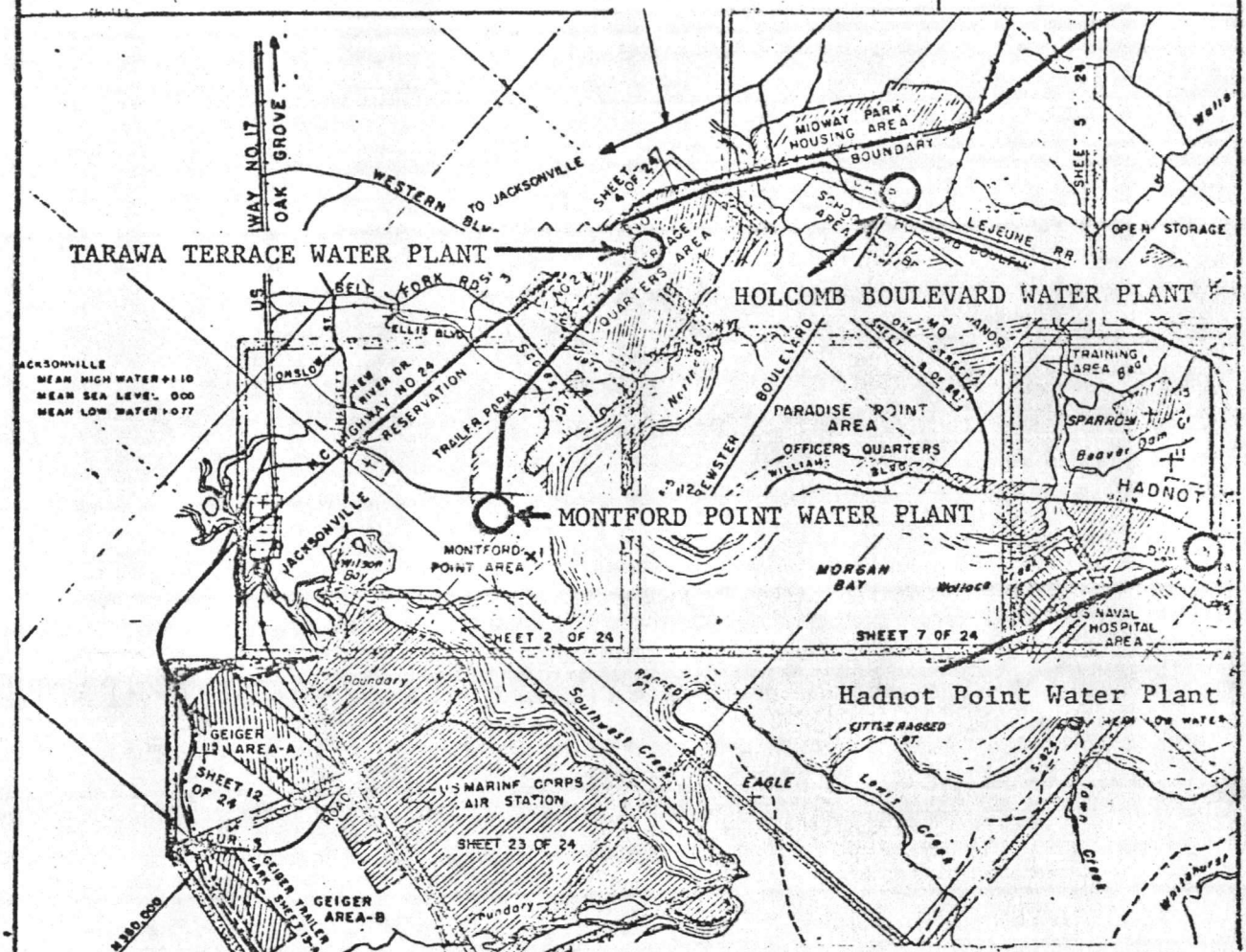
82-4663	Replace Water Reservoir Top (TT)
83-5876	Auxiliary Generator Buildings
86-5444	Replace Boilers (TT2457, TT2475, TT2455)
86-5590	Replace Roof (2615) Replace DA Tank (2615)

1. COMPONENT		2. DATE
NAVY	FY 19 84 MILITARY CONSTRUCTION PROJECT DATA	1 AUG 1981

3. INSTALLATION AND LOCATION

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

4. PROJECT TITLE	5. PROJECT NUMBER
EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	P-785



SITE LOCATION MAP P-785

EXPANSION OF HOLCOMB BOULEVARD
WATER TREATMENT PLANT

INDEX SHEET

CAMP LEJEUNE, NORTH CAROLINA

SHOWING CONDITIONS ON

JUNE 30, 1979

SCALE OF FEET

LANDING ZONES

A LOCATION

ENCLOSURE (1)

1. COMPONENT	FY 19 84 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
NAVY		1 AUG 1981

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA 28542	EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
	841-09	P-785	$6,900

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT COST	COST ($000)
TREATMENT PLANT EXPANSION	LS	-	-	1,851
Site Work	LS	-	-	(13)
Building	LS	-	-	(460)
Reservoir	EA	2	295,000	(590)
Treatment Equipment and Pumps	LS	-	-	(334)
Filter Equipment	LS	-	-	(270)
Piping, Mechanical, Electrical	LS	-	-	(184)
WELLS	LS	20	58,000	1,160
RAW WATER LINES	LS	-	-	747
14 inch	LF	6,000	26.26	(158)
12 inch	LF	10,800	25.28	(273)
8 inch	LF	14,500	20.41	(296)
Valves, appurtenances	LS	-	-	(20)
WATER TRUNK MAIN	LS	-	-	1,595
24" line	LF	26,000	55.12	(1,433)
Creek Crossing	LF	400	212.50	(85)
Connections to Existing System	LS	-	-	(53)
Valves	EA	7	3,392	(24)
TRANSMISSION MAIN	LS	-	-	549
16 inch	LF	13,000	32.83	(427)
Special Line	LF	1,000	98.48	(98)
Valves, appurtenances	LS	-	-	(24)
MODIFICATIONS - TARAWA TERRACE	LS	-	-	49
Connections	LS	-	-	(20)
High Speed Pump	LS	-	-	(22)
Electrical	LS	-	-	(7)
DISTRIBUTION	LS	-	-	302
12 inch main	LF	9,800	19.69	(193)
Valves	LS	-	-	(22)
Creek Crossing	LF	200	65.65	(13)
High Speed Pumping Station	EA	2	37,000	(74)
SUBTOTAL				6,253
CONTINGENCY - 5%				312
TOTAL CONTRACT COST				6,565
SUPERVISION, INSPECTION, & OVERHEAD - 5.5%				361
TOTAL REQUEST				6,926
TOTAL REQUEST (ROUNDED)				6,900
EQUIPMENT PROVIDED FROM OTHER APPROPRIATIONS				-

10. DESCRIPTION OF PROPOSED CONSTRUCTION

Expand existing Holcomb Boulevard plant from two MGD to 5 MGD and construct transmission main to existing Tarawa Terrace and Montford Point plants. Add new pump at Tarawa Terrace and twelve inch supply line between Tarawa Terrace and Montford Point. Install 20 wells, raw and finished water

DD FORM 1 DEC 76 1391 PREVIOUS EDITIONS MAY BE USED INTERNALLY UNTIL EXHAUSTED

S/N 0102-LF-001-3910

☆U. S. Government Printing Office: 1979—603-076/6547 2-1

ENCL (3.1)

1. COMPONENT	FY 19 84 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
NAVY		1 AUG 1981

3. INSTALLATION AND LOCATION

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

4. PROJECT TITLE	5. PROJECT NUMBER
EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	P-785

10. DESCRIPTION OF PROPOSED CONSTRUCTION (continued...)
reservoirs. Construct two pumping stations at Holcomb Boulevard to pump water to Tarawa Terrace and Hadnot Point plants, a pumping station at Hadnot Point plant to pump water to Holcomb Boulevard plant via existing twelve inch line, and add 24" trunk main between Holcomb Boulevard plant and Hadnot Point plant.

11. REQUIREMENTS:
Project: Expand/upgrade Holcomb Boulevard water treatment plant, and expand distribution system to Tarawa Terrace plant. Provide pumping capability between Holcomb Boulevard and Hadnot Point plants.
Requirement: To provide adequate water supply and to be in compliance with Safe Drinking Water Act.
Current Situation: The Holcomb Boulevard plant is presently at maximum capacity. New Naval Regional Medical Center currently under construction will add new requirements on this plant. Existing equipment in the Tarawa Terrace plant is in poor condition, resulting in such problems as cementing of filter sands, structural damage to filter bed supports, and short filter runs, and difficulty in pacing lime feed system to incoming flow. The treatment process at the Montford Point plant is not adequate for the raw water due to the presence of iron in excess of 2 ppm. High iron content is causing serious problems in the distribution system. Zeolite softeners are in extremely poor condition.
Impact if Not Provided: Inadequate water supplies at the Holcomb Boulevard plant and further decline in water treatment process at Tarawa Terrace and Montford Point.

VM

1. COMPONENT	FY 19 84 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
NAVY		1 AUG 1981

3. INSTALLATION AND LOCATION

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

4. PROJECT TITLE	5. PROJECT NUMBER
EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	P-785

SPECIAL CONSIDERATIONS

1. Pollution Prevention, Abatement, and Control: This project will not cause additional air or water pollution.

2. Flood Hazard Evaluation: Requirements of Executive Order No. 11296 (Flood Hazards) are not applicable.

3. Environmental Impact: The project Environmental Impact Assessment (EIA) is being written and will be processed through the local EIA Review Board. No adverse environmental impact is anticipated.

4. Fallout Shelter Construction: Fallout shelter protection is not incorporated in this project.

5. Design for Accessibility of Physically Handicapped Personnel: Provisions for physically handicapped personnel are not required in this project.

6. Use of Air Conditioning: Ceiling "U" factors will be made to conform WITH DOD 4270.1-M.

7. Preservation of Historical Sites and Structures: This project does not directly or indirectly affect a district, site, building, structure, object, or setting which is listed in the National Register or otherwise possesses a significant quality of American history.

8. "New Start" Criteria for Commercial or Industrial Activities Program (OMB Circular A-76): Not applicable.

1. COMPONENT	FY 19 84 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
NAVY		1 AUG 1981

3. INSTALLATION AND LOCATION

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

4. PROJECT TITLE	5. PROJECT NUMBER
EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	P-785

FACILITY STUDY

1. Project: Provide expansion and upgrade to the Holcomb Boulevard water treatment plant, and new transmission lines to Tarawa Terrace, Montford Point, and Hadnot Point water treatment plants.

2. Current and Planned Future Workload with Regard to this Project: Duration of need is indefinite and the facility will be utilized twenty-four hours daily, seven days per week. There is no projected decrease in the requirements to be performed by the facility.

3. Description of Proposed Construction:

a. Type of Construction:

(1) Permanent water treatment facilities. Storage tanks and slabs of concrete and reinforced concrete. Installation of piping above and below ground, pumps, and electrical wiring are included.

b. Replacement: Project consists of upgrading and expanding existing facilities.

c. Description of Work to be Done:

(1) Primary Facility: Existing Holcomb Boulevard plant has adequate room for expansion. Three new lime contact tanks and three filters will be installed, as well as new raw and treated water reservoirs, and backwash settling facilities.

(a) Support Facilities: Twenty new wells will be required to provide raw water. Transmission and distribution lines and pumping facilities will be required between Tarawa Terrace, Montford Point, Hadnot Point, and Holcomb Boulevard plants. Two pumping stations will be required between Holcomb Boulevard plant and Hadnot Point plant.

(2) Energy Conservation: Energy efficient equipment will be utilized.

(3) Collateral Equipment. Not applicable.

(4) Supporting Facilities: Special piling, foundation, and site improvements, etc.

1. COMPONENT	FY 19 84 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
NAVY		1 AUG 1981

3. INSTALLATION AND LOCATION

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

4. PROJECT TITLE	5. PROJECT NUMBER
EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	P-785

4. Cost Estimate. Area cost factor for Camp Lejeune, NC is 0.95. Cost data for study taken from A&E study prepared by Henry Von Ossen and Associates in April 1979, and escalated to FY-83.

5. Justification for Project and for Scope of Project.

a. Justification for Project:

(1) Project: Proposed facilities are required to provide adequate potable water in the Hadnot Point, Montford Point and Tarawa Terrace areas.

(2) Current Situation: Holcomb Boulevard plant is presently at capacity and will not be able to meet future requirements. Equipment at Tarawa Terrace and Montford Point plants is deteriorated and is incapable of meeting current and future needs.

(3) Impact If Not Provided: Required quantities of potable water meeting the requirements of the Safe Drinking Water Act will not be available for facilities supported by these plants.

b. Justification for Scope of Project: The project is the minimum size facility that can meet the deficiency requirements to support existing and proposed facilities.

6. Equipment Provided from Other Appropriations: Not applicable.

7. Common Support Facilities: Not applicable.

8. Effect on Other Resources: No new personnel will be required to operate the proposed facilities. Additional requirements for electricity, and other supplies create an additional expense of approximately $14,000 per year.

9. Siting of the Project: The facilities will be located in the Hadnot Point, Montford Point, and Tarawa Terrace areas. See enclosure (1).

10. Other Graphic Presentations, including Photographs. None

11. Economic Analysis: No analysis has been made. Requirements are as specified and cannot be met by other means.

12. Environmental Impact. An Environmental Impact Assessment (EIA) is being written and will be processed through the local EIA Review Board. No adverse environmental impact is anticipated.

1. COMPONENT	FY 19 84 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
NAVY		1 AUG 1981

3. INSTALLATION AND LOCATION

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

4. PROJECT TITLE	5. PROJECT NUMBER
EXPANSION OF HOLCOMB BOULEVARD WATER TREATMENT PLANT	P-785

13. Quantitative Data: Not applicable.

14. Maintenance Facilities: Not applicable.

15. Morale, Welfare, and Recreation Facilities: Not applicable.

16. Relocation Facilities: Not applicable.

17. Storage Facilities: Not applicable.

18. Hazard Identification, Assessment, and Analysis: Not applicable.

PLEASE NOTE: LISTED BELOW IS INFORMATION FOR SERVICE ON CONTRACT N62470-81-C-1478 - Utility Improvements - Camp Lejeune, North Carolina.

Compiled By: WILSON CONSTRUCTION COMPANY
P. O. Box 7578
Huntington, West Virginia 25777-7578
Telephone: 304-429-5531

OVERHEAD METAL DOOR

Section 8360 - Paragraph 2.2
Maxson & Associates Inc.
8100-A Arrowridge Blvd.,
Charlotte, North Carolina 28210
Office Phone - 1-800-532-6099
All inquires should be mailed to:
Maxson & Associates, Inc.
P. O. Box 240257
Charlotte, North Carolina 28224
Attention: Service/Engineering

STEEL WINDOWS

Section 8510 - Paragraph 4. & 5.
Reginald Griffin
Griffin Steel Company
P. O. Box 87
Goldsboro, North Carolina
Office Phone - 919-735-3284

WATER PUMPS

Section 11210 - Paragraph 1.2.2
Pump & Lighting Company
P. O. Box 2504
Hickory, North Carolina 28601
Robert Wilkinson
Office Phone - 704-324-9705
Home Phone - 704-462-1696

FILTER PUMPS

Section 11210 - Paragraph 1.2.2.a.b.
Pump & Lighting Company
P. O. Box 2504
Hickory, North Carolina 28601
Robert Wilkinson
Office Phone - 704-324-9705
Home Phone - 704-462-1696

WATER SOFTNERS

Section 11233 - Paragraph 1.3.1
Robert Mercer
Mercer Associates
P. O. Box 2082
360 Carmel Commons Office Park
Charlotte, North Carolina 28211
Office Phone - 704-542-5588
Home Phone - 704-847-4890

WATER METERS

Section 11233 - Paragraph 2.8.e
Robert Mercer
Mercer Associates
P. O. Box 2082
360 Carmel Commons Office Park
Charlotte, North Carolina 28211
Office Phone - 704-542-5588
Home Phone - 704-847-4890

PRESSURE WATER FILTERS

Section 11240 - Paragraph 1.3.1
Robert Mercer
Mercer Associates
P. O. Box 2082
360 Carmel Commons Office Park
Charlotte, North Carolina 28211
Office Phone - 704-542-5588
Home Phone - 704-847-4890

SEWAGE PUMPS

Section 11310 - Paragraph 1.2.1 - 1.2.2 - 1.2.2.2 - 1.2.3 - 1.2.4 - 1.2.5 - 1.2.6
Pump & Lighting Company
Robert M. Wilkinson
P. O. Box 2504
Hickory, North Carolina 28603
Office Phone - 704-324-9705
Home Phone - 704-462-1696

COMMINUTOR

Section 11334 - Paragraph 1.2
Combs & Associates Inc.
Mr. Doug Baxley
3614 McKee Road
Matthews, North Carolina 28105
Office Phone - 704-847-4406
Home Phone - 704-846-4433

CLARIFIERS

Section 11361 - Paragraph 2.
Jim Kowalski
% Heyward Inc.
717 East Boulevard
Charlotte, North Carolina 28203
Office Phone - 704-372-5805

PROPORTIONAL SAMPLERS

Section 11600 - Paragraph 1.2.1
Combs & Associates Inc.
Doug Baxley
3614 McKee Road
Matthews, North Carolina 28105
Office Phone - 704-847-4406
Home Phone - 704-846-4433

CHLORINATORS
Section 11961 - Paragraph 2.2.1
Combs & Associates, Inc.
Monroe Dismure
P. O. Box 32185
Charlotte, North Carolina 28232-2185
Office Phone - 704-376-0450

MONITERING PANEL
Section 13440 - Paragraph 2.3.2
Process Control Services, Ltd.
P. O. Box 98
Seaford, Virginia 23696
John W. Gritton
Office Phone - 804-898-4332
Home Phone - 804-898-6652

FLOW MEASURING EQUIPMENT
Section 13625.1 - Paragraph 1.1
Process Control Services, Ltd.
P. O. Box 98
Seaford, Virginia 23696
John W. Gritton
Office Phone - 804-898-4332
Home Phone - 804-898-6652

FLOW MEASURING EQUIPMENT
Section 13625.2 - Paragraph 1.2
Process Control Services, Ltd.
P. O. Box 98
Seaford, Virginia 23696
John W. Gritton
Office Phone - 804-898-4332
Home Phone - 804-898-6652

HOIST
Section 14325 - Paragraph 1.2
Harrington Hoists, Inc.
401 West End Avenue
Manheim, Pennsylvania 17545
Phone - Customer Service - 1-800-233-3010

PIPING & ACCESSORIES
Section 15271 - Paragraph 1.2
Southern Utilities Inc.
3482 Hwy 51
Fort Mill, South Carolina 29715
Dan Love
Office Phone - 704-525-9695
Home Phone - 803-548-1813

ROTARY DISTRIBUTOR
Section 15386 - Paragraph 5.2.1
Jim Kowalski
% Heyward Inc.
717 East Boulevard
Charlotte, North Carolina 28203
Office Phone - 704-372-5805

FILTER BLOCKS
Section 15386 - Paragraph 5.4
Jim Kowalski
% Heyward Inc.
717 East Boulevard
Charlotte, North Carolina 28203
Office Phone - 704-372-5805

AERATION EQUIPMENT
Section 15390 - Paragraph 3
Jim Kowalski
% Heyward Inc.
717 East Boulevard
Charlotte, North Carolina 28203
Office Phone - 704-372-5805

BLOWERS
Section 15390 - Paragraph 4.1.3.a
Carotek, Inc.
Doug Baxley
3614 McKee Road
Matthews, North Carolina 28105
Office Phone - 704-847-4406
Home Phone - 704-846-4433

GRIT COLLECTOR
Section 15392 - Paragraph 3
Jim Kowalski
% Heyward Inc.
717 East Boulevard
Charlotte, North Carolina 28203
Office Phone - 704-372-5805

AIR COMPRESSOR & DRYER PACKAGE
(Air Compressor)
Section 15411 - Paragraph 3.1.1 - 3.2
Emglo Products Corporation
Johnstown Industrial Park
Johnstown, Pennsylvania 15904
Office Phone - 814-266-8656

AIR COMPRESSOR & DRYER PACKAGE
(Dryer)
Section 15411 - Paragraph 3.1.1 - 3.2
Factory Representative: Bud Roderick
4650 Melody Court
Richmond Virginia 23234
Office Phone - 804-275-5798

DIESEL ENGINE

Section 15649 - Paragraph 3.1
All warranty claims must be processed through
Reagen Equipment Company
Jack Walsh
2535 St. Clair St.
Jacksonville, Florida 32205
Local Service - (You pay them direct)
Covington Diesel
Jim Moore - Service Manager
Phone - 919-763-0944

HEAT PUMP

Section 15801 - Paragraph 3.1
Your local telephone book under GE Company Service
If not listed phone:
Customer Products Inforamtion - 1-800-626-2000

LOUVERS

Section 15801 - Paragraph 3.2.4
The Airolite Company
P. O. Box 667
Marietta, Ohio 45750-0067
Factory Representative:
Kuestgr Sales Company
Charlotte, North Carolina
Office Phone - 704-344-7762

ELECTRIC UNIT HEATERS

Section 15801 - Paragraph 3.2
Markel Products Company
726 Young Street
Tonawanda, New York 14150
Customer Service Phone - 1-800-233-3010

EXHAUST FANS

Section 15801 - Paragraph 3.2.2
Renko Sales
1723 West North Avenue
Pittsburgh, Pennsylvania 15233
Office Phone - 412-321-7900

DIESEL ENGINE - GENERATOR SET

Section 16208 - Paragraph 1.3
Gregory Poole Equipment Company
P. O. Box 469
Raleigh, North Carolina 27602
Office Phone - 919-828-0641

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
	1

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
NO. 1	08 Jan 1988	SPEC.	NO.05-85-6407

6. ISSUED BY	CODE 406	7. ADMINISTERED BY (If other than Item 6)	CODE
Officer in Charge of Construction Jacksonville, North Carolina Area Building 1005, Marine Corps Base Camp Lejeune, North Carolina 28542			

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)	(✓)	9A. AMENDMENT OF SOLICITATION NO.
	X	N62470-85-B-6407
		9B. DATED (SEE ITEM 11) NOT YET ISSUED
		10A. MODIFICATION OF CONTRACT/ORDER NO.
		10B. DATED (SEE ITEM 13)
CODE / FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers [ ] is extended, [X] is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(✓)	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor [ ] is not, [ ] is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

CHLORINE STORAGE NEAR BUILDINGS 20, TC-563 AND TT-36
AT THE
MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA

Contents (Page 2):

(I) Bidding Instructions
  (2) Instructions to Bidders, change date to read "December 1987."
(II) Bid Submittal Documents
  (2) Representations and Certifications:
    Change date to "Sept. 1987." Corrected copy attached.
  (3) Bid Bond, change date to read "(Rev. 4-85).

CONTINUED

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY (Signature of Contracting Officer)	16C. DATE SIGNED

(III) Contract Documents

(4) Contract Clauses:

Change date to "Sept. 1987." Corrected copy attached.

(8) Wage Determination... (Contents Page 2 and last page of specification) Change "NC86-4" to read "NC88-4."

Contents (Page 3)

Following Representations and Certifications, line 3, insert the following:

Bid Bond
Performance Bond
Payment Bond

Copies of the above are included with this amendment.

Section 00101. Instructions to Bidders

1. SOLICITATION DEFINITIONS - SEALED BIDDING Change date from "(APR 1985)" to read "(JUL 1987)."

Line 2, "Solicitation"... following this sentence insert:
"Government" means United States Government (FAR 52.214-1)

5. RATED OR AUTHORIZED CONTROLLED MATERIAL ORDERS (APR 1984)
Delete this paragraph and insert the following:

5. NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE (MAY 1986). Any contract awarded as a result of this solicitation will be a C2DO rated order certified for national defense use under the Defense Priorities and Allocations System (DPAS)(15 CFR 350), and the Contractor will be required to follow all of the requirements of this regulation. (FAR 52.212-7)

22. FALSE STATEMENTS IN BIDS (APR 1984) following this paragraph insert:

23. SERVICE OF PROTEST (JAN 1985)

Protests, as defined in section 33.101 of the Federal Acquisition Regulation, shall be served on the Contracting Officer by obtaining written and dated acknowledgement of receipt from Officer in Charge of Construction/Resident Officer in Charge of Construction (OICC/ROICC), Jacksonville, North Carolina Area, Building 1005, Marine Corps Base, Camp Lejeune, North Carolina 28542. (FAR 52.233-2)

24. ANTI-KICKBACK PROCEDURES (FEB 1987) FAR 52.203-72

(a) Definitions.

"Kickback," as used in this clause, means any money, fee, commission, credit gift, gratuity, thing of value, or compensation of any kind which is provided, directly or indirectly, to any prime Contractor, prime Contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a subcontract relating to a prime contract.

"Person," as used in this clause, means a corporation, partnership, business association of any kind, trust, joint-stock company, or individual.

"Prime contract," as used in this clause, means a contract or contractual action entered into by the United States for the purpose of obtaining supplies, materials, equipment, or services of any kind.

"Prime Contractor employee," as used in this clause, means any officer, partner, employee, or agent of a prime Contractor.

"Subcontract," as used in this clause, means a contract or contractual action entered into by a prime Contractor or subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind under a prime contract.

"Subcontractor," as used in this clause, (1) means any person, other than the prime Contractor, who offers to furnish or furnishes any supplies, materials, equipment, or serices of any kind under a prime contract or a subcontract entered into in connection with such prime contract, and (2) includes any person who offers to furnish or furnishes general supplies to the prime Contractor or a higher tier subcontractor.

"Subcontractor employee," as used in this clause, means any officer, partner, employee, or agent of a subcontractor.

(b) The Anti-Kickback Act of 1986 (41 U.S.C. 51-58) (the Act), prohibits any person from--

(1) Providing or attempting to provide or offering to provide any kickback;

(2) Solicting, accepting, or attempting to accept any kickback; or

(3) Including, directly or indirectly, the amount of any kickback in the contract price charged by a prime Contractor to the United States or in the contract price charged by a subcontractor to a prime Contractor or higher tier subcontractor.

(c)(1) The Contractor shall have in place and follow reasonable procedures designed to prevent and detect possible violations described in paragraph (b) of this clause in its own operations and direct business relationships.

(2) When the Contractor has reasonable grounds to believe that a violation described in paragraph (b) of this clause may have occurred, the Contractor shall promptly report in writing the possible violation. Such reports shall be made to the inspector general of the contracting agency, the head of the contracting agency if the agency does not have an inspector general, or the Department of Justice.

(3) The Contractor shall cooperate fully with any Federal agency investigating a possible violation described in paragraph (b) of this clause.

(4) Regardless of the contract tier at which a kickback was provided, accepted, or charged under the contract in violation of paragraph (b) of this clause, the Contracting Officer may--

(i) Offset the amount of the kickback against any monies owed by the United States under this contract and/or (ii) direct that the Contractor withhold from sums owed the subcontractor, the amount of the kickback. The

Contracting Officer may order that monies withheld under subdivision (c)(4)(ii) of this clause be paid over to the Government unless the Government has already offset those monies under subdivision (c)(4)(i) of this clause. In the latter case, the Contractor shall notify the Contracting Officer when the monies are withheld.

(5) The Contractor agrees to incorporate the substance of this clause, including this subparagraph (c)(5), in all subcontracts under this contract.

Section 01010. General Paragraphs

5. REQUIRED INSURANCE: delete and replace with the following:

5.1 The Contractor shall procure and maintain during the entire period of performance under this contract the following minimum insurance coverage.

5.2 Insurance--Work on a Government Installation (APR 1984) (FAR 52.228-5)

(a) The Contractor shall, at its own expense, provide and maintain during the entire performance period of this contract at least the kinds and minimum amounts of insurance required in the Schedule or elsewhere in the contract.

(b) Before commencing work under this contract, the Contractor shall certify to the Contracting Officer in writing that the required insurance has been obtained. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the Government's interest shall not be effective (1) for such period as the laws of the State in which this contract is to be performed prescribe or (2) until 30 days after the insurer of the contractor gives written notice to the Contracting Officer, whichever period is longer.

(c) The Contractor shall insert the substance of this clause, including this paragraph (c), in subcontracts under this contract that require work on a Government installation and shall require subcontractors to provide and maintain the insurance required in the Schedule or elsewhere in the contract. At least 5 days before entry of each such subcontractor's personnel on the Government installation, the Contractor shall furnish (or ensure that there has been furnished) to the Contracting Officer a current certificate of insurance, meeting the requirements of paragraph (b) above, for each such subcontractor.

Type of Insurance	Per Person	Per Accident	Property
1. Comprehensive General Liability		$500,000	
2. Automobile Liability	$200,000	$500,000	$ 20,000

3. Workmen's Compensation: As required by Federal and State workers' compensation and occupational disease statutes.

4. Employer's liability coverage: $100,000, except in states where workers' compensation may not be written by private carriers.

5. Other as required by state law."

22. NORTH CAROLINA STATE.... Change date to read "(APR 1984)" Following this paragraph insert:

23. EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE: Whenever a contract for modification of contract price is negotiated, the contractor's cost proposal for equipment ownership and operating expenses shall be determined in accordance with the requirements of (a), (b), and (c) below. A copy of EP 1110-1-8 "Construction Equipment Ownership and Operating Expense Schedule" is available for review at:

Commander (Code 02)
Atlantic Division
Naval Facilities Engineering Command
Building N-26, Room 266
Norfolk, Virginia 23511-6287

(a) Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual cost data when the Government can determine both ownership and operating costs for each piece of equipment or equipment groups of similar serial and series from the contractor's accounting records. When both ownership and operating costs cannot be determined from the contractor's accounting records, equipment costs shall be based upon the applicable provisions of EP 1110-1-8, "Construction Equipment Ownership and Operating Expense Schedule", Region III (the schedule). Working conditions shall be considered to be average for the Contracting Officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time the work was performed shall apply.

(b) Equipment rental costs are allowable, subject to FAR 31.105(d)(2)(ii) and FAR 31.205-36, when substantiated by certified copies of paid invoices. Rates for equipment rented from an organization under common control, lease purchase or sale-lease back arrangements will be determined using the schedule except that rental costs leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees are allowable. Costs for major repairs and overhaul are unallowable.

(c) When actual equipment costs are proposed and the total amount of the pricing action is over $25,000, cost or pricing data shall be submitted on Standard Form 1411, "Contract Pricing Proposal Cover Sheet". By submitting cost or pricing data, the contractor grants to the Contracting Officer or an authorizing representative the right to examine those books, records, documents and other supporting data that will permit evaluation of the proposed equipment costs. After price agreement the contractor shall certify that the equipment costs or pricing data submitted are accurate, complete and current."

24. WORK BY THE CONTRACTOR:

24.1 Performance of Work by the Contractor (APR 1984) (FAR 52.236-1): The Contractor shall perform on the site, and with its own organization, work equivalent to at least twenty (20) percent of the total amount of work to be performed under the contract. This percentage may be reduced by a supplemental agreement to this contract if, during performing the work, the Contracting Officer determines that the reduction would be to the advantage of the Government.

24.2 Description of Work Performed by the Contractor: In addition to the requirements of the paragraph entitled "Performance of Work by the Contractor (APR 1984)" and prior to the commencement of work at the site, furnish to the Contracting Officer a description of the work to be performed with the Contractor's own organization and the percentage of the total amount of work to be performed under the contract which this represents. Consider the value of materials as part of the work performed by the Contractor only if the materials are to be installed on the site by the Contractor's own organization.

25. SPECIFICATIONS AND STANDARDS: The specifications and standards referenced in this project specification, including addenda, amendments, and errata listed, will govern in all cases where references thereto are made. In case of differences between these specifications or standards and this project specification or its accompanying drawings, this project specification and its accompanying drawings will govern to extent of such differences. Otherwise, the referenced specifications and standards will apply. The requirement for packaging, packing, marking, and preparation for shipment or delivery included in the reference specifications will apply only to materials and equipment that are furnished directly to the Government and not to materials and equipment that are to be furnished and installed by the Contractor.

Section 01011. Additional General Paragraphs

20.1, line 2, delete "(Helicopter)".

22. SUBMISSION OF OPERATION AND MAINTENANCE MANUALS: following this paragraph insert:

23. ADDITIONAL PRECAUTIONS FOR PROTECTING MATERIALS AND EQUIPMENT IN EXISTING BUILDINGS AND STRUCTURES; Extreme hazards may be caused by rain or other natural elements entering the building through temporary openings, particularly at roofs during reroofing. It is, therefore, essential that the Contractor take all necessary precautions to assure that roof openings and other critical openings in the building are monitored very carefully. The Contractor shall take all immediate actions required to seal off such openings immediately when rain or other detrimental weather is imminent, and at the end of each workday, and shall insure that the openings are completely sealed off to protect materials and equipment in the building from damage.

24. ADDITIONAL INSTRUCTIONS ON SUBMITTALS AND THE USE OF THE CONTRACTOR'S SUBMITTAL TRANSMITTAL FORM: The instructions specified herein represent applicable instructions provided to Contractors on projects administered by

the OICC/ROICC, Jacksonville, North Carolina Area, Building 1005, Marine Corps Base, Camp Lejeune, North Carolina 28542. They are specified here to integrate submittal presentation requirements, as well as to place them in full force in this contract. These instructions appear as Appendix "A" at the end of this section.

APPENDIX "A" - ADDITIONAL INSTRUCTIONS ON SUBMITTALS AND THE USE OF THE CONTRACTOR'S SUBMITTAL TRANSMITTAL FORM

1. All submittals shall be clearly marked to indicate the specific items submitted for approval.

2. Items submitted for approval shall be accompanied by complete information concerning the item proposed in sufficient detail to show compliance with the contract requirements.

3. When more than one item is included in the SUBMITTAL TRANSMITTAL FORM, each sheet or bound set of sheets of attached submittals shall be identified by the item numbers assigned on the transmittal form.

4. Approval of an item cannot be construed as relieving the Contractor of responsibility to comply with the contract requirements unless the Contractor calls attention to the noncomplying features (subparagraph 5f).

5. The following instructions apply to the use of the CONTRACTOR'S SUBMITTAL FORM:

a. Transmittal No. - Transmittals shall be numbered consecutively as submitted. Resubmittals should bear the original transmittal number with the letter (A) added to identify the first resubmittal. The letters (B), (C), etc., may be used if additional resubmittals are necessary.

b. Each transmittal form must be restricted to submittals for one section of the project specifications.

c. Each transmittal form must be restricted to submittals in only one of the following categories: (1) Contractor Approved (CQCR approval items only), (2) OICC Approval, or (3) Deviation or Substitution for OICC Approval.

d. The "item number" next to the Project Specification section and paragraph and/or project drawing number block should match the item number on the submittal log for that specification section or drawing number. This will ensure that all required submittals from each section of the contract specification are received.

e. Project specification section and paragraph number and/or project drawing number - This is the specific project specification section and paragraph(s) that describe and require the item or the project drawing that is being detailed. Referenced LANTDIV plates, if applicable, should be entered here.

f. When approval of a deviation is requested, the following supporting data must be submitted on a separate sheet attached to the transmittal form:

(1) Identify and describe proposed deviations or substitutions.

(2) Reason for each proposed deviation or substitution.

(3) If material or equipment is unavailable, the Contractor's efforts to procure must be documented (contact with minimum of three different suppliers and/or manufacturers).

(4) Complete technical data on the proposed substitution, sufficient to determine acceptability.

(5) Warrant that the entire contract has been reviewed to establish that a deviation, if incorporated, will be compatible with all other elements of construction. Also, warrant that any necessary action or additional expense which may arise by reason of incorporating the proposed deviation, including but not limited to change in this or other elements of construction resulting from the incompatibility of the proposed deviation with any other element of construction, will be the responsibility of the Contractor.

(6) Separate cost estimates for each specified item and each proposed item and proposed change, if any, in the contract time.

g. Each submittal will be signed by the Contractor Representative after the Contractor's comments block.

h. The Contractor's Submittal Transmittal form will be filled out by the Contractor on Contractor Quality Control Contracts as stated above, and additionally as follows:

(1) The CQC will annotate the results of "his" review of the submittal data in the "reviewer use only" box with an appropriate action code and initials and date.

(2) The CQC will sign the submittal in the "Contractor's Representative" signature block.

(3) The CQC will make no marks in the reviewer's blocks below the double line under the Construction Representative signature block.

i. All product literature and catalog data will be conspicuously marked to indicate the specific item, product, or option being offered for consideration by the Contractor. Failure to mark the product literature or catalog data will be cause for return of the submittal data by the Government.

CONTRACT CLAUSES
(Construction Contract)

CLAUSES INCORPORATED BY REFERENCE (APR 1984). This contract incorporates the following clauses by reference, with the same force and effect as if they were given full text. Upon request, the Contracting Officer will make their full text available. (FAR 52.252-2)

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) CLAUSES

1. FAR 52.202-1, Definitions - Alternate I (APR 1984)

2. FAR 52.203-1, Officials Not To Benefit (APR 1984)

3. FAR 52.203-3, Gratuities (APR 1984)

4. FAR 52.203-5, Covenant Against Contingent Fees (APR 1984)

5. FAR 52.203-7, Anti-Kickback Procedures (FEB 1987)

6. FAR 52.212-6, Time Extensions (APR 1984)

7. FAR 52.212-8, Defense Priority and Allocation Requirements (MAY 1986)

8. FAR 52.212-11, Variation in Estimated Quantity (APR 1984)

9. FAR 52.212-12, Suspension of Work (APR 1984)

10. FAR 52.214-26, Audit-Sealed Bidding (APR 1985)

11. FAR 52.214-27, Price Reduction for Defective Cost or Pricing Data-Modifications-Sealed Bidding (APR 1985)

12. FAR 52.214-28, Subcontractor Cost or Pricing Data-Modifications-Sealed Bidding (APR 1985)

13. FAR 52.215-1, Examination of Records by Comptroller General (APR 1984)

14. FAR 52.219-8, Utilization of Small Business Concerns and Small Disadvantaged Business Concerns (JUN 1985)

15. FAR 52.219-9, Small Business and Small Disadvantaged Business Subcontracting Plan - Alternate I (APR 1984)

16. FAR 52.219-13, Utilization of Women-Owned Business Concerns (APR 1984)

17. FAR 52.220-1, Preference for Labor Surplus Area Concerns (APR 1984)

18. FAR 52.222-3, Convict Labor (APR 1984)

19. FAR 52.222-26, Equal Opportunity (APR 1984)

20. FAR 52.222-27, Affirmative Action Compliance Requirements for Construction (APR 1984) 05-85-6407 - AMENDMENT NO. 1

21. FAR 52.222-35, Affirmative Action for Special Disabled and Vietnam Era Veterans (APR 1984)

22. FAR 52.222-36, Affirmative Action for Handicapped Workers (APR 1984)

23. FAR 52.223-2, Clean Air and Water (APR 1984)

24. FAR 52.225-5, Buy American Act - Construction Materials (APR 1984)

25. FAR 52.227-1, Authorization and Consent (APR 1984)

26. FAR 52.227-4, Patent Indemnity - Construction Contract (APR 1984)

27. FAR 52.228-2, Additional Bond Security (APR 1984)

28. FAR 52.228-5, Insurance-Work on a Government Installation (APR 1984)

29. FAR 52.229-3, Federal, State, and Local Taxes (APR 1984)

30. FAR 52.230-4, Administration of Cost Accounting Standards (APR 1984)

31. FAR 52.232-5, Payments Under Fixed Price Construction Contracts (AUG 1987)

32. FAR 52.232-17, Interest (APR 1984)

33. FAR 52.232-23, Assignment of Claims (JAN 1986)

34. FAR 52.233-1, Disputes (APR 1984)

35. FAR 52.233-3, Protest after Award (JUN 1985)

36. FAR 52.236-1, Performance of Work by the Contractor (APR 1984)

37. FAR 52.236-2, Differing Site Conditions (APR 1984)

38. FAR 52.236-3, Site Investigation and Conditions Affecting the Work (APR 1984)

39. FAR 52.236-5, Material and Workmanship (APR 1984)

40. FAR 52.236-6, Superintendence by the Contractor (APR 1984)

41. FAR 52.236-7, Permits and Responsibilities (APR 1984)

42. FAR 52.236-8, Other Contracts (APR 1984)

43. FAR 52.236-9, Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements (APR 1984)

44. FAR 52.236-10, Operations and Storage Areas (APR 1984)

45. FAR 52.236-11, Use and Possession Prior to Completion (APR 1984)

46. FAR 52.236-12, Cleaning Up (APR 1984)

47. FAR 52.236-13, Accident Prevention (APR 1984)

48. FAR 52.236-14, Availability and Use of Utility Services (APR 1984)

49. FAR 52.236-15, Schedules for Construction Contracts (APR 1984)

50. FAR 52.236-17, Layout of Work (APR 1984)

51. FAR 52.236-21, Specifications and Drawings for Construction (APR 1984)

52. FAR 52.243-4, Changes (AUG 1987)

53. FAR 52.245-1, Property Records (APR 1984)

54. FAR 52.245-2, Government Property (Fixed Price Contract) (APR 1984)

55. FAR 52.245-4, Government-Furnished Property (Short Form) (APR 1984)

56. FAR 52.246-12, Inspection of Construction (JUL 1986)

57. FAR 52.246-21, Warranty of Construction (APR 1984)

58. FAR 52.248-3, Value Engineering-Construction (APR 1984)

59. FAR 52.249-2, Termination for Convenience of the Government (Fixed-Price) - Alternate I (APR 1984)

60. FAR 52.249-10, Default (Fixed-Price Construction) (APR 1984)

61. FAR SUPP 52.203-7001, Special Prohibition on Employment (APR 1987)

62. FAR SUPP 52.217-7122, Notice and Assistance Regarding Patent and Copyright Infringement (APR 1984)

63. FAR SUPP 52.219-7000, Small Business and Small Disadvantaged Business (APR 1984)

64. FAR SUPP 52.233-7000, Certification of Requests for Adjustment or Relief Exceeding $100,000 (FEB 1980)

65. FAR SUPP 52.236-7000, Composition of Contractor (JAN 1965)

66. FAR SUPP 52.236-7001, Modification of Proposals - Price Breakdown (APR 1968)

67. FAR SUPP 52.236-7005, Salvage Materials and Equipment (JAN 1965)

68. FAR SUPP 52.236-7006, Misplaced Material (JAN 1965)

69. FAR SUPP 52.236-7007, Identification of Employees (JAN 1965)

70. DAR 7-602.37, Subcontractors (MAR 1979)

71. FAR SUPP 52.227-7033, Rights in Shop Drawings (APR 1966)

72. FAR SUPP 52.243-7001, Pricing of Adjustments (APR 1984)

73. FAR 52.247-64, Preference For Privately Owned U.S. Flag Commercial Vessels (APR 1984)

(a) When ocean transportation is required to bring supplies, materials, or equipment to the construction site from the United States either for use in performance of, or for incorporation in, the work called for by this contract, the Contractor shall use privately owned U.S.-flag commercial vessels to the extent that such vessels are available at rates that are fair and reasonable for privately owned U.S.-flag commercial vessels.

(b) The Contractor shall not make any shipment exceeding 10 measurement tons (400 cubic feet) by vessels other than privately owned U.S.-flag commercial vessels without (1) notifying the Contracting Officer that U.S.-flag commercial vessels are not available at rates that are fair and reasonable for such vessels and (2) obtaining permission to ship in other vessels. If permission is granted, the contract price shall be equitably adjusted to reflect the difference in cost.

(c) (1) The Contractor shall submit one legible copy of a rated on-board ocean bill of lading for each shipment to both (i) the Contracting Officer and (ii) the Division of National Cargo, Office of Market Development, Maritime Administration, U.S. Department of Transportation, Washington, DC 20590. Subcontractor bills of lading shall be submitted through the Prime Contractor.

(2) The Contractor shall furnish these bill of lading copies (i) within 20 working days of the date of loading for shipments originating in the United States or (ii) within 30 working days for shipments originating outside the United States. Each bill of lading copy shall contain the following information:

(A) Sponsoring U.S. Government agency.
(B) Name of vessel.
(C) Vessel flag of registry.
(D) Date of loading.
(E) Port of loading.
(F) Port of final discharge.
(G) Description of commodity.
(H) Gross weight in pounds and cubic feet if available.
(I) Total ocean freight revenue in U.S. dollars.

(d) Except for small purchases as described in 48 CFR 13, the Contractor shall insert the substance of this clause, including this paragraph (d), in all subcontracts or purchase orders under this contract.

(e) The requirement in paragraph (a) does not apply to-

(1) Small purchases as defined in 48 CFR 13;

(2) Cargoes carried in vessels of the Panama Canal Commission or as required or authorized by law or treaty;

(3) Ocean transportation between foreign countries of supplies purchased with foreign currencies made available, or derived from funds that are made available, under the Foreign Assistance Act of 1961 (22 U.S.C. 2353); and

(4) Shipments of classified supplies when the classification prohibits the use of non-Government vessels.

(f) Guidance regarding fair and reasonable rates for privately owned U.S.-flag commercial vessels may be obtained from the Division of National Cargo, Office of Market Development, Maritime Administration, U.S. Department of Transportation, Washington, DC 20590, Phone: 202-426-4610.

REPRESENTATIONS AND CERTIFICATIONS
(Construction Contract)

Invitation Reference No:

Name and Address of Bidder:

DUNS Number:

Date of Bid:

The bidder makes the following representations and certifications, by placing a check in the appropriate spaces or otherwise as appropriate, as part of the bid identified above. (In negotiated procurements, "bid" and "bidder" shall mean "offer" and "offeror.") A completed REPRESENTATIONS AND CERTIFICATIONS is to be returned with the bid.

1. SMALL BUSINESS CONCERN REPRESENTATION (MAY 1986).

The offeror represents and certifies as part of its offer that it [ ] is, [ ] is not a small business concern and that [ ] all, [ ] not all end items to be furnished will be manufactured or produced by a small business concern in the United States, its territories or possessions, Puerto Rico, or the trust Territory of the Pacific Islands. "Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the size standards in this solicitation. (FAR 52.219-1)

2. CONTINGENT FEE REPRESENTATION AND AGREEMENT (APR 1984).

(a) Representation. The offeror represents that, except for full-time bona fide employees working solely for the offeror, the offeror-

[Note: The offeror must check the appropriate boxes. For interpretation of the representation, including the term " bona fide employee," see Subpart 3.4 of the Federal Acquisiton Regulation.]

(1) [ ] has, [ ] has not employed or retained any person or company to solicit or obtain this contract; and

(2) [ ] has, [ ] has not paid or agreed to pay to any person or company employed or retained to solicit or obtain this contract any commission, percentage, brokerage, or other fee contingent upon or resulting from the award of this contract.

(b) Agreement. The offeror agrees to provide information relating to the above Representation as requested by the Contracting Officer and, when subparagraph (a)(1) or (a)(2) is answered affirmatively, to promptly submit to the Contracting Officer-

REPRESENTATIONS AND CERTIFICATIONS
(Construction Contract)

Invitation Reference No:

Name and Address of Bidder:

DUNS Number:

Date of Bid:

The bidder makes the following representations and certifications, by placing a check in the appropriate spaces or otherwise as appropriate, as part of the bid identified above. (In negotiated procurements, "bid" and "bidder" shall mean "offer" and "offeror.") A completed REPRESENTATIONS AND CERTIFICATIONS is to be returned with the bid.

1. SMALL BUSINESS CONCERN REPRESENTATION (MAY 1986).

The offeror represents and certifies as part of its offer that it [ ] is, [ ] is not a small business concern and that [ ] all, [ ] not all end items to be furnished will be manufactured or produced by a small business concern in the United States, its territories or possessions, Puerto Rico, or the trust Territory of the Pacific Islands. "Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the size standards in this solicitation. (FAR 52.219-1)

2. CONTINGENT FEE REPRESENTATION AND AGREEMENT (APR 1984).

(a) Representation. The offeror represents that, except for full-time bona fide employees working solely for the offeror, the offeror-

[Note: The offeror must check the appropriate boxes. For interpretation of the representation, including the term " bona fide employee," see Subpart 3.4 of the Federal Acquisiton Regulation.]

(1) [ ] has, [ ] has not employed or retained any person or company to solicit or obtain this contract; and

(2) [ ] has, [ ] has not paid or agreed to pay to any person or company employed or retained to solicit or obtain this contract any commission, percentage, brokerage, or other fee contingent upon or resulting from the award of this contract.

(b) Agreement. The offeror agrees to provide information relating to the above Representation as requested by the Contracting Officer and, when subparagraph (a)(1) or (a)(2) is answered affirmatively, to promptly submit to the Contracting Officer-

5. PARENT COMPANY AND IDENTIFYING DATA (APR 1984)

(a) A "parent" company, for the purpose of this provision, is one that owns or controls the activities and basic business policies of the bidder. To own the bidding company means that the parent company must own more than 50 percent of the voting rights in that company. A company may control a bidder as a parent even though not meeting the requirement for such ownership if the parent company is able to formulate, determine, or veto basic policy decisions of the offeror through the use of dominant minority voting rights, use of proxy voting, or otherwise.

(b) The bidder [ ] is, [ ] is not [check applicable box] owned or controlled by a parent company.

(c) If the bidder checked "is" in paragraph (b) above, it shall provide the following information:

Name and Main Office Address of Parent Company (Include Zip Code)	Parent Company's Employer's Identification Number

.....

(d) If the bidder checked "is not" in paragraph (b) above, it shall insert its own Employer's Identification Number on the following line _____. (FAR 52.214-8)

6. CERTIFICATION OF NONSEGREGATED FACILITIES (APR 1984)

(Applies when the amount of the contract is in excess of $10,000.)

(a) "Segregated facilities," as used in this provision, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color religion, or national origin because of habit, local custom, or otherwise.

(b) By the submission of this offer, the offeror certifies that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The offeror agrees that a breach of this certification is a violation of the Equal Opportunity clause in the contract.

(c) The offeror further agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) it will-

(1) Obtain identical certifications from proposed subcontractors before the award of subcontracts under which the subcontractor will be subject to the Equal Opportunity clause;

(2) Retain the certifications in the files; and

(3) Forward the following notice to the proposed subcontractors (except if the proposed subcontractors have submitted identical certifications for specific time periods):

NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENT FOR CERTIFICATIONS OF REQUIREMENT FOR CERTIFICATIONS OF NONSEGREGATED FACILITIES.

A Certification of Nonsegregated Facilities must be submitted before the award of a subcontract under which the subcontractor will be subject to the Equal Opportunity clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001. (FAR 52.222-21)

7. CLEAN AIR AND WATER CERTIFICATION (APR 1984)

The Offeror certifies that-

(a) Any facility to be used in the performance of this proposed contract is [ ], is not [ ] listed on the Environmental Protection Agency List of Violating Facilities;

(b) The Offeror will immediately notify the Contracting Officer, before award, of the receipt of any communication from the Administrator, or a designee, of the Environmental Protection Agency, indicating that any facility that the Offeror proposes to use for the performance of the contract is under consideration to be listed on the EPA List of Violating Facilities; and

(c) The Offeror will include a certification substantially the same as this certification, including this paragraph (c), in every nonexempt subcontract. (FAR 52.223-1)

8. SMALL DISADVANTAGED BUSINESS CONCERN REPRESENTATION (APR 1984)

(a) Representation. The offeror represents that it [ ] is, [ ] is not a small disadvantaged business concern.

(b) Definitions.

"Asian-Indian American," as used in this provision, means a United States citizen whose origins are in India, Pakistan, or Bangladesh.

"Asian-Pacific American," as used in this provision, means a United States citizen whose origins are in Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the U.S. Trust Territory of the Pacific Islands, the Northern Mariana Islands, Cambodia, or Taiwan.

"Native American," as used in this provision, means American Indians, Eskimos, Aleuts, and native Hawaiians.

"Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria and size standards in 13 CFR 121.

"Small disadvantaged business concern," as used in this provision, means a small business concern that (1) is at least 51 percent owned by one or more individuals who are both socially and economically disadvantaged, or a publicly owned business having at least 51 percent of its stock owned by one or more socially and economically disadvantaged individuals and (2) has its management and daily business controlled by one or more such individuals.

(c) Qualified groups. The offeror shall presume that socially and economically disadvantaged individuals include Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Asian-Indian Americans, and other individuals found to be qualified by the SBA under 13 CFR 124.1. (FAR 52.219-2)

9. WOMEN-OWNED SMALL BUSINESS REPRESENTATION (APR 1984)

(a) Representation. The offeror represents that is [ ] is, [ ] is not a women-owned small business concern.

(b) Definitions.

"Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominate in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria and size standards in 13 CFR 121.

"Women-owned," as used in this provision, means a small business that is at least 51 percent owned by a woman or women who are U.S. citizens and who also control and operate the business. (FAR 52.219-3)

10. DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER REPORTING (DEC 1980)

In the block with its name and address, the offeror should supply the Data Universal Numbering System (DUNS) Number applicable to that name and address. The DUNS Number should be preceded by "DUNS:". If the offeror does not have a DUNS Number, it may obtain one from any DUN and Bradstreet branch office. No offeror should delay the submission of its offer pending receipt of its DUNS Number. (FAR SUPP 52.204-7004)

11. PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (APR 1984)

The offeror represents that-

(a) It [ ] has, [ ] has not participated in a previous contract or subcontract subject either to the Equal Opportunity clause of this solicitation, the clause originally contained in Section 310 of Executive Order No. 10925, or the clause contained in Section 201 of Executive Order No. 11114;

(b) It [ ] has, [ ] has not filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards. (FAR 52.222-22)

12. PERCENT FOREIGN CONTENT (SEP 1978)

Approximately _____ percent of the proposed contract price represents foreign content or effort. (DAR 7-2003.81)

13. CERTIFICATION OF DEBARMENT/SUSPENSION STATUS

(a) The Offeror certifies with its submission of this offer that it _____ is, _____ is not (check one) suspended, debarred or ineligible from entering into contracts with the Executive Branch of the Federal Government, or in receipt of a notice of proposed debarment from another DOD Agency.

(b) The Offeror shall provide immediate notice to the Contracting Officer in the event of being suspended, debarred or declared ineligible by any Department or other Federal Agency, or upon receipt of a notice of proposed debarment from another DOD Agency, prior to award of this contract.

NOTE: Bids must set forth full, accurate and complete information as required by this invitation for bids (including attachments). The penalty for making false statements is prescribed in 18 U.S.C. 1001.

A completed REPRESENTATIONS AND CERTIFICATIONS is to be returned with the bid.

OMB NO. 9000-0045

BID BOND

(See Instructions on reverse)

DATE BOND EXECUTED *(Must not be later than bid opening date)*

PRINCIPAL *(Legal name and business address)*

TYPE OF ORGANIZATION *("X" one)*

☐ INDIVIDUAL ☐ PARTNERSHIP

☐ JOINT VENTURE ☐ CORPORATION

STATE OF INCORPORATION

SURETY(IES) *(Name and business address)*

PENAL SUM OF BOND					BID IDENTIFICATION	
PERCENT OF BID PRICE	AMOUNT NOT TO EXCEED				BID DATE	INVITATION NO.
	MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENTS		
					FOR *(Construction, Supplies or Services)*	

OBLIGATION:

We, the Principal and Surety(ies) are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown opposite the name of the Surety. If no limit of liability is indicated, the limit of liability is the full amount of the penal sum.

CONDITIONS:

The Principal has submitted the bid identified above.

THEREFORE:

The above obligation is void if the Principal — (a) upon acceptance by the Government of the bid identified above, within the period specified therein for acceptance (sixty (60) days if no period is specified), executes the further contractual documents and gives the bond(s) required by the terms of the bid as accepted within the time specified (ten (10) days if no period is specified) after receipt of the forms by the principal; or (b) in the event of failure so to execute such further contractual documents and give such bonds, pays the Government for any cost of procuring the work which exceeds the amount of the bid.

Each Surety executing this instrument agrees that its obligation is not impaired by any extension(s) of the time for acceptance of the bid that the Principal may grant to the Government. Notice to the surety(ies) of extension(s) are waived. However, waiver of the notice applies only to extensions aggregating not more than sixty (60) calendar days in addition to the period originally allowed for acceptance of the bid.

WITNESS:

The Principal and Surety(ies) executed this bid bond and affixed their seals on the above date.

PRINCIPAL

Signature(s)	1. *(Seal)*	2. *(Seal)*	*Corporate Seal*
Name(s) & Title(s) *(Typed)*	1.	2.	

INDIVIDUAL SURETIES

Signature(s)	1. *(Seal)*	2. *(Seal)*
Name(s) *(Typed)*	1.	2.

CORPORATE SURETY(IES)

SURETY A	Name & Address		STATE OF INC.	LIABILITY LIMIT $	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		

NSN 7540-01-152-8059
PREVIOUS EDITION NOT USABLE

05-85-6407 - AMENDMENT NO. 1

STANDARD FORM 24 (REV. 4-85)
Prescribed by GSA
FAR (48 CFR 53.228(a))

CORPORATE SURETY(IES) *(Continued)*

SURETY B	Name & Address		STATE OF INC.	LIABILITY LIMIT $	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY C	Name & Address		STATE OF INC.	LIABILITY LIMIT $	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY D	Name & Address		STATE OF INC.	LIABILITY LIMIT $	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY E	Name & Address		STATE OF INC.	LIABILITY LIMIT $	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY F	Name & Address		STATE OF INC.	LIABILITY LIMIT $	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY G	Name & Address		STATE OF INC.	LIABILITY LIMIT $	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		

INSTRUCTIONS

1. This form is authorized for use when a bid guaranty is required. Any deviation from this form will require the written approval of the Administrator of General Services.

2. Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. An authorized person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.

3. The bond may express penal sum as a percentage of the bid price. In these cases, the bond may state a maximum dollar limitation (e.g., 20% of the bid price but the amount not to exceed _____ dollars).

4. (a) Corporations executing the bond as sureties must appear on the Department of the Treasury's list of approved sureties and must act within the limitation listed herein. Where more than one corporate surety is involved, their names and addresses shall appear in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)". In the space designated "SURETY(IES)" on the face of the form, insert only the letter identification of the sureties.

(b) Where individual sureties are involved, two or more responsible persons shall execute the bond. A completed Affidavit of Individual Surety (Standard Form 28), for each individual surety, shall accompany the bond. The Government may require these sureties to furnish additional substantiating information concerning their financial capability.

5. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Corporate Seal"; and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction requiring adhesive seals.

6. Type the name and title of each person signing this bond in the space provided.

7. In its application to negotiated contracts, the terms "bid" and "bidder" shall include "proposal" and "offeror".

☆ U.S. GOVERNMENT PRINTING OFFICE: 1985-461-275/20147

PERFORMANCE BOND (See Instructions on reverse)	DATE BOND EXECUTED (Must be same or later than date of contract)
PRINCIPAL (Legal name and business address)	TYPE OF ORGANIZATION ("X" one) ☐ INDIVIDUAL ☐ PARTNERSHIP ☐ JOINT VENTURE ☐ CORPORATION STATE OF INCORPORATION
SURETY(IES) (Name(s) and business address(es))	PENAL SUM OF BOND MILLION(S) | THOUSAND(S) | HUNDRED(S) | CENTS CONTRACT DATE | CONTRACT NO.

OBLIGATION:

We, the Principal and Surety(ies), are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown opposite the name of the Surety. If no limit of liability is indicated, the limit of liability is the full amount of the penal sum.

CONDITIONS:

The Principal has entered into the contract identified above.

THEREFORE:

The above obligation is void if the Principal –

(a)(1) Performs and fulfills all the undertakings, covenants, terms, conditions, and agreements of the contract during the original term of the contract and any extensions thereof that are granted by the Government, with or without notice to the Surety(ies), and during the life of any guaranty required under the contract, and (2) perform and fulfills all the undertakings, covenants, terms conditions, and agreements of any and all duly authorized modifications of the contract that hereafter are made. Notice of those modifications to the Surety(ies) are waived.

(b) Pays to the Government the full amount of the taxes imposed by the Government, if the said contract is subject to the Miller Act, (40 U.S.C. 270a-270e), which are collected, deducted, or withheld from wages paid by the Principal in carrying out the construction contract with respect to which this bond is furnished.

WITNESS:

The Principal and Surety(ies) executed this performance bond and affixed their seals on the above date

PRINCIPAL			
Signature(s)	1. (Seal)	2. (Seal)	Corporate Seal
Name(s) & Title(s) (Typed)	1.	2.	

INDIVIDUAL SURETY(IES)		
Signature(s)	1. (Seal)	2. (Seal)
Name(s) (Typed)	1.	2.

CORPORATE SURETY(IES)					
SURETY A	Name & Address		STATE OF INC.	LIABILITY LIMIT $	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) & Title(s) (Typed)	1.	2.		

NSN 7540-01-152-8060
PREVIOUS EDITION USABLE

STANDARD FORM 25 (REV. 10-83)
Prescribed by GSA
FAR (48 CFR 53.228 (b))

CORPORATE SURETY(IES) *(Continued)*

SURETY B	Name & Address		STATE OF INC.	LIABILITY LIMIT $	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY C	Name & Address		STATE OF INC.	LIABILITY LIMIT $	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY D	Name & Address		STATE OF INC.	LIABILITY LIMIT $	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY E	Name & Address		STATE OF INC.	LIABILITY LIMIT $	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY F	Name & Address		STATE OF INC.	LIABILITY LIMIT $	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY G	Name & Address		STATE OF INC.	LIABILITY LIMIT $	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		

BOND PREMIUM ▶	RATE PER THOUSAND	TOTAL
	$	$

INSTRUCTIONS

1. This form is authorized for use in connection with Government contracts. Any deviation from this form will require the written approval of the Administrator of General Services.

2. Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. An authorization person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.

3. (a) Corporations executing the bond as sureties must appear on the Department of the Treasury's list of approved sureties and must act within the limitation listed therein. Where more than one corporate surety is involved, their names and addresses shall appear in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)". In the space designated "SURETY(IES)" on the face of the form insert only the letter identification of the sureties.

(b) Where individual sureties are involved, two or more responsible persons shall execute the bond. A completed Affidavit of Individual Surety (Standard Form 28), for each individual surety, shall accompany the bond. The Government may require these sureties to furnish additional substantiating information concerning their financial capability.

4. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Corporate Seal"; and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction requiring adhesive seals.

5. Type the name and title of each person signing this bond in the space provided.

• U.S. GOVERNMENT PRINTING OFFICE : 1984 O - 421-526 (237)

PAYMENT BOND (See instructions on reverse)	DATE BOND EXECUTED (Must be same or later than date of contract)
PRINCIPAL (Legal name and business address)	TYPE OF ORGANIZATION ("X" one) ☐ INDIVIDUAL ☐ PARTNERSHIP ☐ JOINT VENTURE ☐ CORPORATION STATE OF INCORPORATION
SURETY(IES) (Name(s) and business address(es))	PENAL SUM OF BOND MILLION(S) / THOUSAND(S) / HUNDRED(S) / CENTS CONTRACT DATE / CONTRACT NO.

OBLIGATION.

We, the Principal and Surety(ies), are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown opposite the name of the Surety. If no limit of liability is indicated, the limit of liability is the full amount of the penal sum.

CONDITIONS.

The above obligation is void if the Principal promptly makes payment to all persons having a direct relationship with the Principal or a subcontractor of the Principal for furnishing labor, material or both in the prosecution of the work provided for in the contract identified above, and any authorized modifications of the contract that subsequently are made. Notice of those modifications to the Surety(ies) are waived.

WITNESS:

The Principal and Surety(ies) executed this payment bond and affixed their seals on the above date.

PRINCIPAL			
Signature(s)	1. (Seal)	2. (Seal)	Corporate Seal
Name(s) & Title(s) (Typed)	1.	2.	

INDIVIDUAL SURETY(IES)		
Signature(s)	1. (Seal)	2. (Seal)
Name(s) (Typed)	1.	2.

CORPORATE SURETY(IES)					
SURETY A	Name & Address		STATE OF INC.	LIABILITY LIMIT $	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) & Title(s) (Typed)	1.	2.		

NSN 7540-01-152-8061
PREVIOUS EDITION USABLE

STANDARD FORM 25-A (REV. 10-83)
Prescribed by GSA
FAR (48 CFR 53.228(c))

CORPORATE SURETY(IES) *(Continued)*

SURETY B	Name & Address		STATE OF INC.	LIABILITY LIMIT $	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY C	Name & Address		STATE OF INC.	LIABILITY LIMIT $	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY D	Name & Address		STATE OF INC.	LIABILITY LIMIT $	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY E	Name & Address		STATE OF INC.	LIABILITY LIMIT $	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY F	Name & Address		STATE OF INC.	LIABILITY LIMIT $	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY G	Name & Address		STATE OF INC.	LIABILITY LIMIT $	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		

INSTRUCTIONS

1. This form, for the protection of persons supplying labor and material, is used when a payment bond is required under the Act of August 24, 1935, 49 Stat. 793 (40 U.S.C. 270 a–270e). Any deviation from this form will require the written approval of the Administrator of General Services.

2. Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. An authorized person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.

3. (a) Corporations executing the bond as sureties must appear on the Department of the Treasury's list of approved sureties and must act within the limitation listed therein. Where more than one corporate surety is involved, their names and addresses shall appear in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)". In the space designated "SURETY(IES)" on the face of the form, insert only the letter identification of the sureties.

(b) Where individual sureties are involved, two or more responsible persons shall execute the bond. A completed Affidavit of Individual Surety (Standard Form 28), for each individual surety, shall accompany the bond. The Government may require these sureties to furnish additional substantiating information concerning their financial capability.

4. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Corporate Seal", and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction regarding adhesive seals.

5. Type the name and title of each person signing this bond in the space provided.

STANDARD FORM 25-A BACK (REV. 10-83)
☆ GPO : 1984 O - 421-526 (245)