US Army Corps
of Engineers
Savannah District

Fort Benning
Georgia

Solicitation Number
DACA21-03-R-0016
Barracks Complex
FY-03, Line Item 48707
April 2003

PHASE TWO OF TWO PHASE DESIGN/BUILD SUBMITTAL PROCEDURE

THIS SOLICITATION IS UNRESTRICTED PURSUANT TO THE "BUSINESS OPPORTUNITY DEVELOPMENT REFORM ACT OF 1988" (PUBLIC LAW 100-656)

U.S. ARMY ENGINEER DISTRICT, SAVANNAH
CORPS OF ENGINEERS
100 WEST OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640

TABLE OF CONTENTS

00010 Solicitation/Contract Form and Bidding Schedule

00100 Instructions, Conditions, and Notices to Offerors

00600 Representations and Certifications

00700 Contract Clauses

00800 Special Contract Requirements

Attachment 1 to Section 00800

Specifications

SOLICITATION, OFFER, AND AWARD *(Construction, Alteration, or Repair)*	1. SOLICITATION NO. DACA21-03-R-0016-0002	2. TYPE OF SOLICITATION [ ] SEALED BID (IFB) [X] NEGOTIATED *(RFP)*	3. DATE ISSUED 20-Nov-2002	PAGE OF PAGES 1 OF 211

IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.

4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO.	6. PROJECT NO.

7. ISSUED BY CODE DACA21	8. ADDRESS OFFER TO *(If Other Than Item 7)* CODE
A-E & CONSTRUCTION BRANCH 100 W. OGLETHORPE AVE SAVANNAH GA 31401-3640	**See Item 7**
TEL:(912)652-5075 FAX: (912)652-5828	TEL: FAX:

9. FOR INFORMATION CALL:	A. NAME	B. TELEPHONE NO. *(Include area code)* *(NO COLLECT CALLS)*
	MARY M CORBIN	(912)652-5289

SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS *(Title, identifying no., date):*

DESIGN/BUILD PHASE I I
BARRACKS COMPLEX
FT BENNING, GA

Contracting Officer: Colleen O'Keefe
E-Mail: colleen.j.okeefe@sas02.usace.army.mil
Phone: (912) 652-5075

11. The Contractor shall begin performance within 5 calendar days and complete it within 1080 calendar days after receiving [ ] award, [X] notice to proceed. This performance period is [X] mandatory, [ ] negotiable. *(See* 52.211-10 *.)*

12 A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? *(If "YES," indicate within how many calendar days after award in Item 12B.)* [X] YES [ ] NO	12B. CALENDAR DAYS 10

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 5 copies to perform the work required are due at the place specified in Item 8 by 03:30 PM *(hour)* local time 11 Jun 2003 *(date).* If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee [X] is, [ ] is not required.

C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.

D. Offers providing less than 90 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

SOLICITATION, OFFER, AND AWARD (Continued)

(Construction, Alteration, or Repair)

OFFER ***(Must be fully completed by offeror)***

14. NAME AND ADDRESS OF OFFEROR *(Include ZIP Code)*	15. TELEPHONE NO. *(Include area code)*
	16. REMITTANCE ADDRESS *(Include only if different than Item 14)* **See Item 14**
CODE / FACILITY CODE	

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due. *(Insert any number equal to or greater than the minimum requirements stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)*

AMOUNTS	SEE SCHEDULE OF PRICES

18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the solicitation -- give number and date of each)

AMENDMENT NO.										
DATE										

20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER *(Type or print)*	20B. SIGNATURE	20C. OFFER DATE

AWARD ***(To be completed by Government)***

21. ITEMS ACCEPTED:

22. AMOUNT	23. ACCOUNTING AND APPROPRIATION DATA

24. SUBMIT INVOICES TO ADDRESS SHOWN IN *(4 copies unless otherwise specified)*	**ITEM**	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO ☐ 10 U.S.C. 2304(c) ☐ 41 U.S.C. 253(c)
26. ADMINISTERED BY CODE		27. PAYMENT WILL BE MADE BY: CODE

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

☐ 28. NEGOTIATED AGREEMENT *(Contractor is required to sign this document and return _ copies to issuing office.)* Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications or incorporated by reference in or attached to this contract.

☐ 29. AWARD *(Contractor is not required to sign this document.)* Your offer on this solicitation, is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.

30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN *(Type or print)*		31A. NAME OF CONTRACTING OFFICER *(Type or print)* TEL: EMAIL:	
30B. SIGNATURE	30C. DATE	31B. UNITED STATES OF AMERICA BY	31C. AWARD DATE

Section 00010 - Solicitation Contract Form

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001		1	Lump Sum	xxxxxxxxx	$_____._____
	BASE BID Design Effort and Engineering Services During Construction for the Base Bid and Options, Complete				

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002		1	Lump Sum	xxxxxxxxxxx	$_____._____
	BASE BID Construction of Barracks Buidlings, Company Operations Facility, and Battalion HQ Building, Complete to the 5-Foot Building Line				

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003		1	Lump Sum	xxxxxxxxxx	$_____.___
	BASE BID Site Preparation and Development Including Utilities (Everything Outside the 5-Foot Building LIne for the Barracks Buildings, Company Operations Facility, and Battalion HQ Building, Complete)				

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0004 OPTION		1	Lump Sum	xxxxxxxxx	$_____.____
	OPTIONAL ITEM Extended Warranties for All Facilities, Complete.				

FOB: Destination

CLAUSES INCORPORATED BY FULL TEXT

52.232-4001 COST LIMITATION – JUNE 1999

The contract award for design and construction shall not exceed $39,600,000.00 for this project. Offerors are under no obligation to approach this amount.

(End of Clause)

Section 00100 - Bidding Schedule/Instructions to Bidders

NOTICE TO OFFERORS

NOTICE TO OFFERORS

1. HAND-CARRIED OR MAILED PROPOSALS:

All proposals must be clearly identified with the contractor's name and address. To ensure timely and proper handling, the lower left corner of the outermost wrapper must indicate the Request For Proposal No., Due Date of Proposal, Time by which Proposals are Due, and Title of Project.

The Government will not be responsible for proposals delivered to any location or to anyone other than those designated to receive proposals on its behalf as indicated below.

Proposals delivered by commercial carrier and those sent by U.S. Mail, including U.S. Express Mail, must be addressed as indicated below. Proposals shall not be addressed to any specific person.

U.S. Army Engineer District, Savannah
ATTN: CESAS-CT-C
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3640

Mailroom personnel on the first floor of 100 West Oglethorpe Avenue must receive proposals sent by U.S. Mail or delivered by commercial carrier by the time specified in Block 13 of the SF1442 for receipt of proposals.

Hand-carried proposals must also be delivered to mailroom personnel on the first floor of 100 West Oglethorpe Avenue by the time specified in Block 13 of SF1442 for receipt of proposals. Due to increased security requirements it is suggested that hand carried proposals be delivered 30 minutes prior to the specified time of receipt.

Offerors are cautioned that there is no parking in or around the building, and visitors must pass through security and sign in prior to being allowed access to the mailroom. Sufficient time must therefore be allowed when hand carrying proposals.

2. FACSIMILE MODIFICATIONS OF PROPOSALS ARE NOT AUTHORIZED.

3. QUALITY CONTROL SYSTEM (QCS)
Any contract award resulting from this solicitation will require the mandatory use of the automated Quality Control System. Please see section 01312A for additional information.

CLAUSES INCORPORATED BY FULL TEXT

52.204-6 DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUN 99)

(a) The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation "DUNS" followed by the DUNS number that identifies the offeror's name and address exactly as stated in the offer.

(b) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one. A DUNS number will be provided immediately by telephone at no charge to the offeror. For information on obtaining a DUNS number, the offeror, if located within the United States, should call Dun and Bradstreet at 1 -800-333-0505. The offeror should be prepared to provide the following information:

(1) Company name.

(2) Company address.

(3) Company telephone number.

(4) Line of business.

(5) Chief executive officer/key manager.

(6) Date the company was started.

(7) Number of people employed by the company.

(8) Company affiliation.

(c) Offerors located outside the United States may obtain the location and phone number of the local Dun and Bradstreet Information Services office from the Internet Home Page at http://www.customerservice@dnb.com. If an offeror is unable to locate a local service center, it may send an e-mail to Dun and Bradstreet at globalinfo@mail.dnb.com.

(End of provision)

52.211-2 AVAILABILITY OF SPECIFICATIONS LISTED IN THE DOD INDEX OF SPECIFICATIONS AND STANDARDS (DODISS) AND DESCRIPTIONS LISTED IN THE ACQUISITION MANAGEMENT SYSTEMS AND DATA REQUIREMENTS CONTROL LIST, DOD 5010.12-L (DEC 1999)

Copies of specifications, standards, and data item descriptions cited in this solicitation may be obtained--

(a) From the ASSIST database via the Internet at http://assist.daps.mil; or

(b) By submitting a request to the--Department of Defense Single Stock Point (DoDSSP), Building 4, Section D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, Telephone (215) 697-2667/2179, Facsimile (215) 697-1462.

(End of provision)

52.211-14 NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE (SEP 1990)

Any contract awarded as a result of this solicitation will be DX rated order; X DO rated order certified for national defense use under the Defense Priorities and Allocations System (DPAS) (15 CFR 700), and the

Contractor will be required to follow all of the requirements of this regulation. [Contracting Officer check appropriate box.]

(End of provision)

52.214-34 SUBMISSION OF OFFERS IN THE ENGLISH LANGUAGE (APR 1991)

Offers submitted in response to this solicitation shall be in the English language. Offers received in other than English shall be rejected.

(End of provision)

52.214-35 SUBMISSION OF OFFERS IN U.S. CURRENCY (APR 1991)

Offers submitted in response to this solicitation shall be in terms of U.S. dollars. Offers received in other than U.S. dollars shall be rejected.

(End of provision)

52.214-5000 APPARENT CLERICAL MISTAKES (MAR 1995)--EFARS
(a) For the purpose of initial evaluations of bids, the following will be utilized in the resolving arithmetic discrepancies found on the face of bidding schedule as submitted by the bidder:
(1) Obviously misplaced decimal points will be corrected;
(2) Discrepancy between unit price and extended price, the unit price will govern;
(3) Apparent errors in extension of unit prices will be corrected;
(4) Apparent errors in additi on of lump-sum and extended prices will be corrected.
(b) For the purpose of bid evaluation, the government will proceed on the assumption that the bidder intends his bid to be evaluated on basis of the unit prices, the totals arrived at by resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids.
(c) These correction procedures shall not be used to resolve any ambiguity concerning which bid is low.
(End of statement)

52.215-1 INSTRUCTIONS TO OFFERORS--COMPETITIVE ACQUISITION (MAY 2001)

(a) Definitions. As used in this provision--

"Discussions" are negotiations that occur after establishment of the competitive range that may, at the Contracting Officer's discretion, result in the offeror being allowed to revise its proposal.

"In writing or written" means any worded or numbered expression which can be read, reproduced, and later communicated, and includes electronically transmitted and stored information.

"Proposal modification" is a c hange made to a proposal before the solicitation's closing date and time, or made in response to an amendment, or made to correct a mistake at any time before award.

"Proposal revision" is a change to a proposal made after the solicitation closing date, at the request of or as allowed by a Contracting Officer as the result of negotiations.

"Time", if stated as a number of days, is calculated using calendar days, unless otherwise specified, and will include Saturdays, Sundays, and legal holidays. However, if the last day falls on a Saturday, Sunday, or legal holiday, then the period shall include the next working day.

(b) Amendments to solicitations. If this solicitation is amended, all terms and conditions that are not amended remain unchanged. Offerors shall acknowledge receipt of any amendment to this solicitation by the date and time specified in the amendment(s).

(c) Submission, modification, revision, and withdrawal of proposals. (1) Unless other methods (e.g., electronic commerce or facsimile) are permitted in the solicitation, proposals and modifications to proposals shall be submitted in paper media in sealed envelopes or packages (i) addressed to the office specified in the solicitation, and (ii) showing the time and date specified for receipt, the solicitation number, and the name and address of the offeror. Offerors using commercial carriers should ensure that the proposal is marked on the outermost wrapper with the information in paragraphs (c)(1)(i) and (c)(1)(ii) of this provision.

(2) The first page of the proposal must show--

(i) The solicitation number;

(ii) The name, address, and telephone and facsimile numbers of the offeror (and electronic address if available);

(iii) A statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation and agreement to furnish any or all items upon which prices are offered at the price set opposite each item;

(iv) Names, titles, and telephone and facsimile numbers (and electronic addresses if available) of persons authorized to negotiate on the offeror's behalf with the Government in connection with this solicitation; and

(v) Name, title, and signature of person authorized to sign the proposal. Proposals signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.

(3) Submission, modification, or revision, of proposals.

(i) Offerors are responsible for submitting proposals, and any modifications, or revisions, so as to reach the Government office designated in the solicitation by the time specified in the solicitation. If no time is specified in the solicitation, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that proposal or revision is due.

(ii)(A) Any proposal, modification, or revision received at the Government office designated in the solicitation after the exact time specified for receipt of offers is "late" and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late offer would not unduly delay the acquisition; and--

(1) If it was transmitted through an electronic commerce method authorized by the solicitation, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of proposals; or

(2) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of offers and was under the Government's control prior to the time set for receipt of offers; or

(3) It is the only proposal received.

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

(iii) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the proposal wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(iv) If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be received at the office designated for receipt of proposals by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation, the time specified for receipt of proposals will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(v) Proposals may be withdrawn by written notice received at any time before award. Oral proposals in response to oral solicitations may be withdrawn orally. If the solicitation authorizes facsimile proposals, proposals may be withdrawn via facsimile received at any time before award, subject to the conditions specified in the provision at 52.215-5, Facsimile Proposals. Proposals may be withdrawn in person by an offeror or an authorized representative, if the identity of the person requesting withdrawal is established and the person signs a receipt for the proposal before award.

(4) Unless otherwise specified in the solicitation, the offeror may propose to provide any item or combination of items.

(5) Offerors shall submit proposals in response to this solicitation in English, unless otherwise permitted by the solicitation, and in U.S. dollars, unless the provision at FAR 52.225-17, Evaluation of Foreign Currency Offers, is included in the solicitation.

(6) Offerors may submit modifications to their proposals at any time before the solicitation closing date and time, and may submit modifications in response to an amendment, or to correct a mistake at any time before award.

(7) Offerors may submit revised proposals only if requested or allowed by the Contracting Officer.

(8) Proposals may be withdrawn at any time before award. Withdrawals are effective upon receipt of notice by the Contracting Officer.

(d) Offer expiration date. Proposals in response to this solicitation will be valid for the number of days specified on the solicitation cover sheet (unless a different period is proposed by the offeror).

(e) Restriction on disclosure and use of data. Offerors that include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall--

(1) Mark the title page with the following legend: This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed--in whole or in part--for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of--or in connection with-- the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [insert numbers or other identification of sheets]; and

(2) Mark each sheet of data it wishes to restrict with the following legend: Use or disclosure of data contained on

this sheet is subject to the restriction on the title page of this proposal.

(f) Contract award. (1) The Government intends to award a contract or contracts resulting from this solicitation to the responsible offeror(s) whose proposal(s) represents the best value after evaluation in accordance with the factors and subfactors in the solicitation.

(2) The Government may reject any or all proposals if such action is in the Government's interest.

(3) The Government may waive informalities and minor irregularities in proposals received.

(4) The Government intends to evaluate proposals and award a contract without discussions with offerors (except clarifications as described in FAR 15.306(a)). Therefore, the offeror's initial proposal should contain the offeror's best terms from a cost or price and technical standpoint. The Government reserves the right to conduct discussions if the Contracting Officer later determines them to be necessary. If the Contracting Officer determines that the number of proposals that would otherwise be in the competitive range exceeds the number at which an efficient competition can be conducted, the Contracting Officer may limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the most highly rated proposals.

(5) The Government reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit cost or prices offered, unless the offeror specifies otherwise in the proposal.

(6) The Government reserves the right to make multiple awards if, after considering the additional administrative costs, it is in the Government's best interest to do so.

(7) Exchanges with offerors after receipt of a proposal do not constitute a rejection or counteroffer by the Government.

(8) The Government may determine that a proposal is unacceptable if the prices proposed are materially unbalanced between line items or subline items. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more contract line items is significantly overstated or understated as indicated by the application of cost or price analysis techniques. A proposal may be rejected if the Contracting Officer determines that the lack of balance poses an unacceptable risk to the Government.

(9) If a cost realism analysis is performed, cost realism may be considered by the source selection authority in evaluating performance or schedule risk.

(10) A written award or acceptance of proposal mailed or otherwise furnished to the successful offeror within the time specified in the proposal shall result in a binding contract without further action by either party.

(11) The Government may disclose the following information in postaward debriefings to other offerors:

(i) The overall evaluated cost or price and technical rating of the successful offeror;

(ii) The overall ranking of all offerors, when any ranking was developed by the agency during source selection;

(iii) A summary of the rationale for award; and

(iv) For acquisitions of commercial items, the make and model of the item to be delivered by the successful offeror.

(End of provision)

52.215-4001 FACSIMILE MODIFICATION OF OFFERS (Ref. FAR 52.215-1(c)) (JUL 1999)

(a) Definition. "Facsimile proposal modification," as used in this solicitation means a modification to a proposal that has been submitted in accordance with the solicitation.
(b) Offerors may submit facsimile proposal modifications to this solicitation. These facsimile proposal modifications must arrive at the place, and by the time specified in the solicitation.
(c) ALL FACSIMILE BID MODIFICATIONS SHALL CONTAIN A COMPLETED BID SCHEDULE. THE SPACES SHALL BE FILLED IN FOR UNIT PRICES, EXTENDED PRICES AND TOTAL BID PRICE.
(d) Facsimile proposal modifications must contain the signature of an official of the company.
(e) Facsimile receiving data and compatibility characteristics are as follows:
(1) Telephone number of receiving facsimile equipment: 912-652-6001
(2) Compatibility characteristics - CCTTT Group 3, 2, 1
(f) If the offeror chooses to transmit a facsimile proposal modification, the Government will not be responsible for any failure attributable to the transmission or receipt of the facsimile modification, including, but not limited to, the following:
(1) Receipt of garbled or incomplete modification.
(2) Availability or condition of the receiving facsimile equipment.
(3) Incompatibility between the sending and receiving equipment.
(4) Delay in transmission or receipt of modification.
(5) Failure of the offeror to properly identify the modification.
(6) Illegibility of modification.
(7) Security of modification data.
(End of provision)

52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a fixed price contract resulting from this solicitation.

(End of clause)

52.217-4 EVALUATION OF OPTIONS EXERCISED AT TIME OF CONTRACT AWARD (JUN 1988)

Except when it is determined in accordance with FAR 17.206(b) not to be in the Government's best interests, the Government will evaluate the total price for the basic requirement together with any option(s) exercised at the time of award.

(End of provision)

52.219-4001 SUBCONTRACTING PLAN FOR SMALL BUSINESS CONCERNS
(SEP 2002 CESAS-CT)

(a) In accordance with FAR Clause 52.219-9, large businesses must submit a subcontracting plan. A sample subcontracting plan is located in Section 00800.

(b) The subcontracting targets (expressed in terms of percentages of total planned subcontracting dollars) of the Savannah District are as follows:

Small Business	-	57.2%
Small Disadvantaged Business	-	8.9%
HUBZone Small Business		3.0%
Women-Owned Business	-	8.1%
Veteran-Owned Small Business		0%*
Service-Disabled Veteran-Owned Small Business	-	3.0%**

If you cannot reach the above-stated targets, you must provide written justification with your subcontracting plan detailing the reasons you cannot meet the requirements.

*(c) While Savannah District does not have a specific target for subcontracting with Veteran-Owned small businesses, this must be addressed in any subcontracting plan.

**(d) Service-disabled Veteran-owned Small Business (SD/VOSB) is a composite of Veteran-Owned Small Business. The SD/VOSB target must be included in the Veteran-Owned small business target.

52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)

(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
29.6%	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 4 1 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 Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, 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;

(2) Employer's identification number of the subcontractor;

(3) Estimated dollar amount of the subcontract;

(4) Estimated starting and completion dates of the subcontract; and

(5) 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 Ft Benning, GA.

(End of provision)

52.225-12 NOTICE OF BUY AMERICAN ACT REQUIREMENT-- CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS (MAY 2002)

(a) Definitions. Construction material, designated country construction material, domestic construction material, foreign construction material, and NAFTA country construction material, as used in this provision, are defined in the clause of this solicitation entitled "Buy American Act--Construction Materials under Trade Agreements" (Federal Acquisition Regulation (FAR) clause 52.225-11).

(b) Requests for determination of inapplicability. An offeror requesting a determination regarding the inapplicability of the Buy American Act should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of FAR clause 52.225-11 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American Act or Balance of Payments Program before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) Evaluation of offers. (1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act, based on claimed unreasonable cost of domestic construction materials, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(4)(i) of FAR clause 52.225-11.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) Alternate offers. (1) When an offer includes foreign construction material, other than designated country or NAFTA country construction material, that is not listed by the Government in this solicitation in paragraph (b)(3) of FAR clause 52.225-11, the offeror also may submit an alternate offer based on use of equivalent domestic, designated country, or NAFTA country construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of FAR clause 52.225-11 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of FAR clause 52.225-11 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic, designated country, or NAFTA country construction material, and the offeror shall be required to furnish such domestic, designated country, or NAFTA country construction material. An offer based on use of the foreign construction material for which an exception was requested--

(i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or

(ii) May be accepted if revised during negotiations.

(End of provision)

52.233-2 SERVICE OF PROTEST (AUG 1996)

52 Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from

US Army Corps of Engineers, Savannah District
ATTN: Contracting Officer, CESAS-CT-C
100 W. Oglethorpe Ave
Savannah, GA 31401-3640

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

52.236-27 SITE VISIT (CONSTRUCTION) (FEB 1995) – ALTERNATE I (FEB 1995)

(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are urged and expected to inspect the site where the work will be performed.

(b) An organized site visit has been scheduled for--

Phase II only

(c) Participants will meet at--

Will be established at Phase II

(End of provision)

52.236-28 PREPARATION OF PROPOSALS--CONSTRUCTION (OCT 1997)

(a) Proposals 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 proposal must initial each erasure or change appearing on any proposal form.

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

(1) Lump sum price;

(2) Alternate prices;

(3) Units of construction; or

(4) Any combination of paragraphs (b)(1) through (b)(3) of this provision.

(c) If the solicitation requires submission of a proposal on all items, failure to do so may result in the proposal being rejected without further consideration. If a proposal on all items is not required, offerors should insert the words "no proposal" in the space provided for any item on which no price is submitted.

(d) Alternate proposals will not be considered unless this solicitation authorizes their submission.

(End of provision)

52.236-4011 Disclosure of Magnitude of Construction (FAR 36.204 and DFARS 236.204)

The estimated price range for this project is between $25,000,000.00 and $100,000, 000.00. .

00110

Section 00110

PROPOSAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS

1. PROPOSAL OVERVIEW.

1.1 General. Since the proposal will describe the capability of the offeror to perform any resulting contract, as well as describe its understanding of the requirements of the Statement of Work, the proposal should be specific and complete in every detail. The proposal should be prepared simply and economically, providing straight-forward, concise delineation of capabilities to satisfactorily perform the contract. The proposal should be practical, legible, clear, and coherent.

1.2 Proposal Submissions and the Two (2) Phase Design-Build Process. This process requires Offerors to submit performance and capability information initially (Phase 1) for review and consideration by the Government. Following the review, evaluation, and rating of these proposals, the Government will select up to five of the highest rated Offerors to receive the technical requirements package and provide a technical and cost proposal for consideration by the Government at Phase 2. The technical and cost proposals of the selected contractors, will be reviewed by the Government. The technical information contained in this Phase 2 proposal will be reviewed and evaluated by the Government in accordance with the evaluation criteria set out in Section 00120 – PART 2, PHASE 2 EVALUATION MANUAL. The final evaluation rating used for comparison, selection, and award will reflect both the rating received in Phase 1 and the evaluation rating received in Phase 2. Cost information will not be rated in either phase but will be evaluated in response to the funding limitations set out in Section 00010 – PRICE PROPOSAL SCHEDULE and other offeror's price proposals.

1.3 FOR ALL OFFERORS WHO COMPETE IN BOTH PHASE 1 AND PHASE 2, THE OFFEROR'S PROPOSAL WILL BE DEFINED AS ALL INFORMATION WHICH WAS SUBMITTED IN RESPONSE TO THE REQUIREMENTS OF BOTH PHASES OF THE SOLICITATION.

1.4 Compliance Statement: Offerors selected to compete in Phase 2 are required to certify that all items submitted in its technical proposal comply with the RFP requirements and any differences, deviations, or exceptions have been identified and explained. Offerors are required to complete the statement and submit it with their technical proposal. Even if there are no differences, deviations or exceptions, the Offeror must submit the Compliance Statement and state that none exist.

Statement of Compliance

[*Insert name of the offeror*] hereby certifies that all items submitted in this proposal and final design documents (after contract award) comply with the solicitation requirements. The criteria specified in Request for Proposal No. [*Insert RFP Number*] are binding contract criteria and in case of any conflict after award, between [*Insert RFP Number*] and the contractor's proposal, the Request for Proposal criteria will govern unless there is a written and signed agreement between the contractor and the Government waiving a specific requirement. Should this proposal result in the award of a contract, this statement will be included on each sheet of drawings and on the cover of the specifications.

1.5 Exceptions. Exceptions to the contractual terms and conditions of the solicitation, such as standard company terms and conditions, must not be included in the proposal.

2. PHASE 1 PROPOSAL SUBMISSION INSTRUCTIONS

2.1 Who May Submit.

2.1.1 Proposals may be submitted by firms formally organized as design/build entities, or by design firms and construction contractors that have associated specifically for this project. In the latter case, a single design firm or construction contractor may offer more than one proposal by entering into more than one such association. For the purpose of this solicitation, no distinction is made between formally organized design/build entities and project-specific design/build associations. Both are referred to as the design/build offeror, (or simply "Offeror"), or the design/build contractor, (or simply "Contractor"), after award of a contract.

2.1.2 Any legally organized Offeror may submit a proposal.

2.2 Where to Submit. Offerors will submit their proposal package to the Savannah District at the address shown in Block 7 of Standard Form 1442.

2.3 Submission Deadline. Proposals must be received by the Savannah District no later than the time and date specified in Block 13 of Standard Form 1442.

2.4 General Requirements.

2.4.1 In order to effectively and equitably evaluate all proposals, the Contracting Officer must receive information sufficiently detailed to allow review and evaluation by the Government.

2.4.2 Tabs. Organize and tab the proposal as shown.

2.4.3 Size of Printed Matter Submissions.

2.4.3.1 Written materials will be on 8-1/2" x 11" paper.

2.4.3.2 The proposals will contain a detailed table of contents. If more than one binder is used, the complete table of contents will be included in each. Place any materials submitted, but not required by this solicitation, such as company brochures, in appendices.

2.4.4 Number of Copies. Submit an original plus five (5) hard copies of the Phase One Proposal.

2.4.5 Electronic Copy of Submissions. In addition to the hard copies of the proposal, submit the Phase 1 Proposal on a CD ROM disk. The proposal should be in MS Word, Adobe Acrobat PDF file, or WordPerfect format. The electronic version will be either a single file tabbed in the same order as the hard copy or multiple files hyperlinked to a single table of contents.

2.5 Submission Format.

2.5.1 Tab and submit the Phase One Proposal in a three ring binder in the following format:

<u>PHASE 1 PROPOSAL</u>

TAB A

SF 1442

Section 00600 – Representations and Certifications

PROPOSAL DATA SHEET – include Offeror's DUNS # and A -E ACASS ID # and Contractor's CCASS # and FAX number

TAB B – FACTOR 1-1 Offeror Past Performance Information

PAST PERFORMANCE INFORMATION Sheets

TAB C – FACTOR 1-2 Technical Approach Narrative

TAB D – FACTOR 1-3 Corporate Relevant Specialized Experience

CORPORATE RELEVANT SPECIALIZED EXPERIENCE Sheets (Example Projects)

TAB E – FACTOR 1-4 Offeror Sustainable Design Experience

SUSTAINABLE DESIGN EXPERIENCE Sheets (Example Projects)

TAB F - Other Information

2.6 TAB B – FACTOR 1-1 Offeror Past Performance Information. A sample Past Performance Evaluation Questionnaire is included at the end of this section. Identify the three completed projects (or substantially complete) to be used for reference and evaluation purposes and provide a questionnaire to the Point of Contact for each project listed for completion. When completed, these forms will be mailed, faxed or e-mailed to the Savannah District Contract Specialist identified in the sample transmittal letter provided. It is the contractor's responsibility to ensure that the reference documentation is provided. The Government may or may not make additional requests for past performance information from the references. Copies of the evaluation form will be provided to the Savannah District directly from the reference. Projects from which questionnaires are received will have been completed within three years of the date of the solicitation. The Government may contact sources other than those provided by the Offeror for information with respect to past performance. These other sources may include CCASS (Construction Contractor Appraisal Support System), ACASS (Architect-Engineer Contractor Appraisal Support System), telephone interviews with organizations familiar with the Offeror's performance, and Government personnel with personal knowledge of the Offeror's performance capability. The experience of individuals will not be credited under this factor but will be evaluated under "Project Key Personnel" in Phase 2.

2.7 TAB C – FACTOR 1-2 Technical Approach Narrative. Describe in general terms how the offeror will approach the design and construction of these facilities. Technical Approach Narrative will be limited to a maximum of ten (10) single-spaced typed pages, using 12-pitch font. At a minimum the narrative should address the following:

Does the Offeror demonstrate a suitable understanding of the process to enable it to adequately address and anticipate the risks associated with Design/Build processes?

Does the Offeror demonstrate rhe roles and responsibilities of the various sub-contractors for both design and construction?

How does the Offeror continue the design phase of the project and incorporate User comments and reviews into the process?

Does the Offeror describe its Design Quality Control Program?

What is the design team's involvement throughout the construction period?

How does the Offeror integrate construction subcontractors into the design process?

What are the Offeror's processes for handling construction and design problems?

Does Offeror's implementation plan utilize "fast track" procedures on this project whereby preliminary site construction activities can begin prior to 100% completion of the design documents.

This narrative will not exceed ten (10) pages. Government review staff will review and evaluate only the information contained on the first ten pages of this section.

2.8 TAB D – FACTOR 1-3 -- Corporate Relevant Specialized Experience. Provide examples of at least three projects for which the offeror has been responsible. The examples should be as similar as possible to this solicitation in project type and scope. Provide references including contact names and telephone numbers for all examples cited. Each example will indicate the general character, scope, location, cost, and date of completion of the project. If the offeror represents the combining of two or more companies for the purpose of this RFP, each company will list project examples. Example projects must have been completed not later than five years prior to the date of the solicitation. The experience of individuals will not be credited under this factor but will be evaluated under "Project Key Personnel" in Phase 2.

2.9 TAB E – FACTOR 1-4 -- Offeror Sustainable Design Experience. Provide examples of at least three projects for which the Offeror has been responsible and which included sustainable features. Specific experience in LEED/SPIRIT application will be given more favorable consideration. Provide references including with contact names and telephone numbers for all examples cited. Each example will indicate the general character, scope, location, cost, and date of completion of the project. Each example will also indicate what sustainable features the project included, a quantification of the results as applicable (i.e. "diverted 25% of construction waste"), and the role the Offeror had in the accomplishment of each sustainable goal. If the Offeror represents the combining of two or more companies for the purpose of this RFP, each company will list project examples. Example projects must have been completed within five years prior to the date of the solicitation.

2.10 No cost information will be included in the Phase 1 proposal package.

3. PHASE 2 PROPOSAL SUBMISSION INSTRUCTIONS

3.1 Who May Submit. Proposals may be submitted by the Offerors who receive written notification from the Savannah District Contracting Officer that their firm has been s elected to participate in Phase 2 of this solicitation. No more than five Offerors will compete in Phase 2 under typical circumstances. The Government intends to announce the names of Offerors selected for Phase 2 in the FEDBIZOPS website unless an Offeror objects in writing explaining why it does not desire this information released.

3.2 General Requirements.

3.2.1 Title Page. Include the title of the solicitation, solicitation number, Offeror name, and date of the submittal.

3.2.2 Table of Contents. The proposals will contain a detailed table of contents. If more than one binder is used, include the complete table of contents in each. Place any materials submitted, but not required by this solicitation, such as company brochures, in appendices.

3.2.3 Tabs. Organize and tab the proposal as shown.

3.2.4 Size of Printed Matter Submissions.

3.2.4.1 Written materials: 8-1/2" x 11" format.

3.2.5.2 Drawing sheets:

3.2.5.2.1 Submit one set of full size drawings Size A1 (approximately 24" x 36").

3.2.5.2.2 Submit five half size sheets size A2 (approximately 16" x 23").

3.2.5.3.3 Bind Drawings.

3.2.5.3.4 Drawings submitted for the proposal may be done with any CAD software available to the Offeror. However, the drawings for 60% and Final design submittals will be done and submitted in the latest version of Microstation format only. Conversions from AutoCAD are discouraged because of file incompatibility and the added work necessary for the conversion.

3.2.5.4 Electronic Submission. In addition to the hard copies required above, all Offerors that advance to Phase 2 will submit their complete submittal on a CD-ROM. This includes the Phase One Submission and the Phase Two Submission (Volumes I and II) including all drawings. Written portions of the proposal should be in MS Word, Adobe Acrobat PDF, or WordPerfect format. The electronic version will be either a single file tabbed in the same order as the hard copy or multiple files hyperlinked to a single table of contents. Drawings should be in one of the following formats: Microstation DGN, Adobe Acrobat PDF, Max View CAL (with Sendable INDEX.SVD), or Auto Cad DWG. Any portion of the proposal not available in electronic format, i.e. cut sheets, should be scanned in Adobe Acrobat PDF format. The CD ROM must be clearly labeled by solicitation number, project name, installation, and Offeror's name.

3.3 PHASE 2 PROPOSAL, VOLUME I – Contract Requirements & Price Proposal

3.3.1 Submit original and one (1) copy of VOLUME I - Contract Requirements & Price Proposal. This information will be submitted in separate three-ring binders labeled "Contract Requirements & Price Proposal."

3.3.2 Volume I – CONTRACT REQUIREMENTS & PRICE PROPOSAL will be organized as follows:

VOLUME I - Contract Requirements & Price Proposal

TAB A – Standard Form 1442, completed and signed by an authorized person from the company or team.

TAB B – Proposal Schedule "Supplies or Services Price/Cost"

TAB C – Bid Bond

TAB D – Section 00600 – Representations and Certifications .

TAB E – Financial Information (e.g. latest financial statement, annual reports, Dun & Bradstreet Ratings, and or number, etc.)

TAB F – Statement of Compliance (See paragraph 1.4)

3.4 PHASE 2 PROPOSAL, VOLUME II – Technical information.

3.4.1 Number of copies. Submit one original and five (5) copies of VOLUME II of the Phase 2 Proposal, six (6) half-size copies of all drawings, and one (1) full-size copy of all drawings.

3.4.2 Submit this information in separate three -ring binders labeled "Technical Information." This category consists of design documents, drawings, sketches, outline specifications, design analysis, catalog cuts, and other information.

3.4.3 VOLUME II – TECHNICAL INFORMATION will be organized as follows:

VOLUME II – TECHNICAL INFORMATION

TAB A – BETTERMENTS

TAB B – FACTOR 2-1: Building Function and Aesthetics

TAB C – FACTOR 2-2: Sustainable Design Considerations

TAB D – FACTOR 2-3: Building Systems

TAB E – FACTOR 2-4: Site Design Considerations

TAB F – FACTOR 2-5: Offeror Management Plans and Schedules

TAB G – Any other information provided by the Offeror

DRAWINGS (Minimum drawings required are outlined in each section)

3.4.4 Submit the technical data described in Paragraphs 4 through 9 below as part of the formal proposal. All alternate designs will be graphically described on separate drawings from the basic proposal. Offerors are advised that the required data listed below will be utilized for technical review and evaluation and used for determination of a "Quality Rating" by a Technical Evaluation Team. Materials indicated in the design/construction criteria, but not indicated in the Offeror's specifications, will be assumed to be included and a part of the proposal.

3.4.5 Incomplete proposals. Failure to submit all the data indicated in this section may be cause for determining a proposal incomplete. Incomplete proposals will not be considered for technical evaluation in Phase 2 or for subsequent award.

4. TAB A – BETTERMENTS

4. 1 Definition of Betterments. A "Betterment" is defined as any component or system which meets and exceeds the minimum requirements stated in the Request for Proposal. This includes all proposed betterments listed in

accordance with the "Proposal Submission Requirements" of this TAB, and all Government identified betterments.

4.2 During discussions, the Government may request that betterments be removed from the Offeror's proposal in order to reduce costs.

4.3 The minimum requirements of the contract are identified in the Request for Proposal. All betterments offered in the proposal become a requirement of the awarded contract.

4.4 Submission of Betterments. The Offeror will identify "Betterments" in the following manner:

Short descriptive title of the betterment and how it exceeds RFP requirements.

Narrative of the proposed betterment and rationale as to why it has been included.

Reference in the Offeror's proposal where the betterment is shown or specified.

Estimated value of the betterment.

Key each betterment to the factor or subfactor referenced.

5. TAB B – FACTOR 2-1: BUILDING FUNCTION AND AESTHETICS

5.1 Architectural Narrative. State the proposed image or design theme of this proposal. Describe interior design theme. Describe any special features or finishes that contribute to the proposed design theme. Describe construction of typical interior partitions. List all architectural deviations included in the proposal.

5.2 Certifications.

5.2.1 "U" Value Certification. Provide signed and dated certification that the final design will meet "U" values required in the RFP for each exterior wall assembly and roof assemblies.

5.2.2 Mechanical Room Certification. Provide signed and dated certification that the mechanical room is of sufficient size to accommodate and serve all mechanical equipment shown and specified by the mechanical design.

5.3 List of Specifications. Provide a list of titles of specifications proposed to use in the design. It is not necessary to include sections required in this RFP.

5.4 Architectural Drawings. Drawings must contain sufficient detail for reviewers to visualize how the designer has interpreted the RFP functional and operational requirements in its proposal. Drawings will include, at a minimum, the following:

5.4.1 Floor Plan(s). Floor plans for each floor will be drawn accurately to scale and will be shown at 1/8 " = 1' -0" minimum scale unless otherwise noted. Show gross floor area tabulations on lower portion of plate. Label all spaces. Indicate net area of all spaces. Show all doors, windows, plumbing fixtures, toilet partitions and built-in casework. Show required workstations as dashed-line blocks to demonstrate that the spaces accommodate the required workstations. Show overall building dimensions. If the floor plan(s) must be drawn in segments in order to comply with the requirements on the proper scale, provide a separate 1/16"=1' -0" or smaller scale composite floor plan showing exterior walls, interior partitions, circulation elements and c ross referencing for enlarged floor plans.

5.4.2 Building Elevations. Exterior elevations will be drawn to 1/8"=1' -0" scale for all four major building elevations. If elevations must be drawn in segments in order to comply with the requirements on proper scale, provide separate 1/16"=1' -0" or smaller composite elevations as required to fit on one sheet. Elevations will show all windows, doors, canopies, and platforms. All building exterior materials and roof pitches will be noted clearly.

5.4.3 Typical Wall Section. Provide one exterior wall section indicating the predominant exterior wall and wall/roof intersection condition. Show overall wall thickness and eave height. Note all materials. Wall section will be unbroken where practical and drawn at ¾"= 1'-0" scale.

5.4.4 Roof Plan. Roof plans for each building will be drawn accurately to scale and will be shown at least 1/16 " = 1'-0" minimum scale unless otherwise noted. Indicate all roof slopes.

5.4.5 Room Finish Schedule. Provide a room finish schedule indicating the following for all spaces: floor, wall base, wainscot, wall and ceiling finishes; wainscot height, wall base height and ceiling height.

5.4.6 Enlarged Barracks Module Plan. Provide an enlarged plan of typical barracks module at minimum ¼" = 10" scale with furnishings and appliances shown.

6. TAB C – FACTOR 2-2: SUSTAINABLE DESIGN SUBMITTAL REQUIREMENTS.

6.1 SPIRIT Summary Table. Submit Appendix H of Section 01010 DESIGN REQUIREMENTS, "SPIRIT Requirements and Summary Table" with the "Proposal Points" column filled in to reflect the points contained in your proposal, including the total. A "SPIRIT Requirements and Summary Table" will be provided for each individual occupied building type in project. The requirement is to achieve a minimum of 35 points with a goal of achieving at least 50 points in each summary table using the SPIRIT Project Rating Tool for Sustainable Design. NOTE: The points indicated on this summary will be considered contract requirements upon award. Do not modify any of the spaces in this column that were filled in on the solicitation.

6.2 Sustainable Design Narrative. Organize the narrative in the same order as SPIRIT summary table with one paragraph devoted to each proposed item on the chart. Briefly describe the activities and/or features proposed to earn each point indicated on your proposal. For mandatory points and requirements the narrative may be limited to repeating the statement found in the "Remarks" column of the SPIRIT summary table.

7 TAB D – FACTOR 2-3: BUILDING SYSTEMS

7.1. STRUCTURAL SUBMITTAL REQUIREMENTS. The structural portion of the proposal must outline the proposed methods and materials of design and construction. The submittal will include the following:

7.1.1 Structural Narrative. Provide a general description of the scope of the project and all of the major structures. Give overall building dimensions and a description of the principal features such as wall and roof construction proposed. If the building is irregularly shaped, explain where seismic joints will be placed to create regular shapes or provide a statement that a dynamic analysis of the building will be performed.

7.1.1.1 Provide a description of the framing system chosen.

7.1.1.2 Provide a description of the lateral load resisting system and how these loads will be transmitted to the foundations.

76.1.1.3 Provide a description of the anticipated foundations based on information provided in the RFP.

7.1.1.4 Provide a list of special design features including features to be used in compliance with the AT/FP requirements.

7.1.2 Fire Resistance Statement. State the required fire resistance criteria for all portions of the structural system and the proposed method of meeting these requirements.

7.1.3 Design Analysis. State the live loads for which the facility is to be designed. Include roof and floor loads. Provide the wind loads, lateral earth pressure loads, seismic loads, etc. as applicable. Complete analysis is not necessary, only tabulation of loads is required.

7.1.4 Outline Specifications. Provide a list of titles of specifications propose for use in the design, if sections are not provided in this RFP.

7.2 MECHANICAL SUBMITTAL REQUIREMENTS.

7.2.1 Heating, Ventilating, and Air Conditioning Narrative. Narrative of design analysis will contain the following:

7.2.1.1 Design conditions used in calculations - inside and outside temperatures, personnel load, outside air or ventilation requirements, U-factors, and other special conditions.

7.2.1.2 Block loads for heating and cooling calculated using ASHRAE-based methods. Where passive solar applications prove feasible and cost effective, the Offeror will employ a load calculation method that can incorporate all applicable passive solar factors. All load calculation software must be traditionally used by the industry.

7.2.1.3 A description of all HVAC systems to be considered in a life cycle cost analysis (LCCA). A LCCA, using the program LCCID, of each of the HVAC systems described will be submitted by the successful Offeror– after contract award, verifying that the system selected for the building is the most efficient and is within the energy budget. For additional requirements, see Section 01020.

7.2.1.4. A description of piping systems including type of pipe, insulation requirements, and whether concealed or exposed, including catalog cuts.

7.2.1.5 Energy Budget Certification. Provide a certification that the final design will comply with Energy Budget requirements of specification Section 01020.

7.2.1.6 Controls System Narrative. A description of the proposed Direct Digital Controls System to be used.

7.2.1.7 Catalog Cuts. Brief description of various items of equipment, including catalog cuts. Manufacturers, level of quality, warranties, etc. are more important to the evaluators than selections of specific sizes or capacities.

7.2.1.8 Specifications. List of specifications to be used.

7.2.2 Plumbing Narrative. Plumbing analysis to determine number of fixture units, cold and hot water capacity requirements, and equipment or capacities of miscellaneous and special systems.

7.2.2.1 Determine fixtures listing quantity and type of fixtures for both men's and women's toilets, and other fixtures such as drinking water fountains, service sinks, etc.

7.2.2.2 Description of domestic water heating and storage equipment, including capacity, type (gas, electric, boiler, water), materials, and insulation.

7.2.2.3 Piping types and location (concealed or exposed), together with material proposed and insulation requirements.

7.2.2.4. Brief description of miscellaneous systems such as compressed air (capacity, pressure, piping, location of air outlets, etc.), roof drainage, natural gas (pressure, quantity, and equi pment to be served), and other special systems.

7.2.2.5 Catalog Cuts. Brief description of various items of equipment, including catalog cuts. Manufacturers, level of quality, warranties, etc. are more important to the evaluators than selections of specific sizes or capacities.

7.2.2.6 Specifications. The Offeror will provide a list of titles of specifications he proposes to use in the design, if section not provided in this RFP.

7.2.3 Mechanical Drawings. Provide plan view showing the following:

7.2.3.1 Heating, Ventilating, and Air Conditioning Drawings. Heating, ventilating, and air conditioning equipment layout - chillers or refrigeration compressors, boilers, pumps, condensers or cooling tower, air handling units, fans, hoods, and other items of major equipment required for the facility.

7.2.3.2 Plumbing Drawings. Plumbing fixture layout, floor and area drains, and plumbing equipment layout (hot water generator, storage tank, air compressors, etc.).

7.2.3.3 Mechanical Room(s) Drawings. Provide a 1/4 inch = 1 foot scale (1:50) plan showing equipment layout of major components in mechanical rooms. The Engineer/ Architect of record will be required to certify that adequate space has been provided for safe operation of equipment and maintenance capability. Mechanical equipment layouts will comply with Section 01020.

7.3 ELECTRICAL DESIGN SUBMITTAL REQUIREMENTS.

7.3.1 Interior Electrical System Design Narrative. Provide an overview of the interior electrical design describing the major features of the power, lighting, communication and security systems.

7.3.2 Interior Lighting System. Provide an Interior Concept Lighting Schedule tabulating room names, fixture types, lighting intensities, and basis of design (e.g., IES criteria, RFP requi rement). The schedule will include but not be limited to the following typical areas:

7.3.2.1 Barracks Buildings. Building Exterior, Laundry Room, Communications Room, Corridors, and Barracks Typical Module (Clothes Closet, Bathroom, Living/Sleeping Area, Kitchen/Dining Area and Interior Corridor).

7.3.2.2 Omitted.

7.3.2.3 Omitted.

7.3.2.4 Battalion Headquarters. Building Exterior, Open Office, Private Office, Executive Office, Corridor, Lobby and Conference Room.

7.3.2.5 Company Operations Facility (COF). Building Exterior, Open Office, Private Office, Corridor, Lobby, Classroom and Conference Room.

76.3.3 Interior Electrical Distribution. For typical areas within the various buildings, describe the type of power and communication wiring systems proposed (e.g., cable tray, rigid metallic conduit, rigid nonmetallic conduit, electrical metallic tubing, nonmetallic-sheathed cable).

7.3.4 Interior Lighting Fixture Catalog Cuts. Provide a single catalog cut sheet for each fixture type. This cut sheet will be correlated to the Concept Lighting Schedule and will establish the aesthetic, physical, functional and photometric characteristics of the fixture and will establish a level of quality.

7.3.5 Interior Electrical Equipment Catalog Cuts. Provide catalog cuts of electrical devices and equipment.

7.3.6 Interior Electrical Drawings. Provide lighting, power and signal plans for the proposed Barracks Typical Module Plan. The plans will indicate locations of devices and fixtures only; no wiring will be shown. Fixtures will be marked to correlate to the Interior Concept Lighting Schedule.

7.3.7 Exterior Electrical Distribution System Design Narrative. Provide an overview of the exterior electrical design describing the major features of the power, lighting and communication systems.

7.3.8 Exterior Lighting System. Provide an Exterior Concept Lighting Schedule tabulating areas (e.g., roadway, walkway, parking, security), fixture types, pole heights, lighting intensities, and basis of design (e.g., IES criteria, RFP requirement).

7.3.9 Exterior Lighting Fixture Catalog Cuts. Provide a single catalog cut sheet for each fixture type and pole. This cut sheet will be correlated to the Exterior Concept Lighting Schedule and will establish the aesthetic, physical, functional and photometric characteristics of the fixture and will establish a level of quality.

7.3.10 Exterior Electrical Equipment Catalog Cuts. Provide catalog cuts of electrical distribution equipment.

7.3.11 Exterior Electrical Drawings. Provide a separate electrical site plan indicating all existing to be removed, existing to remain, and new utility lines and equipment required to serve the project. Utility lines shown will include electrical power lines, telephone and other communication lines. The plan will also show all buildings, trees, roads and driveways, parking areas, and any other items necessary for functional and operating adequacy. Indicate the connection points and the approximate routing of lines through the site. Indicate the locations of transformers, switches and cable termination cabinets. Also indicate on the drawings the lighting fixture type proposed within each area (no layout is required).

7.3.12 Specifications. Provide a list of specifications proposed for use in the design but not included in the RFP.

7.3.13 Energy Conservation Design Narrative. Indicate energy conservation measures. The narrative will describe measures and techniques proposed in the electrical design that will conserve energy.

7.4 FIRE PROTECTION DESIGN SUBMITTAL REQUIREMENTS.

7.4.1. Fire Protection Narrative. A narrative will be provided addressing the following items for each building type in this project:

7.4.1.1 Automatic fire extinguishing systems and hose standpipe systems: Identify all areas provided with sprinkler protection and the type of sprinkler system provided, sprinkler hazard classification for these areas, areas protected by other automatic suppression systems and the type system provided, and buildings provided with hose standpipe systems and the type of standpipe system provided and indication if a fire pump is required and where the pump will be located.

7.4.1.2 The type of alarm and detection system, location of the fire alarm and detection equipment including fire alarm control panel, and catalog data sheets of major components

7.4.2 Life Safety Certification. Provide certification by the fire protection engineer that the building design will comply with the life safety/fire protection provisions of the applicable criteria indicated in Section 01020.

7.4.3 Credentials of Fire Protection Engineer. Provide the credentials of the fire protection engineer in the proposal submittal. The design of the fire protection features will be performed by a qualified fire protection engineer meeting one of the following conditions: a) an engineer with a Bachelor of Science or Masters of Science Degree in fire protection engineering from an accredited university engineering program, plus a minimum of 5 years' work experience in fire protection engineering, b) a registered professional engineer who has passed the National Council of Examiners for Engineering and Surveys (NCEE) fire protection engineering written examination, or c) a registered P.E. in a related engineering discipline with a minimum of 5 years' experience dedicated to fire protection engineering.

7.4.4 Specifications. Provide a list of all UFGS guide specifications to be used.

8. TAB E – FACTOR 2-4: SITE DESIGN CONSIDERATIONS. The site development portion of the proposal must outline the proposed site demolition, layout, grading, storm drainage, and erosion control practices of design and construction. A topographic survey will be provided at Phase II to the Offerors in English units. The proposal will include the following:

8.1 General Site Development Narrative. State the purpose, functional layout of all major structures in relation to parking and access drives, the extent of grading and drainage system, as well as erosion control measures in sufficient detail to delineate and characterize functional features and the desired image or visual appearance of this project. The narrative will reflect setbacks requirements as indicated in Section 01020, as well as the visual characteristics of the surrounding topography. Include a statement addressing Force Protection Compliance, as well as a statement addressing Storm Water Management such that post development runoff does not exceed pre development runoff flows. Also include a statement of any requirements for traffic control signals and signage plans. Provide a brief statement of the exterior construction materials to be used in the project.

8.2 Erosion Control Narrative. Provide a narrative of the erosion control measures to be used in this project.

8.3 Landscape Narrative. The landscape design narrative will include an analysis of existing site conditions, including an indication of existing trees and plant materials that are to be saved and remain on the project site. The narrative will indicate specific site problems related to proposed development and the rationale for proposed plant selection and locations. The narrative will also include a list of suggested types and sizes of plant materials to be used (use native plants as much as possible). It will also discuss type of irrigation to be provided, type, quantity and location of site furniture, per Fort Bragg Installation Design Guide's (IDG). The narrative will discuss what materials are being included in the project that comes from recycled materials and renewable resources. It will also indicate coordination with AT/FP requirements.

8.4 Site Utilities Narrative. Design Narrative will include Description of the utility systems chosen.

8.5 Design Calculations. Submit calculations for the following:

8.5.1 Storm drainage pipe design calculations will not be required for the proposal submittal. Storm drainage pipe design calculations for the final design submittal will show that the pipes are adequately sized using the Rational Method in accordance with technical instructions.

8.5.2 Storm water detention pond calculation will show that the pond is adequately sized such that post development runoff does not exceed pre-development runoff in accordance with Fort Bragg Installation Design Guide requirements. Storm water detention can be designed as an underground system.

8.6 Outline Specifications. Provide a list of titles of specifications proposed for use in the design, if the section is not provided in this RFP.

8.7 Site Development Drawings. Drawings will be shown at 1 in = 30ft scale (or 1:400 in metric units). All drawings will have a Legend, North Arrow, and graphic bar scales. Drawings will contain sufficient detail and annotations so that Government can visualize how the designer has interpreted the user's functional and operational requirements in the proposal for final design. Drawings will includeat least the following:

8.7.1 Demolition Plan and Tree Removal Plan. The demolition plan will also show the limits of tree removal.

8.7.2 Layout Plan. This plan should show the building layout in relation to parking areas, access drives, and pedestrian walkways. This plan should show overall dimensions of parking lots, minimum building setbacks (in compliance with Force Protection), minimum setback from Streets or Roads, utility pad locations (this includes dumpster, electrical and mechanical equipment pads). The Layout Plan will also show location of sidewalks, access drives, retaining walls, fencing, site steps, service vehicle drives, pedestrian bridges, sports fields, handicap parking spaces, and curb and gutter. The use of patterning will be required to distinguish between concrete pavement and bituminous asphalt pavement. The submitted layout plan will also show dimensions of major items such as building, parking lot rather than coordinates of corner points.

8.7.3 Grading and Drainage Plan. This plan should show contour elevations at 1-foot (250mm) minimum interval and critical spot elevations, as well as finish floor elevations. This plan should also show the locations of storm inlets, curb inlets, manholes, storm drainage pipes, culverts, headwalls, storm water control structure, detention pond area, and drainage ditches. Drainage ditches will be kept to a minimum due to the highly erodable soil. Curb cuts for drainage of parking lots and access drives are prohibited.

8.7.4 Landscape Design Plan. This plan will include existing trees and under story to be saved, new trees to be planted, screens, buffers, lawns, and mulched area for the project. Both large shade trees and small under story and ornamental trees will be shown. Plant labels will be provided for the plans. Also to be provided is a drawing at a larger scale of the building entrance of the project site to indicate the Landscape Architect's ideas or intent for a more detailed planting plan as used in foundation plantings including plant labels.

8.7.5 Site Utility Plan. Indicate locations of outside utilities where required to support the project. Show same scale as other site work drawings. The plan will include a general utility layout with connection points, valve fittings and requirements for pneumatic ejector, sewage pumps and sump pumps and the relative placement of water and sanitary sewer systems. The layout plans should take into account the ease of maintenance and utility corridors.

9. TAB F – FACTOR 2-5: PROJECT MANAGEMENT PLANS AND SCHEDULES. The offeror will provide a Management Plan. This is an overall pl an showing how the offeror will control the job. The term "management plan" is defined as a plan that includes the following subplans:

9.1 SUBFACTOR 2-5 a. Project Key Personnel.

9.1.1 Provide the names, resumes, and levels of responsibility of the principal managers and technical personnel who will be directly responsible for the day-to-day design and construction activities. Include, as a minimum the following:

Project Manager

Project Achitect

Construction Manager

Construction Quality Control Manager

Design Quality control Manager

9.1.2 Indicate whether each individual has had a significant part in any of the project examples cited. If reassignment of personnel is considered possible, provide the names and resumes of the alternative professionals in each assignment.

9.1.3 Provide a narrative and/or diagram that outlines the relationships and interaction between each of the key personnel above.

9.1.4 Project key personnel will include the key construction subcontractors and the extent of their role with respect to the design phases of this project. For each subcontractor, the prime contractor's experience working with that sub should be indicated and the subs past experience in work similar in nature to the project being evaluated should be submitted. Key subcontractors will include, but are not limited to:

Masonry subcontractor

Mechanical subcontractor

Site Development subcontractor

9.2 SUBFACTOR 2-5 b. Schedule.

9.2.1 Integrated Design and Construction Schedule with all are as clearly identified. The schedule for design and construction will be task oriented, indicating dates by which milestones are to be achieved. The offeror may use a critical path or other method of choice; however, the schedules will be graphically represented.

9.2.2 The offeror will also submit a narrative explaining how the schedules will be achieved.

9.3 SUBFACTOR 2-5 c. Small and Small Disadvantaged Business Utilization.

9.3.1 ALL OFFERORS are required to provide a narrative discussion of their plan for utilization of small and small disadvantaged businesses. At a minimum, the narrative will discuss:

Goals for subcontracting with small and small disadvantaged businesses in sufficient detail to allow Government evaluators to determine that these goals are realistic, justifiable, positive, and in accordance with the Government's policy to maximize opportunities for these types of businesses.

The extent to which small disadvantaged businesses, and where appropriate, historically black colleges and universities/minority institutions (HBCU/MI) have been identified for participation as part of the Offeror's team.

The Offeror's past and present commitment to providing subcontracting opportunities and encouragement to small and small disadvantaged businesses.

9.3.2 For Offerors' information, the following are the U.S. Army Corps of Engineers Subcontracting Targets for FY03:

71.1% of planned subcontracting dollars placed with Small business concerns

10.2% of planned subcontracting dollars placed with Small Disadvantaged business concerns

3% of planned subcontracting dollars placed with HubZone small business concerns

10.6% of planned subcontracting dollars placed with Women owned small business concerns

3% of planned subcontracting dollars placed with Service-Disabled Veteran-owned small business concerns

PROPOSAL DATA SHEET – PHASE 1

NOTE TO OFFERORS
This OFFEROR PERFORMANCE CAPABILITY PROPOSAL DATA SHEET must be completed and attached as the first page of the body of your proposal. The information required by this data sheet may be completed directly on this form or attached to the form as supplemental data sheets.

1. NAME OF OFFEROR.

Name of Offeror(s):

If a joint venture or contractor-subcontractor association of firms, list the individual firms and briefly describe the nature of the association.

Firm 1:

Firm 2:

Nature of Association:

2. DUNS NUMBER FOR OFFEROR
(If more than one DUNS number is to be considered explain affiliation to offeror)

3. FAX number for Offeror

4. ACASS identification number for design firm

5. AUTHORIZED NEGOTIATORS. FAR 52.215-11

The offeror represents that the following persons are authorized to negotiate on its behalf with the Government in connection with this Request for Proposals (RFP).

[List names, titles, and telephone number of the authorized negotiator.]

Name of Person Authorized to Negotiate:

Negotiator's Address:

Negotiator's Telephone:

PROPOSAL DATA SHEET – PHASE 1 (CONTINUED)

6. PAST PERFORMANCE PROJECTS.

6.1 Provide information for three completed or substantially completed projects, that are being or have been constructed by the Offeror to be used for reference and evaluation purposes. These should be the same projects for which Past Performance Questionnaires have been provided to the Procurement Point of Contact.

6.2 If the offeror is made up of separate design and construction companies that have combined for this project, then this item must be completed twice (once for each company), for a total of six projects.

6.3 For each project provide the information shown. Failure to provide this minimum information may result in lower ratings.

7. LIQUIDATED DAMAGES. On an attached sheet, list any projects within the last three years that have been assessed liquidated damages. Provide an explanation.

8. TERMINATED PROJECTS. On an attached sheet, list any projects within the last five years that have been terminated. Provide an explanation.

9. GOVERNMENT PROJECTS. On an attached sheet, list all contracts with the Government within the last three years. Indicate Government contract number and contracting agency including contact names and telephone numbers.

10. CADD CAPABILITIES. On an attached sheet, describe your office capabilities for using CADD (Computer Aided Design and Drafting) and other forms of automation on this project. This information will be limited to two 8 ½" by 11" sheets of paper, double spaced, using a 12-pitch font.

SAMPLE

FACTOR 1-1 PAST PERFORMANCE INFORMATION
(Offerors should submit for at least three projects)

Project Title:

Location:

Contract number:

Procuring activity:

Procurement point of contact and telephone number:

List date of construction completion or percent completion if construction is underway:

Address of building(s):

Address and telephone number of owner:

Indicate type of project (private sector, Government, planned unit development, etc.):

General character:

Total cost:

Total cost of all modifications:

SAMPLE

FACTOR 1-3 CORPORATE RELEVANT SPECIALIZED EXPERIENCE.

Project Title:

Location:

Contract number:

Nature of involvement in this project, i.e. General Contractor, subcontractor, designer:

Procuring activity:

Procurement point of contact and telephone number:

List date of construction completion or percent completion if construction is underway:

Address of building(s):

Address and telephone number of owner:

Indicate type of project (private sector, Government, planned unit development, etc.):

General character:

Total cost:

SAMPLE

FACTOR 1-4 SUSTAINABLE DESIGN EXPERIENCE.

On an attached sheet, provide information for in-progress or completed projects that include sustainable design features, that have been done by the offeror to be used for reference and evaluation purposes. For each project provide the following information:

Project Title:

Location:

Contract number:

Nature of involvement in this project, i.e. General Contractor, subcontractor, designer:

Procuring activity:

Procurement point of contact and telephone number:

List date of construction completion or percent completion if construction is underway:

Address of building(s):

Address and telephone number of owner:

Indicate type of project (private sector, Government, planned unit development, etc.):

General character:

Total cost:

Sustainable design features in project - for each provide the following:

Brief description of SDD feature.

Quantified SDD accomplishment or goals

Nature of involvement in this SDD feature, i.e. General Contractor, subcontractor, designer:

SAMPLE TRANSMITTAL LETTER
AND
PAST PERFORMANCE EVALUATION QUESTIONNAIRE

Date: _____

To: _____
_____
_____

We have listed your firm as a reference for work we have performed for you as listed below. Our firm has submitted a proposal under a project advertised by the U.S. Army Corps of Engineers, Savannah District: **Barracks Complex, Fort Benning, Georgia**. In accordance with Federal Acquisition Regulations (FAR), an evaluation of our firm's past performance will be completed by the Corps of Engineers. Your candid response to the attached questionnaire will assist the evaluation team in this process.

We understand that you have a busy schedule and your participation in this evaluation is greatly appreciated. Please complete the enclosed questionnaire as thoroughly as possible. Space is provided for comments. Understand that while the responses to this questionnaire may be released to the offeror, FAR 15.306 (e)(4) prohibits the release of the names of the persons providing the responses. Complete confidentiality will be maintained. Furthermore, a questionnaire has also been sent to _____ of your organization. Only one response from each office is required. If at all possible, we suggest that you individually answer this questionnaire and then coordinate your responses with that of _____, to forge a consensus on one overall response from your organization.

Please send your completed questionnaire to the following address to arrive NOT LATER THAN *December 13, 2002* to:

U.S. Army Engineer District, Savannah
Contracting Division (CESAS-CT-C)
ATTN: Lynne Roahrig
100 W. Oglethorpe Ave.
Savannah, GA 31402

The questionnaires can also be emailed to; lynne.e.roahrig@sas02.usace.army.mil or faxed to; 912-652-5828, ATTN: Lynne Roahrig. If you have questions regarding the attached questionnaire, or require assistance, please contact Lynne Roahrig at 912-652-5293. Thank you for your assistance.

PAST PERFORMANCE EVALUATION QUESTIONNAIRE

Upon completion of this form, please send directly to the U.S. Army Corps of Engineers in the enclosed addressed envelope or fax to 912-652-5828, ATTN: Lynne Roahrig, or e-mail to lynne.e.roahrig@sas02.usace.army.mil **. Do not return this form to our offices. Thank you.**

1. Contractor/Name & Address (City and State):

2. Type of Contract: Fixed Price _____ Cost Reimbursement _____
Other (Specify) _____

3. Title of Project/Contract Number:
_____
_____
_____

4. Description of Work: (Attach additional pages as necessary)

5. Complexity of Work: High _____ Mid _____ Routine _____

6. Location of Work:_____

7. Date of Award: _____

8. Status: Active _____ (provide percent complete)

Complete _____ (provide completion date)

9. Name, address and telephone number of person completing this questionnaire:

10. QUALITY OF CONSTRUCTION:

Evaluate the contractor's performance in complying with contract requirements, quality achieved and overall technical expertise demonstrated.

Outstanding Quality	
Above Average Quality	
Satisfactory Quality	
Marginal Quality	
Unsatisfactory or Experienced Significant Quality Problems	

Remarks: _____

_____

_____

11. TIMELINESS OF PERFORMANCE:

To what extent did the contractor meet the contract and/or individual task order schedules if the contract was an indefinite delivery type contract?

Completed Substantially Ahead of Schedule (Outstanding)	
Completed Ahead of Schedule (Above Average)	
Completed on Schedule with Minor Delays Under Extenuating Circumstances (Satisfactory)	
Completed Behind Schedule (Marginal)	
Experienced Significant Delays without Justification (Unstaisfactory)	

Remarks: _____

_____

_____

12. CUSTOMER SATISFACTION:

To what extent were the end users satisfied with:

	Quality	**Cost**	**Schedule**
Exceptionally Satisfied (Outstanding)			
Highly Satisfied (Above Average)			
Satisfied (Satisfactory)			
Somewhat Dissatisfied (Marginal)			
Highly Dissatisfied (Unsatisfactory)			

Remarks:

_____

_____

_____

13. If given the opportunity, would you work with this contractor again?

Yes _____ No _____ Not Sure _____

Remarks:

_____

_____

_____

_____

_____

14. OTHER REMARKS:

Use the space below to provide other information related to the contractor's performance. This may include the contractor's selection and management of subcontractors, flexibility in dealing with contract challenges, their overall concern for the Government's interest (if applicable), project awards received, etc.

_____

_____

_____

_____

_____

_____

_____

_____

00120

Section 00120 – PART 1
PHASE 1 EVALUATION MANUAL

1. GENERAL

This document establishes a uniform evaluation procedure for Phase 1 of the solicitation based on contractually defined criteria. The Evaluation Team will evaluate each proposal individually using the qualitative procedures which follow. Each proposal will be reviewed and rated by each of the evaluators. During this process, discrepancies between evaluations will be discussed and resolved within the team. Following the completion of the individual evaluations, a consensus evaluation will be derived. The results of this consensus evaluation will be documented and presented to the Contracting Officer/Source Selection Authority for determination of which proposals proceed into Phase 2 of the solicitation process.

2. PROPOSAL REQUIREMENTS

2.1 Section 00110, Proposal Submission Requirements and Instructions identify all the necessary submittal information to be included in the proposals. Proposals that reach the evaluation stage have passed an initial Contracting Division review to ensure they are complete and responsive. All proposals provided to the evaluation team will be evaluated and rated.

2.2 Past Performance Questionnaires. Offerors should have at least three questionnaires from previous projects completed and forwarded directly to the Savannah District for use by the evaluation team in past performance evaluation and risk analysis. The Government may contact the points of contact indicated on these questionnaires for additional information and to ensure validity of the information received. The Government may contact sources other than those provided by the Offeror for information with respect to past performance. These other sources may include ACASS (Architect-Engineer Contract Administration Support System), CCASS (Construction Contractor Appraisal Support System), telephone interviews, and Government personnel with personal knowledge of the Offeror's performance capability. If more than three questionnaires are returned, the evaluation team will evaluate all questionnaires. If less than three questionnaires are returned, t he proposal will receive a rating commensurate with the contractor's performance risk as determined by the evaluation team.

3. INDIVIDUAL PROPOSAL RATING WORKSHEETS

3.1 Evaluators will use the worksheets on the following pages to review and rate individual proposals.

3.2 Comments are required to support all ratings.

4. RATING METHODOLOGY

4.1 Proposals will be evaluated in each Evaluation Factor based on the following rating scheme:

RATING	EXPLANATION
Outstanding/Very Low Performance Risk	Based on the Offeror's Phase One Submittal, no doubt exists that the Offeror will successfully perform the required effort.
Above Average/Low Performance Risk	Based on the Offeror's Phase One Submittal, little doubt exists that the Offeror will successfully perform the required effort.
Satisfactory/Moderate Performance Risk	Based on the Offeror's Phase One Submittal, some doubt exists that the Offeror will successfully perform the required effort. Normal contractor emphasis should preclude any problems.
Marginal/High Performance Risk	Based on the Offeror's Phase One Submittal, substantial doubt exists that the Offeror will successfully perform the required effort.
Unsatisfactory/Unacceptable Performance Risk	Based on the Offeror's Phase One Submittal, extreme doubt exists that the Offeror will successfully perform the required effort.

4.2 Yes - No Ratings. Where the specific evaluation sheets indicate a YES – NO Rating, these items will be treated as information items. They are included in the evaluation worksheets to ensure a similar focus among the evaluators and to ensure that individual evaluators do not overlook proposal information provided.

4.3 Weighting of Factors. Relative Importance Definitions: For the purpose of this evaluation, the following terms will be used to establish the relative importance of the factors and subfactors:

Significantly More Important: The criterion is at least two times greater in value than another criterion.

More Important: The criterion is greater in value than another criterion but less than two times greater.

Equal: The criterion is of the same value as another criterion.

5. EVALUATION FACTORS.

5.1 Factor Relative Weights. The following factors will be evaluated and rated for each proposal:

FACTOR 1-1: OFFEROR PAST PERFORMANCE: This factor is significantly more important than Factors 1-2, 1-3, and 1-4.

FACTOR 1-2: TECHNICAL APPROACH NARRATIVE: This factor is equal in importance to Factors 1-3 and 1-4.

FACTOR 1-3: CORPORATE RELEVANT SPECIALIZED EXPERIENCE: This factor is equal in importance to Factors 1-2 and 1-4.

FACTOR 1-4: OFFEROR SUSTAINABLE DESIGN EXPERIENCE: This factor is equal in importance to Factors 1-2 and 1-3.

5.2 FACTOR 1-1: OFFEROR PAST PERFORMANCE. The Government will evaluate the Offeror's past performance using the sources available including the example projects identified by the Offeror, Past Performance Evaluation Questionnaires, ACASS, and CCASS. Offerors may be provided an opportunity to address any negative past performance information about which the Offeror has not previously had an opportunity to respond. The Government treats an Offeror's lack of past performance as having no positive or negative evaluation significance. The experience of individuals will not be credited under this factor but will be evaluated under "key personnel." The Government will evaluate past performance based on the elements listed below:

5.2.1 Quality of Construction. Based on information provided in the questionnaire and other information, the Government will assess the quality of the actual construction undertaken and the standards of workmanship exhibited by the Offeror's team.

5.2.2 Timeliness of Performance. The Government will evaluate all information available with respect to the Offeror completing past projects within the scheduled completion times.

5.2.3 Documentation. The Government will evaluate all information available with respect to the Offeror's level of meeting customer satisfaction on timeliness and quality of the documentation, reports, and other written materials completed by the Offeror on past projects.

5.2.4 Customer Satisfaction. The Government will evaluate all information available with respect to the Offeror's past customer satisfaction, cooperation with customers, and interaction on past projects.

5.2.5 Subcontractor Management. The Government will evaluate all information available with respect to the Offeror's management of subcontractors on past projects.

5.3 FACTOR 1-2: TECHNICAL APPROACH NARRATIVE. The Government will evaluate the overall understanding of the two phase design-build process being used in this solicitation including the following:

Does the Offeror demonstrate a suitable understanding of the process to enable it to adequately address and anticipate the risks associated with Design/Build processes?

Does the Offeror adequately define the roles and responsibilities of the various sub-contractors for both design and construction?

How does the Offeror continue the design phase of the project and incorporate User comments and reviews into the process?

Is the Offeror's Design Quality Control Program adequate?

What is the design team's involvement throughout the construction period?

How does the Offeror integrate construction subcontractors into the design process?

What are the Offeror's processes for handling construction and design problems?

How adequate is Offeror's implementation plan to utilize "fast track" procedures on this project whereby preliminary site construction activities can begin prior to 100% completion of the design documents?

5.4. FACTOR 1-3: CORPORATE RELEVANT SPECIALIZED EXPERIENCE. The Government will review the example projects provided by the Offeror to evaluate and rate the recent experience of the Offeror in similar projects. The example projects that most closely resemble the project identified in this solicitation will receive the highest consideration. If the Offeror cannot provide suitable relevant experience and the evaluators consider that the information provided indicates that the Offeror has no relevant experience, evaluators will determine the risk this lack of corporate experience presents to the Government, and the proposal will be evaluated accordingly. Experience will be evaluated using the elements listed below. The experience of individuals will not be credited under this factor but will be evaluated under "key personnel" in Phase 2.

5.4.1 Similar construction projects completed: The Government will evaluate the number and size of contracts completed or substantially completed by the Offeror of similar scope and complexity in the past five (5) years.

5.4.2 Multiple phasing type construction projects completed: The Government will evaluate overall corporate experience in performing construction contracts in which phasing, maintaining facilities in operations and close coordination with the customer was involved.

5.4.3 Military construction projects completed: The Government will evaluate the number and size of large military construction projects undertaken by the Offeror in the past five (5) years.

5.5 FACTOR 1-4: OFFEROR SUSTAINABLE DESIGN EXPERIENCE. The Government will evaluate the example projects provided by the Offeror to evaluate and rate the recent experience of the Offeror in similar construction and/or design projects that contain sustainable features. The example projects most closely resembling the project requirements identified in this solicitation will receive the highest consideration. If the Offeror cannot provide suitable sustainable design experience and the evaluators consider that the information provided indicates that the Offeror has no sustainable design experience, evaluators will determine the risk this lack of sustainable design experience presents to the Government, and the proposal will be evaluated accordingly.

6. OVERALL PROPOSAL RATING

6.1 Each member of the Government evaluation team will independently consider all information provided in the Phase 1 proposal. Once these individual analyses are completed, the team will meet and determine a rating for each of the evaluation factors for Phase 1 by consensus decision.

6.2 Following completion of the consensus rating, each proposal will be assigned a single overall adjectival rating. This final overall rating, along with ratings on individual factors, will be provided to the Contracting Officer/Source Selection Authority and used to determine which Offerors will proceed to Phase 2 of the solicitation. In no case will more than five (5) proposals be included in the Phase 2 process.

6.3 No proposals receiving an overall rating of Unsatisfactory or Marginal will be forwarded to Phase 2 regardless of the total number of proposals received.

6.4 The evaluation team will document strengths, weaknesses, and omissions sufficiently to support the assigned rating for each factor as well as the overall Phase 1 rating. Comments are required for all ratings.

Offeror: _____

Evaluator:_____

Factor 1-1 Summary and Overall Rating

Item No.	Description	Rating
1.	Were three Past Performance Questionnaires received?	YES/NO
2.	Do all the Questionnaires received reflect projects completed within t he last 3 Years?	YES/NO
3.	Were ACASS/CCASS Ratings available?	YES/NO
4.	Do you have any Personal Experience with the Offeror?	YES/NO
5.	Past Performance	
OVERALL FACTOR 1-1 RATING		

Strengths:

Weaknesses:

Other:

Offeror: _____

Evaluator:_____

Factor 1-2 Summary and Overall Rating

Item No.	Description	Rating
1.	Technical Approach narrative included in Proposal	YES – NO
2.	Understanding of the Design/Build Process	
OVERALL FACTOR 1-2 RATING		

Strengths:

Weaknesses:

Other:

Offeror: _____

Evaluator:_____

Factor 1-3 Summary and Overall Rating

OFFEROR RELEVANT EXPERIENCE

Item No.	Description	Rating
1.	Does the Proposal include an example project listing with suitable explanation?	YES – NO
2.	Offeror's Relevant Experience	
OVERALL FACTOR 1-3 RATING		

Strengths:

Weaknesses:

Other:

Offeror: _____

Evaluator:_____ _____

Factor 1-4 Summary and Overall Rating

OFFEROR SUSTAINABLE DESIGN EXPERIENCE

Item No.	Description	Rating
1.	Does the Proposal include an example project listing with suitable explanation?	YES – NO
2.	Offeror's Sustainable Design Experie nce	
OVERALL FACTOR 1-4 RATING		

Strengths:

Weaknesses:

Other:

Offeror: _____

Evaluator:_____

Phase 1 Summary and Overall Rating

Item No.	Description	Rating
1.	Factor 1-1 Offeror Past Performa nce	
2.	Factor 1-2 Technical Approach Narrative	
3.	Factor 1-3 Offeror Relevant Experience	
4.	Factor 1-4 Offeror Sustainable Design Experience	
OVERALL PHASE 1 RATING		

_____
Board Member

Offeror: _____

PHASE 1 SOURCE SELECTION BOARD SUMMARY RATINGS							
FACTOR No.	**Description**	**Board Member 1**	**Board Member 2**	**Board Member 3**	**Board Member 4**	**Board Member 5**	**CONSENSUS**
1-1	**Offeror Past Performance**						
1-2	**Technical Approach Narrative**						
1-3	**Offeror Relevant Experience**						
1-4	**Offeror Sustainable Design Experience**						
OVERALL PHASE 1 RATING							

_____
Board Member 1

_____
Board Member 2

_____
Board Member 3

_____
Board Member 4

_____
Board Member 5

_____
Board Chairman

Offeror: _____

PHASE 1 CONSENSUS SUMMARY RATING

FACTOR 1-1 OFFEROR PAST PERFORMANCE

STRENGTHS:

WEAKNESSES:

OTHER COMMENTS:

Offeror: _____

PHASE 1 CONSENSUS SUMMARY RATING
(Continued)

FACTOR 1-2 OFFEROR TECHNICAL APPROACH NARRATIVE

STRENGTHS:

WEAKNESSES:

OTHER COMMENTS:

Offeror: _____

PHASE 1 CONSENSUS SUMMARY RATING
(Continued)

FACTOR 1-3 OFFEROR RELEVANT EXPERIENCE

STRENGTHS:

WEAKNESSES:

OTHER COMMENTS:

Offeror: _____

PHASE 1 CONSENSUS SUMMARY RATING
(Continued)

FACTOR 1-4 OFFEROR SUSTAINABLE DESIGN EXPERIENCE

STRENGTHS:

WEAKNESSES:

OTHER COMMENTS:

Section 00120 – PART 2
PHASE 2 EVALUATION MANUAL

1. GENERAL. This document establishes a uniform evaluation procedure for Phase 2 of the solicitation based on defined criteria. This process is an extension of the Phase 1 evaluation process. The Evaluation Team will evaluate each proposal using the qualitative procedures that follow. Each proposal will be reviewed and rated by each evaluator. During this process, discrepancies between evaluations will be discussed and resolved within the team. Following the completion of the individual evaluations, a consensus evaluation will be derived. The results of this consensus evaluation will be used to set the competitive range for the purposes of discussions and as the basis for the best value decision by the Contracting Officer/ Source Selection Authority.

2. PROPOSAL REQUIREMENTS. Section 0110, Proposal Submission Requirements and Instructions identify all the submittal information to be included in the proposals. Proposals that reach the evaluation stage have passed an initial review by Contracting Division to ensure completeness and responsiveness. All proposals provided to the evaluation team will be evaluated and rated.

3. INDIVIDUAL PROPOSAL RATING WORKSHEETS

3.1 Evaluators will use the worksheets on the following pages to review and rate the individual proposals.

3.2 Comments are required to support all ratings.

4. RATING METHODOLOGY

4.1 General. Proposals from the Offerors who reach Phase 2 will be evaluated by a team to determine compliance with this solicitation (as a minimum), and to evaluate the quality of the proposed materials, methods, and procedures. Each evaluation factor in Phase 2 will be evaluated, and a final overall rating for the proposals will be determined by consensus of the Government evaluation team. Evaluation criteria including factors and subfactors will be rated using the following adjectival descriptions. Evaluators will apply the appropriate adjective to each criterion rated. The evaluator's narrative explanation must clearly establish that the Offeror's submittal meets the definitions established below:

> **OUTSTANDING:** Information submitted in the proposal demonstrates the Offeror's potential to significantly exceed performance or capability standards identified in the solicitation. The Offeror has clearly demonstrated an understanding of all aspects of the requirements to the extent that timely and highest quality performance is anticipated and risk to the Government is very low. The Offeror has convincingly demonstrated that the RFP requirements have been analyzed, evaluated, and synthesized into approaches, plans, and techniques that, when implemented, should result in outstanding, effective, efficient, and economical performance under the contract. An assigned rating of "outstanding" indicates that, in terms of the specific factor or subfactor, the submittal contains essentially no significant weaknesses, deficiencies, or disadvantages. The proposal has exceptional strengths that will significantly benefit the Government. The proposal exceeds an "Above Average" rating. **The proposal significantly exceeds most or all solicitation requirements. The proposal presents very low risk to the Government.**

> **ABOVE AVERAGE -** Information submitted in the proposal demonstrates the Offeror's potential to exceed performance or capability standards. The proposal has one or more strengths that will benefit the Government. The areas in which the Offeror exceeds the requirements are anticipated to result in a high

level of efficiency or productivity or quality. An assigned rating of "Above Average" indicates that, in terms of the specific factor or subfactor, any deficiencies noted are minor and should not seriously affect the Offeror's performance. The submittal demonstrates that the requirements of the RFP are understood and the approach will likely result in a high quality of performance representing low risk to the Government. A rating of "Above Average" is used when there are no indications of exceptional features or innovations that could prove to be beneficial, or conversely, weaknesses that could diminish the quality of the effort or increase the risk of failure. Disadvantages are minimal. The submittal contains excellent features that will likely produce results very beneficial to the Government. "Above Average" exceeds a "Satisfactory" rating. **The proposal fully meets all RFP requirements and significantly exceeds many of the RFP requirements. The proposal presents low risk to the Government.**

SATISFACTORY - Information submitted in the proposal demonstrates the Offeror's potential to meet performance or capability standards. The proposal presents an acceptable solution to the Government's requirements. The proposal meets minimum RFP requirements and presents few or no advantages or strengths. The Offeror's proposal contains weaknesses in several areas that are not offset by strengths in other areas. The Proposal is complete and comprehensive exemplifying an understanding of the scope and depth of the task requirements. A rating of "Satisfactory" indicates that, in terms of the specific factor or subfactor, there is sufficient confidence that a fully compliant level of performance will be achieved with moderate risk to the Government. "Satisfactory" exceeds a "Marginal" rating. **The proposal contains no significant advantages or disadvantages. The proposal presents moderate risk to the Government.**

MARGINAL - Information submitted in the proposal demonstrates the Offeror's potential to marginally meet performance or capability standards necessary for minimal, but still acceptable contract performance. The proposal is not adequately responsive or does not address one or more specific factors or subfactors. The Offeror's interpretation of the Government's requirements is superficial, incomplete, vague, incompatible, incomprehensible, or incorrect thereby making it unacceptable. The assignment of a rating of "Marginal" indicates that mandatory corrective action would be required to prevent significant deficiencies from affecting the overall project. The Offeror's qualifications demonstrate an acceptable understanding of the requirements of the RFP, and the approach will likely result in an adequate quality of performance carrying that represents a high level of risk to the Government. Thile the proposal has a reasonable chance of becoming at least acceptable with mandatory correction, it carries a low probability of success. "Marginal" exceeds an "Unsatisfactory" rating. **The proposal contains significant disadvantages. The proposal presents high risk to the Government.**

UNSATISFACTORY - The proposal fails to demonstrate that the Offeror meets performance or capability standards required in the RFP. The proposal is unacceptable. The proposal does not meet the minimum requirements of the RFP, and solicitation requirements can only be met with major changes to the proposal. There is no reasonable expectation that acceptable performance would be achieved. The Offeror's proposal has many deficiencies and/or gross omissions; fails to provide a reasonable, logical approach to fulfilling much of the Government's requirements; or, fails to meet many of the minimum requirements. The Offeror's proposal would have to be completely revised in order to make it acceptable. **The proposal contains very significant disadvantages. There is extreme doubt that the Offeror will perform the required effort. The proposal presents unacceptably high risk to the Government.**

4.7 YES – NO Ratings. Where the evaluation worksheets indicate a YES – NO Rating, these items will be treated as information items. They are included in the evaluation worksheets to ensure a similar focus among the evaluators, and to ensure that individual evaluators do not overlook proposal information provided.

4.8 Weighting of Factors. For the purpose of this evaluation, the following terms will be used to establish the relative importance of the factors and subfactors:

Significantly More Important: The criterion is at least two times greater in value than another criterion.

More Important: The criterion is greater in value than another criterion but less than two times greater.

Equal: The criterion is of the same value as another criterion.

5. EVALUATION FACTORS

5.1 Factor Relative Weights. The following factors will be evaluated and rated for each proposal:

5.1.1 PRICE is equal in importance to all TECHNICAL FACTORS combined.

5.1.2 Weight among technical factors:

Phase 1 FACTORS 1-1, 1-2, 1-3, and 1-4 together are equal in importance to Factor 2-1.

FACTOR 2-1: BUILDING FUNCTION AND AESTHETICS: This factor is more important than Factor 2-2 and significantly more important than Factors 2-3, 2-4 and 2-5.

FACTOR 2-2: SUSTAINABLE DESIGN CONSIDERATIONS: This factor is more important than Factors 2-3, 2-4 and 2-5.

FACTOR 2-3: BUILDING SYSTEMS: This factor is equal in importance to Factor 2-4 and more important than Factor 2-5.

FACTOR 2-4: SITE DESIGN: This factor is equal in importance to Factor 2-3 and more important than Factor 2-5.

FACTOR 2-5: OFFEROR MANAGEMENT PLANS AND SCHEDULES: This factor is less important than Factors 2-3 and 2-4.

6. OVERALL PROPOSAL RATING

6.1 The evaluation worksheets focus on key issues and concerns with respect to construction, operation, and function of the facilities. These worksheets are meant to stimulate thought and analysis and provide a framework in which to document concerns, strengths, weaknesses, and omissions. Evaluators should document observations and analyses when analyzing proposals, and share that analysis with the team during the consensus discussions.

6.2 The evaluation team will provide and document strengths, weaknesses, and omissions to support the assigned rating in each Factor as well as the overall Phase 2 rating. Comments are required for all ra tings.

6.3 The Chairman will provide a copy of the Phase 1 ratings for each Offeror. The evaluation team will then weigh the ratings from Phase 1 and Phase 2, taking into account the identified strengths and weaknesses, and provide an overall proposal rating for each Offeror. During the consensus evaluation, a single "consensus rating"

worksheet will be completed for each proposal and signed by all the evaluators. All comments and supporting rational for the ratings will be included on this consensus sheet. This final combined rating will be used for comparison and in the trade-off process as applicable.

6.4 Following the completion of the consensus discussions and rating assignments, the individual rating worksheets from each evaluator will be collected by the Chairman and provided to the Contracting Officer. Each evaluator will sign the final consensus rating sheet.

7. BASIS OF AWARD

7.1 In order to determine which proposal represents the best overall value, the Government will compare proposals to one another. The Government will award a firm fixed-price contract to the responsible Offeror whose submittal and price proposal contain the combination of those criteria described in this document offering the best overall value to the Government. Best value will be determined by a comparative assessment of proposals against all source selection criteria in this RFP.

7.2 The Government is concerned with striking the most advantageous balance between technical features and cost to the Government.

7.3 As technical ratings and relative advantages and disadvantages become less distinct, differences in price between proposals increase in importance. Conversely, as differences in price become less distinct, differences in scoring and relative advantages and disadvantages between proposals are of increased importance to the determination.

7.4 The Government reserves the right to accept other than the lowest priced offer. The Government also reserves the right to reject any and all offers. The basis of award will be a conforming offer, the price or cost of which may or may not be the lowest. If it is other than the lowest offer, it must be sufficiently more advantageous than the lowest offer to justify the payment of additional amounts.

7.5 Offerors should include their best technical and price terms in their initial offer and not assume they will have an opportunity to participate in discussions or be asked to submit a revised offer. The Government may make award of a conforming proposal without discussions if it is determined to be in the best interests of the Government.

EVALUATION CRITERIA

FACTOR 2-1: BUILDING FUNCTION AND ASTHETICS

This factor considers the overall functional layout and interaction of the spaces in the facilities as well as the "appeal" of the facility considering interior as well as exterior considerations. The subfactors to be considered deal with the planning and design of the spaces with respect to soldier living and working conditions, and the operations of a Barracks Complex. Closely associated with the functional layout of the spaces and facilities, this factor considers the aesthetics of the interior areas as well as the exterior finishes and design of the facilities, up to and including pedestrian ways and the overall environment created by the design proposed. The subfactors described below will be evaluated in the following order of importance:

Subfactor a is considered the most important subfactor.

Subfactor b is slightly less important than subfactor a.

Subfactors c and d are "GO/NO GO" factors and will be rated as pass/fail without an adjectival component.

SUBFACTOR 2-1 a. FUNCTIONAL ARRANGEMENT The following items will be considered in the evaluation of the functional arrangement of the various facilities:

(1A) 372-Soldier Barracks (Dixie Road Site)

(a) Does the building floor plan provide space arrangement well suited to the mission of the facility?

(b) Does the building floor plan provide acceptable life safety and fire safety measures? Is the Life Safety Analysis for the facility acceptable and in conformance with the Statement of Work requirements?

(c) Does the Offeror's floor plan conform to the Statement of Work with respect to the functional and spatial relationship requirements?

(d) Does the Offeror's floor plan demonstrate compliance with the mandatory requirements for furnishings while allowing suitable space for circulation and other requirements?

(e) Does the Offeror's floor plan allow for suitable workflow and access necessary to successfully operate this facility in accordance with its mission?

(1B) 120-Soldier Barracks (Hospital Site)

(a) Does the building floor plan provide space arrangement well suited to the mission of the facility?

(b) Does the building floor plan provide acceptable life safety and fire safety measures? Is the Life Safety Analysis for the facility acceptable and in conformance with the Statement of Work requirements?

(c) Does Offeror's floor plan conform to the Statement of Work with respect to the functional and spatial relationship requirements?

(d) Does the Offeror's floor plan demonstrate compliance with the mandatory requirements for furnishings while allowing suitable space for circulation and other requirements?

(e) Does the Offeror's floor plan allow for suitable workflow and access necessary to successfully operate this facility in accordance with its mission?

(1C) Battalion Headquarters

(a) Does the building floor plan provide space arrangement well suited to the mission of the facility?

(b) Does the building floor plan provide acceptable life safety and fire safety measures? Is the Life Safety Analysis for the facility acceptable and in conformance with the Statement of Work requirements?

(c) Does the Offeror's floor plan conform to the requirements established in the Statement of Work with respect to functional and spatial relationships?

(d) Does the Offeror's floor plan demonstrate compliance with the mandatory requirements for furnishings while allowing suitable space for circulation and other requirements?

(e) Does the Offeror's floor plan allow for suitable workflow and access necessary to successfully operate this facility in accordance with its mission?

(1D) Company Operations Facilities

(a) Does the building floor plan provide space arrangements well suited to the mission of the facilities?

(b) Does the building floor plan provide acceptable life safety and fire safety measures? Are the Life Safety Analysis for the facilities acceptable and in conformance with the Statement of Work requirements?

(c) Does the floor plan conform with requirements established in the Statement of Work with respect to functional and spatial relationships?

(d) Does the Offeror's floor plan comply with the mandatory requirements for furnishings while allowing suitable space for circulation and other requirements?

(e) Does the Offeror's floor plan allow for suitable workflow and access necessary to successfully operate this facility in accordance with its mission?

SUBFACTOR 2-1 b. Building Aesthetics. The following items will be considered (Materials will be evaluated in Factor 2-2):

(1) Exterior Considerations:

(a) Facades, roof lines, and delineation of entrances.
(b) Proportions of fenestration in relation to elevations.
(c) Shadow effects, materials, and textures.
(d) Proportion and scale within the structure.
(e) Compliance with Installation Design Guide Recommendations.
(f) Conformance to adjacent structures architectural styles.
(g) Exterior color schemes proposed.
(h) Other aesthetic considerations.

(2) Interior Considerations:

(a) Are the proposed colors and details conducive to the mission of the facility?

(b) Do the proposed materials and finishes represent a positive working environment?

(c) Do the ceiling heights, hallway widths, and other space sizes and configurations provided develop a workable solution to the facility mission?

(d) Does the interior design package provide for an interesting, attractive environment?

(e) Is the interior system and finishes proposed suitable for use in a facility where the primary occupants are soldiers? Are these systems suitable for a heavy usage environment?

SUBFACTOR 2-1 c. APPROPRIATE FACILITIES

From an overall perspective, does the proposal include all the required facilities as described in the Statement of Work?

SUBFACTOR 2-1 d. MINIMUM SPACE AND FACILITY SIZE

Does the proposal include all the mandatory spaces in response to the requirements set forth in the Statement of Work? For each of the spaces with a minimum or maximum size limitation, does the proposal comply with these requirements? Insufficient information contained in the proposal to evaluate this item will be considered a "NO GO" and will represent a "FAIL" rating.

EVALUATION CRITERIA
FACTOR 2-2: SUSTAINABLE DESIGN CONSIDERATIONS

Offerors should include a preliminary ranking of the sustainable design considerations included in the proposal. The successful proposal will be required to complete a detailed analysis on the final design that meets or exceeds the preliminary ranking established at proposal level. The evaluation of this factor will be as follows:

FACTOR RATING	SPIRIT POINTS PROPOSED
Unsatisfactory	Less than 35 points
Marginal	35 to 49 points
Satisfactory	50 to 60 points
Above Average	61 to 74 points
Outstanding	75 to 100 points

EVALUATION CRITERIA
FACTOR 2-3: BUILDING SYSTEMS

This factor considers the materials, layout, maintainability, quality, durability, maintenance considerations, and any aspects of the proposed building systems and materials. Additional consideration will be given to all proposed systems or materials which exceed the minimum requirements of the RFP. Offerors are encouraged to present energy, maintenance, and life cycle cost improvements which will lead to the overall improvement in the final facilities constructed. The following subfactors will be considered in evaluating this factor. The levels of importance are as follows:

Subfactor a is more important than Subfactors b and c.

Subfactor b and c are equal.

SUBFACTOR 2-3 a. Building Heating, Ventilating, Air Conditioning, Plumbing Systems and Fire Protection Systems. This subfactor evaluates the heating, air conditioning, and ventilating systems proposed. The evaluation will concentrate on the proposed schematic drawing information presented, the design approach narratives, and the equipment and material catalog information included in the proposals. The systems proposed must meet the minimum requirements set out in the Statement of Work, and will represent systems which are fully integrated into the building structure and are fully capable of environmental control of the spaces. Within this subfactor, automatic temperature controls will also be considered. Where addressed in the Statement of Work, the proposed automatic temperature control systems proposed will be 100% compatible and integrated into the existing installation-wide UMCS without translators or third party interface devices. Additional considerations will be given to proposals that incorporate energy recovery systems, high efficiency systems, energy conservation considerations, thermal storage systems, and other systems and features designed to enhance the overall performance of the facility while reducing the operating and maintenance costs expected. The proposed fire detection and suppression systems will also be evaluated. Ensure the design will be accomplished by a fire protection professional.

SUBFACTOR 2-3 b. Building Structural Systems. Evaluate the structural systems and sub-systems proposed for installation in the facilities. While no detail drawings or calculations are required or desired, this subfactor will evaluate the narrative descriptions of the structural systems proposed. Consideration will be given to overall life cycle maintenance of the systems and also to consideration of materials selected with respect to the expected use by soldiers. Additional consideration will be given to proposed systems with a long expected life (greater than 25 years) vice a system requiring greater cyclical replacement.

SUBFACTOR 2-3 c. Electrical Power, Lighting, Grounding, and Communications Systems. Evaluate the electrical power and lighting systems proposed for installation. Evaluation will concentrate on the proposed schematic drawing information presented, the design approach narratives, and the equipment and material catalog information included in the proposals. The systems proposed must meet the minimum requirements set forth in the Statement of Work and will represent systems that are fully integrated into the building structure. Additional consideration will be given to proposals which incorporate energy saving materials or materials which represent a lower life cycle cost to the Base.

EVALUATION CRITERIA
FACTOR 2-4: SITE DESIGN CONSIDERATIONS

This factor considers the layout and planning of the site and various specialties that comprise a good site development plan. The goal and direction of the Barracks Complex is to produce a "campus like" setting and to encourage a positive relationship between the site development and soldier needs. All elements of site design will be considered in this factor, with the exception of the design and materials utilized for utility systems that will be evaluated under a different factor. The following subfactors will be considered in evaluating this factor. The levels of importance are as follows:

Subfactor a is more important than Subfactors b and c.

Subfactor b and c are equal.

SUBFACTOR 2-4 a. Area Development Plan. This subfactor evaluates the overall development concept proposed in the Offeror's plan with respe ct to the placement and orientation of the facilities, parking areas, pedestrian ways, circulation paths, site lighting, and other aspects which comprise the overall site development. Proposals that reflect the design intent and direction as outlined in the Statement of Work will receive the most consideration during the evaluation process.

SUBFACTOR 2-4 b. Force Protection Considerations. This subfactor evaluates the inclusion of the site restraints imposed by the Force Protection requirements in the Statement of Work into the Offeror's proposal. The proposal must address this subfactor specifically. If a proposal is rated "unsatisfactory" in this subfactor the proposal may be eliminated from further consideration.

SUBFACTOR 2-4 c. Site Utilities. This factor evaluates the technical performance of the proposed site utility and exterior utility distribution systems. The quality of the proposed design as well as the materials selected will be considered in this item. Emphasis will be placed on durability, corrosion resistance, ease of maintenance, and life cycle cost of materials selected. Consideration will be given to the suitability of the chosen materials for the site soil conditions present. Site engineering will consider all aspects of the proposal beyond the 5-ft line from all new facilities.

EVALUATION CRITERIA
FACTOR 2-5: OFFEROR MANAGEMENT PLANS AND SCHEDULES

This factor evaluates the Offeror's Project Management Plan as well as the proposed schedule for completion of the entire design-build project. Through this factor the Government will evaluate the Offeror's understanding of the solicitation provisions with respect to an integrated design-build process and the associated quality control, scheduling, coordination, and contract close out provisions. Subfactors a and b are equal in importance and each is more important than Subfactor c.

SUBFACTOR 2-5 a. Offeror Project Key personnel. The Government will evaluate and rate the Key Personnel identified. The resumes and levels of responsibility of the principal managers and technical personnel who will be directly responsible for the day-to-day design and construction activities will be evaluated. Data should indicate whether each individual has had a significant part in any of the project examples cited. If reassignment of personnel is considered possible, the names and resumes of the alternative professionals for each assignment will be evaluated. Additional consideration will be given to individuals who have past experience with Corps of Engineers construction project operations and who have completed the Corps sponsored Quality Control Class.

SUBFACTOR 2-5 b. Schedule Information. The schedule will be evaluated to assess the inclusion of "fast tracking" and how the Offeror intends to comply with the submitted schedule. The schedule must reflect a single task-oriented structure for both design and construction. The schedule will be reviewed for completeness and the inclusion of required milestones. A schedule that improves on the Government supplied maximum duration will be considered more favorably during the evaluation.

SUBFACTOR 2-5 c. Small and Small Disadvantaged Business Utilization.
The Government will evaluate narratives provided for the following elements. Greater detail and specificity will be given greater credit than general statements and commitments:

The extent to which the goals for subcontracting with small and small disadvantaged businesses are realistic, justifiable, positive, and in accordance with the Government's policy to maximize opportunities for these types of businesses.

The extent to which small disadvantaged businesses, and where appropriate, historically black colleges and universities/minority institutions (HBCU/MI) have been identified for participation as part of the Offeror's team.

The Offeror's past commitment to providing subcontracting opportunities and encouragement to small and small disadvantaged businesses.

Offeror: _____

Evaluator:_____

PROPOSAL RATING WORKSHEET

FACTOR 2-1

BUILDING FUNCTION AND AESTHETICS

General: In some areas the evaluators will be required to use subjective judgment based on experience and expertise to arrive a t a rating adjective. In this most basic area the subfactors are concerned with the "appeal" of the facility as well as its functionality in space arrangement and work/living space circulation patterns. This subfactor will also consider the aesthetics o f the interior and exterior of the proposed facilities. The last two subfactors are GO/NO GO items. If either of these items is a "NO GO" rating, the entire factor (2 -1) will be rated as "UNACCEPTABLE".

SUBFACTOR 2-1 a. FUNCTIONAL ARRANGEMENT.

/__ / Outstanding

/__ / Above Average

/__ / Satisfactory

/__ / Marginal

/__ / Unsatisfactory

Strengths:

Weaknesses:

Other Comments:

Offeror: _____

Evaluator:_____ ____

PROPOSAL RATING WORKSHEET

BUILDING FUNCTION AND AESTHETICS
FACTOR 2-1

SUBFACTOR 2-1 b. Building Aesthetics.

/__ / Outstanding

/__ / Above Average

/__ / Satisfactory

/__ / Marginal

/__ / Unsatisfactory

Strengths:

Weaknesses:

Other Comments:

Offeror: _____

Evaluator:_____

PROPOSAL RATING WORKSHEET

BUILDING FUNCTION AND AESTHETICS
FACTOR 2-1

SUBFACTOR 2-1 c. Appropriate Facilities. Has the offeror provided the facilities as required by the Statement of Work? This subfactor is to be evaluated on the "gross scale" of buildings and types of building provided. The actual evaluation of the technical quality of those facilities will be do ne in other factors and subfactors.

/__ / GO /__ / NO GO

Other Comments:

SUBFACTOR 2-1 d. Minimum Space and Facility Size. Does the proposal include all the spaces required by the statement of work and do those spaces comply with the minim um size or dimension requirements of the statement of work? Insufficient or incomplete information in the proposal will be scored as a "NO GO".

/__ / GO /__ / NO GO

Other Comments:

Offeror: _____

Evaluator: _____

PROPOSAL RATING WORKSHEET

FACTOR 2-2

SUSTAINABLE DESIGN CONSIDERATIONS

SUSTAINABILITY RATINGS		
Offeror Prepared Sustainability Level	***Associated Factor Rating***	***Comments***
SPIRIT POINTS		
75 to 100	Outstanding	
61 to 74	Above Average	
50 to 60	Satisfactory	
35 to 49	Marginal	
< 35	Unsatisfactory	

Factor Rating: _____

Strengths:

Weaknesses:

Other Comments:

Offeror: _____ _____

Evaluator:_____

PROPOSAL RATING WORKSHEET

FACTOR 2-3 BUILDING SYSTEMS

SUBFACTOR 2-3 a. BUILDING HVAC, PLUMBING, AND FIRE PROTECTION.

/__ / Outstanding

/__ / Above Average

/__ / Satisfactory

/__ / Marginal

/__ / Unsatisfactory

Strengths:

Weaknesses:

Other Comments:

Offeror: _____

Evaluator:_____

PROPOSAL RATING WORKSHEET

FACTOR 2-3 BUILDING SYSTEMS

SUBFACTOR 2-3 b. BUILDING STRUCTURAL SYSTEMS.

/__ / Outstanding

/__ / Above Average

/__ / Satisfactory

/__ / Marginal

/__ / Unsatisfactory

Strengths:

Weaknesses:

Other Comments:

Offeror: _____ _____

Evaluator:_____

PROPOSAL RATING WORKSHEET

FACTOR 2-3 BUILDING SYSTEMS

SUBFACTOR 2-3 c. BUILDING ELECTRICAL POWER, LIGHTING, GROUNDING, AND COMMUNICATIONS SYSTEMS.

/__ / Outstanding

/__ / Above Average

/__ / Satisfactory

/__ / Marginal

/__ / Unsatisfactory

Strengths:

Weaknesses:

Other Comments:

Offeror: _____

Evaluator:_____

PROPOSAL RATING WORKSHEET

FACTOR 2-4 SITE DESIGN CONSIDERATIONS

SUBFACTOR 2-4 a. AREA DEVELOPMENT PLAN.

/__ / Outstanding

/__ / Above Average

/__ / Satisfactory

/__ / Marginal

/__ / Unsatisfactory

Strengths:

Weaknesses:

Other Comments:

Offeror: _____

Evaluator:_____

PROPOSAL RATING WORKSHEET

FACTOR 2-4 SITE DESIGN CONSIDERATIONS

SUBFACTOR 2-4 b. FORCE PROTECTION CONSIDERATIONS.

/__ / Outstandin g

/__ / Above Average

/__ / Satisfactory

/__ / Marginal

/__ / Unsatisfactory

Strengths:

Weaknesses:

Other Comments:

Offeror: _____

Evaluator:_____

PROPOSAL RATING WORKSHEET

FACTOR 2-4 SITE DESIGN CONSIDERATIONS

SUBFACTOR 2-4 c. SITE UTILITIES.

/__ / Outstanding

/__ / Above Average

/__ / Satisfactory

/__ / Marginal

/__ / Unsatisfactory

Strengths:

Weaknesses:

Other Comments:

Offeror: _____

Evaluator:_____

PROPOSAL RATING WORKSHEET

FACTOR 2-5

OFFEROR MANAGEMENT PLANS AND SCHEDULES

SUBFACTOR 2-5 a. KEY PERSONNEL.

/__/ Outstanding

/__/ Above Average

/__ / Satisfactory

/__ / Marginal

/__ / Unsatisfactory

Strengths:

Weaknesses:

Other Comments:

Offeror: _____

Evaluator:_____

PROPOSAL RATING WORKSHEET
FACTOR 2-5 OFFEROR MANAGEMENT PLANS AND SCHEDULES

SUBFACTOR 2-5 b. SCHEDULE INFORMATION.

/__ / Outstanding

/__ / Above Average

/__ / Satisfactory

/__ / Marginal

/__ / Unsatisfactory

Strengths:

Weaknesses:

Other Comments:

Offeror: _____

Evaluator:_____ __

PROPOSAL RATING WORKSHEET
FACTOR 2-5 OFFEROR MANAGEMENT PLANS AND SCHEDULES

SUBFACTOR 2-5 c. SMALL AND SMALL DISADVANTAGED BUSINESS UTILIZATION.

/__ / Outstanding

/__ / Above Average

/__ / Satisfactory

/__ / Marginal

/__ / Unsatisfactory

Strengths:

Weaknesses:

Other Comments:

Offeror:_____ Evaluator:_____

INDIVIDUAL RATING SUMMARY		
Item No.	**Description**	**Rating**
1.	**Factor 2-1 Building Function and Aesthetics**	
	Subfactor 2-1 a -- Functional Arrangement	
	Subfactor 2-1 b -- Building Aesthetics	
	Subfactor 2-1 c -- Appropriate Facilities	
	Subfactor 2-1 d -- Minimum Space and Facility Size	
2.	**Phase 1 Rating**	
3.	**Factor 2-2 Sustainable Design Considerations**	
4.	**Factor 2-3 Building Systems**	
	Subfactor 2-3 a -- HVAC, Plumbing, Fire Protection	
	Subfactor 2-3 b -- Structural	
	Subfactor 2-3 c -- Electrical Power, Lighting, Grounding, Communications	
5.	**Factor 2-4 Site Design**	
	Subfactor 2-4 a -- Area Development Plan	
	Subfactor 2-4 b -- Force Protection Considerations	
	Subfactor 2-4 c -- Site Utilities	
6.	**Factor 2-5 Offeror Management Plans and Schedules**	
	Subfactor 2-5 a -- Key Personnel	
	Subfactor 2-5 b -- Schedule Information	
	Subfactor 2-5 c -- Small and SDB Utilization	
OVERALL PHASE 2 RATING		

CONSENSUS SUMMARY RATINGS						
FACTOR DESCRIPTION	**Board Member 1**	**Board Member 2**	**Board Member 3**	**Board Member 4**	**Board Member 5**	**CONSENSUS**
Factor 2-1 -- Building Function and Aesthetic s						
Subfactor 2-1 a -- Functional Arrangement						
Subfactor 2-1 b -- Building Aesthetics						
Subfactor 2-1 c -- Appropriate Facilities						
Subfactor 2-1 d -- Minimum Space & Facility Size						
Phase 1 Rating						
Factor 2-2 -- Sustainable Design						
Factor 2-3 -- Building Systems						
Subfactor 2-3 a -- HVAC, Plumbing, Fire Protection						
Subfactor 2-3 b -- Structural						
Subfactor 2-3 c -- Electrical Power, Lighting, Grounding, Communications						
Factor 2-4 -- Site Design						
Subfactor 2-4 a -- Area Development Plan						
Subfactor 2-4 b -- Force Protection						
Subfactor 2-4 c -- Site Utilities						
Factor 2-5 -- Offeror Management Plans and Schedules						
Subfactor 2-5 a -- Key Personnel						
Subfactor 2-5 b -- Schedule Information						
Subfactor 2-5 c -- Small and SDB Utilization						
OVERALL PHASE 2 RATING						

Section 00600 - Representations & Certifications

CLAUSES INCORPORATED BY FULL TEXT

52.222-38 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (DEC 2001)

By submission of its offer, the offeror represents that, if it is subject to the reporting requirements of 38 U.S.C. 4212(d) (i.e., if it has any contract containing Federal Acquisition Regulation clause 52.222-37, Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans), it has submitted the most recent VETS-100 Report required by that clause.

(End of provision)

52.203-2 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985)

(a) The offeror certifies that --

53 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 –

(a) Those prices,

(ii) The intention to submit an offer, or

(iii) The methods of 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 sealed bid 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 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) of this provision; 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) of this provison _____ (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) of this provision.

(c) If the offeror deletes or modifies subparagraph (a)(2) of this provision, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

(End of provision)

52.203-11 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991)

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this Certification.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989,--

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and

(3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of $100,000 shall certify and disclose accordingly.

54 Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision, shall be subject to a civil penalty of not less than $10,000, and not more than $100,000, for each such failure.

(End of provision)

52.204-5 WOMEN-OWNED BUSINESS (OTHER THAN SMALL BUSINESS) (MAY 1999)

(a) Definition. Women-owned business concern, as used in this provision, means a concern that is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of its stock is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

(b) Representation. [Complete only if the offeror is a women-owned business concern and has not represented itself as a small business concern in paragraph (b)(1) of FAR 52.219-1, Small Business Program Representations, of this solicitation.] The offeror represents that it ( ) is a women-owned business concern.

(End of provision)

52.204-4003 TAXPAYER IDENTIFICATION

Taxpayer Identification Number (TIN),” as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(a) Taxpayer Identification Number (TIN).

___ TIN:._____

___ TIN has been applied for.

___ TIN is not required because:

___ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

___ Offeror is an agency or instrumentality of a foreign government;

___ Offeror is an agency or instrumentality of the Federal Government.

(b) Type of organization.

___ Sole proprietorship;

___ Partnership;

___ Corporate entity (not tax-exempt);

___ Corporate entity (tax-exempt);

___ Government entity (Federal, State, or local);

___ Foreign government;

___ International organization per 26 CFR 1.6049 -4;

___ Other _____

(c) Common parent.

___ Offeror is not owned or controlled by a common parent

___ Name and TIN of common parent:

Name _____

TIN _____

(End of provision)

52.209-5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (DEC 2001)

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that--

(i) The Offeror and/or any of its Principals--

(A) Are ( ) are not ( ) presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have ( ) have not ( ), within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are ( ) are not ( ) presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(B) of this provision.

(ii) The Offeror has ( ) has not ( ), within a three -year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER SECTION 1001, TITLE 18, UNITED STATES CODE.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification,

in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

(End of provision)

52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (APR 2002)- ALTERNATE I (APR 2002)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 236220.

(2) The small business size standard is $28,500,000.00.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations. (1) The offeror represents as part of its offer that it ( ) is, ( ) is not a small business concern.

(2) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, for general statistical purposes, that it ( ) is, ( ) is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a women-owned small business concern.

(4) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a veteran-owned small business concern.

(5) (Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a service-disabled veteran-owned small business concern.

(6) [Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.] The offeror represents, as part of its offer, that--

(i) It ( ) is, ( ) is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It ( ) is, ( ) is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. (The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture:_____.) Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(7) (Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision.) The offeror shall check the category in which its ownership falls:

____ Black American.

____ Hispanic American.

____ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

____ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

____ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

____ Individual/concern, other than one of the preceding.

(c) Definitions. As used in this provision--

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern," 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 in 13 CFR Part 121 and the size standard in paragraph (a) of this provision.

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern," means a small business concern --

(1) That is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; or

(2) Whose management and daily business operations are controlled by one or more women.

(d) Notice.

(1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall--

(i) Be punished by imposition of fine, imprisonment, or both;

(ii) Be subject to administrative remedies, including suspension and debarment; and

(iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

52.219-19 SMALL BUSINESS CONCERN REPRESENTATION FOR THE SMALL BUSINESS COMPETITIVENESS DEMONSTRATION PROGRAM (OCT 2000)

(a) Definition.

"Emerging small business" as used in this solicitation, means a small business concern whose size is no greater than 50 percent of the numerical size standard applicable to the North American Industry Classification System (NAICS) code assigned to a contracting opportunity.

(b) [Complete only if the Offeror has represented itself under the provision at 52.219-1 as a small business concern under the size standards of this solicitation.] The Offeror [ ] is, [ ] is not an emerging small business.

(c) (Complete only if the Offeror is a small business or an emerging small business, indicating its size range.)

Offeror's number of employees for the past 12 months (check this column if size standard stated in solicitation is expressed in terms of number of employees) or Offeror's average annual gross revenue for the last 3 fiscal years (check this column if size standard stated in solicitation is expressed in terms of annual receipts). (Check one of the following.)

No. of Employees	Avg. Annual Gross Revenues
____ 50 or fewer	____ $1 million or less
____ 51 - 100	____ $1,000,001 - $2 million
____ 101 - 250	____ $2,000,001 - $3.5 million
____ 251 - 500	____ $3,500,001 - $5 million
____ 501 - 750	____ $5,000,001 - $10 million

____ 751 - 1,000 ____ $10,000,001 - $17 million

____ Over 1,000 ____ Over $17 million

(End of provision)

52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999)

The offeror represents that --

(a) ( ) It has, ( ) has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation;

(b) ( ) It has, ( ) has not, filed all required complian ce reports; and

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

(End of provision)

52.223-4 RECOVERED MATERIAL CERTIFICATION (OCT 1997)

As required by the Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6962(c)(3)(A)(i)), the offeror certifies, by signing this offer, that the percentage of recovered materials to be used in the performance of the contract will be at least the amount required by the applicable contract specifications.

(End of provision)

52.223-13 CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

(a) Submission of this certification is a prerequisite for making or entering into this contract imposed by Executive Order 12969, August 8, 1995.

(b) By signing this offer, the offeror certifies that--

(1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: (Check each block that is applicable.)

( ) (i) The facility does not manufacture, process or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

( ) (ii) The facility does not have 10 or more full-time employees as specified in section 313.(b)(1)(A) of EPCRA 42 U.S.C. 11023(b)(1)(A);

( ) (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

( ) (iv) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

( ) (v) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

(End of clause)

252.209-7001 DISCLOSURE OF OWNERSHIP OR CONTROL BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) "Definitions."

As used in this provision --

(a) "Government of a terrorist country" includes the state and the government of a terrorist country, as well as any political subdivision, agency, or instrumentality thereof.

(2) "Terrorist country" means a country determined by the Secretary of State, under section 6(j)(1)(A) of the Export Administration Act of 1979 (50 U.S.C. App. 2405(j)(i)(A)), to be a country the government of which has repeatedly provided support for such acts of international terrorism. As of the date of this provision, terrorist countries include: Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria.

(3) "Significant interest" means --

(i) Ownership of or beneficial interest in 5 percent or more of the firm's or subsidiary's securities. Beneficial interest includes holding 5 percent or more of any class of the firm's securities in "nominee shares," "street names," or some other method of holding securities that does not disclose the beneficial owner;

(ii) Holding a management position in the firm, such as a director or officer;

(iii) Ability to control or influence the election, appointment, or tenure of directors or officers in the firm;

(iv) Ownership of 10 percent or more of the assets of a firm such as equipment, buildings, real estate, or other tangible assets of the firm; or

(v) Holding 50 percent or more of the indebtness of a firm.

(b) "Prohibition on award."

In accordance with 10 U.S.C. 2327, no contract may be awarded to a firm or a subsidiary of a firm if the government of a terrorist country has a significant interest in the firm or subsidiary or, in the case of a subsidiary, the firm that owns the subsidiary, unless a waiver is granted by the Secretary of Defense.

(c) "Disclosure."

If the government of a terrorist country has a significant interest in the Offeror or a subsidiary of the Offeror, the Offeror shall disclosure such interest in an attachment to its offer. If the Offeror is a subsidiary, it shall also disclose any significant interest the government of a terrorist country has in any firm that owns or controls the subsidiary. The disclosure shall include --

(1) Identification of each government holding a significant interest; and

(2) A description of the significant interest held by each government.

(End of provision)

252.247-7022 REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (AUG 1992)

(a) The Offeror shall indicate by checking the appropriate blank in paragraph (b) of this provision whether transportation of supplies by sea is anticipated under the resultant contract. The term supplies is defined in the Transportation of Supplies by Sea clause of this solicitation.

(b) Representation. The Offeror represents that it:

____ (1) Does anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

____ (2) Does not anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

(c) Any contract resulting from this solicitation will include the Transportation of Supplies by Sea clause. If the Offeror represents that it will not use ocean transportation, the resulting contract will also include the Defense FAR Supplement clause at 252.247-7024, Notification of Transportation of Supplies by Sea.

(End of provision)

Section 00700 - Contract Clauses

CLAUSES INCORPORATED BY FULL TEXT

52.202-1 DEFINITIONS (DEC 2001) --ALTERNATE I (MAY 2001)

(a) Agency head or head of the agency means the Secretary (Attorney General, Administrator, Governor, Chairperson, or other chief official, as appropriate) of the agency, unless otherwise indicated, including any deputy or assistant chief official of the executive agency.

(b) "Commercial component" means any component that is a commercial item.

(c) Any item, other than real property, that is of a type customarily used by the general public or by non-governmental entities for purposes other than governmental purposes, and that --

(i) Has been sold, leased, or licensed to the general public; or

(ii) Has been offered for sale, lease, or license to the general public;

(2) Any item that evolved from an item described in paragraph (c)(1) of this clause through advances in technology or performance and that is not yet available in the commercial marketplace, but will be available in the commercial marketplace in time to satisfy the delivery requirements under a Government solicitation;

(3) Any item that would satisfy a criterion expressed in paragraphs (c)(1) or (c)(2) of this clause, but for --

(i) Modifications of a type customarily available in the commercial marketplace; or

(ii) Minor modifications of a type not customarily available in the commercial marketplace made to meet Federal Government requirements. "Minor" modifications means modifications that do not significantly alter the nongovernmental function or essential physical characteristics of an item or component, or change the purpose of a process. Factors to be considered in determining whether a modification is minor include the value and size of the modification and the comparative value and size of the final product. Dollar values and percentages may be used as guideposts, but are not conclusive evidence that a modification is minor;

(4) Any combination of items meeting the requirements of paragraphs (c)(1), (2), (3), or (5) of this clause that are of a type customarily combined and sold in combination to the general public;

(5) Installation services, maintenance services, repair services, training services, and other services if --

(i) Such services are procured for support of an item referred to in paragraph (c)(1), (2), (3), or (4) of this definition, regardless of whether such services are provided by the same source or at the same time as the item; and

(ii) The source of such services provides similar services contemporaneously to the general public under terms and conditions similar to those offered to the Federal Government;

(6) Services of a type offered and sold competitively in substantial quantities in the commercial marketplace based on established catalog or market prices for specific tasks performed under standard commercial terms and conditions. This does not include services that are sold based on hourly rates without an established catalog or market price for a specific service performed. For purposes of these services --

(i) Catalog price means a price included in a catalog, price list, schedule, or other form that is regularly maintained by the manufacturer or vendor, is either published or otherwise available for inspection by customers, and states

prices at which sales are currently, or were last, made to a significant number of buyers constituting the general public; and

(ii) Market prices means current prices that are established in the course of ordinary trade between buyers and sellers free to bargain and that can be substantiated through competition or from sources independent of the offerors.

(7) Any item, combination of items, or service referred to in subparagraphs (c)(1) through (c)(6), notwithstanding the fact that the item, combination of items, or service is transferred between or among separate divisions, subsidiaries, or affiliates of a Contractor; or

(8) A nondevelopmental item, if the procuring agency determines the item was developed exclusively at private expense and sold in substantial quantities, on a competitive basis, to multiple State and local Governments.

(d) Component means any item supplied to the Government as part of an end item or of another component, except that for use in 52.225-9, and 52.225-11 see the definitions in 52.225-9(a) and 52.225-11(a).

(e) Contracting Officer means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(f) Nondevelopmental item means--

(1) Any previously developed item of supply used exclusively for governmental purposes by a Federal agency, a State or local government, or a foreign government with which the United States has a mutual defense cooperation agreement;

(2) Any item described in paragraph (f)(1) of this definition that requires only minor modification or modifications of a type customarily available in the commercial marketplace in order to meet the requirements of the procuring department or agency; or

(3) Any item of supply being produced that does not meet the requirements of paragraph (f)(1) or (f)(2) solely because the item is not yet in use.

(End of clause)

52.203-3 GRATUITIES (APR 1984)

(a) The right of the Contractor to proceed may be terminated by written notice if, after notice and hearing, the agency head or a designee determines that the Contractor, its agent, or another representative --

(1) Offered or gave a gratuity (e.g., an entertainment or gift) to an officer, official, or employee of the Government; and

(2) Intended, by the gratuity, to obtain a contract or favorable treatment under a contract.

(b) The facts supporting this determination may be reviewed by any court having lawful jurisdiction.

(c) If this contract is terminated under paragraph (a) of this clause, the Government is entitled --

(1) To pursue the same remedies as in a breach of the contract; and

(2) In addition to any other damages provided by law, to exemplary damages of not less than 3 nor more than 10 times the cost incurred by the Contractor in giving gratuities to the person concerned, as determined by the agency head or a designee. (This subparagraph (c)(2) is applicable only if this contract uses money appropriated to the Department of Defense.)

(d) The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.203-5 COVENANT AGAINST CONTINGENT FEES (APR 1984)

(a) The Contractor warrants that no person or agency has been employed or retained to solicit or obtain this contract upon an agreement or understanding for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or, in its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of the contingent fee.

(b) "Bona fide agency," as used in this clause, means an established commercial or selling agency, maintained by a contractor for the purpose of securing business, that neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds itself out as being able to obtain any Government contract or contracts through improper influence.

"Bona fide employee," as used in this clause, means a person, employed by a contractor and subject to the contractor's supervision and control as to time, place, and manner of performance, who neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds out as being able to obtain any Government contract or contracts through improper influence.

"Contingent fee," as used in this clause, means any commission, percentage, brokerage, or other fee that is contingent upon the success that a person or concern has in securing a Government contract.

"Improper influence," as used in this clause, means any influence that induces or tends to induce a Government employee or officer to give consideration or to act regarding a Government contract on any basis other than the merits of the matter.

(End of clause)

52.203-6 RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT (JUL 1995)

(a) Except as provided in (b) of this clause, the Contractor shall not enter into any agreement with an actual or prospective subcontractor, nor otherwise act in any manner, which has or may have the effect of restricting sales by such subcontractors directly to the Government of any item or process (including computer software) made or furnished by the subcontractor under this contract or under any follow-on production contract.

(b) The prohibition in (a) of this clause does not preclude the Contractor from asserting rights that are otherwise authorized by law or regulation.

(c) The Contractor agrees to incorporate the substance of this clause, including this paragraph (c), in all subcontracts under this contract which exceed $100,000.

52.203-7 ANTI-KICKBACK PROCEDURES. (JUL 1995)

(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," as used in this clause, means a person who has entered into a prime contract with the United States.

"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 Contract or 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 services 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) Soliciting, 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) The Contracting Officer may (i) offset the amount of the kickback against any monies owed by the United States under the prime contract and/or (ii) direct that the Prime Contractor withhold, from sums owed a subcontractor under the prime contract, the amount of any kickback. The Contracting Officer may order the 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 either case, the Prime 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) but excepting subparagraph (c)(1), in all subcontracts under this contract which exceed $100,000.

52.203-8 CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) If the Government receives information that a contractor or a person has engaged in conduct constituting a violation of subsection (a), (b), (c), or (d) of Section 27 of the Office of Federal Procurement Policy Act(41 U.S.C. 423) (the Act), as amended by section 4304 of the 1996 National Defense Authorization Act for Fiscal Year 1996 (Pub. L. 104-106), the Government may--

(1) Cancel the solicitation, if the contract has not yet been awarded or issued; or

(2) Rescind the contract with respect to which--

(i) The Contractor or someone acting for the Contractor has been convicted for an offense where the conduct constitutes a violation of subsection 27(a) or (b) of the Act for the purpose of either--

(A) Exchanging the information covered by such subsections for anything of value; or

(B) Obtaining or giving anyone a competitive advantage in the award of a Federal agency procurement contract; or

(ii) The head of the contracting activity has determined, based upon a preponderance of the evidence, that the Contractor or someone acting for the Contractor has engaged in conduct constituting an offense punishable under subsections 27(e)(1) of the Act.

(b) If the Government rescinds the contract under paragraph (a) of this clause, the Government is entitled to recover, in addition to any penalty prescribed by law, the amount expended under the contract.

(c) The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law, regulation, or under this contract.

(End of clause)

52.203-10 PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) The Government, at its election, may reduce the price of a fixed-price type contract and the total cost and fee under a cost-type contract by the amount of profit or fee determined as set forth in paragraph (b) of this clause if

the head of the contracting activity or designee determines that there was a violation of subsection 27 (a), (b), or (c) of the Office of Federal Procurement Policy Act, as amended (41 U.S.C. 423), as implemented in section 3.104 of the Federal Acquisition Regulation.

(b) The price or fee reduction referred to in paragraph (a) of this clause shall be--

(1) For cost-plus-fixed-fee contracts, the amount of the fee specified in the contract at the time of award;

(2) For cost-plus-incentive-fee contracts, the target fee specified in the contract at the time of award, notwithstanding any minimum fee or "fee floor" specified in the contract;

(3) For cost-plus-award-fee contracts--

(i) The base fee established in the contract at the time of contract award;

(ii) If no base fee is specified in the contract, 30 percent of the amount of each award fee otherwise payable to the Contractor for each award fee evaluation period or at each award fee determination point.

(4) For fixed-price-incentive contracts, the Government may--

(i) Reduce the contract target price and contract target profit both by an amount equal to the initial target profit specified in the contract at the time of contract award; or

(ii) If an immediate adjustment to the contract target price and contract target profit would have a significant adverse impact on the incentive price revision relationship under the contract, or adversely affect the contract financing provisions, the Contracting Officer may defer such adjustment until establishment of the total final price of the contract. The total final price established in accordance with the incentive price revision provisions of the contract shall be reduced by an amount equal to the initial target profit specified in the contract at the time of contract award and such reduced price shall be the total final contract price.

(5) For firm-fixed-price contracts, by 10 percent of the initial contract price or a profit amount determined by the Contracting Officer from records or documents in existence prior to the date of the contract award.

(c) The Government may, at its election, reduce a prime contractor's price or fee in accordance with the procedures of paragraph (b) of this clause for violations of the Act by its subcontractors by an amount not to exceed the amount of profit or fee reflected in the subcontract at the time the subcontract was first definitively priced.

(d) In addition to the remedies in paragraphs (a) and (c) of this clause, the Government may terminate this contract for default. The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.203-12 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (JUN 1997)

(a) Definitions.

"Agency," as used in this clause, means executive agency as defined in 2.101.

"Covered Federal action," as used in this clause, means any of the following Federal actions:

(1) The awarding of any Federal contract.

(2) The making of any Federal grant.

(3) The making of any Federal loan.

(4) The entering into of any cooperative agreement.

(5) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

"Indian tribe" and "tribal organization," as used in this clause, have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) and include Alaskan Natives.

"Influencing or attempting to influence," as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government," as used in this clause, means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Officer or employee of an agency," as used in this clause, includes the following individuals who are employed by an agency:

(1) An individual who is appointed to a position in the Government under Title 5, United States Code, including a position under a temporary appointment.

(2) A member of the uniformed services, as defined in subsection 101(3), Title 37, United States Code.

(3) A special Government employee, as defined in section 202, Title 18, United States Code.

(4) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, Title 5, United States Code, appendix 2.

"Person," as used in this clause, means an individual, corporation, company, association, authority, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Reasonable compensation," as used in this clause, means, with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.

"Reasonable payment," as used in this clause, means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.

"Recipient," as used in this clause, includes the Contractor and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Regularly employed," as used in this clause, means, with respect to an officer or employee of a person requesting or receiving a Federal contract, an officer or employee who is employed by such person for at least 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.

"State," as used in this clause, means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and multi-State, regional, or interstate entity having governmental duties and powers.

(b) Prohibitions.

(1) Section 1352 of Title 31, United States Code, among other things, prohibits a recipient of a Federal contract, grant, loan, or cooperative agreement from using appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.

(2) The Act also requires Contractors to furnish a disclosure if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

(3) The prohibitions of the Act do not apply under the following conditions:

(i) Agency and legislative liaison by own employees.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities not directly related to a covered Federal action.

(B) For purposes of subdivision (b)(3)(i)(A) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.

(C) The following agency and legislative liaison activities are permitted at any time where they are not related to a specific solicitation for any covered Federal action:

(1) Discussing with an agency the qualities and characteristics (including individual demonstrations) of the person's products or services, conditions or terms of sale, and service capabilities.

(2) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.

(D) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action--

(1) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;

(2) Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and

(3) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Pub. L. 95-507, and subsequent amendments.

(E) Only those services expressly authorized by subdivision (b)(3)(i)(A) of this clause are permitted under this clause.

(ii) Professional and technical services.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of--

(1) A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action.

(2) Any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.

(B) For purposes of subdivision (b)(3)(ii)(A) of this clause, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal by a lawyer is allowable. Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this section unless they provide advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this section since the engineer is providing technical services but not directly in the preparation, submission or negotiation of a covered Federal action.

(C) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation and any other requirements in the actual award documents.

(D) Only those services expressly authorized by subdivisions (b)(3)(ii)(A)(1) and (2) of this clause are permitted under this clause.

(E) The reporting requirements of FAR 3.803(a) shall not apply with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

(c) Disclosure.

(1) The Contractor who requests or receives from an agency a Federal contract shall file with that agency a disclosure form, OMB standard form LLL, Disclosure of Lobbying Activities, if such person has made or has agreed to make any payment using nonappropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph (b)(1) of this clause, if paid for with appropriated funds.

(2) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph (c)(1) of this clause. An event that materially affects the accuracy of the information reported includes--

(i) A cumulative increase of $25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or

(ii) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or

(iii) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

(3) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person who requests or receives any subcontract exceeding $100,000 under the Federal contract.

(4) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall submit all disclosures to the Contracting Officer at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.

(d) Agreement. The Contractor agrees not to make any payment prohibited by this clause.

(e) Penalties.

(1) Any person who makes an expenditure prohibited under paragraph (a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

(2) Contractors may rely without liability on the representation made by their subcontractors in the certification and disclosure form.

(f) Cost allowability. Nothing in this clause makes allowable or reasonable any costs which would otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provision.

(End of clause)

52.204-4 PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER (AUG 2000)

(a) Definitions. As used in this clause--

"Postconsumer material" means a material or finis hed product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of "recovered material." For paper and paper products, postc onsumer material means "postconsumer fiber" defined by the U.S. Environmental Protection Agency (EPA) as --

(1) Paper, paperboard, and fibrous materials from retail stores, office buildings, homes, and so forth, after they have passed through their end-usage as a consumer item, including: used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used cordage; or

(2) All paper, paperboard, and fibrous materials that enter and are collected from municipal solid waste; but not

(3) Fiber derived from printers' over-runs, converters' scrap, and over-issue publications.

"Printed or copied double-sided" means printing or reproducing a document so that information is on both sides of a sheet of paper.

"Recovered material," fo r paper and paper products, is defined by EPA in its Comprehensive Procurement Guideline as "recovered fiber" and means the following materials:

(1) Postconsumer fiber; and

(2) Manufacturing wastes such as--

(i) Dry paper and paperboard waste generated after completion of the papermaking process (that is, those manufacturing operations up to and including the cutting and trimming of the paper machine reel into smaller rolls or rough sheets) including: envelope cuttings, bindery trimmings, and other paper and paperboard waste resulting from printing, cutting, forming, and other converting operations; bag, box, and carton manufacturing wastes; and butt rolls, mill wrappers, and rejected unused stock; and

(ii) Repulped finished paper and paperboard from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others.

(b) In accordance with Section 101 of Executive Order 13101 of September 14, 1998, Greening the Government through Waste Prevention, Recycling, and Federal Acquisition, the Contractor is encouraged to submit paper documents, such as offers, letters, or reports, that are printed or copied double-sided on recycled paper that meet minimum content standards specified in Section 505 of Executive Order 13101, when not using electronic commerce methods to submit information or data to the Government.

(c) If the Contractor cannot purchase high-speed copier paper, offset paper, forms bond, computer printout paper, carbonless paper, file folders, white wove envelopes, writing and office paper, book paper, cotton fiber paper, and cover stock meeting the 30 percent postconsumer material standard for use in submitting paper documents to the Government, it should use paper containing no less than 20 percent postconsumer material. This lesser standard should be used only when paper meeting the 30 percent postconsumer material standard is not obtainable at a reasonable price or does not meet reasonable performance standards.

(End of clause)

52.209-6 PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (JUL 1995)

(a) The Government suspends or debars Contractors to protect the Government's interests. The Contractor shall

not enter into any subcontract in excess of the $25,000 with a Contractor that is debarred, suspended, or proposed for debarment unless there is a compelling reason to do so.

(b) The Contractor shall require each proposed first-tier subcontractor, whose subcontract will exceed $25,000, to disclose to the Contractor, in writing, whether as of the time of award of the subcontract, the subcontractor, or its principles, is or is not debarred, suspended, or proposed for debarment by the Federal Government.

(c) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is debarred, suspended, or proposed for debarment (see FAR 9.404 for information on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs). The notice must include the following:

(1) The name of the subcontractor.

(2) The Contractor's knowledge of the reasons for the subcontractor being on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.

(3) The compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.

(4) The systems and procedures the Contractor has established to ensure that it is fully protecting the Government's interests when dealing with such subcontractor in view of the specific basis for the party's debarment, suspension, or proposed debarment.

(End of clause)

52.211-15 DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS (SEP 1990)

This is a rated order certified for national defense use, and the Contractor shall follow all the requirements of the Defense Priorities and Allocations System regulation (15 CFR 700).

(End of clause)

52.215-2 AUDIT AND RECORDS--NEGOTIATION (JUN 1999)

(a) As used in this clause, "records" includes books, documents, accounting procedures and practices, and other data, regardless of type and regardless of whether such items are in written form, in the form of computer data, or in any other form.

(b) Examination of costs. If this is a cost-reimbursement, incentive, time-and-materials, labor-hour, or price redeterminable contract, or any combination of these, the Contractor shall maintain and the Contracting Officer, or an authorized representative of the Contracting Officer, shall have the right to examine and audit all records and other evidence sufficient to reflect properly all costs claimed to have been incurred or anticipated to be incurred directly or indirectly in performance of this contract. This right of examination shall include inspection at all reasonable times of the Contractor's plants, or parts of them, engaged in performing the contract.

(c) Cost or pricing data. If the Contractor has been required to submit cost or pricing data in connection with any pricing action relating to this contract, the Contracting Officer, or an authorized representative of the Contracting Officer, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data, shall have the

right to examine and audit all of the Contractor's records, including computations and projections, related to --

(1) The proposal for the contract, subcontract, or modification;

(2) The discussions conducted on the proposal(s), including those related to negotiating;

(3) Pricing of the contract, subcontract, or modification; or

(4) Performance of the contract, subcontract or modification.

(d) Comptroller General--(1) The Comptroller General of the United States, or an authorized representative, shall have access to and the right to examine any of the Contractor's directly pertinent records involving transactions related to this contract or a subcontract hereunder.

(2) This paragraph may not be construed to require the Contractor or subcontractor to create or maintain any record that the Contractor or subcontractor does not maintain in the ordinary course of business or pursuant to a provision of law.

(e) Reports. If the Contractor is required to furnish cost, funding, or performance reports, the Contracting Officer or an authorized representative of the Contracting Officer shall have the right to examine and audit the supporting records and materials, for the purpose of evaluating (1) the effectiveness of the Contractor's policies and procedures to produce data compatible with the objectives of these reports and (2) the data reported.

(f) Availability. The Contractor shall make available at its office at all reasonable times the records, materials, and other evidence described in paragraphs (a), (b), (c), (d), and (e) of this clause, for examination, audit, or reproduction, until 3 years after final payment under this contract or for any shorter period specified in Subpart 4.7, Contractor Records Retention, of the Federal Acquisition Regulation (FAR), or for any longer period required by statute or by other clauses of this contract. In addition--

(1) If this contract is completely or partially terminated, the Contractor shall make available the records relating to the work terminated until 3 years after any resulting final termination settlement; and

(2) The Contractor shall make available records relating to appeals under the Disputes clause or to litigation or the settlement of claims arising under or relating to this contract until such appeals, litigation, or claims are finally resolved.

(g) The Contractor shall insert a clause containing all the terms of this clause, including this paragraph (g), in all subcontracts under this contract that exceed the simplified acquisition threshold, and--

(1) That are cost-reimbursement, incentive, time-and-materials, labor-hour, or price-redeterminable type or any combination of these;

(2) For which cost or pricing data are required; or

(3) That require the subcontractor to furnish reports as discussed in paragraph (e) of this clause.

The clause may be altered only as necessary to identify properly the contracting parties and the Contracting Officer under the Government prime contract.

(End of clause)

52.215-11 PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA--MODIFICATIONS (OCT 1997)

(a) This clause shall become operative only for any modification to this contract involving a pricing adjustment expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, except that this clause does not apply to any modification if an exception under FAR 15.403-1 applies.

(b) If any price, including profit or fee, negotiated in connection with any modification under this clause, or any cost reimbursable under this contract, was increased by any significant amount because (1) the Contractor or a subcontractor furnished cost or pricing data that were not complete, accurate, and current as certified in its Certificate of Current Cost or Pricing Data, (2) a subcontractor or prospective subcontractor furnished the Contractor cost or pricing data that were not complete, accurate, and current as certified in the Contractor's Certificate of Current Cost or Pricing Data, or (3) any of these parties furnished data of any description that were not accurate, the price or cost shall be reduced accordingly and the contract shall be modified to reflect the reduction. This right to a price reduction is limited to that resulting from defects in data relating to modifications for which this clause becomes operative under paragraph (a) of this clause.

(c) Any reduction in the contract price under paragraph (b) of this clause due to defective data from a prospective subcontractor that was not subsequently awarded the subcontract shall be limited to the amount, plus applicable overhead and profit markup, by which--

(1) The actual subcontract; or

(2) The actual cost to the Contractor, if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor; provided, that the actual subcontract price was not itself affected by defective cost or pricing data.

(d)(1) If the Contracting Officer determines under paragraph (b) of this clause that a price or cost reduction should be made, the Contractor agrees not to raise the following matters as a defense:

(i) The Contractor or subcontractor was a sole source supplier or otherwise was in a superior bargaining position and thus the price of the contract would not have been modified even if accurate, complete, and current cost or pricing data had been submitted.

(ii) The Contracting Officer should have known that the cost or pricing data in issue were defective even though the Contractor or subcontractor took no affirmative action to bring the character of the data to the attention of the Contracting Officer.

(iii) The contract was based on an agreement about the total cost of the contract and there was no agreement about the cost of each item procured under the contract.

(iv) The Contractor or subcontractor did not submit a Certificate of Current Cost or Pricing Data.

(2)(i) Except as prohibited by subdivision (d)(2)(ii) of this clause, an offset in an amount determined appropriate by the Contracting Officer based upon the facts shall be allowed against the amount of a contract price reduction if--

(A) The Contractor certifies to the Contracting Officer that, to the best of the Contractor's knowledge and belief, the Contractor is entitled to the offset in the amount requested; and

(B) The Contractor proves that the cost or pricing data were available before the "as of" date specified on its Certificate of Current Cost or Pricing Data, and that the data were not submitted before such date.

(ii) An offset shall not be allowed if--

(A) The understated data were known by the Contractor to be understated before the "as of" date specified on its Certificate of Current Cost or Pricing Data; or

(B) The Government proves that the facts demonstrate that the contract price would not have increased in the amount to be offset even if the available data had been submitted before the "as of" date specified on its Certificate of Current Cost or Pricing Data.

(e) If any reduction in the contract price under this clause reduces the price of items for which payment was made prior to the date of the modification reflecting the price reduction, the Contractor shall be liable to and shall pay the United States at the time such overpayment is repaid--

(1) Simple interest on the amount of such overpayment to be computed from the date(s) of overpayment to the Contractor to the date the Government is repaid by the Contractor at the applicable underpayment rate effective for each quarter prescribed by the Secretary of the Treasury under 26 U.S.C. 6621(a)(2); and

A penalty equal to the amount of the overpayment, if the Contractor or subcontractor knowingly submitted cost or pricing data that were incomplete, inaccurate, or noncurrent.

(End of clause)

52.215-13 SUBCONTRACTOR COST OR PRICING DATA--MODIFICATIONS (OCT 1997)

(a) The requirements of paragraphs (b) and (c) of this clause shall --

(1) Become operative only for any modification to this contract involving a pricing adjustment expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4; and

(2) Be limited to such modifications.

(b) Before awarding any subcontract expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, on the date of agreement on price or the date of award, whichever is later; or before pricing any subcontract modification involving a pricing adjustment expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4, the Contractor shall require the subcontractor to submit cost or pricing data (actually or by specific identification in writing), unless an exception under FAR 15.403-1 applies.

(c) The Contractor shall require the subcontractor to certify in substantially the form prescribed in FAR 15.406-2 that, to the best of its knowledge and belief, the data submitted under paragraph (b) of this clause were accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract modification.

The Contractor shall insert the substance of this clause, including this paragraph (d), in each subcontract that exceeds the threshold for submission of cost or pricing data at FAR 15.403-4 on the date of agreement on price or the date of award, whichever is later.

(End of clause)

52.219-4 NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS (JAN 1999)

(a) Definition. HUBZone small business concern, as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

(b) Evaluation preference. (1) Offers will be evaluated by adding a factor of 10 percent to the price of all offers, except--

(i) Offers from HUBZone small business concerns that have not waived the evaluation preference;

(ii) Otherwise successful offers from small business concerns;

(iii) Otherwise successful offers of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is exceeded (see 25.402 of the Federal Acquisition Regulation (FAR)); and

(iv) Otherwise successful offers where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government.

(2) The factor of 10 percent shall be applied on a line item basis or to any group of items on which award may be made. Other evaluation factors described in the solicitation shall be applied before application of the factor.

(3) A concern that is both a HUBZone small business concern and a small disadvantaged business concern will receive the benefit of both the HUBZone small business price evaluation preference and the small disadvantaged business price evaluation adjustment (see FAR clause 52.219-23). Each applicable price evaluation preference or adjustment shall be calculated independently against an offeror's base offer.

These individual preference amounts shall be added together to arrive at the total evaluated price for that offer.

(c) Waiver of evaluation preference. A HUBZone small business concern may elect to waive the evaluation preference, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply if the offeror has waived the evaluation preference.

___ Offeror elects to waive the evaluation preference.

(d) Agreement. A HUBZone small business concern agrees that in the performance of the contract, in the case of a contract for

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost o f manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(e) A HUBZone joint venture agrees that in the performance of the contract, the applicable percentage specified in paragraph (d) of this clause will be performed by the HUBZone small business participant or participants.

(f) A HUBZone small business concern nonmanufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

52.219-8 UTILIZATION OF SMALL BUSINESS CONCERNS (OCT 2000)

(a) It is the policy of the United States that small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns shall have the maximum practicable opportunity to participate in performing contracts let by any Federal agency, including contracts and subcontracts for subsystems, assemblies, components, and related services for major systems. It is further the policy of the United States that its prime contractors establish procedures to ensure the timely payment of amounts due pursuant to the terms of their subcontracts with small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns.

(b) The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with efficient contract performance. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor's compliance with this clause.

Definitions. As used in this contract--

HUBZone small business concern means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

Small business concern means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

Small disadvantaged business concern means a small business concern that represents, as part of its offer that --

(1) It has received certification as a small disadvantaged business concern consistent with 13 CFR part 124, subpart B;

(2) No material change in disadvantaged ownership and control has occurred since its certification;

(3) Where the concern is owned by one or more individuals, the net worth of each individual upon whom the certification is based does not exceed $750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(4) It is identified, on the date of its representation, as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net).

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

Women-owned small business concern means a small business concern--

(1) That is at least 51 percent owned by one or more women, or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as a small business concern, a veteran-owned small business concern, a service-disabled veteran-owned small business concern, a HUBZone small business concern, a small disadvantaged business concern, or a women-owned small business concern.

(End of clause)

52.219-9 SMALL BUSINESS SUBCONTRACTING PLAN (JAN 2002)--ALTERNATE II (OCT 2001).

(a) This clause does not apply to small business concerns.

(b) Definitions. As used in this clause--

Commercial item means a product or service that satisfies the definition of commercial item in section 2.101 of the Federal Acquisition Regulation.

Commercial plan means a subcontracting plan (including goals) that covers the offeror's fiscal year and that applies to the entire production of commercial items sold by either the entire company or a portion thereof (e.g., division, plant, or product line).

Individual contract plan means a subcontracting plan that covers the entire contract period (including option periods), applies to a specific contract, and has goals that are based on the offeror's planned subcontracting in support of the specific contract, except that indirect costs incurred for common or joint purposes may be allocated on a prorated basis to the contract.

Master plan means a subcontracting plan that contains all the required elements of an individual contract plan, except goals, and may be incorporated into individual contract plans, provided the master plan has been approved.

Subcontract means any agreement (other than one involving an employer-employee relationship) entered into by a Federal Government prime Contractor or subcontractor calling for supplies or services required for performance of the contract or subcontract.

(c) Proposals submitted in response to this solicitation shall include a subcontracting plan that separately addresses subcontracting with small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns. If the offeror is submitting an individual contract plan, the plan must separately address subcontracting with small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns, with a separate part for the basic contract and separate parts for each option (if any). The plan shall be included in and made a part of the resultant contract. The subcontracting plan shall be negotiated within the time specified by the Contracting Officer. Failure to submit and negotiate a subcontracting plan shall make the offeror ineligible for award of a contract.

(d) The offeror's subcontracting plan shall include the following:

(1) Goals, expressed in terms of percentages of total planned subcontracting dollars, for the use of small business, veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns as subcontractors. The offeror shall include all subcontracts that contribute to contract performance, and may include a proportionate share of products and services that are normally allocated as indirect costs.

(2) A statement of--

(i) Total dollars planned to be subcontracted for an individual contract plan; or the offeror's total projected sales, expressed in dollars, and the total value of projected subcontracts to support the sales for a commercial plan;

(ii) Total dollars planned to be subcontracted to small business concerns;

(iii) Total dollars planned to be subcontracted to veteran-owned small business concerns;

(iv) Total dollars planned to be subcontracted to HUBZone small business concerns;

(v) Total dollars planned to be subcontracted to small disadvantaged business concerns; and

(vi) Total dollars planned to be subcontracted to women-owned small business concerns.

(3) A description of the principal types of supplies and services to be subcontracted, and an identification of the types planned for subcontracting to--

(i) Small business concerns;

(ii) Veteran-owned small business concerns;

(iii) HUBZone small business concerns;

(iv) Small disadvantaged business concerns; and

(v) Women-owned small business concerns.

(4) A description of the method used to develop the subcontracting goals in paragraph (d)(1) of this clause.

(5) A description of the method used to identify potential sources for solicitation purposes (e.g., existing company source lists, the Procurement Marketing and Access Network (PRO-Net) of the Small Business Administration

(SBA), veterans service organizations, the National Minority Purchasing Council Vendor Information Service, the Research and Information Division of the Minority Business Development Agency in the Department of Commerce, or small, HUBZone, small disadvantaged, and women-owned small business trade associations). A firm may rely on the information contained in PRO-Net as an accurate representation of a concern's size and ownership characteristics for the purposes of maintaining a small, veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business source list. Use of PRO-Net as its source list does not relieve a firm of its responsibilities (e.g., outreach, assistance, counseling, or publicizing subcontracting opportunities) in this clause.

(6) A statement as to whether or not the offeror in included indirect costs in establishing subcontracting goals, and a description of the method used to determine the proportionate share of indirect costs to be incurred with—

(i) Small business concerns;

(ii) Veteran-owned small business concerns;

(iii) HUBZone small business concerns;

(iv) Small disadvantaged business concerns; and

(v) Women-owned small business concerns.

(7) The name of the individual employed by the offeror who will administer the offeror's subcontracting program, and a description of the duties of the individual.

(8) A description of the efforts the offeror will make to assure that small business, veteran-owned small business, HUBZone small business, small disadvantaged business and women-owned small business concerns have an equitable opportunity to compete for subcontracts.

(9) Assurances that the offeror will include the clause of this contract entitled ``Utilization of Small Business Concerns'' in all subcontracts that offer further subcontracting opportunities, and that the offeror will require all subcontractors (except small business concerns) that receive subcontracts in excess of $500,000 ($1,000,000 for construction of any public facility) to adopt a subcontracting plan that complies with the requirements of this clause.

(10) Assurances that the offeror will--

(i) Cooperate in any studies or surveys as may be required;

(ii) Submit periodic reports so that the Government can determine the extent of compliance by the offeror with the subcontracting plan;

(iii) Submit Standard Form (SF) 294, Subcontracting Report for Individual Contracts, and/or SF 295, Summary Subcontract Report, in accordance with paragraph (j) of this clause. The reports shall provide information on subcontract awards to small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, small disadvantaged business concerns, women-owned small business concerns, and Historically Black Colleges and Universities and Minority Institutions. Reporting shall be in accordance with the instructions on the forms or as provided in agency regulations.

(iv) Ensure that its subcontractors agree to submit SF 294 and SF 295.

(11) A description of the types of records that will be maintained concerning procedures that have been adopted to comply with the requirements and goals in the plan, including establishing source lists; and a description of the

offeror's efforts to locate small business, veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns and award subcontracts to them. The records shall include at least the following (on a plant-wide or company-wide basis, unless otherwise indicated)

(i) Source lists (e.g., PRO-Net), guides, and other data that identify small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns.

(ii) Organizations contacted in an attempt to locate sources that are small business, veteran-owned small business, HUBZone small business, small disadvantaged business, or women-owned small business concerns.

(iii) Records on each subcontract solicitation resulting in an award of more than $100,000, indicating --

(A) Whether small business concerns were solicited and, if not, why not;

(B) Whether veteran-owned small business concerns were solicited and, if not, why not;

(C) Whether HUBZone small business concerns were solicited and, if not, why not;

(D) Whether small disadvantaged business concerns were solicited and, if not, why not;

(E) Whether women-owned small business concerns were solicited and, if not, why not; and

(F) If applicable, the reason award was not made to a small business concern.

(iv) Records of any outreach efforts to contact--

(A) Trade associations;

(B) Business development organizations;

(C) Conferences and trade fairs to locate small, HUBZone small, small disadvantaged, and women-owned small business sources; and

(D) Veterans service organizations.

(v) Records of internal guidance and encouragement provided to buyers through--

(A) Workshops, seminars, training, etc.; and

(B) Monitoring performance to evaluate compliance with the program's requirements.

(vi) On a contract-by-contract basis, records to support award data submitted by the offeror to the Government, including the name, address, and business size of each subcontractor. Contractors having commercial plans need not comply with this requirement.

(e) In order to effectively implement this plan to the extent consistent with efficient contract performance, the Contractor shall perform the following functions:

(1) Assist small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation by such concerns. Where the Contractor's lists of potential small business, veteran-owner small business, HUBZone small business, small disadvantaged

business, and women-owned small business subcontractors are excessively long, reasonable effort shall be made to give all such small business concerns an opportunity to compete over a period of time.

(2) Provide adequate and timely consideration of the potentialities of small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns in all ``make-or-buy'' decisions.

(3) Counsel and discuss subcontracting opportunities with representatives of small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business firms.

(4) Provide notice to subcontractors concerning penalties and remedies for misrepresentations of business status as small, veteran-owner small business, HUBZone small, small disadvantaged, or women-owned small business for the purpose of obtaining a subcontract that is to be included as part or all of a goal contained in the Contractor's subcontracting plan.

(f) A master plan on a plant or division-wide basis that contains all the elements required by paragraph (d) of this clause, except goals, may be incorporated by reference as a part of the subcontracting plan required of the offeror by this clause; provided--
(1) the master plan has been approved, (2) the offeror ensures that the master plan is updated as necessary and provides copies of the approved master plan, including evidence of its approval, to the Contracting Officer, and (3) goals and any deviations from the master plan deemed necessary by the Contracting Officer to satisfy the requirements of this contract are set forth in the individual subcontracting plan.

(g) A commercial plan is the preferred type of subcontracting plan for contractors furnishing commercial items. The commercial plan shall relate to the offeror's planned subcontracting generally, for both commercial and Government business, rather than solely to the Government contract. Commercial plans are also preferred for subcontractors that provide commercial items under a prime contract, whether or not the prime contractor is supplying a commercial item.

(h) Prior compliance of the offeror with other such subcontracting plans under previous contracts will be considered by the Contracting Officer in determining the responsibility of the offeror for award of the contract.

(i) The failure of the Contractor or subcontractor to comply in good faith with (1) the clause of this contract entitled "Utilization Of Small Business Concerns," or (2) an approved plan required by this clause, shall be a material breach of the contract.

(j) The Contractor shall submit the following reports:

(1) Standard Form 294, Subcontracting Report for Individual Contracts. This report shall be submitted to the Contracting Officer semiannually and at contract completion. The report covers subcontract award data related to this contract. This report is not required for commercial plans.

(2) Standard Form 295, Summary Subcontract Report. This report encompasses all of the contracts with the awarding agency. It must be submitted semi-annually for contracts with the Department of Defense and annually for contracts with civilian agencies. If the reporting activity is covered by a commercial plan, the reporting activity must report annually all subcontract awards under that plan. All reports submitted at the close of each fiscal year (both individual and commercial plans) shall include a breakout, in the Contractor's format, of subcontract awards, in whole dollars, to small disadvantaged business concerns by North American Industry Classification System (NAICS) Industry Subsector. For a commercial plan, the Contractor may obtain from each of its subcontractors a predominant NAICS Industry Subsector and report all awards to that subcontractor under its predominant NAICS Industry Subsector.

(End of clause)

52.219-14 LIMITATIONS ON SUBCONTRACTING (DEC 1996)

(a) This clause does not apply to the unrestricted portion of a partial set-aside.

(b) By submission of an offer and execution of a contract, the Offeror/Contractor agrees that in performance of the contract in the case of a contract for--

(1) Services (except construction). At least 50 percent of the cost of contract performance incurred for personnel shall be expended for employees of the concern.

(2) Supplies (other than procurement from a nonmanufacturer of such supplies). The concern shall perform work for at least 50 percent of the cost of manufacturing the supplies, not including the cost of materials.

(3) General construction. The concern will perform at least 15 percent of the cost of the contract, not including the cost of materials, with its own employees.

(4) Construction by special trade contractors. The concern will perform at least 25 percent of the cost of the contract, not including the cost of materials, with its own employees.

52.219-16 LIQUIDATED DAMAGES-SUBCONTRACTING PLAN (JAN 1999)

(a) Failure to make a good faith effort to comply with the subcontracting plan, as used in this clause, means a willful or intentional failure to perform in accordance with the requirements of the subcontracting plan approved under the clause in this contract entitled "Small Business Subcontracting Plan," or willful or intentional action to frustrate the plan.

(b) Performance shall be measured by applying the percentage goals to the total actual subcontracting dollars or, if a commercial plan is involved, to the pro rata share of actual subcontracting dollars attributable to Government contracts covered by the commercial plan. If, at contract completion or, in the case of a commercial plan, at the close of the fiscal year for which the plan is applicable, the Contractor has failed to meet its subcontracting goals and the Contracting Officer decides in accordance with paragraph (c) of this clause that the Contractor failed to make a good faith effort to comply with its subcontracting plan, established in accordance with the clause in this contract entitled "Small Business Subcontracting Plan," the Contractor shall pay the Government liquidated damages in an amount stated. The amount of probable damages attributable to the Contractor's failure to comply shall be an amount equal to the actual dollar amount by which the Contractor failed to achieve each subcontract goal.

(c) Before the Contracting Officer makes a final decision that the Contractor has failed to make such good faith effort, the Contracting Officer shall give the Contractor written notice specifying the failure and permitting the Contractor to demonstrate what good faith efforts have been made and to discuss the matter. Failure to respond to the notice may be taken as an admission that no valid explanation exists. If, after consideration of all the pertinent data, the Contracting Officer finds that the Contractor failed to make a good faith effort to comply with the subcontracting plan, the Contracting Officer shall issue a final decision to that effect and require that the Contractor pay the Government liquidated damages as provided in paragraph (b) of this clause.

(d) With respect to commercial plans, the Contracting Officer who approved the plan will perform the functions of the Contracting Officer under this clause on behalf of all agencies with contracts covered by the commercial plan.

(e) The Contractor shall have the right of appeal, under the clause in this contract entitled Disputes, from any final decision of the Contracting Officer.

(f) Liquidated damages shall be in addition to any other remedies that the Government may have.

(End of clause)

52.222-3 CONVICT LABOR (AUG 1996)

The Contractor agrees not to employ in the performance of this contract any person undergoing a sentence of imprisonment which has been imposed by any court of a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands. This limitation, however, shall not prohibit the employment by the Contractor in the performance of this contract of persons on parole or probation to work at paid employment during the term of their sentence or persons who have been pardoned or who have served their terms. Nor shall it prohibit the employment by the Contractor in the performance of this contract of persons confined for violation of the laws of any of the States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands who are authorized to work at paid employment in the community under the laws of such jurisdiction, if--

(a)(1) The worker is paid or is in an approved work training program on a voluntary basis;

(2) Representatives of local union central bodies or similar labor union organizations have been consulted;

(3) Such paid employment will not result in the displacement of employed workers, or be applied in skills, crafts, or trades in which there is a surplus of available gainful labor in the locality, or impair existing contracts for services; and

(4) The rates of pay and other conditions of employment will not be less than those paid or provided for work of a similar nature in the locality in which the work is being performed; and

(b) The Attorney General of the United States has certified that the work-release laws or regulations of the jurisdiction involved are in conformity with the requirements of Executive Order 11755, as amended by Executive Orders 12608 and 12943.

(End of clause)

52.222-4 CONTRACT WORK HOURS AND SAFETY STANDARDS ACT - OVERTIME COMPENSATION. (SEP 2000)

(a) Overtime requirements. No Contractor or subcontractor employing laborers or mechanics (see Federal Acquisition Regulation 22.300) shall require or permit them to work over 40 hours in any workweek unless they are paid at least 1 and 1/2 times the basic rate of pay for each hour worked over 40 hours.

(b) Violation; liability for unpaid wages; liquidated damages. The responsible Contractor and subcontractor are liable for unpaid wages if they violate the terms in paragraph (a) of this clause. In addition, the Contractor and subcontractor are liable for liquidated damages payable to the Government. The Contracting Officer will assess liquidated damages at the rate of $10 per affected employee for each calendar day on which the employer required or permitted the employee to work in excess of the standard workweek of 40 hours without paying overtime wages required by the Contract Work Hours and Safety Standards Act.

(c) Withholding for unpaid wages and liquidated damages. The Contracting Officer will withhold from payments due under the contract sufficient funds required to satisfy any Contractor or subcontractor liabilities for unpaid

wages and liquidated damages. If amounts withheld under the contract are insufficient to satisfy Contractor or subcontractor liabilities, the Contracting Officer will withhold payments from other Federal or Federally assisted contracts held by the same Contractor that are subject to the Contract Work Hours and Safety Standards Act.

(d) Payrolls and basic records.

(1) The Contractor and its subcontractors shall maintain payrolls and basic payroll records for all laborers and mechanics working on the contract during the contract and shall make them available to the Government until 3 years after contract completion. The records shall contain the name and address of each employee, social security number, labor classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. The records need not duplicate those required for construction work by Department of Labor regulations at 29 CFR 5.5(a)(3) implementing the Davis-Bacon Act.

(2) The Contractor and its subcontractors shall allow authorized representatives of the Contracting Officer or the Department of Labor to inspect, copy, or transcribe records maintained under paragraph (d)(1) of this clause. The Contractor or subcontractor also shall allow authorized representatives of the Contracting Officer or Department of Labor to interview employees in the workplace during working hours.

(e) Subcontracts. The Contractor shall insert the provisions set forth in paragraphs (a) through (d) of this clause in subcontracts exceeding $100,000 and require subcontractors to include these provisions in any lower tier subcontracts. The Contractor shall be responsible for compliance by any subcontractor or lower-tier subcontractor with the provisions set forth in paragraphs (a) through (d) of this clause.

(End of clause)

52.222-6 DAVIS-BACON ACT (FEB 1995)

(a) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (d) of this clause; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such period. Such laborers and mechanics shall be paid not less than the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in the clause entitled Apprentices and Trainees. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (b) of this clause) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(b)(1) The Contracting Officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The Contracting Officer shall approve an additional classification and wage rate and fringe

benefits therefor only when all the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination.

(ii) The classification is utilized in the area by the construction industry.

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits, where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator or an authorized representative will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(3) In the event the Contractor, the laborers or mechanics to be employed in the classification, or their representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits, where appropriate) determined pursuant to subparagraphs (b)(2) and (b)(3) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(c) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

55 If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, That the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(End of clause)

52.222-7 WITHHOLDING OF FUNDS (FEB 1988)

The Contracting Officer shall, upon his or her own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same Prime Contractor, or any other Federally assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same Prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working

on the site of the work, all or part of the wages required by the contract, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(End of clause)

52.222-8 PAYROLLS AND BASIC RECORDS (FEB 1988)

(a) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of 3 years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found, under paragraph (d) of the clause entitled Davis-Bacon Act, that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(b)(1) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under paragraph (a) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. The Prime Contractor is responsible for the submission of copies of payrolls by all subcontractors.

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify--

(i) That the payroll for the payroll period contains the information required to be maintained under paragraph (a) of this clause and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR Part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph (b)(2) of this clause.

(4) The falsification of any of the certifications in this clause may subject the Contractor or subcontractor to civil

or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.

(c) The Contractor or subcontractor shall make the records required under paragraph (a) of this clause available for inspection, copying, or transcription by the Contracting Officer or authorized representatives of the Contracting Officer or the Department of Labor. The Contractor or subcontractor shall permit the Contracting Officer or representatives of the Contracting Officer or the Department of Labor to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit required records or to make them available, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(End of clause)

52.222-9 APPRENTICES AND TRAINEES (FEB 1988)

(a) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in this paragraph, shall be paid not less than the applicable wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(b) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with

the corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(c) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

(End of clause)

52.222-10 COMPLIANCE WITH COPELAND ACT REQUIREMENTS (FEB 1988)

The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.

(End of clause)

52.222-11 SUBCONTRACTS (LABOR STANDARDS (FEB 1988)

(a) The Contractor or subcontractor shall insert in any subcontracts the clauses entitled Davis-Bacon Act, Contract Work Hours and Safety Standards Act-Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Withholding of Funds, Subcontracts (Labor Standards), Contract Termination-Debarment, Disputes Concerning Labor Standards, Compliance with Davis-Bacon and Related Act Regulations, and Certification of Eligibility, and such other clauses as the Contracting Officer may, by appropriate instructions, require, and also a clause requiring subcontractors to include these clauses in any lower tier subcontracts. The Prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with all the contract clauses cited in this paragraph.

(b)(1) Within 14 days after award of the contract, the Contractor shall deliver to the Contracting Officer a completed Statement and Acknowledgment Form (SF 1413) for each subcontract, including the subcontractor's signed and dated acknowledgment that the clauses set forth in paragraph (a) of this clause have been included in the subcontract.

(2) Within 14 days after the award of any subsequently awarded subcontract the Contractor shall deliver to the Contracting Officer an updated completed SF 1413 for such additional subcontract.

(End of clause)

52.222-12 CONTRACT TERMINATION--DEBARMENT (FEB 1988)

A breach of the contract clauses entitled Davis-Bacon Act, Contract Work Hours and Safety Standards Act--Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Subcontracts (Labor Standards), Compliance with Davis-Bacon and Related Act Regulations, or Certification of Eligibility may be grounds for termination of the contract, and for debarment as a Contractor and

subcontractor as provided in 29 CFR 5.12.

(End of clause)

52.222-13 COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS (FEB 1988)

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are hereby incorporated by reference in this contract.

(End of clause)

52.222-14 DISPUTES CONCERNING LABOR STANDARDS (FEB 1988)

The United States Department of Labor has set forth in 29 CFR Parts 5, 6, and 7 procedures for resolving disputes concerning labor standards requirements. Such disputes shall be resolved in accordance with those procedures and not the Disputes clause of this contract. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(End of clause)

52.222-15 CERTIFICATION OF ELIGIBILITY (FEB 1988)

(a) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(b) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(c) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

(End of clause)

52.222-21 PROHIBITION OF SEGREGATED FACILITIES (FEB 1999)

(a) Segregated facilities, as used in this clause, 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, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.

(b) The Contractor agrees 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 Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.

(c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

(End of clause)

52.222-26 EQUAL OPPORTUNITY (APR 2002)

(a) Definition. United States, as used in this clause, means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.

(b) If, during any 12-month period (including the 12 months preceding the award of this contract), the Contractor has been or is awarded nonexempt Federal contracts and/or subcontracts that have an aggregate value in excess of $10,000, the Contractor shall comply with paragraphs (b)(1) through (b)(11) of this clause, except for work performed outside the United States by employees who were not recruited within the United States. Upon request, the Contractor shall provide information necessary to determine the applicability of this clause.

(1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. However, it shall not be a violation of this clause for the Contractor to extend a publicly announced preference in employment to Indians living on or near an Indian reservation, in connection with employment opportunities on or near an Indian reservation, as permitted by 41 CFR 60-1.5.

(2) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to, (i) employment, (ii) upgrading, (iii) demotion, (iv) transfer, (v) recruitment or recruitment advertising, (vi) layoff or termination, (vii) rates of pay or other forms of compensation, and (viii) selection for training, including apprenticeship.

(3) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.

(4) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(5) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(6) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(7) The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. The Contractor shall also file Standard Form 100 (EEO-1), or any successor form, as prescribed in 41 CFR part 60-1. Unless the Contractor has filed within the 12 months preceding the date of contract award, the Contractor shall, within 30 days after contract award, apply to either the regional Office of Federal Contract Compliance Programs (OFCCP) or the local office of the Equal Employment Opportunity Commission for the necessary forms.

(8) The Contractor shall permit access to its premises, during normal business hours, by the contracting agency or the OFCCP for the purpose of conducting on-site compliance evaluations and complaint investigations. The

Contractor shall permit the Government to inspect and copy any books, accounts, records (including computerized records), and other material that may be relevant to the matter under investigation and pertinent to compliance with Executive Order 11246, as amended, and rules and regulations that implement the Executive Order.

(9) If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended; in the rules, regulations, and orders of the Secretary of Labor; or as otherwise provided by law.

(10) The Contractor shall include the terms and conditions of subparagraphs (b)(1) through (11) of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.

(11) The Contractor shall take such action with respect to any subcontract or purchase order as the contracting officer may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance; provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of any direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

(c) Notwithstanding any other clause in this contract, disputes relative to this clause will be governed by the procedures in 41 CFR 60-1.1.

(End of clause)

52.222-27 AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION (FEB 1999)

(a) Definitions. "Covered area," as used in this clause, means the geographical area described in the solicitation for this contract.

"Deputy Assistant Secretary," as used in this clause, means Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, or a designee.

"Employer's identification number," as used in this clause, means the Federal Social Security number used on the employer's quarterly federal tax return, U.S. Treasury Department Form 941.

"Minority," as used in this clause, means--

(1) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

(2) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands);

(3) Black (all persons having origins in any of the black African racial groups not of Hispanic origin); and

(4) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race).

(b) If the Contractor, or a subcontractor at any tier, subcontracts a portion of the work involving any construction

trade, each such subcontract in excess of $10,000 shall include this clause and the Notice containing the goals for minority and female participation stated in the solicitation for this contract.

(c) If the Contractor is participating in a Hometown Plan (41 CFR 60-4) approved by the U.S. Department of Labor in a covered area, either individually or through an association, its affirmative action obligations on all work in the plan area (including goals) shall comply with the plan for those trades that have unions participating in the plan. Contractors must be able to demonstrate participation in, and compliance with, the provisions of the plan. Each Contractor or subcontractor participating in an approved plan is also required to comply with its obligations under the Equal Opportunity clause, and to make a good faith effort to achieve each goal under the plan in each trade in which it has employees. The overall good-faith performance by other Contractors or subcontractors toward a goal in an approved plan does not excuse any Contractor's or subcontractor's failure to make good-faith efforts to achieve the plan's goals.

(d) The Contractor shall implement the affirmative action procedures in subparagraphs (g)(1) through (16) of this clause. The goals stated in the solicitation for this contract are expressed as percentages of the total hours of employment and training of minority and female utilization that the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for the geographical area where that work is actually performed. The Contractor is expected to make substantially uniform progress toward its goals in each craft.

(e) Neither the terms and conditions of any collective bargaining agreement, nor the failure by a union with which the Contractor has a collective bargaining agreement, to refer minorities or women shall excuse the Contractor's obligations under this clause, Executive Order 11246, as amended, or the regulations thereunder.

(f) In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

(g) The Contractor shall take affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's compliance with this clause shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and implement affirmative action steps at least as extensive as the following:

(1) Ensure a working environment free of harassment, intimidation, and coercion at all sites and in all facilities where the Contractor's employees are assigned to work. The Contractor, if possible, will assign two or more women to each construction project. The Contractor shall ensure that foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at these sites or facilities.

(2) Establish and maintain a current list of sources for minority and female recruitment. Provide written notification to minority and female recruitment sources and community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

(3) Establish and maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant, referrals of minorities or females from unions, recruitment sources, or community organizations, and the action taken with respect to each individual. If an individual was sent to the union hiring hall for referral and not referred back to the Contractor by the union or, if referred back, not employed by the Contractor, this shall be documented in the file, along with whatever additional actions the Contractor may have taken.

(4) Immediately notify the Deputy Assistant Secretary when the union or unions with which the Contractor has a collective bargaining agreement has not referred back to the Contractor a minority or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

(5) Develop on-the-job training opportunities and/or participate in training programs for the area that expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under subparagraph (g)(2) of this clause.

(6) Disseminate the Contractor's equal employment policy by--

(i) Providing notice of the policy to unions and to training, recruitment, and outreach programs, and requesting their cooperation in assisting the Contractor in meeting its contract obligations;

(ii) Including the policy in any policy manual and in collective bargaining agreements;

(iii) Publicizing the policy in the company newspaper, annual report, etc.;

(iv) Reviewing the policy with all management personnel and with all minority and female employees at least once a year; and

(v) Posting the policy on bulletin boards accessible to employees at each location where construction work is performed.

(7) Review, at least annually, the Contractor's equal employment policy and affirmative action obligations with all employees having responsibility for hiring, assignment, layoff, termination, or other employment decisions. Conduct review of this policy with all on-site supervisory personnel before initiating construction work at a job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

(8) Disseminate the Contractor's equal employment policy externally by including it in any advertising in the news media, specifically including minority and female news media. Provide written notification to, and discuss this policy with, other Contractors and subcontractors with which the Contractor does or anticipates doing business.

(9) Direct recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students, and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than 1 month before the date for acceptance of applications for apprenticeship or training by any recruitment source, send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

(10) Encourage present minority and female employees to recruit minority persons and women. Where reasonable, provide after-school, summer, and vacation employment to minority and female youth both on the site and in other areas of the Contractor's workforce.

(11) Validate all tests and other selection requirements where required under 41 CFR 60-3.

(12) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities. Encourage these employees to seek or to prepare for, through appropriate training, etc., opportunities for promotion.

(13) Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not

have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the Contractor's obligations under this contract are being carried out.

(14) Ensure that all facilities and company activities are nonsegregated except that separate or single -user rest rooms and necessary dressing or sleeping areas shall be provided to assure privacy between the sexes.

(15) Maintain a record of solicitations for subcontracts for minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

(16) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's equal employment policy and affirmative action obligations.

(h) The Contractor is encouraged to participate in voluntary associations that may assist in fulfilling one or more of the affirmative action obligations contained in subparagraphs (g)(1) through (16) of this clause. The efforts of a contractor association, joint contractor-union, contractor-community, or similar group of which the contractor is a member and participant may be asserted as fulfilling one or more of its obligations under subparagraphs (g)(1) through (16) of this clause, provided the Contractor--

(1) Actively participates in the group;

(2) Makes every effort to ensure that the group has a positive impact on the employment of minorities and women in the industry;

(3) Ensures that concrete benefits of the program are reflected in the Contractor's minority and female workforce participation;

(4) Makes a good-faith effort to meet its individual goals and timetables; and

(5) Can provide access to documentation that demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply is the Contractor's, and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

(i) A single goal for minorities and a separate single goal for women shall be established. The Contractor is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and nonminority. Consequently, the Contractor may be in violation of Executive Order 11246, as amended, if a particular group is employed in a substantially disparate manner.

(j) The Contractor shall not use goals or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

(k) The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts under Executive Order 11246, as amended.

(l) The Contractor shall carry out such sanctions and penalties for violation of this clause and of the Equal Opportunity clause, including suspension, termination, and cancellation of existing subcontracts, as may be imposed or ordered under Executive Order 11246, as amended, and its implementing regulations, by the OFCCP. Any failure to carry out these sanctions and penalties as ordered shall be a violation of this clause and Executive Order 11246, as amended.

(m) The Contractor in fulfilling its obligations under this clause shall implement affirmative action procedures at least as extensive as those prescribed in paragraph (g) of this clause, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of

Executive Order 11246, as amended, the implementing regulations, or this clause, the Deputy Assistant Secretary shall take action as prescribed in 41 CFR 60-4.8.

(n) The Contractor shall designate a responsible official to--

(1) Monitor all employment-related activity to ensure that the Contractor's equal employment policy is being carried out;

(2) Submit reports as may be required by the Government; and

(3) Keep records that shall at least include for each employee the name, address, telephone number, construction trade, union affiliation (if any), employee identification number, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, separate records are not required to be maintained.

Nothing contained herein shall be construed as a limitation upon the application of other laws that establish different standards of compliance or upon the requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

(End of clause)

52.222-35 AFFIRMATIVE ACTION FOR DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA (APR 1998)

(a)) Definitions. As used in this clause--

All employment openings includes all positions except executive and top management, those positions that will be filled from within the contractor's organization, and positions lasting 3 days or less. This term includes full -time employment, temporary employment of more than 3 days' duration, and part-time employment.

Appropriate office of the State employment service system meansthe local office of the Federal-State national system of public employment offices with assigned responsibility to serve the area where the employment opening is to be filled, including the District of Columbia, Guam, the Commonwealth of Puerto Rico, and the Virgin Islands.

Positions that will be filled from within the Contractor's organization means employment openings for which no consideration will be given to persons outside the Contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings that the Contractor proposes to fill from regularly established "recall" lists. The exception does not apply to a particular opening once an employer decides to consider applicants outside of its organization.

Veteran of the Vietnam era means a person who--

(1) Served on active duty for a period of more than 180 days, any part of which occurred between August 5, 1964, and May 7, 1975, and was discharged or released therefrom with other than a dishonorable discharge; or

(2) Was discharged or released from active duty for a service-connected disability if any part of such active duty was performed between August 5, 1964, and May 7, 1975.

(b) General. (1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against the individual because the individual is a disabled veteran or a veteran of the Vietnam era. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified disabled veterans and veterans of the Vietnam era without discrimination based upon their disability or veterans' status in all employment practices such as--

(i) Employment;

(ii) Upgrading;

(iii) Demotion or transfer;

(iv) Recruitment;

(v) Advertising;

(vi) Layoff or termination;

(vii) Rates of pay or other forms of compensation; and

(viii) Selection for training, including apprenticeship.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Vietnam Era Veterans' Readjustment Assistance Act of 1972 (the Act), as amended.

(c) Listing openings. (1) The Contractor agrees to list all employment openings existing at contract award or occurring during contract performance, at an appropriate office of the State employment service system in the locality where the opening occurs. These openings include those occurring at any Contractor facility, including one not connected with performing this contract. An independent corporate affiliate is exempt from this requirement.

(2) State and local government agencies holding Federal contracts of $10,000 or more shall also list all their employment openings with the appropriate office of the State employment service.

(3) The listing of employment openings with the State employment service system is required at least concurrently with using any other recruitment source or effort and involves the obligations of placing a bona fide job order, including accepting referrals of veterans and nonveterans. This listing does not require hiring any particular job applicant or hiring from any particular group of job applicants and is not intended to relieve the Contractor from any requirements of Executive orders or regulations concerning nondiscrimination in employment.

(4) Whenever the Contractor becomes contractually bound to the listing terms of this clause, it shall advise the State employment service system, in each State where it has establishments, of the name and location of each hiring location in the State. As long as the Contractor is contractually bound to these terms and has so advised the State system, it need not advise the State system of subsequent contracts. The Contractor may advise the State system when it is no longer bound by this contract clause.

(d) Applicability. This clause does not apply to the listing of employment openings that occur and are filled outside the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, and the Virgin Islands.

(e) Postings. (1) The Contractor agrees to post employment notices stating (i) the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified disabled veterans and veterans of the Vietnam era, and (ii) the rights of applicants and employees.

(2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. They shall be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance Programs, Department of Labor (Deputy Assistant Secretary), and provided by or through the Contracting Officer.

(3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of the Act, and is committed to take affirmative action to employ, and advance in employment, qualified disabled veterans and veterans of the Vietnam Era.

(f) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.

(g) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order of $10,000 or more unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Deputy Assistant Secretary to enforce the terms, including action for noncompliance.

(End of clause)

52.222-36 AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES (JUN 1998)

(a) General. (1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against any employee or applicant because of physical or mental disability. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified individuals with disabilities without discrimination based upon their physical or mental disability in all employment practices such as--

(i) Recruitment, advertising, and job application procedures;

(ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff, and rehiring;

(iii) Rates of pay or any other form of compensation and changes in compensation;

(iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;

(v) Leaves of absence, sick leave, or any other leave;

(vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;

(vii) Selection and financial support for training, including apprenticeships, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

(viii) Activities sponsored by the Contractor, including social or recreational programs; and

(ix) Any other term, condition, or privilege of employment.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Rehabilitation Act of 1973 (29 U.S.C. 793) (the Act), as amended.

(b) Postings. (1) The Contractor agrees to post employment notices stating--

(i) The Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified individuals with disabilities; and

(ii) The rights of applicants and employees.

(2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. The Contractor shall ensure that applicants and employees with disabilities are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled individual, or may lower the posted notice so that it might be read by a person in a wheelchair). The notices shall be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance of the U.S. Department of Labor (Deputy Assistant Secretary) and shall be provided by or through the Contracting Officer.

(3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Section 503 of the Act and is committed to take affirmative action to employ, and advance in employment, qualified individuals with physical or mental disabilities.

(c) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.

(d) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order in excess of $10,000 unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Deputy Assistant Secretary to enforce the terms, including action for noncompliance.

(End of clause)

52.222-37 EMPLOYMENT REPORTS ON DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA (JAN 1999)

(a) Unless the Contractor is a State or local government agency, the Contractor shall report at least annually, as required by the Secretary of Labor, on--

(1) The number of disabled veterans and the number of veterans of the Vietnam era in the workforce of the contractor by job category and hiring location; and

(2) The total number of new employees hired during the period covered by the report, and of that total, the number of disabled veterans, and the number of veterans of the Vietnam era.

(b) The above items shall be reported by completing the form entitled "Federal Contractor Veterans' Employment Report VETS-100."

(c) Reports shall be submitted no later than September 30 of each year beginning September 30, 1988.

(d) The employment activity report required by paragraph (a)(2) of this clause shall reflect total hires during the most recent 12-month period as of the ending date selected for the employment profile report required by paragraph (a)(1) of this clause. Contractors may select an ending date: (1) As of the end of any pay period during the period January through March 1st of the year the report is due, or (2) as of December 31, if the contractor has previous written approval from the Equal Employment Opportunity Commission to do so for purposes of submitting the Employer Information Report EEO-1 (Standard Form 100).

(e) The count of veterans reported according to paragraph (a) of this clause shall be based on voluntary disclosure. Each Contractor subject to the reporting requirements at 38 U.S.C. 4212 shall invite all disabled veterans and veterans of the Vietnam era who wish to benefit under the affirmative action program at 38 U.S.C. 4212 to identify themselves to the Contractor. The invitation shall state that the information is voluntarily provided; that the information will be kept confidential; that disclosure or refusal to provide the information will not subject the applicant or employee to any adverse treatment; and that the information will be used only in accordance with the regulations promulgated under 38 U.S.C. 4212.

(f) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order of $10,000 or more unless exempted by rules, regulations, or orders of the Secretary.

(End of clause)

52.222-41 SERVICE CONTRACT ACT OF 1965, AS AMENDED (MAY 1989)

(a) Definitions. "Act," as used in this clause, means the Service Contract Act of 1965, as amended (41 U.S.C. 351, et seq.).

"Contractor," as used in this clause or in any subcontract, shall be deemed to refer to the subcontractor, except in the term "Government Prime Contractor."

"Service employee," as used in this clause, means any person engaged in the performance of this contract other than any person employed in a bona fide executive, administrative, or professional capacity, as these terms are defined in Part 541 of Title 29, Code of Federal Regulations, as revised. It includes all such persons regardless of any contractual relationship that may be alleged to exist between a Contractor or subcontractor and such persons.

(b) Applicability. This contract is subject to the following provisions and to all other applicable provisions of the Act and regulations of the Secretary of Labor (29 CFR Part 4). This clause does not apply to contracts or subcontracts administratively exempted by the Secretary of Labor or exempted by 41 U.S.C. 356, as interpreted in Subpart C of 29 CFR Part 4.

(c) Compensation. (1) Each service employee employed in the performance of this contract by the Contractor or any subcontractor shall be paid not less than the minimum monetary wages and shall be furnished fringe benefits in accordance with the wages and fringe benefits determined by the Secretary of Labor, or authorized representative, as specified in any wage determination attached to this contract.

(2)(i) If a wage determination is attached to this contract, the Contractor shall classify any class of service employee which is not listed therein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination) so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed class of employees shall be paid the monetary wages and furnished the fringe benefits as are determined pursuant to the procedures in this paragraph (c).

(ii) This conforming procedure shall be initiated by the Contractor prior to the performance of contract work by the unlisted class of employee. The Contractor shall submit Standard Form (SF) 1444, Request For Authorization of Additional Classification and Rate, to the Contracting Officer no later than 30 days after the unlisted class of employee performs any contract work. The Contracting Officer shall review the proposed classification and rate and promptly submit the completed SF 1444 (which must include information regarding the agreement or disagreement of the employees' authorized representatives or the employees themselves together with the agency recommendation), and all pertinent information to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor. The Wage and Hour Division will approve, modify, or disapprove the action or render a final determination in the event of disagreement within 30 days of receipt or will notify the

Contracting Officer within 30 days of receipt that additional time is necessary.

(iii) The final determination of the conformance action by the Wage and Hour Division shall be transmitted to the Contracting Officer who shall promptly notify the Contractor of the action taken. Each affected employee shall be furnished by the Contractor with a written copy of such determination or it shall be posted as a part of the wage determination.

(iv)(A) The process of establishing wage and fringe benefit rates that bear a reasonable relationship to those listed in a wage determination cannot be reduced to any single formula. The approach used may vary from wage determination to wage determination depending on the circumstances. Standard wage and salary administration practices which rank various job classifications by pay grade pursuant to point schemes or other job factors may, for example, be relied upon. Guidance may also be obtained from the way different jobs are rated under Federal pay systems (Federal Wage Board Pay System and the General Schedule) or from other wage determina- tions issued in the same locality. Basic to the establishment of any conformable wage rate(s) is the concept that a pay relationship should be maintained between job classifications based on the skill required and the duties performed.

(B) In the case of a contract modification, an exercise of an option, or extension of an existing contract, or in any other case where a Contractor succeeds a contract under which the classification in question was previously conformed pursuant to paragraph (c) of this clause, a new conformed wage rate and fringe benefits may be assigned to the conformed classification by indexing (i.e., adjusting) the previous conformed rate and fringe benefits by an amount equal to the average (mean) percentage increase (or decrease, where appropriate) between the wages and fringe benefits specified for all classifications to be used on the contract which are listed in the current wage determination, and those specified for the corresponding classifications in the previously applicable wage determination. Where conforming actions are accomplished in accordance with this paragraph prior to the performance of contract work by the unlisted class of employees, the Contractor shall advise the Contracting Officer of the action taken but the other procedures in subdivision (c)(2)(ii) of this clause need not be followed.

(C) No employee engaged in performing work on this contract shall in any event be paid less than the currently applicable minimum wage specified under section 6(a)(1) of the Fair Labor Standards Act of 1938, as amended.

(v) The wage rate and fringe benefits finally determined under this subparagraph (c)(2) of this clause shall be paid to all employees performing in the classification from the first day on which contract work is performed by them in the classification. Failure to pay the unlisted employees the compensation agreed upon by the interested parties and/or finally determined by the Wage and Hour Division retroactive to the date such class of employees commenced contract work shall be a violation of the Act and this contract.

(vi) Upon discovery of failure to comply with subparagraph (c)(2) of this clause, the Wage and Hour Division shall make a final determination of conformed classification, wage rate, and/or fringe benefits which shall be retroactive to the date such class or classes of employees commenced contract work.

(3) Adjustment of Compensation. If the term of this contract is more than 1 year, the minimum monetary wages and fringe benefits required to be paid or fur- nished thereunder to service employees under this contract shall be subject to adjustment after 1 year and not less often than once every 2 years, under wage determinations issued by the Wage and Hour Division.

(d) Obligation to Furnish Fringe Benefits. The Contractor or subcontractor may discharge the obligation to furnish fringe benefits specified in the attachment or determined under subparagraph (c)(2) of this clause by furnishing equivalent combinations of bona fide fringe benefits, or by making equivalent or differential cash payments, only in accordance with Subpart D of 29 CFR Part 4.

(e) Minimum Wage. In the absence of a minimum wage attachment for this contract, neither the Contractor nor any subcontractor under this contract shall pay any person performing work under this contract (regardless of whether the person is a service employee) less than the minimum wage specified by section 6(a)(1) of the Fair

Labor Standards Act of 1938. Nothing in this clause shall relieve the Contractor or any subcontractor of any other obligation under law or contract for payment of a higher wage to any employee.

(f) Successor Contracts. If this contract succeeds a contract subject to the Act under which substantially the same services were furnished in the same locality and service employees were paid wages and fringe benefits provided for in a collective bargaining agreement, in the absence of the minimum wage attachment for this contract setting forth such collectively bargained wage rates and fringe benefits, neither the Contractor nor any subcontractor under this contract shall pay any service employee performing any of the contract work (regardless of whether or not such employee was employed under the predecessor contract), less than the wages and fringe benefits provided for in such collective bargaining agreement, to which such employee would have been entitled if employed under the predecessor contract, including accrued wages and fringe benefits and any prospective increases in wages and fringe benefits provided for under such agreement. No Contractor or subcontractor under this contract may be relieved of the foregoing obligation unless the limitations of 29 CFR 4.1b(b) apply or unless the Secretary of Labor or the Secretary's authorized representative finds, after a hearing as provided in 29 CFR 4.10 that the wages and/or fringe benefits provided for in such agreement are substantially at variance with those which prevail for services of a character similar in the locality, or determines, as provided in 29 CFR 4.11, that the collective bargaining agreement applicable to service employees employed under the predecessor contract was not entered into as a result of arm's length negotiations. Where it is found in accordance with the review procedures provided in 29 CFR 4.10 and/or 4.11 and Parts 6 and 8 that some or all of the wages and/or fringe benefits contained in a predecessor Contractor's collective bargaining agreement are substantially at variance with those which prevail for services of a character similar in the locality, and/or that the collective bargaining agreement applicable to service employees employed under the predecessor contract was not entered into as a result of arm's length negotiations, the Department will issue a new or revised wage determination setting forth the applicable wage rates and fringe benefits. Such determination shall be made part of the contract or subcontract, in accordance with the decision of the Administrator, the Administrative Law Judge, or the Board of Service Contract Appeals, as the case may be, irrespective of whether such issuance occurs prior to or after the award of a contract or subcontract (53 Comp. Gen. 401 (1973)). In the case of a wage determination issued solely as a result of a finding of substantial variance, such determination shall be effective as of the date of the final administrative decision.

(g) Notification to Employees. The Contractor and any subcontractor under this contract shall notify each service employee commencing work on this contract of the minimum monetary wage and any fringe benefits required to be paid pursuant to this contract, or shall post the wage determination attached to this contract. The poster provided by the Department of Labor (Publication WH 1313) shall be posted in a prominent and accessible place at the worksite. Failure to comply with this requirement is a violation of section 2(a)(4) of the Act and of this contract.

(h) Safe and Sanitary Working Conditions. The Contractor or subcontractor shall not permit any part of the services called for by this contract to be performed in buildings or surroundings or under working conditions provided by or under the control or supervision of the Contractor or subcontractor which are unsanitary, hazardous, or dangerous to the health or safety of the service employees. The Contractor or subcontractor shall comply with the safety and health standards applied under 29 CFR Part 1925.

(i) Records. (1) The Contractor and each subcontractor performing work subject to the Act shall make and maintain for 3 years from the completion of the work, and make them available for inspection and transcription by authorized representatives of the Wage and Hour Division, Employment Standards Administration, a record of the following:

(i) For each employee subject to the Act--

(A) Name and address and social security number;

(B) Correct work classification or classifications, rate or rates of monetary wages paid and fringe benefits provided, rate or rates of payments in lieu of fringe benefits, and total daily and weekly compensation;

(C) Daily and weekly hours worked by each employee; and

(D) Any deductions, rebates, or refunds from the total daily or weekly compensation of each employee.

(ii) For those classes of service employees not included in any wage determination attached to this contract, wage rates or fringe benefits determined by the interested parties or by the Administrator or authorized representative under the terms of paragraph (c) of this clause. A copy of the report required by subdivision (c)(2)(ii) of this clause will fulfill this requirement.

(iii) Any list of the predecessor Contractor's employees which had been furnished to the Contractor as prescribed by paragraph (n) of this clause.

(2) The Contractor shall also make available a copy of this contract for inspection or transcription by authorized representatives of the Wage and Hour Division.

(3) Failure to make and maintain or to make available these records for inspection and transcription shall be a violation of the regulations and this contract, and in the case of failure to produce these records, the Contracting Officer, upon direction of the Department of Labor and notification to the Contractor, shall take action to cause suspension of any further payment or advance of funds until the violation ceases.

(4) The Contractor shall permit authorized representatives of the Wage and Hour Division to conduct interviews with employees at the worksite during normal working hours.

(j) Pay Periods. The Contractor shall unconditionally pay to each employee subject to the Act all wages due free and clear and without subsequent deduction (except as otherwise provided by law or regulations, 29 CFR Part 4), rebate, or kickback on any account. These payments shall be made no later than one pay period following the end of the regular pay period in which the wages were earned or accrued. A pay period under this Act may not be of any duration longer than semi-monthly.

(k) Withholding of Payments and Termination of Contract. The Contracting Officer shall withhold or cause to be withheld from the Government Prime Contractor under this or any other Government contract with the Prime Contractor such sums as an appropriate official of the Department of Labor requests or such sums as the Contracting Officer decides may be necessary to pay underpaid employees employed by the Contractor or subcontractor. In the event of failure to pay any employees subject to the Act all or part of the wages or fringe benefits due under the Act, the Contracting Officer may, after authorization or by direction of the Department of Labor and written notification to the Contractor, take action to cause suspension of any further payment or advance of funds until such violations have ceased. Additionally, any failure to comply with the requirements of this clause may be grounds for termination of the right to proceed with the contract work. In such event, the Government may enter into other contracts or arrangements for completion of the work, charging the Contractor in default with any additional cost.

(l) Subcontracts. The Contractor agrees to insert this clause in all subcontracts subject to the Act.

(m) Collective Bargaining Agreements Applicable to Service Employees. If wages to be paid or fringe benefits to be furnished any service employees employed by the Government Prime Contractor or any subcontractor under the contract are provided for in a collective bargaining agreement which is or will be effective during any period in which the contract is being performed, the Government Prime Contractor shall report such fact to the Contracting Officer, together with full information as to the application and accrual of such wages and fringe benefits, including any prospective increases, to service employees engaged in work on the contract, and a copy of the collective bargaining agreement. Such report shall be made upon commencing performance of the contract, in the case of collective bargaining agreements effective at such time, and in the case of such agreements or provisions or amendments thereof effective at a later time during the period of contract performance such agreements shall be reported promptly after negotiation thereof.

(n) Seniority List. Not less than 10 days prior to completion of any contract being performed at a Federal facility where service employees may be retained in the performance of the succeeding contract and subject to a wage determination which contains vacation or other benefit provisions based upon length of service with a Contractor (predecessor) or successor (29 CFR 4.173), the incumbent Prime Contractor shall furnish the Contracting Officer a certified list of the names of all service employees on the Contractor's or subcontractor's payroll during the last month of contract performance. Such list shall also contain anniversary dates of employment on the contract either with the current or predecessor Contractors of each such service employee. The Contracting Officer shall turn over such list to the successor Contractor at the commencement of the succeeding contract.

(o) Rulings and Interpretations. Rulings and interpretations of the Act are contained in Regulations, 29 CFR Part 4.

(p) Contractor's Certification. (1) By entering into this contract, the Contractor (and officials thereof) certifies that neither it (nor he or she) nor any person or firm who has a substantial interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of the sanctions imposed under section 5 of the Act.

(2) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract under section 5 of the Act.

(3) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

(q) Variations, Tolerances, and Exemptions Involving Employment. Notwithstanding any of the provisions in paragraphs (b) through (o) of this clause, the following employees may be employed in accordance with the following variations, tolerances, and exemptions, which the Secretary of Labor, pursuant to section 4(b) of the Act prior to its amendment by Pub. L. 92-473, found to be necessary and proper in the public interest or to avoid serious impairment of the conduct of Government business:

(1) Apprentices, student-learners, and workers whose earning capacity is impaired by age, physical or mental deficiency, or injury may be employed at wages lower than the minimum wages otherwise required by section 2(a)(1) or 2(b)(1) of the Act without diminishing any fringe benefits or cash payments in lieu thereof required under section 2(a)(2) of the Act, in accordance with the conditions and procedures prescribed for the employment of apprentices, student-learners, handicapped persons, and handicapped clients of sheltered workshops under section 14 of the Fair Labor Standards Act of 1938, in the regulations issued by the Administrator (29 CFR Parts 520, 521, 524, and 525).

(2) The Administrator will issue certificates under the Act for the employment of apprentices, student-learners, handicapped persons, or handicapped clients of sheltered workshops not subject to the Fair Labor Standards Act of 1938, or subject to different minimum rates of pay under the two acts, authorizing appropriate rates of minimum wages (but without changing requirements concerning fringe benefits or supplementary cash payments in lieu thereof), applying procedures prescribed by the applicable regulations issued under the Fair Labor Standards Act of 1938 (29 CFR Parts 520, 521, 524, and 525).

(3) The Administrator will also withdraw, annul, or cancel such certificates in accordance with the regulations in 29 CFR Parts 525 and 528.

(r) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed and individually registered in a bona fide apprenticeship program registered with a State Apprenticeship Agency which is recognized by the U.S. Department of Labor, or if no such recognized agency exists in a State, under a program registered with the Bureau of Apprenticeship and Training, Employment and Training Administration, U.S. Department of Labor . Any employee who is not registered as an apprentice in an approved program shall be paid the wage rate and fringe benefits contained in the applicable wage

determination for the journeyman classification of work actually performed. The wage rates paid apprentices shall not be less than the wage rate for their level of progress set forth in the registered program, expressed as the appropriate percentage of the journeyman's rate contained in the applicable wage determination. The allowable ratio of apprentices to journeymen employed on the contract work in any craft classification shall not be greater than the ratio permitted to the Contractor as to his entire work force under the registered program.

(s) Tips. An employee engaged in an occupation in which the employee customarily and regularly receives more than $30 a month in tips may have the amount of these tips credited by the employer against the minimum wage required by section 2(a)(1) or section 2(b)(1) of the Act, in accordance with section 3(m) of the Fair Labor Standards Act and Regulations, 29 CFR Part 531. However, the amount of credit shall not exceed $1.34 per hour beginning January 1, 1981. To use this provision--

(1) The employer must inform tipped employees about this tip credit allowance before the credit is utilized;

(2) The employees must be allowed to retain all tips (individually or through a pooling arrangement and regardless of whether the employer elects to take a credit for tips received);

(3) The employer must be able to show by records that the employee receives at least the applicable Service Contract Act minimum wage through the combination of direct wages and tip credit; and

(4) The use of such tip credit must have been permitted under any predecessor collective bargaining agreement applicable by virtue of section 4(c) of the Act.

Disputes Concerning Labor Standards. The U.S. Department of Labor has set forth in 29 CFR Parts 4, 6, and 8 procedures for resolving disputes concerning labor standards requirements. Such disputes shall be resolved in accordance with those procedures and not the Disputes clause of this contract. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(End of clause)

52.222-42 STATEMENT OF EQUIVALENT RATES FOR FEDERAL HIRES (MAY 1989)

In compliance with the Service Contract Act of 1965, as amended, and the regulations of the Secretary of Labor (29 CFR Part 4), this clause identifies the classes of service employees expected to be employed under the contract and states the wages and fringe benefits payable to each if they were employed by the contracting agency subject to the provisions of 5 U.S.C. 5341 or 5332.

THIS STATEMENT IS FOR INFORMATION ONLY: IT IS NOT A WAGE DETERMINATION

Employee Class	Monetary Wage-Fringe Benefits
General Clerk II	$ 7.07
Civil Engineering Technician	$16.31
Engineering technician IV	$20.10
Environmental Technician	$15.70

(End of clause)

52.222-44 FAIR LABOR STANDARDS ACT AND SERVICE CONTRACT ACT--PRICE ADJUSTMENT

(FEB 2002)

(a) This clause applies to both contracts subject to area prevailing wage determinations and contracts subject to Contractor collective bargaining agreements.

(b) The Contractor warrants that the prices in this contract do not include any allowance for any contingency to cover increased costs for which adjustment is provided under this clause.

(c) The contract price or contract unit price labor rates will be adjusted to reflect increases or decreases by the Contractor in wages and fringe benefits to the extent that these increases or decreases are made to comply with--

(1) An increased or decreased wage determination applied to this contract by operation of law; or

(2) An amendment to the Fair Labor Standards Act of 1938 that is enacted subsequent to award of this contract, affects the minimum wage, and becomes applicable to this contract under law.

(d) Any such adjustment will be limited to increases or decreases in wages and fringe benefits as described in paragraph (c) of this clause, and to the accompanying increases or decreases in social security and unemployment taxes and workers' compensation insurance; it shall not otherwise include any amount for general and administrative costs, overhead, or profit.

(e) The Contractor shall notify the Contracting Officer of any increase claimed under this clause within 30 days after the effective date of the wage change, unless this period is extended by the Contracting Officer in writing. The Contractor shall promptly notify the Contracting Officer of any decrease under this clause, but nothing in the clause shall preclude the Government from asserting a claim within the period permitted by law. The notice shall contain a statement of the amount claimed and any relevant supporting data that the Contracting Officer may reasonably require. Upon agreement of the parties, the contract price or contract unit price labor rates shall be modified in writing. The Contractor shall continue performance pending agreement on or determination of any such adjustment and its effective date.

(f) The Contracting Officer or an authorized representative shall, until the expiration of 3 year s after final payment under the contract, have access to and the right to examine any directly pertinent books, documents, papers, and records of the Contractor.

(End of clause)

52.223-5 POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION (APR 1998)

(a) Executive Order 12856 of August 3, 1993, requires Federal facilities to comply with the provisions of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA)(42 U.S.C. 11001-11050) and the Pollution Prevention Act of 1990 (PPA)(42 U.S.C. 13101-13109).

(b) The Contractor shall provide all information needed by the Federal facility to comply with the emergency planning reporting requirements of Section 302 of EPCRA; the emergency notice requirements of Section 304 of EPCRA; the list of Material Safety Data Sheets required by Section 311 of EPCRA; the emergency and hazardous chemical inventory forms of Section 312 of EPCRA; the toxic chemical release inventory of Section 313 of EPCRA, which includes the reduction and recycling information required by Section 6607 of PPA; and the toxic chemical reduction goals requirements of Section 3-302 of Executive Order 12856.

(End of clause)

52.223-6 DRUG-FREE WORKPLACE (MAY 2001)

(a) Definitions. As used in this clause --

"Controlled substance" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11 - 1308.15.

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to deter- mine violations of the Federal or State criminal drug statutes.

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession, or use of any controlled substance.

"Drug-free workplace" means the site(s) for the performance of work done by the Contractor in connection with a specific contract at which employees of the Contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

"Employee" means an employee of a Contractor directly engaged in the performance of work under a Government contract. "Directly engaged" is defined to include all direct cost employees and any other Contractor employee who has other than a minimal impact or involvement in contract performance.

"Individual" means an offeror/contractor that has no more than one employee including the offeror/contractor.

(b) The Contractor, if other than an individual, shall -- within 30 days after award (unless a longer period is agreed to in writing for contracts of 30 days or more performance duration), or as soon as possible for contracts of less than 30 days performance duration--

(1) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;

(2) Establish an ongoing drug-free awareness program to inform such employees about--

(i) The dangers of drug abuse in the workplace;

(ii) The Contractor's policy of maintaining a drug-free workplace;

(iii) Any available drug counseling, rehabilitation, and employee assistance programs; and

(iv) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b)(1) of this clause;

(4) Notify such employees in writing in the statement required by subparagraph (b)(1) of this clause that, as a condition of continued employment on this contract, the employee will--

(i) Abide by the terms of the statement; and

(ii) Notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than 5 days after such conviction.

(5) Notify the Contracting Officer in writing within 10 days after receiving notice under subdivision (b)(4)(ii) of this clause, from an employee or otherwise receiving actual notice of such conviction. The notice shall include the position title of the employee;

(6) Within 30 days after receiving notice under subdivision (b)(4)(ii) of this clause of a conviction, take one of the following actions with respect to any employee who is convicted of a drug abuse violation occurring in the workplace:

(i) Taking appropriate personnel action against such employee, up to and including termination; or

(ii) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency; and

(7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b)(1) though (b)(6) of this clause.

(c) The Contractor, if an individual, agrees by award of the contract or acceptance of a purchase order, not to engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance while performing this contract.

(d) In addition to other remedies available to the Government, the Contractor's failure to comply with the requirements of paragraph (b) or (c) of this clause may, pursuant to FAR 23.506, render the Contractor subject to suspension of contract payments, termination of the contract for default, and suspension or debarment.

(End of clause)

52.223-14 TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

(a) Unless otherwise exempt, the Contractor, as owner or operator of a facility used in the performance of this contract, shall file by July 1 for the prior calendar year an annual Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023(a) and (g)), and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106). The Contractor shall file, for each facility subject to the Form R filing and reporting requirements, the annual Form R throughout the life of the contract.

(b) A Contractor owned or operated facility used in the performance of this contract is exempt from the requirement to file an annual Form R if--

(1) The facility does not manufacture, process, or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

(2) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

(3) The facility does not meet the reporting thresholds of toxic chemicals established under of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

(4) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

(5) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

(c) If the Contractor has certified to an exemption in accordance with one or more of the criteria in paragraph (b) of this clause, and after award of the contract circumstances change so that any of its owned or operated facilities used in the performance of this contract is no longer exempt--

(1) The Contractor shall notify the Contracting Officer; and

(2) The Contractor, as owner or operator of a facility used in the performance of this contract that is no longer exempt, shall (i) submit a Toxic Chemical Release Inventory Form (Form R) on or before July 1 for the prior calendar year during which the facility becomes eligible; and (ii) continue to file the annual Form R for the life of the contract for such facility.

(d) The Contracting Officer may terminate this contract or take other action as appropriate, if the Contractor fails to comply accurately and fully with the EPCRA and PPA toxic chemical release filing and reporting requirements.

(e) Except for acquisitions of commercial items, as defined in FAR Part 2, the Contractor shall--

(1) For competitive subcontracts expected to exceed $100,000 (including all options), include a solicitation provision substantially the same as the provision at FAR 52.223-13, Certification of Toxic Chemical Release Reporting; and

(2) Include in any resultant subcontract exceeding $100,000 (including all options), the substance of this clause, except this paragraph (e).

(End of clause)

52.225-11 BUY AMERICAN ACT --CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS (MAY 2002)

(a) Definitions. As used in this clause--

Component means an article, material, or supply incorporated directly into a construction material.

Construction material means an article, material, or supply brought to the construction site by the Contractor or subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

Cost of components means--

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the construction material (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but

excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.

Designated country means any of the following countries: Aruba, Austria, Bangladesh, Belgium, Benin, Bhutan, Botswana, Burkina Faso, Burundi, Canada, Cape Verde, Central African Republic, Chad, Comoros, Denmark, Djibouti, Equatorial Guinea, Finland, France, Gambia, Germany, Greece, Guinea, Guinea -Bissau, Haiti, Hong Kong, Iceland, Ireland, Israel, Italy, Japan.

Kiribati, Korea, Republic of, Lesotho, Liechtenstein, Luxembourg, Malawi, Maldives, Mali, Mozambique, Nepal, Netherlands, Niger, Norway, Portugal, Rwanda.

Sao Tome and Principe, Sierra Leone, Singapore, Somalia, Spain, Sweden, Switzerland, Tanzania U.R., Togo, Tuvalu, Uganda, United Kingdom, Vanuatu, Western Samoa, Yemen.

Designated country construction material means a construction material that --

(1) Is wholly the growth, product, or manufacture of a designated country; or

(2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a designated country into a new and different construction material distinct from the materials from which it was transformed.

Domestic construction material means--

(1) An unmanufactured construction material mined or produced in the United States; or

(2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.

Foreign construction material means a construction material other than a domestic construction material.

North American Free Trade Agreement country means Canada or Mexico.

North American Free Trade Agreement country construction material means a construction material that--

(1) Is wholly the growth, product, or manufacture of a North American Free Trade Agreement (NAFTA) country; or

(2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a NAFTA country into a new and different construction material distinct from the materials from which it was transformed.

United States means the 50 States and the District of Columbia, U.S. territories and possessions, Puerto Rico, the Northern Mariana Islands, and any other place subject to U.S. jurisdiction, but does not include leased bases.

(b) Construction materials. (1) This clause implements the Buy American Act (41 U.S.C. 10a -10d) by providing a preference for domestic construction material. In addition, the Contracting Officer has determined that the Trade Agreements Act and the North American Free Trade Agreement (NAFTA) apply to this acquisition. Therefore, the Buy American Act restrictions are waived for designated country and NAFTA country construction materials.

(2) The Contractor shall use only domestic, designated country, or NAFTA country construction material in performing this contract, except as provided in paragraphs (b)(3) and (b)(4) of this clause.

(3) The requirement in paragraph (b)(2) of this clause does not apply to the construction materials or components listed by the Government as follows: None

(4) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(3) of t his clause if the Government determines that--

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the restrictions of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent;

(ii) The application of the restriction of the Buy American Act to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) Request for determination of inapplicability of the Buy American Act. (1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(4) of this clause shall include adequate information for Government evaluation of the request, including--

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modi fy the contract to allow use of the foreign construction material. However, when the basis for the exception is the

unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(4)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act applies, use of foreign construction material is noncompliant with the Buy American Act.

(d) Data. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Construction Materials Price Comparison

Construction material description	Unit of measure	Quantity	Price (dollars) \1\
Item 1:			
Foreign construction material....	.....	.....	.....
Domestic construction material...	.....	.....	.....
Item 2:			
Foreign construction material....	.....	.....	.....
Domestic construction material...	.....	.....	.....

\1\ Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).
List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.
Include other applicable supporting information.

(End of clause)

52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JUL 2000)

(a) The Contractor shall not acquire, for use in the performance of this contract, any supplies or services originating from sources within, or that were located in or transported from or through, countries whose p roducts are banned from importation into the United States under regulations of the Office of Foreign Assets Control, Department of the Treasury. Those countries are Cuba, Iran, Iraq, Libya, North Korea, Sudan, the territory of Afghanistan controlled by the Taliban, and Serbia (excluding the territory of Kosovo).

(b) The Contractor shall not acquire for use in the performance of this contract any supplies or services from entities controlled by the government of Iraq.

(c) The Contractor shall insert this clause, including this paragraph (c), in all subcontracts.

(End of clause)

52.227-1 AUTHORIZATION AND CONSENT (JUL 1995)

(a) The Government authorizes and consents to all use and manufacture, in performing this contract or any subcontract at any tier, of any invention described in and covered by a United States patent (1) embodied in the structure or composition of any article the delivery of which is accepted by the Government under this contract or

(2) used in machinery, tools, or methods whose use necessarily results from compliance by the Contractor or a subcontractor with (i) specifications or written provisions forming a part of this contract or (ii) specific written instructions given by the Contracting Officer directing the manner of performance. The entire liability to the Government for infringement of a patent of the United States shall be determined solely by the provisions of the indemnity clause, if any, included in this contract or any subcontract hereunder (including any lower-tier subcontract), and the Government assumes liability for all other infringement to the extent of the authorization and consent hereinabove granted.

(b) The Contractor agrees to include, and require inclusion of, this clause, suitably modified to identify the parties, in all subcontracts at any tier for supplies or services (including construction, architect-engineer services, and materials, supplies, models, samples, and design or testing services expected to exceed the simplified acquisition threshold (however, omission of this clause from any subcontract, including those at or below the simplified acquisition threshold, does not affect this authorization and consent.)

(End of clause)

52.227-2 NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (AUG 1996)

(a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.

(b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed under this contract, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

56 The Contractor agrees to include, and require inclusion of, this clause in all subcontracts at any tier for supplies or services (including construction and architect-engineer subcontracts and those for material, supplies, models, samples, or design or testing services) expected to exceed the simplified acquisition threshold at (FAR) 2.101.to exceed the dollar amount set forth in 13.000 of the Federal Acquisition Regulation (FAR).

(End of clause)

52.227-4 PATENT INDEMNITY--CONSTRUCTION CONTRACTS (APR 1984)

Except as otherwise provided, the Contractor agrees to indemnify the Government and its officers, agents, and employees against liability, including costs and expenses, for infringement upon any United States patent (except a patent issued upon an application that is now or may hereafter be withheld from issue pursuant to a Secrecy Order under 35 U.S.C. 181) arising out of performing this contract or out of the use or disposal by or for the account of the Government of supplies furnished or work performed under this contract.

(End of clause)

52.228-1 BID GUARANTEE (SEP 1996)

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

(b) The bidder shall furnish a bid guarantee in the form of a firm commitment, e.g., bid bond supported by good and sufficient surety or sureties acceptable to the Government, 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 unsuccessf ul 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) The amount of the bid guarantee shall be twenty (20) percent of the bid price or $3,000,000.00, whichever is less.-

(d) 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 furnish executed bond(s) within 10 days after receipt of the forms by the bidder, the Contracting Officer may terminate the contract for default.-

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

(End of clause)

52.228-2 ADDITIONAL BOND SECURITY (OCT 1997)

The Contractor shall promptly furnish additional security requ ired to protect the Government and persons supplying labor or materials under this contract if--

(a) Any surety upon any bond, or issuing financial institution for other security, furnished with this contract becomes unacceptable to the Government.

(b) Any surety fails to furnish reports on its financial condition as required by the Government;

(c) The contract price is increased so that the penal sum of any bond becomes inadequate in the opinion of the Contracting Officer; or

(d) An irrevocable letter of credit (ILC) used as security will expire before the end of the period of required security. If the Contractor does not furnish an acceptable extension or replacement ILC, or other acceptable substitute, at least 30 days before an ILC's scheduled expiration, the Contracting officer has the right to immediately draw on the ILC.

(End of clause)

52.228-5 INSURANCE--WORK ON A GOVERNMENT INSTALLATION (JAN 1997)

(a) The Contractor shall, at its own expense, provide and maintain during the entire pe rformance 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 notify 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 or 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. The Contractor shall maintain a copy of all subcontractors' proofs of required insurance, and shall make copies available to the Contracting Officer upon request.

(End of clause)

52.228-11 PLEDGES OF ASSETS (FEB 1992)

(a) Offerors shall obtain from each person acting as an individual surety on a bid guarantee, a performance bond, or a payment bond--

(1) Pledge of assets; and

(2) Standard Form 28, Affidavit of Individual Surety.

(b) Pledges of assets from each person acting as an individual surety shall be in the form of--

(1) Evidence of an escrow account containing cash, certificates of deposit, commercial or Government securities, or other assets described in FAR 28.203-2 (except see 28.203-2(b)(2) with respect to Government securities held in book entry form) and/or;

(2) A recorded lien on real estate. The offeror will be required to provide--

(i) Evidence of title in the form of a certificate of title prepared by a title insurance company approved by the United States Department of Justice. This title evidence must show fee simple title vested in the surety along with any concurrent owners; whether any real estate taxes are due and payable; and any recorded encumbrances against the property, including the lien filed in favor of the Government as required by FAR 28.203-3(d);

(ii) Evidence of the amount due under any encumbrance shown in the evidence of title;

(iii) A copy of the current real estate tax assessment of the property or a current appraisal dated no earlier than 6 months prior to the date of the bond, prepared by a professional appraiser who certifies that the appraisal has been conducted in accordance with the generally accepted appraisal standards as reflected in the Uniform Standards of Professional Appraisal Practice, as promulgated by the Appraisal Foundation.

(End of clause)

52.228-12 PROSPECTIVE SUBCONTRACTOR REQUESTS FOR BONDS. (OCT 1995)

In accordance with Section 806(a)(3) of Pub. L. 102-190, as amended by Sections 2091 and 8105 of Pub. L. 103-355, upon the request of a prospective subcontractor or supplier offering to furnish labor or material for the performance of this contract for which a payment bond has been furnished to the Government pursuant to the Miller Act, the Contractor shall promptly provide a copy of such payment bond to the requester.

(End of clause)

52.228-14 IRREVOCABLE LETTER OF CREDIT (DEC 1999)

(a) "Irrevocable letter of credit" (ILC), as used in this clause, means a written commitment by a federally insured financial institution to pay all or part of a stated amount of money, until the expiration date of the letter, upon presentation by the Government (the beneficiary) of a written demand therefor. Neither the financial institution nor the offeror/Contractor can revoke or condition the letter of credit.

(b) If the offeror intends to use an ILC in lieu of a bid bond, or to secure other types of bonds such as performance and payment bonds, the letter of credit and letter of confirmation formats in paragraphs (e) and (f) of this clause shall be used.

(c) The letter of credit shall be irrevocable, shall require presentation of no document other than a written demand and the ILC (including confirming letter, if any), shall be issued/confirmed by an acceptable federally insured financial institution as provided in paragraph (d) of this clause, and --

(1) If used as a bid guarantee, the ILC shall expire no earlier than 60 days after the close of the bid acceptance period;

(2) If used as an alternative to corporate or individual sureties as security for a performance or payment bond, the offeror/Contractor may submit an ILC with an initial expiration date estimated to cover the entire period for which financial security is required or may submit an ILC with an initial expiration date that is a minimum period of one year from the date of issuance. The ILC shall provide that, unless the issuer provides the beneficiary written notice of non-renewal at least 60 days in advance of the current expiration date, the ILC is automatically extended without amendment for one year from the expiration date, or any future expiration date, until the period of required coverage is completed and the Contracting Officer provides the financial institution with a written statement waiving the right to payment. The period of required coverage shall be:

(i) For contracts subject to the Miller Act, the later of--

(A) One year following the expected date of final payment;

(B) For performance bonds only, until completion of any warranty period; or

(C) For payment bonds only, until resolution of all claims filed against the payment bond during the one-year period following final payment.

(ii) For contracts not subject to the Miller Act, the later of--

(A) 90 days following final payment; or

(B) For performance bonds only, until completion of any warranty period.

(d) Only federally insured financial institutions rated investment grade or higher shall issue or confirm the ILC. The offeror/Contractor shall provide the Contracting Officer a credit rating that indicates the financial institution has the required rating(s) as of the date of issuance of the ILC. Unless the financial institution issuing the ILC had letter of credit business of less than $25 million in the past year, ILCs over $5 million must be confirmed by another acceptable financial institution that had letter of credit business of less than $25 million in the past year.

(e) The following format shall be used by the issuing financial institution to create an ILC:

_____

[Issuing Financial Institution's Letterhead or Name and Address]

Issue Date _____

IRREVOCABLE LETTER OF CREDIT NO. _____

Account party's name _____

Account party's address _____

For Solicitation No. _____(for reference only)

TO: [U.S. Government agency]

[U.S. Government agency's address]

1. We hereby establish this irrevocable and transferable Letter of Credit in your favor for one or more drawings up to United States $_____. This Letter of Credit is payable at [issuing financial institution's and, if any, confirming financial institution's] office at [issuing financial institution's address and, if any, confirming financial institution's address] and expires with our close of business on _____, or any automatically extended expiration date.

2. We hereby undertake to honor your or the transferee's sight draft(s) drawn on the issuing or, if any, the confirming financial institution, for all or any part of this credit if presented with this Letter of Credit and confirmation, if any, at the office specified in paragraph 1 of this Letter of Credit on or before the expiration date or any automatically extended expiration date.

3. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this Letter of Credit that it is deemed to be automatically extended without amendment for one year from the expiration date hereof, or any future expiration date, unless at least 60 days prior to any expiration date, we notify you or the transferee by registered mail, or other receipted means of delivery, that we elect not to consider this Letter of Credit renewed for any such additional period. At the time we notify you, we also agree to notify the account party (and confirming financial institution, if any) by the same means of delivery.

4. This Letter of Credit is transferable. Transfers and assignments of proceeds are to be effected without charge to either the beneficiary or the transferee/assignee of proceeds. Such transfer or assignment shall be only at the written direction of the Government (the beneficiary) in a form satisfactory to the issuing financial institution and the confirming financial institution, if any.

5. This Letter of Credit is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution, if any, otherwise state of issuing financial institution].

6. If this credit expires during an interruption of business of this financial institution as described in Article 17 of the UCP, the financial institution specifically agrees to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

_____

[Issuing financial institution]

(f) The following format shall be used by the financial institution to confirm an ILC:

_____
[Confirming Financial Institution's Letterhead or Name and Address]

(Date) _____

Our Letter of Credit Advice Number _____

Beneficiary: _____ [U.S. Government agency]

Issuing Financial Institution: _____

Issuing Financial Institution's LC No.: _____

Gentlemen:

1. We hereby confirm the above indicated Letter of Credit, the original of which is attached, issued by _____ [name of issuing financial institution] for drawings of up to United States dollars _____/U.S. $_____ and expiring with our close of business on _____ [the expiration date], or any automatically extended expiration date.

2. Draft(s) drawn under the Letter of Credit and this Confirmation are payable at our office located at _____.

3. We hereby undertake to honor sight draft(s) drawn under and presented with the Letter of Credit an d this Confirmation at our offices as specified herein.

4. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this confirmation that it be deemed automatically extended without amendment for one year from the expiration date hereof, or any automatically extended expiration date, unless:

(a) At least 60 days prior to any such expiration date, we shall notify the Contracting Officer, or the transferee and the issuing financial institution, by registered mail or other receipted means of delivery, that we elect not to consider this confirmation extended for any such additional period; or

(b) The issuing financial institution shall have exercised its right to notify you or the transferee, the account party, and ourselves, of its election not to extend the expiration date of the Letter of Credit.

5. This confirmation is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution].

6. If this confirmation expires during an interruption of business of this financial institution as described in Artic le 17 of the UCP, we specifically agree to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

_____

[Confirming financial institution]

(g) The following format shall be used by the Contracting Officer for a sight draft to draw on the Letter of Credit:

SIGHT DRAFT

_____

[City, State]

(Date) _____

[Name and address of financial institution]

Pay to the order of _____ [Beneficiary Agency] _____ the sum of United States $_____.
This draft is drawn under Irrevocable Letter of Credit No. _____.

_____

[Beneficiary Agency]

By: _____

(End of clause)

52.228-15 PERFORMANCE AND PAYMENT BONDS--CONSTRUCTION (JUL 2000)-

(a) Definitions. As used in this clause--

Original contract price means the award price of the contract; or, for requirements contracts, the price payable for the estimated total quantity; or, for indefinite-quantity contracts, the price payable for the specified minimum quantity. Original contract price does not include the price of any options, except those options exercised at the time of contract award.

(b) Amount of required bonds. Unless the resulting contract price is $100,000 or less, the successful offeror shall furnish performance and payment bonds to the Contracting Officer as follows:

(1) Performance bonds (Standard Form 25). The penal amount of performance bonds at the time of contract award shall be 100 percent of the original contract price.

(2) Payment Bonds (Standard Form 25-A). The penal amount of payment bonds at the time of contract award shall be 100 percent of the original contract price.

(3) Additional bond protection. (i) The Government may require additional performance and payment bond protection if the contract price is increased. The increase in protection generally will equal 100 percent of the increase in contract price.

(ii) The Government may secure the additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

(c) Furnishing executed bonds. The Contractor shall furnish all executed bonds, including any necessary reinsurance agreements, to the Contracting Officer, within the time period specified in the Bid Guarantee provision of the solicitation, or otherwise specified by the Contracting Officer, but in any event, before starting work.

(d) Surety or other security for bonds. The bonds shall be in the form of firm commitment, supported by corporate sureties whose names appear on the list contained in Treasury Department Circular 570, individual sureties, or by other acceptable security such as postal money order, certified check, cashier's check, irrevocable letter of credit, or, in accordance with Treasury Department regulations, certain bonds or notes of the United States. Treasury Circular 570 is published in the Federal Register or may be obtained from the U.S. Department of Treasury, Financial Management Service, Surety Bond Branch, 401 14th Street, NW, 2nd Floor, West Wing, Washington, DC 20227.

(e) Notice of subcontractor waiver of protection (40 U.S.C. 270b(c). Any waiver of the right to sue on the payment bond is void unless it is in writing, signed by the person whose right is waived, and executed after such person has first furnished labor or material for use in the performance of the contract.

(End of clause)

52.229-3 FEDERAL, STATE, AND LOCAL TAXES (JAN 1991)

(a) "Contract date," as used in this clause, means the date set for bid opening or, if this is a negotiated contract or a modification, the effective date of this contract or modification.

"All applicable Federal, State, and local taxes and duties," as used in this clause, means all taxes and duties, in effect on the contract date, that the taxing authority is imposing and collecting on the transactions or property covered by this contract.

"After-imposed Federal tax," as used in this clause, means any new or increased Federal excise tax or duty, or tax that was exempted or excluded on the contract date but whose exemption was later revoked or reduced during the contract period, on the transactions or property covered by this contract that the Contractor is required to pay or bear as the result of legislative, judicial, or administrative action taking effect after the contract date. It does not include social security tax or other employment taxes.
"After-relieved Federal tax," as used in this clause, means any amount of Federal excise tax or duty, except social security or other employment taxes, that would otherwise have been payable on the transactions or property covered by this contract, but which the Contractor is not required to pay or bear, or for which the Contractor obtains a refund or drawback, as the result of legislative, judicial, or administrative action taking effect after the contract date.

(b) The contract price includes all applicable Federal, State, and local taxes and duties.

(c) The contract price shall be increased by the amount of any after-imposed Federal tax, provided the Contractor warrants in writing that no amount for such newly imposed Federal excise tax or duty or rate increase was included in the contract price, as a contingency reserve or otherwise.

(d) The contract price shall be decreased by the amount of any after-relieved Federal tax.

(e) The contract price shall be decreased by the amount of any Federal excise tax or duty, except social security or other employment taxes, that the Contractor is required to pay or bear, or does not obtain a refund of, through the Contractor's fault, negligence, or failure to follow instructions of the Contracting Officer.

(f) No adjustment shall be made in the contract price under this clause unless the amount of the adjustment exceeds

$250.

(g) The Contractor shall promptly notify the Contracting Officer of all matters relating to any Federal excise tax or duty that reasonably may be expected to result in either an increase or decrease in the contract price and shall take appropriate action as the Contracting Officer directs.

(h) The Government shall, without liability, furnish evidence appropriate to establish exemption from any Federal, State, or local tax when the Contractor requests such evidence and a reasonable basis exists to sustain the exemption.

(End of clause)

52.229-5 TAXES--CONTRACTS PERFORMED IN U.S. POSSESSIONS OR PUERTO RICO (APR 1984)

The term "local taxes," as used in the Federal, State, and local taxes clause of this contract, includes taxes imposed by a possession of the United States or by Puerto Rico.

(End of clause)

52.232-5 PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (MAY 1997)

(a) Payment of price. The Government shall pay the Contractor the contract price as provided in this contract.

(b) Progress payments. The Government shall make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, on estimates of work accomplished which meets the standards of quality established under the contract, as approved by the Contracting Officer.

(1) The Contractor's request for progress payments shall include the following substantiation:

(i) An itemization of the amounts requested, related to the various elements of work required by the contract covered by the payment requested.

(ii) A listing of the amount included for work performed by each subcontractor under the contract.

(iii) A listing of the total amount of each subcontract under the contract.

(iv) A listing of the amounts previously paid to each such subcontractor under the contract.

(v) Additional supporting data in a form and detail required by the Contracting Officer.

(2) In the preparation of estimates, the Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the site also may be taken into consideration if--

(i) Consideration is specifically authorized by this contract; and

(ii) The Contractor furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this contract.

(c) Contractor certification. Along with each request for progress payments, the Contractor shall furnish the following certification, or payment shall not be made: (However, if the Contractor elects to delete paragraph (c)(4)

from the certification, the certification is still acceptable.)

I hereby certify, to the best of my knowledge and belief, that--

(1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;

(2) Payments to subcontractors and suppliers have been made from previous payments received under the contract, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements and the requirements of chapter 39 of Title 31, United States Code;

(3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract; and

(4) This certification is not to be construed as final acceptance of a subcontractor's performance.

_____

(Name)

_____

(Title)

_____

(Date)

(d) Refund of unearned amounts. If the Contractor, after making a certified request for progress payments, discovers that a portion or all of such request constitutes a payment for performance by the Contractor that fails to conform to the specifications, terms, and conditions of this contract (hereinafter referred to as the "unearned amount"), the Contractor shall--

(1) Notify the Contracting Officer of such performance deficiency; and

(2) Be obligated to pay the Government an amount (computed by the Contracting Officer in the manner provided in paragraph (j) of this clause) equal to interest on the unearned amount from the 8th day after the date of receipt of the unearned amount until--

(i) The date the Contractor notifies the Contracting Officer that the performance deficiency has been corrected; or

(ii) The date the Contractor reduces the amount of any subsequent certified request for progress payments by an amount equal to the unearned amount.

(e) Retainage. If the Contracting Officer finds that satisfactory progress was achieved during any period for which a progress payment is to be made, the Contracting Officer shall authorize payment to be made in full. However, if satisfactory progress has not been made, the Contracting Officer may retain a maximum of 10 percent of the amount of the payment until satisfactory progress is achieved. When the work is substantially complete, the Contracting Officer may retain from previously withheld funds and future progress payments that amount the Contracting Officer considers adequate for protection of the Government and shall release to the Contractor all the remaining withheld funds. Also, on completion and acceptance of each separate building, public work, or other division of the contract, for which the price is stated separately in the contract, payment shall be made for the

completed work without retention of a percentage.

(f) Title, liability, and reservation of rights. All material and work covered by progress payments made shall, at the time of payment, become the sole property of the Government, but this shall not be construed as--

(1) Relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or

(2) Waiving the right of the Government to require the fulfillment of all of the terms of the contract.

(g) Reimbursement for bond premiums. In making these progress payments, the Government shall, upon request, reimburse the Contractor for the amount of premiums paid for performance and payment bonds (including coinsurance and reinsurance agreements, when applicable) after the Contractor has furnished evidence of full payment to the surety. The retainage provisions in paragraph (e) of this clause shall not apply to that portion of progress payments attributable to bond premiums.

(h) Final payment. The Government shall pay the amount due the Contractor under this contract after --

(1) Completion and acceptance of all work;

(2) Presentation of a properly executed voucher; and

(3) Presentation of release of all claims against
the Government arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned under the Assignment of Claims Act of 1940 (31 U.S.C. 3727 and 41 U.S.C. 15).

(i) Limitation because of undefinitized work. Notwithstanding any provision of this contract, progress payments shall not exceed 80 percent on work accomplished on undefinitized contract actions. A "contract action" is any action resulting in a contract, as defined in FAR Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes.

(j) Interest computation on unearned amounts. In accordance with 31 U.S.C. 3903(c)(1), the amount payable under subparagraph (d)(2) of this clause shall be--

(1) Computed at the rate of average bond equivalent rates of 91-day Treasury bills auctioned at the most recent auction of such bills prior to the date the Contractor receives the unearned amount; and

(2) Deducted from the next available payment to the Contractor.

(End of clause)

52.232-10 PAYMENTS UNDER FIXED-PRICE ARCHITECT-ENGINEER CONTRACTS (AUG 1987)

(a) Estimates shall be made monthly of the amount and value of the work and services performed by the Contractor under this contract which meet the standards of quality established under this contract. The estimates shall be prepared by the Contractor and accompanied by any supporting data required by the Contracting Officer.

(b) Upon approval of the estimate by the Contracting Officer, payment upon properly executed vouchers shall be

made to the Contractor, as soon as practicable, of 90 percent of the approved amount, less all previous payments; provided, that payment may be made in full during any months in which the Contracting Officer determines that performance has been satisfactory. Also, whenever the Contracting Officer determines that the work is substantially complete and that the amount retained is in excess of the amount adequate for the protection of the Government, the Contracting Officer may release the excess amount to the Contractor.

(c) Upon satisfactory completion by the Contractor and acceptance by the Contracting Officer of the work done by the Contractor under the "Statement of Architect-Engineer Services", the Contractor will be paid the unpaid balance of any money due for work under the statement, including retained percentages relating to this portion of the work. Upon satisfactory completion and final acceptance of the construction work, the Contractor shall be paid any unpaid balance of money due under this contract.

(d) Before final payment under the contract, or before settlement upon termination of the contract, and as a condition precedent thereto, the Contractor shall execute and deliver to the Contracting Officer a release of all claims against the Government arising under or by virtue of this contract, other than any claims that are specifically excepted by the Contractor from the operation of the release in amounts stated in the release.

(e) Notwithstanding any other provision in this contract, and specifically paragraph (b) of this clause, progress payments shall not exceed 80 percent on work accomplished on undefinitized contract actions. A "contract action" is any action resulting in a contract, as defined in FAR Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes.

(End of clause)

52.232-17 INTEREST (JUNE 1996)

(a) Except as otherwise provided in this contract under a Price Reduction for Defective Cost or Pricing Data clause or a Cost Accounting Standards clause, all amounts that become payable by the Contractor to the Government under this contract (net of any applicable tax credit under the Internal Revenue Code (26 U.S.C. 1481)) shall bear simple interest from the date due until paid unless paid within 30 days of becoming due. The interest rate shall be the interest rate established by the Secretary of the Treasury as provided in Section 12 of the Contract Disputes Act of 1978 (Public Law 95-563), which is applicable to the period in which the amount becomes due, as provided in paragraph (b) of this clause, and then at the rate applicable for each six-month period as fixed by the Secretary until the amount is paid. reproduce, prepare derivative works, distribute copies to the public, and (b) Amounts shall be due at the earliest of the following dates:

(1) The date fixed under this contract.

(2) The date of the first written demand for payment consistent with this contract, including any demand resulting from a default termination.

(3) The date the Government transmits to the Contractor a proposed supplemental agreement to confirm completed negotiations establishing the amount of debt.

(4) If this contract provides for revision of prices, the date of written notice to the Contractor stating the amount of refund payable in connection with a pricing proposal or a negotiated pricing agreement not confirmed by contract modification.

(c) The interest charge made under this clause may be reduced under the procedures prescribed in 32.614-2 of the Federal Acquisition Regulation in effect on the date of this contract.

(End of clause)

52.232-23 ASSIGNMENT OF CLAIMS (JAN 1986)

(a) The Contractor, under the Assignment of Claims Act, as amended, 31 U.S.C. 3727, 41 U.S.C. 15 (hereafter referred to as "the Act"), may assign its rights to be paid amounts due or to become due as a result of the performance of this contract to a bank, trust company, or other financing institution, including any Federal lending agency. The assignee under such an assignment may thereafter further assign or reassign its right under the original assignment to any type of financing institution described in the preceding sentence.

(b) Any assignment or reassignment authorized under the Act and this clause shall cover all unpaid amounts payable under this contract, and shall not be made to more than one party, except that an assignment or reassignment may be made to one party as agent or trustee for two or more parties participating in the financing of this contract.

(c) The Contractor shall not furnish or disclose to any assignee under this contract any classified document (including this contract) or information related to work under this contract until the Contracting Officer authorizes such action in writing.

(End of clause)

52.232-26 PROMPT PAYMENT FOR FIXED-PRICE ARCHITECT-ENGINEER CONTRACTS (FEB 2002)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments under the terms and conditions specified in this clause. The Government considers payment as being made on the day a check is dated or the date of an electronic funds transfer. Definitions of pertinent terms are set forth in sections 2.101, 32.001, and 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see paragraph (a)(3) of this clause concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) Invoice payments--(1) Due date. The due date for making invoice payments is--

(i) For work or services completed by the Contractor, the later of the following two events:

(A) The 30th day after the designated billing office receives a proper invoice from the Contractor (except as provided in paragraph (a)(1)(iii) of this clause).

(B) The 30th day after Government acceptance of the work or services completed by the Contractor. For a final invoice, when the payment amount is subject to contract settlement actions (e.g., release of claims), acceptance is deemed to occur on the effective date of the settlement.

(ii) The due date for progress payments is the 30th day after Government approval of Contractor estimates of work or services accomplished.

(iii) If the designated billing office fails to annotate the invoice or payment request with the actual date of receipt at the time of receipt, the payment due date is the 30th day after the date of the Contractor's invoice or payment request, provided the designated billing office receives a proper invoice or payment request and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(2) Contractor's invoice. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in paragraphs (a)(2)(i) through (a)(2)(x) of this clause. If the invoice does not comply with these requirements, the designated billing office will return it within 7 days after receipt, with the reasons why it is not a proper invoice. When computing any interest penalty owed the Contractor, the Government will take into account if the Government notifies the Contractor of an improper invoice in an untimely manner.

(i) Name and address of the Contractor.

(ii) Invoice date and invoice number. (The Contractor should date invoices as close as possible to the date of mailing or transmission.)

(iii) Contract number or other authorization for work or services performed (including order number and contract line item number).

(iv) Description of work or services performed.

(v) Delivery and payment terms (e.g., discount for prompt payment terms).

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to notify in the event of a defective invoice.

(viii) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(ix) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision (e.g., 52.232-38, Submission of Electronic Funds Transfer Information with Offer), contract clause (e.g., 52.232-33, Payment by Electronic Funds Transfer--Central Contractor Registration, or 52.232-34,Payment by Electronic Funds Transfer--Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(x) Any other information or documentation required by the contract.

(3) Interest penalty. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if payment is not made by the due date and the conditions listed in paragraphs (a)(3)(i) through (a)(3)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday, the designated payment office may make payment on the following working day without incurring a late payment interest penalty.

(i) The designated billing office received a proper invoice.

(ii) The Government processed a receiving report or other Government documentation authorizing payment and there was no disagreement over quantity, quality, Contractor compliance with any contract term or condition, or requested progress payment amount.

(iii) In the case of a final invoice for any balance of funds due the Contractor for work or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(4) Computing penalty amount. The Government will compute the interest penalty in accordance with the Office of Management and Budget prompt payment regulations at 5 CFR part 1315.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor, Government acceptance or approval is deemed to occur constructively as shown in paragraphs (a)(4)(i)(A) and (B) of this clause. If actual acceptance or approval occurs within the constructive acceptance or approval period, the Government will base the determination of an interest penalty on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, Contractor compliance with a contract provision, or requested progress payment amounts. These requirements also do not compel Government officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(A) For work or services completed by the Contractor, Government acceptance is deemed to occur constructively on the 7th day after the Contractor completes the work or services in accordance with the terms and conditions of the contract.

(B) For progress payments, Government approval is deemed to occur on the 7th day after the designated billing office receives the Contractor estimates.

(ii) The prompt payment regulations at 5 CFR 1315.10(c) do not require the Government to pay interest penalties if payment delays are due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. The Government and the Contractor shall resolve claims involving disputes, and any interest that may be payable in accordance with the clause at FAR 52.233-1, Disputes.

(5) Discounts for prompt payment. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if the Government takes a discount for prompt payment improperly. The Government will calculate the interest penalty in accordance with 5 CFR part 1315.

(6) Additional interest penalty. (i) The designated payment office will pay a penalty amount, calculated in accordance with the prompt payment regulations at 5 CFR part 1315, in addition to the interest penalty amount only if--

(A) The Government owes an interest penalty of $1 or more;

(B) The designated payment office does not pay the interest penalty within 10 days after the date the invoice amount is paid; and

(C) The contractor makes a written demand to the designated payment office for additional penalty payment, in accordance with paragraph (a)(6)(ii) of this clause, postmarked not later than 40 days after the date the invoice amount is paid.

(ii)(A) The Contractor shall support written demands for additional penalty payments with the following data. The Government will not request any additional data. The Contractor shall --

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest is due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) If there is no postmark or the postmark is illegible--

(1) The designated payment office that receives the demand will annotate it with the date of receipt, provided the demand is received on or before the 40th day after payment was made; or

(2) If the designated payment office fails to make the required annotation, the Government will determine the demand's validity based on the date the Contractor has placed on the demand, provided such date is no later than the 40th day after payment was made.

(iii) The additional penalty does not apply to payments regulated by other Government regulations (e.g., payments under utility contracts subject to tariffs and regulation).

(b) Contract financing payments. If this contract provides for contract financing, the Government will make contract financing payments in accordance with the applicable contract financing clause.

(c) Overpayments. If the Contractor becomes aware of a duplicate payment or that the Government has otherwise overpaid on an invoice payment, the Contractor shall immediately notify the Contracting Officer and request instructions for disposition of the overpayment.

(End of clause)

52.232-27 PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS (FEB 2002)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments under the terms and conditions specified in this clause. The Government considers payment as being made on the day a check is dated or the date of an electronic funds transfer. Definitions of pertinent terms are set forth in sections 2.101, 32.001, and 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see paragraph (a)(3) concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) Invoice payments--(1) Types of invoice payments. For purposes of this clause, there are several types of invoice payments that may occur under this contract, as follows:

(i) Progress payments, if provided for elsewhere in this contract, based on Contracting Officer approval of the estimated amount and value of work or services performed, including payments for reaching milestones in any project.

(A) The due date for making such payments is 14 days after the designated billing office receives a proper payment request. If the designated billing office fails to annotate the payment request with the actual date of receipt at the time of receipt, the payment due date is the 14th day after the date of the Contractor's payment request, provided the designated billing office receives a proper payment request and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) The due date for payment of any amounts retained by the Contracting Officer in accordance with the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts, is as specified in the contract or, if not specified, 30 days after approval by the Contracting Officer for release to the Contractor.

(ii) Final payments based on completion and acceptance of all work and presentation of release of all claims against the Government arising by virtue of the contract, and payments for partial deliveries that have been accepted by the Government (e.g., each separate building, public work, or other division of the contract for which the price is stated separately in the contract).

(A) The due date for making such payments is the later of the following two events:

(1) The 30th day after the designated billing office receives a proper invoice from the Contractor.

(2) The 30th day after Government acceptance of the work or services completed by the Contractor. For a final invoice when the payment amount is subject to contract settlement actions (e.g., release of claims), acceptance is deemed to occur on the effective date of the contract settlement.

(B) If the designated billing office fails to annotate the invoice with the date of actual receipt at the time of receipt, the invoice payment due date is the 30th day after the date of the Contractor's invoice, provided the designated billing office receives a proper invoice and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(2) Contractor's invoice. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in paragraphs (a)(2)(i) through (a)(2)(xi) of this clause. If the invoice does not comply with these requirements, the designated billing office must return it within 7 days after receipt, with the reasons why it is not a proper invoice. When computing any interest penalty owed the Contractor, the Government will take into account if the Government notifies the Contractor of an improper invoice in an untimely manner.

(i) Name and address of the Contractor.

(ii) Invoice date and invoice number. (The Contractor should date invoices as close as possible to the date of mailing or transmission.)

(iii) Contract number or other authorization for work or services performed (including order number and contract line item number).

(iv) Description of work or services performed.

(v) Delivery and payment terms (e.g., discount for prompt payment terms).

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to notify in the event of a defective invoice.

(viii) For payments described in paragraph (a)(1)(i) of this clause, substantiation of the amounts requested and certification in accordance with the requirements of the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts.

(ix) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(x) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision (e.g., 52.232-38, Submission of Electronic Funds Transfer Information with Offer), contract clause (e.g., 52.232-33, Payment by Electronic Funds Transfer--Central Contractor Registration, or 52.232-34, Payment by Electronic Funds Transfer--Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(xi) Any other information or documentation required by the contract.

(3) Interest penalty. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if payment is not made by the due date and the conditions listed in paragraphs (a)(3)(i) through (a)(3)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday, the designated payment office may make payment on the following working day without incurring a late payment interest penalty.

(i) The designated billing office received a proper invoice.

(ii) The Government processed a receiving report or other Government documentation authorizing payment and there was no disagreement over quantity, quality, Contractor compliance with any contract term or condition, or requested progress payment amount.

(iii) In the case of a final invoice for any balance of funds due the Contractor for work or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(4) Computing penalty amount. The Government will compute the interest penalty in accordance with the Office of Management and Budget prompt payment regulations at 5 CFR part 1315.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor for payments described in paragraph (a)(1)(ii) of this clause, Government acceptance or approval is deemed to occur constructively on the 7th day after the Contractor has completed the work or services in accordance with the terms and conditions of the contract. If actual acceptance or approval occurs within the constructive acceptance or approval period, the Government will base the determination of an interest penalty on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. These requirements also do not compel Government officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The prompt payment regulations at 5 CFR 1315.10(c) do not require the Government to pay interest penalties if payment delays are due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. The Government and the Contractor shall resolve claims involving disputes, and any interest that may be payable in accordance with the clause at FAR 52.233-1, Disputes.

(5) Discounts for prompt payment. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if the Government takes a discount for prompt payment improperly. The

Government will calculate the interest penalty in accordance with the prompt payment regulations at 5 CFR part 1315.

(6) Additional interest penalty. (i) The designated payment office will pay a penalty amount, calculated in accordance with the prompt payment regulations at 5 CFR part 1315 in addition to the interest penalty amount only if--

(A) The Government owes an interest penalty of $1 or more;

(B) The designated payment office does not pay the interest penalty within 10 days after the date the invoice amount is paid; and

(C) The Contractor makes a written demand to the designated payment office for additional penalty payment, in accordance with paragraph (a)(6)(ii) of this clause, postmarked not later than 40 days after the date the invoice amount is paid.

(ii)(A) The Contractor shall support written demands for additional penalty payments with the following data. The Government will not request any additional data. The Contractor shall --

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest was due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) If there is no postmark or the postmark is illegible--

(1) The designated payment office that receives the demand will annotate it with the date of receipt provided the demand is received on or before the 40th day after payment was made; or

(2) If the designated payment office fails to make the required annotation, the Government will determine the demand's validity based on the date the Contractor has placed on the demand, provided such date is no later than the 40th day after payment was made.

(b) Contract financing payments. If this contract provides for contract financing, the Government will make contract financing payments in accordance with the applicable contract financing clause.

(c) Subcontract clause requirements. The Contractor shall include in each subcontract for property or services (including a material supplier) for the purpose of performing this contract the following:

(1) Prompt payment for subcontractors. A payment clause that obligates the Contractor to pay the subcontractor for satisfactory performance under its subcontract not later than 7 days from receipt of payment out of such amounts as are paid to the Contractor under this contract.

(2) Interest for subcontractors. An interest penalty clause that obligates the Contractor to pay to the subcontractor an interest penalty for each payment not made in accordance with the payment clause--

(i) For the period beginning on the day after the required payment date and ending on the date on which payment of the amount due is made; and

(ii) Computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(3) Subcontractor clause flowdown. A clause requiring each subcontractor to use:

(i) Include a payment clause and an interest penalty clause conforming to the standards set forth in paragraphs (c)(1) and (c)(2) of this clause in each of its subcontracts; and

(ii) Require each of its subcontractors to include such clauses in their subcontracts with each lower-tier subcontractor or supplier.

(d) Subcontract clause interpretation. The clauses required by paragraph (c) of this clause shall not be construed to impair the right of the Contractor or a subcontractor at any tier to negotiate, and to include in their subcontract, provisions that--

(1) Retainage permitted. Permit the Contractor or a subcontractor to retain (without cause) a specified percentage of each progress payment otherwise due to a subcontractor for satisfactory performance under the subcontract without incurring any obligation to pay a late payment interest penalty, in accordance with terms and conditions agreed to by the parties to the subcontract, giving such recognition as the parties deem appropriate to the ability of a subcontractor to furnish a performance bond and a payment bond;

(2) Withholding permitted. Permit the Contractor or subcontractor to make a determination that part or all of the subcontractor's request for payment may be withheld in accordance with the subcontract agreement; and

(3) Withholding requirements. Permit such withholding without incurring any obligation to pay a late payment penalty if--

(i) A notice conforming to the standards of paragraph (g) of this clause previously has been furnished to the subcontractor; and

(ii) The Contractor furnishes to the Contracting Officer a copy of any notice issued by a Contractor pursuant to paragraph (d)(3)(i) of this clause.

(e) Subcontractor withholding procedures. If a Contractor, after making a request for payment to the Government but before making a payment to a subcontractor for the subcontractor's performance covered by the payment request, discovers that all or a portion of the payment otherwise due such subcontractor is subject to withholding from the subcontractor in accordance with the subcontract agreement, then the Contractor shall --

(1) Subcontractor notice. Furnish to the subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon ascertaining the cause giving rise to a withholding, but prior to the due date for subcontractor payment;

(2) Contracting Officer notice. Furnish to the Contracting Officer, as soon as practicable, a copy of the notice furnished to the subcontractor pursuant to paragraph (e)(1) of this clause;

(3) Subcontractor progress payment reduction. Reduce the subcontractor's progress payment by an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (e)(1) of this clause;

(4) Subsequent subcontractor payment. Pay the subcontractor as soon as practicable after the correction of the identified subcontract performance deficiency, and--

(i) Make such payment within--

(A) Seven days after correction of the identified subcontract performance deficiency (unless the funds therefor must be recovered from the Government because of a reduction under paragraph
(e)(5)(i)) of this clause; or

(B) Seven days after the Contractor recovers such funds from the Government; or

(ii) Incur an obligation to pay a late payment interest penalty computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty;

(5) Notice to Contracting Officer. Notify the Contracting Officer upon--

(i) Reduction of the amount of any subsequent certified application for payment; or

(ii) Payment to the subcontractor of any withheld amounts of a progress payment, specifying--

(A) The amounts withheld under paragraph (e)(1) of this clause; and

(B) The dates that such withholding began and ended; and

(6) Interest to Government. Be obligated to pay to the Government an amount equal to interest on the withheld payments (computed in the manner provided in 31 U.S.C. 3903(c)(1)), from the 8th day after receipt of the withheld amounts from the Government until--

(i) The day the identified subcontractor performance deficiency is corrected; or

(ii) The date that any subsequent payment is reduced under paragraph (e)(5)(i) of this clause.

(f) Third-party deficiency reports--(1) Withholding from subcontractor. If a Contractor, after making payment to a first-tier subcontractor, receives from a supplier or subcontractor of the first-tier subcontractor (hereafter referred to as a "second-tier subcontractor") a written notice in accordance with section 2 of the Act of August 24, 1935 (40 U.S.C. 270b, Miller Act), asserting a deficiency in such first-tier subcontractor's performance under the contract for which the Contractor may be ultimately liable, and the Contractor determines that all or a portion of future payments otherwise due such first-tier subcontractor is subject to withholding in accordance with the subcontract agreement, the Contractor may, without incurring an obligation to pay an interest penalty under paragraph (e)(6) of this clause--

(i) Furnish to the first-tier subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon making such determination; and

(ii) Withhold from the first-tier subcontractor's next available progress payment or payments an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (f)(1)(i) of this clause.

(2) Subsequent payment or interest charge. As soon as practicable, but not later than 7 days after receipt of satisfactory written notification that the identified subcontract performance deficiency has been corrected, the Contractor shall--

(i) Pay the amount withheld under paragraph (f)(1)(ii) of this clause to such first-tier subcontractor; or

(ii) Incur an obligation to pay a late payment interest penalty to such first-tier subcontractor computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments

under section 12 of the Contracts DisputesAct of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(g) Written notice of subcontractor withholding. The Contractor shall issue a written notice of any withholding to a subcontractor (with a copy furnished to the Contracting Officer), specifying--

(1) The amount to be withheld;

(2) The specific causes for the withholding under the terms of the subcontract; and

(3) The remedial actions to be taken by the subcontractor in order to receive payment of the amounts withheld.

(h) Subcontractor payment entitlement. The Contractor may not request payment from the Government of any amount withheld or retained in accordance with paragraph (d) of this clause until such time as the Contractor has determined and certified to the Contracting Officer that the subcontractor is entitled to the payment of such amount.

(i) Prime-subcontractor disputes. A dispute between the Contractor and subcontractor relating to the amount or entitlement of a subcontractor to a payment or a late payment interest penalty under a clause included in the subcontract pursuant to paragraph (c) of this clause does not constitute a dispute to which the Government is a party. The Government may not be interpleaded in any judicial or administrative proceeding involving such a dispute.

(j) Preservation of prime-subcontractor rights. Except as provided in paragraph (i) of this clause, this clause shall not limit or impair any contractual, administrative, or judicial remedies otherwise available to the Contractor or a subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor or deficient subcontract performance or nonperformance by a subcontractor.

(k) Non-recourse for prime contractor interest penalty. The Contractor's obligation to pay an interest penalty to a subcontractor pursuant to the clauses included in a subcontract under paragraph (c) of this clause shall not be construed to be an obligation of the Government for such interest penalty. A cost-reimbursement claim may not include any amount for reimbursement of such interest penalty.

(l) Overpayments. If the Contractor becomes aware of a duplicate payment or that the Government has otherwise overpaid on an invoice payment, the Contractor shall immediately notify the Contracting Officer and request instructions for disposition of the overpayment.

(End of clause)

52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER—CENTRAL CONTRACTOR REGISTRATION (MAY 1999)

(a) Method of payment. (1) All payments by the Government under this contract shall be made by electronic funds transfer (EFT), except as provided in paragraph (a)(2) of this clause. As used in this clause, the term "EFT" refers to the funds transfer and may also include the payment information transfer.

(2) In the event the Government is unable to release one or more payments by EFT, the Contractor agrees to either--

(i) Accept payment by check or some other mutually agreeable method of payment; or

(ii) Request the Government to extend the payment due date until such time as the Government can make payment by EFT (but see paragraph (d) of this clause).

(b) Contractor's EFT information. The Government shall make payment to the Contractor using the EFT information contained in the Central Contractor Registration (CCR) database. In the event that the EFT information changes, the Contractor shall be responsible for providing the updated information to the CCR database.

(c) Mechanisms for EFT payment. The Government may make payment by EFT through either the Automated Clearing House (ACH) network, subject to the rules of the National Automated Clearing House Association, or the Fedwire Transfer System. The rules governing Federal payments through the ACH are contained in 31 CFR part 210.

(d) Suspension of payment. If the Contractor's EFT information in the CCR database is incorrect, then the Government need not make payment to the Contractor under this contract until correct EFT information is entered into the CCR database; and any invoice or contract financing request shall be deemed not to be a proper invoice for the purpose of prompt payment under this contract. The prompt payment terms of the contract regarding notice of an improper invoice and delays in accrual of interest penalties apply.

(e) Contractor EFT arrangements. If the Contractor has identified multiple payment receiving points (i.e., more than one remittance address and/or EFT information set) in the CCR database, and the Contractor has not notified the Government of the payment receiving point applicable to this contract, the Government shall make payment to the first payment receiving point (EFT information set or remittance address as applicable) listed in the CCR database.

(f) Liability for uncompleted or erroneous transfers. (1) If an uncompleted or erroneous transfer occurs because the Government used the Contractor's EFT information incorrectly, the Government remains responsible for--

(i) Making a correct payment;

(ii) Paying any prompt payment penalty due; and

(iii) Recovering any erroneously directed funds.

(2) If an uncompleted or erroneous transfer occurs because the Contractor's EFT information was incorrect, or was revised within 30 days of Government release of the EFT payment transaction instruction to the Federal Reserve System, and--

(i) If the funds are no longer under the control of the payment office, the Government is deemed to have made payment and the Contractor is responsible for recovery of any erroneously directed funds; or

(ii) If the funds remain under the control of the payment office, the Government shall not make payment, and the provisions of paragraph (d) of this clause shall apply.

(g) EFT and prompt payment. A payment shall be deemed to have been made in a timely manner in accordance with the prompt payment terms of this contract if, in the EFT payment transaction instruction released to the Federal Reserve System, the date specified for settlement of the payment is on or before the prompt payment due date, provided the specified payment date is a valid date under the rules of the Federal Reserve System.

(h) EFT and assignment of claims. If the Contractor assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the Contractor shall require as a condition of any such assignment, that the assignee shall register in the CCR database and shall be paid by EFT in accordance with the terms of this clause. In all respects, the requirements of this clause shall apply to the assignee as if it were the Contractor. EFT

information that shows the ultimate recipient of the transfer to be other than the Contractor, in the absence of a proper assignment of claims acceptable to the Government, is incorrect EFT information within the meaning of paragraph (d) of this clause.

(i) Liability for change of EFT information by financial agent. The Government is not liable for errors resulting from changes to EFT information made by the Contractor's financial agent.

(j) Payment information. The payment or disbursing office shall forward to the Contractor available payment information that is suitable for transmission as of the date of release of the EFT instruction to the Federal Reserve System. The Government may request the Contractor to designate a desired format and method(s) for delivery of payment information from a list of formats and methods the payment office is capable of executing. However, the Government does not guarantee that any particular format or method of delivery is available at any particular payment office and retains the latitude to use the format and delivery method most convenient to the Government. If the Government makes payment by check in accordance with paragraph (a) of this clause, the Government shall mail the payment information to the remittance address contained in the CCR database.

(End of Clause)

52.233-1 DISPUTES. (DEC 1998)

(a) This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613).

(b) Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved under this clause.

(c) "Claim," as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. A claim arising under a contract, unlike a claim relating to that contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant. However, a written demand or written assertion by the Contractor seeking the payment of money exceeding $100,000 is not a claim under the Act until certified as required by subparagraph (d)(2) of this clause. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under the Act. The submission may be converted to a claim under the Act, by complying with the submission and certification requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

(d)(1) A claim by the Contractor shall be made in writing and, unless otherwise stated in this contract, submitted within 6 years after accrual of the claim to the Contracting Officer for a written decision. A claim by the Government against the Contractor shall be subject to a written decision by the Contracting Officer.

(2)(i) The contractors shall provide the certification specified in subparagraph (d)(2)(iii) of this clause when submitting any claim -

(A) Exceeding $100,000; or

(B) Regardless of the amount claimed, when using -

(1) Arbitration conducted pursuant to 5 U.S.C. 575-580; or

(2) Any other alternative means of dispute resolution (ADR) technique that the agency elects to handle in accordance with the Administrative Dispute Resolution Act (ADRA).

(ii) The certification requirement does not apply to issues in controversy that have not been submitted as all or part of a claim.

(iii) The certification shall state as follows: "I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable; and that I am duly authorized to certify the claim on behalf of the Contractor.

(3) The certification may be executed by any person duly authorized to bind the Contractor with respect to the claim.

(e) For Contractor claims of $100,000 or less, the Contracting Officer must, if requested in writing by the Contractor, render a decision within 60 days of the request. For Contractor-certified claims over $100,000, the Contracting Officer must, within 60 days, decide the claim or notify the Contractor of the date by which the decision will be made.

(f) The Contracting Officer's decision shall be final unless the Contractor appeals or files a suit as provided in the Act.

(g) If the claim by the Contractor is submitted to the Contracting Officer or a claim by the Government is presented to the Contractor, the parties, by mutual consent, may agree to use alternative disput resolution (ADR). If the Contractor refuses an offer for ADR, the Contractor shall inform the Contracting Officer, in writing, of the Contractor's specific reasons for rejecting the request.

(h) The Government shall pay interest on the amount found due and unpaid from (1) the date the Contracting Officer receives the claim (certified, if required); or (2) the date that payment otherwise would be due, if that date is later, until the date of payment. With regard to claims having defective certifications, as defined in (FAR) 48 CFR 33.201, interest shall be paid from the date that the Contracting Officer initially receives the claim. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury as provided in the Act, which is applicable to the period during which the Contracting Officer receives the claim and then at the rate applicable for each 6-month period as fixed by the Treasury Secretary during the pendency of the claim.

(i) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the Contracting Officer.

(End of clause)

52.233-3 PROTEST AFTER AWARD (AUG. 1996)

(a) Upon receipt of a notice of protest (as defined in FAR 33.101) or a determination that a protest is likely (see FAR 33.102(d)), the Contracting Officer may, by written order to the Contractor, direct the Contractor to stop performance of the work called for by this contract. The order shall be specifically identified as a stop-work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Upon receipt of the final decision in the protest, the Contracting Officer shall either--

(1) Cancel the stop-work order; or

(2) Terminate the work covered by the order as provided in the Default, or the Termination for Convenience of the Government, clause of this contract.

(b) If a stop-work order issued under this clause is canceled either before or after a final decision in the protest, the Contractor shall resume work. The Contracting Officer shall make an equitable adjustment in the delivery schedule or contract price, or both, and the contract shall be modified, in writing, accordingly, if --

(1) The stop-work order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this contract; and

(2) The Contractor asserts its right to an adjustment within 30 days after the end of the period of work stoppage; provided, that if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon a proposal at any time before final payment under this contract.

(c) If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of the Government, the Contracting Officer shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.

(d) If a stop-work order is not canceled and the work covered by the order is terminated for default, the Contracting Officer shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

(e) The Government's rights to terminate this contract at any time are not affected by action taken under this clause.

(f) If, as the result of the Contractor's intentional or negligent misstatement, misrepresentation, or miscertification, a protest related to this contract is sustained, and the Government pays costs, as provided in FAR 33.102(b)(2) or 33.104(h)(1), the Government may require the Contractor to reimburse the Government the amount of such costs. In addition to any other remedy available, and pursuant to the requirements of Subpart 32.6, the Government may collect this debt by offsetting the amount against any payment due the Contractor under any contract between the Contractor and the Government.

(End of clause)

52.236-2 DIFFERING SITE CONDITIONS (APR 1984)

As prescribed in 36.502, insert the following clause in solicitations and contracts when a fixed-price construction contract or a fixed-price dismantling, demolition, or removal of improvements contract is contemplated and the contract amount is expected to exceed the small purchase limitation. The Contracting Officer may insert the clause in solicitations and contracts when a fixed-price construction or a fixed-price contract for dismantling, demolition, or removal of improvements is contemplated and the contract amount is expected to be within the small purchase limitation.

(a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of

(1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or

(2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

(b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an

equitable adjustment shall be made under this clause and the contract modified in writing accordingly.

(c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.

(d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

(End of clause)

52.236-3 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (APR 1984)

(a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to

(1) conditions bearing upon transportation, disposal, handling, and storage of materials;

(2) the availability of labor, water, electric power, and roads;

(3) uncertainties of weather, river stages, tides, or similar physical conditions at the site;

(4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Government, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Government.

(b) The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

(End of clause)

52.236-5 MATERIAL AND WORKMANSHIP (APR 1984)

(a) All equipment, material, and articles incorporated into the work covered by this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.

(b) The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other

equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the material or articles which the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. When directed to do so, the Contractor shall submit samples for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

(c) All work under this contract shall be performed in a skillful and workmanlike manner. The Contracting Officer may require, in writing, that the Contractor remove from the work any employee the Contracting Officer deems incompetent, careless, or otherwise objectionable.

(End of clause)

52.236-6 SUPERINTENDENCE BY THE CONTRACTOR (APR 1984)

At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the worksite a competent superintendent who is satisfactory to the Contracting Officer and has authority to act for the Contractor.

(End of clause)

52.236-7 PERMITS AND RESPONSIBILITIES (NOV 1991)

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State, and municipal laws, codes, and regulations applicable to the performance of the work. The Contractor shall also be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.

(End of clause)

52.236-8 OTHER CONTRACTS (APR 1984)

The Government may undertake or award other contracts for additional work at or near the site of the work under this contract. The Contractor shall fully cooperate with the other contractors and with Government employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by Government employees.

(End of clause)

52.236-9 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS (APR 1984)

(a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and

grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.

(b) The Contractor shall protect from damage all existing improvements and utilities

(1) at or near the work site, and

(2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

(End of clause)

52.236-10 OPERATIONS AND STORAGE AREAS (APR 1984)

(a) The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.

(b) Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.

(c) The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

(End of clause)

52.236-11 USE AND POSSESSION PRIOR TO COMPLETION (APR 1984)

(a) The Government shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contracting Officer shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the Government intends to take possession of or use. However, failure of the Contracting Officer to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the contract. The Government's possession or use shall not be deemed an acceptance of any work under the contract.

(b) While the Government has such possession or use, the Contractor shall be relieved of the responsibility for the loss of or damage to the work resulting from the Government's possession or use, notwithstanding the terms of the

clause in this contract entitled "Permits and Responsibilities." If prior possession or use by the Government delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the contract shall be modified in writing accordingly.

(End of clause)

52.236-12 CLEANING UP (APR 1984)

The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. Before completing the work, the Contractor shall remove from the work and premises any rubbish, tools, scaffolding, equipment, and materials that are not the property of the Government. Upon completing the work, the Contractor shall leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer.

(End of clause)

52.236-13 ACCIDENT PREVENTION (NOV 1991) – ALTERNATE I (NOV 1991)

(a) The Contractor shall provide and maintain work environments and procedures which will

(1) safeguard the public and Government personnel, property, materials, supplies, and equipment exposed to Contractor operations and activities;

(2) avoid interruptions of Government operations and delays in project completion dates; and

(3) control costs in the performance of this contract.

(b) For these purposes on contracts for construction or dismantling, demolition, or removal of improvements, the Contractor shall-

(1) Provide appropriate safety barricades, signs, and signal lights;

(2) Comply with the standards issued by the Secretary of Labor at 29 CFR Part 1926 and 29 CFR Part 1910; and

(3) Ensure that any additional measures the Contracting Officer determines to be reasonably necessary for the purposes are taken.

57 If this contract is for construction or dismantling, demolition or removal of improvements with any Department of Defense agency or component, the Contractor shall comply with all pertinent provisions of the latest version of U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, in effect on the date of the solicitation.

(d) Whenever the Contracting Officer becomes aware of any noncompliance with these requirements or any condition which poses a serious or imminent danger to the health or safety of the public or Government personnel, the Contracting Officer shall notify the Contractor orally, with written confirmation, and request immediate initiation of corrective action. This notice, when delivered to the Contractor or the Contractor's representative at the work site, shall be deemed sufficient notice of the noncompliance and that corrective action is required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not be entitled to any equitable adjustment of the contract price or extension of the performance schedule on any stop work order issued under this clause.

(e) The Contractor shall insert this clause, including this paragraph (e), with appropriate changes in the designation of the parties, in subcontracts.

(f) Before commencing the work, the Contractor shall-

(1) Submit a written proposed plan for implementing this clause. The plan shall include an analysis of the significant hazards to life, limb, and property inherent in contract work performance and a plan for controlling these hazards; and

(2) Meet with representatives of the Contracting Officer to discuss and develop a mutual understanding relative to administration of the overall safety program.

(End of clause)

52.236-15 SCHEDULES FOR CONSTRUCTION CONTRACTS (APR 1984)

(a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule.

(b) The Contractor shall enter the actual progress on the chart as directed by the Contracting Officer, and upon doing so shall immediately deliver three copies of the annotated schedule to the Contracting Officer. If, in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.

(c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract.

(End of clause)

52.236-17 LAYOUT OF WORK (APR 1984)

The Contractor shall lay out its work from Government established base lines and bench marks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to

remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due or to become due to the Contractor.

(End of clause)

52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997)

(a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

(b) Wherever in the specifications or upon the drawings the words "directed", "required", "ordered", "designated", "prescribed", or words of like import are used, it shall be understood that the "direction", "requirement", "order", "designation", or "prescription", of the Contracting Officer is intended and similarly the words "approved", "acceptable", "satisfactory", or words of like import shall mean "approved by," or "acceptable to", or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.

(c) Where "as shown," as indicated", "as detailed", or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place," that is "furnished and installed".

(d) Shop drawings means drawings, submitted to the Government by the Contractor, subcontractor, or any lower tier subcontractor pursuant to a construction contract, showing in detail (1) the proposed fabrication and assembly of structural elements, and (2) the installation (i.e., fit, and attachment details) of materials or equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the contractor to explain in detail specific portions of the work required by the contract. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the Government's reasons therefor. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.

(f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation, the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

(g) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise

indicated) of all shop drawings, will be retained by the Contracting Officer and one set will be returned to the Contractor.

(End of clause)

52.236-22 DESIGN WITHIN FUNDING LIMITATIONS (APR 1984)

(a) The Contractor shall accomplish the design services required under this contract so as to permit the award of a contract, using standard Federal Acquisition Regulation procedures for the construction of the facilities designed at a price that does not exceed the estimated construction contract price as set forth in paragraph (c) below. When bids or proposals for the construction contract are received that exceed the estimated price, the contractor shall perform such redesign and other services as are necessary to permit contract award within the funding limitation. These additional services shall be performed at no increase in the price of this contract. However, the Contractor shall not be required to perform such additional services at no cost to the Government if the unfavorable bids or proposals are the result of conditions beyond its reasonable control.

(b) The Contractor will promptly advise the Contracting Officer if it finds that the project being designed will exceed or is likely to exceed the funding limitations and it is unable to design a usable facility within these limitations. Upon receipt of such information, the Contracting Officer will review the Contractor's revised estimate of construction cost. The Government may, if it determines that the estimated construction contract price set forth in this contract is so low that award of a construction contract not in excess of such estimate is improbable, authorize a change in scope or materials as required to reduce the estimated construction cost to an amount within the estimated construction contract price set forth in paragraph (c) below, or the Government may adjust such estimated construction contract price. When bids or proposals are not solicited or are unreasonably delayed, the Government shall prepare an estimate of constructing the design submitted and such estimate shall be used in lieu of bids or proposals to determine compliance with the funding limitation.

(c) The estimated construction contract price for the project described in this contract is $

(End of clause)

52.236-24 WORK OVERSIGHT IN ARCHITECT-ENGINEER CONTRACTS (APR 1984)

The extent and character of the work to be done by the Contractor shall be subject to the general oversight, supervision, direction, control, and approval of the Contracting Officer.

(End of clause)

52.236-25 REQUIREMENTS FOR REGISTRATION OF DESIGNERS (APR 1984)

The design of architectural, structural, mechanical, electrical, civil, or other engineering features of the work shall be accomplished or reviewed and approved by architects or engineers registered to practice in the particular professional field involved in a State or possession of the United States, in Puerto Rico, or in the District of Columbia.

(End of clause)

52.236-26 PRECONSTRUCTION CONFERENCE (FEB 1995)

If the Contracting Officer decides to conduct a preconstruction conference, the successful offeror will be notified and will be required to attend. The Contracting Officer's notification will include specific details regarding the date, time, and location of the conference, any need for attendance by subcontractors, and information regarding the items to be discussed.

(End of clause)

52.239-4001 Year 2000 Compliance

The contractor shall ensure products provided under this contract, to include hardware, software, firmware, and middleware, whether acting alone or combined as a system, are Year 2000 compliant as defined as follows: Year 2000 compliant means with respect to information technology, that the information technology accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations, to the extent that other information, used in combination with the information technology being acquired, properly exchanges date/time data with it.

52.239-4005 Year 2000 Compliance - Construction Contracts

a. In accordance with FAR 39.106, the contractor shall ensure that with respect to any design, construction, goods, or services under this contract as well as any subsequent task/delivery orders issued under this contract (if applicable), all information technology contained therein shall be Year 2000 compliant. Specifically:

The contractor shall:

(1) Perform, maintain, and provide an inventory of all major components to include structures, equipment, items, parts, and furnishings under this contract and each task/delivery order which may be affected by the Y2K compliance requirement.

(2) Indicate whether each component is currently Year 2000 compliant or requires an upgrade for compliance prior to government acceptance.

(End of Clause)

52.242-13 BANKRUPTCY (JUL 1995)

In the event the Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, the Contractor agrees to furnish, by certified mail or electronic commerce method authorized by the contract, written notification of the bankruptcy to the Contracting Officer responsible for administering the contract. This notification shall be furnished within five days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in

which the bankruptcy petition was filed, and a listing of Government contract numbers and contracting offices for all Government contracts against which final payment has not been made. This obligation remains in effect until final payment under this contract.

(End of clause)

52.242-14 SUSPENSION OF WORK (APR 1984)

(a) The Contracting Officer may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the Government.

(b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified in this contract (or within a reasonable time if not specified), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by the unreasonable suspension, delay, or interruption, and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor, or for which an equitable adjustment is provided for or excluded under any other term or condition of this contract. (c) A claim under this clause shall not be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order), and (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

(End of clause)

52.243-1 CHANGES--FIXED-PRICE (AUG 1987) - ALTERNATE III (APR 1984)

(a) The Contracting Officer may at any time, by written order, and without notice to the sureties, if any, make changes within the general scope of this contract in the services to be performed.

(b) If any such change causes an increase or decrease in the cost of, or the time required for, performance of any part of the work under this contract, whether or not changed by the order, the Contracting Officer shall make an equitable adjustment in the contract price, the delivery schedule, or both, and shall modify the contract.

(c) The Contractor must assert its right to an adjustment under this clause within 30 days from the date of receipt of the written order. However, if the Contracting Officer decides that the facts justify it, the Contracting Officer may receive and act upon a proposal submitted before final payment of the contract.

(d) If the Contractor's proposal includes the cost of property made obsolete or excess by the change, the Contracting Officer shall have the right to prescribe the manner of the disposition of the property.

(e) Failure to agree to any adjustment shall be a dispute under the Disputes clause. However, nothing in this clause shall excuse the Contractor from proceeding with the contract as changed.

(f) No services for which an additional cost or fee will be charged by the Contractor shall be furnished without the prior written authorization of the Contracting Officer.

(End of clause)

52.243-4 CHANGES (AUG 1987)

(a) The Contracting Officer may, at any time, without notice to the sureties, if any, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract, including changes--

(1) In the specifications (including drawings and designs);

(2) In the method or manner of performance of the work;

(3) In the Government-furnished facilities, equipment, materials, services, or site; or

(4) Directing acceleration in the performance of the work.

(b) Any other written or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating

(1) the date, circumstances, and source of the order and

(2) that the Contractor regards the order as a change order.

(c) Except as provided in this clause, no order, statement, or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.

(d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for an adjustment based on defective specifications, no adjustment for any change under paragraph (b) of this clause shall be made for any costs incurred more than 20 days before the Contractor gives written notice as required. In the case of defective specifications for which the Government is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.

(e) The Contractor must assert its right to an adjustment under this clause within 30 days after

(1) receipt of a written change order under paragraph (a) of this clause or (2) the furnishing of a written notice under paragraph (b) of this clause, by submitting to the Contracting Officer a written statement describing the general nature and amount of the proposal, unless this period is extended by the Government. The statement of proposal for adjustment may be included in the notice under paragraph (b) above.

(f) No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

(End of clause)

52.244-5 COMPETITION IN SUBCONTRACTING (DEC 1996)

(a) The Contractor shall select subcontractors (including suppliers) on a competitive basis to the maximum

practical extent consistent with the objectives and requirements of the contract.

(b) If the Contractor is an approved mentor under the Department of Defense Pilot Mentor-Protege Program (Pub. L. 101–510, section 831 as amended), the Contractor may award subcontracts under this contract on a noncompetitive basis to its proteges.

(End of clause)

52.244-6 SUBCONTRACTS FOR COMMERCIAL ITEMS (MAY 2002)

(a) Definitions. As used this clause--

"Commercial item", has the meaning contained in the clause at 52.202 -1, Definitions.

"Subcontract", includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the Contractor or subcontractor at any tier.

(b) To the maximum extent practicable, the Contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this contract.

(c)(1) The Contractor shall insert the following clauses in subcontracts for commercial items:

(i) 52.219-8, Utilization of Small Business Concerns (OCT 2000) (15 U.S.C. 637(d)(2) and (3)), in all subcontracts that offer further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds $500,000 ($1,000,000 for construction of any public facility), the subcontractor must include 52.219-8 in lower tier subcontracts that offer subcontracting opportunities.

(ii) 52.222-26, Equal Opportunity (APR 2002) (E.O. 11246).

(iii) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era and Other Eligible Veterans (DEC 2001) (38 U.S.C. 4212(a)).

(iv) 52.222-36, Affirmative Action for Workers with Disabilities (JUN 1998) (29 U.S.C. 793).

(v) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (JUN 2000) (46 U.S.C. Appx 1241) (flowdown not required for subcontracts awarded beginning May 1, 1996).

(2) While not required, the Contractor may flow down to subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

(d) The Contractor shall include the terms of this clause, including this paragraph (d), in subcontracts awarded under this contract.

(End of clause)

52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (SEP 1996) - ALTERNATE I (SEP 1996)

(a) The Government may terminate performance of work under this contract in whole or, from time to time, in part if the Contracting Officer determines that a termination is in the Government's interest. The Contracting Offi cer shall terminate by delivering to the Contractor a Notice of Termination specifying the extent of termination and the effective date.

(b) After receipt of a Notice of Termination, and except as directed by the Contracting Officer, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due under this clause:

(1) Stop work as specified in the notice.

(2) Place no further subcontracts or orders (referred to as subcontracts in this clause) for materials, services, or facilities, except as necessary to complete the continued portion of the contract.

(3) Terminate all subcontracts to the extent they relate to the work terminated.

(4) Assign to the Government, as directed by the Contracting Officer, all right, title, and interest of the Contractor under the subcontracts terminated, in which case the Government shall have the right to settle or to pay any termination settlement proposal arising out of those terminations.

(5) With approval or ratification to the extent required by the Contracting Officer, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts; the approval or ratification will be final for purposes of this clause.

(6) As directed by the Contracting Officer, transfer title and deliver to the Government (i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced or acquired for the work terminated, and (ii) the completed or partially completed plans, drawings, information, and other property that, if the contract had been completed, would be required to be furnished to the Government.

(7) Complete performance of the work not terminated.

(8) Take any action that may be necessary, or that the Contracting Officer may direct, for the protection and preservation of the property related to this contract that is in the possession of the Contractor and in which the Government has or may acquire an interest.

(9) Use its best efforts to sell, as directed or authorized by the Contracting Officer, any property of the types referred to in subparagraph (b)(6) of this clause; provided, however, that the Contractor (i) is not required to extend credit to any purchaser and (ii) may acquire the property under the conditions prescribed by, and at prices approved by, the Contracting Officer. The proceeds of any transfer or disposition will be applied to reduce any payments to be made by the Government under this contract, credited to the price or cost of the work, or paid in any other manner directed by the Contracting Officer.

(c) The Contractor shall submit complete termination inventory schedules no later than 120 days from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 120-day period.

(d) After expiration of the plant clearance period as defined in Subpart 45.6 of the Federal Acquisition Regulation, the Contractor may submit to the Contracting Officer a list, certified as to quantity and quality, of termination inventory not previously disposed of, excluding items authorized for disposition by the Contracting Officer. The Contractor may request the Government to remove those items or enter into an agreement for their storage. Within 15 days, the Government will accept title to those items and remove them or enter into a storage agreement. The Contracting Officer may verify the list upon removal of the items, or if stored, within 45 days from submission of the list, and shall correct the list, as necessary, before final settlement.

(e) After termination, the Contractor shall submit a final termination settlement proposal to the Contracting Officer in the form and with the certification prescribed by the Contracting Officer. The Contractor shall submit the proposal promptly, but no later than 1 year from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 1-year period. However, if the Contracting Officer determines that the facts justify it, a termination settlement proposal may be received and acted on after 1 year or any extension. If the Contractor fails to submit the proposal within the time allowed, the Contracting Officer may determine, on the basis of information available, the amount, if any, due the Contractor because of the termination and shall pay the amount determined.

(f) Subject to paragraph (e) of this clause, the Contractor and the Contracting Officer may agree upon the whole or any part of the amount to be paid or remaining to be paid because of the termination. The amount may include a reasonable allowance for profit on work done. However, the agreed amount, whether under this paragraph (g) or paragraph (g) of this clause, exclusive of costs shown in subparagraph (g)(3) of this clause, may not exceed the total contract price as reduced by (1) the amount of payments previously made and (2) the contract price of work not terminated. The contract shall be modified, and the Contractor paid the agreed amount. Paragraph (g) of this clause shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.

(g) If the Contractor and Contracting Officer fail to agree on the whole amount to be paid the Contractor because of the termination of work, the Contracting Officer shall pay the Contractor the amounts determined as follows, but without duplication of any amounts agreed upon under paragraph (f) of this clause:

(1) For contract work performed before the effective date of termination, the total (without duplication of any items) of--

(i) The cost of this work;

(ii) The cost of settling and paying termination settlement proposals under terminated subcontracts that are properly chargeable to the terminated portion of the contract if not included in subdivision (g)(1)(i) of this clause; and

(iii) A sum, as profit on subdivision (g)(1)(i) of this clause, determined by the Contracting Officer under 49.202 of the Federal Acquisition Regulation, in effect on the date of this contract, to be fair and reasonable; however, if it appears that the Contractor would have sustained a loss on the entire contract had it been completed, the Contracting Officer shall allow no profit under this subdivision (iii) and shall reduce the settlement to reflect the indicated rate of loss.

(2) The reasonable costs of settlement of the work terminated, including--

(i) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement proposals and supporting data;

(ii) The termination and settlement of subcontracts (excluding the amounts of such settlements); and

(iii) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory.

(h) Except for normal spoilage, and except to the extent that the Government expressly assumed the risk of loss, the Contracting Officer shall exclude from the amounts payable to the Contractor under paragraph (g) of this clause, the fair value, as determined by the Contracting Officer, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable to the Government or to a buyer.

(i) The cost principles and procedures of Part 31 of the Federal Acquisition Regulation, in effect on the date of this contract, shall govern all costs claimed, agreed to, or determined under this clause.

(j) The Contractor shall have the right of appeal, under the Disputes clause, from any determination made by the Contracting Officer under paragraph (e), (g), or (l) of this clause, except that if the Contractor failed to submit the termination settlement proposal or request for equitable adjustment within the time provided in paragraph (e) or (l), respectively, and failed to request a time extension, there is no right of appeal.

(k) In arriving at the amount due the Contractor under this clause, there shall be deducted --

(1) All unliquidated advance or other payments to the Contractor under the terminated portion of this contract;

(2) Any claim which the Government has against the Contractor under this contract; and

(3) The agreed price for, or the proceeds of sale of, materials, supplies, or other things acquired by the Contractor or sold under the provisions of this clause and not recovered by or credited to the Government.

(l) If the termination is partial, the Contractor may file a proposal with the Contracting Officer for an equitable adjustment of the price(s) of the continued portion of the contract. The Contracting Officer shall make any equitable adjustment agreed upon. Any proposal by the Contractor for an equitable adjustment under this clause shall be requested within 90 days from the effective date of termination unless extended in writing by the Contracting Officer.

(m)(1) The Government may, under the terms and conditions it prescribes, make partial payments and payments against costs incurred by the Contractor for the terminated portion of the contract, if the Contracting Officer believes the total of these payments will not exceed the amount to which the Contractor will be entitled.

(2) If the total payments exceed the amount finally determined to be due, the Contractor shall repay the excess to the Government upon demand, together with interest computed at the rate established by the Secretary of the Treasury under 50 U.S.C. App. 1215(b)(2). Interest shall be computed for the period from the date the excess payment is received by the Contractor to the date the excess is repaid. Interest shall not be charged on any excess payment due to a reduction in the Contractor's termination settlement proposal because of retention or other disposition of termination inventory until 10 days after the date of the retention or disposition, or a later date determined by the Contracting Officer because of the circumstances.

(n) Unless otherwise provided in this contract or by statute, the Contractor shall maintain all records and documents relating to the terminated portion of this contract for 3 years after final settlement. This includes all books and other evidence bearing on the Contractor's costs and expenses under this contract. The Contractor shall make these records and documents available to the Government, at the Contractor's office, at all reasonable times, without any direct charge. If approved by the Contracting Officer, photographs, microphotographs, or other authentic reproductions may be maintained instead of original records and documents.

(End of clause)

52.249-7 TERMINATION (FIXED-PRICE ARCHITECT-ENGINEER) (APR 1984)

(a) The Government may terminate this contract in whole or, from time to time, in part, for the Government's convenience or because of the failure of the Contractor to fulfill the contract obligations. The Contracting Officer shall terminate by delivering to the Contractor a Notice of Termination specifying the nature, extent, and effective date of the termination. Upon receipt of the notice, the Contractor shall (1) immediately discontinue all services affected (unless the notice directs otherwise), and (2) deliver to the Contracting Officer all data, drawings,

specifications, reports, estimates, summaries, and other information and materials accumulated in performing this contract, whether completed or in process.

(b) If the termination is for the convenience of the Government, the Contracting Officer shall make an equitable adjustment in the contract price but shall allow no anticipated profit on unperformed services.

(c) If the termination is for failure of the Contractor to fulfill the contract obligations, the Government may complete the work by contract or otherwise and the Contractor shall be liable for any additional cost incurred by the Government.

(d) If, after termination for failure to fulfill contract obligations, it is determined that the Contractor had not failed, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the Government.

58 The rights and remedies of the Government provided in this clause are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.249-10 DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984)

(a) If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract including any extension, or fails to complete the work within this time, the Government may, by written notice to the Contractor, terminate the right to proceed with the work (or the separable part of the work) that has been delayed. In this event, the Government may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Government resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Government in completing the work.

(b) The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this clause, if--

(1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include

(i) acts of God or of the public enemy,

(ii) acts of the Government in either its sovereign or contractual capacity,

(iii) acts of another Contractor in the performance of a contract with the Government,

(iv) fires,

(v) floods,

(vi) epidemics,

(vii) quarantine restrictions,

(viii) strikes,

(ix) freight embargoes,

(x) unusually severe weather, or delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and

(2) The Contractor, within 10 days from the beginning of any delay (unless extended by the Contracting Officer), notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, the time for completing the work shall be extended. The findings of the Contracting Officer shall be final and conclusive on the parties, but subject to appeal under the Disputes clause.

(c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Government.

The rights and remedies of the Government in this clause are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.253-1 COMPUTER GENERATED FORMS (JAN 1991)

(a) Any data required to be submitted on a Standard or Optional Form prescribed by the Federal Acquisition Regulation (FAR) may be submitted on a computer generated version of the form, provided there is no change to the name, content, or sequence of the data elements on the form, and provided the form carries the Standard or Optional Form number and edition date.

(b) Unless prohibited by agency regulations, any data required to be submitted on an agency unique form prescribed by an agency supplement to the FAR may be submitted on a computer generated version of the form provided there is no change to the name, content, or sequence of the data elements on the form and provided the form carries the agency form number and edition date.

59 If the Contractor submits a computer generated version of a form that is different than the required form, then the rights and obligations of the parties will be determined based on the content of the required form.

(End of clause)

252.201-7000 CONTRACTING OFFICER'S REPRESENTATIVE (DEC 1991)

(a) "Definition. Contracting officer's representative" means an individual designated in accordance with subsection 201.602-2 of the Defense Federal Acquisition Regulation Supplement and authorized in writing by the contracting officer to perform specific technical or administrative functions.

(b) If the Contracting Officer designates a contracting officer's representative (COR), the Contractor will receive a copy of the written designation. It will specify the extent of the COR's authority to act on behalf of the contracting officer. The COR is not authorized to make any commitments or changes that will affect price, quality, quantity, delivery, or any other term or condition of the contract.

(End of clause)

252.203-7001 PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE-CONTRACT-RELATED FELONIES (MAR 1999)

(a) Definitions. As used in this clause—

(1) "Arising out of a contract with the DoD" means any act in connection with—

(i) Attempting to obtain;

(ii) Obtaining, or

(iii) Performing a contract or first-tier subcontract of any agency, department, or component of the Department of Defense (DoD).

(2) "Conviction of fraud or any other felony" means any conviction for fraud or a felony in violation of state or Federal criminal statutes, whether entered on a verdict or plea, including a plea of *nolo contendere*, for which sentence has been imposed.

(3) "Date of conviction" means the date judgment was entered against the individual.

(b) Any individual who is convicted after September 29, 1988, of fraud or any other felony arising out of a contract with the DoD is prohibited from serving--

(1) In a management or supervisory capacity on any DoD contract or first-tier subcontract;

(2) On the board of directors of any DoD contractor or first-tier subcontractor;

(3) As a consultant, agent, or representative for any DoD contractor or first-tier subcontractor; or

(4) In any other capacity with the authority to influence, advise, or control the decisions of any DoD contractor or subcontractor with regard to any DoD contract or first-tier subcontract.

(c) Unless waived, the prohibition in paragraph (b) of this clause applies for not less than 5 years from the date of conviction.

(d) 10 U.S.C. 2408 provides that a defense contractor or first-tier subcontractor shall be subject to a criminal penalty of not more than $500,000 if convicted of knowingly—

(1) Employing a person under a prohibition specified in paragraph (b) of this clause; or

(2) Allowing such a person to serve on the board of directors of the contractor or first-tier subcontractor.

(e) In addition to the criminal penalties contained in 10 U.S.C. 2408, the Government may consider other available remedies, such as—

(1) Suspension or debarment;

(2) Cancellation of the contract at no cost to the Government; or

(3) Termination of the contract for default.

(f) The Contractor may submit written requests for waiver of the prohibition in paragraph (b) of this clause to the Contracting Officer. Requests shall clearly identify—

(1) The person involved;

(2) The nature of the conviction and resultant sentence or punishment imposed;

(3) The reasons for the requested waiver; and

(4) An explanation of why a waiver is in the interest of national security.

(g) The Contractor agrees to include the substance of this clause, appropriately modified to reflect the identity and relationship of the parties, in all first-tier subcontracts exceeding the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation, except those for commercial items or components.

(h) Pursuant to 10 U.S.C. 2408(c), defense contractors and subcontractors may obtain information as to whether a particular person has been convicted of fraud or any other felony arising out of a contract with the DoD by contacting The Office of Justice Programs, The Denial of Federal Benefits Office, U.S. Department of Justice, telephone (202) 616-3507.

(End of clause)

252.203-7002 DISPLAY OF DOD HOTLINE POSTER (DEC 1991)

(a) The Contractor shall display prominently in common work areas within business segments performing work under Department of Defense (DoD) contracts, DoD Hotline Posters prepared by the DoD Office ofthe Inspector General.

(b) DoD Hotline Posters may be obtained from the DoD Inspector General, ATTN: Defense Hotline, 400 Army Navy Drive, Washington, DC 22202-2884.

60 The Contractor need not comply with paragraph (a) of this clause if it has established a mechanism, such as a hotline, by which employees may report suspected instances of improper conduct, and instructions that encourage employees to make such reports.

(End of clause)

252.204-7000 DISCLOSURE OF INFORMATION (DEC 1991)

(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless--

(1) The Contracting Officer has given prior written approval; or

(2) The information is otherwise in the public domain before the date of release.

(b) Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

(End of clause)

252.204-7003 CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT (APR 1992)

The Contractor's procedures for protecting against unauthorized disclosure of information shall not require Department of Defense employees or members of the Armed Forces to relinquish control of their work products, whether classified or not, to the contractor.

(End of clause)

252.204-7004 REQUIRED CENTRAL CONTRACTOR REGISTRATION (NOV 2001)

(a) Definitions.

As used in this clause--

(1) Central Contractor Registration (CCR) database means the primary DoD repository for contractor information required for the conduct of business with DoD.

(2) Data Universal Numbering System (DUNS) number means the 9-digit number assigned by Dun and Bradstreet Information Services to identify unique business entities.

(3) Data Universal Numbering System +4 (DUNS+4) number means the DUNS number assigned by Dun and Bradstreet plus a 4-digit suffix that may be assigned by a parent (controlling) business concern. This 4-digit suffix may be assigned at the discretion of the parent business concern for such purposes as identifying subunits or affiliates of the parent business concern.

(4) Registered in the CCR database means that all mandatory information, including the DUNS number or the DUNS+4 number, if applicable, and the corresponding Commercial and Government Entity (CAGE) code, is in the CCR database; the DUNS number and the CAGE code have been validated; and all edits have been successfully completed.

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee must be registered in the CCR database prior to award, during performance, and through final payment of any contract resulting from this solicitation, except for awards to foreign vendors for work to be performed outside the United States.

(2) The offeror shall provide its DUNS or, if applicable, its DUNS+4 number with its offer, which will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.

(3) Lack of registration in the CCR database will make an offeror ineligible for award.

(4) DoD has established a goal of registering an applicant in the CCR database within 48 hours after receipt of a complete and accurate application via the Internet. However, registration of an applicant submitting an application

through a method other than the Internet may take up to 30 days. Therefo re, offerors that are not registered should consider applying for registration immediately upon receipt of this solicitation.

(c) The Contractor is responsible for the accuracy and completeness of the data within the CCR, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to confirm on an annual basis that its information in the CCR database is accurate and compl ete.

(d) Offerors and contractors may obtain information on registration and annual confirmation requirements by calling 1-888-227-2423, or via the Internet at http://www.ccr.gov.

(End of clause)

252.205-7000 PROVISION OF INFORMATION TO COOPERATIVE AGREEMENT HOLDERS (DEC 1991)

(a) Definition.

"Cooperative agreement holder" means a State or local government; a private, nonprofit organization; a tribal organization (as defined in section 4(c) of the Indian Self-Determination and Education Assistance Act (Pub. L. 93-268; 25 U.S.C. 450 (c))); or an economic enterprise (as defined in section 3(e) of the Indian Financing Act of 1974 (Pub. L. 93-362; 25 U.S.C. 1452(e))) whether such economic enterprise is organized for profit or nonprofit purposes; which has an agreement with the Defense Logistics Agency to furnish procurement technical assistance to business entities.

(b) The Contractor shall provide cooperative agreement holders, upon their request, with a list of those appropriate employees or officesresponsible for entering into subcontracts under defense contracts. The list shall include the business address, telephone number, and area of responsibility of each employee or office.

(c) The Contractor need not provide the listing to a particular coo perative agreement holder more frequently than once a year.

(End of clause)

252.209-7000 ACQUISITION FROM SUBCONTRACTORS SUBJECT TO ONSITE INSPECTION UNDER THE INTERMEDIATE-RANGE NUCLEAR FORCES (INF) TREATY (NOV 1995)

(a) The Contractor shall not de ny consideration for a subcontract award under this contract to a potential subcontractor subject to on-site inspection under the INF Treaty, or a similar treaty, solely or in part because of the actual or potential presence of Soviet inspectors at the subcontractor's facility, unless the decision is approved by the Contracting Officer.

(b) The Contractor shall incorporate this clause, including this paragraph (b), in all solicitations and contracts exceeding the simplified acquisition threshold in part 13 of the Federal Acquisition Regulation, except those for commercial items.

(End of clause)

252.209-7004 SUBCONTRACTING WITH FIRMS THAT ARE OWNED OR CONTROLLED BY THE

GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) Unless the Government determines that there is a compelling reason to do so, the Contractor shall not enter into any subcontract in excess of $25,000 with a firm, or subsidiary of a firm, that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country.

(b) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country. The notice must include the name of the proposed subcontractor notwithstanding its inclusion on the List of Parties Excluded From Federal Procurement and Nonprocurement Programs.

(End of clause)

252.215-7000 PRICING ADJUSTMENTS (DEC 1991)

The term "pricing adjustment," as used in paragraph (a) of the clauses entitled "Price Reduction for Defective Cost or Pricing Data - Modifications," "Subcontractor Cost or Pricing Data," and "Subcontractor Cost or Pricing Data - Modifications," means the aggregate increases and/or decreases in cost plus applicable profits.

(End of clause)

252.219-7003 SMALL, SMALL DISADVANTAGED AND WOMEN-OWNED SMALL BUSINESS SUBCONTRACTING PLAN (DOD CONTRACTS) (APR. 1996)

This clause supplements the Federal Acquisition Regulation 52.219-9, Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan, clause of this contract.

(a) *Definitions. Historically black colleges and universities,* as used in this clause, means institutions determined by the Secretary of Education to meet the requirements of 34 CFR 608.2. The term also means any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

Minority institutions, as used in this clause, means institutions meeting the requirements of section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1135d-5(3)). The term also includes Hispanic-serving institutions as defined in section 316(b)(1) of such Act (20 U.S.C. 1059c(b)(1)).

(b) Except for company or division-wide commercial items subcontracting plans, the term *small disadvantaged business,* when used in the FAR 52.219-9 clause, includes historically black colleges and universities and minority institutions, in addition to small disadvantaged business concerns.

(c) Work under the contract or its subcontracts shall be credited toward meeting the small disadvantaged business concern goal required by paragraph (d) of the FAR 52.219-9 clause when:

(1) It is performed on Indian lands or in joint venture with an Indian tribe or a tribally -owned corporation, and

(2) It meets the requirements of 10 U.S.C. 2323a.

(d) Subcontracts awarded to workshops approved by the Committee for Purchase from People Who are Blind or Severely Disabled (41 U.S.C. 46-48), may be counted toward the Contractor's small business subcontracting goal.

(e) A mentor firm, under the Pilot Mentor-Protege Program established under Section 831 of Pub. L. 101-510, as amended, may count toward its small disadvantaged business goal, subcontracts awarded--

(f) The master plan approval referred to in paragraph (f) of the FAR 52.219-9 clause is approval by the Contractor's cognizant contract administration activity.

(g) In those subcontracting plans which specifically identify small, small disadvantaged, and women-owned small businesses, the Contractor shall notify the Administrative Contracting Officer of any substitutions of firms that are not small, small disadvantaged, or women-owned small businesses for the firms listed in the subcontracting plan. Notifications shall be in writing and shall occur within a reasonable period of time after award of the subcontract. Contractor-specified formats shall be acceptable.

(End of clause)

252.223-7001 HAZARD WARNING LABELS (DEC 1991)

(a) "Hazardous material," as used in this clause, is defined in the Hazardous Material Identification and Material Safety Data clause of this contract.

(b) The Contractor shall label the item package (unit container) of any hazardous material to be delivered under this contract in accordance with the Hazard Communication Standard (29 CFR 1910.1200 et seq). The Standard requires that the hazard warning label conform to the requirements of the standard unless the material is otherwise subject to the labeling requirements of one of the following statutes:

(1) Federal Insecticide, Fungicide and Rodenticide Act;

(2) Federal Food, Drug and Cosmetics Act;

(3) Consumer Product Safety Act;

(4) Federal Hazardous Substances Act; or

(5) Federal Alcohol Administration Act.

(c) The Offeror shall list which hazardous material listed in the Hazardous Material Identification and Material Safety Data clause of this contract will be labeled in accordance with one of the Acts in paragraphs (b)(1) through (5) of this clause instead of the Hazard Communication Standard. Any hazardous material not listed will be interpreted to mean that a label is required in accordance with the Hazard Communication Standard.

MATERIAL (If None, Insert "None.")	ACT
_____	_____
_____	_____

(d) The apparently successful Offeror agrees to submit, before award, a copy of the hazard warning label for all hazardous materials not listed in paragraph (c) of this clause. The Offeror shall submit the label with the Material Safety Data Sheet being furnished under the Hazardous Material Identification and Material Safety Data clause of this contract.

(e) The Contractor shall also comply with MIL-STD-129, Marking for Shipment and Storage (including revisions adopted during the term of this contract).

(End of clause)

252.223-7004 DRUG-FREE WORK FORCE (SEP 1988)

(a) Definitions.

(1) "Employee in a sensitive position," as used in this clause, means an employee who has been granted access to classified information; or employees in other positions that the Contractor determines involve national security; health or safety, or functions other than the foregoing requiring a high degree of trust and confidence.

(2) "Illegal drugs," as used in this clause, means controlled substances included in Schedules I and II, as defined by section 802(6) of title 21 of the United States Code, the possession of which is unlawful under chapter 13 of that Title. The term "illegal drugs" does not mean the use of a controlled substance pursuant to a valid prescription or other uses authorized by law.

(b) The Contractor agrees to institute and maintain a program for achieving the objective of a drug-free work force. While this clause defines criteria for such a program, contractors are encouraged to implement alternative approaches comparable to the criteria in paragraph (c) that are designed to achieve the obje ctives of this clause.

(c) Contractor programs shall include the following, or appropriate alternatives:

(1) Employee assistance programs emphasizing high level direction, education, counseling, rehabilitation, and coordination with available community resources;

(2) Supervisory training to assist in identifying and addressing illegal drug use by Contractor employees;

(3) Provision for self-referrals as well as supervisory referrals to treatment with maximum respect for individual confidentiality consistent with safety and security issues;

(4) Provision for identifying illegal drug users, including testing on a controlled and carefully monitored basis. Employee drug testing programs shall be established taking account of the following:

(i) The Contractor shall establish a program that provides for testing for the use of illegal drugs by employees in sensitive positions. The extent of and criteria for such testing shall be determined by the Contractor based on considerations that include the nature of the work being performed under the contract, the employee's duties, and efficient use of Contractor resources, and the risks to health, safety, or national security that could result from the failure of an employee adequately to discharge his or her position.

(ii) In addition, the Contractor may establish a program for employee drug testing --

(A) When there is a reasonable suspicion that an employee uses illegal drugs; or

(B) When an employees has been involved in an accident or unsafe practice;

(C) As part of or as a follow-up to counseling or rehabilitation for illegal drug use;

(D) As part of a voluntary employee drug testing program.

(iii) The Contractor may establish a program to test applicants for employment for illegal drug use.

(iv) For the purpose of administering this clause, testing for illegal drugs may be limited to those substances for which testing is prescribed by section 2..1 of subpart B of the "Mandatory Guidelines for Federal Workplace Drug Testing Programs" (53 FR 11980 (April 11, 1988), issued by the Department of Health and Human Services.

(d) Contractors shall adopt appropriate personnel procedures to deal with employees who are found to be using drugs illegally. Contractors shall not allow any employee to remain on duty or perform in a sensitive position who is found to use illegal drugs until such times as the Contractor, in accordance with procedures established by the Contractor, determines that the employee may perform in such a position.

(e) The provisions of this clause pertaining to drug testing program shall not apply to the extent that are inconsistent with state or local law, or with an existing collective bargaining agreement; provided that with respect to the latter, the Contractor agrees those issues that are in conflict will be a subject of negotiation at the next collective bargaining session.

(End of clause)

252.223-7006 PROHIBITION ON STORAGE AND DISPOSAL OF TOXIC AND HAZARDOUS MATERIALS (APR 1993)

(a) "Definitions".

As used in this clause --

(1) "Storage" means a non-transitory, semi-permanent or permanent holding, placement, or leaving of material. It does not include a temporary accumulation of a limited quantity of a material used in or a waste generated or resulting from authorized activities, such as servicing, maintenance, or repair of Department of Defense (DoD) items, equipment, or facilities.

(2) "Toxic or hazardous materials" means:

(i) Materials referred to in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (42 U.S.C. 9601(14)) and materials designated under section 102 of CERCLA (42 U.S.C. 9602) (40 CFR part 302);

(ii) Materials that are of an explosive, flammable, or pyrotechnic nature; or

(iii) Materials otherwise identified by the Secretary of Defense as specified in DoD regulations.

(b) In accordance with 10 U.S.C. 2692, the Contractor is prohibited from storing or disposing of non-DoD-owned toxic or hazardous materials on a DoD installation, except to the extent authorized by a statutory exception to 10 U.S.C. 2692 or as authorized by the Secretary of Defense or his designee.

(End of clause)

252.225-7012 PREFERENCE FOR CERTAIN DOMESTIC COMMODITIES (APR 2002)

(a) Definitions. As used in this clause--

(1) Component means any item supplied to the Government as part of an end product or of another component.

(2) End product means supplies delivered under a line item of this contract.

(b) The Contractor shall deliver under this contract only such of the following items, either as end products or components, that have been grown, reprocessed, reused, or produced in the United States, its possessions, or Puerto Rico:

(1) Food.

(2) Clothing.

(3) Tents, tarpaulins, or covers.

(4) Cotton and other natural fiber products.

(5) Woven silk or woven silk blends.

(6) Spun silk yarn for cartridge cloth.

(7) Synthetic fabric, and coated synthetic fabric, including all textile fibers and yarns that are for use in such fabrics.

(8) Canvas products.

(9) Wool (whether in the form of fiber or yarn or contained in fabrics, materials, or manufactured articles).

(10) Any item of individual equipment (Federal Supply Class 8465) manufactured from or containing fibers, yarns, fabrics, or materials listed in this paragraph (b).

(c) This clause does not apply--

(1) To items listed in section 25.104(a) of the Federal Acquisition Regulation (FAR), or other items for which the Government has determined that a satisfactory quality and sufficient quantity cannot be acquired as and when needed at U.S. market prices;

(2) To end products incidentally incorporating cotton, other natural fibers, or wool, for which the estimated value of the cotton, other natural fibers, or wool--

(i) Is not more than 10 percent of the total price of the end product; and (ii) Does not exceed the simplified acquisition threshold in FAR part 2;

(3) To foods that have been manufactured or processed in the United States, its possessions, or Puerto Rico, regardless of where the foods (and any component if applicable) were grown or produced;

(4) To chemical warfare protective clothing produced in the countries listed in subsection 225.872-1 of the Defense FAR Supplement; or

(5) To fibers and yarns that are for use in synthetic fabric or coated synthetic fabric (but does apply to the synthetic or coated synthetic fabric itself), if--

(i) The fabric is to be used as a component of an end product that is not a textile product. Examples of textile products, made in whole or in part of fabric, include--

(A) Draperies, floor coverings, furnishings, and bedding (Federal Supply Group 72, Household and Commercial Furnishings and Appliances);

(B) Items made in whole or in part of fabric in Federal Supply Group 83, Textile/leather/furs/apparel/findings/ tents/flags, or Federal Supply Group 84, Clothing, Individual Equipment and Insignia;

(C) Upholstered seats (whether for household, office, or other use); and

(D) Parachutes (Federal Supply Class 1670); or

(ii) The fibers and yarns are para-aramid fibers and yarns manufactured in the Netherlands.

(End of clause)

252.225-7031 SECONDARY ARAB BOYCOTT OF ISRAEL (JUN 1992)

(a) Definitions. As used in this clause--

(1) "Foreign person" means any person other than a United States person as defined in Section 16(2) of the Export Administration Act of 1979 (50 U.S.C. App. Sec 2415).

(2) "United States person" is defined in Section 16(2) of the Export Administration Act of 1979 and means any United States resident or national (other than an individual resident outside the United States and employed by other than a United States person), any domestic concern (including any permanent domestic establishment of any foreign concern), and any foreign subsidiary or affiliate (including any permanent foreign establishment) of any domestic concern which is controlled in fact by such domestic concerns, as determined under regulations of the President.

(b) Certification. By submitting this offer, the Offeror, if a foreign person, company or entity, certifies that it--

(1) Does not comply with the Secondary Arab Boycott of Israel; and

(2) Is not taking or knowingly agreeing to take any action, with respect to the Secondary Boycott of Israel by Arab countries, which 50 U.S.C. App. Sec 2407(a) prohibits a United States person from taking.

(End of clause)

252.226-7001 UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC ENTERPRISES-DOD CONTRACTS (SEP 2001)

(a) Definitions. As used in this clause --

“Indian” means any person who is a member of any Indian tribe, band, group, pueblo, or community that is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs (BIA) in accordance with 25 U.S.C. 1452(c) and any “Native” as defined in the Alaska Native Claims Settlement Act (43 U.S.C. 1601).

“Indian organization” means the governing body of any Indian tribe or entity established or recognized by the governing body of an Indian tribe for the purposes of 25 U.S.C. Chapter 17.

"Indian-owned economic enterprise" means any Indian-owned (as determined by the Secretary of the Interior) commercial, industrial, or business activity established or organized for the purpose of profit, provided that Indian ownership constitutes not less than 51 percent of the enterprise.

"Indian tribe" means any Indian tribe, band, group, pueblo, or community, including native villages and native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, that is recognized by the Federal Government as eligible for services from BIA in accordance with 25 U.S.C. 1452 (c).

"Interested party" means a contractor or an actual or prospective offeror whose direct economic interest would be affected by the award of a subcontract or by the failure to award a subcontract.

(b) The Contract shall use its best efforts to give Indian organizations and Indian-owned economic enterprises the maximum practicable opportunity to participate in the subcontracts it awards, to the fullest extent consistent with efficient performance of the contract.

(c) The Contracting Officer and the Contractor, acting in good faith, may rely on the representation of an Indian organization or Indian-owned economic enterprise as to its eligibility, unless and interested party challenges its status or the Contracting Officer has independent reason to question that status.

(d) In the event of a challenge to the representation of a subcontractor, the Contracting Officer will refer the matter to the U.S. Department of the Interior, Bureau of Indian Affairs, Attn: Chief, Division of Contracting and Grants Administration, 1849 C Street NW, MS-2626-MIB, Washington, DC 20240-4000. The BIA will determine the eligibility and will notify the Contracting Officer. No incentive payment will be made--

(1) Within 59 working days of subcontract award;

(2) While a challenge is pending; or

(3) If a subcontractor is determined to be an ineligible participant.

(e)(1) The Contractor, on its own behalf or on behalf of a subcontractor at any tier, may request an adjustment under the Indian Incentive Program to the following:

(i) The estimated cost of cost-type contract.

(ii) The target cost of a cost-plus-incentive-fee contract.

(iii) The target cost and ceiling price of a fixed-price incentive contract.

(iv) The price of a firm-fixed-price contract.

(2) The amount of the adjustment that may be made to the contract is 5 percent of the estimated cost, target cost, or firm-fixed price included in the subcontract initially awarded to the Indian organization or Indian-owned economic enterprise.

(3) The Contractor has the burden of proving the amount claimed and must assert its request for an adjustment prior to completion of contract performance.

(4) The Contracting Officer, subject to the terms and conditions of the contract and the availability of funds, will authorize an incentive payment of 5 percent of the amount paid to the subcontractor.

(5) If the Contractor requests and receives an adjustment on behalf of a subcontractor, the Contractor is obligated to pay the subcontractor the adjustment.

(f) The Contractor shall insert the substance of this clause, including this paragraph (f), in all subcontracts that--

(1) Are for other than commercial items; and

(2) Are expected to exceed the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation.

(End of clause)

252.227-7022 GOVERNMENT RIGHTS (UNLIMITED) (MAR 1979)

The Government shall have unlimited rights, in all drawings, designs, specifications, notes and other works developed in the performance of this contract, including the right to use same on any other Government design or construction without additional compensation to the Contractor. The Contractor hereby grants to the Government a paid-up license throughout the world to all such works to which he may assert or establish any claim under design patent or copyright laws. The Contractor for a period of three (3) years after completion of the project agrees to furnish the original or copies of all such works on the request of the Contracting Officer.

(End of clause)

252.227-7033 RIGHTS IN SHOP DRAWINGS (APR 1966)

(a) Shop drawings for construction means drawings, submitted to the Government by the Construction Contractor, subcontractor or any lower-tier subcontractor pursuant to a construction contract, showing in detail (i) the proposed fabrication and assembly of structural elements and (ii) the installation (i.e., form, fit, and attachment details) of materials or equipment. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(b) This clause, including this paragraph (b), shall be included in all subcontracts hereunder at any tier.

252.236-7000 MODIFICATION PROPOSALS - PRICE BREAKDOWN. (DEC 1991)

(a) The Contractor shall furnish a price breakdown, itemized as required and within the time specified by the Contracting Officer, with any proposal for a contract modification.

(b) The price breakdown --

(1) Must include sufficient detail to permit an analysis of profit, and of all costs for --

(i) Material;

(ii) Labor;

(iii) Equipment;

(iv) Subcontracts; and

(v) Overhead; and

(2) Must cover all work involved in the modification, whether the work was deleted, added, or changed.

(c) The Contractor shall provide similar price breakdowns to support any amounts claimed for subcontracts.

(d) The Contractor's proposal shall include a justification for any time extension proposed.

252.242-7000 POSTAWARD CONFERENCE (DEC 1991)

The Contractor agrees to attend any postaward conference convened by the contracting activity or contract administration office in accordance with Federal Acquisition Regulation subpart 42.5.

(End of clause)

252.243-7001 PRICING OF CONTRACT MODIFICATIONS (DEC 1991)

When costs are a factor in any price adjustment under this contract, the contract cost principles and procedures in FAR part 31 and DFARS part 231, in effect on the date of this contract, apply.

252.243-7002 REQUESTS FOR EQUITABLE ADJUSTMENT (MAR 1998)

(a) The amount of any request for equitable adjustment to contract terms shall accurately reflect the contract adjustment for which the Contractor believes the Government is liable. The request shall include only costs for performing the change, and shall not include any costs that already have been reimbursed or that have been separately claimed. All indirect costs included in the request shall be properly allocable to the change in accordance with applicable acquisition regulations.

(b) In accordance with 10 U.S.C. 2410(a), any request for equitable adjustment to contract terms that exceeds the simplified acquisition threshold shall bear, at the time of submission, the following certificate executed by an individual authorized to certify the request on behalf of the Contractor:

I certify that the request is made in good faith, and that the supporting data are accurate and complete to the best of my knowledge and belief.

(Official's Name)

(Title)

(c) The certification in paragraph (b) of this clause requires full disclosure of all relevant facts, including --

(1) Cost or pricing data if required in accordance with subsection 15.403-4 of the Federal Acquisition Regulation (FAR); and

(2) Information other than cost or pricing data, in accordance with subsection 15.403 -3 of the FAR, including actual cost data and data to support any estimated costs, even if cost or pricing data are not required.

(d) The certification requirement in paragraph (b) of this clause does not apply to ----

(1) Requests for routine contract payments; for example, requests for payment for accepted supplies and services, routine vouchers under a cost-reimbursement type contract, or progress payment invoices; or

(2) Final adjustment under an incentive provision of the contract.

252.244-7000 SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS (DOD) (MAR 2000)

In addition to the clauses listed in paragraph (c) of the Subcontracts for Commercial Items and Commercial Components clause of this contract (Federal Acquisition Regulation 52.244-6), the Contractor shall include the terms of the following clauses, if applicable, in subcontracts for commercial items or commercial components, awarded at any tier under this contract:

252.225-7014 Preference for Domestic Specialty Metals, Alternate I (10 U.S.C. 2241 note).

252.247-7023 Transportation of Supplies by Sea (10 U.S.C. 2631).

252.247-7024 Notification of Transportation of Supplies by Sea (10 U.S.C. 2631).

(End of clause)

252.247-7023 TRANSPORTATION OF SUPPLIES BY SEA (MAY 2002)

(a) Definitions. As used in this clause --

(1) "Components" means articles, materials, and supplies incorporated directly into end products at any level of manufacture, fabrication, or assembly by the Contractor or any subcontractor.

(2) "Department of Defense" (DoD) means the Army, Navy, Air Force, Marine Corps, and defense agencies.

(3) "Foreign flag vessel" means any vessel that is not a U.S.-flag vessel.

(4) "Ocean transportation" means any transportation aboard a ship, vessel, boat, barge, or ferry through international waters.

(5) "Subcontractor" means a supplier, materialman, distributor, or vendor at any level below the prime contractor whose contractual obligation to perform results from, or is conditioned upon, award of the prime contract and who is performing any part of the work or other requirement of the prime contract.

(6) "Supplies" means all property, except land and interests in land, that is clearly identifiable for eventual use by or owned by the DoD at the time of transportation by sea.

(i) An item is clearly identifiable for eventual use by the DoD if, for example, the contract documentation contains a reference to a DoD contract number or a military destination.

(ii) "Supplies" includes (but is not limited to) public works; buildings and facilities; ships; floating equipment and vessels of every character, type, and description, with parts, subassemblies, accessories, and equipment; machine tools; material; equipment; stores of all kinds; end items; construction materials; and components of the foregoing.

(7) "U.S.-flag vessel" means a vessel of the United States or belonging to the United States, including any vessel registered or having national status under the laws of the United States.

(b)(1) The Contractor shall use U.S.-flag vessels when transporting any supplies by sea under this contract.

(2) A subcontractor transporting supplies by sea under this contract shall use U.S.-flag vessels if--

(i) This contract is a construction contract; or

(ii) The supplies being transported are--

(A) Noncommercial items; or

(B) Commercial items that--

(1) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it contracts for f.o.b. destination shipment);

(2) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(3) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

(c) The Contractor and its subcontractors may request that the Contracting Officer authorize shipment in foreign-flag vessels, or designate available U.S.-flag vessels, if the Contractor or a subcontractor believes that --

(1) U.S.-flag vessels are not available for timely shipment;

(2) The freight charges are inordinately excessive or unreasonable; or

(3) Freight charges are higher than charges to private persons for transportation of like goods.

(d) The Contractor must submit any request for use of other than U.S.-flag vessels in writing to the Contracting Officer at least 45 days prior to the sailing date necessary to meet its delivery schedules. The Contracting Officer will process requests submitted after such date(s) as expeditiously as possible, but the Contracting Officer's failure to grant approvals to meet the shipper's sailing date will not of itself constitute a compensable delay under this or any other clause of this contract. Requests shall contain at a minimum --

(1) Type, weight, and cube of cargo;

(2) Required shipping date;

(3) Special handling and discharge requirements;

(4) Loading and discharge points;

(5) Name of shipper and consignee;

(6) Prime contract number; and

(7) A documented description of efforts made to secure U.S.-flag vessels, including points of contact (with names and telephone numbers) with at least two U.S.-flag carriers contacted. Copies of telephone notes, telegraphic and facsimile message or letters will be sufficient for this purpose.

(e) The Contractor shall, within 30 days after each shipment covered by this clause, provide the Contracting Officer and the Maritime Administration, Office of Cargo Preference, U.S. Department of Transportation, 400 Seventh Street SW., Washington, DC 20590, one copy of the rated on board vessel operating carrier's ocean bill of lading, which shall contain the following information:

(1) Prime contract number;

(2) Name of vessel;

(3) Vessel flag of registry;

(4) Date of loading;

(5) Port of loading;

(6) Port of final discharge;

(7) Description of commodity;

(8) Gross weight in pounds and cubic feet if available;

(9) Total ocean freight in U.S. dollars; and

(10) Name of the steamship company.

(f) The Contractor shall provide with its final invoice under this contract a representati on that to the best of its knowledge and belief--

(1) No ocean transportation was used in the performance of this contract;

(2) Ocean transportation was used and only U.S.-flag vessels were used for all ocean shipments under the contract;

(3) Ocean transportation was used, and the Contractor had the written consent of the Contracting Officer for all non-U.S.-flag ocean transportation; or

(4) Ocean transportation was used and some or all of the shipments were made on non-U.S.-flag vessels without the written consent of the Contracting Officer. The Contractor shall describe these shipments in the following format:

ITEM DESCRIPTION	CONTRACT LINE ITEMS	QUANTITY

_____
TOTAL_____

(g) If the final invoice does not include the required representation, the Government will reject and return it to the Contractor as an improper invoice for the purposes of the Prompt Payment clause of this contract. In the event there has been unauthorized use of non-U.S.-flag vessels in the performance of this contract, the Contracting Officer is entitled to equitably adjust the contract, based on the unauthorized use.

(h) In the award of subcontracts for the types of supplies described in paragraph (b)(2) of this clause, the Contractor shall flow down the requirements of this clause as follows:

(1) The Contractor shall insert the substance of this clause, including this paragraph (h), in subcontracts that exceed the simplified acquisition threshold in part 2 of the Federal Acquisition Regulation.

(2) The Contractor shall insert the substance of paragraphs (a) through (e) of this clause, and this paragraph (h), in subcontracts that are at or below the simplified acquisition threshold in part 2 of the Federal Acquisition Regulation.

(End of clause)

252.247-7024 NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)

(a) The Contractor has indicated by the response to the solicitation provision, Representation of Extent of Transportation by Sea, that it did not anticipate transporting by sea any supplies. If, however, after the award of this contract, the Contractor learns that supplies, as defined in the Transportation of Supplies by Sea clause of this contract, will be transported by sea, the Contractor --

(1) Shall notify the Contracting Officer of that fact; and

(2) Hereby agrees to comply with all the terms and conditions of the Transportation of Supplies by Sea clause of this contract.

(b) The Contractor shall include this clause; including this paragraph (b), revised as necessary to reflect the relationship of the contracting parties--

(1) In all subcontracts under this contract, if this contract is a construction contract; or

(2) If this contract is not a construction contract, in all subcontracts under this contract that are for --

(i) Noncommercial items; or

(ii) Commercial items that--

(A) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it subcontracts for f.o.b. destination shipment);

(B) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(C) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

(End of clause)

Section 00800 - Special Contract Requirements

CLAUSES INCORPORATED BY REFERENCE

52.223-9	Estimate of Percentage of Recovered Material Content for EPA-Designated Products	AUG 2000

CLAUSES INCORPORATED BY FULL TEXT

52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (a) commence work under this contract within five calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than 1080 calendar days. The time stated for completion shall include final cleanup of the premises.

(End of clause)

52.211-12 LIQUIDATED DAMAGES--CONSTRUCTION (SEP 2000)

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of $1,881.00 for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

(End of clause)

52.219-4002 REPORTING REQUIREMENTS--SUBCONTRACTING PLAN (CESAD-CT JUL 1993)

(a) Retainage will be withheld from progress payments in an amount sufficient to protect the Government's ability to assess Liquidated Damages in accordance with FAR clause 52.219-0016 for failure to submit timely SF 294 and SF 295 Reports. The amount of retainage will be determined in accordance with the following formula:
(b) Total dollar amount proposed for subcontracting to small business multiplied by percentage of actual progress on the contract, up to a maximum of 10% of the given progress payment, shall be withheld from the next progress payment due after a contractor fails to submit a required report. If one or more reports have been submitted before such failure, formula for determining the amount of retainage will be adjusted by deducting any amounts reported as subcontracted to small business from the total dollar amount proposed to be subcontracted and the difference multiplied by the percent of actual progress, up to a maximum of 10% of the given progress payment.

(End of clause)

52.223-4002 U.S. ARMY CORPS OF ENGINEERS SAFETY AND HEALTH REQUIREMENTS MANUAL, EM 385-1-1

This paragraph applies to contracts and purchase orders that require the contractor to comply with EM 385-1-1 (e.g., contracts that include the Accident Prevention clause at FAR 52.236-13 and/or other safety provisions). EM 385-1-1 and its changes are available at http://www.hq.usace.army.mil. (At the HQ homepage, select Safety and Occupational Health.) The Contractor shall be responsible for complying with the current edition and all changes posted on the web through the date that is 10 calendar days prior to the date offers are due. If the solicitation is amended to extend the time set for receipt of offers, the 10 calendar days rule stated above shall be applied against the amended date. (For example, if offers are due on 10 April, all changes posted on or before 31 March shall apply to the contract. If the time for receipt of offers is extended from 10 April to 20 April, all changes posted on or before 10 April shall apply to the contract.)

52.228-4001 RECOMMENDED INSURANCE COVERAGE – MAY 2000

The Design-Build Contractor's attention is invited to the contract requirements concerning "RESPONSIBILITY OF THE CONTRACTOR FOR DESIGN" and "WARRANTY OF CONSTURCTION WORK". These requirements vest in the Contractor complete responsibility for the professional quality, technical accuracy, and coordination of all design, drawings, specifications and other work or materials furnished by his in-house or consultant forces. The Design-Build Contractor must correct and revise any errors or deficiencies in his work, notwithstanding any review, approval, acceptance or payment by the Government. The Contractor must correct and change any work resulting from his defective design at no additional cost to the Government. The requirements further stipulate that the Design-Build Contractor shall be liable to the Government for the damages to the Government caused by negligent performance. Though it is not am mandatory requirement, this is to recommend that the Design-Build Contractor investigate and obtain appropriate insurance coverage for such liability protection.

(End of Clause)

52.228-4002 REQUIRED INSURANCE (FEB 1987 SAS) (Ref. FAR 28.307)

(a) The Contractor shall procure and maintain during the entire period of his performance under this contract the following minimum insurance:

Comprehensive and Employer's Liability Insurance in the amount required by the State law in which the work is to be performed under this contract.

Comprehensive General Liability Insurance in an amount not less than $500,000 per accident.

Automobile Liability Insurance: $200,000 per person and $500,000 per accident for bodily injury liability and $20,000 property damage liability.

(b) Prior to the commencement of work hereunder, 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 30 days after written notice thereof to the Contracting Officer.

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

(End of clause)

52.231-5000 EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE
MAR 1995)--EFARS

(a) This clause does not apply to terminations. See 52.249-5000, Basis for Settlement of Proposals and FAR Part 49.

(b) 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 for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series equipment from the contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, Construction Equipment Ownership and Operating Expense Schedule, Region III. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by 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 of negotiations shall apply. For retroactive pricing, the schedule in effect at the time the work was performed shall apply.

(c) Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.

(d) When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet.

(End of clause)

52.232-4006 I SUBJECT TO AVAILABILITY OF FUNDS STATEMENT (JUL 1990
SASCT) (Ref. AFARS 5101.602-2)

This is a high priority requirement as defined in Army Federal Acquisition Regulation (AFAR) Supplement 5101.602-2. Subject to the availability of funds, the accounting classification will be stated on the contract documents.. This statement is not a commitment of funds. Funds are not presently available for this acquisition. No contract award will be made until appropriated funds are made available from which payment for contract purposes can be made.

(End of provision)

52.232-4007 ACCOUNTING AND APPROPRIATION DATA (APR 1989 CESAS-RM)

Accouonting and Appropriation Data will be provided on contract documents.

(End of clause)

52.232-4008 DESIGNATED BILLING OFFICE (APR 1989 CESAS-RM)

Invoices will be mailed to:

West Georgia Area Office (CD-BE)
Rm 412, Meloy Hall, Bldg 6
Ft Benning, GA 31905-1009

(End of Clause)

52.232-4009 DESIGNATED PAYMENT OFFICE (AUG 1998 CESAS-RM-F)

Payment will be made by:
U.S. Army Corps of Engineers Finance Center
ATTN: CEFC-AO-P
5720 Integrity Drive
Millington, TN 38054-5005
(End of clause)

52.236-1 PERFORMANCE OF WORK BY THE CONTRACTOR (APR 1984)

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 Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government.

(End of clause)

52.236-4 PHYSICAL DATA (APR 1984)

Data and information furnished or referred to below is for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

(a) The indications of physical conditions on the drawings and in the specifications are the result of site investigations by . **This data will be added by amendment.** . . . . . [insert a description of investigati onal methods used, such as surveys, auger borings, core borings, test pits, probings, test tunnels].

(b) Weather conditions . . . . . (See 52.249-4001).

(c) Transportation facilities: The work site is accessible by public highway.

(End of clause)

52.236-14 AVAILABILITY AND USE OF UTILITY SERVICES (APR 1984)

(a) The Government shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. Unless otherwise provided in the contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the Government or, where the utility is produced by the Government, at reasonable rates determined by the Contracting Officer. The Contractor shall carefully conserve any utilities furnished without charge.

(b) The Contractor, at its expense and in a workmanlike manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges. Before final acceptance of the work by the Government, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

(End of clause)

52.236-4001 DESIGN-BUILD CONTRACT-ORDER OF PRECEDENCE – AUG 1997

(a) The contract includes the standard contract clauses and schedules current at the time of award. It also entails: (1) the solicitation in its entirety, including all drawings, cuts and illustrations, and any amendments during proposal evaluation and selection, and (2) the successful Offeror's accepted proposal. The contract constitutes and defines the entire agreement between the Contractor and the Government. No documentation shall be omitted which in any ways bears upon the terms of that agreement.

(b) In the event of conflict or inconsistency between any of the provisions of the various portions of this contract, precedence shall be given in the following order:

(1) Betterments: Any portions of the Offeror's proposal which both meet and exceed the provisions of the solicitation

(2) The provisions of the solicitation. (see also Contract Clause: SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION.)

(3) All other provisions of the accepted proposal.

(4)Any design products, including but not limited to plans, specifications, engineering studies and analyses, shop drawings, equipment installation drawings, etc. These are "deliverables" under the contract and are not part of the contract itself. Design products must conform to all provisions of the contract, in the order of precedence herein.

(End of Clause)

52.236-4003 RESPONSIBILITY OF THE CONTRACTOR FOR DESIGN – FEB 2000

(i) The Contractor shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and other non-construction services furnished by the Contractor under this contract. The Contractor shall, without additional compensation, correct or revise any errors or deficiency in its designs, drawings, specifications, and other non-construction services and perform any necessary rework or modifications, including any damage to real or personal property, resulting from the design error or omission.

(ii) Neither the Government's review, approval or acceptance of, nor payment for, the services required under this contract shall be construed to operate as a waiver of any rights under this contract or of any cause of action arising out of the performance of this contract. The Contractor shall be and remain liable to the Government in accordance wit applicable law for all damages to the Government caused by the Contractor's negligent performance of any of these services furnished under this contract.

(iii) The rights and remedies of the Government provided for under this contract are in addition to any other rights and remedies provided by law

(iv) If the Contractor is comprised of more than one legal entity shall be jointly and severally liable thereunder.

(End of Clause)

* This provision shall apply if Fast Track is **not** used

52.236-4004 SEQUENCE OF DESIGN-CONSTRUCTION – AUG 1997

(a) After receipt of the Contract Notice to Proceed (NTP) the Contractor shall initiate design, comply with all design submission requirements as covered under Division 01 General Requirements, and obtain Government review of each submission. No construction may be started, <with the exception of… .clearing, etc… > until the Government reviews the Final Design submission and determines it satisfactory for purposes of beginning construction. The Contracting Officer will notify the Contractor when the design is cleared for construction. The Government will not grant any time extension for any design resubmittal required when, in the opinion of the Contracting Officer, the initial submission failed to meet the minimum quality requirements as set forth in the Contract.

(b) If the Government allows the Contractor to proceed with limited construction based on pending minor revisions to the reviewed Final Design submission, no payment will be made for any in-place construction related to the pending revisions until they are completed, resubmitted and are satisfactory to the Government.

(c) No payment will be made for any in-place construction until all required submittals have been made, reviewed and are satisfactory to the Government.

(End of Clause)

* This provision shall apply if Fast Track is used

52.236-4005 SEQUENCE OF DESIGN- CONSTRUCTION (FAST TRACK) – AUG 1997

(b) After receipt of the Contract Notice to Proceed (NTP) the Contractor shall initiate design, comply with all design submissions requirements as covered under Division 01 General Requirements, and obtain Government review of each submission. The contractor may begin construction on portions of the work for which the Government has reviewed the final design submission and has determined satisfactory for purposes of beginning construction. The Contracting Officer will notify the Contractor when the design is cleared for construction. The Government will not grant any time extension for any design resubmittal required when, in the opinion of the Contracting Officer, the initial submission failed to meet the minimum quality requirements as set forth in the Contract.

(c) If the Government allows the Contractor to proceed with the construction based on pending minor revisions to the reviewed Final Design submission, no payment will be made for any in-place construction related to the pending revisions until they are completed, resubmitted and are satisfactory to the Government.

(d) No payment will be made for any in-place construction until all required submittals have been made, reviewed and are satisfactory to the Government.

(End of Clause)

52.236-4006 CONSTRUCTOR'S ROLE DURING DESIGN – JUN 1998

The Contractor's construction management key personnel shall be actively involved during the design process to effectively integrate the design and construction requirements of this contract. In addition to the typical required construction activities, the constructor's involvement includes, but is not limited to actions such as: integrating the design schedule into the Master Schedule to maximize the effectiveness of fast-tracking design and construction (within the limits allowed in the contract), ensuring constructability and economy of the design, integrating the shop drawing and installation drawing process into the design, e xecuting the material and equipment acquisition programs to meet critical schedules, effectively interfacing the construction QC program with the design QC program, and maintaining and providing the design team with accurate, up -to-date redline and as-built documentation. The Contractor shall require and manage the active involvement of key trade subcontractors in the above activities.

(End of Clause)

52.236-4007 TRAINING – FEB 2000

The Contractor shall provide operational and maintenance training for all systems furnished under this contract for the operating and maintenance personnel. The system manufacturer shall conduct the training, where feasible. All operation and maintenance manuals shall be submitted and approved prior to conducting the training, where feasible. All operation and maintenance manuals shall be submitted and approved prior to conducting the training and shall be used during training. The Contractor shall video tape the training session on VHS tapes and provide the tapes to the Government.

(End of Clause)

52.236-4008 DESIGN CONFERENCES – AUG 1997

(a) Pre-Work: As part of the Pre-Work Conference conducted after contract award, key representatives of the Government and the Contractor will review the design submission and procedures specified herein, discuss the preliminary design schedule and provisions for phase completion of the D-B documents with construction activities (fast tracking), as appropriate, meet with Corps of Engineers Design Review personnel and key Using Agency points of contract and any other appropriate pre-design discussion items.

(b) Design Charette: After award of the contract, the Contractor shall visit the site and conduct extensive interviews, and problem solving discussions with the individual users, base personnel, Corps of Engineers

personnel to acquire all necessary site information, review user options, and discuss user needs. The Contractor shall document all discussions. The design shall be finalized as direct result of these meetings.

(c) Design Review Conferences: Review conferences will be held on base for each design submittal. The Contractor will bring the personnel that developed the design submittal to the review conference. The conferences will take place the week after the review is complete.

(End of Clause)

52.236-4009 PARTNERING – FEB 2000

In order to most effectively accomplish this contract, the Government proposes to form a partnership with the Contractor to develop a cohesive building team. It is anticipated that this partnership would involve the Ft Benning facility users, installation support personnel, the Contractor, primary subcontractors and designers and the Corps of Engineers. This partnership would strive to develop a cooperative management team drawing on the strengths of each team member in an effort to achieve quality project within budget and on schedule. This partnership would be bilateral in membership and participation will be totally voluntary. Any cost associated with effectuating this partnership, excluding travel and lodging cost of Government personnel, will be borne by each party. The partnering meetings shall be held at Ft Benning, GA.

(End of Clause)

52.236-4013 CONTRACTOR-PREPARED NETWORK ANALYSIS SYSTEM
(January 2002 SAS) (Ref. DFARS 236.273)

The progress chart to be prepared by the contractor pursuant to FAR 52.236-15, Schedules for Construction Contracts, shall utilize the Critical Path Method (CPM) of network calculation. (See Attachment 1 to Section 00800).

52.236-4015 PRECONSTRUCTION CONFERENCE (OCT 1988 SAS) (Ref. FAR 36.305)

(a) A preconstruction conference will be arranged by the Area/Resident Engineer after award of contract and before commencement of work. The Area/Resident Engineer will notify the Contractor of the time and date set for the meeting. At this conference, the Contractor shall be oriented with respect to Government procedures and line of authority, contractual, administrative, and construction matters.

(b) The Contractor shall bring to this conference, in completed form, a Certificate of Insurance, plus the following items in either completed or draft form:

Accident Prevention Plan (5 copies)
(use format shown in Attachment 1 to SECTION 00800)
Quality Control Plan (5 copies)
Letter Appointing Superintendent
Transmittal Register

Power of Attorney and Certified Copy of Resolution
Network Analysis System, when applicable
List of Subcontractors

(c) A letter of record will be written documenting all items discussed at the conference, and a copy will be furnished by the Area/Resident Engineer to all in attendance.

(End of clause)

52.236-4016 VIDEO TAPING OPERATING AND MAINTENANCE INSTRUCTIONS (MAR 1987 SASCD-SQ)

For all of the operating and maintenance instructions which are required in the contract specifications, the Contractor shall video tape these instructions as they are presented to the Government representatives. These tapes shall provide clear and understandable detailed instructions for all items required by the contract specifications. The tapes shall be prepared by an experienced video director/cameraman using good quality half-inch VHS color tape with correct sound equipment, lighting, and backdrop. The sound and picture quality shall be high and subject to approval by the Contracting Officer. The tapes are intended as followup training for other Government representatives at a later date. They must be suitable for this purpose. The Contractor shall be responsible for the contents of the instructions and shall verify that they are correct prior to taping. The Contractor may submit individual equipment manufacturer's instructional tape(s), provided they meet the above qualifications and cover the actual equipment that is installed. The tape(s) shall be for specific equipment identified by contents and contract name and number. The Contractor shall submit one copy of the tape(s) to the Contracting Officer for review and approval. Unacceptable tapes are to be corrected by the Contractor as indicated by the Contracting Officer at no additional cost to the Government.

(End of clause)

52.236-4017 SUBMITTAL OF MODIFICATION COST ESTIMATE PROPOSALS (MAR 1992 SAS)
(Ref. DFARS 52.236-7000)

When submittals of Cost Estimate Proposals are required for additions or deletions to work under this contract by modification, the Contractor shall use DA Form 5418-R titled "Cost Estimate Analysis" (see Attachment 1 to SECTION 00800). A separate assemblage will be prepared for submittal by each trade affected by the proposed work.

(End of clause)

52.244-4001 KEY PERSONNEL, SUBCONTRACTORS AND OUTSIDE ASSOCIATES OR CONSULTANTS–AUG 1997

In connection with the services covered by this contract, any in-house personnel, subcontractors, and outside associates or consultants will be limited to the individuals or firms that were specifically identified and agreed to during negotiations. The contractor shall obtain the Contracting Officer's written consent before making any substitution for these designated in-house personnel, subcontractors, associates, or consultants.

(End of Clause)

52.246-12 INSPECTION OF CONSTRUCTION (AUG 1996)

(a) Definition. "Work" includes, but is not limited to, materials, workmanship, and manufacture and fabrication of components.

(b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. The Contractor shall maintain complete inspection records and make them available to the Government. All work shall be conducted under the general direction of the Contracting Officer and is subject to Government inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

(c) Government inspections and tests are for the sole benefit of the Government and do not--

(1) Relieve the Contractor of responsibility for providing adequate quality control measures;

(2) Relieve the Contractor of responsibility for damage to or loss of the material before acceptance;

(3) Constitute or imply acceptance; or

(4) Affect the continuing rights of the Government after acceptance of the completed work under paragraph (i) of this section.

(d) The presence or absence of a Government inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specification without the Contracting Officer's written authorization.

(e) The Contractor shall promptly furnish, at no increase in contract price, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The Government may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The Government shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.

(f) The Contractor shall, without charge, replace or correct work found by the Government not to conform to contract requirements, unless in the public interest the Government consents to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.

(g) If the Contractor does not promptly replace or correct rejected work, the Government may (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor or (2) terminate for default the Contractor's right to proceed.

(h) If, before acceptance of the entire work, the Government decides to examine already completed work by

removing it or tearing it out, the Contractor, on requ est, shall promptly furnish all necessary facilities, labor, and material. If the work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray the expenses of the examination and of satisfactory reconstruction. However, if the work is found to meet contract requirements, the Contracting Officer shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including , if completion of the work was thereby delayed, an extension of time.

(i) Unless otherwise specified in the contract, the Government shall accept, as promptly as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer determines can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the Government's rights under any warranty or guarantee.

(End of clause)

52.246-4001 WARRANTY OF CONSTRUCTION WORK– AUG 1997

(a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (1) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

(b) This warranty shall contain for a period of year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government-owned or controlled real or personal property, when that damage is the result of –

(1) The Contractor's failure to conform to contract requirements; or

(2) Any defect of equipment, material, or workmanship.

(d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

(e) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

(f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(g) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall –

(1) Obtain all warranties that would be given in normal commercial practice:

(2) Require all warranties to be executed, in writing for the benefit of the Government, if directed by the Contracting Officer; and

(3)Enforce warranties for the benefit of the Government, if directed by the Contracting Officer.

(h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's or supplier's warranty.

(i) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

(j) This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

(End of Clause)

52.248-4003 VALUE ENGINEERING AFTER AWARD

61 In reference to Contract Clause 52.248-3, "Value Engineering – Construction", the Government may refuse to entertain a "Value Engineering Change Proposal" (VECP) for those "performance oriented" aspects of the Solicitation documents which were addressed in the Contractor's accepted contract proposal and which were evaluated in competition with other offerors for award of this contract.

62 The Government may consider a VECP for those "prescriptive" aspects of the Solicitation documents, not addressed in the Contractor's accepted contract proposal or addressed but evaluated only for minimum conformance with the Solicitation requirements.

63 For purposes of this clause, the term "performance oriented" refers to those aspects of the design criteria or other contract requirements which allow the Offeror or Contractor certain latitude, choice of and flexibility to propose in its accepted contract offer a choice of design, technical approach, design solution, construction approach or other approach to fulfil the contract requirements. Such requirements generally tend to be expressed in terms of functions to be performed, performance required or essential physical characteristics, without dictating a specific process or specific design solution for achieving the desired result.

64 In contrast, for purposes of this clause, the term "prescriptive" refers to those aspects of the design criteria or other Solicitation requirements wherein the Government expressed the design solution or other requirements in terms of specific materials, approaches, systems and/or processes to be used. Prescriptive aspects typically allow the Offerors little or no freedom in the choice of design approach, materials, fabrication techniques, methods of installation or other approach to fulfill the contract requirements.

(End of Clause)

52.249-4001 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER (APR 1991 OCE)
(Ref. FAR 52.249 -10)

(a) This provision specifies the procedure for the determination of time extensions for unusually severe weather in accordance with the contract clause entitled DEFAULT (FIXED-PRICE CONSTRUCTION). In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

(1) The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

(2) The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.

(b) The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The Contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORKDAYS BASED ON 5-DAY WORK WEEK

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
9	8	6	4	4	6	9	7	5	3	4	8

(c) Upon acknowledgment of the Notice to Proceed and continuing through-out the contract, the Contractor will record on the daily Contractor Quality Control report the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled workday. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day in each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph (b) above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather workdays, and issue a modification in accordance with the contract clause entitled DEFAULT (FIXED PRICE CONSTRUCTION).

(End of clause)

52.249-5000 BASIS FOR SETTLEMENT OF PROPOSALS - EFARS

Actual costs will be used to determine equipment costs for a settlement proposal submitted on the total cost basis under FAR 49.206-2(b). In evaluating a terminations settlement proposal using the total cost basis, the following principles will be applied to determine allowable equipment costs:

Actual costs for each piece of equipment, or groups of similar serial or series equipment, need not be available in the contractor's accounting records to determine total actual equipment costs. If equipment costs have been allocated to a contract using predetermined rates , those charges will be adjusted to actual costs.

(3) Recorded job costs adjusted for unallowable expenses will be used to determine equipment operating expenses.

(4) Ownership costs (depreciation) will be determined using the contractor's depreciation schedule (subject to the provisions of FAR 31.205-11).

(5) License, taxes, storage and insurance costs are normally recovered as an indirect expense and unless the contractor charges these costs directly to contracts, they will be recovered through the indirect expense rate.

(End of Clause)

ATTACHMENT 1 TO SECTION 00800

LIST OF ATTACHMENTS

1. Contract Drawings:

   File No. 721-11-14, Sheets 1 through 54

2. Rates of Wages:

3. Formats:

   Project Sign

   Project Sign Legend Defined (Army/Civil)

   Project Sign Erection Detail

   Corps of Engineers Logo

   Accident Prevention Plan (Ref. FAR 52.236-13 and EM 385-1-1)

   Construction Quality Control Report

   Small and Disadvantaged Business Subcontracting Plan

   Weekly Temporary Electrical Inspection

4. Minimum Standard for Temporary Electrical Service (Ref. FAR 52.236-14)

5. Forms:

   SAS Form 9 - Activity Hazard Analysis

   SAD Form 1666a-R - Safety Checklist for Crawler, Truck & Wheel Mounted Cranes

   SAD Form 1666b-R - Safety Checklist for Portal, Tower, and Pillar Cranes

   SAD Form 1666c-R - Safety Checklist for Rigging

   SAD Form 1666d-R - Safety Checklist for Motor Vehicles, Trailers and Trucks

   SAD Form 1666e-R - Safety Checklist for Crawler Tractors and Dozers

   SAD Form 1666f-R - Safety Checklist for Scrapers, Motor Graders, and Other Mobile Equipment

   SAD Form 1666g-R - Safety Checklist for Material Hoists

   SAD Form 1666h-R - Safety Checklist for Earth Drilling Equipment

   ENG Form 4025 - Transmittal of Shop Drawings, Equipment Data, Material Samples, or Manufacturer's Certificates of Compliance

   DA Form 5418-R - Cost Estimate Analysis

   DD Form 1354 - Transfer and Acceptance of Military Real Property

   Standard Form LLL-A - Disclosure of Lobbying Activities

FB (ENG) Form 51 - Real Property Inventory and BIS Worksheet

General Decision Number GA020001

General Decision Number **GA020001**
Superseded General Decision No. GA010001
State: Georgia
Construction Type:
BUILDING
County(ies):
CHATTAHOOCHEE MUSCOGEE
BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/01/2002

COUNTY(ies):
CHATTAHOOCHEE MUSCOGEE
SUGA1001D 11/22/1993

	Rates	Fringes
BRICKLAYER/BLOCKLAYER	12.15	
CARPENTER (including batt insulation, drywall hanging, and metal framing)	9.77	
CEMENT MASON/CONCRETE FINISHER	8.35	
ELECTRICIAN	12.76	2.83
HVAC MECHANIC (duct work only)	12.00	
LABORERS:		
Unskilled	5.65	
Pipelayer	6.50	.13
PAINTER, BRUSH (does not include drywall finishing)	8.38	
PLASTERER	10.00	
PLUMBER (including HVAC piping)	12.31	
POWER EQUIPMENT OPERATORS;		
Backhoe	8.04	
Bulldozer	8.47	
Loader	7.80	

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)(v)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:
* an existing published wage determination
* a survey underlying a wage determination

* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

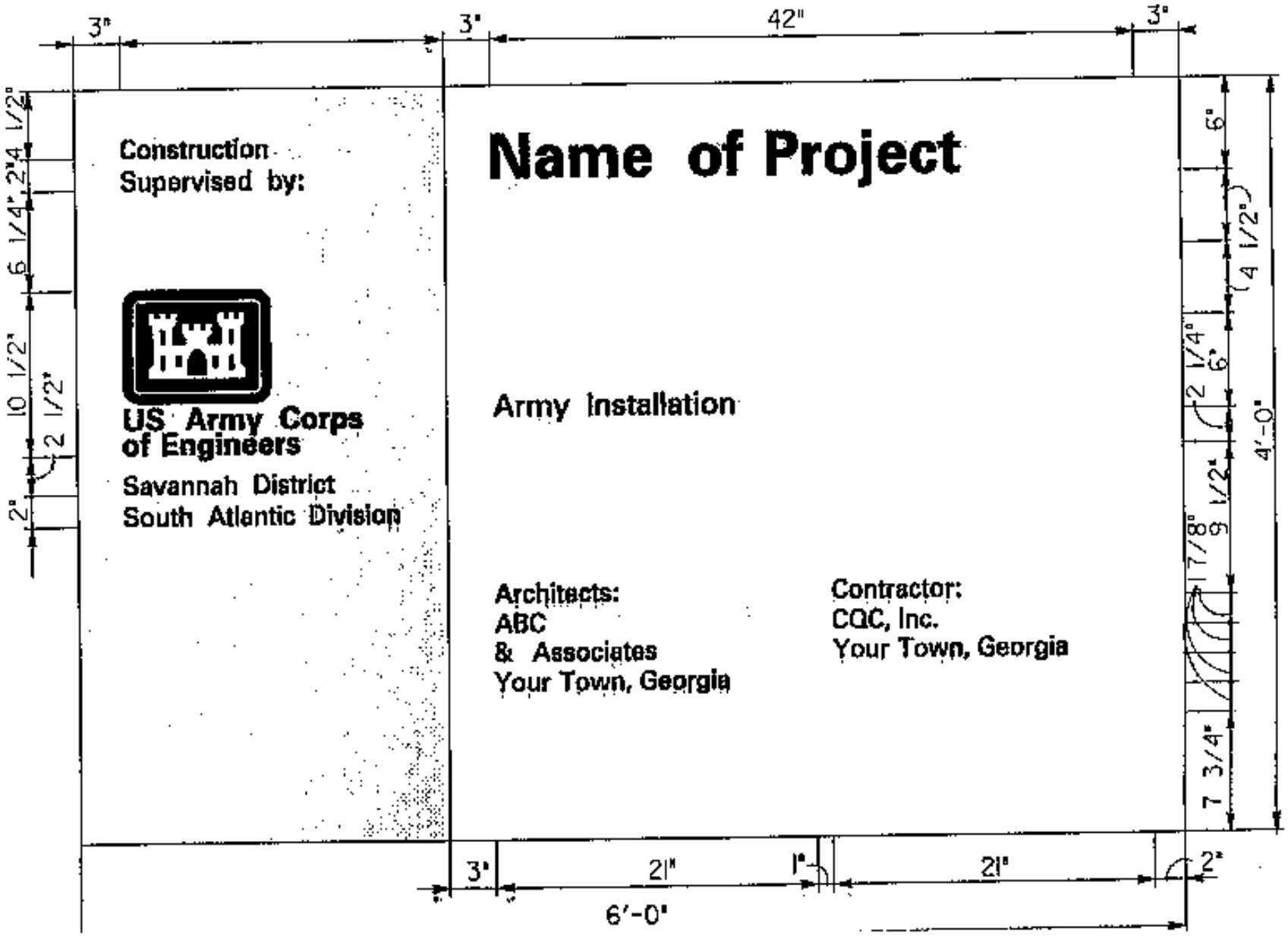
The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION


3"
3"
42"
3"
Construction
Supervised by:
US Army Corps
of Engineers
Savannah District
South Atlantic Division
Name of Project
Army Installation
Architects:
ABC
& Associates
Your Town, Georgia
Contractor:
CQC, Inc.
Your Town, Georgia
6"
4 1/2"
2 1/4"
6"
9 1/2"
7 3/4"
4'-0"
2 1/2"
10 1/2"
6 1/4"
4 1/2"
2"
3"
21"
1"
21"
2"
6'-0"

PROJECT SIGN LEGEND DEFINED

Legend Group 1: The words:

"Construction Supervised by:" or "Design and Construction Supervised by:"

shall be placed on two lines using black, 1.25" Helvetica regular typeface. Maximum line length is 19".

10.5" Reverse Signature: The Corps symbol shall be a 10.5" white reverse signature using a 6" castle on a red background. The castle and surrounding border lines shall be white. The castle windows, door, and logo background are to be red. The words "U.S. Army Corps of Engineers" shall be black.

Legend Group 2: The words:

"Savannah District
South Atlantic Division"

shall be placed on two lines below the 10.5" reverse signature, using black, 1.25" Helvetica regular typeface.

Legend Group 3: The "Name of Project" shall be placed on one to three lines using white 3" Helvetica bold typeface. Maximum line length is 42".

Legend Group 4: The "Army Installation" shall be a one or two line identification of the facility or name of the sponsoring department. Lettering is to be white, 1.5" Helvetica regular typeface. Maximum line length is 42".

NOTE: Cross-align the first line of legend group 4 with the first line of the Corps signature (U.S. Army Corps) as shown.

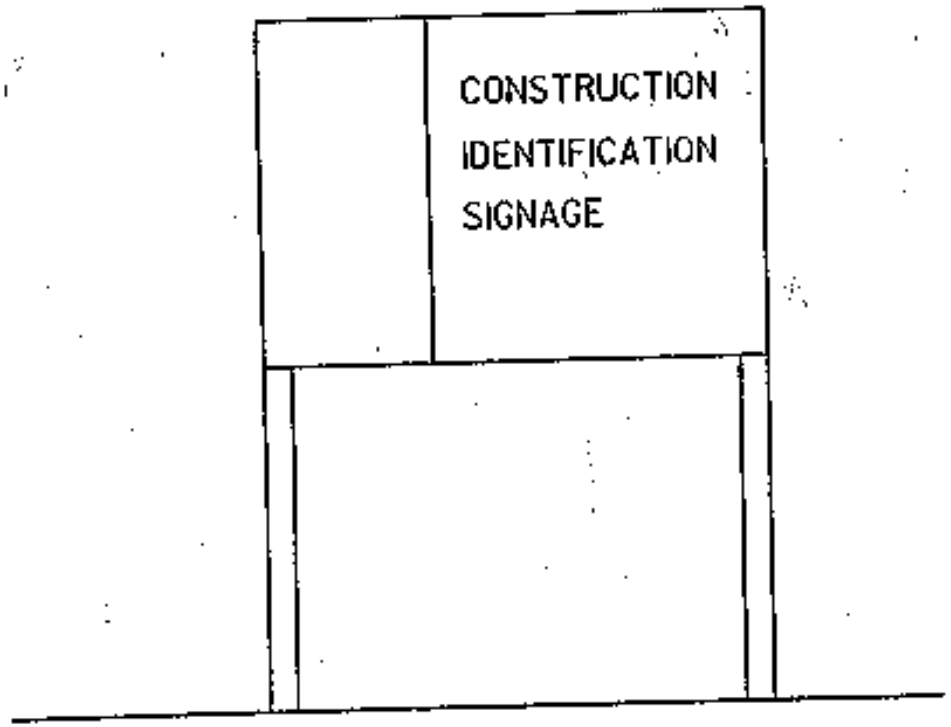
Legend Group 5a: The words:

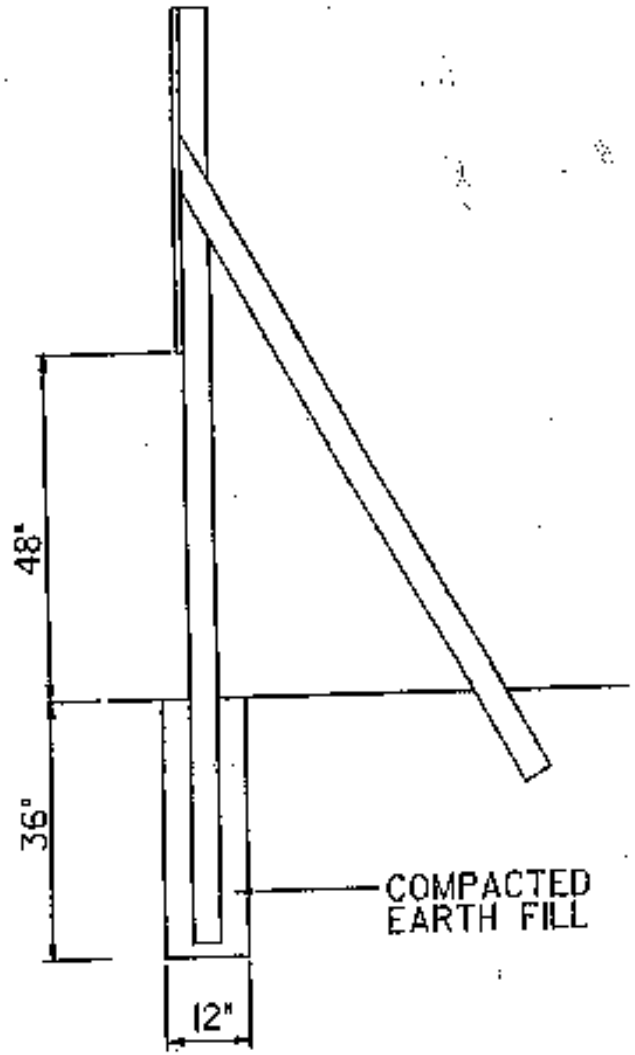
"Architects:" or "Engineers:" or "Architect-Engineers:"

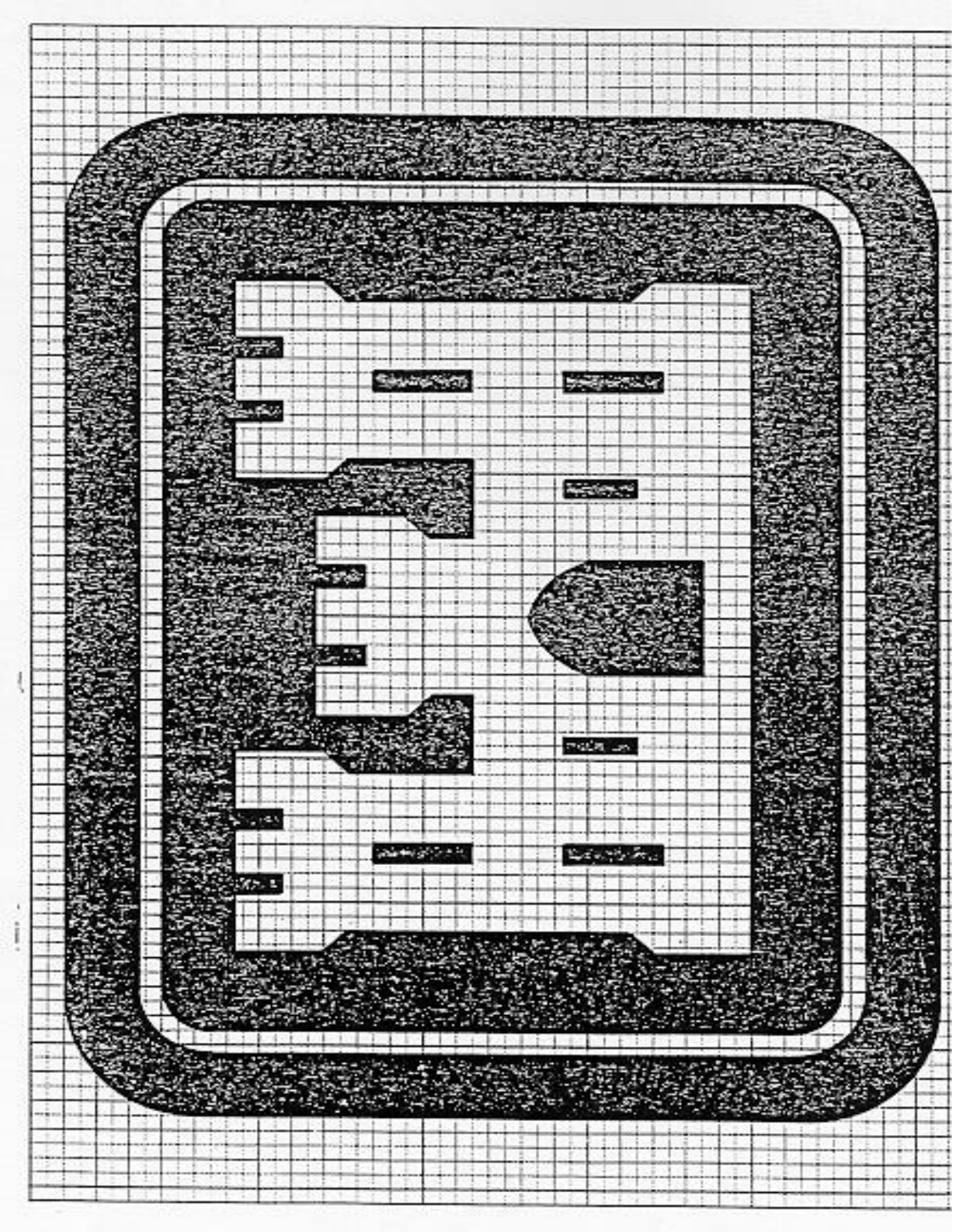
shall be a one to five line identification of the prime architect or engineering corporate or firm name, city, and State. Lettering shall be white, 1.25" Helvetica regular typeface. Maximum line length is 21".

Legend Group 5b: The "Contractor:" shall be a one to five line identification of the prime Contractor corporate or firm name, city, and State. Include type of Contractor, i.e. General Contractor, etc. Lettering shall be white, 1.25" Helvetica regular typeface. Maximum line length is 21".

NOTE: All typography shall be flush left and rag right, upper and lower case with initial capitals only as shown.


CONSTRUCTION
IDENTIFICATION
SIGNAGE


48"
36"
12"
COMPACTED
EARTH FILL



CORPS OF ENGINEERS LOGO
HALF SIZE

Last revised 9 May 97

FORMAT
(Ref. FAR 52.236-13 and EM 385-1-1 dated 3 Sep 96)
ACCIDENT PREVENTION PLAN

MINIMUM BASIC OUTLINE FOR ACCIDENT PREVENTION PLAN

An accident prevention plan is, in essence, a safety and health policy and program document. The following areas are typically addressed in an accident prevention plan, but a plan shall be job specific and shall also address any unusual or unique aspects of the project or activity for which it is written. The accident prevention plan shall interface with the employer's overall safety and health program. Any portions of the overall safety and health program that are referenced in the accident prevention plan shall be included as appropriate.

1. SIGNATURE SHEET. Title, signature, and phone number of the following:

a. Plan preparer (corporate safety staff person, QC);

b. Plan approval, e.g., owner, company president, regional vice president (HTRW activities require approval of a Certified Industrial Hygienist (or qualified Industrial Hygiene personnel for in-house USACE activities; a Certified Safety Professional (or qualified USACE safety personnel for in-house work) may approve the plan for operations involving UST removal where contaminants are known to be petroleum, oils, or lubricants);

c. Plan concurrence (provide concurrence of other applicable corporate and project personnel (contractor)), e.g., Corporate Chief of Operations, Corporate Chief of Safety, Corporate Industrial Hygienist, project manager or superintendent, project safety professional, project QC. The plan will be developed by qualified personnel (plan preparer) and will be signed by a competent person (plan concurrence) and a representative of the prime contractor's project management team (plan approval).

2. BACKGROUND INFORMATION. List the following:

a. Contractor;

b. Contract number;

c. Project name;

d. Brief project description, description of work to be performed, and location (map);

e. Contractor accident experience (provide information such as EMR, OSHA 200 Forms, corporate safety trend analyses);

f. Listing of phases of work and hazardous activities requiring activity hazards analyses.

3. STATEMENT OF SAFETY AND HEALTH POLICY. (In addition to the corporate policy statement, a copy of the corporate safety program may provide a

significant portion of the information required by the accident prevention plan.)

4. RESPONSIBILITIES AND LINES OF AUTHORITIES.

a. Identification and accountability of personnel responsible for safety - at both corporate and project level (contracts specifically requiring safety or industrial hygiene personnel should include a copy of their resume - the District Safety and Occupational Health Office will review the qualifications for acceptance). For items in EM 385-1-1 which require the use of a competent person or a qualified person, the contractor is to maintain documentation demonstrating the competence or qualification of that individual.

b. Lines of authority

5. SUBCONTRACTORS AND SUPPLIERS. Provide the following:

a. Identification of subcontractors and suppliers (if known);

b. Means for controlling and coordinating subcontractors and suppliers;

c. Safety responsibilities of subcontractors and suppliers.

6. TRAINING.

a. List subjects to be discussed with employees in safety indoctrination.

b. List mandatory training and certifications which are applicable to this project (e. g., explosive actuated tools, confined space entry, crane operator, diver, vehicle operator, HAZWOPER training and certification, personal protective equipment) and any requirements for periodic retraining/recertification.

c. Identify requirements for emergency response training.

d. Outline requirements (who attends, when given, who will conduct etc.) for supervisory and employee safety meetings.

e. Identify location at the project site where the records will be maintained.

7. SAFETY AND HEALTH INSPECTIONS. Provide details on:

a. Who will conduct safety inspections (e.g., project manager, safety professional, QC, supervisors, employees, etc.), when inspections will be conducted, how the inspections will be recorded, deficiency tracking system, follow-up procedures, etc;

b. Any external inspections/certifications which may be required (e.g., Coast Guard).

8. SAFETY AND HEALTH EXPECTATIONS, INCENTIVE PROGRAMS, AND COMPLIANCE.

a. The company's written safety program goals, objectives, and accident experience goals for this contract should be provided.

b. A brief description of the company's safety incentive programs (if any) should be provided.

c. Policies and procedures regarding noncompliance with safety requirements (to include disciplinary actions for violation of safety requirements) should be identified.

d. Provide written company procedures for holding managers and supervisors accountable for safety.

9. ACCIDENT REPORTING. The contractor shall identify who shall complete the following, how, and when:

a. Exposure data (man-hours worked);

b. Accident investigations, reports and logs;

c. Immediate notification of major accidents.

10. MEDICAL SUPPORT. Outline on-site medical support and off-site medical arrangements.

11. PERSONAL PROTECTIVE EQUIPMENT. Outline procedures (who, when, how) for conducting hazard assessments and written certifications for use of personal protective equipment.

12. PLANS (PROGRAMS, PROCEDURES) REQUIRED BY THE SAFETY MANUAL (as applicable).

a. Hazard communication program (01.B.04);

b. Emergency response plans:
- procedures and tests (01.E.01)
- spill plans (01.E.01, 06.A.02)
- fire fighting plan (01.E.01, 19.A.04)
- posting of emergency telephone numbers (01.E.04)
- wildfire prevention plan (09.K.01)
- man overboard/abandon ship (19.A.04)

c. Layout plans (04.A.01);

d. Respiratory protection plan (05.E.01);

e. Health hazard control program (06.A.02);

f. Lead abatement plan (06.B.05 & specifications);

g. Asbestos abatement plan (06.B.05 & specifications);

h. Abrasive blasting (06.H.01);

i. Confined space (06.1);

j. Hazardous energy control plan (12.A.07);

k. Critical lift procedures (16.C.17);

l. Contingency plan for severe weather (19.A.03);

m. Access and haul road plan (22.1.10);

n. Demolition plan (engineering and asbestos surveys) (23.A.01);

o. Emergency rescue (tunneling) (26.A.05);

p. Underground construction fire prevention and protection plan (26.D.01);

q. Compressed air plan (26.1.01);

r. Formwork and shoring erection and removal plans (27.B.02);

s. Lift slab plans (27.D.01);

t. SHP and SSHP (for HTRW work an SSHP must be submitted and shall contain all information required by the accident prevention plan - two documents are not required (28.B.01);

u. Blasting plan (29.A.01);

v. Diving plan (30.A.13);

w. Plan for prevention of alcohol and drug abuse (Defense Federal Acquisition Regulation Supplement Subpart 252.223-7004, Drug-Free Work Force).

13. The Contractor shall provide information on how they will meet the requirements of major sections of EM 385-1-1 in the accident prevention plan. Particular attention shall be paid to excavations, scaffolding, medical and first aid requirements, sanitation, personal protective equipment, fire prevention, machinery and mechanized equipment, electrical safety, public safety requirements, and chemical, physical agent, and biological occupational exposure prevention requirements. Detailed site-specific hazards and controls shall be provided in the activity hazard analysis for each phase of the operation. Site-specific hazards are those hazards which would be reasonably be anticipated to occur on the construction site of concern and will be identified through analysis of the activities to be performed. The controls are measures which will be implemented by the contractor to eliminate or reduce each hazard to an acceptable level.

F O R M A T

CONTRACTOR'S NAME
(Address)

CONSTRUCTION QUALITY CONTROL REPORT

Date: _____ Report No. _____

Contract No.: _____

Description and Location of Work: _____

WEATHER: (Clear)(P. Cloudy)(Cloudy); Temperature:___Min,___Max;
Rainfall ___Inches

Contractor/Subcontractors and Area of Responsibility
a._____
b._____
c._____
d._____
e._____
f._____
g._____
h._____

1. Work Performed Today:

(Indicate location and description of work performed. Refer to work performed by prime and/or subcontractors by letter in table above.)

_____

2. Results of Control Activities:

(Indicate whether: P-Preparatory, I-Initial, or F-Followup and include satisfactory work completed or deficiencies with action to be taken.)

_____

3. Test Required by Plans and/or Specifications Performed and Results of Tests:

_____

4. Monitoring of Materials and Equipment:

---

5. Offsite Surveillance Activities:

---

6. Job Safety:

(Daily comment required.)

---

7. Remarks:

a. (Cover any conflicts in plans, specifications or instructions.)

b. (Action taken in review of submittal.)

c. (Verbal instructions received.)

_____
Inspector

CONTRACTOR'S VERIFICATION:

The above report is complete and correct and all material and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications except as noted above.

_____
Contractor's Approved
Authorized Representative

SAMPLE

SMALL AND DISADVANTAGED BUSINESS SUBCONTRACTING PLAN

BETTER BUILDERS, INC.

DATE: February 11, 2003

SOLICITATION NO. DACA21-0X-X-XXXX

TITLE: Barracks Complex, Fort Swampy, Georgia

Type of Work: Design and Construction

In accordance with applicable contract clauses of the solicitation noted above, Better Builders, Inc. submits the following Small Business Subcontracting Plan (includes small, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns).

It is company policy to follow all public laws including P.L. 99-661, Section 1207, P.L. 100-180, Section 806, P.L. 105-135 and P.L. 106-50. We have informed all purchasers to follow these laws in hiring subcontractors and buying materials.

1. The following goals (expressed in terms of percentages of the total dollars available for subcontract/purchase order award) would be applicable to a contract awarded under the cited solicitation. You must also provide the dollar amounts for each of the goals listed below.

    a. Total Proposed Contract Amount: $26,961,000

    b. Total amount available for Subcontract award: $18,300,000

    c. Large Business: $7,832,400 – 42.8%

    d. Total amount to be subcontracted to all small business: $10,467,600 - 57.2%

    e. Small Disadvantaged Business: $1,628,700 – 8.9%

    f. Women-Owned Small Business: $1,482,300 – 8.1%

    g. Service-Disabled Veteran-Owned Small Business: $549,000 - 3%

    h. HUBZone Small Business: $549,000 – 3%

i. There are no options in this solicitation. ***(NOTE: If there are options in the solicitation you must provide the same information as listed in paragraph 1 a-h for each option year/period.)***

j. Indirect and overhead costs have not been included in the goals specified in this section for amounts available for subcontract/purchase order award.

k. Consideration was given to HCBU/MI's but no opportunities were found to be included in the small disadvantaged business goals.

NOTE: While Savannah District does not have a specific goal for subcontracting with Veteran-Owned small business, it must be addressed in any subcontracting plan. However, FAR 52.219-9 requires a goal in your subcontracting plan for Veteran-Owned small business concerns.

2. The following principal products and/or services will be subcontracted under this contract, and the distribution among all small business concerns are as follows:

Large Business - Earthwork
Small Business - Windows and Storm Doors, Recreation, Site Utilities Plumbing
Veteran Owned Small Business – Materials, Equipment
Service Disabled Veteran Owned Small Business – Asphalt, Electrical, Doors
HUBZone Small Business - Window Treatment, HVAC, Concrete
Small Disadvantaged Business - Vinyl Siding, Insulation, Gutters
Women Owned Small Business – Carpentry, Ceramic Tile, Fencing

NOTE: Company names should be provided for each product and/or service listed.

The following method was used in developing our subcontracting goals: (1) all areas of potential subcontract work were determined to be available for subcontract award to all types of small business concerns, and (2) will be actively recruited for participation through the many sources described hereinafter.

3. The following individual will administer this Subcontract Plan on behalf of Better Builders, Inc.:

Name: Freddie Better Title: Executive Vice President

Address and Telephone Number: 4845 Tonka Drive
Fair Haven, CT 27413
800-621-4845

The individual's specific duties with regard to the conduct of our firm's Subcontracting Plan will include, but will not be limited to the following:

a. Developing and maintaining bidders lists of all types of small business concerns using sources such as the Pronet System developed by the Small Business Administration, the Minority Business Development Agency of the U.S. Department of Commerce, Local Minority Business Development Centers and Minority Contractor Associations, and the General Business Services Center in the project's Standard Metropolitan Statistical Area.

b. Assuring the inclusion of all types of small business concerns in all solicitations for products or services which they are capable of providing; and ensuring that all solicitations are structured to permit the maximum possible participation by all types of small business concerns.

c. Establishing and maintaining records of all solicitations and subcontract awards to all types of small business concerns to ensure that the members of the firm who review bidders proposals document their reasons for selecting or not selecting a bid.

d. Preparing and submitting the Subcontracting Report for Individual Contracts (SF 294) and the Summary Subcontract Report (SF 295) in accordance with the instructions provided on the forms, and coordinating and preparing for all compliance reviews by Federal agencies.

e. Conducting or arranging for all other activities necessary to further the intent and attainment of goals of the Plan to include motivational training of the firm's purchasing personnel attendance at workshop, seminars and trade fairs conducted by or on behalf of all types of small business concerns, and general cooperation with members of these concerns or their representatives.

4. The following steps will be taken to ensure that all types of small business concerns receive notice and have an equitable opportunity to compete for intended awards of subcontracts and/or purchase orders for the products and/or services described in paragraph 2 above:

a. Sources will be requested through the SBA's ProNet system, business development organizations, small business trade associations and at small business procurement conferences; sources will be contacted and bidding materials will be provided to all respond ing parties with interest.

b. Internally, motivational training will be conducted to guide and encourage purchasing personnel; source lists and guides to all types of small business concerns will be maintained and utilized by purchasing personnel while soliciting subcontracts and purchase orders; activities will be monitored to ensure sufficient time is allowed for interested bidders to prepare their bids and to evaluate continuing compliance with this Subcontracting Plan.

5. Better Builders, Inc. agrees that the clause entitled "Utilization of Small Business Concerns" will be included in all subcontracts which offer further subcontracting opportunities. All subcontractors, except small business concerns, who receive subcontracts in excess of $500,000 ($1,000,000 in the case of construction) will be required to adopt and comply with a subcontracting plan similar to this one. Such plans will be reviewed to assure that all minimum requirements of an acceptable subcontracting plan have been satisfied.

The acceptability of goals shall be determined on a case-by-case basis depending on the supplies/services involved, the availability of all potential small business and prior experience. Once approved and implemented, plans will be monitored through the submission of periodic reports or, as time and availability of funds permit, periodic visits to subcontractor's facilities to review applicable records and subcontracting program progress.

6. Better Builders, Inc. agrees to submit such periodic reports and cooperate in any studies or surveys as may be required by the Contracting agency or the Small Business Administration in order to determine the extent of compliance by the offeror with the subcontracting plan and with the clause entitled "Utilization of Small Business Concerns" contained in the solicitation.

7. Better Builders, Inc. agrees to maintain at least the following types of records to document compliance with this Subcontracting Plan:

a. The names of all organizations, agencies, and associations contacted for all small business sources, along with records of attendance at conferences, seminars and trade fairs where additional sources were developed.

b. Source lists, guides, and other data identifying all types of small business concerns

c. Records on all subcontract solicitations, on a contract-by-contract basis, indicating (1) whether all types of small business concerns were solicited, and if not, why not; and (2) the reasons for the failure of all solicited small businesses to receive a subcontract award.

d. Records of all subcontract award data, to include subcontractor's name and address, to be kept on a contract-by-contract basis.

e. Minutes of internal motivational and training meetings held for the guidance and encouragement of purchasing personnel, and records of all monitoring activities performed for compliance evaluation.

f. Copies of SF 294 and SF 295 showing date and place of filing and copies of all other reports or results of reviews conducted by the contracting agency or other interested agencies of the Federal government to monitor our compliance with this Subcontracting Plan.

In closing Better Builders, Inc. states that it will be the policy of Better Builders, Inc. to afford every practicable opportunity to all types of small business concerns to participate in construction contracts awarded to Better Builders, Inc. by the Federal Government to ensure that equitable opportunity is provided to all types of small business concerns to compete for award of subcontracts and purchase orders, and to diligently pursue the achievement of our goals by participation of all types of small business concerns in the dollars available for subcontract/purchase order award under the solicitation.

BY_____ DATE _____

_____
Signature

_____
Title, and Company Name

_____ DATE _____
Contract Specialist

Approval Recommended

_____ DATE _____
SADBU

Approve/Disapprove

_____ DATE _____
Contracting Officer

Approve/Disapprove

_____ DATE _____
Procurement Center Representative
Small Business Administration

WEEKLY TEMPORARY ELECTRICAL INSPECTION

Week ending _____

Contract No. _____

Contract Description _____

The following items were inspected in accordance with requirements in National Electrical Code and Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1.

1. Wire (size, type, condition).

2. Systems and devices (polarity, continuity of ground, resistance to ground).

3. Resistance of ground rods (25 OHMS) measured and recorded.

4. Check GFI for 15/20 amp 120 volt circuits.

5. Plugs and receptacles (type, NEMA rating).

6. Circuit breakers and disconnect (size, type, weatherproof).

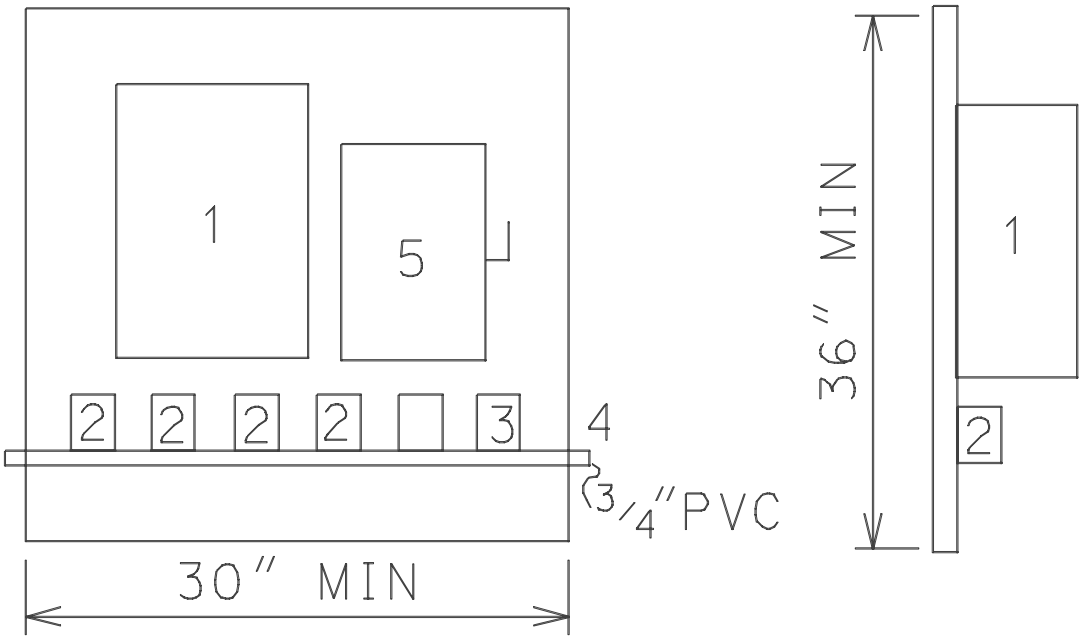
7. Extension cords (type, UL listed, insulation condition, splices, location).

8. Open wiring on insulators, nonmetallic sheathed cable, outside clearance (600 volts or less), Festoon lighting (as applicable).

_____

Signature Electrician/Electrical Engineer

MINIMUM STANDARD FOR TEMPORARY ELECTRICAL SERVICE



(DIMENSIONS ARE APPROXIMATE)

A. The backboard for temporary service shall consist of not less than 1/2 inch plywood of exterior grade.

B. Numbers above correspond to the item below:

Item 1 - NEMA 3R circuit breaker type panelboard. This panelboard shall consist of 1 two-pole 60 amp main circuit breaker, 4* one pole 20 AMP branch circuit breakers, and 1* two pole 20 AMP branch circuit breaker. Breakers shall meet Federal Specifications Standards for Class 1A breakers and shall be plug-in type. (*Number of breakers to be adjusted to suit the job requirements.)

Item 2 - Duplex grounding type convenience outlets in standard utility type outlet boxes with covers, meeting the NEC and NEMA requirements for wet locations. Connections to the branch circuit breakers shall be grounded by two conductors #12 NMC cable.

Item 3 – (Optional) A single three-conductor grounding type outlet rated for 250 volt service meeting the NEC and NEMA requirements for wet locations. Connections from this outlet to the two pole breaker shall be by two conductor grounded type NMC cable.

Item 4 - 3/4 inch PVC. This shall be used to support extension cords.

Item 5 – NEMA 3R service disconnect safety switch – 60 amp minimum.

C. The panelboard shall be grounded by #6 copper wire connected to a 3/4 inch by 10-foot long ground rod.

D. Service to the panel shall consist of three copper conductor #6 minimum service entrance cable. This cable may enter the top or side of the panelboard.

E. Periodic inspections of systems and devices will be made by the Contractor at intervals not to exceed 1 week, and a report will be submitted indicating the results.

F. All receptacle outlets that provide temporary electrical power during construction, remodeling, maintenance, repair, or demolition shall have ground-fault circuit-interrupter (CFCI) protection for personnel. GFCI protection shall be provided on all circuits serving portable electric hand tools or semi-portable electric power tools (such as block/brick saws, table saws, air compressors, welding machines, and drill presses). See EM 385-1-1 for exceptions.

G. Per EM 385-1-1 all temporary power distribution systems shall be submitted to the field office before installation.

ACTIVITY HAZARD ANALYSIS

1. Phase of Construction		
2. Location	3. Contract No.	4. Project
5. Prime Contractor	6. Date of Preparatory	7. Estimated Start Date
Potential Safety Hazard	Procedure to Control Hazard	
8. Contractor's Representative (signature)	9.	

SAS Form 9
1 Jan 82

SAFETY CHECKLIST FOR CRAWLER, TRUCK & WHEEL MOUNTED CRANES

Contract # and title:	
Equipment name & number: owned or leased?	
Contractor:	Subcontractor:
Contract Inspector:	Date inspected:

	Yes	No	N/A
1. Unless the manufacture has specified an on-rubber rating, outriggers will be fully extended and down? (16.D.10)			
2. Are lattice boom cranes equipped with a boom angle indicator, load indicating device, or a load moment indicator? (16.D.01)			
3. Are lattice boom and hydraulic cranes equipped with a means for the operator to visually determine levelness? (16.D.02)			
4. Are lattice boom and hydraulic cranes, except articulating booms cranes, equipped with drum rotation indicators located for use for the operator? (16.D.03)			
5. Are lattice boom and hydraulic mobile cranes equipped with a boom angle or radius indicator within the operator’s view? (16.D.04)			
6. Are lattice boom cranes, with exception of duty cycle cranes, equipped with an anti-two blocking device? (16.D.05)			
7. When duty cycle machines are required to make a non-duty lift, is the crane equipped with an international orange warning device and is a signal person present? (16.D 05)			
8. Are the following with the crane at all times: (16.C.02) a. the manufacturer’s operating manual? b. the load rating chart? c. the crane’s log book documenting use, maintenance, inspections and tests? d. operating manual for crane operator aids used on the crane.			

	Yes	No	N/A
9. Are the following on the project site: a. completed periodic inspection report prior to initial work? (16.C.12) b. pre-operational checklist used for daily inspection? (16.C.12) c. written reports of the operational performance test? (16.C.13) d. written reports of the load performance test? (16.C.13)			
10. Are all operators physically qualified to perform work? (16.C.05)			
11. Are all operators qualified by written and practical exam or by appropriate licensing agency for the type crane they are to operate? (16.C.05)			
12. Is the crane designed and constructed IAW the standards listed in Table 16-1? (16.C.06)			
13. Is a hazard analysis for set-up and set-down available? (16.C.08)			
14. Are accessible areas within the swing radius of the rear of the crane barricaded? (16.C.09)			
15. Are there at least 3 wraps of cable on the drum? (16.C.10)			
16. Are the hoisting ropes installed IAW the manufacturer’s recommendations? (16.C.10)			
17. Are critical lift plans available? (16.C.18)			
18. Are minimum clearance distance for high voltage lines posted at the operator’s position? (11.E.04)			
19. Do older lattice boom cranes with anti-two block warning devices in lieu of anti-two block prevention devices have a written exemption? (16.D.05)			
20. Is the slow moving emblem used on all vehicles which by design move at 25 MPH or less on public roads? (08.A.04)			
21. Are all vehicles which will be parked or moving slower than normal traffic on haul roads equipped with a yellow flashing light or flasher visible from all directions? (16.A.13)			

	Yes	No	N/A
22. Is all equipment to be operated on public roads provided with: (16A.07) a. headlights? b. brake lights? c. taillights? d. back-up lights? e. front and rear turn signals?			
23. Are seat and seat belts provided for the operator and each rider on equipment? (16.A.07 and 16.B.08)			
24. Is all equipment with windshields equipped with powered wipers and defogging or defrosting devices? (16.A.07)			
25. Is the glass in the windshield or other windows clear and unbroken to provide adequate protection and visiblity for the operator? (16.A.07, 16.B.10)			
26. Is all equipment equipped with adequate service brake system and emergency brake system? (16.A.18)			
27. Are areas on equipment where employees walk or climb equipped with platforms, footwalks, steps, handholds, guardrails, toeboards and non-slip surfaces? (16.B.03)			
28. Is all self propelled equipment equipped with automatic, audible, reverse signal alarms? (16.B.01)			
29. Is there a record of manufacturer’s approval of any modification of equipment which affects its capacity or safe operation? (16.A.18)			
30. Are truck and crawler cranes attached to a barge or pontoon by a slack tiedown system? (16.F.06)			
31. Have the following conditions been met for land cranes mounted on barges or pontoons: (16.F.04) a. Have load ratings been modified to reflect the increased loading from list, trim, wave, and wind action? b. Are all deck surfaces above the water? c. Is the entire bottom area of the barge or pontoon submerged? d. Are tie downs available? e. Are cranes blocked and secured?			
32. Are all belts, gears, shafts, spindles, drums, flywheels, or other rotating parts of equipment guarded where is a potential for exposure to workers? (16.B.03)			

	Yes	No	N/A
33. Is the area where the crane is to work level, firm and secured? (16.A.10)			
34. Is a dry chemical or carbon dioxide fire extinguisher rated at least 5-B:C on the crane? (16.A.26)			
35. Are trucks, for truck mounted cranes, equipped with a working reverse signal alarm? (16.B.01)			
36. Is a signal person provided where there is danger from swinging loads, buckets, booms, etc.? (16.B.13)			
37. Is there adequate clearance from overhead structures and electrical sources for the crane to be operated safely? (16.C.09)			
38. Is there adequate lighting for night operations? (16.C.19)			
39. Has the the boom stop test on cable-supported booms been performed? (16.D.06)			
40. Is the boom disenaging device functioning as required? (16.D.06)			
41. Has all rigging and wire rope been inspected? (Section 15)			
Remarks:(Enter actions taken for all “no” answers.)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAFETY CHECKLIST FOR PORTAL, TOWER, AND PILLAR CRANES

Contract # and Title:			
Equipment name & number: owned or leased?			
Contractor:	Subcontractor:		
Contract Inspector:	Date Inspected:		
	Yes	No	N/A
1. Are the following available: (16.E.02) a. written erection instructions? b. listing of the weight of each component? c. an activity hazard analysis for the erection? d. does the activity hazard analysis contain (1.) location of crane and adjacent structures? (2.) foundation design and construction requirements? (3.) clearance and bracing requirements?			
2. Is there a boom angle indicator within the operator's view? (16.E.04)			
3. Are luffing jib cranes equipped with: (16.E.05) a. shock absorbing jib stops? b. jib hoist limit switch? c. jib angle indicator visible to operator?			
4. If used, do rail clamps have slack between the point of attachment to the rail and the end fastened to the crane? (16E.06)			
5. Are the following with the crane at all times: (16.C.02) a. the manufacturer's operating manual? b. the load rating chart? c. the crane's log book documenting use, maintenance, inspections and tests? d. the operating manual for crane operational aids used on the crane?			

	Yes	No	N/A
6. Are the following on the project site: a. completed periodic inspection report prior to initial work? (16.C.12) b. pre-operational checklist used for daily inspections? (16.C.12) c. written reports of the operational performance tests? (16.C.13) d. written reports of the load performance tests? (16.C.13)			
7. Is every crane operator certified by a physician to be physically qualified to perform work? (16.C.05)			
8. Are all operators qualified by written and practical exam or by appropriate licensing agency for the type crane they are to operate? (16.C.05)			
9. Is the crane designed and constructed IAW the standards listed in Table 16-1? (16.C.05)			
10. Is a hazard analysis for set-up and set-down available? (16.C.08)			
11. Are there at least 3 wraps of cable on the drum? (16.C.10)			
12. Are the hoisting ropes installed IAW the manufacturer’s recommendations? (16.C.10)			
13. Is the a record of manufacturer’s approval of any modification of equipment which affects its capacity or safe operation? (16.A.07)			
5. Remarks: (Enter actions taken)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAFETY CHECKLIST FOR RIGGING

Contract # and title:			
Equipment name & number: owned or leased?			
Contractor	Subcontractor:		
Contractor inspector:	Date inspected:		
	Yes	No	N/A
1. Has all defective rigging been removed? (15.A.01)			
2. Is rigging stored properly? (15.A.01)			
3. Are running lines within 6.5’ of the ground or working level guarded? (15.A.03)			
4. Are all eye splices made in an approved manner with rope thimbles? (sling eyes excepted) (15.A.04)			
5. Are positive latching devices used to secure loads? (15.A.05)			
6. Are all custom lifting accessories marked to indicate their safe working loads? (15A.07)			
7. Are all custom designed lifting accessories proof-tested to 125% of their rated load? (15.A.07)			
8. Are the following conditions met for wire rope: (15.B.01-09) a. Are they free of rust or broken wires? b. Are defective ropes cut up or marked as unusable? c. Do rope clips attached with U-bolts have the U-bolts on the dead end or short end of the rope? d. Are protruding ends of strands in splices on slings and bridles covered or blunted? e. Except for eye splices in the end of wires and for all endless wire rope slings, are all wire ropes used in hoisting, lowering, or pulling loads one continuous piece, free of knots or splices?			

	Yes	No	N/A
f. Do all eye splices have at least 5 full tucks? g. If used, are wedge sockets fastening attached without attached the dead end of the wire rope to the live rope? h. Are they free of eyes or splices formed by wire rope clips or knots?			
9. Are the following conditions met for chain? (15.C.01-04) a. Are all chains alloyed? b. Do all coupling links or other attachments have rated capacities at least equal to that of the chain. c. Are makeshift fasteners restricted from use?			
10. Are the following conditions met for fiber rope:(15.D.01-07) a. Are all ropes protected from freezing, excessive heat or corrosive materials? b. Are all ropes protected from abrasion? c. Are splices made IAW manufacture's recommendations? d. Do all eye splices in manila rope contain at least 3 full tucks and do all short splices contain at least 6 full tucks(3 on each side of the centerline of the splice)? e. Do all splices in layed synthetic fiber rope contain at least 4 full tucks and do short splices contain at least 8 full tucks (4 on each side of the centerline of the splice)? f. Do the tails of fiber rope splices extend at least 6 rope diameters (for rope 1" diameter or greater) past the last full tuck? g. Are all eye splices large enough to provide an included angle of not greater than 60* at the splice when the eye is placed over the load or support?			
11. Are the following conditions met for all slings:(15.E.01-06) a. Is protection provided between the sling and sharp surfaces? b. Do all rope slings have minimum clear length of 40 times the diameter of component ropes between each end fitting or eye splice? c. Do all braided slings have a minimum clear length of 40 times the diameter of component ropes between each end fitting or eye splice?			

	Yes	No	N/A
d. Do all welded alloy steel chain slings have affixed permanent identification stating size, grade, rated capacity and manufacturer? e. Is each synthetic web sling marked or coded to identify its manufacturer, rated capacities for each type hitch and the type material?			
12. Are drums, sheaves, and pulley smooth and free of surface defects? (15.F.01)			
13. Is the ratio of the diameter of the rigging and the drum, block sheave or pulley thread diameter such that the rigging will adjust without excessive wear, deformation, or damage? (15F.02)			
14. Have all damaged drums, sheaves and pulleys been removed from service? (15.F.04)			
15. Are all connections, fittings, fastenings, and attachments of good quality, proper size and strength, and installed IAW manufacturer's recommendations? (15.F.05)			
16. Are all shackles and hooks sized properly? (15.F.06 & .07)			
17. Are hoisting hooks rated at 10 tons or greater provided with safe handling means? (15.F.07)			
18. Do all drums have sufficient rope capacity? (15.F.08)			
19. Is the drum end of the rope anchored by a clamp securely attached to the drum in a manner approved by the manufacturer? (15.F.08)			
20. Do grooved drums have the correct groove pitch for the diameter of the rope and is the groove depth correct? (15.F.08)			
21. Do the flanges on grooved drums project beyond the last layer of rope at a distance of either 2″ or twice the diameter of the rope, whichever is greater? (15.F.08)			
22. Do the flanges on ungrooved drums project beyond the last layer of rope a distance of either 2.5″ or twice the diameter of the rope, which ever is greater.			

	Yes	No	N/A
23. Are the sheaves compatible with the size of rope used and as specified by the manufacture? (15F.09)			
24. Are sheaves properly aligned, lubricated, and in good condition? (15.F.09)			
25. When rope is subject to riding or jumping off a sheave, are sheaves equipped with cablekeepers? 915.F.09)			
26. Are eye bolts loaded in the plane of the eye and at angles less than 45* to the horizontal? (15.F.10)			
27. Remarks: (Enter actions taken for “no” answers.)			
Contractor inspector signature			
Contractor QC/safety/project manager signature			

SAFETY CHECKLIST FOR MOTOR VEHICLES , TRAILERS AND TRUCKS

Contract # and title: owned or leased?	
Equipment name & number:	
Contractor:	Subcontractor:
Contractor inspector:	Date inspected:

	Yes	No	N/A
1. Are records of safety inspections of all vehicles available? (18.A.02)			
2. Are all vehicles to be operated between sunset and sunrise equipped with: (18.A.04) a. 2 headlights? b. taillights and brake lights? c. front and back turn signals? d. 3 emergency flares, reflective markers, or equivalent portable warning devices?			
3. Are vehicles, except trailers or semi-trailers having a gross weight of 5000 lbs or less, equipped with service brakes and manually operated parking brakes? (18.A.05)			
4. Are service brakes on trailers and semitrailers controlled from the driver’s seat of the prime mover? (18A.06)			
5. Does the vehicle have: (18.A.06) a. a speedometer? b. a fuel gage? c. an audible warning device (horn)? d. a windshield & adequate windshield wiper? e. an operable defroster and defogging device? f. an adequate rearview mirror? g. a cab, cab shield, and other protection to protect the driver from the elements and falling or shifting materials? h. non-slip surfaces on steps? I. a power-operated starting device?			

	Yes	No	N/A
6. Is all the glass safety glass and is all broken or cracked glass replace? (18.A.07)			
7. Do trailers meet the following: (18A.08) a. Are all towing devices adequate for the weight drawn? b. Are all towing devices properly mounted? c. Are locking devices or a double safety system provided on every 5th wheel mechanism and tow bar arrangement to prevent accidental separation? d. Are trailers coupled with safety chains or cables to the towing vehicle? e. Are trailers equipped with the power brakes equipped with a break-away device which will lock-up the brakes in the event the trailer separates from the towing vehicle?			
8. Are all dump trucks:(18.A.10) a. equipped with a holding device to prevent accidental lowering of the body? b. equipped with a hoist lever secured to prevent accidental starting or tipping? c. equipped with means to determine (from the operator’s position) if the dump box is lowered? d. equipped with trip handles for tailgates that allow the operator to be clear?			
9. Are all buses, trucks and combination of vehicles with a carrying capacity of 1.5 tons or more, to be operated on public roads equipped with: (18.A.11) a. 3 reflective markers? b. 2 wheel chocks for each vehicle? c. at least one 2A:10B:C fire extinguisher? d. at least two properly rated fire extinguishers (for vehicles carrying flammable cargo)? e. a red flag not less than 1 foot square.			
10. Is vehicle exhaust controlled so as not to present a hazard to personnel? (18.A.13)			
11. Are all rubber tired motor vehicles equipped with fenders or with mud flaps if the vehicle is not designed for fenders? (18.A.14)			

	Yes	No	N/A
12. Are all vehicles, except buses, equipped with seat belts? (18.B.02)			
13. Does all self-propelled construction and industrial equipment have a working reverse signal alarm? (16.B.01)			
14. Are all hot surfaces of equipment, including exhaust pipes or other lines, guarded or insulated to prevent injury or fire? (16.B.03)			
15. If an off the road vehicle, is it equipped with rollover protective structures? (16.B.12)			
16. Remarks: (Enter actions taken for “no” answers)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAFETY CHECKLIST FOR CRAWLER TRACTORS AND DOZERS

Contract # and title:	
Equipment name & number: owned or leased?	
Contractor:	Subcontractor:
Contractor inspector:	Date inspected:

	Yes	No	N/A
1. Are initial and daily/shift inspection records available? (16.A.01& .02)			
2. Are only qualified operators assigned to operate mechanized equipment? (16.A.04)			
3. Are sufficient lights provided for night operations? (16.A.11)			
4. Is the unit shut down before refueling? (16.A.14)			
5. Does the unit have as a minimum a 5-B:C fire extinguisher? (16.A.26)			
6. Is there an effective, working reverse alarm? (16.B.01)			
7. Are moving parts, shafts, sprockets, belts, etc., guarded? (16.B.03 ,07, and 13)			
8. Is protections against hot surfaces, exhausts, etc., provided? (16.B.03 and .13)			
9. Are fuel tanks located in a manner to prevent spills or overflows from running onto engine exhaust or electrical equipment?			

	Yes	No	N/A
10. Are exhaust discharges directed so they do not endanger person of obstruct operator vision?(16.B.05)			
11. Are seat belts provided? (16B.08)			
12. Is protection (grills, canopies, screens) provided to shield operator from falling or flying objects? (16.B.10 and .11)			
13. Is roll over protection provided? (16.B.12)			
14. Remarks: (Enter actions taken for “no” answers)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAFETY CHECKLIST FOR SCRAPERS, MOTOR GRADERS , AND OTHER MOBILE EQUIPMENT

Contract # and title:	
Equipment name and number: owned or leased?	
Contractor:	Subcontractor:
Contractor inspector:	Date inspected:

	Yes	No	N/A
1. Are initial and daily/shift inspection records available? (16.A.01 & .02)			
2. Are only qualified operators assigned to operate equipment? (16.A.04)			
3. Are sufficient lights provided for night operations? (16.A.11)			
4. Does the unit have as a minimum a 5-B:C fire extinguisher? (16.A.26)			
5. Is there an effective working reverse alarm? (16.B.01)			
6. Is the unit shut down for refueling? (16.A.14)			
7. Are moving parts, shafts, sprockets, belts, etc., guarded? (16.B.03, .07 and .13)			
8. Is protection against hot surfaces, exhausts, etc., provided? (16.B.03 and .13)			
9. Are fuel tanks located in a manner to prevent spills or overflow from running onto engine exhaust or electrical equipment? (16.B.04)			
10. Are exhaust discharges directed so they do not endanger persons or obstruct operator vision? (16.B.05)			

	Yes	No	N/A
11. Are seat belts provided for each person required to ride on the equipment? (16.B.08)			
12. Is protection (grills, canopies, screens) provided to shield operators from falling or flying objects? (16.B.10 and .11)			
13. Is roll over protection provided? (16.B.12)			
14. Is a safe means of access to the cab provided (steps, grab bars, non-slip surfaces)? (16.B.03)_			
15. Are adequate head and tail lights provided? (16.A.07)			
16. Have brakes been tested and found satisfactory? (16.A.07)			
17. Does the unit have an emergency brake which will automatically stop the equipment upon brake failure? Is this system manually operable from the drivers position? (16.A.07)			
18. Is all equipment with windshields equipped with powered wipers and defogging or defrosting system? (16.A.07)			
19. Are all vehicles which will be parked or moving slower than normal traffic on haul roads equipped with a yellow flashing light or flasher visible from all directions? (16.A.13)			
20. Is the slow moving emblem used on all vehicles which by design move at 25 MPH or less on public roads? (08A.04)			

	Yes	No	N/A
21. Have air tanks been tested and certified? (20.A.01)			
22. Is an air pressure gage in working condition installed on the unit? (20.A.12)			
23. Does the air tank have an accessible drain valve? (20.B.17)			
24. Remarks: (Enter action taken for all “no” answers)			
Contractor inspector signature			
Contractor QC/safety officer/project manager			

SAFETY CHECKLIST FOR MATERIAL HOISTS

Contract # and title:	
Equipment name & number:	
Contractor:	Subcontractor:
Contract Inspector:	Date inspected:

	Yes	No	N/A
1. Are all hoist towers, masts, guys or braces, counterweights, drive machinery supports, sheave supports, platforms, supporting structures, and accessories designed by a licensed engineer? (16.K.02)			
2. Is a copy of the hoist operating manual available? (16.K.04)			
3. Do all floors and platforms have slip-resistant surfaces? (16.K.08)			
4. Are landings and runways adequately barricaded and is overhead protection provided where needed? (16.K.08)			
5. Are hoisting ropes installed IAW manufacturer's instructions? (16.K.10)			
6. Are operating rules posted at the hoist operator's station? (16.K.14)			
7. Are air powered hoists connected to an air supply of sufficient capacity and pressure to safely operate the hoist? (16.K.15)			
8. Are pneumatic hoses secured by some positive means to prevent accidental disconnection? (16.K.15)			
9. Remarks: (Enter actions taken for all "no" answers.)			
Contractor inspector signature			
Contractor QC/safety officer/project manager signature			

SAD Form 1666g-R Mar 97 Previous editions may be used for contracts referencing the 1992 edition of EM 385-1-1.

SAFETY CHECKLIST FOR EARTH DRILLING EQUIPMENT

Contract # and title:	
Equipment name & number:	
Contractor:	Subcontractor:
Contractor inspector:	Date inspected:

	Yes	No	N/A
1. Is a copy of the manual for all drilling equipment available? (16.M.01)			
2. Have all overhead electrical hazards and potential ground hazards been identified in a site layout plan and addressed in an activity hazard analysis? (16.M.02)			
3. Are MSDSs for all drilling fluids available? (16.M.05)			
4. Does the drilling equipment have 2 easily accessible emergency shut down devices (one for the operator and one for the helper)? (16.M.06)			
5. Is the equipment posted with a warning of electrical hazards? (16.M.06)			
6. Is there a spotter or an electrical proximity warning device available to ensure safe distances from power lines are maintained? (16.M.06)			
7. Remarks: (Enter actions taken for “no” answers)			
Contractor inspector signature			
Contractor QC/safety officer/project manager			

SAD Form 1666h-R Mar 97 Previous editions may be used for contracts referencing the 1992 edition of EM 385-1-1.

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE *(Read instructions on the reverse side prior to initiating this form)*	DATE	TRANSMITTAL NO.

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS *(This section will be initiated by the contractor)*

TO:	FROM:	CONTRACT NO.	CHECK ONE: ☐ THIS IS A NEW TRANSMITTAL ☐ THIS IS A RESUBMITTAL OF TRANSMITTAL _____
SPECIFICATION SEC. NO. *(Cover only one section with each transmittal)*	PROJECT TITLE AND LOCATION		CHECK ONE: THIS TRANSMITTAL IS FOR ☐ FIO ☐ GOV'T. APPROVAL

ITEM NO. *a.*	DESCRIPTION OF ITEM SUBMITTED *(Type size, model number/etc.)* *b.*	MFG OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. *(See instruction no. 8)* *c.*	NO. OF COPIES *d.*	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE CODE *g.*	VARIATION *(See instruction No. 6)* *h.*	FOR CE USE CODE *i.*
				SPEC. PARA. NO. *e.*	DRAWING SHEET NO. *f.*			

REMARKS	I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as other wise stated. NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED *(List by Item No.)*	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.

2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.

3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.

4. Submittals requiring expeditious handling will be submitted on a separate form.

5. Separate transmittal form will be used for submittals under separate sections of the specifications.

6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".

7. Form is self-transmittal, letter of transmittal is not required.

8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.

9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

A -- Approved as submitted.

B -- Approved, except as noted on drawings.

C -- Approved, except as noted on drawings.
Refer to attached sheet resubmission required.

D -- Will be returned by separate correspondence.

E -- Disapproved (See attached).

F -- Receipt acknowledged.

FX -- Receipt acknowledged, does not comply as noted with contract requirements.

G -- Other *(Specify)*

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

(Reverse of ENG Form 4025-R)

COST ESTIMATE ANALYSIS

For use of this form, see TM 5-800-2; the proponent agency is USACE.

PROJECT	INVITATION/CONTRACTOR	EFFECTIVE PRICING DATE	DATE PREPARED
LOCATION	CODE (Check one) ☐ A ☐ B ☐ C ☐ OTHER	DRAWING NO.	SHEET OF SHEETS
		ESTIMATOR	CHECKED BY

TASK DESCRIPTION	QUANTITY		LABOR				EQUIPMENT		MATERIAL		TOTAL	SHIPPING	
	NO. OF UNITS	UNIT MEAS	MH UNIT	TOTAL HRS	UNIT PRICE	COST	UNIT PRICE	COST	UNIT PRICE	COST		UNIT WT	TOTAL WT
TOTAL THIS SHEET													

DA FORM 5418-R, Apr 85

TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY

Form Approved
OMB No. 0704-0188

PAGE OF PAGES

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, Va 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. **FROM** *(Installation/Activity/Service and Zip code)*	2. OPERATING UNIT	3. DISTRICT CODE	4. OPERATING AGENCY	5. DATE	6. JOB NUMBER	7. SERIAL NUMBER	8. CONTRACT NUMBER

9. **TO** *(Installation/Activity/Service and Zip code)*	10. OPERATING UNIT	11. DISTRICT CODE	12. OPERATING AGENCY	13. ACCOUNTING NUMBER	14. ACCOUNTABLE OFFICE NUMBER	15. TYPE OF TRANSACTION		16. PROJECT NUMBER
						A. ☐ NEW CONSTR. ☐ EXISTING FAC. ☐ CAPITAL IMP. ☐ OTHER *(Specify)*	B. ☐ BENF/O ☐ PHYSICAL COM. ☐ FINAN. COM. ☐ OTHER *(Specify)*	

ITEM NO. 17	CATEGORY CODE 18	FACILITY *(Category description)* 19	NO. OF UNITS 20	TYPE 21	UNIT OF MEAS. 22	TOTAL QUANTITY 23	COST 24	DRAWING NUMBERS 25	REMARKS 26

27.		28. ACCEPTED BY *(Signature)*	DATE
TRANSFERRED BY *(Signature)*	DATE	TITLE *(Post Engr./Base Civ. Engr./Navy Rep.)*	29. PROPERTY VOUCHER NUMBER
TITLE *(Area Engr./Base Engr./DPWO)*			

30. CONSTRUCTION DEFICIENCIES

31. REMARKS

INSTRUCTIONS

This form has been designed and issued for use in connection with the transfer of military real property between the military departments and to or from other government agencies. It supersedes ENG Forms 290 and 290B (formerly used by the Army and Air Force) and NAVDOCKS Form 2317 (formerly used by the Navy).

Existing instructions issued by the military departments relative to the preparation of the three superseded forms are applicable to this form to the extent that the various items and columns on the superseded forms have been retained. Additional instructions, as appropriate, will be promulgated by the military departments in connection with any new items appearing hereon.

With the issuance of this DD form, it is not intended that the departments shall revise and reprint manuals and directives simply to show the number of this DD form. Such action can be accomplished through the normal course of revision for other reasons.

Approved by OM 0348-0046

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure.)

1. Type of Federal Action:

☐ a. contract
b. grant
c. cooperative agreement
d. loan
e. loan guarantee
f. loan insurance

2. Status of Federal Action:

☐ a. bid/offer/application
b. initial award
c. post-award

3. Report Type:

☐ a. initial filing
b. material change

For Material Change Only:
year _____ quarter _____
date of last report _____

4. Name and Address of Reporting Entity:

☐ Prime ☐ Subawardee
Tier _____, *if known*:

Congressional District, *if known:*

5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime:

Congressional District, *if known*:

6. Federal Department/Agency:

7. Federal Program Name/Description:

CFDA Number, *if applicable* : _____

8. Federal Action Number, *if known*:

9. Award Amount, *if known*:

$

10. a. Name and Address of Lobbying Entity
(*if individual, last name, first name, MI):*

b. Individuals Performing Services *(including address if different from No. 10a)*
(last name, first name, MI):

(attach Continuation Sheet(s) SF-LLL-A, *if necessary*)

11. Amount of Payment *(check all that apply)*:

$ _____ ☐ actual ☐ planned

12. Form of Payment *(check all that apply)*:

☐ a. cash
☐ b. in-kind; specify: nature _____
value _____

13. Type of Payment *(check all that apply)*:

☐ a. retainer
☐ b. one-time fee
☐ c. commission
☐ d. contingent fee
☐ e. deferred
☐ f. other; specify: _____

14. Brief Description of Services Performed or to be Performed and Date(s) of Service, including officer(s), employee(s), or Member(s) contacted, for Payment indicated in Item 11:

(attach Continuation Sheet(s) SF-LLL-A, *if necessary*)

15. Continuation Sheet(s) SF-LLL-A attached: ☐ Yes ☐ No

16. Information requested through this form is authorized by title 31 U.S.C section 1352. This disclosure of lobbyig activities is a materia representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352 . This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to

Signature: _____

Print Name: _____

Title: _____

Telephone No.: _____ **Date:** _____

Federal Use Only:

Authorized for Local Reproduction

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with a covered Federal action. Use the SF-LLL-A Continuation Sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.

2. Identify the status of the covered Federal action.

3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.

4. Enter the full name, address, city, state and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.

5. If the organization filing the report in item 4 checks " Subawardee" , then enter the full name, address, city, state and zip code of the prime Federal recipient. Include Congressional District, if known.

6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.

8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., " RFP-DE-90-001."

9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.

10. (a) Enter the full name, address, city, state and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influence the covered Federal action.

    (b) Enter the full names of the individuals(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).

11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.

12. Check the appropriate box(es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.

13. Check the appropriate box(es). Check all boxes that apply. If other, specify nature.

    Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date(s) of any services rendered. Include all preparatory and related activity, not just time spent in

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, D.C. 20503.

DISCLOSURE OF LOBBYING ACTIVITIES
CONTINUATION SHEET

Approved by OM
0348-0046

Reporting Entity: _____ Page ____ of ____ ____

*U.S. G.P.O. 1990-260-708:00012

REAL PROPERTY INVENTORY & BIS WORKSHEET

DESCRIPTION **DATA**

_____
_____
_____
_____

Gross Area of Facility (UM-1_) _____
Length X width X no. Floors

Facility Dimensions: _____
Main
Offset _____

Wings _____

Type of Facility:
___BLDG ___MISC STRUC
___UTIL SYS ___SURF AREA

Current Use (Admin: Stg; Bks; Dispensary, etc _____
Utilities Available: (Enter "X" if "No" in applicable column)

Water (W) _____
Electricity (E) _____
Telephone (T) _____
Heated by Space Heater (D) _____
Heated by Plant Serving More Than One Bldg (M) _____
Major Heat Source:
Coal (C); Oil (O); Interruptible Gas w/fuel
Oil (I); Natural Gas (G); LPG (L); Elec (Z) _____
Cooling and Ventilation:
Ventilation Exhaust Fans (V); Individual Direct
Expansion A/C Units (U);
Cooled by Chilled Water From:
Reciprocating (K); Centrifugal (P)
Absorbent (A) _____
Cooled Air if Circulated by:
Low velocity air from single or multiple zone
(B); Fan Coil Unit (F); High velocity
Air: Double Duct (J); Induction (K);
No distribution (X) _____
Number of Floors _____
Fire Rating _____

Building Fire Resistive Rating and Degree of Sprinkler Protection (Circle One):

Un-Sprinkled	Pre-Action or Deluge	Sprinkled wet System	Sprinkled dry system	
1	5	W	D	Combustible
2	6	E	R	Unprotected noncombustible
3	7	T	Y	Protect/noncombustible (1hr Fire resistance)
4	8	S	P	Fire Resistive (2 hr or more fire resistive)

Construction Material Codes:
Foundation From: Pile (PL) Slab (SL) Pier (PR)
No Foundation (NF) Continuous Footing (CON) _____
Foundation Material: Concrete Reinforced (CR) Wood (WD)
Concrete Block (BK) Steel (ST) Concrete (CN) Masonry (MAS)
Other _____ _____

DESCRIPTION **DATA**

Primary Structure Material: _____
- Concrete Blk (BK)
- Concrete Reinforced (CR)
- Metal (MIL) Wood (WD)
- Brick (BK)
- Other ____

Secondary Structure: _____
- See Pri for Material Code

Exterior Wall Material:
- Wood (WD) Brick (BK)
- Conc Blk (Blk) Cone (CN)
- Steel (ST) Struc Tile (TIST)
- Comb Brick & Wood.
- ASB Shingle or Alum
- Siding (CMB)

Interior Wall Material: _____
- Masonite Paneling (MAP)
- Plywood Paneling (PLP)
- Plywood (PL)
- Plaster Bd on Wood Fr (PBW)
- Wood Sheathing (WDS)
- Wood Wainscoting (WWS)
- Other _____

Roof Deck Material:
- No Roof Deck (0)
- Metal (6)
- Wood (Less than 2")(8)
- Wood (2" of more)(9)
- Reinforced Concrete (7)
- Asphalt (3)
- Other _____

Roof Surface Material: _____
- Roofs, Composition (CPS)
- Shingles, Comp (SC)
- Built-up Gravel (BUG)

DESCRIPTION **DATA**

Air Conditioning: Type Code _____
& Capacity (BTU) _____
- Window Unit (0)
- Central Chilled Water (02)
- Central Direct Expansion (03)
- Evaporative Cooling (04)

Total Area A/C (SF) _____

Largest Exterior Doors:
Height (Tenths of Ft) _____

Utility Connections
Exterior (BLDGS only)

	No.	Size
WATER (POT)		
SEWER, Sanitary		
Electricity	Ph	Volts / Amps
GAS		
STEAM		
CONDENSATE		
CHILL WATER		
WATER (N-P)		

Total Area (SF) by:
- Foundation _____
- Roof _____
- Floors _____
- Exterior Painting _____
- Interior Painting _____

Other Utilities & Equipment:
Water Htrs:
- Capacity _____
- Temp Rise _____
- Fuel _____

PROJECT TABLE OF CONTENTS

SPECIFICATIONS

DIVISION 01 GENERAL REQUIREMENTS

01010 DESIGN OBJECTIVES
APPENDIX A REFERENCES
APPENDIX B FIRE PROTECTION ANALYSIS/LIFE SAFETY CODE ANALYSIS
APPENDIX C SUSTAINABLE RATING TOOL (SpiRiT)
APPENDIX D GEOTECHNICAL REPORT
APPENDIX E SPiRiT POINT SUMMARY TABLES
E1-UEPH FACILITIES
E2-COMPANY OPERATIONS FACILITY (COF)
E3-BATTALION HEADQUARTERS (BHQ)
APPENDIX F SPECIFICATION LIST
01012 DESIGN AFTER AWARD
01312A QUALITY CONTROL SYSTEM (QCS)
01320A PROJECT SCHEDULE
01330 SUBMITTAL PROCEDURES-DURING CONSTRUCTION
01420 SOURCES FOR REFERENCED PUBLICATIONS
01451 CONTRACTOR QUALITY CONTROL
01500 TEMPORARY CONSTRUCTION FACILITIES
01572 CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT
01670 RECYCLED / RECOVERED MATERIALS
01780 CLOSEOUT SUBMITTALS (as-built and warranty)
01781 OPERATION AND MAINTENANCE DATA

SECTION 01010

GENERAL DESIGN AND CONSTRUCTION REQUIREMENTS

TABLE OF CONTENTS

CHAPTER 1 DESIGN OBJECTIVES

Paragraph 1-1 SCOPE OF WORK .....
1-2 APPLICABLE CRITERIA .....
1-3 DESIGN QUALITY .....
1-4 DESIGN FREEDOM .....
1-5 ENERGY AND RESOUCES CONSERVING FEATURES .....
1-6 INSTALLATION DESIGN GUIDE .....
1-7 ACCESSIBILITY REQUIREMENTS .....
1-8 ANTI-TERRORISM FORCE PROTECTION REQUIREMENTS .....
1-9 ORGANIZATIONAL STRUCTURE .....

CHAPTER 2 FUNCTIONAL AND AREA REQUIREMENTS

Paragraph 2-1 GENERAL REQUIREMENTS .....
2-2 UEPH FACILITIES FUNCTIONAL AND AREA REQUIREMENTS .....
2-3 COMPANY OPERATIONS FACILITIES FUNCTIONAL AND AREA REQUIREMENTS .....
2-4 BATTALION HEADQUARTERS FUNCTIONAL AND AREA REQUIREMENTS .....

CHAPTER 3 SITE PLANNING AND DESIGN

Paragraph 3-1 SCOPE OF WORK .....
3-2 SITE VERIFICATION .....
3-3 EXISTING CONDITIONS .....
3-4 EXCAVATION PERMITS .....
3-5 SITE DEVELOPMENT PLAN .....
3-6 GRADING AND DRAINAGE .....
3-7 GENERAL SITE DESIGN CRITERIA .....
3-8 CIRCULATION AND PARKING .....
3-9 DEFINITIONS .....
3-10 SIDEWALK DESIGN .....
3-11 LANDSCAPE PLANTING PLAN .....
3-12 SPRINKLER AND/OR IRRIGATION SYSTEM .....

CHAPTER 4 SITE ENGINEERING

Paragraph 4-1 FOUNDATION AND GEOTECHNICAL DESIGN
4-2 EROSION AND SEDIMENT CONTROL .....
4-3 DEMOLITION .....
4-4 CLEARING, GRUBBING AND EARTHWORK .....
4-5 WETLANDS .....
4-6 EARTHWORK .....
4-7 BORROW MATERIAL .....
4-8 WATER DISTRIBUTION SYSTEM .....
4-9 SANITARY SEWERAGE SYSTEM .....
4-10 STORMWATER MANAGEMENT, STORM DRAINAGE,

AND GRADING .....
4-11 STORM DRAINAGE COLLECTION SYSTEMS AND GRADING .....
4-12 PAVEMENT DESIGN CRITERIA .....
4-13 PERMIT REQUIREMENTS .....
4-14 GAS DISTRIBUTION SYSTEM .....
4-15 HEATING HOT WATER DISTRIBUTION .....
4-16 STEAM DISTRIBUTION .....
4-17 FUEL OIL STORAGE AND DISTRIBUTION .....
4-18 LIQUIFIED PETROLEUM GAS STORAGE AND DISTRIBUTION .....
4-19 ELECTRICAL DISTRIBUTION .....
4-20 TELEPHONE .....
4-21 TELEVISION .....
4-22 CATHODIC PROTECTION .....

CHAPTER 5 ARCHITECTURAL DESIGN

Paragraph 5-1 DESIGN GOALS .....
5-2 APPLICABLE CODES AND STANDARDS .....
5-3 IBC OCCUPANCY AND BUILDING TYPE CLASSIFICATIONS .....
5-4 EXTERIOR DESIGN .....
5-5 INTERIOR DESIGN .....
5-6 PHYSICAL SECURITY REQUIREMENTS .....

CHAPTER 6 STRUCTURAL DESIGN

Paragraph 6-1 GENERAL .....
6-2 STRUCTURAL WORK .....
6-3 DESIGN CRITERIA .....
6-4 SELECTION OF STRUCTURAL SYSTEMS .....
6-5 SPECIAL REQUIREMENTS .....

CHAPTER 7 THERMAL PERFORMANCE

Paragraph 7-1 THERMAL CHARACTERISTICS .....
7-2 THERMAL INSULATION .....
7-3 HUMID AREA DESIGN .....
7-4 INFILTRATION .....

CHAPTER 8 PLUMBING

Paragraph 8-1 DESIGN STANDARDS AND CODES .....
8-2 DESIGN CALCULATIONS .....
8-3 EQUIPMENT .....
8-4 FIXTURES .....
8-5 PIPING SYSTEMS .....
8-6 MISCELLANEOUS ITEMS .....
8-7 PIPE INSULATION .....

CHAPTER 9 ELECTRICAL SYSTEMS

Paragraph 9-1 DESIGN STANDARDS AND CODES .....
9-2 DESIGN CALCULATIONS .....
9-3 MATERIALS AND EQUIPMENT .....
9-4 LIGHTING .....
9-5 TELECOMMUNICATIONS .....
9-6 SECURITY SYSTEMS .....
9-7 SPECIAL SYSTEMS .....
9-8 CABLE TELEVISION (CATV) SYSTEM .....

CHAPTER 10 HEATING, VENTILATING, AND AIR CONDITIONING

Paragraph 10-1 DESIGN STANDARDS AND CODES .....
10-2 DESIGN CALCULATIONS .....
10-3 HUMID AREA DESIGN .....

10-4 MECHANICAL SYSTEMS .....
10-5 INCREMENTAL EQUIPMENT .....
10-6 AIR DISTRIBUTION TERMINAL UNITS .....
10-7 AIR DISTRIBUTION CENTRAL EQUIPMENT .....
10-8 CENTRAL HEATING EQUIPMENT .....
10-9 CENTRAL COOLING EQUIPMENT .....
10-10 AIR DISTRIBUTION SYSTEMS .....
10-11 HYDRONIC DISTRIBUTION SYSTEMS .....
10-12 PIPING SYSTEMS .....
10-13 INSULATION .....
10-14 CONTROLS .....
10-15 TESTING, ADJUSTING AND BALANCING .....
10-16 COMMISSIONING .....
10-17 TRAINING .....

CHAPTER 11 ENERGY CONSERVATION

Paragraph 11-1 ENERY CALCULATIONS
11-2 LIFECYCLE COST ANALYSIS
11-3 U-VALUES
11-4 PASSIVE SOLAR APPLICATIONS .....
11-5 PRE-ENGINEERED ACTIVE SOLAR APPLICATIONS .....
11-6 GEOTHERMAL .....
11-7 WIND .....
11-8 CONDENSER HEAT RECOVERY .....
11-9 ENERGY RECOVERY EQUIPMENT .....
11-10 REBATES AND INCENTIVES .....

CHAPTER 12 FIRE PROTECTION

Paragraph 12-1 DESIGN STANDARDS AND CODES .....
12-2 HYDRANT FLOW DATA .....
12-3 SPRINKLER SYSTEM .....
12-4 FIRE PUMP .....
12-5 STANDPIPE AND HOSE SYSTEM .....
12-6 BUILDING CONSTRUCTION .....
12-7 FIRE ALARM .....

CHAPTER 13 SUSTAINABLE DESIGN

Paragraph 13-1 SUSTAINABLE DESIGN GOALS .....
13-2 PROJECT REQUIREMENTS .....

APPENDIX A REFERENCES
APPENDIX B FIRE PROTECTION ANALYSIS/LIFE SAFETY CODE ANALYSIS
APPENDIX C SUSTAINABLE RATING TOOL (SpiRiT)
APPENDIX D GEOTECHNICAL REPORT
APPENDIX E SPiRiT POINT SUMMARY TABLES
E1-UEPH FACILITIES
E2-COMPANY OPERATIONS FACILITY (COF)
E3-BATTALION HEADQUARTERS (BHQ)
APPENDIX F SPECIFICATION LIST

CHAPTER 1

DESIGN OBJECTIVES

1-1 SCOPE OF WORK. Design and construction shall comply with the specifications and requirements contained in this Request for Proposals (RFP). The design and technical criteria contained and cited in this RFP establish minimum standards for design and construction quality. The objective of this solicitation is to obtain a campus complex of buildings complete and adequate for assignment as unaccompanied enlisted personnel housing and support facilities. This contract shall consist of the design and construction of barracks, including common support spaces, for a minimum of 488 and maximum of 492 soldiers, one company operations facility (COF), one battalion headquarters (BHQ), site work, and associated facilities on Government-owned land at Fort Benning, Georgia.

1-1.1 Site Area. The sites are described on the RFP drawings included as part of this solicitation and include approximately 75 acres.

1-1.2 Site Work. Site work includes all design and construction of site features described in the RFP, including but not limited to, site planning, design, permitting, clearing, grading, erosion control, site drainage, utility systems, pavements, pedestrian and vehicular circulation systems, outdoor recreation facilities, landscaping, physical security measures, fencing, and site furnishings.

1-1.3 Demolition Considerations and Requirements. The project will require the demolition and removal of one (1) building consisting of approximately 470 SF, one (1) trailer, several pavement areas and infrastructure as part of the scope of this project

1-2 APPLICABLE CRITERIA. Applicable design and construction criteria references are listed in Appendix A to the Statement of Work. Criteria shall be taken from the most current references as of the date of issue of the RFP. Referenced codes and standards are minimum acceptable criteria. The reference list in Appendix A is not inclusive. Applicable criteria include all federal, state and local building codes, standards, and regulations, national and industry standards, and all engineering publications available for download at the U. S. Army Engineering and Support Center, Huntsville, AL website (www.hnd.usace.army.mil/techinfo/indes.asp). Administrative, contractual, and procedural features of the contract shall be as described in other sections of the RFP.

1-3 DESIGN QUALITY. The main objectives of this solicitation are to obtain a complex of unaccompanied enlisted personnel housing (UEPH) including support facilities, and associated site development within funds available, and to maximize design quality. Design quality is achieved through the optimization of interior planning, integration of buildings with the site, sustainability, selection of building systems for low-cost maintenance and operation, and an overall balance of aesthetics and functionality.

1-4 DESIGN FREEDOM. Requirements stated in this RFP are minimums. Layouts shown have been coordinated with the user and are acceptable from a functional standpoint. Any innovative, creative, or cost-saving proposals, which meet or exceed these requirements are encouraged and will be considered accordingly. Designs may incorporate factory fabricated components or modules.

1-5 ENERGY AND RESOURCES CONSERVING FEATURES. Public Law 102-486, Executive Order 12902, and Federal Regulations 10 CFR 435, require federal buildings to be designed and constructed to reduce energy consumption in a life cycle, cost-effective manner using renewable energy sources when economical. Products designed to conserve energy and resources by controlling the amounts of

consumed energy or by operating at increased efficiencies should be considered. Minimum requirements for this project are listed in the Statement of Work.

1-6 INSTALLATION DESIGN GUIDE. Design of this project shall incorporate the design guidance and criteria contained in the Fort Benning Installation Design Guide.

1-7 ACCESSIBILITY REQUIREMENTS. All areas and facilities required to be accessible to physically disabled persons shall conform to the Uniform Federal Accessibility Standards (UFAS) Federal Standard 795, and to the extent greater accessibility is required in the Americans With Disabilities Act Accessibility Guidelines (ADAAG). Able-bodied military personnel shall occupy UEPH living units, thus provisions for the disabled are not required within the living units. The following areas shall be accessible:

1-7.1 Areas that may be used by non-military employees or visitors including the Battalion Headquarters and UEPH Commons Areas.

1-7.2 Handicap accessible visitor and non-military employee parking spaces near UEPH and other buildings as indicated in Chapter 3, SITE PLANNING AND DESIGN of the Statement of Work.

1-7.3 Minimum of one accessible pedestrian route linking handicap accessible parking areas with accessible building entrances.

1-8 FORCE PROTECTION & ANTI-TERRORISM CONSIDERATIONS. Project design and construction shall comply with the Unified Facilities Criteria (UFC 4-010-01) DoD Minimum Antiterrorism Standards for Buildings, dated 31 July 2002. Barracks ,including UEPH commons areas, Battalion Headquarters buildings and Company Operations Facility as well as any administration building shall meet minimum setback requirements for “BILLETING” and “PRIMARY GATHERING” BUILDINGS respectively. Use bollards, and/or earthen berms and vegetation to keep vehicles out of any courtyards at the barracks. Provide fire truck access points. Site drawings provided either meets the setbacks and/or the building within the minimum setbacks are hardened per force protection requirements. The layouts may be adjusted to meet the minimum setbacks to prevent building hardening.

The setbacks shall be as follows:

Billeting and Primary Gathering

Building front to back of curb	82 feet (25.0 meters)
Building to trash containers	82 feet (25 meters)
Building to building	33 feet (10 meters)

Inhabited

Building front to back	33 feet (10 meters)
Building to trash containers	33 feet (10 meters)
Building to building	33 feet (10 meters)

1-9 ORGANIZATIONAL STRUCTURE. The housing facilities designed and constructed under this solicitation will be occupied by enlisted soldiers. Each soldier is assigned to a company. Company operations facilities will accommodate the day-to-day functions of the company, including storage of the company’s gear and arms, locker/shower facilities for use by soldiers after physical training, and spaces for administration and command of the company. Company operations facilities will be used by enlisted personnel residing in the UEPH facilities, enlisted personnel living in family housing areas, and non-enlisted personnel.

A number of companies comprise a battalion. Battalion headquarters house the administrative and command functions of the battalion, and provide training and support areas for soldiers.

CHAPTER 2

FUNCTIONAL AND AREA REQUIREMENTS

2-1 GENERAL REQUIREMENTS

2-1.1 Gross building area definition. Gross building area is measured to the outside face of exterior enclosure walls. Gross area includes floor areas, penthouses, mezzanines, and other spaces as follows:

2-1.1.1 Areas calculated as half space. Gross area includes one-half the area of exterior covered areas such as balconies, entries, loading platforms, breezeways, exterior corridors, and porches. Exterior covered areas are measured from the face of the enclosure wall to the edge of the covered area served. Stairs (enclosed or open) and elevator shafts count as half space for each floor they serve. In UEPH buildings only, interior public corridors will be calculated as half space (circulation spaces within the living unit will be calculated as full area).

2-1.1.2 Excluded space. The following spaces are excluded from gross area calculations: Attic areas where average clear height does not exceed 7 feet (2.13 m); crawl spaces; exterior uncovered loading platforms; open courtyards; normal roof overhangs and soffits for weather protection; uncovered ramps and steps; utility tunnels; raceways; mechanical equipment platforms and catwalks.

2-1.2 Gross area limitations. Maximum authorized gross building areas for each facility are included in this chapter. Proposals that exceed authorized gross area limitations shall be considered non-conforming.

2-1.3 Net area definition. Net area is measured to the inside face of the room or space walls.

2-1.4 Net Area Requirements. Net area requirements for programmed spaces are included in this chapter. If net area requirements are not specified in the Statement of Work, the space shall be sized to: accommodate the required function, comply with code requirements, comply with overall gross area limitations and other requirements of the RFP (for example, area requirements for corridors, stairs, and mechanical rooms will typically be left to the discretion of the offeror).

2-1.5 Functionality. Rooms shall be sized and arranged for efficient use, circulation, and furniture placement.

2-1.6 Finish Requirements. Room finishes stated in the following paragraphs are preferred minimums; finish selections are not limited to those listed.

2-1.7 Furniture Requirements. Furniture requirements are listed with room descriptions.

2-2 UEPH FACILITIES FUNCTIONAL AND AREA REQUIREMENTS. The UEPH building(s) shall consist of living units, common areas, and support spaces. Each living unit shall be designed for occupation by one soldier. Provide living units for a minimum of 488 and a maximum of 492 enlisted personnel. Living units and common areas may comprise a single building, or multiple buildings. Maximum gross area of the UEPH buildings is limited to 366 SF per soldier; this includes living units, common areas, and support spaces in the UEPH buildings. The successful design scheme will maximize the area of the living units, provide the required support and common areas, and strictly comply with the overall gross building area limitation. Building spaces and areas shall be as shown on the drawings and as follows:

2-2.1 Areas Comprising the One-Person Living Unit (Module). Each One-Person living unit, or module, will contain one individual living/sleeping room with a closet, a private service area with kitchenette and a private bathroom. Spaces are as follows.

2-2.1.1 Individual Living/Sleeping Room. Minimum net area: 140 SF. Maximum net area: 182 SF. Provide two per module.

2-2.1.1.1 Function: Private bedroom and living space for one enlisted person. Floor plan layout shall allow the room to be used as a bedroom and living room.

2-2.1.1.2 Adjacency requirements: Adjacent to service area and closet. Living/sleeping room shall be entered from service area, or the public interior corridor or breezeway. If living/sleeping room is entered directly from interior corridor or breezeway, provide 3’-0” wide entry door swinging into room.

2-2.1.1.3 Furnishings/Fixtures/Equipment: Provide, and design the room to accommodate, the following furnishings:

a. One twin bed with headboard and footboard: 40” wide by 85” long.
b. One entertainment center for occupant’s television and sound system: 34” wide by 25” deep by 76” high.
c. One chest of drawers: 28” wide by 18” deep by 26” high.
d. One nightstand: 19” wide by 17” deep by 21” high.
e. One desk (with keyboard tray retracted): 60” wide by 30” deep by 30” high.
f. One desk chair: 19-1/2” wide by 21” deep by 33-1/2” high.

2-2.1.1.4 Minimum Finishes:
Floor: vinyl composition tile.
Base: wood or resilient cove base.
Walls: painted gypsum wallboard or painted veneer plaster.
Ceiling: painted gypsum wallboard, painted veneer plaster, or painted underside of precast concrete structural floor planks.

2-2.1.1.5 Other requirements: Living/sleeping room shall have at least one exterior operable window with insect screen. Window shall meet egress requirements of NFPA 101 and International Building Code. Window shall not be located adjacent to an exterior corridor or breezeway. Door between public corridor and living/sleeping room shall have mortise dormitory function (F13) lockset. Provide minimum of one combination telephone/data outlet in each Living/Sleeping room. Provide minimum of one cable television outlet in each Living/Sleeping room. Coordinate outlet locations with furniture arrangement. Refer to Chapter 9: ELECTRICAL SYSTEMS. Partitions/party walls shall have minimum STC of 52

2-2.1.2 Closet. Minimum net area: 30.0 SF. Provide one per living/sleeping room.

2-2.1.2.1 Function: Private walk-in closet for clothing and storage of boxes and field gear.

2-2.1.2.2 Adjacency requirements: Adjacent to living/sleeping room. Provide minimum 2’-4” wide door between living/sleeping room and closet.

2-2.1.2.3 Furnishings/Fixtures/Equipment (FFE): Provide minimum 6’-7” of rod and shelf. Closet organizer systems with double rods and shelves may be used.

2-2.1.2.4 Minimum Finishes:
Floor: vinyl composition tile.
Base: wood or resilient cove base.
Walls: painted gypsum wallboard or painted veneer plaster.
Ceiling: painted gypsum wallboard, painted veneer plaster, or painted underside of precast concrete structural floor planks.

2-2.1.2.5 Other requirements: Door shall have privacy function (F76) lockset, or be equipped with a hasp so the occupant can provide his/her own padlock. Partitions/party walls shall have minimum STC of 52.

2-2.1.3 Service Area. Provide one per module.

2-2.1.3.1 Function: Circulation space, food preparation area, and eating area for occupants.

2-2.1.3.2 Adjacency requirements: Adjacent to living/sleeping rooms and bathroom.

2-2.1.3.3 Furnishings/Fixtures/Equipment: Provide refrigerator-freezer (minimum 20 total cubic feet). Provide microwave oven (min 0.9 cubic feet, 800 watts) mounted under wall cabinets. Provide minimum 5′-0″ long, 2′-0″ deep kitchen base cabinets and countertop with 4″ high backsplash and sidesplash, and minimum 7′-0″ long, 12″ deep wall cabinets. Wall cabinets shall be minimum 2′-0″ high; provide 2′-0″ clear between countertop and bottom of wall cabinets at sink. Base cabinets shall have minimum of two 12″ wide drawers. Provide plastic laminate countertop with side and backsplashes at walls. Provide single compartment, stainless steel kitchen sink with food strainer/stopper, minimum inside dimensions 1′-4″ by 1′-4″ by 7″ deep, with chrome-plated, single handle, washerless mixing faucet (refer to Chapter 8: PLUMBING). Provide, and design room to accommodate, the following furnishings: one dining table for two persons, 30″x30″ by 28-1/2″ high with two armless dining chairs. Provide fire extinguisher mounted inside base cabinet.

2-2.1.3.4 Minimum Finishes:

Floor: vinyl composition tile.

Base: resilient cove base.

Walls: painted gypsum wallboard or painted veneer plaster. Wall area between countertop and wall cabinets: ceramic tile, plastic laminate, or color coordinated back wall shield (if unitized kitchen is used).

Ceiling: painted gypsum wallboard, painted veneer plaster, or painted underside of precast concrete structural floor planks.

2-2.1.3.5 Other requirements: At wall areas around dining table provide chair rail or similar wall protection to protect walls from chair and table impact. Partitions/party walls shall have minimum STC of 52.

2-2.1.4 Bathroom. Provide one bathroom per module.

2-2.1.4.1 Function: Bathing and toilet facilities for either occupant; storage for occupant’s bath articles.

2-2.1.4.2 Adjacency requirements: Adjacent to service area or interior hallway. Provide 2′-4″ wide door between bathroom and service area/hallway.

2-2.1.4.3 Furnishings/Fixtures/Equipment (FFE): Countertop shall be minimum 3′-0″ wide solid polymer with integrally molded bowls and 4″ high coved backsplash. Provide 4″ high side splash at sidewalls. Provide plastic laminate surfaced vanity base cabinet with hinged door(s) and minimum two 9″ wide drawers. Lavatory shall be Minimum 19″x19″ solid surfacing material integrally molded to countertop. Provide chrome plated washerless faucet with pop-up drain (refer to chapter 8). Provide 1/4″ thick by minimum 3′-6″ high mirror glass, full width of vanity countertop, with wall mounted vanity light fixture above mirror (refer to Chapter 9: ELECTRICAL SYSTEMS). Provide one recessed medicine cabinet, soap holder, and toothbrush/tumbler holder. Provide floor-mounted toilet with full seat and seat cover (lid). Provide bathtub, chrome-plated brass showerhead, and anti-scald single-handle mixing valve (refer to Chapter 8: PLUMBING). Provide two minimum 2′-0″ long towel bars mounted on walls outside tub/shower enclosure, a wall mounted soap holder in the tub/shower, and one door mounted robe hook with two hooks. Provide wall mounted retractable clothesline across tub/shower.

Provide mildew-resistant vinyl shower curtain with stainless steel curtain hooks and chrome-plated brass shower curtain rod. Provide single roll toilet tissue dispenser.

2-2.1.4.4 Minimum Finishes:
Floor: ceramic tile.
Base: ceramic tile sanitary cove base.
Walls: painted water-resistant gypsum wallboard or painted veneer plaster, or ceramic tile, or ceramic tile wainscot. Walls around shower/tub enclosure shall be solid surface material, water-resistance, and durability.
Ceiling: painted exterior gypsum soffit board, or painted veneer plaster, painted Portland cement plaster, or painted underside of precast concrete structural floor planks.

2-2.1.4.5 Other requirements: HVAC system shall exhaust bathroom air; refer to Chapter 10, UNIT DESIGN – HEATING, VENTILATING, AND AIR CONDITIONING. Door shall have privacy function (F76) lockset. Partitions/party walls shall have minimum STC of 52.

2-2.1.5 Module Mechanical Area. Mechanical units shall be located above ceilings. Refer to Chapter 10: UNIT DESIGN – HEATING, VENTILATING, AND AIR CONDITIONING.

2-2.3 UEPH Common Areas. Common areas are located within barracks building at Dixie Road site, and in a separate building at hospital site. Entry lobby, CQ station, toilet room, mail room, public telephones, and vending area should be grouped together at the main entrance to the barracks, adjacent to visitor parking area. Spaces are as follows:

2-2.3.1 Entry Lobby. Provide one.

2-2.3.1.1 Function: Primary entry point into the UEPH facility; waiting area for visitors.

2-2.3.1.2 Adjacency requirements: Adjacent to main entry to UEPH facility. It is preferable to enter lobby area from two sides of building.

2-2.3.1.3 Furnishings/Fixtures/Equipment: Provide and design space to accommodate a minimal waiting-area with space for seating. Provide wall mounted electric water cooler. Provide ceiling or wall mounted television bracket with locking tray. Arrange seating to allow viewing of television (television is government furnished government installed).

2-2.3.1.4 Minimum Finishes:
Floor: porcelain tile, or quarry tile.
Base: porcelain tile or quarry tile, or stained wood base.
Walls: painted gypsum wallboard, or painted veneer plaster.
Ceiling: suspended acoustical panel ceiling, painted gypsum wallboard, painted veneer plaster, painted Portland cement plaster, or painted underside of precast concrete structural floor planks.

2-2.3.1.5 Other requirements: Handicap accessible. Provide conduit and junction box for cable television service to wall or ceiling mounted television.

2-2.3.2 Entry Vestibules. Provide at exterior entrance to lobby area at Dixie Road Site.

2-2.3.2.1 Function: Primary entry point into the UEPH facility; weather protection for interior spaces.

2-2.3.2.2 Adjacency requirements: Adjacent to lobby.

2-2.3.2.3 Furnishings/Fixtures/Equipment:

2-2.3.2.4 Minimum Finishes:
Floor: porcelain tile, or quarry tile
Base: porcelain tile or quarry tile
Walls: Match exterior wall finish material (preferred), or painted gypsum wallboard, or painted veneer plaster
Ceiling: painted gypsum wallboard, painted veneer plaster, painted Portland cement plaster, or painted underside of precast concrete structural floor planks.

2-2.3.2.5 Other requirements: Handicap accessible.

2-2.3.3 Charge of Quarters (CQ) Station. Provide one area, approximately 70 SF.

2-2.3.3.1 Function: Reception area for visitors; duty desk for barracks manager.

2-2.3.3.2 Adjacency requirements: Adjacent to lobby and main entry. Locate to allow observation of lobby, main entry, public telephones, and common outdoor areas.

2-2.3.3.3 Furnishings/Fixtures/Equipment: Provide reception desk (built-in casework) minimum 8’-0” long, to accommodate computer and monitor (not in contract), security system monitor, telephone, writing area. Provide built-in communication and power receptacles. Desk shall have minimum two legal size file drawers and one pencil drawer. All drawers shall have locks. Desk components shall have plastic laminate or stained wood finish. Work surfaces and counters shall be solid surfacing material or plastic laminate.

2-2.3.3.4 Minimum Finishes:
Match entry lobby.
2-2.3.3.5 Other requirements: Handicap accessible. Two combination data/telephone outlets at desk

2-2.3.4 Toilet Rooms. Provide separate male and female toilet rooms.

2-2.3.4.1 Function: Private, handicap accessible toilet for use by visitors and CQ.

2-2.3.4.2 Adjacency requirements: Adjacent to entry lobby and CQ station.

2-2.3.4.3 Furnishings/Fixtures/Equipment: Floor mounted toilet; wall hung lavatory; recessed multifold paper towel dispenser/trash receptacle; two roll toilet tissue dispenser; sanitary napkin disposal; liquid soap dispenser; wall mounted mirror over lavatory; wall mounted grab bars at toilet.

2-2.3.4.4 Minimum Finishes:
Floor: Ceramic tile, or porcelain tile.
Base: Ceramic tile, or porcelain tile.
Walls: Ceramic tile, ceramic tile wainscot, or painted water-resistant gypsum wallboard.
Ceiling: Painted gypsum wallboard, painted veneer plaster, painted Portland cement plaster, or painted underside of precast concrete structural floor planks.

2-2.3.4.5 Other requirements: Handicap accessible. Entry door shall have privacy function (F76) lockset. Partitions/party walls shall have minimum STC of 52.

2-2.3.5 Janitor Closet. Provide one on each floor of building at the Dixie Road site. At the Hospital site provide one at the Commons building. Minimum area: 30 SF each.

2-2.3.5.1 Function: Sink, and storage of cleaning supplies.

2-2.3.5.2 Adjacency requirements: Locate near toilet room on first floor; preferred location on upper floors is adjacent to laundry areas.

2-2.3.5.3 Furnishings/Fixtures/Equipment: Provide floor mop sink, mop rack for three mops, and minimum 6 linear feet of wall mounted stainless steel shelving.

2-2.3.5.4 Minimum Finishes:
Floor: Ceramic tile, or sealed concrete.
Base: Resilient cove base, or ceramic tile base.
Walls: Painted water-resistant gypsum wallboard, or painted concrete masonry units.
Ceiling: Painted gypsum wallboard, painted veneer plaster, or painted underside of precast concrete structural floor planks.

2-2.3.5.5 Other requirements: door shall have classroom function (F84) lockset. Partitions/party walls shall have minimum STC of 52.

2-2.3.6 Vending Area. Provide minimum one area on ground floor. Additional vending areas with ice machine-dispensers may be provided at upper floors as a proposed betterment over the minimum requirement.

2-2.3.6.1. Function: Space for soft drink and snack vending machines, and ice machine-dispenser.

2-2.3.6.2 Adjacency requirements: Near entry lobby.

2-2.3.6.3 Furnishings/Fixtures/Equipment: Provide one ice cube machine-dispenser designed for hotel ice bucket filling, capable of producing minimum 250 lbs. of regular ice cubes in 24 hours, with 180 lb. storage capacity. Provide ice machine manufacturer’s automatic cleaning system to clean and sanitize the water distribution system of the machine at scheduled intervals. Ice machine shall be Energy Star compliant. Design the space to accommodate two full-size soft drink and snack vending machines (government furnished, government installed). Vending machines will not require plumbing connections.

2-2.3.6.4 Minimum Finishes:
Match entry lobby or adjacent corridor or breezeway.

2-2.3.6.5 Other requirements: First floor vending areas shall be handicap accessible. Provide floor drain near ice machines; locate drain outside of traffic area. Receptacle on dedicated circuit for each vending machine.

2-2.3.8 Public Telephone Area. Provide one.

2-2.3.8.1 Function: Pay telephones for barracks occupants and visitors.

2-2.3.8.2 Adjacency requirements: Near lobby and CQ station.

2-2.3.8.3 Furnishings/Fixtures/Equipment: Provide minimum one pay telephones and telephone stations. Offeror shall contract with local telephone company or other telephone service provider to furnish and install pay telephones; rate charged for calls shall not exceed the average prevailing rate in the local off-post community. Station shall be wheelchair accessible. Provide capability to mount portable TDD at station. Materials shall be vandal resistant and easily cleaned.

2-2.3.8.4 Minimum Finishes:
Match entry lobby.

2-2.3.8.5 Other requirements: Handicap accessible.

2-2.3.9 **Mail Room**. Provide one at Dixie Road Site. Room shall be sized to allow access to all rear-loading mailboxes and parcel lockers. Provide minimum 6’-0” (1800 mm) clear between back of mailboxes and any obstructions. To comply with force protection minimum standards, avoid routing key utilities (including communications, fire detection and alarm, water mains, etc.) through or on common walls to mail room.

2-2.3.9.1 Function: Secure area for sorting incoming mail and distributing to rear-loading mailboxes.

2-2.3.9.2 Adjacency requirements: Near CQ station and entry lobby. To comply with force protection minimum standards, locate mailroom on perimeter of building.

2-2.3.9.3 Furnishings/Fixtures/Equipment: Provide plastic laminate-faced sorting counter (built-in casework) 2’-6” deep by minimum 8’-0” long by 3’-0” high. Provide United States Postal Service approved mailbox for each living/sleeping space of the facility. Provide minimum of nine parcel lockers, and one outgoing mail collection box.

2-2.3.9.4 Minimum Finishes:
Floor: Vinyl composition tile, sheet flooring, or sealed concrete.
Base: Resilient cove base.
Walls: Painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units.
Ceiling: Painted gypsum wallboard, painted veneer plaster, or painted underside of precast concrete structural floor planks.

2-2.3.9.5 Other requirements: Provide 3’-0” wide door into room; door shall have mortise dormitory function (F13) lockset. Room shall be handicap accessible. Design shall comply with United States Postal Service regulations.

2-2.3.10 **Mailbox Access Area**. Provide at Dixie Road Site an area from which residents may access mailboxes to pick up their mail. Access may be from a covered exterior area or from an interior lobby. Mailboxes will be loaded from the interior mailroom.

2-2.3.10.1 Function: Mail pickup area for residents.

2-2.3.10.2 Adjacency requirements: Adjacent to mail room. Located on ground floor, near CQ station and entry lobby.

2-2.3.10.3 Furnishings/Fixtures/Equipment: None.

2-2.3.10.4 Minimum Finishes:
Interior: match entry lobby.
Exterior: refer to exterior building material requirements.

2-2.3.10.4 Other requirements: For exterior location, provide minimum 6’-0” of covered area in front of mailboxes (recess, building overhang, etc.) for weather protection; it is preferable to provide continuous covered area between mailbox access area and main entry. Provide adequate drainage at exterior areas.

2-2.3.11 **Laundry Areas**. Provide a minimum of one clothes washer per 12 residents, and 1.5 clothes dryers per washer (round fractional numbers to the next highest whole number).

2-2.3.11.1 Function: Self-service washers and dryers and clothes folding areas for residents.

2-2.3.11.2 Adjacency requirements: Locate laundry rooms on exterior walls so dryers can be exhausted directly to exterior. Locate dryer exhaust wall caps away from operable windows. For noise considerations, it is preferable not to locate laundry rooms adjacent to living units (shared walls).

2-2.3.11.3 Furnishings/Fixtures/Equipment: Commercial quality clothes washers and dryers (each minimum 2.5 cubic feet capacity), non-coin operation. Stacked dryers are preferred. Appliances shall be Energy Star compliant. Provide one plastic laminate-faced table with clothes hanging rod (minimum table size: 48″ by 24″ by 36″ high) per each four washers, or continuous table with hanging rods.

2-2.3.11.4 Minimum Finishes:
Floor: Porcelain tile, quarry tile, or sealed concrete.
Base: Porcelain tile or quarry tile.
Walls: Painted water resistant gypsum wallboard or painted veneer plaster, or painted concrete masonry units.
Ceiling: Painted gypsum wallboard, painted veneer plasters, painted Portland cement plaster, or painted underside of precast concrete structural floor planks.

2-2.3.11.5 Other requirements: Provide insulated glass storefront or sidelights at door to allow views into the room from the corridor. Conceal utilities from view, but provide easy maintenance access; locate utility connections 3′-0″ above finish floor, unless otherwise recommended by manufacturer. Provide one floor drain for every four washers; locate drains outside of traffic area. Provide direct straight-run venting of dryer exhaust. Provide stainless steel sink. Partitions around laundry rooms shall have minimum STC of 52, and shall extend to underside of floor above. Provide 3′-0″ wide doors into room. Doors shall have classroom function (F84) locksets (or exit devices if required by applicable code) check.

2-2.4 **UEPH Support Areas**. Support areas include circulation spaces such as stairs and corridors; mechanical, electrical, and communications spaces; boot wash facilities; and outdoor storage buildings. Spaces are as follows:

2-2.4.1 **Interior Corridor**. Provide as required to allow circulation to building spaces, and comply with applicable code egress requirements. Provide minimum 5′-0″ corridor width. Due to security, climate, and force protection concerns, interior corridors are the preferred means of circulation between living units and other building spaces.

2-2.4.1.1 Function: Circulation and means of egress.

2-2.4.1.2 Adjacency requirements: Adjacent to vertical circulation.

2-2.4.1.3 Furnishings/Fixtures/Equipment (FFE): Provide mechanical and electrical systems to comply with applicable codes. Provide fire extinguishers in semi-recessed fire extinguisher cabinets to comply with applicable codes.

2-2.4.1.4 Minimum Finishes:
Floor: Porcelain tile, quarry tile, vinyl composition tile, or integrally stained concrete.
Base: Porcelain tile, quarry tile, or resilient cove base.
Walls: Impact resistant gypsum wallboard with vinyl wall covering or painted finish.
Ceiling: Suspended acoustical panel ceiling, painted gypsum wallboard, painted veneer plaster, painted Portland cement plaster, or painted underside of precast concrete structural floor planks.

2-2.4.1.5 Other requirements: Handicap accessible. Partitions shall have minimum STC of 52

2-2.4.4 **Interior Stairs**. Provide as required to allow circulation to upper floors of the building, and to comply with applicable code egress requirements. Due to security, climate, and force protection concerns, interior stairs are preferred over exterior stairs.

2-2.4.4.1 Function: Circulation and means of egress.

2-2.4.4.2 Adjacency requirements: Adjacent to corridors or breezeways. Connects all floors of the building.

2-2.4.4.3 Furnishings/Fixtures/Equipment (FFE): Stairs shall be steel construction with concrete-filled treads, or cast-in-place concrete construction. Open risers are prohibited. Provide mechanical and electrical systems to comply with applicable codes.

2-2.4.4.4 Minimum Finishes:

Floor: Landings: Porcelain tile, quarry tile, resilient tile, vinyl composition tile, or sealed concrete.
Base: Porcelain tile, quarry tile, or resilient cove base.
Treads: Porcelain tile, quarry tile, resilient treads, or sealed concrete. Provide slip-resistant nosing if tile is used.
Risers: Painted steel, porcelain tile, quarry tile, or sealed concrete.
Walls: Painted impact resistant gypsum wallboard, or painted concrete masonry units.
Ceiling: Suspended acoustical panel ceiling, painted gypsum wallboard, painted veneer plaster, painted Portland cement plaster, or painted underside of precast concrete structural floor planks.

2-2.4.4.5 Other requirements: Stairs shall comply with handicap accessibility requirements of applicable codes. Railings shall be painted galvanized steel, or pre-finished aluminum. Partitions shall have minimum STC of 52

2-2.4.5 **Exterior Stairs**. Provide as required to allow circulation to upper floors of the building, and to comply with applicable code egress requirements. Due to security, climate, and force protection concerns, interior stairs are preferred over exterior stairs. Exterior stairs shall be covered.

2-2.4.5.1 Function: Circulation and means of egress.

2-2.4.5.2 Adjacency requirements: Adjacent to corridors or breezeways. Connects all floors of the building.

2-2.4.5.3 Furnishings/Fixtures/Equipment (FFE): Exterior stairs shall be cast-in-place concrete construction (preferred), or galvanized steel construction with concrete-filled treads. Open risers and metal grating treads are prohibited.

2-2.4.5.4 Minimum Finishes:

Floor: Landings: Sealed concrete with slip-resistant finish texture.
Base: None required.
Treads: Sealed concrete with slip-resistant finish texture. Provide slip-resistant nosing.
Risers: Painted steel, or sealed concrete.
Walls: Exterior wall materials.
Ceiling: Painted exterior gypsum soffit board, painted Portland cement plaster, or painted underside of concrete structure above.

2-2.4.5.5 Other requirements: Stairs shall comply with handicap accessibility requirements of applicable codes. Railings shall be painted galvanized steel, or pre-finished aluminum. Refer to Chapter 5: ARCHITECTURAL DESIGN for hardware and security requirements for exterior doors.

2-2.4.6 **Mechanical Areas**. Provide dedicated interior spaces and exterior areas for plumbing, fire protection, and HVAC equipment. Size and locate rooms to allow equipment removal and maintenance Provide floor openings and vertical shaft spaces as necessary.

2-2.4.6.1 Function: Mechanical support spaces for the UEPH building.

2-2.4.6.2 Adjacency requirements: Locate main mechanical room on ground floor with doors opening to exterior. Mechanical support spaces shall not be used for

storage or other purposes; access to mechanical spaces will be limited to properly authorized personnel. Locate exterior mechanical equipment and air intake and openings in exterior walls to comply with force protection standards. Do not locate mechanical equipment rooms adjacent to living units (shared walls).

2-2.4.6.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-2.4.6.4 Minimum Finishes:
Floor: Sealed concrete.
Base: Resilient cove base, or none.
Walls: Painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units.
Ceiling: None required.

2-2.4.6.5 Other requirements: Locate air intake and exhaust openings to provide optimum indoor air quality. Roof mounted equipment shall not be used. Provide screening around outdoor equipment areas (refer to Chapter 3: SITE PLANNING AND DESIGN); comply with force protection standards. Doors shall have storeroom function (F86) locksets. Partitions shall have minimum STC of 52

2-2.4.7 **Electrical Rooms**. Provide dedicated interior spaces and exterior areas for electrical equipment. Size and locate rooms to allow equipment removal and maintenance. Provide floor openings and vertical shaft spaces as necessary. Provide minimum of one electrical room per floor.

2-2.4.7.1 Function: Electrical support spaces for the UEPH building.

2-2.4.7.2 Adjacency requirements: Locate main electrical equipment room on ground floor. Electrical rooms on upper floors should be located to allow efficient distribution. Size and locate rooms to allow equipment removal and maintenance. Electrical rooms shall not be used for storage or other purposes; access to electrical rooms will be limited to properly authorized personnel. Locate exterior electrical equipment to comply with force protection standards.

2-2.4.7.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-2.4.7.4 Minimum Finishes:
Floor: Sealed concrete.
Base: Resilient cove base, or none.
Walls: Painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units
Ceiling: None required.

2-2.4.7.5 Other requirements: Electrical service to the building shall be underground. Provide masonry screen walls with lockable metal access gates around outdoor equipment (refer to Chapter 3: SITE PLANNING AND DESIGN); it is preferable to locate transformer within the screened mechanical equipment area. Comply with force protection standards. Door shall have storeroom function (F86) lockset. Partitions shall have minimum STC of 52

2-2.4.8 **Communication Rooms**. Provide dedicated interior rooms for communication equipment. Size and locate rooms to allow equipment removal and maintenance; room area shall be minimum of 1.1% of the building area served, however, minimum dimensions for each communication room shall be 7’-0” by 10’-0”. Provide minimum of one communication room per floor.

2-2.4.8.1 Function: Telephone and data network support spaces for the UEPH building.

2-2.4.8.2 Adjacency requirements: Locate to allow efficient distribution. Communication rooms on upper floors shall be vertically stacked above each other. Communication rooms shall not be used for storage or other purposes; access will be limited to properly authorized personnel.

2-2.4.8.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-2.4.8.4 Minimum Finishes:
Floor: Vinyl composition tile.
Base: Resilient cove base, or none.
Walls: Painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units.
Ceiling: Painted gypsum wallboard, painted veneer plaster, or suspended acoustical panel ceiling, or painted underside of concrete structure above.

2-2.4.8.5 Other requirements: Communication service to the building shall be underground. Provide minimum 3′-0″ wide door with storeroom function (F86) lockset. Provide floor openings and vertical shaft spaces as necessary. Provide a minimum of three 4″ diameter empty conduits between vertically stacked communication rooms. Partitions shall have minimum STC of 52

2-2.4.9 **Boot Wash Areas**. Provide paved exterior boot wash area at each entrance to the UEPH building. Design area for use by one soldier at a time.

2-2.4.9.1 Function: Exterior area for washing footgear prior to entering building.

2-2.4.9.2 Adjacency requirements: Locate on ground floor, adjacent to each entrance to the UEPH building.

2-2.4.9.3 Furnishings/Fixtures/Equipment: Provide drainage assembly: Removable 3′-0″ by 3′-0″ aluminum or stainless steel grating, with non-slip surface, supported by concrete storm drainage inlet box. Filtered runoff shall be piped to storm drainage system. Provide freeze-proof wall hydrant with aerator nozzle mounted approximately 1′-4″ above grating, control valve mounted at 2′-8″ above pavement. Provide 3′-0″ long metal grab bar above control valve, mounted at 3′-3″ above pavement. Top of grating and concrete structure shall align with adjacent concrete sidewalk. Provide concrete sidewalk between boot wash area and entrance sidewalk.

2-2.4.9.4 Minimum Finishes:
Refer to exterior building material requirements.

2-2.4.9.5 Other requirements: Provide adequate drainage away from building.

2-3 COMPANY OPERATIONS FACILITIES FUNCTIONAL AND AREA REQUIREMENTS. Company operations facilities (COF) shall consist of administrative and supply areas and support spaces. Provide facilities for one (1) small company. Total gross area of a small company COF shall not exceed area indicated on floor plans. Provide separate exterior entrances to the administrative and supply areas of COF. COF functions and areas shall be as follows:

2-3.1 COF Administrative Areas. Provide one group of administrative areas per company. Company leadership will manage the organization, receive visitors, and conduct day-to-day business from the COF administrative areas. Provide an easily identified, covered entrance. Entrance shall be separate and distinct from the entrances to company supply areas and to other COF administrative areas. Exterior wall space above or adjacent to the entrance will be used to display company identification signage. Provide interior circulation to company supply areas. Military personnel will staff the facility; military and non-military personnel will visit the administrative areas to meet with leadership or attend meetings in the conference room. Only able-bodied military personnel will be on staff, thus provisions for the disabled are not required. Provide the following areas for each company:

2-3.1.1 Commander (CO). Provide one, minimum 150 SF. Room shall be accessed through the Admin Office. Occupants: one (1), and occasional visitors.

2-3.1.1.1 Function: Private office for commanding officer.

2-3.1.1.2 Adjacency requirements: Adjacent to Admin Office; near XO, 1st SGT, and Training Office.

2-3.1.1.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate one desk, with return, one bookcase, two legal-size four-drawer file cabinets, one conference table, four side chairs, and one desk chair.

2-3.1.1.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-3.1.1.5 Other requirements: Provide 3’-0” wide door into room; door shall have entry function (F81) lockset. Room shall have exterior window. Partitions shall have minimum STC rating of 55. Two combination data/telephone outlets located on opposite sides of the room, coordinated with furniture layout.

2-3.1.2 Executive Officer (XO). Provide one, minimum 100 SF. Room shall be accessed through the Admin Office. Occupants: 1, and occasional visitors.

2-3.1.2.1 Function: Private office for the company executive officer.

2-3.1.2.2 Adjacency requirements: Adjacent to Admin Office; near CO, 1 SGT, and Training Office.

2-3.1.2.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate one desk, with return, one bookcase, two legal-size four-drawer file cabinets, one side chair and one desk chair. Provide a floor anchor for one GFGI security safe. Coordinate anchor location with furniture layout; refer to Paragraph 5-6.4, Floor Anchors for GFGI Security Safes.

2-3.1.2.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.
2-3.1.2.5 Other requirements: Provide 3’-0” wide door into room; door shall have entry function (F81) lockset. Room shall have exterior window. Partitions shall have minimum STC rating of 55. Two combination data/telephone outlets located on opposite sides of the room, coordinated with furniture layout.

2-3.1.3 First Sergeant (1st SGT). Provide one; 120 SF. Room shall be accessed through the Admin Office. Occupants: 1, and occasional visitors.

2-3.1.3.1 Function: Private office for the company first sergeant (highest ranking non-commissioned officer).

2-3.1.3.2 Adjacency requirements: Adjacent to Admin Office; near CO, XO, and Training Office.

2-3.1.3.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate one desk, with return, one bookcase, two legal-size four-drawer file cabinets, four side chairs and one desk chair. Provide a floor anchor for one GFGI security safe. Coordinate anchor location with furniture layout; refer to Paragraph 5-6.4, Floor Anchors for GFGI Security Safes.

2-3.1.3.4 Minimum Finishes:
Floor: Carpet

Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-3.1.3.5 Other requirements: Provide 3′-0″ wide door into room; door shall have entry function (F81) lockset. Room shall have exterior window. Partitions shall have minimum STC rating of 55. Two combination data/telephone outlets located on opposite sides of the room, coordinated with furniture layout.

2-3.1.4 Training Office. Provide one, 100 SF. Room shall be accessed through the Admin Office. Occupants: 1, and occasional visitors.

2-3.1.4.1 Function: Private office for the company Training Officer.

2-3.1.4.2 Adjacency requirements: Adjacent to Admin Office; near CO, XO, and 1 SGT.

2-3.1.4.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate one desk, with return, one bookcase, two legal-size four-drawer file cabinets, two side chairs and one desk chair. Provide a floor anchor for one GFGI security safe. Coordinate anchor location with furniture layout; refer to Paragraph 5-6.4, Floor Anchors for GFGI Security Safes.

2-3.1.4.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-3.1.4.5 Other requirements: Provide 3′-0″ wide door into room; door shall have entry function (F81) lockset. Exterior window is desirable. Partitions shall have minimum STC rating of 55. Two combination data/telephone outlets located on opposite sides of the room, coordinated with furniture layout.

2-3.1.5 Administration Office. Provide one area, minimum 320 SF, including interior circulation. Room shall be accessed through the Waiting Area. Occupants: two (2) clerks, and occasional visitors.

2-3.1.5.1 Function: Office for company administrative clerks, storage of files, access to private offices. Clerks will have visual control of waiting area and conference room door.

2-3.1.5.2 Adjacency requirements: Adjacent to Waiting Area; CO, XO, 1 SGT, and Training Office. Locate adjacent to or near Conference Room. Locate near main entrance to Administrative Area.

2-3.1.5.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate two (2) clerk desks, with returns and desk chairs. Provide reception desk (built-in casework) minimum 15′-3″ long separating the Admin Office from the Waiting Area. The counter on the Waiting Area side shall be 3′-4″ high by 1′-0″ deep. Admin side of reception desk shall be at desk height, and shall accommodate computer and monitor (not in contract), and writing area. Provide built-in communication and power receptacles or grommets in desk top to access wall receptacles. Desk shall have knee space and minimum two cabinets with hinged doors, and two drawers. Drawers and cabinets shall have keyed locks. Desk components shall have plastic laminate or stained wood finish. Provide a floor anchor for one GFGI security safe. Coordinate anchor location with furniture layout; refer to Paragraph 5-6.4, Floor Anchors for GFGI Security Safes.

2-3.1.5.4 Minimum Finishes:
Floor: Carpet or vinyl composition tile.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-3.1.5.5 Other requirements: Provide 3’-0” wide entry door into room from Waiting Area; door shall have entry function (F81) lockset. Exterior window is desirable. One combination data/telephone outlet located on each wall of the room, coordinated with furniture layout.

2-3.1.6 Storage. Provide one, minimum area 40 SF. Room shall be accessed from the Admin Office.

2-3.1.6.1 Function: Closet for storage of supplies, paper, etc.

2-3.1.6.2 Adjacency requirements: Adjacent to Admin Office.

2-3.1.6.3 Furnishings/Fixtures/Equipment: Built-in shelving.

2-3.1.6.4 Minimum Finishes:
Floor: Vinyl composition tile.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster
Ceiling: Suspended acoustical panel ceiling, painted gypsum wallboard, or painted veneer plaster.

2-3.1.6.5 Other requirements: Door(s) shall have classroom function (F84) lockset.

2-3.1.7 Corridor. Provide as required to allow circulation to building spaces, and comply with applicable code egress requirements. Unless otherwise required, minimum corridor width shall be 6’-0”. Administrative area corridor shall be capable of being secured from exterior entrances and from any adjacent public, unsecured corridors.

2-3.1.7.1 Function: Circulation and means of egress.

2-3.1.7.2 Adjacency requirements: Adjacent to entry vestibule, and vertical circulation (where occurs). Corridor(s) shall provide access to administrative area spaces and shall provide circulation between administrative spaces and supply spaces. Corridor may directly link a company’s administrative area to its supply area; or the company’s administrative area corridor may provide access to a public, unsecured corridor that provides access to the supply areas of all companies in the building.

2-3.1.7.3 Furnishings/Fixtures/Equipment (FFE): Provide one handicap accessible electric water cooler. Provide fire extinguishers in semi-recessed fire extinguisher cabinets to comply with applicable codes.

2-3.1.7.4 Minimum Finishes:
Floor: Porcelain tile, quarry tile, or vinyl composition tile.
Base: Porcelain tile, quarry tile, or resilient cove base.
Walls: Impact resistant gypsum wallboard with painted finish.
Ceiling: Suspended acoustical panel ceiling, painted gypsum wallboard, painted veneer plaster, or painted Portland cement plaster.

2-3.1.7.5 Other requirements: Door shall have Entry Function (F81)

2-3.1.8 Waiting. Provide one area, approximately 50 SF incorporated into the Corridor. Occupants: Two (2) or more visitors; additional visitors (e.g. those waiting to attend a large meeting in the conference room) will wait in the adjacent corridor.

2-3.1.8.1 Function: Waiting and reception area for company soldiers and visitors. Control point for access to admin office and conference room.

2-3.1.8.2 Adjacency requirements: Adjacent to, or very close to, entry vestibule; reception desk should be easily seen by visitors entering the

building. Waiting Area is open to Administrative Area Corridor.

2-3.1.8.3 Furnishings/Fixtures/Equipment (FFE): Provide two side chairs. Provide one 4’-0” high by 6’-0” wide wall mounted bulletin board.

2-3.1.8.4 Minimum Finishes:
Match Administrative Area Corridor.

2-3.1.8.5 Other requirements: None required. Two combination data/telephone outlets located on opposite sides of the room, coordinated with furniture layout.

2-3.1.9 Vestibule. Provide at main exterior entrance to Corridor.

2-3.1.9.1 Function: Primary entry point into the COF; weather protection for interior spaces.

2-3.1.9.2 Adjacency requirements: Adjacent to Administrative Area Corridor.

2-3.1.9.3 Furnishings/Fixtures/Equipment:

2-3.1.9.4 Minimum Finishes:
Floor: Porcelain tile, quarry tile, or vinyl composition tile.
Base: Porcelain tile or quarry tile.
Walls: Match exterior wall finish material (preferred), or painted impact resistant gypsum wallboard, or painted veneer plaster.
Ceiling: Painted gypsum wallboard, painted veneer plaster, or painted Portland cement plaster.

2-3.1.9.5 Other requirements: Provide aluminum storefront entrance doors on exterior and corridor sides of vestibule. Additional aluminum storefront area (sidelights, transoms) is desirable. Provide minimum 3’-0” deep exterior covered area (entry porch) full width of storefront. Provide location for company identification signage on exterior wall above or adjacent to entrance. Two combination data/telephone outlets located on opposite sides of the room, coordinated with furniture layout.

2-3.1.10 Platoon Office. Provide one area approximately 800 SF. Office shall be accessed directly from the Corridor, or through a common space that is accessed from the Corridor. Occupants: eight (8) in each office, and occasional visitors.

2-3.1.10.1 Function: Private office for platoon leaders or other administrators.

2-3.1.10.2 Adjacency requirements: Adjacent to Administrative Area Corridor. Locate near Admin Office.

2-3.1.10.3 Furnishings/Fixtures/Equipment: Provide and design each office to accommodate one desk, with return, one side chair and one desk chair.

2-3.1.10.4 Minimum Finishes:
Floor: sealed concrete.
Base: Resilient cove base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-3.1.10.5 Other requirements: Exterior window is desirable, but not required. Partitions shall have minimum STC rating of 49. Two combination data/telephone outlets located on opposite sides of the room, coordinated with furniture layout.

2-3.1.11 Conference Room. Provide one, 560 SF. Room shall be accessed from the Waiting Area (preferable), or through the Admin Office. Admin clerks shall have visual control of Conference Room door. Occupants: up to 22 persons.

2-3.1.11.1 Function: Conference room for company leadership, staff, and

visitors. Functions will include staff meetings, hearings, disciplinary sessions, and training.

2-3.1.11.2 Adjacency requirements: Adjacent to Admin Office or Waiting Area.

2-3.1.11.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate: Provide one marker board (minimum 8’-0” wide by 4’-0” high and one 8’-0” wide wall mounted pull-down projection screen.

2-3.1.11.4 Minimum Finishes:
Floor: Carpet
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-3.1.11.5 Other requirements: Door shall have classroom function (F84) lockset. Partitions shall have minimum STC rating of 55. Two combination data/telephone outlets located on opposite sides of the room, coordinated with furniture layout. Provide ceiling receptacle for projector. Provide conduit infrastructure for projector control cables from a laptop or desktop computer to ceiling projector. Coordinate exact location of computer with Contracting Officer.

2-3.1.13 Men’s Toilet. Provide one private toilet room. Room shall be accessed from Corridor.

2-3.1.13.1 Function: Men’s single-occupant toilet and lavatory, for use by staff and visitors.

2-3.1.13.2 Adjacency requirements: Adjacent to Administrative Area Corridor. Locate near Shower rooms and Women’s Toilet.

2-3.1.13.3 Furnishings/Fixtures/Equipment (FFE): Provide one floor mounted toilet, one wall-hung lavatory, mirror with shelf above lavatory, Paper towel dispenser/waste receptacle, soap dispenser, toilet tissue dispenser.

2-3.1.13.4 Minimum Finishes:
Floor: Porcelain tile, or ceramic tile.
Base: Porcelain tile, or ceramic tile.
Walls: Ceramic tile.
Ceiling: Painted gypsum wallboard, painted veneer plaster, or painted Portland cement plaster.

2-3.1.13.5 Other requirements: Door shall have privacy function (F76) lockset. Partitions shall have minimum STC rating of 49.

2-3.1.14 Women’s Toilet. Provide one private toilet room. Room shall be accessed from Corridor.

2-3.1.14.1 Function: Women’s single-occupant toilet and lavatory, for use by staff and visitors.

2-3.1.14.2 Adjacency requirements: Adjacent to Administrative Area Corridor. Locate near Shower rooms and Men’s Toilet.

2-3.1.14.3 Furnishings/Fixtures/Equipment (FFE): Provide one floor mounted toilet, one wall-hung lavatory, mirror with shelf above lavatory, Paper towel dispenser/waste receptacle, soap dispenser, sanitary napkin disposal, toilet tissue dispenser.

2-3.1.14.4 Minimum Finishes:
Floor: Porcelain tile, or ceramic tile.
Base: Porcelain tile, or ceramic tile.
Walls: Ceramic tile.
Ceiling: Painted gypsum wallboard, painted veneer plaster, or painted

Portland cement plaster.

2-3.1.14.5 Other requirements: Door shall have privacy function (F76) lockset. Partitions shall have minimum STC rating of 49.

2-3.1.15 OMITTED.

2-3.1.16 Janitor. Provide one, minimum area: 50 SF. Room shall be accessed from Administrative Area Corridor.

2-3.1.16.1 Function: Sink and storage of cleaning supplies, soap, and paper products.

2-3.1.16.2 Adjacency requirements: Adjacent to Administrative Area Corridor. Locate near Shower rooms and toilets.

2-3.1.16.3 Furnishings/Fixtures/Equipment (FFE): Provide one floor mounted mop sink, mop rack for three mops, and minimum linear 5’-0” of wall mounted stainless steel shelving.

2-3.1.16.4 Minimum Finishes:
Floor: Ceramic tile, or sealed concrete.
Base: Ceramic tile base or resilient cove base.
Walls: Painted water-resistant gypsum wallboard, or painted concrete masonry units.
Ceiling: painted gypsum wallboard, painted veneer plaster, or painted Portland cement plaster

2-3.1.16.5 Other requirements: Door shall have classroom function (F84) lockset.

2-3.1.17 IMS. Provide dedicated interior room for communication distribution equipment. Room shall not be combined with mechanical or electrical rooms. Room may be accessed from Corridor, or public unsecured corridor (if provided). Access will be limited to properly authorized personnel. Provide one main communication room; minimum size 7’-0” by 10’-0”. All spaces having telephone or computer data outlets shall be located to allow a maximum cable length of 295 feet between outlet and communication room. Provide floor openings and vertical shaft spaces as necessary.

2-3.1.17.1 Function: Telephone and data network support spaces for the COF.

2-3.1.17.2 Adjacency requirements: Locate to allow efficient distribution. Communication rooms shall not be used for storage or other purposes; access will be limited to properly authorized personnel.

2-3.1.17.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-3.1.17.4 Minimum Finishes:
Floor: Vinyl composition tile.
Base: Resilient cove base.
Walls: Painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units.
Ceiling: Painted gypsum wallboard, painted veneer plaster, or suspended acoustical panel ceiling.

2-3.1.17.5 Other requirements: Door shall have minimum 3’-0” wide door with storeroom function (F86) lockset.

2-3.2 COF Supply Areas. Provide one group of supply areas per company; locate on the ground floor. COF supply areas will be used to store, clean, and repair company operational equipment and weapons. Main entrance to supply areas will be from paved service area; service area will be used for loading company

equipment on and off of military vehicles including large trucks. Entrance shall be separate and distinct from the entrances to company administrative areas and to other COF supply areas. Exterior wall space above or adjacent to the entrance will be used to display company identification signage. Provide interior circulation to company administrative areas. Only able-bodied military personnel will occupy COF supply areas; handicapped accessibility is not required. Wire mesh partitions shall be used to separate storage areas from each other and from Equipment Maintenance Area. Provide the following areas for each company:

2-3.2.1 OMITTED.

2-3.2.2 OMITTED.

2-3.2.3 Unit Storage. Provide one area, minimum area: Small company 350 SF. Exterior entry shall open to paved service yard. Provide access from exterior service yard.

2-3.2.3.1 Function: Storage of miscellaneous items.

2-3.2.3.2 Adjacency requirements: Adjacent to exterior paved area for loading equipment on large vehicles. Locate adjacent to Equipment Maintenance Area.

2-3.2.3.3 Furnishings/Fixtures/Equipment:
2-3.2.3.4 Minimum Finishes:
Floor: Sealed concrete.
Base: None required.
Walls: Provide painted impact resistant gypsum wallboard, or painted concrete masonry units at exterior walls and walls separating Unit Storage from adjacent COFs.
Ceiling: Painted exposed structure, or wire mesh.

2-3.2.3.5 Other requirements: Provide a pair of 3’-0” wide hollow metal doors opening onto the paved service yard; doors shall have hold open devices and entry function (F82) locksets with auxiliary deadlocks (thumb turn inside, keyed cylinder outside), or function (F08) exit devices (if exit devices are required by code). Provide 3’-0” wide swinging door with keyed cylinder lock in wire mesh partition at Equipment Storage. Provide wire mesh ceiling or extend wire mesh partitions to underside of structure above. Two combination data/telephone outlets located on opposite sides of the room, coordinated with furniture layout.

2-3.2.4 OMITTED.

2-3.2.5 OMITTED.

2-3.2.6 OMITTED.

2-3.2.7 OMITTED.

2-3.3 COF Support Areas. Provide the following areas in each COF building. Only able-bodied personnel will occupy COF support areas; handicapped accessibility is not required.

2-3.3.1 Mechanical Room. Provide dedicated areas for mechanical equipment. Each company shall have independent operation and control of HVAC system for its own spaces, but mechanical equipment may serve more than one company, and mechanical rooms may be combined. Mechanical rooms shall not be used for storage or other purposes. Access will be limited to properly authorized personnel. Size and locate room(s) to allow equipment removal and maintenance. Also, in humid climates, the option exists to condition all inhabited portions of the COF including the supply and shower/locker areas. The mechanical room shall be sized accordingly to accommodate the increased mechanical equipment requirements. Provide floor openings and vertical shaft spaces as necessary.

2-3.3.1.1 Function: Spaces for HVAC, water heating, and other plumbing and mechanical equipment.

2-3.3.1.2 Adjacency requirements: Locate to allow efficient distribution. Mechanical rooms located on the ground floor shall have doors opening to the exterior. Mechanical rooms on second floor shall be accessed from corridors.

2-3.3.1.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-3.3.1.4 Minimum Finishes:
Floor: Sealed concrete.
Base: None required.
Walls: Painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units.
Ceiling: None required.

2-3.3.1.5 Other requirements: Doors shall have storeroom function (F86) locksets.

2-3.3.2 Electrical Room. Provide dedicated areas for electrical equipment. Each company shall have independent metering and control of the electrical system for its own spaces, but electrical equipment may serve more than one company, and electrical rooms may be combined. Electrical rooms shall not be used for storage or other purposes. Access will be limited to properly authorized personnel. Size and locate room(s) to allow equipment removal and maintenance. Provide floor openings and vertical shaft spaces as necessary.

2-3.3.2.1 Function: Spaces for electrical equipment.

2-3.3.2.2 Adjacency requirements: Locate to allow efficient distribution. Electrical rooms shall be accessed from the exterior or from corridors.

2-3.3.2.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-3.3.2.4 Minimum Finishes:
Floor: Sealed concrete.
Base: None required.
Walls: Painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units.
Ceiling: None required.

2-3.3.2.5 Other requirements: Electrical service to buildings shall be underground. Doors shall have storeroom function (F86) locksets.

2-3.3.3 OMITTED.

2-3.3.4 OMITTED.

2-3.4 Common Locker/Shower Areas. Provide one group of men’s and one group of women’s common locker/shower areas in the COF. Provide the quantity of lockers and fixtures indicated on the drawings. Soldiers will use locker rooms before and after physical training. Handicapped accessibility is not required. Provide entrance from interior of the COF. Entrances shall provide visual privacy into the spaces.

2-3.4.1 **Women’s Locker Room**. Provide one or more rooms, sized to accommodate the number of lockers and plumbing fixtures. Locker room shall be accessed from a common interior public corridor in the COF building. For egress purposes, the occupant load shall be equal to the higher of the following numbers: a) the number of lockers in the room, or b) the code determined number of occupants calculated by multiplying room area x the occupant load factor.

2-3.4.1.1 Function: Toilets, showers and lockers for female soldiers.

2-3.4.1.2 Adjacency requirements: Near Men’s Locker Room.

2-3.4.1.3 Furnishings/Fixtures/Equipment (FFE): Provide floor mounted toilets, wall-hung lavatories, and ceramic tile shower enclosures. Provide toilet partitions at each toilet. Provide the following toilet accessories: one mirror with shelf above each lavatory; one paper towel dispenser/waste receptacle per two lavatories (or fraction thereof); one soap dispenser per lavatory; one sanitary napkin disposal per toilet; one toilet tissue dispenser per toilet; one soap holder per shower; one shower curtain and rod at each shower and at each dressing compartment; two double pin robe hooks at each shower compartment; one robe hook on each toilet partition door; one sanitary napkin and tampon vending machine. Provide a minimum of 1’-0” of locker room bench per 2 lockers provided. Provide a wall mounted, hand held, electric hair dryer per each lavatory; mount adjacent to mirrors. Provide fire extinguishers in semi-recessed fire extinguisher cabinets to comply with applicable codes

2-3.4.1.4 Minimum Finishes:

Floor: porcelain tile, or ceramic tile.
Base: porcelain tile, or ceramic tile.
Walls: ceramic tile, or 1800 mm high ceramic tile wainscot with painted impact resistant gypsum wallboard or painted concrete masonry units above.
Ceiling: painted Portland cement plaster, or suspended cement board with synthetic finish system.

2-3.4.1.5 Other requirements:

2-3.4.2 **Men’s Locker Room**. Provide one or more rooms, sized to accommodate the number of lockers and plumbing fixtures. Locker room shall be accessed from a common interior public corridor in the COF building. For egress purposes, the occupant load shall be equal to the higher of the following numbers: a) the number of lockers in the room, or b) the code determined number of occupants calculated by multiplying room area x the occupant load factor.

2-3.4.2.1 Function: Toilets, showers and lockers for male soldiers.

2-3.4.2.2 Adjacency requirements: Near Women’s Locker Room.

2-3.4.2.3 Furnishings/Fixtures/Equipment (FFE): Provide floor mounted toilets, wall-hung lavatories, and ceramic tile shower enclosures in the quantities indicated on the drawings. Provide toilet partitions at each toilet. Provide the following toilet accessories: one mirror with shelf above each lavatory; one paper towel dispenser/waste receptacle per two lavatories (or fraction thereof); one soap dispenser per lavatory; one toilet tissue dispenser per toilet; one soap holder per shower; one shower curtain and rod at each shower; one double pin robe hook outside each shower; one robe hook on each toilet partition door. Provide 1’-0” of locker room bench per 2 lockers provided. Provide a wall mounted hand-held electric hair dryer for each lavatory; mount adjacent to mirrors. Provide fire extinguishers in semi-recessed fire extinguisher cabinets to comply with applicable codes

2-3.4.2.4 Finishes:

Floor: porcelain tile, or ceramic tile.
Base: porcelain tile, or ceramic tile.
Walls: ceramic tile, or 1800 mm high ceramic tile wainscot with painted impact resistant gypsum wallboard or painted concrete masonry units above.
Ceiling: painted Portland cement plaster, or suspended cement board with synthetic finish system.

2-3.4.2.5 Other requirements:

2-3.5 EXTERIOR EQUIPMENT WASH AREA. Provide paved exterior equipment wash areas near exterior entrance to the COF Supply Area. Provide 6 wash stations for small COFs. Each wash station will include a hose bib, catch basin, and drying rack (handrail).

2-3.5.1 Function: Exterior area for washing equipment prior to entering building.

2-3.5.2 Adjacency requirements: Locate in exterior service area, near entrance to COF Supply Area.

2-3.5.2 Furnishings/Fixtures/Equipment: Provide drainage assembly: Removable 3′-0″ by 3′-0″ aluminum or stainless steel grating, with non-slip surface, supported by concrete storm drainage inlet box. Filtered runoff shall be piped to storm drainage system. Provide freeze-proof wall hydrant with aerator nozzle mounted approximately 1′-4″ above grating, control valve mounted at 2′-8″ above pavement. Provide 3′-0″ long metal grab bar above control valve, mounted at 3′-3″above pavement. Top of grating and concrete structure shall align with adjacent concrete sidewalk. Provide concrete sidewalk between boot wash area and entrance sidewalk.

2.3.5.3 Minimum Finishes:
Refer to exterior building material requirements.

2-3.5.4 Other requirements: Provide adequate drainage away from building.

2-4 BATTALION HEADQUARTERS (HQ) FUNCTIONAL AND AREA REQUIREMENTS. The battalion HQ building(s) shall consist of administrative areas, classrooms, and support spaces. Provide facilities for one (1) small battalion. Maximum gross area shall not exceed area indicated on floor plans. Building to be one story in height. To the greatest extent possible, buildings shall be arranged to allow future reconfiguration of battalion sizes, and internal reorganization of office spaces: fixed elements such as toilets, equipment rooms, and core areas shall be located at the perimeter of administrative spaces; partitions separating administrative spaces should not be bearing walls.

Leadership and staff will manage the organization, receive visitors, and conduct the business of the battalion from the administrative areas (Command section, S-1, S-3, S-4, and PAC). Soldiers will visit the facility to conduct administrative business, attend training classes, or meet with support personnel. Military personnel will staff the facility; military and non-military personnel will visit the facility to meet with leadership or attend meetings. Although only able-bodied military personnel will be on staff, all spaces except shower rooms, and utility areas (janitor closets, mechanical, electrical, and communications) shall comply with handicapped accessibility requirements. Functions and areas are as follows:

2-4.1 Command Section. Provide one group of offices, with accompanying reception area, coffee area and private toilet. Command section shall be adjacent to, and accessed through, the S-1 Clerical/Central Files area.

2-4.1.1 Commanding Officer (CO). Provide one, minimum 225 SF. Room shall be accessed through the Reception Area. Occupants: 1, and occasional visitors.

2-4.1.1.1 Function: Private office for battalion commanding officer.

2-4.1.1.2 Adjacency requirements: Adjacent to Reception Area, Clerical /Central Files. Locate adjacent to or near command section toilet, coffee area, Executive Officer and Command Sergeant Major offices.

2-4.1.1.3 Furnishings/Fixtures/Equipment: Provide and design room to

accommodate one desk, one credenza, one bookcase, two legal-size four-drawer file cabinets, one conference table, six side chairs, and one desk chair.

2-4.1.1.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.1.1.5 Other requirements: Provide 3’-0” wide door into room; door shall have entry function (F81) lockset. Room shall have exterior window. Partitions shall have minimum STC rating of 55. Provide one combination data/telephone outlet on each wall and coordinate with furniture layout.

2-4.1.2 Executive Officer (XO). Provide one, minimum 105 SF. Room shall be accessed through the Reception Area. Occupants: one (1), and occasional visitors.

2-4.1.2.1 Function: Private office for battalion executive officer.

2-4.1.2.2 Adjacency requirements: Adjacent to Reception Area, Clerical /Central Files. Locate adjacent to or near command section toilet, coffee area, CO office and Command Sergeant Major office.

2-4.1.2.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate one desk, with return, one bookcase, two legal-size four-drawer file cabinets, one side chair, and one desk chair.

2-4.1.2.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.1.2.5 Other requirements: Provide 3’-0” wide door into room; door shall have entry function (F81) lockset. Room shall have exterior window. Partitions shall have minimum STC rating of 55. Provide one combination data/telephone outlet on each wall and coordinate with furniture layout.

2-4.1.3 Command Sergeant Major (CSM). Provide one, minimum 120 SF. Room shall be accessed through the Reception Area. Occupants: one (1), and occasional visitors.

2-4.1.3.1 Function: Private office for battalion command sergeant major.

2-4.1.3.2 Adjacency requirements: Adjacent to Reception Area, Clerical /Central Files. Locate adjacent to or near command section toilet, coffee area, CO office and Command Sergeant Major office.

2-4.1.3.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate one desk, with return, one bookcase, two legal-size four-drawer file cabinets, one side chair, and one desk chair.

2-4.1.3.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.1.3.5 Other requirements: Provide 3’-0” wide door into room; door shall have entry function (F81) lockset. Room shall have exterior window. Partitions shall have minimum STC rating of 55. Provide one combination data/telephone outlet on each wall and coordinate with furniture layout.

2-4.1.4 OMITTED.

2-4.1.5 Toilet/Shower Room. Provide one private toilet/shower room. Room shall be sized to comply with handicap accessibility requirements. Room shall be accessed from Clerical/Central Files area.

2-4.1.5.1 Function: single-occupant toilet and lavatory, and private shower and dressing room for use by command staff.

2-4.1.5.2 Adjacency requirements: Adjacent to Clerical/Central Files area. Locate near CO, XO, and CSM offices.

2-4.1.5.3 Furnishings/Fixtures/Equipment (FFE): Provide one floor mounted toilet, one wall-hung lavatory, mirror with shelf above lavatory, Paper towel dispenser/waste receptacle, soap dispenser, toilet tissue dispenser, and wall mounted grab bars at toilet. Provide one ceramic tile shower with rod and shower curtain. Shower shall have ceramic soap holder, wall mounted folding seat and wall mounted grab bar. Dressing area shall have bench, four towel/robe hooks, and wall mounted full-length mirror. Provide floor drain at dressing area; locate drain outside of circulation path.

2-4.1.5.4 Minimum Finishes:
Floor: Porcelain tile, or ceramic tile.
Base: Porcelain tile, or ceramic tile.
Walls: Ceramic tile.
Ceiling: Painted gypsum wallboard, painted veneer plaster, or painted Portland cement plaster. Ceiling at shower shall be Portland cement plaster.

2-4.1.5.5 Other requirements: Door shall have privacy function (F76) lockset. Arrange space so that door does not open directly into reception area. Partitions shall have minimum STC rating of 49. Provide one wall mounted telephone jack.

2-4.1.6 Break Area. Provide one. Area shall have countertop with kitchen sink; comply with handicap accessibility requirements.

2-4.1.6.1 Function: Sink and space for coffee maker and supplies; for use by command section staff and visitors.

2-4.1.6.2 Adjacency requirements: Adjacent to reception area. Locate near CO, XO, and CSM offices. Locate to avoid conflicts with circulation pattern.

2-4.1.6.3 Furnishings/Fixtures/Equipment (FFE): Provide minimum 4’-0” wide by 2’-0” deep plastic laminate countertop, with stainless steel kitchen sink. Provide minimum 4’-0” of wall cabinets; mounted to provide 2’-0” clearance above countertop. Provide dedicated electrical receptacle for coffee maker (coffee maker not in contract).

2-4.1.6.4 Minimum Finishes:
Floor: Porcelain tile, or ceramic tile.
Base: Porcelain tile, or ceramic tile.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.1.7 S-1 Officer. Provide one, minimum 120 SF. Room shall be accessed through the S-1 Clerical/Central Files area. Occupants: 1, and occasional visitors.

2-4.1.7.1 Function: Private office for S-1 officer.

2-4.1.7.2 Adjacency requirements: Adjacent to Clerical/Central Files. Locate near Command Section offices.

2-4.1.7.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate one desk, with return, one bookcase, two legal-size four-drawer file cabinets, one side chair, and one desk chair.

2-4.1.7.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.1.7.5 Other requirements: Provide 3′-0″ wide door into room; door shall have entry function (F81) lockset. Room shall have exterior window. Partitions shall have minimum STC rating of 55. Provide one combination data/telephone outlet on each wall and coordinate with furniture layout.

2-4.1.8 Clerical/Central Files. Provide one, minimum 445 SF. Clerical/Central Files shall be accessed from the lobby or corridor. The area shall have direct access to S-1 and Command Section private offices. Occupants: 7 staff and occasional visitors.

2-4.1.8.1 Function: Open office area for S-1 admin staff; access to S-1 and Command offices.

2-4.1.8.2 Adjacency requirements: Adjacent to lobby or corridor. Adjacent to S-1 and Command private offices.

2-4.1.8.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate seven (7) systems furniture workstations.

2-4.1.8.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.1.8.5 Other requirements: Provide 3′-0″ wide door into room; door shall have entry function (F81) lockset. Exterior window is desirable. Partitions shall have minimum STC rating of 49. Minimum ceiling height: 8′-8″. Provide one combination data/telephone outlet on each wall and coordinate with furniture and shelving layout.

2-4.2 OMITTED

2-4.3 OMITTED.

2-4.3.1 OMITTED.

2-4.3.2 OMITTED.

2-4.3.3 OMITTED.

2-4.3.4 OMITTED.

2-4.4 S-3 Section. Provide one group of offices. Locate S-3 Section adjacent to Command Section.

2-4.4.1 S-3 Officer. Provide one, minimum 150 SF. Room shall be accessed through the NCO Schools/NCO Air area. Occupants: 1, and occasional visitors.

2-4.4.1.1 Function: Private office for S-3 officer.

2-4.4.1.2 Adjacency requirements: Adjacent to NCO Schools/NCO Air.

2-4.4.1.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate one desk, with return, one bookcase, two legal-size four-drawer file cabinets, one side chair, and one desk chair.

2-4.4.1.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.4.1.5 Other requirements: Provide 3′-0″ (900 mm) wide door into room; door shall have entry function (F81) lockset. Room shall have exterior window. Partitions shall have minimum STC rating of 55. Provide one combination data/telephone outlet on each wall and coordinate with furniture layout.

2-4.4.2 Offices (A5-3 Officer, ABN Tech). Provide one space, each 110 SF. Area may be a private office or a systems furniture workstation accessed through the NCO Schools/NCO Air area. Occupants: one (1) in each office.

2-4.4.2.1 Function: Private office or systems furniture workstation for use by S-3 personnel.

2-4.4.2.2 Adjacency requirements: Adjacent to S-3 Clerical /Central Files.

2-4.4.2.3 Furnishings/Fixtures/Equipment: Provide and design each room to accommodate one desk, with return, one bookcase, two legal-size four-drawer file cabinets, one side chair, and one desk chair.

2-4.4.2.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.4.2.5 Other requirements: Exterior window is desirable. If drywall partitions are used, provide 3′-0″ wide door into each room; door shall have entry function (F81) lockset. Drywall partitions shall have minimum STC rating of 49. Provide one combination data/telephone outlet on each wall and coordinate with furniture layout.

2-4.4.4 Schools NCO/Air NCO. Provide one, minimum 620 SF. Schools NCO/Air NCO area shall be accessed from the lobby or corridor. The area shall have direct access to S-3 private offices. Occupants: eight (8) staff, and occasional visitors.

2-4.4.4.1 Function: Open office area for S-3 admin staff; access to S-3 offices.

2-4.4.4.2 Adjacency requirements: Adjacent to lobby or corridor. Locate adjacent to S-3 private offices.

2-4.4.4.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate eight (8) systems furniture workstations.

2-4.4.4.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.4.4.5 Other requirements: Provide 3′-0″ wide door into room; door shall have entry function (F81) lockset. Exterior window is desirable. Partitions shall have minimum STC rating of 49. Minimum ceiling height: 8′-8″ (2642 mm). Provide one combination data/telephone outlet on each wall and coordinate with

furniture layout.

2-4.4.5 S-3 NCOIC Office. Provide one space, minimum 150 SF. Area may be a private office or a systems furniture workstation accessed through the NCO Schools/NCO Air area. Occupants: one (1).

2-4.4.5.1 Function: Private office or systems furniture workstation for use by S-3 personnel.

2-4.4.5.2 Adjacency requirements: Adjacent to S-3 Clerical /Central Files.

2-4.4.5.3 Furnishings/Fixtures/Equipment: Provide and design each room to accommodate one desk, with return, one bookcase, two legal-size four-drawer file cabinets, one side chair, and one desk chair.

2-4.4.5.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.4.5.5 Other requirements: Exterior window is desirable. If drywall partitions are used, provide 3’-0” wide door into each room; door shall have entry function (F81) lockset. Drywall partitions shall have minimum STC rating of 49. Provide one combination data/telephone outlet on each wall and coordinate with furniture layout.

2-4.4.6 S-3 Storage. Provide minimum 100 SF of general storage space. Storage rooms will be accessed from the NCO Schools/NCO Air area.

2-4.4.6.1 Function: Storage of supply items for the S-3 Section.

2-4.4.6.2 Adjacency requirements: Adjacent to corridor.

2-4.4.6.3 Furnishings/Fixtures/Equipment: None.

2-4.4.6.4 Minimum Finishes:
Floor: Sealed concrete.
Base: Resilient cove base.
Walls: Painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units.
Ceiling: Suspended acoustical panel ceiling.

2-4.4.6.5 Other requirements: Door shall have storeroom function (F86) lockset.

2-4.4.7 Waiting. Provide one area, approximately 50 SF incorporated into the Corridor. Occupants: Two or more visitors; additional visitors (e.g. those waiting to attend a large meeting in the conference room) will wait in the adjacent corridor.

2-4.4.7.1 Function: Waiting and reception area for battalion soldiers and visitors. Main control point for access to NCO Schools/NCO Air.

2-4.4.7.2 Adjacency requirements: Adjacent to, or very close to, entry vestibule; reception desk should be easily seen by visitors entering the building. Waiting Area is open to Corridor.

2-4.4.7.3 Furnishings/Fixtures/Equipment (FFE): Provide two side chairs. Provide one 4’-0” high by 6’-0” wide wall mounted bulletin board.

2-4.4.7.4 Minimum Finishes:
Match Corridor finishes.

2-4.4.7.5 Other requirements: Provide one combination data/telephone outlet on

each wall and coordinate with furniture layout.

2-4.4.8 Secured Documents Vault. Provide one room, minimum 170 SF. Vault shall be certified for open storage of secret material. Class M Modular construction is acceptable. Provide Class 5 vault door with day gate. To allow future flexibility in reconfiguring offices areas, locate vault on the perimeter of the administrative areas. Occupants: one (1).

2-4.4.8.1 Function: Storage of documents classified 'secret' and below. Provides workspace for one clerk.

2-4.4.8.2 Adjacency requirements: Adjacent to and accessed from NCO Schools/NCO Air area.

2-4.4.8.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate one desk, with return, and one desk chair.

2-4.4.8.4 Minimum Finishes:
Floor: vinyl composition tile.
Base: Resilient base.
Walls: Painted or pre-finished modular vault panels.
Ceiling: Painted or pre-finished modular vault panels.

2-4.4.8.5 Other requirements:

2-4.5 OMITTED.

2-4.6 S-4 Section. Provide one group of offices. Locate S-4 Section adjacent to PAC Section.

2-4.6.1 S-4 Officer. Provide one, minimum 110 SF. Room shall be accessed through the Clerical/Central Files area. Occupants: one (1), and occasional visitors.

2-4.6.1.1 Function: Private office for S-4 officer.

2-4.6.1,2 Adjacency requirements: Adjacent to Clerical /Central Files.

2-4.6.1.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate one desk, with return, one bookcase, two legal-size four-drawer file cabinets, one side chair, and one desk chair.

2-4.6.1.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.6.1.5 Other requirements: Provide 3'-0" wide door into room; door shall have entry function (F81) lockset. Room shall have exterior window. Partitions shall have minimum STC rating of 55. Provide one combination data/telephone outlet on each wall and coordinate with furniture layout.

2-4.6.2 Offices (S-4 NCOIC, S-4 Tech). Provide two, each 110 SF. Area may be a private office or a systems furniture workstation accessed through the Clerical/Central Files area. Occupants: one (1) in each office.

2-4.6.2.1 Function: Private office or systems furniture workstation for use by S-4 personnel.

2-4.6.2.2 Adjacency requirements: Adjacent to Clerical /Central Files.

2-4.6.2.3 Furnishings/Fixtures/Equipment: Provide and design each area to

accommodate one desk, with return, one bookcase, two legal-size four-drawer file cabinets, one side chair, and one desk chair.

2-4.6.2.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.6.2.5 Other requirements: Exterior window is desirable. If drywall partitions are used, provide 3′-0″ wide door into each room; door shall have entry function (F81) lockset. Drywall partitions shall have minimum STC rating of 49. Provide one combination data/telephone outlet on each wall and coordinate with furniture layout.

2-4.6.3 Clerical/Central Files. Provide one, minimum 820 SF. S-4 Clerical/Central Files shall be accessed from the lobby or corridor. The area shall have direct access to S-4 private offices. Occupants: eight (8) staff, and occasional visitors.

2-4.6.3.1 Function: Open office area for S-4 admin staff; access to S-4 offices.

2-4.6.3.2 Adjacency requirements: Adjacent to lobby or corridor. Locate adjacent to S-4 private offices.

2-4.6.3.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate eight (8) systems furniture workstations.

2-4.6.3.4 Minimum Finishes:
Floor: carpet
Base: resilient base
Walls: painted gypsum wallboard or painted veneer plaster
Ceiling: suspended acoustical panel ceiling

2-4.6.3.5 Other requirements: Provide 3′-0″ wide door into room; door shall have entry function (F81) lockset. Exterior window is desirable. Partitions shall have minimum STC rating of 49. Minimum ceiling height: 8′-8″. Provide one combination data/telephone outlet on each wall and coordinate with furniture layout.

2-4.6.4 Storage. Provide one, minimum 270 SF of general storage space. Room shall be under control of, and accessed from, Clerical/Central Files area. Room shall be located on exterior wall, with exterior doors leading to paved sidewalk.

2-4.6.4.1 Function: Storage of for S-4 Section.

2-4.6.4.2 Adjacency requirements: Adjacent to S-4 Clerical/Central Files and building exterior.

2-4.6.4.3 Furnishings/Fixtures/Equipment: 25′-0″ of linear shelving.

2-4.6.4.4 Minimum Finishes:
Floor: Sealed concrete.
Base: Resilient cove base.
Walls: Painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units.
Ceiling: Suspended acoustical panel ceiling.

2-4.6.4.5 Other requirements: Provide 3′-0″ wide door into room from S-4/Clerical/Central Files; provide pair of 3′-0″ wide out swinging hollow metal exterior doors. Doors shall have storeroom function (F86) locksets; exterior doors shall have hold open devices and auxiliary deadlocks (thumb turn inside,

keyed cylinder outside). Provide minimum 8′-0″ wide exterior sidewalk between exterior doors and the main sidewalk leading to main entry area.

2-4.7 Personnel Administration Center (PAC) Section. Provide one group of offices. Locate PAC Section adjacent to S-4 Section.

2-4.7.1 OMITTED.

2-4.7.2 OMITTED.

2-4.7.3 PAC Office. Provide one; 680 SF. PAC Office shall be accessed from the lobby of corridor. The area shall have direct access to PAC private offices. Occupants: eight (8) staff, and occasional visitors.

2-4.7.3.1 Function: Open office area for PAC admin staff; access to PAC offices and Mail Room.

2-4.7.3.2 Adjacency requirements: Adjacent to lobby or corridor. Locate adjacent to PAC private offices and Message Mail Center.

2-4.7.3.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate eight (8) systems furniture workstations.

2-4.7.3.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.7.3.5 Other requirements: Provide 3′-0″ wide door into room; door shall have entry function (F81) lockset. Exterior window is desirable. Partitions shall have minimum STC rating of 49. Minimum ceiling height: 8′-8″. Provide one combination data/telephone outlet on each wall and coordinate with furniture layout.

2-4.7.4 Mail Room. Provide one. Room shall be sized to allow access to all rear-loading mailboxes and parcel lockers. Provide minimum 6′-0″ clear between back of mailboxes and any obstructions. To comply with force protection minimum standards, avoid routing key utilities (including communications, fire detection and alarm, water mains, etc.) through or on common walls to mail room.

2-4.7.4.1 Function: Secure area for sorting incoming mail and distributing to rear-loading mailboxes.

2-4.7.4.2 Adjacency requirements: Near PAC Office. To comply with force protection minimum standards, locate mailroom on perimeter of building.

2-4.7.4.3 Furnishings/Fixtures/Equipment: Provide plastic laminate-faced sorting counter (built-in casework) 2′-0″ deep x minimum 6′-0″ long x 3′-0″ high. Provide 180 United States Postal Service approved mailboxes and one outgoing mail collection box.

2-4.7.4.4 Minimum Finishes:
Floor: vinyl composition tile, or sealed concrete
Base: resilient cove base
Walls: painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units
Ceiling: painted gypsum wallboard, painted veneer plaster, or painted underside of precast concrete structural floor planks.

2-4.7.4.5 Other requirements: Provide 3′-0″ wide door into room; door shall have mortise dormitory function (F13) lockset. Room shall be handicap accessible. Design shall comply with United States Postal Service regulations.

2-4.7.5 Mailbox Access Area. Provide an area from which users may access mailboxes to pick up their mail. Access may be from a covered exterior area or from an interior lobby. Mailboxes will be loaded from the interior mail room.

2-4.7.5.1 Function: Mail pickup area for residents.

2-4.7.5.2 Adjacency requirements: Adjacent to mail room. Located on ground floor, near CQ station and entry lobby.

2-4.7.5.3 Furnishings/Fixtures/Equipment:

2-4.7.5.4 Finishes: Interior: match entry lobby. Exterior: refer to exterior building material requirements.

2-4.7.5.5 Other requirements: For exterior location provide minimum 6’-0” of covered area in front of mailboxes (recess, building overhang, etc.) for weather protection; it is preferable to provide continuous covered area between mailbox access area and main entry. Provide adequate drainage at exterior areas.

2-4.7.6 Awards Clerk. Provide one, 90 SF. Area may be a private office or a systems furniture workstation accessed through the PAC Office area. Occupants: one (1).

2-4.7.6.1 Function: Private office or systems furniture workstation for use by PAC personnel.

2-4.7.6.2 Adjacency requirements: Adjacent to PAC Office.

2-4.7.6.3 Furnishings/Fixtures/Equipment: Provide and design area to accommodate one desk, with return, one bookcase, two legal-size four-drawer file cabinets, one side chair, and one desk chair.

2-4.7.6.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.7.6.5 Other requirements: Exterior window is desirable. If drywall partitions are used, provide 3’-0” wide door into each room; door shall have entry function (F81) lockset. Drywall partitions shall have minimum STC rating of 49. Provide one combination data/telephone outlet on each wall and coordinate with furniture layout.

2-4.7.7 Clerk. Provide one, 145 SF. Area may be a private office or a systems furniture workstation accessed through the PAC Office area. Occupants: one (1).

2-4.7.7.1 Function: Private office or systems furniture workstation for use by PAC personnel.

2-4.7.7.2 Adjacency requirements: Adjacent to PAC Office.

2-4.7.7.3 Furnishings/Fixtures/Equipment: Provide and design area to accommodate one desk, with return, one bookcase, two legal-size four-drawer file cabinets, one side chair, and one desk chair.

2-4.7.7.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.7.7.5 Other requirements: Exterior window is desirable. If drywall partitions are used, provide 3’-0” wide door into each room; door shall have entry function (F81) lockset. Drywall partitions shall have minimum STC rating of 49. Provide one combination data/telephone outlet on each wall and coordinate with furniture layout.

2-4.7.8 S-1 NCOIC. Provide one, 140 SF. Area may be a private office or a systems furniture workstation accessed through the PAC Office area. Occupants: one (1).

2-4.7.8.1 Function: Private office or systems furniture workstation for use by PAC personnel.

2-4.7.8.2 Adjacency requirements: Adjacent to PAC Office.

2-4.7.8.3 Furnishings/Fixtures/Equipment: Provide and design area to accommodate one desk, with return, one bookcase, two legal-size four-drawer file cabinets, one side chair, and one desk chair.

2-4.7.8.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.7.8.5 Other requirements: Exterior window is desirable. If drywall partitions are used, provide 3’-0” wide door into each room; door shall have entry function (F81) lockset. Drywall partitions shall have minimum STC rating of 49. Provide one combination data/telephone outlet on each wall and coordinate with furniture layout.

2-4.7.9 Ommitted

2-4.7.10 PAC Storage. Provide one, minimum 150 SF of general storage space. Room shall be under control of, and accessed from, PAC Office.

2-4.7.10.1 Function: Storage of for S-4 Section.

2-4.7.10.2 Adjacency requirements: Adjacent to PAC Office.

2-4.7.10.3 Furnishings/Fixtures/Equipment:

2-4.7.10.4 Minimum Finishes:
Floor: Sealed concrete.
Base: Resilient cove base.
Walls: Painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units.
Ceiling: Suspended acoustical panel ceiling.

2-4.7.10.5 Other requirements: Provide 3’-0” wide door into room from PAC Office; Doors shall have storeroom function (F86) lockset.

2-4.7.11 Break Area. Provide one. Area shall have countertop with kitchen sink; comply with handicap accessibility requirements.

2-4.7.11.1 Function: Sink and space for coffee maker and supplies; for use by staff and visitors.

2-4.7.11.2 Adjacency requirements: Adjacent to corridor area. Locate near general office area.

2-4.7.11.3 Furnishings/Fixtures/Equipment (FFE): Provide minimum 6’-0” wide by 2’-0” deep plastic laminate countertop, with stainless steel kitchen sink.

Provide minimum 6′-0″ of wall cabinets; mounted to provide 2′-0″ clearance above countertop. Provide dedicated electrical receptacle for coffee maker (coffee maker not in contract).

2-4.7.11.4 Minimum Finishes:
Floor: Porcelain tile, or ceramic tile.
Base: Porcelain tile, or ceramic tile.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.7.11.5 Other requirements:

2-4.8 OMITTED.

2-4.9 Classroom Areas. Provide one group of classrooms and adjacent Resource Center for each battalion. Classrooms and Resource Center will be accessed from the lobby or main corridor. The three classrooms shall be divided by operable panel partitions and provided with appropriate entrances and exits to allow two or three rooms to be combined for use as one large classroom.

2-4.9.1 Classrooms. Provide three (3) classrooms, minimum area: 880 SF each. Each classroom shall be located to allow direct access from the main corridor/lobby, and direct egress out of the building. In a two-story building, classrooms will be located on the first floor. Occupants: up to sixty (60) persons in each classroom

2-4.9.1.1 Function: Soldier training and other meetings.

2-4.9.1.2 Adjacency requirements: Adjacent to lobby or main corridor, adjacent to exterior wall. Locate all three classrooms together to allow use as larger room. Locate near toilets.

2-4.9.1.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate the following furnishings: 15 Training tables with 2 stacking chairs per table per classroom. Walls separating classrooms shall be operable panel partitions with minimum STC rating of 47. Provide one marker board minimum 12′-0″ wide by 4′-0″ high and one 8′-0″ wide wall mounted pull-down projection screen Provide data jacks around room near training tables. Provide one data jack per seat. Provide one additional telephone jack near instructor’s position. Provide one CATV jack on wall where television bracket is installed. Provide ceiling receptacle for projector. Provide conduit infrastructure for projector control cables from a laptop or desktop computer to ceiling projector. Coordinate exact location of computer with Contracting Officer.

2-4.9.1.4 Minimum Finishes:
Floor: VCT.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling, and painted gypsum wallboard or painted veneer plaster.

2-4.9.1.5 Other requirements: Provide 3′-0″ wide doors into room; doors shall have classroom function (F84) lockset. Permanent partitions shall have minimum STC rating of 49. Minimum ceiling height: 8′-8″ at perimeter, 10′-0″ in main portion of room.

2-4.9.2 Resource Center. Provide one, minimum area 180 SF. Provide direct access from the main corridor/lobby. Occupants: up to ten (10) persons.

2-4.9.2.1 Function: Soldier training and other meetings.

2-4.9.2.2 Adjacency requirements: Adjacent to lobby or main corridor. Locate near classrooms and toilets.

2-4.9.2.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate the following furnishings: one (1) 30″ by 60″ worktables, eight (8) stacking chairs and four (4) bookcases (3 shelf). Partitions shall have minimum STC rating of 49. Provide one marker board minimum 8′-0″ wide by 4′-0″ high and one 8′-0″ wide wall mounted pull-down projection screen.

2-4.9.2.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling, and painted gypsum wallboard or painted veneer plaster.

2-4.9.2.5 Other requirements: Provide 3′-0″ wide doors into room; doors shall have classroom function (F84) lockset. Permanent partitions shall have minimum STC rating of 49. Minimum ceiling height: 8′-8″ at perimeter, 10′-0″ in main portion of room. Provide one combination data/telephone outlet for each desk. Coordinate locations with furniture layout.

2-4.10 Battalion HQ Common Areas. Provide the following areas in building. Handicapped accessibility is required in all common areas except janitor closet and shower rooms.

2-4.10.1 Lobby and Corridors. Provide as required to allow access to building spaces. Unless otherwise required, minimum width of main corridors providing access to classroom area shall not be less than 8′-0″; minimum width of other main corridors shall not be less than 6′-0″. Corridor width shall comply with applicable egress codes.

2-4.10.1.1 Function: Entry to the facility; egress and circulation through the building.

2-4.10.1.2 Adjacency requirements: Adjacent to main entrances and vertical circulation. It is preferable to enter lobby/main corridor from two sides of the building.

2-4.10.1.3 Furnishings/Fixtures/Equipment: Provide wall mounted electric water cooler. Provide mechanical and electrical systems to comply with applicable codes. Provide fire extinguishers in semi-recessed fire extinguisher cabinets to comply with applicable codes. Provide interior signage to identify major spaces. Provide two (2) recessed trophy cases, minimum size: 8′-0″ wide by 5′-0″ high by 1′-4″ deep; provide one recessed building directory near each main entrance. Provide one 6′-0″ wide by 4′-0″ high wall mounted bulletin board.

2-4.10.1.4 Minimum Finishes:
Floor: Porcelain tile.
Base: Porcelain tile, stained wood base, or resilient cove base.
Walls: Painted gypsum wallboard, or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.10.1.5 Other requirements: Handicap accessible.

2-4.10.2 Entry Vestibules. Provide at each exterior entrance to lobby/main corridor area.

2-4.10.2.1 Function: Primary entry point into the facility; weather protection for interior spaces.

2-4.10.2.2 Adjacency requirements: Adjacent to lobby/main corridor.

2-4.10.2.3 Furnishings/Fixtures/Equipment: Provide recessed entry mat full depth of vestibule by full width of doors.

2-4.10.2.4 Minimum Finishes:
Floor: Porcelain tile, or quarry tile.
Base: Porcelain tile or quarry tile.
Walls: Match exterior wall finish material, or painted gypsum wallboard, or painted veneer plaster
Ceiling: Painted gypsum wallboard, painted veneer plaster, or painted Portland cement plaster.

2-4.10.2.5 Other requirements: Handicap accessible.

2-4.10.3 Duty Officer. Provide one, minimum 95 SF. Room shall be accessed from the main lobby. Occupants: one (1).

2-4.10.3.1 Function: Duty Officer will provide physical security of the building, and visual control of the entrances and lobby, as well as functioning as an information source for visitors.

2-4.10.3.2 Adjacency requirements: Adjacent to lobby and main entrance; near PAC Clerical /Central Files.

2-4.10.3.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate one desk, with return, one legal-size four-drawer file cabinet, one side chair, and one desk chair.

2-4.10.3.4 Minimum Finishes:
Floor: Porcelain Tile.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.10.3.5 Other requirements: Provide duty officer counter (built-in casework) minimum 6’-0” long separating the Duty Officer room from the lobby/corridor. The counter on the corridor side shall be minimum 10’-0” wide by 3’-4” high by 12” deep. Provide one combination data/telephone outlet for each desk. Coordinate locations with furniture layout.

2-4.10.4 Men’s Toilet/Shower/Locker Room. Provide one room, with quantity of lockers and plumbing fixtures indicated. Toilet/shower/locker room will be accessed from corridor. Arrange entrance to provide visual privacy.

2-4.10.4.1 Function: Restroom/shower/lockers for male occupants and battalion staff.

2-4.10.4.2 Adjacency requirements: Adjacent to corridor.

2-4.10.4.3 Furnishings/Fixtures/Equipment: Provide 2 lavatories, 3 floor mounted toilets, and 3 wall-hung urinals. Lavatories in gang toilets shall be countertop mounted. Countertops shall be plastic laminate or solid surfacing material. Provide toilet partitions at each toilet, and urinal partitions between urinals. Provide the following toilet accessories: one mirror with shelf above each wall-hung lavatory; one continuous mirror full width of countertop at countertop mounted lavatories; one paper towel dispenser/waste receptacle per toilet room; one soap dispenser per lavatory; one toilet tissue dispenser per toilet; one robe hook on each toilet partition door. Provide two (2) ceramic tile showers with rod and shower curtain. Showers shall have ceramic soap holder and wall mounted grab bars. Dressing areas shall have bench, two towel/robe hooks, and wall mounted full-length mirror. Provide floor drain at dressing area; locate drain outside of circulation path.

2-4.10.4.4 Minimum Finishes:
Floor: Porcelain tile, or ceramic tile.
Base: Porcelain tile, or ceramic tile.
Walls: Ceramic tile, or 6’-0” high ceramic tile wainscot with painted impact resistant gypsum wallboard or painted concrete masonry units

above.
Ceiling: Painted Portland cement plaster, or painted gypsum wallboard or veneer plaster.

2-4.10.4.5 Other requirements: Provide eighteen (18) lockers and 1’-0” of locker room bench per 2 lockers provided.

2-4.10.5 Women’s Toilet/Shower/Locker Room. Provide one room, with quantity of lockers and plumbing fixtures indicated. Toilet/shower/locker room will be accessed from corridor. Arrange entrance to provide visual privacy.

2-4.10.5.1 Function: Restroom/shower/lockers for female occupants and battalion staff.

2-4.10.5.2 Adjacency requirements: Adjacent to corridor.

2-4.10.5.3 Furnishings/Fixtures/Equipment: Provide 2 lavatories and 3 floor mounted toilets. Lavatories in gang toilets shall be countertop mounted. Countertops shall be plastic laminate or solid surfacing material. Provide toilet partitions at each toilet. Provide the following toilet accessories: one continuous mirror full width of countertop at countertop mounted lavatories; one paper towel dispenser/waste receptacle per toilet room; one soap dispenser per lavatory; one toilet tissue dispenser per toilet; one sanitary napkin disposal at each toilet; one robe hook on each toilet partition door. Provide one ceramic tile shower with rod and shower curtain. Shower shall have ceramic soap holder and wall mounted grab bar. Dressing area shall have bench, two towel/robe hooks, and wall mounted full-length mirror. Provide floor drain at dressing area; locate drain outside of circulation path.

2-4.10.5.4 Minimum Finishes:
Floor: Porcelain tile, or ceramic tile.
Base: Porcelain tile, or ceramic tile.
Walls: Ceramic tile, or 6’-0” high ceramic tile wainscot with painted impact resistant gypsum wallboard or painted concrete masonry units above.
Ceiling: Painted Portland cement plaster, or painted gypsum wallboard or veneer plaster.

2-4.10.5.5 Other requirements: Provide twelve (12) lockers and 1’-0” of locker room bench per 2 lockers provided.

2-4.10.6 Legal Clerk. Provide one, 100 SF. Area may be a private office or a systems furniture workstation accessed through the Corridor. Occupants: one (1).

2-4.10.6.1 Function: Private office or systems furniture workstation for use by PAC personnel.

2-4.10.6.2 Adjacency requirements: Adjacent to Corridor.

2-4.10.6.3 Furnishings/Fixtures/Equipment: Provide and design area to accommodate one desk, with return, one bookcase, two legal-size four-drawer file cabinets, one side chair, and one desk chair.

2-4.10.6.4 Minimum Finishes:
Floor: Carpet.
Base: Resilient base.
Walls: Painted gypsum wallboard or painted veneer plaster.
Ceiling: Suspended acoustical panel ceiling.

2-4.10.6.5 Other requirements: Exterior window is desirable. If drywall partitions are used, provide 3’-0” wide door into each room; door shall have entry function (F81) lockset. Drywall partitions shall have minimum STC rating of 49. Provide one combination data/telephone outlet for each desk. Coordinate locations with furniture layout.

2-4.10.7 Janitor. Provide one; minimum area: 30 SF. Room shall be accessed from the corridor.

2-4.10.7.1 Function: Sink and storage of cleaning supplies, soap, paper products.

2-4.10.7.2 Adjacency requirements: Near toilets and shower rooms.

2-4.10.7.3 Furnishings/Fixtures/Equipment: Provide one floor mounted mop sink, mop rack for two mops, and minimum 6’-0” linear of wall mounted stainless steel shelving.

2-4.10.7.4 Minimum Finishes:
Floor: Sealed concrete.
Base: Resilient cove base, or ceramic tile base.
Walls: Painted water-resistant gypsum wallboard, or painted concrete masonry units.
Ceiling: Painted gypsum wallboard, painted veneer plaster, or painted Portland cement plaster.

2-4.10.7.5 Other requirements: Door shall have classroom function (F84) lockset.

2-4.10.8 Storage. Provide minimum 100 SF of general storage space. Storage rooms will be accessed from the classrooms.

2-4.10.8.1 Function: Storage of supply items for the battalion.

2-4.10.8.2 Adjacency requirements: Adjacent to corridor.

2-4.10.8.3 Furnishings/Fixtures/Equipment: None.

2-4.10.8.4 Minimum Finishes:
Floor: Sealed concrete.
Base: Resilient cove base.
Walls: Painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units.
Ceiling: Suspended acoustical panel ceiling.

2-4.10.8.5 Other requirements: Door shall have storeroom function (F86) lockset.

2-4.11 Battalion HQ Support Areas. Provide the following areas in each battalion HQ building. Handicapped accessibility is not required in mechanical rooms, electrical and communications closets. All other support spaces shall be handicap accessible.

2-4.11.1 Mechanical Room. Provide dedicated areas for mechanical equipment. Mechanical room shall not be used for storage or other purposes. Access will be limited to properly authorized personnel. Size and locate room to allow equipment removal and maintenance. Provide floor openings and vertical shaft spaces as necessary.

2-4.11.1.1 Function: Spaces for HVAC, water heating, and other plumbing and mechanical equipment.

2-4.11.1.2 Adjacency requirements: Locate to allow efficient distribution. Mechanical rooms located on the ground floor shall have doors opening to the exterior. Mechanical rooms on second floor shall be accessed from corridors.

2-4.11.1.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-4.11.1.4 Minimum Finishes:
Floor: Sealed concrete.

Base: Resilient cove base, or none.
Walls: Painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units.
Ceiling: None required.

2-4.11.1.5 Other requirements: Doors shall have storeroom function (F86) locksets.

2-4.11.2 Electrical Room. Provide dedicated areas for electrical equipment. Electrical rooms shall not be used for storage or other purposes. Access will be limited to properly authorized personnel. Size and locate room to allow equipment removal and maintenance.

2-4.11.2.1 Function: Spaces for electrical equipment.

2-4.11.2.2 Adjacency requirements: Locate to allow efficient distribution. Electrical rooms shall be accessed from the exterior or from corridors.

2-4.11.2.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-4.11.2.4 Minimum Finishes:
Floor: Sealed concrete.
Base: Resilient cove base.
Walls: Painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units.
Ceiling: None required.

2-4.11.2.5 Other requirements: Electrical service to buildings shall be underground. Doors shall have storeroom function (F86) locksets.

2-4.11.3 Telecom Closet. Provide dedicated room(s) for communication distribution equipment. Room shall not be combined with mechanical or electrical rooms. Provide one (1) main communication room; minimum size 10’-0” by 11’-0”. Provide additional communication rooms as needed; all spaces having telephone or computer data outlets shall be located to allow a maximum cable length of 295 feet between outlet and communication room. Minimum dimensions of secondary communication rooms shall be 7’-0” by 10’-0”. Provide floor openings and vertical shaft spaces as necessary. Rooms shall be accessed from corridors. Access will be limited to properly authorized personnel.

2-4.11.3.1 Function: Distribution areas for telephone, data network, and cable television.

2-4.11.3.2 Adjacency requirements: Adjacent to corridor. Locate to allow efficient distribution.

2-4.11.3.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-4.11.3.4 Minimum Finishes:
Floor: Sealed Concrete.
Base: Resilient cove base.
Walls: Painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units.
Ceiling: Painted gypsum wallboard, painted veneer plaster, or suspended acoustical panel ceiling.

2-4.11.3.5 Other requirements: Door shall have minimum 3’-0” wide door with storeroom function (F86) lockset. Provide three 4” empty conduits connecting vertically stacked communication rooms.

2-4.11.5 Vending. Provide minimum one area on ground floor. Additional vending areas with ice machine-dispensers may be provided at upper floors as a proposed betterment over the minimum requirement.

2-4.11.5.1. Function: Space for soft drink and snack vending machines, and ice machine-dispenser.

2-4.11.5.2 Adjacency requirements: Near entry lobby.

2-4.11.5.3 Furnishings/Fixtures/Equipment: Provide one ice cube machine-dispenser designed for hotel ice bucket filling, capable of producing minimum 250 lbs. of regular ice cubes in 24 hours, with 180 lb. storage capacity. Provide ice machine manufacturer's automatic cleaning system to clean and sanitize the water distribution system of the machine at scheduled intervals. Ice machine shall be Energy Star compliant. Design the space to accommodate two full-size soft drink and snack vending machines (government furnished, government installed). Vending machines will not require plumbing connections.

2-4.11.5.4 Minimum Finishes:
Match entry lobby or adjacent corridor or breezeway.

2-4.11.5.5 Other requirements: First floor vending areas shall be handicap accessible. Provide floor drain near ice machines; locate drain outside of traffic area. If door is provided, door shall have classroom function (F84) lockset. Provide one combination data/telephone outlet for each desk. Coordinate locations with furniture layout.

2-4.11.6 Storage. Provide minimum 30 SF of general storage space. Storage rooms will be accessed from the corridor.

2-4.11.6.1 Function: Storage of supply items for the battalion.

2-4.11.6.2 Adjacency requirements: Adjacent to corridor.

2-4.11.6.3 Furnishings/Fixtures/Equipment: None.

2-4.11.6.4 Minimum Finishes:
Floor: Sealed concrete.
Base: Resilient cove base.
Walls: Painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units.
Ceiling: Suspended acoustical panel ceiling.

2-4.11.6.5 Other requirements: Door shall have storeroom function (F86) lockset.

2-5 OMITTED

CHAPTER 3

SITE PLANNING AND DESIGN

3-1 SCOPE OF WORK. This project consists of constructing Living Units for a minimum 488 and a maximum of 492 enlisted personnel, one (1) small Company Operations Facility (COF), one (1) Community Building, and one (1) Battalion Headquarters Facility.(BHQ) Imaginative site design is encouraged, however, the site boundaries are fixed. A preferred site layout is shown on the provided RFP drawings. Based on the graphic and narrative descriptions of site opportunities and constraints provided, the offeror shall verify that the site meets the program requirements.

3-2 SITE VERIFICATION. Graphic and narrative descriptions of site opportunities and constraints have been provided. 10% general site demolition, layout, grading & drainage (showing existing topography), and utility plans are being provided for each site. Each offeror shall verify that the site meets the program requirements. The offeror shall perform a detailed site analysis to expand site layout 10% design. The analysis results shall be documented in a written and graphic summary of site opportunities and constraints for Unaccompanied Enlisted Personnel Housing (UEPH) Units, Company Operations Facilities (COF), Community Buildings, and Battalion Headquarters Facilities (BHQ) and meeting Ft. Benning’s Installation Design Guide. Parking and vehicle access to all paved areas shall be documented to meet the design vehicles maneuvering requirements. If the site layout is found to be unsuitable by an offeror, the offeror shall provide an alternate layout solution for this site.

3-3 EXISTING CONDITIONS. The Government shall provide the offeror a digital and hard copy of the topographic survey for the three (3) sites. It is the offeror’s responsibility to verify the Government-furnished survey and obtain all additional survey information that may be required for a completed design and construction project. Any discrepancies, which are found in the Government furnished survey, shall be brought to the immediate attention of the Contracting Officer for clarification.

3-3.1 STATEMENT OF WORK. Maps of the existing utility distribution systems including commercially owned utilities (i.e.: telephone, cable television, gas, etc.) are provided. The locations of existing utilities shown on the site survey and utility maps are approximate only. The offeror shall scan the construction site with electromagnetic or sonic equipment and mark the surface of the ground where existing underground utilities are discovered. Immediately contact the Contracting Officer if actual conditions vary from the topographic survey.

3-4 EXCAVATION PERMITS. The contractor shall obtain approved station excavation permits prior to digging. Request for excavation permits shall be in accordance with installation policies.

3-5 SITE DEVELOPMENT PLAN. Provide a site development plan that shows the spatial and functional arrangement of all Unaccompanied Enlisted Personnel Housing (UEPH) Units, Company Operations Facilities (COF), Community Buildings, and Battalion Headquarters Facilities requirements. The plan should ensure an economical, compatible and functional land use development that utilizes the advantages of the site, fosters visual order, and provides a sense of community when constructing UEPH Units. The site development plan shows consideration for the site opportunities and constraints, program requirements, and specific site design criteria and guidance provided. These recommendations of the Installation Design Guidelines and the Real Property Master Plan should be addressed. The site development plan should show the layout as based upon the contractor’s building floor plans.

3-5.1 LAND USE. The plan for the area should reflect an optimum balance

of floor area, open space, and pedestrian and vehicular circulation. The plan should show an efficient, organized and economical land use arrangement that is compatible and functional. This plan should show the relationship of the area to adjacent land uses.

3-5.2 OMITTED

3-5.3 BUFFER AREA. Provide appropriate buffer areas to separate and visually isolate the Unaccompanied Enlisted Personnel Housing (UEPH) Units from the Company Operations Facilities (COF). Greater emphasis should be used to foster a sense of community within the UEPH Complex, while separating the “work” areas from the “home” areas to the greatest extent possible.

3-5.4 ORIENTATION. Orientation and location of the Unaccompanied Enlisted Personnel Housing (UEPH) shall be as shown on the provided site layout plan.

3-5.5 ORIENTATION. Orientation and location of the Company Operations Facility (COF) shall be as shown on the provided site layout plan.

3-5.6 ORIENTATION. Orientation and location of the Battalion Headquarters Facility (BHQ) shall be as shown on the provided site layout plan.

3-5.7 ORIENTATION. Orientation and location of the Community Building Facilities shall be as shown on the provided site layout plan.

3-6 GRADING AND DRAINAGE. The grading should maintain existing topography while recognizing standard gradients. There should be a smooth transition of graded areas into the existing natural site. The plan should reflect selective site clearing that preserves groups of trees. Grading and drainage systems should manage site runoff to maintain rate of flow and quantity to pre-construction levels, or reduce site runoff where possible, in order to meet all Federal, State, and Local requirements. This may be accomplished through stormwater detention in the areas indicated on the contract drawings, or other suitable areas; or by other methods. If stormwater detention is determined to be required by the Contractor, the detention area shall be designed to be dry within 72 hours of a rainfall event. The principles of positive drainage should be applied to control the conditions that remove rainfall away from facilities and functions. Site designs should seek to minimize the disturbance of land, and utilize natural drainage paths where possible. See Chapter 4 of the Statement of Work for stormwater management systems requirements. Finish floor elevations of the Unaccompanied Enlisted Personnel Housing (UEPH) Units shall be equal to each other for each site. Finish floor elevations for the Unaccompanied Enlisted Personnel Housing (UEPH) at the Hospital Site shall be approximately 1 story lower than those of the Company Operations Facilities (COF) and the Community Building such that an overhead pedestrian bridge from the finished floor of the COF connects to the second floor of the UEPH. Any structure that lies within a floodplain shall have a finish floor elevation set above the base elevation for the 100-year flood determined by FEMA. Finish floor elevations for buildings shall be 6 inches (150 mm) above the highest point of the adjacent outside finished grade. Drainage shall be diverted away from buildings at a minimum slope of 5 percent for the first 10 feet (3 m) away from the building, then a slope of at least 2 percent thereafter. Grassed slopes shall not exceed a 3:1 horizontal to vertical. Where greater slopes are required by the RFP (adjacent to Community Building) or as part of the offeror’s design, slope paving or erosion control blankets shall be installed. Access road and connecting street grades shall not be less than 0.5 percent or exceed 5.0 percent in the longitudinal directions. Slopes in parking areas shall be a minimum of 1.0 percent in both longitudinal and transverse directions. Slopes in parking areas and sidewalks/service drives shall have a maximum slope of 5.0 percent. A topographic survey of the project sites is provided and shall be used as part of the original proposal submittal. Any additional survey,

testing or mapping required for the design or construction of the project shall be the responsibility of the Contractor. For land disturbing activities of 1.0 acres and greater, a NPDES Permit shall be obtained. In addition to the NPDES permit, all necessary permits shall be obtained by the Contractor and complied with throughout all phases of construction. Any violation to such permits may result in the immediate shutdown of work until corrective measures have been taken at the Contractor's expense. Additionally, minimize the impact of construction activities on drainage and prevent loss of soils by water and wind erosion. Designs that improve on existing water quality by incorporating sustainable design principles are encouraged, consistent with budget constraints and activity requirements.

3-7 GENERAL SITE DESIGN CRITERIA. The following are to be used as guidance for site design. Minimum spacing between buildings shall be 33 feet (10.0 meters). Analyze the existing site conditions (i.e.; land use, community facilities, off-site workplaces, etc.) and incorporate a site design that results in an aesthetically pleasing and functional design. The site design shall address the following: orientation, site organization, spatial balance, character and scale, compatibility, life safety, circulation systems, view of the site, buffer zones, wind and noise control, land forms (i.e.; mounds, swales, ponds, etc.), lawns and shaded areas, vehicular access, parking spaces for staff, residents, handicapped, visitors, service, and motorcycles, service entrances, bus routes, connecting walks, utility corridors, fire protection access, site lighting, site furnishings, mechanical enclosures, trash collection dumpsters with trash enclosures, landscaping, and etc. The number of parking spaces (handicapped, motorcycle, and POV) shall meet the number shown on the 10% drawings. Handicap accessible routes shall be provided in accordance witb Chapter 1 of the Statement of Work, and the 10% Drawings.

3-7.1 Site Design Criteria For UEPH Facilities. In addition to the general site design criteria defined above, UEPH Facilities shall include the following: at the Dixie Road site, four (4) picnic shelters in the area enclosed by the Unaccompanied Enlisted Personnel Housing (UEPH) units.

3-7.2 OMITED

3-7.3 OMITTED

3-7.4 Normal Pedestrian Sidewalks shall be concrete and have a minimum width of 6 feet (1.8 m) except where indicated otherwise. and a minimum thickness of 4 inches (100 mm). Sidewalks adjacent to asphalt pavement will have a turned down slab/curb 18" thick in accordance with Ft. Benning Installation Design Guidelines. Sidewalks/Service Drives shall be concrete and have a minimum width of 10 feet (3.0 m) and a minimum thickness of 7 inches (180 mm). Contraction joints shall be spaced at the width of the sidewalk on centers and expansion joints shall be placed at 50 feet (15.3 m) and at the intersection of walks and curbs. Ramps for handicapped individuals shall be provided at intersections by depressing street curbs and adjacent sidewalk.

3-7.5 Streets and Parking areas shall be provided with combination concrete curb and gutter or sidewalks with a turned down slab/curb. Combination concrete curb and gutter shall be 24 inches (610 mm) wide. Curbs shall be depressed at entrances to driveways with gradients providing positive drainage.

3-7.6 Contractor shall provide a minimum of 1 trash collection dumpster pad for the each Barracks (6 total), and a minimum of 1 trash collection dumpster pad for the Battalion Headquarters. Approach drives to all dumpster pads shall be concrete of width equal to the width of the concrete dumpster pad and a length equal to the minimum shown on the 10% drawings.

3-7.7 Street and traffic control signs and building name signs shall

conform to requirements of the Base and shall match adjacent area signs. Street names, if needed, will be provided by the Contracting Officer. See sign information in the IDG.

3-8 CIRCULATION AND PARKING. The vehicular and pedestrian circulation system shall promote safe, efficient movement of vehicles and pedestrians within the site area. Site design shall facilitate pedestrian traffic between facilities, and minimize the need for vehicular traffic within the complex. Vehicular traffic shall be routed around the outer perimeter of UEPH facility areas to the greatest extent possible. The vehicular and pedestrian circulation system should maintain the maximum separation of vehicles and pedestrians. Safe circulation systems have a clear hierarchy of movement, lead to a clear destination, and do not interrupt other functions. The following criteria shall be considered for designing streets and drives for vehicles and pedestrians:

3-8.1 Vehicular Circulation. Vehicular circulation layout is determined by applying the design vehicle templates to the site design. The passenger car class includes passenger cars and light delivery trucks, such as vans and pick-ups. The passenger car template is equivalent to the non-organizational - privately owned vehicle (POV). The truck class template includes single-unit trucks, recreation vehicles, buses, truck tractor/semi-trailer combinations, and trucks or truck tractors with semi-trailers in combination with full trailers. Templates showing the turning movements for design vehicles are provided by the American Association of State Highway and Transportation Officials (AASHTO). Obtain templates and utilize them during the design of the facility. Provide the vehicle clearances that are required to meet traffic safety for emergency vehicles, service vehicles, and moving vans. Site entrances and site drive aisles shall include required traffic control signage. Maximize spacing between drives, incorporate right-angle turns, and limit the points of conflicts between traffic. Service vehicles and fire trucks shall use the sidewalk/service drives as well the asphalt drive west of the Barracks at the Hospital site for vehicular access to the complex. Removable and lockable bollards shall be placed at the entry points to the complex from asphalt pavement. Removable bollards shall be 150 millimeter (6-inch) diameter and spaced at 5 feet on center across the sidewalk/service drives. The maximum longitudinal slopes on the sidewalk/service drives shall be 5%, however, 3% or flatter is preferred. Maximum cross slopes shall be 2%. Fire truck access shall meet all the requirements of NFPA 1.

3-9 DEFINITIONS.

3-9.1 Entrance and Intersection Design. For site entrances and drive aisle intersections, provide "T" intersection offsets of at least 125 ft (38.1 m). The preferred angle of intersection is right angle (90 degrees). Radii shall meet the recommendation of the Installation Design Guidelines and 3-8.1 of the Statement of Work.

3-9.2 Drive Aisle Design. Drive Aisle width shall be a minimum of 25 ft. Separation, corner clearances, and sight distance are established when the design vehicle templates and speed limits are selected.

3-9.3 Privately Owned Vehicle (POV) Parking. POV stalls without vehicle overhang shall be a 9 ft by 19 ft. POV stalls with overhang shall be 9 ft by 17 ft.

3-9.4 Handicap Accessible Parking. Handicap Accessible Parking stalls shall be 13 ft by 19 ft. One (1) ea. minimum Van Accessible Parking stall and aisle shall be provided for each eight (8) Handicap Accessible Parking stalls at each site.

3-9.5 Motorcycle Parking. Motorcycle Parking Areas shall be concrete pavement as shown on 10% Drawings.

3-9.4 Pedestrian Circulation. Pedestrian circulation should be safe and separate from vehicle circulation. Provide good sidewalk layout to connect all building entrances with parking and site facilities and existing walks. Pedestrian circulation should be based on pedestrian desired lines of walking between site facilities and existing walks. Desired lines should be weighted to predict the most traveled routes. These routes would require paving. Topography and vegetation can be used to reinforce a sense of movement. Design pedestrian concentration areas with adequate paved area.

3-11 LANDSCAPE PLANTING PLAN. Landscaping shall be in accordance with the Ft. Benning Installation Design Guide. The offeror shall obtain and use the services of a qualified (State certified) landscape architect, experienced in site planning and planting design. A complete, integrated landscape-planting plan shall be provided for the overall project. The design shall reflect appropriate groupings, foundation plantings, and street tree plantings to define the open spaces to ensure a complete landscaped project. Choose plant materials on the basis of plant hardiness, climate, soil conditions, low maintenance, and quality. Selected plant materials shall be easily maintained and tolerant of the specific site conditions. Incorporate sustainable design principles into the selection of plants. Planting or seeding shall occur only during periods when beneficial results can be obtained. Mulch shall be shredded pinebark or shredded hardwood mulch with a minimum thickness of 4-inches. Metal edging shall be used between plant beds and turf. All landscape plantings shall conform to AT/FP requirements.

3-11.1 Trees, Shrubs, and Ground Cover. Plant varieties shall be nursery grown or plantation grown stock. They shall be grown under climatic conditions similar to those in the locality of the project.

3-11.1.1 Quality. Well-shaped, well-grown, vigorous, healthy plants having healthy and well-branched root systems shall be provided. Plants shall be free from disease, harmful insects and insect eggs, sunscald injury, disfigurement, and abrasion. Plants shall be provided that are typical of the species or variety.

3-11.1.1.1 Shade and Flowering Trees. A height relationship to caliper shall be provided. Height of branching should bear a relationship to the size and variety of tree specified, and with the crown in good balance with the trunk. Trees shall not be "poled" or the leader removed.

3-11.1.1.1.1 Single Stem. Trunk shall be reasonably straight and symmetrical with crown and have a persistent main leader. Minimum caliper shall be 2.5-3”.

3-11.1.1.1.2 Multi-Stem. All countable stems, in aggregate, shall average the size specified. To be considered a stem, there should be no division of the trunk, which branches more than 6 inches (150 mm) from the ground level. Minimum caliper shall be 1.5-2” for each stem and there shall be between 3 to 4 stems.

3-11.1.1.1.3 Specimen. A plant shall be provided that is well branched and pruned naturally according to the species. The form of growth desired, which may not be in accordance with natural growth habit, shall be as indicated.

3-11.1.1.2 Deciduous Shrub. Plants shall be provided having the height and number of primary stems as recommended by the agency having jurisdiction. An acceptable plant shall be well shaped with sufficient well-spaced side branches recognized by the trade as typical for the variety grown in the region. Minimum container size shall be 3-gallon for small shrubs and 7 gallon for large shrubs.

3-11.1.1.3 Coniferous Evergreen. Provide the height-to-spread ratio as recommended by the agency having jurisdiction. Trees shall not be "poled" or

the leader removed. An acceptable plant shall be exceptionally heavy, well shaped and trimmed to form a symmetrical and tightly knit plant. The form of growth desired shall be as indicated. Plant shall be balled & burlap or container grown with a minimum container size of 7-gallon.

3-11.1.1.4 Broadleaf Evergreen. Provide the ratio of height-to-spread as recommended by the agency having jurisdiction. An acceptable plant shall be well shaped and recognized by the trade as typical for the variety grown in the region. Minimum container size shall be 3-gallon for small shrubs and 7-gallon for large shrubs.

3-11.1.1.5 Ground Cover. Plants shall be provided with the minimum number of runners and length of runner as recommended by the agency having jurisdiction. Plants shall be furnished that have heavy, well developed, and balanced top with vigorous well developed root system, and shall be furnished in containers. Minimum container size shall be 1-gallon.

3-11.1.2 Measurement. Plant measurements shall be in accordance with the agency having jurisdiction.

3-11.1.3 Percolation Test. Test for percolation shall be done to determine positive drainage of plant pits and beds. All soil and drainage conditions detrimental to the growth of plant material shall be identified and a proposal correcting the conditions shall be submitted.

3-11.1.4 Soil Test. A soil test shall be performed for pH, chemical analysis, and mechanical analysis to establish the quantities and type of soil amendments required to meet local growing conditions for the type and variety of plant material specified.

3-11.1.5 Installation. Verify the location of underground utilities. When obstructions below ground or poor drainage affect the planting operation, proposed adjustments to plant location, type of plant, and planting method or drainage correction shall be submitted. The plant material shall be installed during appropriate planting times and conditions recommended by the trade for the type and variety of plant material specified. Plant pits shall be excavated and backfilled as recommended by the agency having jurisdiction. The planting operation shall be performed only during periods when beneficial results can be obtained. When special conditions warrant a variance to the planting operations, proposed planting times should be submitted.

3-11.1.6 Pruning. The total amount of foliage shall be pruned by one-fourth to one-third on installed trees and shrubs to compensate for loss of roots and transplanting shock. The typical growth habit of individual plants shall be retained. Trees shall not be poled or the leader removed, nor shall the leader be pruned or "topped off."

3-11.1.7 Maintenance During Planting Operation. Installed plants shall be maintained in a healthy growing condition. Maintenance operations shall begin immediately after each plant is installed and shall continue until the plant establishment period commences.

3-11.1.8 Plant Establishment Period. On completion of the last day of the planting operation, the plant establishment period for maintaining installed plants in a healthy growing condition shall commence and shall be in effect for the remaining contract time period not to exceed 12 months. When the planting operation extends over more than one season or there is a variance to the planting times, the plant establishment periods shall be established for the work completed.

3-11.1.9 Maintenance During Establishment Period. The maintenance of plants shall include straightening plants, tightening stakes and guying material, repairing tree wrap, protecting plant areas from erosion, maintaining erosion material, supplementing mulch, accomplishing wound

dressing, removing dead or broken tip growth by pruning, maintaining edging of beds, checking for girdling of plants and maintaining plant labels, watering, weeding, removing and replacing unhealthy plants.

3-11.1.10 Unhealthy Plant. A plant shall be considered unhealthy or dead when the main leader has died back, or 25 percent of the crown is dead. Determine the cause for an unhealthy plant. Unhealthy or dead plants shall be removed immediately and shall be replaced as soon as seasonal conditions permit in accordance with the following warranty paragraph.

3-11.1.11 Warranty. Furnished plant material shall be guaranteed to be in a vigorous growing condition for a period of 12 months regardless of the contract time period. A plant shall be replaced one time under this guarantee. Transplanting existing plants requires no guarantee.

3.11.2 Turf. Turf consists of seed, sod, and sprigs.

3.11.2.1 Seed. State approved seed of the latest season's crop shall be provided in the original sealed packages bearing the producer's guaranteed analysis for percentages of mixture, purity, germination, hard seed, weed seed content, and inert material. Labels shall be in conformance with applicable State seed laws. Seed mixtures shall be proportioned by weight. Weed seed shall not exceed one percent by weight of the total mixture.

3-11.2.2 Sod. State approved sod shall be provided as classified by applicable State laws. Each individual sod section shall be of a size to permit rolling and lifting without breaking. The sod shall be relatively free of thatch, diseases, nematodes, soil-borne insects, weeds or undesirable plants, stones larger than 2 inches (50 mm) in any dimension, woody plant roots, and other material detrimental to a healthy stand of turf. Sod that has become dry, moldy, or yellow from heating, or has irregular shaped pieces of sod and torn or uneven ends shall be rejected. Sod shall be machine cut to a uniform thickness of 1-1/4 inches (32 mm) within a tolerance of 1/4 inch (6 mm) excluding top growth and thatch. Measurement for thickness shall exclude top growth and thatch. The limitation of time between harvesting and placing sod shall be 36 hours.

3-11.2.3 Sprig Quality. The cultivars shall be provided as healthy living stems, stolons, or rhizomes with attached roots, including two or three nodes, and shall be from 4 to 6 inches (100 to 150 mm) long, without adhering soil. Sprigs shall be provided which have been grown under climatic conditions similar to those in the locality of the project. Sprigs shall be obtained from heavy and dense sod, free from weeds or other material detrimental to a healthy stand of turf. Sprigs that have been exposed to heat or excessive drying shall be rejected. The time limitation between harvesting and placing sprigs shall be 24 hours.

3-11.2.4 Soil Test. A soil test shall be performed for pH, chemical analysis, and mechanical analysis to establish the quantities and type of soil amendments required to meet local growing conditions for the type and variety of turf specified.

3-11.2.5 Temporary Turf Cover. When there are contract delays in the turfing operation or a quick cover is required to prevent erosion, the areas designated for turf shall be seeded with a temporary seed. When no other turfing materials have been applied, the quantity of one-half of the required soil amendments shall be applied and the area tilled.

3-11.2.6 Final Turf. The turf shall be installed during appropriate planting times and conditions recommended by the trade for the type and variety of turf specified. The turf operations shall be performed only during periods when beneficial results can be obtained. Drainage patterns shall be maintained. The turf shall be installed by using the methods as recommended by the trade for the type and variety of turf specified. Immediately after

turfing, the area shall be protected against traffic or other use by erecting barricades and providing signage as required. The turf establishment period for establishing a healthy stand of turf shall begin on the first day of work under the turfing contract and shall end three months after the last day of the turfing operation. An unsatisfactory stand of turf shall be repaired as soon as turfing conditions permit.

3-11.2.7 Satisfactory Stand of Turf.

3-11.2.7.1 Seeded Lawn Area. A satisfactory stand of turf from the seeding operation for a lawn area is defined as a minimum of 15 grass plants per square foot (160 grass plants per square meter). Bare spots shall be no larger than 6 inches (150 mm) square. The total bare spots shall not exceed two (2) percent of the total seeded area.

3-11.2.7.2 Seeded Field Area. A satisfactory stand of turf from the seeding operation for a field area is defined as a minimum of 10 grass plants per square foot (100 grass plants per square meter). The total bare spots shall not exceed two (2) percent of the total seeded area.

3-11.2.7.3 Sodded Area. A satisfactory stand of turf from the sodding operation is defined as living sod uniform in color and texture. Bare spots shall be no larger than 2 inches (50 mm) square.

3-11.2.7.4 Sprigged Area. A satisfactory stand of turf from the sprigging operation is defined as a minimum of 2 sprigs per square foot (20 sprigs per square meter). Bare spots shall be no larger than 9 inches (225 mm) square. The total bare spots shall not exceed two (2) percent of the total sprigged area.

3-11.2.8 Maintenance During Establishment Period. The maintenance of the turfed areas shall include eradicating weeds, eradicating insects and diseases, protecting embankments and ditches from erosion, maintaining erosion control materials and mulch, protecting turf areas from traffic, mowing, watering, post-fertilization, and replacing unsatisfactory turf areas.

3-12 SPRINKLER AND/OR IRRIGATION SYSTEM. Site irrigation will be provided in accordance with the Ft. Benning Installation Design Guide (IDG). Shrub and groundcover beds shall be drip irrigated and zoned separately from lawn areas. A Rain Sensor shall be used in conjunction with the irrigation system to shut-off irrigation during periods of rain. Coordinate metering and backflow preventer location with landscape design.

CHAPTER 4

SITE ENGINEERING

4-1 Foundation and Geotechnical Design

4-1.1 Government Investigation. The Government has performed geotechnical explorations at the project site. The locations of and drilling logs of soil test borings are shown on the drawings included with this RFP. A report of the explorations and analysis is included in Appendix D. This “preliminary” report provides an overview of the soils and geologic conditions, and is furnished for informational and proposal purposes and not for final design; however, the recommendations provided in the report shall be considered to be minimum requirements that shall be incorporated into the final design and construction of the project.

4-1.2 Contractor Investigation. The offeror to whom this contract is awarded, shall employ the services of a consulting professional geotechnical engineer experienced in geotechnical engineering, who shall be responsible for determining site specific geotechnical conditions. The site-specific geotechnical conditions, together with recommendations specific to the geotechnical design and construction requirements for the proposed project, shall be addressed in a “final” geotechnical report prepared by the consulting geotechnical engineer. The geotechnical report shall include, but not be limited to, the following:

a. Description of the site as to topography, existing surface conditions, and any other features that might influence the design.

b. Description of the investigation program and the methods used. Information obtained from the explorations performed by the Government can be used, supplemented by the minimum numbers of additional explorations specified below, and any further investigations as deemed necessary by the consulting geotechnical engineer. Subsurface exploration may include soil test borings, cone penetrometer test (CPT) soundings, and test pits. The investigation, sampling, and identification of subsurface materials shall be in accordance with methods and procedures described in ASTM D 420. Soil investigation and sampling by hollow-stem auger borings shall be in accordance with AASHTO T 251. Drilling and sampling with the "Standard Penetration Test" (SPT) split-barrel sampler shall be in accordance with ASTM D 1586. The procedure shall be modified to provide for continuous standard penetration and sampling tests for the initial 12 feet of the boring. Beginning at a depth of 15 feet below grade, penetration and sampling tests every 5 feet and at each change in soil stratification or soil consistency are recommended. The location of the groundwater table, if encountered, shall be measured and recorded after 24 hours. If drilling techniques that prevent determination of the groundwater table are used, install at least one piezometer for every five explorations to measure the depth to the groundwater table. Classification of soils shall be in accordance with ASTM D 2487 or D 2488, as appropriate. Cone penetrometer test (CPT) soundings shall be in accordance with ASTM D 5778. Undisturbed soil sampling shall be in accordance with ASTM D 1587.

The following minimum numbers of explorations (soil test borings and/or CPT soundings) shall be performed by the Contractor.

Feature	**Minimum Number of Borings**
Battalion Headquarters Building	**3**
Company Operations Facility (COF)	**3**
Community Building	**4**

Barracks Buildings (Hospital Site), per each building	**5**
Barracks Buildings (Dixie Road Site), per each wing	**4**
Roads	**1 per each 250 feet**
Parking Areas	**1 per each 5,000 square feet**

The depths of explorations shall be of sufficient depth to evaluate bearing capacity and settlement potential. However, beneath structures, explorations shall extend to a minimum depth of 25 feet below existing ground surface or below final design grade, whichever is lower. Beneath roads, hardstands, and/or parking areas explorations shall extend to a minimum depth of 5 feet below existing ground surface or below final design grade, whichever is lower.

The Contractor shall be responsible for all applicable clearances and permits and for the protection of all underground utilities from damage during field investigations. Utility clearances and digging permits are required prior to drilling on the installation. Procurement of the clearances and permits shall be coordinated through the Contracting Officer.

c. Discussion of the subsurface soil conditions and stratigraphy and groundwater conditions.

d. Location plan of explorations.

e. Logs of explorations. Indicate on logs complete information on who, when, and how made. Show soil description, standard penetration resistance, N, or other type resistance, topsoil, water level observations, surface elevation and datum, and any other information gathered during the exploration.

Exploration locations shall be surveyed. Surveyed elevations and coordinates shall be provided on each exploration log. Elevations shall be in accordance with NGVD 29 and horizontal coordinates shall be in accordance with NAD 83 (Georgia State Plane Coordinates); accuracy to be plus or minus 3 feet horizontal and plus or minus 0.5 foot vertical.

Soil test boring logs shall show graphical representation of soil strata, location of each change by depth or elevation, location of each sample by depth or elevation, and number of blows for each 6 inches and amount of soil recovered for each sample location. Logs shall also indicate type and size of casing, type of drilling fluid, and type and size of drill bit. If no casing is used, indicate size of borehole. Indicate when boring is terminated due to refusal.

Soil classifications for final logs shall be based on the field classifications, the results of tests, and further inspection of samples in the laboratory by geotechnical engineers.

Include a chart illustrating the soil classification criteria and the terminology and symbols used on the boring logs.

Locations of all explorations shall be shown on the grading and drainage plates of the submittal drawings. Logs of all explorations shall be included on plate(s) of the submittal drawings. Locations of all explorations, logs of all explorations, and results of all laboratory testing shall be included on drawing sheets in the final "As-Built" drawings. If necessary, the logs and test results can be scanned onto the drawing sheets.

f. Laboratory test data shall be included in detail. Laboratory testing

shall be in accordance with the requirements set forth in EM 1110-2-1906, Laboratory Soils Testing, EM 1110-2-1909, Calibration of Laboratory Soils Testing Equipment, and/or applicable ASTM standards. All laboratory testing shall be performed by a commercial testing laboratory which has been validated by the Engineer Research and Development Center Materials Testing Center (MTC) under the Corps of Engineers laboratory inspection and validation program. The laboratory shall be listed on the list of Corps of Engineers Validated Laboratories.

g. Notation of the location of strata containing organic materials, weak materials or other inconsistencies that might affect engineering conclusions.

h. Pavement design, or if not responsible for pavement design, pavement structural design data, including design California Bearing Ratio (CBR) and modulus of subgrade reaction.

i. Discussion of the facilities under design and recommendations regarding foundation support of the structures and slabs on grade, including soil bearing pressures, bearing elevations, foundation design recommendations and anticipated settlements, including total and differential.

j. Anticipation of, and management of, groundwater.

k. Discussion of site preparation and the effect of weather and construction equipment on soils during construction.

l. Areas requiring undercutting and removal of unsatisfactory soils.

m. Types of materials to be excavated and possible uses and/or disposition of the materials.

n. Fill and backfill placement procedures, including recommended moisture content range, and types of compaction equipment.

o. Results of pH tests and salinity tests and resistivity measurements, as appropriate, necessary to design corrosion control and grounding systems. The raw field data shall be included in the report.

p. Lateral earth pressures and pressure coefficients (active, passive, and at rest) and internal friction angles for design of walls below grade, including backfill, compaction and subdrainage, and their requirements.

q. Results of laboratory soils testing, to include classification and compaction tests, on representative samples of materials to be excavated at the project sites that will be reused as structural fill and proposed borrow material (both on and/or off the installation). Testing shall be as specified in paragraph 4.1.8.1. If borrow material is to be obtained from sources off the installation, provide the name and location of the borrow source.

r. Provide calculations that support the recommendations for the foundation design. The calculations may be included in an appendix to the report. Calculations shall include loadings, capacities, safety factors, settlement analysis, bearing analysis, and references from which calculations are based. Any graphs and formulas shall be clearly indicated along with derivation of curve slopes and data derived from laboratory testing. Computer outputs shall also be included.

Three copies of the geotechnical report shall be submitted with the 60 percent submittal. If revisions are made to the 60 percent design submittal that require revisions to the geotechnical report, a revised report (three copies) shall be provided with the final design submittal. In addition, the pavement design and/or pavement structural design data shall also be submitted with the 100 percent Site/Utility Design Submittal.

4-1.3 Certification. The successful proposer shall be fully responsible for acceptable foundations, pavements and other geotechnical aspects for the proposed project. The proposer and his professional geotechnical engineering consultant shall certify in writing that the design of the project has been developed consistent with the site specific geotechnical conditions. The certification shall be stamped by the consulting professional geotechnical engineer and shall be submitted with the 100 percent design submittal.

4-1.4 Foundation Design.

4-1.4.1 General. Given the proposed sites and the proposed structures, it is anticipated that shallow spread footings can be used for support of the proposed buildings.

4-1.4.2 Allowable Bearing Pressure. The consulting geotechnical engineer shall determine allowable soil bearing pressure. An adequate level of protection against structural failure due to uniform and/or differential foundation settlement or general shear shall be provided.

4-1.4.3 Footing Dimensions. Column footings and load-bearing wall footings shall have minimum dimensions of 30 inches and 24 inches, respectively, and shall be located at a minimum depth of 24 inches below finish floor or finish grade, as appropriate. Non load-bearing wall footings shall have a minimum width of 18 inches and shall be located at a minimum depth of 18 inches below finish floor or finish grade, as appropriate.

4-1.4.4 Foundations Over Utility Lines. No foundation shall be constructed over existing or new water, sewer, steam, natural gas, chilled water, industrial waste and foundation drain lines. All foundations shall be stepped down to an elevation below the pipe invert elevation, or the utility line relocated.

4-1.4.5 Additional Requirements. Thickened slabs shall be required for walls and partitions which have a vertical load of 300 plf to 1100 plf. A separate isolated wall footing shall be used for walls having a vertical load in excess of 1100 plf.

4-1.4.6 Segmental Concrete Block Retaining Wall. The design of any segmental block retaining walls shall be in accordance with National Concrete Masonry Association (NCMA) SRW Design Manual for Segmental Retaining Walls, latest edition, or the Federal Highway Administration (FHWA) manual Mechanically Stabilized Earth Walls and Reinforced Soil Slopes: Design and Construction Guidelines. Only one method shall be followed for the complete design, including reinforcement design strength, layout, stability calculations, and seismic effects. The segmental retaining wall system shall be designed under the direction of, and be signed by, a professional engineer.

4-1.5 Site Classification for Seismic Design. The project site shall be classified as Site Class D for the purpose of determining maximum considered earthquake spectral response accelerations S_{ms} and S_{ml} in accordance with Corps of Engineers Technical Instruction “TI809-04, Seismic Design for Buildings.”

4-1.6 Slabs on Grade. All interior slabs on grade, including storage rooms, shall be underlain by a moisture vapor barrier consisting of lapped polyethylene sheeting having a minimum thickness of 6 mils and a minimum 4-inch thick capillary water barrier of open graded, washed pea gravel, or crushed stone. Concrete slabs shall be jointed around columns and along supported walls to minimize cracking due to possible differential movement.

4-1.7 Soil Compaction.

4-1.7.1 Soil compaction shall be achieved by equipment approved by the consulting geotechnical engineer. Soil materials shall be moistened or aerated as necessary to provide the moisture content that will readily

facilitate obtaining the compaction specified with the compaction equipment used.

Each layer of structural fill and subgrades shall be compacted to the following minimum percent of the modified Proctor maximum density, determined in accordance with ASTM D 1557:

Beneath structures and building slabs, to 5 feet beyond structure limits, around footings and in trenches	90 percent
Beneath streets and paved areas, except top 12 inches in fill and top 8 inches in native soil	90 percent
Beneath streets and paved areas, top 12 inches in fill and top 8 inches in native soil	95 percent
Beneath shoulders	90 percent
Beneath sidewalks and grassed areas	85 percent
Base course under paved areas	100 percent

The requirements shall be verified or modifications recommended by the consulting professional geotechnical engineer in the report wherever engineering, soils, or climatic factors indicate the necessity. Any modification to the specified compaction requirements shall require the approval of the Contracting Officer.

4-1.7.2 The Contractor, with recommendations and input from his consulting geotechnical engineer, shall edit and submit the following UFGS Specifications:

02300A	Earthwork
02315A	Excavation, Filling and Backfilling for Buildings
02316A	Excavation, Filling and Backfilling for Utilities

Compaction control using one- and two-point compaction tests with a family of curves as described in the Appendix of the Corps “preliminary” geotechnical report shall be included in the specification sections.

4-1.8 Construction Quality Control Testing.

4-1.8.1 Prior to initiating any structural fill placement and/or compaction operations, representative samples of the soils which will be used as structural fill or subgrade, both suitable on-site soils to be excavated and reused as structural fill and off-site soils (borrow, both on and/or off the installation), shall be obtained and tested to determine their classification and compaction characteristics. The samples shall be carefully selected to represent the full range of soil types to be used. The moisture content, maximum dry density, optimum moisture content, grain-size and plasticity characteristics shall be determined. These tests are required to determine if the fill and subgrade soils are acceptable and for compaction quality control of the subgrades and structural fill. A minimum of 14 compaction tests shall be performed on materials classified as satisfactory for use.

Tests for the above soil properties shall be in accordance with the following:

Moisture Content	ASTM D 2216
Maximum Dry Density and Optimum Moisture	ASTM D 1557
Grain-Size (Wash No. 200, w/o Hydrometer)	ASTM D 422 and ASTM D 1140
Plasticity	ASTM D 4318

4.1.8.2 A representative number of in-place field density tests shall be performed in the subgrade of compacted on-site soils and in the structural fill and backfill to confirm that the required degree of compaction has been obtained. In-place density tests shall be performed in accordance with the sand cone method prescribed in ASTM D 1556; the use of nuclear gauges for density testing will not be permitted.

In-place density tests shall be performed in the material and at the minimum frequency specified below:

Material Type	Location of Material	Minimum Test Frequency
Fill, embankment and backfill	Beneath structures to 5-foot building line	One test per lift per each increment, or fraction, of 5000 square feet
Fill, embankment and backfill	Beneath paved areas	One test per lift per each increment, or fraction, of 7500 square feet
Fill, embankment and backfill	All other areas	One test per lift per each increment, or fraction, of 10,000 square feet
Subgrade	Under building slabs	One test per each increment, or fraction, of 3500 square feet
Subgrade	Under paved areas, excluding roads	One test per each increment, or fraction, of 5000 square feet
Subgrade	Roads	One test per each increment, or fraction, of 100 linear feet
Subgrade	Under footings	One test per every fifth column footing and for each increment, or fraction, of 100 linear feet of wall footings
Backfill	Utility trenches beneath roads and paved areas	One test per each increment, or fraction, of 150 linear feet per foot of depth of backfill
Backfill	Utility trenches beneath grassed areas	One test per each increment, or fraction, of 150 linear feet per 2 feet of depth of backfill
Fill, embankment and Backfill	Areas compacted by hand operated compaction equipment, other than utility trenches	One test per foot of depth per each increment, or fraction, of 250 square feet, or for each 100 linear feet of long

narrow (less than 3 feet wide) fills 100 feet or more in length

4-1.8.3 Any area that does not meet the required compaction criteria shall be reworked, and retested. If the moisture content of the soil is within the recommended range, additional compaction may be all that is necessary to increase the density. If the moisture content is not within the recommended range, then, the moisture content shall be adjusted to within the range, and the area recompacted.

4-1.8.4 All laboratory and field density testing shall be performed by a commercial testing laboratory which has been validated by the Engineer Research and Development Center Materials Testing Center (MTC) under the Corps of Engineers laboratory inspection and validation program. The laboratory shall be listed on the list of Corps of Engineers Validated Laboratories.

4-1.9 Soil Treatment.

4-1.9.1 The pesticide applicator's principal business shall be pest control and the pesticide applicator shall be State certified in the U.S. Environmental Protection Agency (EPA) pesticide applicator category which includes structural pest control, and certified in the State of the project's location.

4-1.9.2 Pesticides shall be delivered to the project site in sealed and labeled containers in good condition as supplied by the manufacturer or formulator. Pesticides shall be stored, handled, and used in accordance with manufacturer's labels. Labels shall bear evidence of registration under the Federal Insecticide, Fungicide, and Rodenticide Act (MX), as amended.

4-1.9.3 The Contractor shall formulate, treat, and dispose of termiticides and their containers in accordance with label directions. Pesticides and related materials shall be kept under lock and key when unattended. Proper protective clothing and equipment shall be worn and used during all phases of termiticide application.

4-1.9.4 The Contractor shall provide a 5-year written warranty against infestations or reinfestations by subterranean termites of the buildings constructed under this contract. Warranty shall include annual inspections of the buildings. If live subterranean termite infestation or subterranean termite damage is discovered during the warranty period, and the soil and building conditions have not been altered in the interim, the Contractor shall:

a. Retreat the soil and perform other treatment as may be necessary for elimination of subterranean termite infestation;

b. Repair damage caused by termite infestation; and

c. Reinspect the building approximately 180 days after the retreatment.

4-1.9.5 Termiticides shall be currently registered by the EPA.

4-1.9.6 At the time of application, the soil moisture content shall be sufficiently low to allow uniform distribution of the treatment solution throughout the soil. Applications shall not be made during or immediately following heavy rains or when conditions may cause runoff and create an environmental hazard.

4-1.9.7 The Contractor shall establish complete and unbroken vertical and/or horizontal (as necessary) soil poison barriers between the soil and all portions of the intended structure that may allow termite access to wood and

wood related products. Application shall not be made to areas intended for use as a plenum air space. Surface treatments shall not be made for areas to serve as crawl spaces. Termiticide shall be applied as a coarse spray and provide uniform distribution unto the soil surface. Treatment shall be applied prior to placement of the vapor barrier and at least 12 hours prior to concrete placement. Where treated soil or fill material is not to be covered with a vapor barrier or waterproof membrane; adequate precautions shall be taken to prevent its disturbance. Soil or fill material disturbed after treatment shall be retreated as specified above before placement of slabs or other covering structures. Treatment of the soil on the exterior sides of foundation walls, grade beams, and similar structures shall be coordinated with final grading and planting operations so as to avoid disturbance of the treated barriers. Manufacturer's warnings and precautions shall be observed in the handling and use of such materials. Care shall be taken to prevent these chemicals from entering water supply systems, potable water supplies, or aquifers; and that they do not endanger plants or animals. The Contracting Officer shall be notified at least 48 hours prior to beginning of treatment and formulating, mixing, and application shall be performed in the presence of the Contracting Officer's representative.

4-1.9.8 Rates and methods of application shall be in accordance with the manufacturer's instructions on the pesticide label. Maximum application or dosage rates shall be used. If the pesticide contains less than the amount of active ingredient specified on the label, work shall be repeated with pesticides conforming to this specification.

4-1.9.9 The Contractor shall dispose of residual pesticides and containers off Government property in accordance with label instructions and EPA criteria.

4-1.9.10 The Contractor shall edit and submit the following UFGS Specification:

02364A TERMITICIDE TREATMENT MEASURES FOR SUBTERRANEAN TERMITE CONTROL

4-1.10 Decay Treatment. The Contractor shall be responsible for determining and implementing the appropriate treatment for prevention of subsurface induced decay.

4-1.11 Radon Mitigation. The design and construction of foundation walls, slabs, and crawl spaces shall include provisions for the reduction of radon entry and facilitate its removal. Radon mitigation shall comply with the requirements of EPA 402-R-94-009.

4-1.12 Soil Resistivity Testing. The proposer to whom this contract is awarded shall be responsible for all soil resistivity testing required for cathodic protection design of underground utilities and for design of grounding systems.

4-1.13 Borrow. Borrow material (if needed) shall be selected to meet the requirements and conditions of the particular fill or embankment for which it is to be used. Borrow material shall be obtained from sources off the installation. Necessary clearing, grubbing, and satisfactory drainage of borrow pits and the disposal of debris thereon shall be considered related operations to the borrow excavation. Borrow pits shall be neatly trimmed and drained after the excavation is completed. Borrow materials shall be free of any contaminants.

4-2 **EROSION AND SEDIMENT CONTROL.** Erosion and Sediment Control Facilities shall be required in accordance with the Manual for Erosion and Sediment Control, latest edition, by the Georgia Soil and Water Conservation Commission.

4-3 **DEMOLITION.** Existing facilities scheduled for demolition includes one (1) building consisting of approximately 470 SF, one (1) trailer, several

pavement areas and infrastructure, as well as clearing and grubbing of trees and vegetation as required for construction. The Contractor shall survey and stakeout the project boundaries before starting work. The survey drawing provided in the RFP indicates existing conditions and locations of existing utilities. The Contractor shall be responsible for locating and verifying the location of existing utilities prior to start of construction. The Contractor may utilize the utilities during construction operations and may incorporate the utilities as part of the final project. The Contractor shall be responsible for protecting all utilities to remain. If these existing utilities are determined to be inadequate for construction operations or incorporation into the final facility, they are to be upgraded as part of the construction project. However, if the Contractor elects not to use the existing utilities, they will be demolished and removed as part of the construction project. Existing utilities that interfere with this project will be relocated. The information shown on the survey drawing is the most recent data. The Contractor shall be responsible for furnishing an independent topographic survey of the project site, and all line and grade surveys, and as-built surveys of the construction. All demolition debris (except for bituminous and concrete pavement) shall be removed to an approved landfill off post. Bituminous and concrete pavement may be recycled and reused for this project. Obtain required demolition permits and disposal permits from the appropriate agency having jurisdiction. Obtain approval of the disposal site from the contracting officer and submit haul tickets for material disposed of off of Government property.

4-4 **CLEARING AND GRUBBING.** Clear and grub all trees and vegetation necessary for construction; but, save as many trees as possible. All timber removed from the project site shall become the property of the Contractor, unless otherwise indicated or specified.

[4-5 **OMITTED**

4-6 **EARTHWORK.** The contractor is responsible for obtaining subsurface soil information for design purposes.

4-7 **BORROW MATERIAL.** Obtain borrow material required for construction from sources off Government property developed by the Contractor. Borrow (if needed) shall be selected to meet the requirements and conditions of the particular fill of embankment for which it is to be used.

4-8 **WATER DISTRIBUTION SYSTEM.** The design of the water distribution system shall be in accordance with Georgia Department of Natural Resources Enviromental Protection Division, applicable AWWA standards, MILITARY HANDBOOK 1008C (MIL-HDBK 1008C), and with Army Technical Manual 5-813-4 (TM 5-813-4), and NFPA 24. The Contractor shall be responsible for the complete design, coordination, permitting, and construction of the water distribution system. Where the requirements of the agency having jurisdiction and the requirements defined herein disagree, the more stringent shall apply. The contractor shall determine the domestic and the fire demands for the facilities, including a future duplicate barracks complex at the Dixie Road Site, and shall verify the design of all components of the domestic and fire protection supply systems. Design of a water distribution system requires both domestic and fire flow demands be considered concurrently. The new water system shall be looped between two connection points with the existing water main(s). A stub-out for a future connection shall be provided for a future barracks complex at the Dixie Road Site. The future barracks complex is shown on the 10% Drawings (Landscape).

4-8.1 **Analysis of Existing System Capacity.** The contractor shall obtain all static pressure, residual pressure, and flow characteristics of the existing distribution system that may be required by actual field tests in addition to the information provided below. The contractor shall provide design calculations that show the existing system is capable of handling the additional flows. Fire flow test data from hydrants in the vicinity of the site areas follows. From this data

and the fire protection criteria, the Contractor shall determine the need for additional water supply components such as fire pumps, water storage, or new connection to off-site water mains.

Fire Hydrant Flow Test Results –

Santa Fe Rd (Test #1)
Static = 84 PSI
Residual = 70 PSI
Flow = 918 GPM

Ireland Dr in front of MACH (Test #2)
Static = 40 PSI
Residual = 30 PSI
Flow = 788 GPM

Compton & Yeager(Test #3)
Static = 75 PSI
Residual = 65 PSI
Flow = No reading

Michael St. & Dixie Rd (Test #4)
Static = 68 PSI
Residual = 56 PSI
Flow = 956 GPM

Michael St. at Regan Court (Test #5)
Static = 80 PSI
Residual = 75 PSI
Flow = 1208 GPM

Thorson & Indianhead Rd (Test #6)
Static = 79 PSI
Residual = 55 PSI
Flow = 628 GPM

4-8.2 **Connections to Water Mains and Building Service Lines.** Connections shall be made at approximate locations indicated on drawings. The contractor shall be responsible for the design of the sizes and means of connections to the existing system based on Facility requirements and system conditions.

4-8.2.1 **Connections to Water Mains.** Design the connections to the station water system and the necessary backflow-preventing devices. Fire protection system shall be considered as that part of the distribution system supplying fire hydrants, or fire hydrant laterals. Service connections supply water from the main to the building. Mains shall be looped with no dead ends and be of adequate size to satisfy both domestic and fire flow requirements. Minimum main size is 6 in. Sufficient sectional control valves shall be provided so that no more than two fire hydrants will be out of service in the event of a single break in a water main. A copper tracer wire shall be placed directly above all non-metallic mains when plastic marking tape does not provide means of determining alignment of pipe by metal detecting equipment. The pipe, valves, and all other materials shall meet the requirements of the Georgia Department of Natural Resources Enviromental Protection Division for a 150 psi working pressure system.

4-8.2.2 **Building Connections.** Design and construction shall be in accordance

with the International Building Code 2000 or latest edition.

4-8.3 **Trenches.** Water and gas mains may not be installed in the same trench. Water mains shall have a minimum earth cover of 36in. Adequate cover must be provided for freeze protection. Where frost penetrates to a depth greater than the minimum above, greater cover will be required. Sufficient cover must also be provided to protect the pipe against structural damage due to superimposed surface loads.

4-8.4 **Fire hydrants.** Hydrants and valves shall conform to Georgia Department of Natural Resources Environmental Protection Division, applicable AWWA standards, and MILITARY HANDBOOK 1008C (MIL-HDBK 1008C). . Hydrants shall be compatible with those presently in use at the installation, with similar pump and hose connections. The maximum amount of flow that can be permitted shall be determined. Fire hydrant spacing shall be no greater that 500 ft apart by paved road. In addition, a hydrant shall be provided so that all parts of the facilities can be reached by hose lines not over 350 ft long. All distances shall be calculated along the closest route that the fire apparatus must travel (i.e.; along the curb or access lane). Each hydrant may account for a maximum of 1500 gpm of fire protection regardless of existing pressures or water line capacity. A fire hydrant shall be located within 150 ft from any fire department connection provided. Hydrant laterals shall be 6 in minimum size, and shall not exceed 50 ft in length, and shall have an underground shutoff valve. Valve box, at each lateral, shall be located within 10 ft of the hydrant, and shall not be located where obstructed by parked vehicles, shrubbery, etc. Guard post barriers shall be provided where hydrant locations are subject to vehicle damage.

4-8.5 **Shutoff Valve.** Each building shall be provided with a separate service and main shutoff valve, readily accessible to maintenance and emergency personnel. Shutoff valves in walks are prohibited.

4-8.6 **Metering.** The method of remote monitoring must be coordinated with installation utility systems.

4-8.7 **Materials.** Materials for the water distribution system shall be in accordance with the Georgia Department of Natural Resources Environmental Protection Division and applicable AWWA standards and MILITARY HANDBOOK 1008C (MIL-HDBK 1008C). Copper water service lines will be dielectrically isolated from ferrous pipe. Dielectric isolation shall conform to the requirements of Georgia Department of Natural Resources Environmental Protection Division and applicable AWWA standards and MILITARY HANDBOOK 1008C (MIL-HDBK 1008C). For ductile iron piping systems (except for ductile iron piping under floor in soil) conduct an analysis to determine if cathodic protection and/or bonded or unbonded coatings are required. Unbonded coatings shall conform to the requirements of the agency having jurisdiction. Use of PVC piping is not allowed.

4-8.8 **Economic Analysis.** Conduct an economic analysis to determine if cathodic protection and protective coatings should be provided for the following structures in soil resistivity conditions above 10,000 Ohm-cm: ferrous metallic potable water lines; Concentric neutral cable; Other buried and submerged ferrous metallic structures not covered above; Ferrous metallic piping passing through concrete shall not be in contact with the concrete.

4-8.9 **Field Quality Control for Water Distribution.** The Contractor will conduct field inspections and witness field tests specified. The contractor shall perform field tests, and provide labor, equipment, and incidentals required for testing, Do not begin testing on any section of a pipeline where concrete thrust blocks have been provided until at least 5 days after placing of the concrete. Testing procedures and requirements shall comply with AWWA and Georgia DNR, EPD.

4-9 **SANITARY SEWERAGE SYSTEM.** The design of the sanitary sewer distribution system shall be in accordance with the Georgia Department of Natural Resources

Environmental Protection Division and Army Technical Manual 5-814-1 (TM 5-814-1). Where the requirements of the agency having jurisdiction and the requirements defined herein disagree, the more stringent shall apply. The Contractor shall be responsible for the complete design, coordination, permitting, and construction of the sanitary sewer system. The contractor shall determine the sewerage contribution for the facilities, including a future duplicate barracks complex at the Dixie Road Site, and shall verify the design of all components of the sanitary sewer system. A stub-out shall be provided for the future barracks complex at the Dixie Road Site. The future barracks complex is shown on the 10% Drawings (Landscape).

4-9.2 **Calculate Sewage Contribution.** Calculate the sewage contribution from the new facilities in accordance with the Georgia Department of Natural Resources Environmental Protection Division requirements and TM 5-814-1. As part of “design after award”, the contractor shall be responsible for obtaining flow data over a period of a week in order to analyze the existing system. In the event that the analysis indicates the existing sewer is inadequate, the contractor will notify the contracting officer immediately.

4-9.3 **Connections to Sewage Collection Mains and Building Service Lines.** The contractor shall be responsible for the design of the sizes and means of connections to the existing system based on Facility requirements and system conditions. Connect to gravity mains with a manhole.

4-9.3.1 **Building Sewer Laterals and Connections.** Laterals and building connections shall be designed and constructed in accordance with the International Building Code 2000 or latest edition. Minimum diameter for laterals shall be 6 in while maintaining a minimum velocity of 2.5 fps.

4-9.3.2 **Main Collection Trunks.** Pipe sizes and slopes shall be calculated using the Manning Formula. Manholes are required at all changes of direction and spaced not more than 300 ft apart Curved sewers are prohibited. Pipes shall be designed to flow full and maintain a minimum velocity of 2.5 fps. If siphons are used, two lines of equivalent capacity shall be used with clean-outs.

4-9.4 **Trenches.** Sewer and water lines, mains or laterals, shall be placed in separate trenches. The separate trenches shall maintain a minimum lateral separation of 10 ft.

4-9.5 **Minimum Sewer and Water Distribution Pipe Separation Requirements.** Parallel water and sewer pipe and crossings between water and sewer pipe shall be in accordance with the Georgia Department of Natural Resources Environmental Protection Division

4-9.6 **Cover.** Sewer lines shall be located at a depth greater than the frost penetration. Coordinate with building connection requirements. To prevent the pipe from being crushed by construction vehicles and the design vehicle, the minimum cover above the top of pipes shall be 30 in.

4-9.7 **Sewage Pump Station and Force Main.** The contractor shall determine if an on-site sewage lift station and force main is required and use only when required by the design or the existing system conditions.

4-9.8 **Field Quality Control for Sanitary Sewer Distribution System.** The Contractor will conduct field inspections and witness field test specified. The contractor shall perform field tests, and provide labor, equipment, and incidentals required for testing,.For force mains, do not begin testing on any section of a pipeline where concrete thrust blocks have been provided until at least 5 days after placing of the concrete. Testing procedures and requirements shall comply with GADNR and Installation testing standards.

4-10 **STORMWATER MANAGEMENT SYSTEMS.** Stormwater management systems shall comply with the requirements of the Georgia Department of Natural Resources Environmental Protection Division and TM-5-820-4. The storm drainage system shall be properly coordinated with surrounding properties to ensure that runoff does not cause damage to other properties. All storm water management calculations shall be based upon a 10-year storm frequency, 1 hour duration. At a minimum there shall be no increase in runoff rate for the 10-year storm. Design storm water management systems in accordance with TM-5-820-4 and the GADNR requirements. The calculation of runoff and the evaluation of existing storm sewer drainage systems shall be as described herein and paragraph entitled “Storm Drainage Collection Systems and Grading”. Obtain required permits from the agency having jurisdiction prior to construction.

4-10.1 **Analysis of Existing System Capacity.** The contractor shall provide design calculations that show there is no increase in runoff to the existing system for the 10-year storm.

4-10.2 **Storm Water Retention/Detention System for Volume Control.** For volume control, the contractor shall determine if an on-site storm water retention/detention system is required, based on the installation requirements and the requirements of the Georgia Department of Natural Resources Enviromental Protection Division.

4-10.3 **Storm Water Retention/Detention System for Runoff Treatment.** For runoff treatment, the contractor shall determine if an on-site storm water retention/detention is required, based on the requirements of the Georgia Department of Natural Resources Enviromental Protection Division.

4-11 **STORM DRAINAGE COLLECTION SYSTEMS AND GRADING.**

4-11.1 **Location of Connections to Existing Systems.** The contractor shall select the connection location. Establish the location for the connection based upon economics, design requirements, and downstream capacity. Connect with a manhole or appropriate drainage structure.

4-11.2 **Building Connections.** All roof drains shall be collected by the underground storm drainage collection system. Connection to building roof or area drain lines shall be designed and constructed in accordance with the International Building Code 2000 or latest edition.

4-11.3 **Storm Sewer System.** The storm sewer gravity drainage collection system shall be designed and constructed in accordance with the requirements of Georgia Department of Natural Resources Enviromental Protection Division and TM-5-820-4. Storm sewer system shall be designed for a minimum of a 10-year return frequency, 1 hour duration and pipes shall be sized for full flow. The minimum velocity of flow in conduits during a design storm shall be 2.5 fps. The pipe capacity shall be determined so that the calculated hydraulic grade line of the storm sewer drainage system(s) shall not exceed the curb flow line grade in pavements and the finished site grades.

4-11.4 **Manholes.** Manholes or Drain Boxes shall be located at intersections and changes in alignment or grade. Intermediate manhole or Drain Box maximum spacing shall be 250 ft for pipes 3 ft or less in diameter or box drains with the smallest dimension less than 3 ft. Maximum spacing for intermediate manholes on larger pipes and drain boxes shall be 500 ft. Manholes and manhole appurtenances shall be pre-cast concrete. Shape manhole inverts to the shape of the pipe with cast in place concrete after installing pipes. The manhole lid shall have a 2 ft. minimum opening as measured from the face of the wall or ladder where applicable.

4-11.5 **Drainage of Grass Areas.** Except at personnel and overhead doors, the difference in grade between the finish floor elevation and the surface of the ground immediately adjacent to the building shall be a minimum of 6 in. Minimum slopes across grass surfaces shall be two percent. In grass areas, overland sheet flow shall be held to a maximum length of 200 feet; then, an inlet must be used. Storm drain pipe and sheet flow surfaces shall be designed to prevent standing water under normal conditions.

4-11.6 **Drainage of Roads and Pavements.** Provide a positive crown in all streets and roads. Minimum cross slopes in streets and roads shall 1/4″:1′ and the maximum cross slope shall be 3/8″:1′′. Minimum sheet flow slopes across parking area and other paved areas shall be 1 percent. Curbs and gutters shall be installed at a minimum longitudinal slope of 0.50 percent. Pavement collectors for storm water shall be by curb inlets and gutters, or drop inlets. Field inlets and an underground collection system shall drain open areas. Ditches shall not be permitted. Gutter spread (or inlet approach spread) in roads shall not exceed 10 ft when measured from the face of curb. The amount of runoff to any one inlet in roads and parking areas shall not exceed the capacity of that inlet. The maximum spread allowable for determining inlet capacity shall equal that allowed for gutter spread in roads. The maximum spread allowable for determining inlet capacity in parking areas shall be height of curb or a depth of 6 in, whichever is less. See also 3-6 “Grading and Drainage” in the Statement of Work.

4-11.7 **Materials.** Select the allowable pipe materials based upon local conditions and facility criteria. Pipe for culverts and storm drains may be of reinforced concrete or fully coated corrugated steel

4-11.8 **Field Quality Control for Storm Drainage System.** The Contractor will conduct field inspections. Testing procedures and requirements shall comply with the requirements of the agency having jurisdiction.

4-12 **PAVEMENT DESIGN CRITERIA.** Pavement structure shall be designed for actual vehicle loadings and frequencies. Access drives shall be asphalt pavement with compacted graded aggregate base course or Portland cement concrete. See the conceptual site plan for locations of each pavement type. Pavement structure thickness shall be in accordance with TM-5-822-5, Chapter 1 and Chapter 3 and pavement design calculation will be based on the latest version of the Pavement Transportation Computer Assisted Structural Engineering program which is available on the web at http://www.pcase.com/. Pavement structure shall be designed for a 20-year pavement life. Minimum pavement thickness shall be 1-1/2 inches of asphalt pavement over 6 inches of compacted base for POV parking and 3 inches of asphalt pavement over 8 inches of compacted base course for heavy duty pavement. Heavy-duty asphalt pavement and concrete pavement (as shown on the contract drawing) shall be used in pavement areas where dump trucks, semi-trucks, fire trucks, and military vehicles traverse. Concrete dumpster service pavement thickness shall be 7 inches and reinforced as necessary.

4-13 **PERMIT REQUIREMENTS.** It is the responsibility of the Contractor to identify, obtain, and comply with all permits required. At a minimum, land disturbance, erosion control, and water and wastewater permits will be required.

4-14 **GAS DISTRIBUTION SYSTEM.** Refer to Plumbing Design for design requirements

4-15 **HEATING HOT WATER [AND CHILLED WATER] DISTRIBUTION.** Prefabricated piping system shall be installed to supply and return heating hot and chilled water to mechanical equipment rooms. Metallic pressure pipe, fittings, and piping accessories shall conform to the requirements of ASME B31.1 and shall be types suitable for the temperature and pressure of the water.

4-15.1Piping materials.

4-15.1.1 Steel pipe. Piping shall conform to ASTM A 53, Grade B, standard weight, black or to ASTM A 106, Grade B, standard weight.

4-15.1.2 Copper tubing. Copper tubing shall conform to ASTM B 88, Type K or L.

4-15.1.3 Reinforced Thermosetting Resin Pipe (RTRP). RTRP pipe shall conform to ASTM D 5686.

4-15.1.4 Polyvinyl Chloride (PVC) Pipe. PVC pipe shall conform to ASTM D 2241 with a Standard Thermoplastic Pipe Dimension Ratio (SDR) of 26 and PVC 1120 or 1220 as the material.

4-15.2Casing materials.

4-15.2.1 Polyvinyl Chloride (PVC) Casing. PVC casings shall conform to ASTM D 1784, Class 12454-B with a minimum thickness equal to the greater of 1/100 the diameter of the casing or 1.50 mm. 60 mils.

4-15.2.2 Polyethylene (PE) Casing. Polyethylene casings shall conform to ASTM D 1248, Type III, Class C, Category 3 or 4, Grade P 34 with thickness as follows:

Casing Diameter (in inches)	Minimum Thickness (in mils)
10 and smaller	125
10 to 18	150
18 through 24	200
over 24	225

4-15.2.3 Reinforced Thermosetting Resin Pipe (RTRP) Casing. RTRP casing shall be of the same material as the pipe, with casing thickness as follows:

Casing Diameter (in inches)	Minimum Thickness (in mils)
8 and smaller	70
10	80
12	105
14	115
16 to 18	120
20	125
24	155

4-15.3End seals. Each preinsulated section of piping shall have a complete sealing of the insulation to provide a permanent water and vapor seal at each end of the preinsulated section of piping. Preinsulated sections of piping modified in the field shall be provided with an end seal which is equivalent to the end seals furnished with the preinsulated section of piping. End seals must be tested and certified in accordance with manufacturer’s recommendations.

4-15.4Insulation.

4-15.4.1 Factory applied insulation. Prefabricated pipe and fittings shall be insulated in the factory. Foam insulation for prefabricated insulated pipe and fittings shall be polyurethane foam meeting the requirements of ASTM C 591 having a density not less than 2 pounds per cubic foot. The polyurethane foam shall completely fill the annular space between the carrier pipe and the casing. Insulation thickness shall be a minimum of 0.9 inches. The insulation thermal conductivity factor shall not exceed the numerical value of

0.15 Btu-inch/square foot-degree F-hour at 75 degrees F, when tested in accordance with ASTM C 518. Manufacturer shall certify that the insulated pipe is free of insulation voids.

4-15.4.2 Field applied insulation. Field applied insulation for fittings, and field casing closures, if required, and other piping system accessories shall be polyurethane matching the pipe insulation. Thickness shall match adjacent piping insulation thickness. Buried fittings and accessories shall have field applied polyurethane insulation to match adjacent piping and shall be protected with a covering matching the pipe casing. Shrink sleeves with a minimum thickness of 1.3 mm 50 mils shall be provided over casing connection joints.

4-15.5Thrust blocks. Thrust blocks shall be installed at the locations shown or recommended by the pipe system manufacturer. No pipe joint shall be embedded in concrete unless the assembly has previously been hydrostatically tested. The thrust blocks shall provide for transfer of thrusts and reactions without exceeding the allowable stress of the concrete and shall be installed in accordance with pipe manufacturer's instructions. In muck or peat, all thrusts shall be resisted by piles or tie rods to solid foundations or by removal of peat or muck which shall be replaced with ballast of sufficient stability to resist thrusts.

4-15.6Expansion loops. Expansion loops and expansion bends (Z- and L- type) shall be factory fabricated of casing, insulation, and carrier piping identical to that furnished for straight runs. Expansion loops and bends shall be properly designed in accordance with the allowable stress limits indicated in ASME B31.1 for the type of pipe used. Expansion loops and bends shall be shipped to the jobsite in the maximum size sections feasible to minimize the number of field joints. The expansion loops and bends casing and insulation where applicable, shall be suitably sized to accommodate pipe movement. Field joints shall be made in straight runs of the expansion loops and bends, and the number shall be kept to a minimum.

4-15.7Manholes and anchors. Manholes shall be designed and installed as recommended by the system manufacturer. Anchor design shall be in accordance with the published data of the manufacturer and for prefabricated systems shall be factory fabricated by the prefabricated system manufacturer. In all cases, the design shall be such that water penetration, condensation, or vapor transmission will not wet the insulation.

4-15.8Installation. The piping system furnished shall be installed in accordance with the piping system manufacturer's instructions. The Contractor shall obtain the services of a trained representative of the pipe system manufacturer to instruct the Contractor's work forces in the installation procedures to ensure that the system is installed in accordance with the manufacturer's published instructions and the plans and specifications. The manufacturer's representative shall be a person who regularly performs such duties for the manufacturer.

4-15.9Testing. The carrier piping shall be hydrostatically tested at 1 ½ times the working pressure for the system. The casing shall be tested in accordance with the manufacturer’s recommendations.

4-16 **STEAM [AND CONDENSATE RETURN] [HIGH TEMPERATURE HOT WATER] DISTRIBUTION.** Distribution system shall be installed to supply steam to and return condensate from mechanical equipment rooms. A complete underground heat distribution and condensate return system including all required components such as carrier pipes, high temperature hot water supply pipe, condensate return pipe, high temperature hot water return pipe, and fittings, anchors, pipe supports, insulation, protective casing, and cathodic protection, for the system supplied. Gland type end seals will not be permitted. Drainable-Dryable-Testable (DDT) systems with fiberglass casings shall not be permitted.

4-16.1Piping materials.

4-16.1.1 Steam and High Temperature Hot Water Pipe. Pipe material shall be

steel; seamless ASTM A 53, Grade B or ASTM A 106, Grade B; or electric resistance welded ASTM A 53, Grade B; Schedule 40. Standard weight will be permitted for pipe sizes 300 mm 12 inches and above. ASTM A 53, Type F furnace butt welded pipe will not be allowed. Joints will not be allowed in the factory fabricated straight section of the carrier pipe. Factory fabricated piping sections, as part of an expansion loop or bend, shall have all welded joints 100% radiographically inspected in accordance with ASME B31.1.

4-16.1.2 Condensate pipe. Pipe shall be steel; seamless ASTM A 53, Grade B or ASTM A 106, Grade B, schedule 80; electric resistance welded ASTM A 53, Grade B; Schedule 80. ASTM A 53, Type F furnace butt welded pipe will not be allowed. Joints will not be allowed in the factory fabricated section of the carrier pipe. Factory fabricated piping sections, as part of an expansion loop or bend shall have all welded joints 100% radiographically inspected in accordance with ASME B31.1.

4-16.2Factory fabricated, direct-buried DDT systems.

4-16.2.1 Casing. Casing shall be smooth-wall steel, electric resistance spiral welded, conforming to ASTM A 134, ASTM A 135, or ASTM A 139. Minimum casing thickness shall be 0.25 inches. Eccentric connectors shall be provided between casing sections as needed to provide drainage of casing section between manholes and between manholes and buildings.

4-16.2.2 Casing End Plates, Vents, and Drains. End plates shall be made of ASTM A 36/A 36M steel, minimum thickness 1/2 inch for conduit pipe sizes above 12 inches and 0.375 inches for conduit pipe sizes 12 inches and less. A 1 inch ASTM A 53, Sch 40, galvanized vent riser pipe shall be provided on end plate vent opening. Vent pipe shall extend to top of manhole and terminate 12 inches above grade with a 180 degree bend. A 1 inch drain shall be provided at the bottom and vent at the top. Brass plugs and half coupling, constructed with welded steel and welded to the end plate, shall be furnished; drains shall be plugged; vents shall not be plugged.

4-16.2.3 Air space. Continuous 1 inch minimum air space shall be provided between carrier pipe insulation and casing.

4-16.2.4 Casing coating. Coating shall be rated by manufacturer for continuous service for at least 25 years at temperatures of 110 degrees C. 230 degrees F. Coating shall be applied in accordance with the coating manufacturer's instructions, shall be factory inspected for holidays and repaired as necessary.

4-16.2.5 Field connections. Field connection of casing sections shall be made using a compatible steel section, welded to casing sections, coated on all surfaces with manufacturer's coating field repair compound, and covered with a 0.05 inch minimum thickness polyethylene shrink sleeve designed for a service temperature exceeding 176 degrees F.

4-16.3Factory fabricated, direct-buried water spread limiting (WSL) systems.

4-16.3.1 Casing for Steam and Condensate. The casing shall be reinforced thermosetting resin plastic (RTRP) piping manufactured by the filament winding process. The casing pipe shall be wound to meet ASTM D 2310 classification RTRP and ASTM D 2996. The resin shall be a polyester isothalic resin. The outer surface shall be coated with a pigmented, protected resin containing a parafinated wax and ultraviolet inhibitors. Casing thickness shall be 0.185 inches for 4 inches and below carrier pipe sizes and 0.25 inches for carrier pipe sizes above 4 inches. Condensate piping shall not be located in casings which contain any other piping.

4-16.3.2 End seals. Each preinsulated section of piping shall completely seal the insulation, providing a permanent water and vapor seal at each end. Preinsulated factory fabricated sections of piping modified in the field shall be provided with an end seal which is equivalent to the end seals furnished with the preinsulated section of piping.

4-16.3.3 Pipe coupling, steam. Coupling shall be of a multi-stage seal designed to accommodate the expansion and contraction of the system in the coupling. Couplings shall be of corrosion resistant materials. The annular seals and carrier pipe ends shall be specifically designed to protect the seals and resist abrasion due to lateral loads in the system.

4-16.3.4 Pipe coupling, condensate. Coupling shall be a single stage seal design to accommodate the expansion and contraction of the adjacent pipes. Coupling shall be of corrosion resistant materials. The annular seals and carrier pipe ends shall be specifically designed to protect the seals and resist abrasion due to lateral loads in the system.

4-16.4Insulation. The minimum thickness of insulation for the heat distribution system shall be in accordance with Tables 1 and 2.

Table 4.3 Minimum Pipe Insulation Thickness (inches)
For Steam (16 to 408 psig) and High Temperature
Hot Water Supply and Return (250 to 450 degrees F)

	INSULATIONS For Drainable/Dryable Systems		INSULATIONS For other Pre-Engineered Systems		
Nominal Pipe Diameter (inches)	Paroc Delta	Epitherm	Kaylo-10 Thermo-12 Super Caltemp	Calcium Silicate	WSL Polyurethane
1.0	2.0	2.5	4.0	N/A	N/A
1.5	2.0	2.5	4.0	N/A	N/A
2.0	2.5	3.5	4.5	N/A	N/A
2.5	2.5	3.5	4.5	N/A	N/A
3.0	3.0	4.0	5.0	1.0	+1.23
4.0	3.0	4.0	5.0	1.0	+1.22
5.0	3.0	4.0	5.0	N/A	N/A
6.0	3.5	4.5	5.5	1.5	+1.34
8.0	3.5	4.5	5.5	2.0	+1.21
10.0	4.0	5.0	6.0	2.5	+1.31
12.0	4.0	5.0	6.0	2.0	+1.29
14.0	4.0	5.0	6.0	N/A	N/A
16.0	4.0	5.0	6.0	N/A	N/A
18.0	4.0	5.0	6.0	N/A	N/A

Table 4.5 Minimum Pipe Insulation Thickness (inches)
For Condensate Return and High Temperature Hot Water Return System

Nominal Pipe Diameter (inches)	Paroc Delta	Epitherm	Kaylo-10 Thermo-12 Super Caltemp	Polyurethane
1.0	1.5	2.0	3.0	N/A
1.5	1.5	2.0	3.0	N/A
2.0	1.5	2.0	3.0	0.77
2.5	1.5	2.0	3.0	N/A
3.0	2.0	2.5	3.5	1.05
4.0	2.0	2.5	3.5	1.05
5.0	2.0	2.5	3.5	N/A
6.0	2.5	3.0	4.5	1.32
8.0	2.5	3.0	4.5	N/A
10.0	3.0	4.0	5.0	N/A
12.0	3.0	4.0	5.0	N/A
14.0	3.0	4.0	5.0	N/A
16.0	3.0	4.0	5.0	N/A
18.0	3.0	4.0	5.0	N/A

4-16.5Expansion loops and bends. Stresses shall be less than the maximum allowable stress from the Power Piping Code (ASME B31.1). Detailed design layout drawings and stress and anchor force calculations shall be provided for all loops and bends. Locations of all anchors, guides and supports shall be shown. Pipe-stress and system-expansion calculations for each expansion compensation elbow using a finite element computer generated 3 dimensional analysis. Calculations shall demonstrate that pipe stresses from temperature changes are within the allowable requirements in ASME B31.1 and that the anchors and the guides will withstand the resultant forces. Detailed design layout drawings shall include all analysis node points. As a minimum, computer analysis results shall include node stresses, forces, moments and displacements. Calculations shall be stamped by a registered Professional Engineer in the employ of the system manufacturer.

4-16.6Manholes and anchors. Design and installation shall be in accordance with the published data of the manufacturer.

4-16.7Installation. The piping system furnished shall be installed in accordance with the piping system manufacturer's instructions. The Contractor shall obtain the services of a trained representative of the pipe system manufacturer to instruct the Contractor's work forces in the installation procedures to ensure that the system is installed in accordance with the manufacturer's published instructions and the plans and specifications. The manufacturer's representative shall be a person who regularly performs such duties for the manufacturer.

4-16.8Testing. The carrier piping shall be hydrostatically tested at 1 ½ times the working pressure for the system. The casing shall be tested in accordance with the manufacturer’s recommendations.

4-17 **SITE ELECTRICAL/COMMUNICATIONS DEMOLITION.**

4-17.1The electrical system on Ft. Benning is owned and maintained by the local power company, Flint Energies. All demolition of aerial and underground power lines, power line poles, light fixtures, guy wires, pole mounted and pad mounted transformers, etc., within the site shall be done by Flint Energies. The Design/Build Contractor shall coordinate all phasing of demolition, new

construction, and temporary connections with Flint prior to work being done.

4-17.2Demolition of all aerial and underground communications lines, ductbanks, manholes, communications poles, etc. within the site is the responsibility of the Design/Build Contractor. The Contractor shall coordinate all phasing of demolition, new construction and temporary connections with Ft. Benning’s DOIM office prior to work being done.

4-17.3See Civil Drawings for area surveys. Design/Build Contractor is responsible for verifying the accuracy of the survey.

4-17.3.1 Refer to the electrical site plans for connection into the existing power, telephone, data & CATV systems. Where cross of existing roads is required for new underground utilities, roads shall be trenched and patched. All roadwork shall be coordinated with Contracting Officer’s representative.

4-17.3.2 Coordinate any service disconnections with the appropriate authority, Flint Energies for electrical, Time-Warner for CATV, and Ft. Benning’s DOIM office for all telephone and LAN systems, prior to demolition work.

4-18 **SITE ELECTRICAL.**

4-18.1Ft. Benning is served by a 12,470/7,200-volt, 3-phase, 4-wire, grounded wye distribution system. All primary electrical work, including pad-mounted transformers will be procured and installed by Flint Energies. The secondary services from the pad-mounted transformers to their associated service entrance equipment shall be sized, designed and installed by the Design/Build Contractor. All secondary services shall be installed underground and shall be concrete encased from the transformer to the building. Provide appropriate cable and PVC conduit from the secondary side of the transformer to the building’s service entrance switchboard or panel board. All conduits shall be 4″ minimum. Provide one additional spare 4″ conduit. Refer to the electrical site plans in the drawing set for proposed locations of all pad-mounted transformers.

4-18.2Coordinate underground cabling and pad mounted transformer locations with the Contracting Officer and Flint Energies. A 1″ conduit shall be installed between secondary compartments of each transformer and facility EMCS system for connection of signals from meter.

4-18.3All outside branch circuits and feeders shall be permanently marked on both ends to identify the circuit number and the location from which it receives power.

4-18.4Any outages on the existing systems shall be scheduled for an off peak time (night, weekend, holiday) to be determined by the Ft. Benning’s DPW. Full preparation shall be done before the outage to keep the downtime duration to a minimum. Design/Build Contractor shall schedule all work items requiring an outage on the same feeder to be accomplished concurrently during the single outage. All coordination with the Ft. Benning’s DPW shall be done through the Contracting Officer's Representative.

4-18.5The landscape architect shall be consulted to provide appropriate screening in accordance with the Base Installation Design Guide of the padmounted transformers, primary switches and termination cabinets, etc.

4-18.6A short-circuit and overcurrent protective devices coordination study shall be provided for the complete electrical distribution system (interior and exterior).

4-19 **SITE COMMUNICATIONS.**

4-19.1All outside plant cabling for telephone and Post LAN services will be installed by Ft. Benning's DOIM office. All infrastructure, including but not limited to ductbanks, manholes, and handholes, shall be provided by the Design/Build Contractor. Refer to the electrical site plan for the proposed routing and sizing of ductbanks and manhole locations for each site.

4-19.1.1 The Design/Build Contractor shall exercise care when working around the existing cables and equipment when connecting the new ductbanks to the existing system. Any cables damaged by the Design/Build Contractor shall be repaired or replaced by the Design/Build Contractor immediately and at no additional cost to the Government. All work shall be coordinated with the Communications officer.

4-19.1.2 The Design/Build Contractor shall coordinate with Time-Warner (CATV) for phasing of new services into each building and exact locations of conduit stub-outs from the main telecommunications room in each building.

4-19.2The conduit infrastructure shown on the site plans shall consist of 4" – Sch. 40 PVC conduits. Ductbanks shall not exceed 475 ft. in length between manholes. Provide (3) 1" fabric type innderducts in half of the conduits of each ductbank. Provide a 200 lb. test nylon pullstring in each innerduct and in each empty conduit for pulling of future cables.

4-19.3Manholes shall be 38Y-J4 type and shall be spaced to meet facility needs and as required by the cable pulling calculations. Manholes located in traffic areas shall be design for a H2O wheel loading as defined by AASHTO HB-13. Manholes will not be less than six feet in depth, by six feet in length, by four feet in width with an access opening to the surface above (outer air) of not less than 30 inches in diameter. Manholes will provide a minimum wall space of six feet on all sides where splices will be racked. Duct entrances into the manhole can be located near one end of long walls so that sharp bends of cables at the duct mouth are avoided, or else sufficient space will be provided for a reverse bend before the cable straightens out on the wall on which the cable is racked. The manholes shall be provided with a sump, ground rod, straps, and cable racks.

4-19.3.1 Coordinate the exact elevation, placement and orientation of communications manholes and the tie-in of new ducts with Ft. Benning's Communications Officer. The ducts shall be placed in the lowest terminators. No conduit crossovers in the telecommunications manholes will be allowed.

4-19.3.2 Manhole and ductbank systems must be completed (to include pumped out and clean), inspected and accepted by the Communications Officer at least six (6) months prior to the BOD (Beneficiary Occupancy Date) for the project.

4-19.3.3 For additional criteria, see Installation Information Infrastructure Architecture (I3A) Design and Implementation Guide.

4-20 **UTILITY ROUTING.**

4-20.1Coordinate the installation of the underground electric and communication lines with all other new utilities which shall include but not be limited to: power, communications, storm drains, sanitary sewers, water lines, steam lines, high temp water lines, chilled water lines, gas lines, and any other utilities. The minimum separation between electric or communication lines and other utility lines shall be 36 inches vertically and 36 inches horizontally when running adjacent. If utilities are crossing, minimum separation shall be 12 inches vertically. In the case of concrete encasement, the clearances shall be measured from the outermost dimension of the utility line and shall have suitable supports on each side of the upper line to prevent transferring any direct load onto the lower line.

4-20.2Prior to commencing work on any new underground power or communication line, the Design/Build Contractor shall stake the route of each line and indicate the exact location of all new ducts, manholes and transformers for approval by the base’s DPW and Communications Officer, and by the Contracting Officer's Representative.

4-20.3The routing of the secondary and communications service ductlines into the buildings shall be coordinated with the structural footings to avoid any conflicts.

4-20.4New underground utilities including manholes shall be located outside the tree drip lines of existing trees scheduled to remain. Ducts that cannot be routed around tree drip lines shall be tunneled through the drip line area as approved by the Contracting Officer's Representative.

4-21 **CATHODIC PROTECTION**. Cathodic Protection (CP) is mandatory on buried ferrous metallic structures as described below:

4-21.1Department of Transportation guidance. Shall be as stated in 49 CFR, Part 192, requires that all metallic natural gas piping be coated and cathodically protected regardless of the soil resistivity.

4-21.2Corrosion control. Mandated for all metallic underground storage tanks storing petroleum or hazardous substance by 40 CFR, Part 280 and AR 200-1 and on hazardous liquid pipelines (e.g., liquid fuel) by 49 CFR, Part 195.

4-21.3Design requirements. CP systems must be designed to provide protective potential to meet the requirements of the National Association of Corrosion Engineers (NACE) Standard RP-0169, Control of External Corrosion on Underground or Submerged Metallic Piping Systems, or NACE Standard RP-0185, Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems, as appropriate.

4-21.4Compatibility. New or supplemental CP systems shall be compatible with existing CP systems and other adjacent structures or components. New systems should be compatible with existing systems to allow ease of repair and maintenance.

4-21.5Tracer wire. When plastic pipe is used to extend a steel gas distribution main, an insulated No. 8 AWG copper wire shall be exothermically welded to the existing steel main and run the length of the new plastic main. This wire can be used as a locator tracer wire and to maintain continuity to any future steel gas main extension.

4-21.6Coatings. CP and protective coatings shall be provided for the following buried and submerged ferrous metallic structures regardless of soil or water resistivity.

4-21.6.1 Natural gas and propane piping.

4-21.6.2 Liquid fuel piping.

4-21.6.3 Underground fuel storage tanks. Not required for those coated in accordance with UL1746.

4-21.6.4 Fire protection piping.

4-21.6.5 Ductile or cast iron piping. Required for pressurized piping under floor (slab on grade) in soil.

4-21.6.6 Conduit piping systems. Required for underground heat distribution and chilled water piping in ferrous metallic conduit.

4-22.6.7 Hazardous storage structures. Structures with hazardous products as

identified by the installation.

4-21.7Cast iron pipe. Shall be treated as follows:

4-21.7.1 Below 10,000 Ohm-cm: For soil resistivity below 10,000 Ohm-cm at pipeline installation depth, provide CP, bonded joints, and protective coatings.

4-21.7.2 Between 10,000 and 30,000 Ohm-cm: For soil resistivity between 10,000 and 30,000 Ohm-cm at pipeline installation depth, provide bonded joints only.

4-21.8Copper water service lines: Piping will be dielectrically isolated from ferrous pipe. Dielectric isolation shall conform with NACE RP-0286.

4-21.9Ductile iron piping systems: Conduct an analysis (except for ductile iron piping under floor in soil) to determine if CP and/or bonded or unbonded coatings are required. Unbonded coatings are defined in ANSI/AWWA C105/A21.5.

4-21.10 Economic analysis: Conduct an economic analysis to determine if CP and protective coatings should be provided for gravity sewer lines and the following structures in soil resistivity conditions above 10,000 Ohm-cm:

4-21.10.1 Potable water lines.

4-21.10.2Other structures. Buried and submerged ferrous metallic structures not covered above.

Contact with concrete. Ferrous metallic piping passing through concrete shall not be in contact with the concrete.

CHAPTER 5

ARCHITECTURAL DESIGN

5-1 DESIGN GOALS. Overall architectural goals for the UEPH complex are to provide a functional, visually appealing campus of facilities that is a source of pride for residents, other facility users, and the installation.

5-1.1 Site Planning Objectives. Provide a pedestrian-oriented site. Locate buildings to create outdoor spaces. Group buildings in configurations that create a sense of community and enable residents to readily identify their homes. Integrate sustainable design principles by retaining and using existing topography to advantage; preserve environmentally sensitive areas and reduce overall project impact on the site.

5-1.2 Exterior Design Objectives. Design buildings to enhance the visual environment of the installation. Exterior materials, roof forms, and detailing shall comply with the Installation Design Guide, and shall be compatible with the immediate local context. Use durable, low-maintenance materials. Configure building massing and use exterior elements such as colonnades, porticos, entry porches, and material detailing to provide human scale.

5-1.3 Interior Design Objectives. Arrange spaces in an efficient, functional manner. Provide simple circulation schemes that allow easy wayfinding within buildings. Use durable materials and furnishings that can be easily maintained and replaced. Maximize use of daylighting and operable windows. Use interior surfaces that are easy to clean and light in color; avoid trendy or bright color schemes. Design UEPH interiors with a residential ambience. To the extent possible, design interiors that residents can personalize (for example, arrange living units to allow more than one furniture placement scheme; provide telephone/data jacks on multiple walls to allow optional locations for the desk). Structure interior spaces to allow maximum flexibility for future modifications; companies and battalions often change size or mission, requiring reconfiguration of facilities.

5-1.4 Material and Product Selection Criteria. Materials shall meet the requirements of the SOW. The SOW includes a range of specificity: some material requirements are specific (no option); other material requirements allow a range of options. The SOW requirements establish a minimum quality level. Higher quality materials will be judged more favorably. The offeror’s proposal shall identify the quality level of all major materials to be provided.

5-2 APPLICABLE CODES AND STANDARDS. Except as specified otherwise in the RFP, design and construction of facilities shall comply with the latest editions (as of the date of the RFP) of the following. Major criteria references for building design are listed below; additional requirements are included throughout the RFP. Refer to Appendix A for a list of criteria references, and sources of availability.

5-2.1 National Fire Codes. Published by the National Fire Protection Association (NFPA), including NFPA 101 Life Safety Code.

5-2.2 International Building Code (IBC).

5-2.3 Federal Std 795 Uniform Federal Accessibility Standards (UFAS), and Americans With Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG). Where these criteria conflict, the most stringent requirement shall apply.

5-2.4 Unified Facilities Criteria (UFC 4-010-01) DoD Minimum Antiterrorism

Standards for Buildings, dated 31 July 2002.

5-2.5 The Ft. Benning Installation Design Guide (IDG).

5.3 IBC OCCUPANCY AND BUILDING TYPE CLASSIFICATIONS.

5-3.1 General. Occupancy classifications, construction types, allowable areas, maximum building heights, and fire separation requirements shall comply with the requirements of the International Building Code. Refer to Appendix B for Fire Protection Analysis/Life Safety Code Analysis of the buildings in this project.

5-4 EXTERIOR DESIGN.

5-4.1 Acceptable Materials and Colors. Exterior elements of the facilities shall comply with the Installation Design Guide (IDG), unless required otherwise by applicable codes or this Statement of Work.

5-4.2 Exterior Walls. Comply with IDG. Where masonry exterior wall finish material is used, and where allowed by code, concrete masonry or metal stud backup wall may be used.

5-4.3 Roofs. Sloped roofs with a minimum pitch of 4:12 shall be used on the barracks at Dixie Road and the Battalion Headquarters. A minimum pitch of 5:12 shall be used on the buildings at the Hospital Site including the Company Operations Facility, Commons Building and the Barracks. Roofing material and color shall comply with IDG. Roofing system shall have Underwriters Laboratory (UL) Class A rating for fire resistance, UL 90 wind resistance rating, and Factory Mutual (FM) 1-90 fire and wind resistance rating.

5-4.3.1 Standing Seam Metal Roofing. Provide manufacturers 20-year finish warranty.

5-4.3.2 Extended Warranties. All proposals shall reflect the cost of providing an extended warranty on the standing seam metal roofing. This warranty shall be in the form of a manufacturers 20-year weather tightness warranty. The warranty shall begin on the date that installation is completed. During the extended warranty period, all covered material that fails shall be repaired at no cost, parts or labor, to the Government. The cost for this extended warranty shall be a separate, identifiable cost in the Contractors proposal. Each proposal shall clearly identify the proposed approach for satisfying the requirements of this paragraph. The successful contractor shall provide a bonafide warranty for the covered roofing system prior to installation of said roofing system.

5-4.3.3 Asphalt Shingle Roofing. Provide minimum 30-year shingles; provide minimum 30# felt underlayment. Provide self-adhering rubberized ice and water shield underlayment at all valleys, and roof perimeter.

5-4.4 Trim and Flashing. Materials and colors shall comply with IDG. Gutters, downspouts, and fascias shall be prefinished metal; comply with SMACNA Architectural Sheet Metal Manual; provide 20-year manufacturers finish warranty.

5-4.5 Miscellaneous Exterior Elements. Comply with IDG.

5-4.6 Signage. Comply with IDG.

5-4.7 Exterior Doors and Frames.

5-4.7.1 Main Entrance Doors. Doors opening to building corridors or lobbies shall be aluminum storefront doors and frames with Architectural Class I anodic finish or AAMA 2605 organic coating finish. Color shall comply with IDG. Doors

shall be minimum 1-3/4″ thick. Fully glazed stile and rail doors shall be medium or wide stile. Provide aluminum storefront systems that comply with wind load requirements of applicable codes. Framing systems shall have thermal-break design.

5-4.7.2 Exterior Non-entrance Doors. Exterior doors and frames opening to spaces other than corridors or lobbies shall be hollow metal; comply with ANSI A250.8/SDI 100. Doors shall be Level 3, physical performance Level A, Model 2; insulated; top edge closed flush. Frames shall be Level 3, 14 gauge, with continuously welded corners and seamless face joints. Doors and frames shall be constructed of hot dipped zinc coated steel sheet, complying with ASTM A653, Commercial Steel, Type B, minimum A40 coating weight; factory primed. Anchors and accessories shall be zinc coated. Frames in masonry shall have bituminous back-coating, plaster guards, and shall be grouted solid. Fire-rated openings shall comply with NFPA 80, and the requirements of the labeling authority.

5-4.7.3 Exterior Door Finish Hardware.

5-4.7.3.1 Hinges. ANSI/BHMA A156.1; template, full mortise, heavy duty, ball bearing, minimum size 4-1/2″ by 4-1/2″, non-ferrous base metal, non-removable pins.

5-4.7.3.2 Locksets on Living Unit Entry Doors. ANSI/BHMA A156.13; mortise lockset with removable core; non-ferrous base metal.

5-4.7.3.3 Locksets on Exterior Hollow Metal Doors. ANSI/BHMA A156.2; series 4000, Grade 1, non-ferrous base metal, removable core.

5-4.7.3.4 Exit (Panic) Devices. ANSI/BHMA 156.3; heavy-duty touch-pad type, through-bolted mounting. Listed and labeled for panic protection based on UL 305.

5-4.7.3.5 Closers. ANSI/BHMA A156.4; Series C02000, Grade 1, hydraulic, factory-sized, adjustable to meet field conditions. Provide for all exterior doors, all entry doors to living units, all doors opening to corridors and as required by codes. At exterior doors to lobbies, corridors, mechanical rooms, janitors closets, and COF supply areas provide overhead holders or closers with hold-open capability.

5-4.7.3.6 Auxiliary Hardware. ANSI/BHMA A156.16. Provide wall or floor stops for all exterior doors that do not have overhead holder/stops. Provide other hardware as necessary for a complete installation.

5-4.7.3.7 Thresholds. ANSI/BHMA A156.21; non-ferrous metal. Provide at all exterior doors.

5-4.7.3.8 Weatherstripping. ANSI/BHMA A156.22. Provide at all exterior doors.

5-4.7.3 Kick Plates. ANSI/BHMA A156.6; non-ferrous metal. Provide at all doors with closers.

5-4.8 Exterior Windows. Provide aluminum windows complying with American Architectural Manufacturers Association AAMA/NWWDA 101/I.S. 2. Minimum performance class shall be Heavy Commercial (HC). Minimum wind load, and resulting design pressure and performance grade shall be determined in accordance with the International Building Code (IBC). Provide windows with insulating glass and thermal break necessary to achieve a minimum Condensation Resistance Factor (CRF) of 45. Finish shall be Architectural Class I anodic coating or AAMA 2605 organic coating. All sleeping rooms shall have operable windows complying with egress requirements of applicable codes. Operable windows shall have locks; provide fiberglass or aluminum insect screens removable from the inside.

5-4.8.1 Exterior Glass and Glazing. To comply with force protection minimum

standards: Single glazing and the inner pane of insulated glass assemblies in exterior windows and doors shall be minimum 1/4- inch (6 mm) annealed laminated glass.

5-4.9 Thermal Insulation. Provide exterior wall, floor, and roof/ceiling assemblies with thermal transmittance (U-values) required to comply with the proposed energy calculations for the facilities. Insulation shall not be installed directly on top of suspended acoustical panel ceilings.

5-5 INTERIOR DESIGN.

5-5.1 Floors. Comply with requirements of applicable codes. Non-combustible construction is preferable, even where combustible materials are allowed by code. Floor finish materials shall be as specified in functional and area requirements listed in Chapter 2 of the Statement of Work.

5-5.2 Ceramic Tile. Comply with ANSI A 137.1 and the recommendations of Tile Council of America (TCA) Handbook For Ceramic Tile Installation. Provide marble threshold under doors where a ceramic tile floor meets a different floor finish.

5-5.3 Interior Walls and Partitions. Comply with requirements of applicable codes. Non-combustible construction is preferable, even where combustible materials are allowed by code. Wall finish materials shall be as specified in functional and area requirements listed in Chapter 2 of the Statement of Work

5-5.3.1 Metal Support Systems. Non-load bearing metal studs and furring shall comply with ASTM C 645; stud gauge shall be as required by height and loading, but shall not be less than 25 gauge. Maximum stud spacing: 16″ on center. Provide galvanized finish.

5-5.3.2 Gypsum Board. Comply with ASTM C 36. Minimum panel thickness: 5/8″. Provide Type X panels in fire-rated assemblies. Provide moisture resistant panels at locations subject to moisture. Provide abuse-resistant panels where indicated in functional and area requirements. Joint treatment: ASTM C 475. Screws: ASTM C 646. Drywall installation: ASTM C 840.

5**-5.3.3 Ceramic Tile.** Comply with ANSI A 137.1 and the recommendations of Tile Council of America (TCA) Handbook For Ceramic Tile Installation. Substrate for wall tile shall be mortar setting bed or cement backer board (gypsum board is not acceptable). Provide marble threshold under doors where a ceramic tile floor meets a different floor finish.

5-5.4 Ceilings. Comply with requirements of applicable codes. Non-combustible construction is preferable, even where combustible materials are allowed by code. Ceiling finish materials shall be as specified in functional and area requirements listed in Chapter 2 of the Statement of Work.

5-5.5 Interior Doors and Frames. Provide hollow metal doors, or flush wood solid core doors at UEPH and administrative spaces. Provide hollow metal doors at COF supply spaces. All frames shall be hollow metal.

5-5.5.1 Wood Doors. Provide flush wood solid core doors complying with National Wood Window and Door Association (NWWDA) I.S.-1A. Stile edges shall be non-finger jointed hardwood compatible with face veneer. Provide American Woodwork Institute (AWI) Grade A hardwood face veneer for transparent finished doors; provide AWI Sound Grade hardwood face veneer for painted doors. Transparent finished doors are preferred.

5-5.5.2 Hollow Metal Doors. Comply with ANSI A250.8/SDI 100. Doors shall be Level 2, physical performance Level B, Model 2; factory primed. Anchors and

accessories shall be zinc coated. Frames in masonry shall have bituminous back-coating, plaster guards, and shall be grouted solid.

5-5.5.3 Hollow Metal Frames. Comply with ANSI A250.8/SDI 100. Frames shall be Level 2, 16 gauge, with continuously welded corners and seamless face joints; factory primed. Anchors and accessories shall be zinc coated. Frames in masonry shall have bituminous back-coating, plaster guards, and shall be grouted solid.

5-5.5.4 Fire-rated and Smoke Control Doors and Frames. Comply with International Building Code (IBC), NFPA 80, and requirements of labeling authority. Doors and frames shall bear labels from IBC approved testing laboratory. Comply with positive pressure testing requirements of IBC.

5-5.5.5 Interior Door Finish Hardware.

5-5.5.5.1 Hinges. ANSI/BHMA A156.1; template, full mortise; heavy duty, ball bearing on doors with closers; standard duty anti-friction bearing on doors without closers. Minimum size: 4-1/2″ by 4-1/2″.

5-5.5.5.2 Locksets on Living Unit Entry Doors. ANSI/BHMA A156.13; mortise lockset with removable core; non-ferrous base metal.

5-5.5.5.3 Locksets on Interior Doors. ANSI/BHMA A156.2; series 4000, Grade 1, non-ferrous base metal, removable core.

5-5.5.5.4 Exit (Panic) Devices. ANSI/BHMA 156.3; heavy-duty touch-pad type, through-bolted mounting. Listed and labeled for panic protection based on UL 305.

5-5.5.5.5 Closers. ANSI/BHMA A156.4; series C02000, Grade 1, hydraulic, factory-sized, adjustable to meet field conditions. Provide for all entry doors to living units, all doors opening to corridors and as required by codes.

5-5.5.5.6 Auxiliary Hardware. ANSI/BHMA A156.16. Provide wall or floor stops for all doors that do not have overhead holder/stops. Provide other hardware as necessary for a complete installation.

5-5.5.5.7 Kick Plates. ANSI/BHMA A156.6; non-ferrous metal. Provide at all doors with closers.

5-5.6 Limitations on Use, Classification, and Flame Spread and Smoke Developed Ratings of Interior Finishes. Refer to Paragraph 12-6.2.

5-5.7 Casework.

5-5.7.1 Service Areas in Living Units and Coffee Areas in Admin Areas. Provide manufactured unitized kitchen; or provide architectural cabinets complying with AWI Quality Standards, Section 400, Custom Grade cabinets with high-pressure decorative laminate finish, meeting NEMA LD3 standards. Horizontal laminate: nominal 0.050″ thick; vertical laminate: nominal 0.028″ thick. Door and drawer edges shall be heavy-duty 0.118″ extruded polyvinyl chloride with self-locking serrated tongue. Countertop shall be post-formed high-pressure decorative laminate with waterfall front edge and integral coved backsplash, or solid surfacing material.

5-5.7.2 Bathroom Vanity in Living Units. Provide manufactured unitized kitchen, or provide architectural cabinets complying with AWI Quality Standards, Section 400, Custom Grade cabinets with high-pressure decorative laminate finish, meeting NEMA LD3 standards. Horizontal laminate nominal 0.048″ thick; vertical laminate nominal 0.028″ thick. Door and drawer edges shall be heavy-duty 0.118″ extruded polyvinyl chloride with self-locking serrated tongue. Vanity countertop shall be post-formed high-pressure decorative laminate with waterfall front edge and integral coved backsplash, or solid surfacing material, or cast-filled

acrylic with integral lavatory bowl.

5-5.7.3 UEPH Building CQ Station Reception Desk. Provide architectural casework complying with AWI Quality Standards, Section 400, Custom Grade cabinets with high-pressure decorative laminate finish meeting NEMA LD3 standards. Horizontal laminate: nominal 0.048″ thick; vertical laminate: nominal 0.028″ thick. Door and drawer edges shall be heavy-duty 0.118″ extruded polyvinyl chloride with self-locking serrated tongue. Worksurfaces and counter shall be high-pressure decorative laminate, or solid surfacing material.

5-5.7.4 Vanity at Public Toilets. Provide architectural casework complying with AWI Section 400, Custom Grade cabinets with high-pressure decorative laminate finish meeting NEMA LD3 standards. Horizontal laminate nominal 0.050″ thick; vertical laminate: nominal 0.028″ thick. Provide enclosed wall-hung vanity cabinet with countertop, or wall-hung countertop with apron. Exposed piping at accessible lavatories shall be insulated in conformance with ADA/UFAS. Countertop shall be post-formed high-pressure decorative laminate with waterfall front edge and integral coved backsplash, or solid surfacing material.

5-5.7.5 Other casework. Provide architectural casework complying with AWI Section 400, Custom Grade cabinets with high-pressure decorative laminate finish meeting NEMA LD3 standards. Horizontal laminate: nominal 0.050″ (1.3 mm) thick; vertical laminate: nominal 0.028″ (0.7 mm) thick. Door and drawer edges shall be heavy-duty 0.118″ (3 mm) extruded polyvinyl chloride with self-locking serrated tongue. Work surfaces and counter shall be high-pressure decorative laminate, or solid surfacing material.

5-5.8 Window Treatments. Provide horizontal aluminum mini-blinds at all exterior windows, except windows and storefront in corridors and lobbies. Blinds shall have one-inch wide by 0.008-inch (0.2 mm) thick slats with anti-static, anti-microbial polyester baked enamel finish. Provide heavy duty 1″ by 1-1/2″ (25.4 mm by 38.1 mm) steel head rail, and tubular steel bottom rail finished to match slats.

5-5.9 Interior Signage. Comply with requirements of ADAAG and UFAS. Provide interior room identification signage for all spaces.

5-5.10 OMITTED.

5-5.11 STRUCTURAL AND COMPREHENSIVE INTERIOR DESIGN

5-5.11.1 GENERAL

5-5.11.1 Structural Interior Design. Structural Interior Design (SID) provides samples of all interior and exterior finishes and signage. Items in the SID are purchased through the construction contract.

5-5.11.1.2 Comprehensive Interior Design. Comprehensive Interior Design (CID) is an expansion of the SID that also addresses furniture and accessories. Furniture and accessories are purchased separate from the construction contract. The design/builder shall provide both the SID and CID required items.

5-5.11.1.3 Format and Content. The format and content of SID and CID shall be in accordance with “Interior Design Presentation Format”, dated February, 1999, by U. S. Army Corps of Engineers, Savannah District. CID will be formatted in a separate binder from the SID binder and shall include all the components as required under Paragraph 5-5.11.3.1. All SID items will be in a separate binder volume from all other items in the CID.

5-5.11.1.4 Number of Copies. Six (6) copies are required at each submittal unless indicated otherwise in the contract. Each copy is to have actual physical samples unless indicated otherwise in the contract.

5-5.11.2 Structural Interior Design.

5-5.11.2.1 Use of SID. The SID is used during the design to review color and finish selections, check for adequate space for furniture, coordinate with electrical as indicated in the generic furniture footprint and signage design. Government personnel use it during construction in review of contractor submittals.

5-5.11.2.2 Special Requirements. The interior designer shall identify items in the SID and CID that require attachment to the building either by cutting or fitting. The designer must prepare specifications and drawings for this service to be performed.

5-5.11.3 Comprehensive Interior Design

5-5.11.3.1 Use of CID. The CID is used during design to review proposed finishes and furniture layouts coded to the furniture illustrations, furniture items, fabrics, colors, and furniture costs. It is used by Government personnel who administer the construction contract. Purchase of furniture shall be reasonability of Government.

5-5.11.3.2 Scope. The CID is to include accessories such as lamps, clocks, framed artwork, artificial plants, trash receptacles, draperies, bedspreads in addition to furniture, finishes and signage.

5-5.11.3.3 Sources of Furniture. The Government is required to purchase furnishings from mandatory sources. This includes GSA Federal Supply Service and UNICOR; see Paragraph 5-5.11.3.5. If the products offered by these sources do not meet the project requirements, then furnishings can be purchased from commercial vendors that have GSA contracts under GSA's Multiple Award Schedules. Many commercial furniture companies have GSA contracts with pre-negotiated prices. Only when none of these sources can meet the project requirements can open market items be purchased. When selecting furnishings, always review mandatory sources first, then GSA contract sources, then open market sources. When the interior designer determines CID items available on contract do not meet the functional requirements, or there is no current GAS resource, a waiver to use open market sources is required. The designer shall write a waiver/justification letter with salient features of that item. The letter shall be addressed to:

Director of Furniture Commodity Center
GSA/FSS/FCNE
Crystal Mall Building #4, Room 1010
Washington, DC 20406

This letter shall be included in the CID binder attached to the applicable order form.

5-5.11.3.4 Quality of Products. The designer is to determine the project requirements and then select furnishings that meet these requirements. The products offered through mandatory government sources and GSA contracts represent a very wide range of quality and features. Being included in a GSA contract does not mean that a product meets any minimum quality standard. It is the responsibility of the designer to research products and determine their acceptability.

5-5.11.3.5 UNICOR Waiver. All furniture/furnishings shall be selected under the guidance of the National Defense Authorization Act – FY 2002, S1438, Title VIII, Subtitle B, Sec 811, Para 2410 which states UNICOR is no longer a mandatory source for furniture and a waiver is not required from UNICOR on items before selecting from GSA schedules. However, UNICOR shall be considered as a vendor to determine if UNICOR offers the "best available" product in terms of quality, price and timeliness. If an UNICOR product is not the "best value", then GSA Schedules shall be used for selection of furniture/furnishings. Three GSA vendors shall be considered, but only one selected for the prepared Order Form. A

Best Value Determination Guideline Sheet shall be filled out for each vendor whose furniture has been specified and the sheet provided in the CID binder. (This is an addition to the requirements under 23.4 Format) See Appendix J, Procurement Information. All furniture/furnishings shall be selected from GSA Schedules. The GSA web site is: www.gsa.gov. The UNICOR web site is: www.unicor.gov. The UNICOR regional sales representative for the Savannah District is: Joe McCormick, telephone number: (803) 802-0189.

5-5.11.3.6 Furniture Information Sources. The UNICOR catalog can be obtained by calling UNICOR regional representative for Savannah District at (803) 802-0189, Joe McCormick. A listing of vendors with GSA contracts can be found on the GSA web site at: http://www.gsa.gov.

5-5.11.3.7 Customer's Own Material (COM). COM's are not permitted, except when selecting fabrics for Army barracks projects designed under the Interior Design Manual for Single Soldier Housing and submitted to the COE Huntsville Division for procurement.

5-5.11.3.8 Personal Computers. Design of all workstations and office furniture, including executive offices, should assume the use of a personal computer and accommodate it with articulating keyboard tray and corner work surface where feasible.

5-5.11.4 FURNITURE RELATED INTERIOR DESIGN

5-5.11.4.1 The contractor shall act as an agent of the government in the design, procurement, and installation of the furniture/furnishings.

5-5.11.4.2 Furniture footprint plans shall be provided in the architectural drawings to indicate the adequacy of the size and shape of each piece of furniture as related to the space. The floor plan scale shall be 1/8" = 1'-0" (1:100). Standard furniture sizes should be used at this point to allow maximum flexibility for the final design. Include legends on plans that identify item (item code) by description and dimension.

5-5.11.4.3 The Furniture Package shall provide all accessories to include lamps, clocks, framed artwork, artificial plants, and trash receptacles in addition to furniture.

5-5.11.4.4 Barracks/Common Lobby Furniture. Selection of the Barracks/Lobby furniture shall be done from the list of approved GSA vendors found on the Excel spreadsheet provided by the U. S. Army Engineer and Support Center, Huntsville, CEHNC-PC-Cr. The Excel spreadsheet form can be downloaded from the Huntsville Center homepage, www.hnd.usace.army.mil. When entering Huntsville Center homepage, click through the following:

Organization
Directorate
Directorate of Program and Project Management
Equipment, Furniture, and Furnishings
UEPH Furnishings Program
Service and Ordering

Furniture selections shall meet the requirements as stated in Appendix D Specifications and Standard Item Descriptions, Interior Design Manual for Single Soldier Housing.

Budgets for barracks rooms and common areas furnishings shall not exceed $3,500.00 per soldier.

5-5.11.4.5 Artwork. Artwork shall be provided in the Common areas/conference rooms/reception areas of the Battalion Headquarters and COF, and the common Lobby of the Barracks Facility and laundries. Minimums are as follows:

Conference Rooms:	Two (2) Landscapes

Barracks Lobby:	Four (4) Landscapes
Barracks Laundries:	Two (2) Lighthouse Scenes
Battalion Headquarters Common Areas/Reception/Corridors:	Four (4) Landscapes
COF Administration Area/Corridors:	Four (4) Landscapes

Artwork shall be double matted with a neutral main mat and an accent mat to coordinate with the facility color scheme and the print. Artwork prints shall not be photographs.

5-5.11.4.6 Furniture/Furnishings for All Facilities. Shall be procured by the Federal procedures indicated in Paragraph “PROCUREMENT”, and presented for review by procedures in Paragraph “REVIEW REQUIREMENTS/FURNITURE PACKAGE.

5-5.11.5 QUALITY

5-5.11.5.1 Materials shall be fire retardant to the maximum extent possible. U. L. Listings shall be met where applicable.

5-5.11.5.2 Furniture layout shall comply with NFPA 101 and Fed Std. 795.

5-5.11.5.3 Warranties and service are important considerations when evaluating furniture sources. Warranties shall be in the range of 5-10 years with the exception of fabrics and task lights. Upholstery shall be warranted for minimum 1 year and task lights for a minimum of 2 years.

5-5.11.5.4 All applicable industry standards and test requirements shall be met.

5-5.11.5.5 Specify one manufacturer for “series” or type of furniture and/or seating to the maximum extent possible. All wood case goods shall be of the same wood species and finish, and similar in appearance and construction. Furniture/furnishings shall be of a design, material, and workmanship to withstand heavy daily usage over an extended life with a minimum of maintenance and repair.

5-5.11.5.6 Wood Furniture shall met all the GSA requirements under Group 71, Part I, special item numbers, 512-1 Furniture Systems.

Offices to receive wood furniture:
Company Operations Facility – Commander, Executive Office
Battalion Headquarters – Commanding Officer, Executive Officer, Command Sgt. Major
Wood workstations shall be “U” shaped, freestanding consisting of a minimum overhead storage unit, desk/conferencing area, and a work surface for terminal/PC usage with keyboard tray, pedestal storage, lateral file storage. Commander areas shall have an attached full door storage unit. Wood construction in office areas shall consist of solid wood edge banding and frame. Chassis shall have book-matched wood veneers of the same species on 5-ply construction, minimum of 1-3/4” thick. Edges on tops shall be rounded. Provide locks on pedestals and files. Pedestals shall a box, box, file configuration and extend the full length of the work surface. Drawer construction shall be five-sided with dovetail joints and metal drawer pulls. File drawer on pedestal shall hold a minimum of 75 pounds. Lateral files shall hold a minimum of 100 pounds. Freestanding wood bookcases with a minimum of three shelves shall be provided. Stain color shall match all wood components.

5-5.11.5.7 User friendly features shall be specified such as radius edges. No sharp edges or exposed connections are acceptable. Clips, screws, etc. construction elements shall be concealed and not exposed.

5-5.11.5.8 Chairs and seating must met or exceed all BIFMA/ANSI durability standards for office seating. Meet all GSA requirements for Item Number 711-18, Office; Fire retardant urethane foam shall be used to the maximum extent possible.

ANSI/BIFMA	X5.1	1993	Office Furniture General Purpose Office Chairs
ANSI/BIFMA	X5.4	1990	Office Furniture Lounge Seating
ANSI/BIFMA	X5.7	1991	Upholstered Furniture Flammability Standards for Non-Residential, Non-Live-In Occupancies

Task seating shall have the minimum of the following features:
a. Integrally colored, textured back/seat shell;
b. Integral colored, textured, resilient urethane (over steel insert) arms with adjustable height (minimum 3.5 total range), width (minimum 2.5 total range), and pad rotation (right and left of center);
c. Textured integral color nylon of textured polypropylene covered steel five-blade base;
d. Two inch diameter, dual, hooded casters (type for appropriate surface);
e. 360 degree swivel;
f. knee tilt with tilt tension
g. back angle;
h. 2-3″ (50-76 mm) back height adjustment;
i. forward tilt;
j. forward and upright tilt lock;
k. pneumatic seat height adjustments.

All task seating and side chairs shall be from the same manufacturer. Side chairs in areas receiving wood desk furniture shall be wood with upholstered seat.

5-5.11.5.9 Upholstery shall meet the following as minimums:

Battalion Headquarters, COF, Office:	Wyzenbeek Abrasion Test:	Minimum 70,000 double rubs.
Barracks/Common Lobby:	Wyzenbeek Abrasion Test: AATCC Method 16A Light Fastness State of California Bulletin #117: ASTM E 84, Class A: UFAC, Class 1:	Minimum 100,000 double rubs. 40 hours Pass Meet Meet

Soil retardant treatment shall be inherent. Upholstery shall be heavy duty.

5-5.11.5.10 ADP/Modular Workstations. ADP/Modular Workstations shall meet all BIFMA/ANSI requirements/specifications under GSA Item Number 711-1. Products shall comply with BIFMA X 5.5 1989 Office Furnishings – Desk Products, UL/286 Office Furnishings, and UL/723 Standard Test for Surface Burning Characteristics of Building Materials. Any overhead storage (minimum of one overhead) shall be able to accommodate task lighting. One work surface per ADP/Modular workstation shall be capable of accommodating an articulating keyboard tray. Work surface laminate top shall have edges that are post-formed, vinyl T-mold edge, or equal. Self-edge, 90-degree edge is not acceptable. Wire management and accessories shall be specified at all ADP/Modular workstations (minimum of one grommet per work surface). Provide a minimum of one locking pedestal with box, box, file configuration.

5-5.11.5.11 Conference Tables. Conference tables shall meet GSA requirements/specifications under Group 71, Part X, and Special Item Numbers 636-1 and 636-2. Tables shall have a minimum seating capacity of 12 persons (chair width, plus 5″ = total chair width to establish table seating capacity). Table shall be rectangular in shape. Edges shall be a minimum 1-1/2″ thick solid wood bull nose or solid wood half-round with a laminate top to match the wood stain or neutral laminate color to match the building color scheme. Bases may be wood panel or wood drum type in a style to match the top. All wood table parts and base stain colors shall match. Stain color shall match wood executive furniture. Provide Wire Management and accessories with a minimum of two grommets.

5-5.11.5.12 Training Tables/Miscellaneous Tables. Training Tables/Miscellaneous Tables shall meet GSA requirements/specifications for Group 71, Part X, Item Numbers 636-2 and 636-3. Tables shall be freestanding. Work surfaces shall be rectangular with a flat, fused urethane edge around the perimeter of table with square corners. The table shall have a folding, metal tubular, L-base or cantilevered base (not T-base), and shall accommodate wire management features. (Wire way) Table shall have folding modesty panel with wire management. Provide two grommets per table. Underside of tables and work surfaces shall be completely and smoothly finished. Leveling glides or leveling device shall be provided on base.

5-5.11.5.13 File and Storage Cabinets. File and storage cabinets shall meet GSA requirements/specifications for Group 71, Part I, Item Number 711-3. Files shall meet the following: ANSI/BIFMA X 5.2 1989. Metal, lateral files/storage cabinets shall be constructed of minimum 22-gage steel with reinforced corners. Lateral files shall have four 12″ roll out drawers with hanging rails and one 12″ roll out shelf with lift up door and with dividers. Drawer hardware shall have progressive telescoping suspension constructed of roll-formed steel with steel ball bearings and retainers. Drawers shall have an interlocking system allowing only one drawer open at a time. Filing/Storage units shall be a minimum of 36″ wide. Storage cabinets shall have two full height doors with minimum of four interior shelves. Files/Storage shall be lockable. Color of metal shall match color of metal on the ADP workstations.

5-5.11.5.14 Lectern or podium shall be floor-supported model with hidden, locking casters, reading shelf and minimum of one additional shelf. Wood stain color shall match the wood furniture.

5-5.11.5.15 Task lighting shall not exceed beyond the edges of the overhead storage unit. Fixtures shall be UL approved. Use energy efficient ballasts and lamps. All diffusers, grilles and other coverings shall be easily removable to permit cleaning and relamping.

5-5.11.5.16 Wire management and accessories shall be specified at all desks, ADP/modular workstations, and training tables. Grommet kits or another suitable finish must be provided for all cable cutouts. Horizontal wire managers shall be supplied for mounting under all work surfaces or to be integral in work surface. Wire manages shall be prefinished and shall be secure, able to conceal and accommodate outlet cords as well as electrical and communication wiring.

5-5.11.5.17 Seating unit in Laundry shall consist of a seat-table-seat unit with arms. The base shall be a beam type made of minimum 14 gage steel tubing and 3 inches in diameter. The finish shall be powder coated. Tabletop shall be high-pressure laminate. The seats shall be made of flexible polyvinylchloride and shall be molded and seamless. The color shall be homogenous throughout the entire thickness of the covering. The foam shall be high resilient polyurethane. The cushion shall meet or exceed CA 133 flame test. The unit shall be equal to Moduform, 3000 Series, Model 2101.

5-5.11.5.18 Refrigerator/Freezer/Microwave Unit shall be on GSA Schedule and meet the requirements and sizes stated. The unit shall be white in color. The unit shall not require a dedicated electrical circuit. The unit shall be equal to MicroFrige, Model MF-10.

5-5.11.6 COLOR AND FINISHES

5-5.11.6.1 Finish and color selection shall be appropriate to the interior design intent. The finishes shall be selected based upon durability, maintenance, life cycle costs, code requirements, Ft. Benning color standards/requirements, appearances and functional considerations.

5-5.11.6.2 Construction quality, materials, finishes and colors shall be compatible with other furniture as well as the building interiors.

5-5.11.6.3 Use variegated finishes and patterns to the maximum extent possible as solids show wear. Integral color and color through shall also be specified where applicable. Factory applied epoxy or powder coat finishes are recommended for metal frames.

5-5.11.7 PROCUREMENT

5-5.11.7.1 Federal Procurement. In order for the furniture package to be successful, the contractor/designer must have a working knowledge of the Federal procurement system. The furniture package must be designed around items that will be available through allowable procurement sources at the time of procurement.

5-5.11.7.2 Maximum Order of Limitation (MOL). In accordance with FAR 8.404 (b), (3), orders will no longer be restricted by the MOL. Once the order amount exceeds the MOL listed on the Federal Supply Schedule Contract, customers shall seek a price reduction from the schedule (FSSC). Contractor shall provide a price that will provide the best value (considering price and other factors).

5-5.11.7.3 Procurement/Installation. It is the responsibility of the Contractor to:

a. Order furniture items in time to coordinate with the building occupancy date (BOD);
b. Be responsible for all furniture/furnishings design, selection, ordering, installation, coordination with furniture vendors/installers, receiving and inspection of furniture items.
c. Tracking of procurement to assure timely receipt of required furniture and equipment;
d. warehousing of furniture and equipment until it is required for placement in the building.

Items not meeting requirements/specifications or damaged shall be the responsibility of the Contractor with the Furniture Vendor for replacement. It is the responsibility of the Contractor to coordinate the installation of any items requiring attachment to the building and to provide necessary preparation, i.e. electrical systems, with the furniture vendors.

5-5.11.7.4 Cost Estimate. Provide itemized list of furniture/furnishings with amounts, unit cost, and subtotal cost for that item. The total cost for the furniture package shall include the price of the furniture items, delivery/shipping costs, and installation.

5-5.11.8 REVIEW REQUIREMENTS/FURNITURE PACKAGE

5-5.11.8.1 Purpose. The Furniture Package binder provides all the information in an organized form for a rapid and accurate review of the building’s furniture components and the relationship to the architecture and it’s finishes. It assures that the objective of providing a facility that meets the user requirements and allows him to perform his job functions within the facility are met. Three copies shall be provided with the proposal.

5-5.11.8.2 Format. Submit all information, furniture illustration sheets, furniture plans, procurement sheets, and cost estimate in a 8-1/2” by ll” three-ring binder. Provide five (5) copies of the submittals. Sample sheets are provided at the end of these requirements.

5-5.11.8.3 Furniture Illustration Sheet. Provide illustration of each furniture/furnishing item in the furniture package. The sheet shall include all of the following information:

a. The job name, location, and date.
b. A picture or line drawing of the product specified.
c. The furniture/furnishings item number that keys the product to the Furniture Placement Plan.
d. The options specified, if any.

e. Specification data on the finishes and fabric.
f. Samples of the finishes and fabric.
g. A comprehensive list giving all occurrences of the item, broken down by room. For example: 4 each, Room 104 Commander.

Furniture Illustration Sheets should be arranged alphabetically by item code: i.e., C1 for chair type one, T1 for table type one, etc.

5-5.11.8.4 Furniture Placement Plans. Furniture Placement Plan is a floor plan of one room showing each furniture component in the room. Provide a Furniture Placement Plan for each room that contains furniture. Furniture Placement Plans shall be drawn at 1/4"=1’-0” scale or 1/8”=1’-0” if the room is large. Each Furniture Placement Plan shall include the following:

a. The job name, location, and date.
b. The footprint of the room.
c. The furniture/furnishings layout.
d. The room name and number.
e. A furnishing Item Number for each item.
f. Quantity of each product specified for the Furniture Package.

Furniture Placement Plans shall be arranged in order of the Room Number.

5-5.11.8.5 Artwork Placement Plans. Shows the spatial relationship between the furniture and the artwork in a room. There will be an Artwork Placement Plan for each room, which contains artwork. Assign an item code to each piece of artwork. The Artwork Placement Plan will include the item code for artwork, but will show the furniture without the item code. Each Artwork Placement Plan shall include the following:

a. Job name, location and date.
b. Room name and number.
c. Plan of the room locating the artwork.
d. Elevation of each wall containing artwork showing mounting height.
e. An item code for each artwork item, i.e. A1, A2.
f. Quantity of each product specified for the Furniture Package.

5-5.11.8.6 Artwork Illustration Sheets. Provide one sheet for each piece of art in the Furniture Package. The Art Illustration Sheet shall include the following information:

a. Job name, location, and date.
b. Title of the artwork and the artist’s name.
c. A color picture of the artwork.
d. Item code which keys the artwork to the Artwork Placement Plan.
e. Name and number of the room where the artwork will be displayed.
f. Frame description/color and sample of the mat colors; main and accent.
g. Mounting height and installation instructions.
h. Specify security mounting, if required.

5-5.11.8.7 Order Data Sheets. Provide all information necessary to review/order the furnishings specified in the Furniture/Artwork Package. Only one item shall be included per data sheet. Sheets shall be in alphabetical order of the item code. The Order Data Sheets shall include the following information:

a. Furnishing item code.
b. Job name, location, and date.
c. FSC Group, Part, and Section.
d. GSA Contract Number, Special Item Number (SIN), and contract expiration date.
e. Maximum Order Limitation.
f. Source and manufacturer’s name, address, telephone number and fax number.
g. Product name.
h. Product model number.

i. Finish name and number.
j. Fabric name and number.
k. Dimensions.
l. Description.
m. Justification (i.e. this guest chair coordinated to match the task seating.
n. Item location by room number.
o. Quantity per room.
p. Total quantity.
q. Unit price.
r. Total price.

5-5.11.8.8 Itemized Furniture Cost Estimate. Itemized furniture cost estimate shall include complete lists of all furniture/furnishings and indication of quantities, unit costs and totals. The cost estimate should include all freight/shipping and installation costs.

5-6 PHYSICAL SECURITY REQUIREMENTS.

5-6.1 Anti Terrorism/Force Protection. Comply with the minimum construction standards of the Interim Department of Defense Antiterrorism/Force Protection Construction Standards. UEPH buildings are classified as troop billeting structures; COFs, Locker Room Facilities, Battalion HQs and Brigade HQs are classified as primary gathering structures

5-6.3 Secured Documents Vaults. Provide 5-sided (walls and ceiling) modular vault attached to building floor system. Vault shall conform to Class M (15 minute working time) requirements of UL 608 Standards for Modular Vault Panels. Vault shall be interfaced with building HVAC, fire protection, and electrical systems. Provide Class 5 vault door and frame complying with Federal Specification AA-D-00600C. Lock shall be Style K, key change combination lock. Provide metal ramp type threshold. Provide wire mesh, day gate with lock operated from outside by key, and from inside by handle. Comply with egress requirements of applicable codes.

5-6.3.1 Penetrations. Penetrations shall be minimized. All openings or penetrations in Vault floor, walls or ceiling greater than 96 square inches shall be protected with welded steel rod-and-bar grid weighing 8.1 lb/SF , consisting of 1″ by 3/16″ vertical bearing bars at 1″ on center, and 5/16″ diameter horizontal rods at 2″ on center; or equivalent protection.

5-6.4 Floor Anchors for GFGI Security Safes. Provide 3/8″ diameter stainless steel bar bent into U-shape 1″ inside radius with 2″ long 90-degree returns at ends of vertical legs. Overall height shall be 5″; embed 3″ of vertical legs (open end) in concrete floor slab; 2″ of U-shaped end will protrude above slab to provide anchorage for GFGI security safe.

CHAPTER 6

STRUCTURAL DESIGN

6-1**GENERAL**. General: The structural criteria established herein shall be used for structural loading, design and installation of all structural systems and foundations, including manufacturing, erection, supervision, testing, and quality assurance of the completed installation of the buildings. All structural calculations shall be checked and initialed as such by a registered engineer other than the original design engineer. Construction Documents (drawings and specifications) shall be sealed and signed by a Professional Engineer registered and licensed to perform work in the jurisdiction.

6-2**STRUCTURAL WORK**. The structural work generally consists of, but is not limited to, design and construction of:

6-2.1 Building Foundations.
6-2.1.1 Spread footings, grade beams, and other concrete foundations, as required, shall be reinforced in conformance with ACI 318-99-99.
6-2.1.2 Piles, if required, shall be of pre-stressed concrete or steel as required by building loads, vibration characteristics, and other parameters. Piles may be drilled or driven as required by Geotechnical Investigation
6-2.1.3 Drilled piers, if required, shall be in conformance with ACI 318-99
6-2.1.4 Other foundation systems as required by the geotechnical investigation.

6-2.2 Ground floor slab systems shall be reinforced concrete in conformance with ACI 318-99.
6-2.2.1 Slab on grade; pile supported as required by geotechnical investigation or other design parameters.
6-2.2.2 Suspended over crawl space and basement area at Commons Buildings due to grade variation. Slab at these areas shall be cast-in-place, pre-cast, or supported by supplemental framing and metal deck.
6-2.2.3 Basement area at Community Building shall be constructed with masonry or cast in place concrete walls. Floor shall consist of slab on grade, which may be pile supported based on requirements of the Geotechnical Investigation.
6-2.3 Load Bearing and Nonload Bearing Walls, including reinforced masonry, reinforced concrete, or metal stud wall construction acting as any of the following, primary vertical load carrying members, shear walls, or infill walls not included in the lateral force resisting system. .

6-2.3.1 Wood members may be used in the Community Buildings, Battalion Headquarters Building, and Company Operations Facility only.

6-2.4 Vertical Framing Members, including steel and reinforced concrete columns, reinforced masonry pilasters or light gauge metal construction.

6-2.4.1 Wood members may be used in the Community Buildings, Battalion Headquarters Building, and Company Operations Facility only.

6-2.5 Horizontal Framing Members, including roof and floor decks and diaphragms, roof and floor beams, joists and trusses.
6-2.5.1 Wood framing shall not be used for elevated floors in barracks.
6-2.5.2 All elevated floors shall be comprised of concrete slab construction, slab may be cast on metal deck, pre-cast, or cast on removable forms.
6-2.6 Lateral Force Resisting Systems, including, but not limited to: eccentrically or concentrically braced steel frames, moment frames of steel, moment frames of reinforced concrete, reinforced masonry shear

walls or pilasters, cross braced metal stud walls, etc…

6-2.6.1 Shear walls with plywood sheathing may be used in the Community Buildings, Battalion Headquarters Building, and Company Operations Facility.

6-2.7 Interconnection Details, including all fastening requirements.

6-2.8 Special Conditions, such as expansion, construction, and control joints, and changes in floor levels.

6-2.8.1 Note, building irregularities, as defined in IBC exist in barracks at hospital site. EOR shall design structures to accommodate irregularity or provide seismic and/or expansion joints as required.

6-2.9 Attachment provisions for architectural, mechanical, and electrical elements.

6-2.10Site structures and foundations conforming to applicable codes and references..

6-3**DESIGN CRITERIA**. All structural loads (including dead, live, hydrodynamic, earth, snow, wind, and seismic loads) and design shall be in accordance with the International Building Code (IBC) and all codes referenced therein.

6-3.1 **Minimum Live Load Requirements**:

UEPH Floor	60 Pounds per square foot (psf)
Corridors	80 psf
Stairwells	100 psf
Roof	20 psf
Mechanical / Electrical Rooms	125 psf

6-3.2 All other building floor live loads shall be in accordance with the International Building Code (IBC).

6-3.3 Wind loads shall be based on the following information:

6-3.3.1 Barracks Structures:

Basic Wind Speed:	95 Miles per hour (mph)
Exposure Category:	C
Building Category	I
Importance Factor (Iw):	1.0

6-3.3.2 Community Buildings:

Basic Wind Speed:	95 Miles per hour (mph)
Exposure Category:	C
Building Category	I
Importance Factor (Iw):	1.0

6-3.3.3 Company Operations Facility:

Basic Wind Speed:	95 Miles per hour (mph)
Exposure Category:	C
Building Category	I
Importance Factor ($_{Iw}$):	1.0

6-3.3.4 Battalion Headquarters:

Basic Wind Speed:	95 Miles per hour (mph)
Exposure Category:	C
Building Category	I
Importance Factor (I_w):	1.0

6-3.4 Seismic Loads shall be in accordance with IBC, the Geotechnical Investigation, and the following information:

6-3.4.1 Barracks Structures:

Seismic Use Group: I

Importance Factor (I_E): 1.0
S_S : 17%
S_1 : 9%

6-3.4.2 Community Buildings:
Seismic Use Group: I
Importance Factor (I_E): 1.0
S_S : 17%
S_1 : 9%

6-3.4.3 Company Operations Facility:
Seismic Use Group: I
Importance Factor (I_E): 1.0
S_S : 17%
S_1 : 9%

6-3.4.4 Battalion Headquarters:
Seismic Use Group: I
Importance Factor (I_E): 1.0
S_S : 17%
S_1 : 9%

6-3.5 Ground Snow Loads shall be in accordance with IBC and the following information:
p_g: 5 (psf)
I_S: 1.0

6-4**SELECTION OF STRUCTURAL SYSTEMS**. The structural systems shall conform to all applicable criteria and guidance as well as industry standards and commonly accepted methods of practice. Consider logical alternative foundations and framing methods when selecting an appropriate structural system. The following elements shall be evaluated and addressed:

6-4.1 Total Life Cycle cost effectiveness of the system.

6-4.2 Constructability.

6-4.3 Experience level of local contractors and labor force.

6-4.4 Availability and use of local materials.

6-4.5 Sustainable Design.

6-5**SPECIAL REQUIREMENTS**.

6-5.1 AISC Certification requirements: All fabrication of structural steel shall be accomplished by an AISC certified Category Sbd fabricating plant.

6-5.2 Anti-terrorism Force Protection Systems: Designs shall conform to UFC 4-010-01 DOD Minimum Anti-terrorism Standards for Buildings dated 08 April 2002.

6-5.2.1 Design Basis Threat

6-5.2.1.1220-pounds of TNT at a standoff distance at eighty feet.

6-5.2.1.2

CHAPTER 7

THERMAL PERFORMANCE

7-1 THERMAL CHARACTERISTICS. Building construction shall conform to the current version of ASHRAE 90.1. All buildings shall be classified as non-residential. R and U values shall be calculated in accordance with ASHRAE methods.

7-2 THERMAL INSULATION.

7-2.1 Characteristics. Thermal insulation shall have a flame-spread rating of 25 or less and a smoke-development rating of 50 or less, exclusive of the vapor barrier, when tested in accordance with ASTM E84. A vapor barrier shall be provided on the warm-in-winter side of exterior wall and ceiling insulation, except in humid areas as defined below. Polyurethane is allowed as an insulation material for slabs and outside concrete or unit masonry walls. It is prohibited as an injected insulation material in walls or floor cavities or within the building envelope.

7-3 Humid area design. [Climates which have 3000 hours or more of 67 degrees F (19.4 degrees C) or higher wet bulb temperature in combination with an outside design condition of 50 percent or higher relative humidity, or climates which have 1500 hours or more of 73 degrees F (22.8 degrees C) or higher wet bulb temperature in combination with an outside design condition of 50 percent or higher relative humidity shall be considered humid areas. In other areas that do not meet the strict definitions of a humid area but experience humid conditions on numerous occasions, these same criteria shall be used by the designer as appropriate for the facility and the climate]. An effective infiltration barrier is critical to limiting moisture flow into occupied spaces. In humid areas, interior surfaces of ceilings and exterior walls shall be covered with materials which allow escape of water vapor from inside the walls into the conditioned space to prevent the growth of mold on interior surfaces. The vapor barrier in humid areas shall have a maximum perm rating of 0.5, and shall be located on the outside face of the exterior wall or ceiling insulation.

7-4 INFILTRATION. To limit air infiltration (especially in humid areas), buildings will be sealed with an air infiltration barrier, installed in accordance with the manufacturer's recommendations. The building envelope shall be caulked, gasketed, weatherstripped or otherwise sealed: around window and door frames, between wall cavities and frames, between walls and ceiling and roof, between walls and floors, at access doors and panels, at utility penetrations through walls, floors, and roofs, and at any other exterior envelope joint which may be a source of air leakage. These steps shall constitute tight building construction.

CHAPTER 8

PLUMBING

8-1 **DESIGN STANDARDS AND CODES**. Plumbing system shall be designed and installed in accordance with the latest edition of the International Plumbing Code (IPC). Inspection and testing of the plumbing system shall be performed as prescribed in the International Plumbing Code. Specified materials and equipment shall be standard products of a manufacturer regularly engaged in the manufacturer of such products. Specified equipment shall essentially duplicate equipment that has performed satisfactorily at least two years prior to bid opening.

8-1.1 Additional consideration in the technical evaluation will be given to systems which incorporate measures beyond the requirements of this STATEMENT OF WORK which are designed to increase energy conservation, ease of maintenance, or occupant comfort (such as water filtration and purification), higher efficiency water heating systems, higher grade plumbing fixture materials (such as enameled cast iron tubs as opposed to enameled steel or plastic), etc.

8-1.2 System design and installation must conform to the following mandatory energy and water conservation criteria: Title 10 CFR Part 434. System shall be tested in accordance with code requirements.

8-2 **DESIGN CALCULATIONS**.

8-2.1 Provide design analysis and calculations with each submittal. Plumbing calculations shall be performed per ASHRAE requirements.

8-2.2 **HOT WATER HEATER CALCULATIONS**. Water heaters for the barracks buildings shall be sized in accordance with ETL 1110-3-489. All other water heaters shall be sized based on the methods described in the ASHRAE Applications Handbook, for a 90ºF rise. Submit calculations for determining storage capacity and recovery rate. Hot water delivered to toilet facilities shall not exceed 100ºF; hot water delivered to showers shall not exceed 110ºF.

8-2.3 **PIPING**. Design shall be based on the International Plumbing Code for domestic water, sanitary waste and vent piping. All water piping shall be sized in accordance with methods outlined in the International Plumbing Code, to limit water velocity in the pipe to 8 ft/sec unless a lower velocity is recommended by the plumbing fixture manufacturer(s).

8-3 **EQUIPMENT**.

8-3.1 **DOMESTIC WATER HEATERS.** Domestic water heaters shall have round, glass-lined tanks, and shall be installed with an integral insulating wrap with a minimum R value of 5. Access shall be provided in the wrap for service and maintenance openings. Storage water heaters that are not equipped with integral heat traps and having vertical pipe risers shall be installed with heat traps directly on the outlet. Circulating systems need not have heat traps installed. A pressure/temperature thermostatic relief valve, vacuum breaker on the water supply line, drain and a 6-inch concrete pad shall be provided for the water heater and/or storage tank. A thermostatic mixing valve shall be installed per the clean water act revision. Water shall be stored at 140ºF to prevent Legionnaire’s Disease from growing. Water shall be tempered through the mixing valve and delivered at 110ºF in family housing and 120ºF in barracks and commercial buildings. Each domestic hot water heater shall be equipped with an inline type recirculation pump and recirculation piping and balancing valves when hot water piping extends further than 50 feet from a tank. The water heater relief drain shall be manufacturer approved, and shall be indirectly connected to the building sanitary sewer system. Water heater energy factors shall meet or exceed the minimum requirements of 10 CFR Part 434 and shall be Energy Star or with efficiencies in the upper 25% of what is available. Additional consideration

in the technical evaluation will be given to designs that include water heaters which exceed the minimum energy efficiency requirements and which utilize high efficiency water heaters. Gas fired water heaters shall be in accordance with ANSI Z21.10.1. Electric water heaters shall comply with UL 174.

8-3.1 **PUMPS**. Each domestic hot water heater shall be equipped with an inline type recirculation pump and recirculation piping and balancing valves when hot water piping extends further than 50 feet from a tank.

8-4 **FIXTURES**. The following fixtures will be acceptable for the facilities on this project except where noted otherwise for specific buildings. Provide handicap accessible type as required by Uniform Federal Accessibility Standards (accessible fixtures are not required in UEPH living units). Fixtures shall be water conservation type, in accordance with the International Plumbing Code. Fixtures shall be provided complete with fittings, and chromium- or nickel-plated brass (polished bright or satin surface) trim. All fixtures, fittings, and trim in a project shall be from the same manufacturer and shall have the same finish. All plumbing fixtures shall meet the requirements of the International Plumbing Code (IPC).

8-4.2 Vitreous china plumbing fixtures shall conform to ANSI A112.19.2, Vitreous China Plumbing Fixtures. Stainless steel fixtures shall be in accordance with ANSI A112.19.3, Stainless Steel Plumbing Fixtures (residential design). Plastic fixtures shall conform to ANSI Z124. Enameled cast iron plumbing fixtures shall comply with ANSI A112.19.1, and enameled steel fixtures shall comply with ANSI A112.19.4.

8-4.2 Exposed traps shall be chromium-plated, adjustable-bent tube, 20-gauge brass. Concealed traps may be plastic (ABS).

8-4.3 Faucets shall be single-control type, with seals and seats combined in one replaceable cartridge designed to be interchangeable among lavatories, bathtubs and kitchen sinks, or having replaceable seals and seats removable either as a seat insert or as a part of a replaceable valve unit. Water flow shall be no more than 2.5 gpm from any faucet. Thermostatic faucets are required at all plumbing fixtures that are supplied with hot water.

8-4.4 Shower and bath combination shall be controlled by a diverter valve. Baths and shower and bath combinations shall be provided with waste fitting pop-up, concealed with all parts removable and renewable through the overflow and outlet openings in the tub. Showers and shower and bath combinations shall be equipped with a combination valve and flow control device to limit the flow to 2.5 gpm at pressures between 20 and 60 psi. All shower and bathtub valves shall be thermostatic type.

8-4.5 Piping shall be concealed. Individual shutoff or stop valves shall be provided on water supply lines to all plumbing fixtures except bathtubs and showers. Shutoff valves shall be provided for each bathroom group. In multi-story units, additional consideration shall be given in the technical evaluation to designs that provide separate shutoff valves for each floor.

8-4.6 **WATER CLOSETS (BARRACKS)**. Close coupled siphon-jet, regular bowl with inclined tank, top supply spud, ASME A112.19.2M, floor mounted. Floor flange shall be copper alloy, cast iron, or plastic. Gasket shall be wax type. Seat - ANSI Z124.5, Type A, white plastic, closed-front with cover.

8-4.6.1 **FLUSH TANK.** An adequate quantity of water shall be provided to flush and clean the fixture served. Ball cocks shall meet ASSE 1002. Water closet trim shall conform to ANSI A112.19.5, Trim for Water-Closet Bowls, Tanks, and Urinals (Dimensional Standards). Any water closets designed as handicapped water closets shall meet the top rim of the bowl height requirements of CABO A117.1.

8-4.7 **WATER CLOSETS (OTHER BUILDINGS)**. Close coupled siphon-jet, elongated bowl,

top supply spud, ASME A112.19.2M, wall mounted. Gasket shall be wax type. Seat – ANSI Z124.5, Type A, white plastic, elongated, open front. Flushometer Valve – ASSE ANSI/ASSE 1037, anti-siphon float valve, large diaphragm type with non-hold-open feature, backcheck angle control stop, and vacuum breaker. Minimum upper chamber inside diameter of not less than 2½ inch at the point where the diaphragm is sealed between the upper and lower chambers. The maximum water use shall be 1.6 gallon per flush. Water closet trim shall conform to ANSI A112.19.5, Trim for Water-Closet Bowls, Tanks, and Urinals (Dimensional Standards). Any water closets designed as handicapped water closets shall meet the top rim of the bowl height requirements of CABO A117.1.

8-4.8 **URINALS**. Wall hanging, with integral trap and extended shields, ASME A112.19.2M, siphon jet. Top supply connection, back outlet. Flushometer Valve - ASSE ANSI/ASSE 1037, large diaphragm type with non-hold-open feature, backcheck angle control stop, and vacuum breaker. Minimum upper chamber inside diameter of not less than 2½ inch at the point where the diaphragm is sealed between the upper and lower chambers. The maximum water use shall be 1.0 gallon per flush. Urinal trim shall conform to ANSI A112.19.5.

8-4.9 **LAVATORIES**. Lavatories shall be solid polymer counter top type (where space allows) or wall mounted vitreous china, minimum 20 by 18 inches in size or oval minimum 19 by 16 inches in size. Lavatories shall have faucets, pop-up drains, supplies and p-traps.

8-4.10**BATHTUBS**. Bathtubs shall be slip resistant and shall be constructed of enameled cast iron or porcelain enameled formed steel. Metal bathtubs shall have fiberglass, porcelain-on-steel panels, or ceramic tile wainscot. Bathtub swain walls shall receive solid polymer wall panels and trim kits. For non-historic housing, bathtubs shall steel with mortar pack underneath to prevent flexing. For historic housing, bathtubs shall be cast iron.

8-4.11**SHOWERS**. Shower stalls shall be of ceramic tile, floor to ceiling, over membrane waterproofing on a cementitious substrate; or gel-coated, glass-fiber - reinforced polyester. Shower receptors shall be slip resistant cast stone or gel-coated, glass-fiber-reinforced polyester. Shower stall wainscots shall be ceramic tile or gel-coated, glass-fiber-reinforced polyester. Soft PVC liners shall be installed for shower pans ceramic tile showers.

8-4.12**KITCHEN SINKS**. Kitchen sinks shall be Type 302 stainless steel, 20-gauge minimum, seamless drawn, and sound deadened. Sinks shall be single bowl, self-mounting without mounting rings, complete with cup strainer and plug. Food waste disposers, where provided, shall be in accordance with UL 430 and ASSE 1008, and shall have a minimum motor size of ½ horsepower. Strainer and plug shall be eliminated where food waste disposers are provided.

8-4.13**SERVICE SINKS**. Service sinks shall be enameled cast iron ASME A112.19.1M, copper alloy or stainless steel ASME A112.19, corner, floor mounted 28 inches square, 6-3/4 inches deep. Faucet shall be cast or wrought copper alloy, with top or bottom brace, with backflow preventer. Faucets shall have replaceable seat and the washer shall rotate onto the seat. Two lever handle type shall be provided. Strainers shall have internal threads. Plug, cup strainer, crossbars, jam nuts, washers, couplings, stopper, etc., shall be copper alloy or stainless steel.

8-4.14**LAUNDRY SINKS**. Double bowl, free standing type with faucet, supplies, drain and p-trap.

8-4.15**ELECTRIC WATER COOLERS**. Units shall be electric refrigerated type. Water cooler drinking fountains shall be self-contained, conform to ARI 1010 and the Lead Contamination Control Act of 1988, use one of the fluorocarbon gases conforming to ARI 700 and ASHRAE 34 which has an Ozone Depletion Potential of less than or equal to 0.05, have a capacity to deliver 7.6 gph of water at 50°F with an inlet water temperature of 80°F while residing in a room environment of

90°F and have self-closing valves. Self-closing valves shall have automatic stream regulators, have a flow control capability, have a push button actuation or have a cross-shaped index metal turn handle without a hood. Exposed surfaces of stainless steel shall have No. 4 general polish finish. Spouts shall provide a flow of water at least 4 inches high so as to allow the insertion of a cup or glass under the flow of water.

8-5 **PIPING SYSTEMS**. Piping shall be concealed. Individual shutoff or stop valves shall be provided on water supply lines to all plumbing fixtures except bathtubs and showers. Shutoff valves shall be provided for each bathroom group. In multi-story units, additional consideration shall be given in the technical evaluation to designs which provide separate shutoff valves for each floor or as required to facilitate servicing in the interest of minimizing down time and interruption of service. Provide cathodic protection and pipe joint bonding systems as required.

8-5.1 **INTERIOR GAS PIPING**. The design and installation of natural gas distribution systems and equipment shall be in conformance with manufacturer's recommendations and applicable sections of ASME B31.8 and AGA-01. The installation of interior natural gas distribution systems shall be in conformance with the provisions of NFPA 54 and AGA-01. The use of semi-rigid tubing and flexible connectors for gas equipment and appliances is prohibited, except that the final connections to the kitchen ranges shall be made using flexible connectors conforming to ANSI Z21.45, Flexible Connectors of Other Than All Metal Construction for Gas Appliances, not less than 40 inches long. Provide accessible gas shutoff valve and coupling for each gas equipment item. Comply with IBC or model code seismic requirements. Exposed horizontal piping shall not be installed farther than 6 inches from the nearest parallel wall in laundry areas or areas where clothes hanging could be attempted.

8-5.1.1 **STEEL PIPE**. Shall conform to ASTM A 53, Grade A or B, Type E or S, Schedule 40. Furnace butt-welded or screwed pipe may be used in sizes 1½ inch and smaller. Fittings 1½ inch and smaller shall conform to ASME B16.11. Pipe flanges and flanged fittings larger than 1½ inch, including bolts, nuts, and bolt patterns shall be in accordance with ASME B16.5, Class 150. Butt-weld fittings shall be in accordance with ASME B16.9. Weld neck flanges shall be used.

8-5.2 **EXTERIOR GAS DISTRIBUTION**. Provide a gas distribution system, connected to existing systems and designed in accordance with local codes, utility company requirements, or installation regulations, whichever is more stringent. Gas distribution systems shall comply with the requirements of ASME B31.8. When connecting to existing steel piping system, provision shall be made to ensure that the integrity of the cathodic protection is not compromised. Shutoff valves shall be provided on the exterior of each building. A gas meter and regulator shall be provided for each building structure. Existing lines that are to be abandoned shall be either removed or physically disconnected from all gas sources and purged. Abandoning existing gas piping shall be done in accordance with ANSI B31.8, Gas Transmission and Distribution Piping Systems. Installation of gas piping will be in accordance with ANSI B31.8 and 49 CFR 192.

8-5.2.1 **STEEL PIPE**. Shall conform to ASTM A 53, Grade A or B, Type E or S, Schedule 40. Furnace butt-welded pipe may be used in sizes 1½ inch and smaller. Fittings 1½ inch and smaller shall conform to ASME B16.11. Pipe flanges and flanged fittings larger than 1½ inch, including bolts, nuts, and bolt patterns shall be in accordance with ASME B16.5, Class 150. Butt-weld fittings shall be in accordance with ASME B16.9. Weld neck flanges shall be used.

8-5.2.2 **POLYETHYLENE PIPE**. Shall conform to ASTM D2513, Standard Specification for Thermoplastic Gas Pressure Piping Systems, with fittings complying with either ASTM D2513 or ASTM D2683, Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing. Connections to metal pipe shall comply with ANSI B16.5, Pipe Flanges and Flanged Fittings, or manufacturer's recommended standards.

8-5.2.3 **PLUG VALVES.** Plug valves shall be installed at intersections of mains and other locations so that interruptions to service can be confined to no more than one building.

8-5.2.4 **MAINS AND SERVICE LINES**. Lines shall not be placed under any buildings. Lines shall be placed with a minimum of 2 feet of earth cover. Protective casings shall be provided to protect lines from superimposed street or heavy traffic loads.

8-5.3 **DOMESTIC WATER PIPING**. Piping and fittings shall be copper tubing. Valves shall be provided at each fixture and piece of equipment, at each toilet and kitchen, and on takeoffs from risers to each floor. Under slab supply piping shall be limited to service entrance only. Water piping from service main to main shut-off valve inside of building may be schedule 40 PVC or SDR 26. Water piping under slabs or structures (roadways, walls etc.) must be encased in cast iron pipe sleeves. Grooved pipe is acceptable around wash racks and commercial grade water heaters.

8-5.2.1 **COPPER TUBING**. Water piping under concrete slabs shall be copper tubing, type K, annealed. Joints under the slabs are prohibited. Copper tubing for interior water piping, it shall be type L hard-drawn copper. Fittings for soft copper tubing shall conform to ANSI B16.26, Cast Copper Alloy Fittings for Flared Copper Tubes, and for hard-drawn to ANSI B16.22, Wrought Copper and Copper alloy Solder Joint Pressure Fittings.

8-5.2.2 **SOIL, WASTE, VENT, AND DRAIN**. Piping and fittings shall be cast iron or copper. Drain piping receiving hot water in excess of 120 degrees F in barracks and commercial buildings must be cast iron. Kitchen and mess halls must utilize heavy duty cast iron pipe (acid resistant/ dura iron) for both drains and kitchen equipment. Drain piping in family housing may be schedule 40 DWV PCV pipe. Hub sewer pipe is acceptable outside of buildings. Oakum joints are forbidden. The exit location of the building sanitary sewer main shall be coordinated with existing site conditions shown on utility drawings. The system shall be provided with traps, vents, cleanouts, and all other components as required by code. Appropriate means shall be provided within the plumbing system design to insure that all fixture trap water seals susceptible to loss of water seal by evaporation are replenished. Plastic drain, waste, and vent piping material shall not be used.

8-6 **MISCELLANEOUS ITEMS**.

8-6.1 **CLEANOUTS**. Cleanouts shall be provided at each change in direction of sanitary sewer lines, at the intervals specified in the International Plumbing Code, and at the building service entrance. All cleanouts shall be permanently accessible. Ground cleanouts shall be installed in a 12-inch by 12-inch concrete pad, flush with grade. Wall and floor types shall be provided as required by the code. Provide access panels or cover plates in exposed areas.

8-6.2 **FLOOR DRAINS**. Floor drains shall be provided in gang toilet rooms, mechanical rooms, janitor rooms and for equipment requiring drainage. Floor drains shall be cast iron body and grate. Floor drains in gang toilet rooms shall ha a polished brass grate. All floor drain traps shall be automatically primed by single trap primers or where appropriate distribution unit type trap primers.

8-6.3 **HOSE BIBBS**. Hose bibbs shall be provided at the front and rear of each building, for each ground level housing unit. Hose bibbs shall be frost-proof,

and shall be supplied with an integral vacuum breaker.

8-6.4 **WALL HYDRANTS (EXTERIOR).** Wall hydrants shall be provided at a maximum spacing interval of 150 feet around the exterior wall of the building. Each hydrant shall be box type, freeze-proof, with an integral vacuum breaker/backflow preventer. Hydrants shall have ¾ inch hose connections.

8-6.5 **BACKFLOW PREVENTERS**. A reduced-pressure type backflow preventer assembly shall be provided for the cold water service main for all buildings and shall be located within a mechanical room. Backflow preventers shall not be located outside. A pressure-reducing valve assembly (with valved bypass) shall be provided in the cold water main where system pressures exceed 60 psig. Water connections to HVAC system shall be isolated from the domestic water system by a reduced-pressure backflow preventer assembly. Backflow prevention shall also be provided at each wall and lawn faucet and service sink.

8-6.6 **WATER HAMMER ARRESTERS**. Water hammer arrestors shall be provided for shock suppression. The placement of water hammer arrestors shall be as referenced in the International Plumbing Code (IPC) and PDI-WH 201.

8-6.7 **WASHER WALL BOXES**. Clothes Washer Connections at each washer location. Drainage and hot and cold water supply shall be provided for automatic clothes washers. Washer connection, complete with 2 inch drain, ¾ inch hose thread supplies shall be provided in standard manufactured recessed wall box with single-face plate. Boxes shall be constructed of plastic or sheet steel. Steel boxes shall have a corrosion-resistant epoxy enamel finish. Boxes shall be mounted a minimum of 2 ft-10 inches above the finish floor. Electrical outlets for both washer and dryer shall also be provided.

8-7 **PIPE INSULATION.** Insulation type shall be fiberglass, closed cell foam, or phenolic foam.

8-7.1 **DOMESTIC SERVICE HOT WATER PIPING**. Minimum pipe insulation performance shall be in accordance with the requirements of the latest edition of ASHRAE/IESNA 09.1.

8-7.2 **DOMESTIC SERVICE HOT, COLD AND HOT WATER RETURN PIPING.** Domestic service hot, cold and hot water return piping shall be insulated with a minimum of ½ inch insulation with vapor jacket.

8-7.3 **ROOF DRAIN PIPING**. Provide 1-inch thickness insulation on all horizontal piping.

8-8 **SPECIFICATIONS**. Unified Guide Specifications (UFGS) shall be used for this project. The contractor shall edit the appropriate UFGS Sections. These shall be submitted for review with the preliminary and final design submittals. Marked-up versions of the specifications shall be provided in the preliminary design submittal to allow reviewers to identify changes made. These specifications shall be followed for the design and installation of the sprinkler systems. Specification sections shall include, but not be limited to 02556A, 15190A and 15400A.

8-9 **CATALOG CUTS**. Manufacturers’ catalog cuts for major pieces of equipment shall be provided with each submittal and shall represent actual equipment to be installed. Deviations from equipment or installation as indicated in the proposal or design submittals shall not be allowed or accepted unless approved by the Contracting Officer.

8-10 **SITE INVESTIGATION**. The Contractor shall perform any site investigations required to gather any information necessary for completing fire protection system design for the project.

8-11 **DESIGN SUBMITTAL REQUIREMENTS**. The contractor shall provide a design

analysis in accordance with A-4 of the Design Manual for Military Construction (DMMC) for the appropriate level of design. The contractor shall provide drawings in accordance with A-4 of the DMMC for the appropriate level of design. The contractor shall provide specifications in accordance with A-4 of the DMMC for the appropriate level of design. All submittals shall comply with A-4 of the DMMC.

CHAPTER 9

ELECTRICAL SYSTEMS

9-1 **DESIGN STANDARDS AND CODES**. The design and construction of the electrical systems shall be in accordance with: (1) National Fire Protection Association Standards, (2) the rules and recommendations of ANSI C2, (3) as required herein, (4) the referenced Unified Facility Guide Specifications (UFGS), and (5) Ft. Benning's Installation Design Guide. Guide specifications are referenced in this RFP for their use in preparation of the design and shall be edited consistent with the criteria furnished. The most current edition of the codes and standards shall be used for building construction and life safety design. Where there is a conflict between the RFP and the codes and standards the most stringent shall apply. When codes and standards are in conflict, the most stringent shall apply. Standards and codes are listed in the guide specifications.

9-1.1 The following criteria references will be used in the design of this project:

i.	TM 5-811-1	Electric Power Supply and Distribution
ii.	TM 5-811-2	Electrical Design, Interior Electrical Design
iii.	TM 5-811-9	Voice/Data Telephone Systems
iv.	TM 5-809-10	Seismic Design for Buildings
v.	TI 800-10	Technical Instructions Design Criteria
vi.	ANSI-C2	National Electrical Safety Code
vii.	ANSI/EIA/TIA-568	Commercial Building Telecommunications Cabling Standard
viii.	ANSI/EIA/TIA-569	Commercial Building Standard for Telecommunications Pathways and Spaces
ix.	ANSI/EIA/TIA-606	Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
x.	NFPA 70	National Electrical Fire Code, 2002 Edition
xi.	NFPA 101	Life Safety Code, 1999 Edition
xii.	NFPA 780	Installation of Lightning Protection Systems
xiii.	Savannah District Design Manual for Military Construction	
xiv.	IES Lighting Handbook	
xv.	Installation Design Handbook, Ft. Benning, Ga.	
xvi.	Installation Information Infrastructure Architecture (I3A) Design and Implementation Guide.	

9-1.2 The Design/Build Contractor shall provide new UFGS specifications for this project in accordance with the requirements contained within this RFP.

9-2 **DESIGN CALCULATIONS**. Provide calculations for the following:

9-2.1 Interior lighting. Provide calculations for each room or area.

9-2.2 Exterior lighting. Provide calculations for all site lighting to include parking areas, walkways, and security.

9-2.3 Load Analysis for each building to include connected and estimated demand. Separate loads by categories such as lighting, receptacles, HVAC, special equipment, etc.

9-2.4 Fault – short circuit calculations for electrical system(s).

9-2.5 Voltage drop – Provide calculations to verify voltage drops. Do not exceed limits as given in the National Electric code (NEC).

9-2.6 Coordination – provide data to verify proper protection and coordination is provided for the equipment/system(s).

9-3 **MATERIALS AND EQUIPMENT**. All materials and equipment shall be the standard catalogued products of manufacturers regularly engaged in the production of such equipment and material, and shall be the manufacturer's latest design. All equipment and material shall conform to the requirements of American National Standards Institute (ANSI), American Society of Testing and Materials (ASTM), National Electrical Manufacturer's Association (NEMA), National Fire Protection Association (NFPA) or other national trade association as applicable. Where standards exist, materials and equipment shall bear the label and be listed by Underwriters Laboratories, Inc. (UL) or other recognized testing organizations.

9-3.1 Space requirements. Electrical space shall be provided for all electrical equipment. Space shall provide clearances and working areas as required by codes. Coordinate location to consider factors such as ease of maintenance, vicinity to loads being served and accessibility.

9-3.2 Wiring. Shall be copper and shall be run in conduit. Use solid bare copper wire for sizes No. 8 AWG and smaller diameter, and Class B, stranded bare copper wire for sizes No. 6 AWG and larger diameter.

9-3.3 Motors. Motors shall be high energy efficient type. Motors larger than one-third horse power shall be three phase. Motors one-third horsepower and smaller shall be single phase. Motor starters for mechanical and special equipment will be furnished as an integral part of the mechanical or special systems.

9-3.3.1 Motor Efficiencies. Minimum motor efficiencies shall be either Energy Star or in accordance with DOE Buying Energy Efficient Products Recommendations (refer to www.eren.doe.gov/femp/procurement for recommended efficiencies). Applications which require definite purpose, special purpose, special frame, or special mounted polyphase induction motors are excluded from these efficiency requirements. Motors provided as an integral part of motor driven equipment are excluded from this requirement if a minimum seasonal or overall efficiency requirement is indicated for that equipment by the provisions of another section.

9-3.4 Switchboard/panelboard. Dead-front construction, NEMA PB1 and UL 67.

9-4**GROUNDING.**

9-4.1 The secondary electrical distribution system shall be the solidly grounded neutral type with no intentionally introduced grounding impedance. Grounding shall be in accordance with Article 250, National Electrical Code. A green insulated grounding conductor shall be provided with all branch and feeder wiring.

9-4.2 A grounding counterpoise shall be provided around each transformer pad, chiller and around each building. Counterpoises shall be bonded together. Building counterpoises provided under lightning protection system requirements shall be connected to the transformer and chiller counterpoise, the main electrical panel, the main communications ground, building steel and lightning protection down conductors. Ground rods shall be provided at each counterpoise connection. Connections shall be by exothermic weld. Building counterpoises shall be connected together where one building is located next to another building. The ground ring is to be located 3 to 6 feet outside the drip edge of the building.

9-4.3 Grounding conductors shall be copper. Driven grounding electrodes shall be 3/4-inch diameter solid rods of the following materials: copper or copper-clad steel.

9-4.4 Even though ground rods are indicated above, the grounding system shall be designed for a maximum of 25 ohms. Chemical or other similar designs, which call for the user to maintain the system, will not be used. Impedance measurements

should be made using a direct reading ground resistance meter. Documentation will be provided to the Contracting Officer’s Representative.

9-4.5 Grounding and bonding shall conform to UL 467.

9-4.6 Provide a #6 bare copper ground wire to each Communications rooms and bond to a telecommunications grounding busbar on each telecommunications backboard. Ground wire shall be bonded to building steel. Leave sufficient coil in each wire to reach any part of the backboard and/or cabinet.

9-5**EXTERIOR LIGHTING.**

9-5.1 The design of exterior lighting and associated lighting levels not indicated shall be in accordance with Illuminating Engineering Society, IES, Lighting Handbook Reference and Application, 9th Edition. Exterior lighting shall include any parking areas, as well as any walkways, canopies, and facility entrances/exits. The maximum brightness ratio will be 1 to 6. All exterior lighting shall utilize color corrected high pressure sodium (HPS) lamps. Parking lots and street lighting shall be photocell controlled. All site lighting shall be zoned and shall have a separate photocell for control unless otherwise indicated. Each contactor/zone shall be equipped with Hand-Off-Auto switches unless otherwise indicated. Location of controls shall be coordinated with the User after Contract award. Walkways shall be illuminated to .5 footcandles. Parking areas shall be illuminated to .5 footcandles and utilize high cut-off type fixtures. Facility entrances/exits shall be illuminated with wall mounted fixtures or recessed fixtures mounted in the soffit, if applicable. All exterior fixtures shall be dark bronze anodized aluminum.

9-5.1.1 Metal poles shall be the pole manufacturer's standard design for supporting the number of fixtures indicated. Poles shall be designed for a wind velocity of 100 mi/hr at the base of the pole, for a wind gust factor of 1.3, and for the height and drag factors recommended by AASHTO LTS-3. The effective projected area of luminaries and other pole-mounted devices shall be taken into account in pole design. Poles shall have grounding provisions. The type of pole shaft material provided shall not be mixed for the same type of fixture types. Grounding connection shall be provided near the bottom of each metal pole and at each concrete pole anchor base. Scratched, stained, chipped, or dented poles shall not be installed.

9-5.1.2 Parking lot lighting design shall be coordinated with Flint Energies. New roadway lighting will be provided by Flint and the overall appearance of site lighting shall be coordinated.

9-6**INTERIOR DISTRIBUTION SYSTEMS.**

9-6.1 General.

9-6.1.1 All electrical equipment shall fit into the space required and be provided with all the access and clearance required by code.

9-6.1.2 Series rated breakers/switchboards/panelboards/loadcenters, etc. shall not be used.

9-6.1.3 All branch circuits that supply 125-volt, single-phase, 15- and 20-ampere outlets installed in dwelling unit bedrooms shall be protected by an arc-fault circuit interrupter listed to provide protection of the entire branch circuit.

9-6.1.4 All conductors shall be in a conduit system that the cables can be removed and replaced, except in living units. It is permissible to provide type AC or NM cable assemblies for branch circuits fed from living unit load centers.

9-6.1.5 Security lighting shall be provided at service entrances and at

utility rooms (i.e. mechanical, electrical, communications, etc.). Wall mounted security light fixtures shall be shrouded to minimize glare. Fixtures shall use compact fluorescent lamps with glare control.

9-6.1.6 Security or wall mounted light fixtures at main entrances and other high visibility areas shall be selected for aesthetics and compatibility with the building's architecture.

9-6.1.7 Fluorescent lamps shall be T8 or compact. Fluorescent ballast shall be electronic type. All fluorescent lamps shall be low mercury content certified to pass the U.S. Environmental Protection Agency (EPA) Toxic Characteristics Leaching Procedures (TCLP) test for non-hazardous waste.

9-6.2 Emergency Lighting.

9-6.2.1 Illuminated exit signs and emergency lights shall be provided by self-contained emergency battery units for all emergency exits and passageways as required by the NFPA Life Safety Code 101. Exit fixtures shall be LED (red).

9-6.2.2 Upon loss of power the emergency lamp shall light regardless of the light switch position.

9-6.2.3 All emergency and exit lights shall be installed in accordance with ETL 99-4.

9-6.3 Lighting

9-6.3.1 Lighting for individual areas and spaces shall be as follows:

Kitchen undercabinet: Task lighting of at least 75 fc utilizing fluorescent undercabinet fixtures with integral switches.

Kitchen Area: General lighting to be 40 fc utilizing recessed fixtures with fluorescent lamps.

Sleep Rooms: Area lighting to be surface mounted fixtures with fluorescent lamps. The fixtures shall be controlled by multiple switches to allow multi-level lighting. The ambient light level (with all lamps on) at desk height shall average 15-25 fc min.

Living Module Common Space: Area lighting to be recessed or surface mounted utilizing compact fluorescent lamps. Fixtures to be switchable by zones to allow for at least (2) levels of illumination with the minimum level to be 30 fc.

Other Spaces: Breezeways/Exterior Corridors: 5 fc (min.)

Stairways: 20 fc

Electrical/Mechanical/Communications Rooms: 30 fc

Lobby: 30 fc

Offices: 50 fc

Multipurpose Rooms: 40 fc (Note 1)

Storage: 10 fc

Restrooms: 20 fc (Note 2)

Notes: 1. Where multi-purpose rooms have provisions for televisions, that space shall have dimmable lighting.

2. For bathrooms in living units provide a wall mounted fluorescent fixture over the lavatory and a ceiling mounted shower light (UL listed for wet applications) over the tub or shower.

9-6.3.2 All linear fluorescent lamps shall be energy efficient T8 type. The color temperature and minimum CRI of all fluorescent T8 lamps shall be 3500 degrees Kelvin and 82 respectively. The color temperature and minimum CRI of all compact fluorescent lamps shall be 3500 degrees Kelvin and 82 respectively, unless otherwise indicated. All lamps shall be approved by the lamp manufacturer for the indicated ballast type.

9-6.3.2.1Incandescent light fixtures may be used only for architectural effect. Incandescent light fixtures will not be used for general lighting.

9-6.4 Power

9-6.4.1 Receptacles in living units shall be located in compliance with the National Electrical Code Article 210 and as described hereinafter:

9-6.4.1.1GFI receptacles are to be wired such that the loss of power on one receptacle does not affect downstream receptacles.

9-6.4.1.2Provide appropriate outlet types for any Government furnished equipment identified (i.e. copier machines, fax machines, etc.)

9-6.4.1.3Waterproof, GFI receptacles shall be provided on the outside areas at entrances to all buildings.

9-6.4.1.4Provide receptacles adjacent to all CATV and data jack locations.

9-6.4.1.5Provide arc-fault circuit interrupter type receptacles in all sleep rooms.

9-6.4.2 Provide one 120 volt, 20 amp receptacle on a dedicated 20 amp circuit on each 4’ wide telecommunications backboard in all Communications rooms.

9-6.4.3 All switchboards, panelboards, loadcenters and feeders shall be sized with 20% additional capacity for future additions and changes.

9-6.4.4 All switchboards, panels, loadcenters and feeders shall be sized for the future addition of range/ovens in each living module. Provide an empty conduit from each load center to the kitchen area where the future cooking unit will be placed and provide a junction box for a future oven receptacle.

9-6.5 Telephone, Data and Cable TV.

9-6.5.1 The design for telephone, data and CATV systems in this project shall comply with the following items. The telecommunications Contractor shall have the following qualifications:

3 years experience in the application, installation, splicing, and testing of the required telecommunications system equipment.

Certification showing qualifications to install and test actual equipment being installed.

Certification as a Registered Communications Distribution Designer (RCDD) awarded by BICSI. The RCDD shall be responsible for the low voltage system design drawings and coordination with other trades.

9-6.5.2 A completely operational cabling system including, but not limited

to, all necessary raceway, cabling, terminations, jacks, patch panels, patch cords and faceplates shall be provided. All outlets (voice/data) and cable TV (CATV) outlets will be 18 inches above finish floor (AFF) except wall telephone outlets will be 54 inches AFF. Voice and data jacks will be in the same outlet. The cable associated with the outlet will be 4 pair, 24 AWG solid, unshielded twisted pair (category 6) copper for voice and a 4 pair, 24 AWG solid, unshielded twisted pair (category 6) for data. Termination of copper at instrument end will be in a RJ-45 jack (Category 6) for “voice” and RJ-45 jack (category 6) for “data”. All terminations shall meet T568B pin configuration standard. Termination at the communication closet/room for voice shall be on 110 type, Category 6 rated, punch down blocks. Termination at the closet/room for data shall be on 24 port, Category 6 rated, modular patch panels (rack mounted). LAN riser cables shall be 12 strand, single-mode optical fiber with CMR rating. Telephone risers shall be multipair bundled Category 3 riser cables with CMR rating (the quantity of pairs to be determined by the number of handsets on each floor times 2 pairs). Coordinate with Ft. Benning’s Communications Officer on the termination arrangements of the cables and the layouts of the patch panels in the equipment racks. All equipment racks shall be floor mounted. The horizontal cable for the CATV shall be RG-6 and the connector shall be a “F” type and terminated on splitters. The backbone cable between floors shall be RG-11 type. All splitters shall be located on CATV backboards in Communications rooms. All CATV horizontal cabling shall be homerun between CATV jacks and CATV backboard in Communications rooms. The Design/Build Contractor shall perform calculations on the CATV system to determine whether amplifiers are needed on certain floors. The Design/Build Contractor shall be responsible for amplifiers where determined to be necessary. All CATV headend equipment, incoming service, etc. shall be furnished and installed by Time-Warner, the local Cable TV Company.

9-6.5.2.1All outside plant cabling, including cables, terminating blocks, surge suppressors, etc. will be provided by Ft. Benning’s DOIM. Provide ductbanks as shown on drawings and provide 200 lb. test nylon pullstrings in each.

9-6.5.2.2All spaces requiring telephones, computers, and/or televisions shall be networked to the appropriate system as described above. Refer to Chapter 2 – Functional and Area Requirements for description of these connections on a room – by – room basis.

9-6.5.3 Each sleep room shall have one CATV jack and one combination telephone/data outlet consisting of two RJ-45 jacks, one for telephone and one for data.

9-6.5.4 The Commons Buildings/Areas shall have a wall phone jack for pay phones for every 12 barracks sleep room in each complex.

9-6.5.5 Provide wall mounted telephone jacks, mounted at 48” AFF, in all electrical, communications, and mechanical rooms.

9-6.5.6 Conduit from telephone or CATV outlets shall be a minimum of 1-inch electrical metallic tubing (EMT) conduit. One-inch EMT conduits shall be installed as a "home run" between the telecommunications closet telephone backboard and each outlet. "Home run" means one continuous conduit run with NO pull boxes and NO more than two 90-degree bends in the entire conduit run. All conduits routed to outlet boxes shall be provided with a pull cord, whether the conduit is empty or not. All conduits to administrative outlet boxes shall be provided with a pull cord for future installation of fiber optic cable (FOC). All outlet boxes for telecommunications cables shall be sized 4-11/16” square and 2-1/8” deep.

9-6.5.7 All communications rooms shall be lined floor to ceiling with 4’ wide plywood backboards for mounting of telecommunications equipment. Plywood shall be ¾” thick and shall be fire retardant Type AC rated.

9-6.5.8 Connect all applicable buildings into the Base EMCS System.

9-6.5.9 All communications systems shall be tested in accordance with EIA/TIA 606 standards.

9-6.5.10 Layout for the telecommunications rooms shall be in accordance with the Installation Information Infrastructure Architecture (I3A) Design and Implementation Guide.

9-6.6 Fire Alarm System.

9-6.6.1 The fire alarm system for this project shall comply with the following items.

9-6.6.2 The fire alarm system will consist of a control panel, manual pull stations, horns and strobe lights, sprinkler water flow switches, valve tamper switches, air pressure supervisory switches, control and monitor modules for non-addressable devices and smoke and heat detectors as required by criteria.

9-6.6.3 In addition to the manual pull stations at all exits; provide pull stations at all other exterior entrances such as mechanical, electrical and communication rooms.

9-6.6.4 Provide horns/strobes throughout the facility so that alarm sound levels at any location are at least 15 dB above normal ambient sound levels and can be heard in all rooms (i.e. in shower with water running). Provide strobe lights to comply with NFPA 72-1999. Strobe lights shall meet Underwriter’s Laboratories (UL) Standard 1971 and shall be synchronized.

9-6.6.5 The fire alarm system shall be a completely supervised system employing analog addressable initiating devices and multiplex communication techniques. Each detection, monitor and control device shall be individually addressable. Devices that are not inherently addressable (i.e. tamper, flow switches etc.) shall be equipped with addressable monitor and control modules.

9-6.6.6 Coordinate with the other disciplines to provide tamper switches on all fire alarm system control valves and the Post Indicator Valve (PIV). Coordinate with the Architect for releasing all electromagnetic doors.

9-6.6.7 System shall be a four wire, two conduit loop system. Vertical and horizontal separation of conduits shall be in accordance with NFPA 72. Conduits are to be marked with a red stripe every 10 feet. All junction or pullboxes shall be painted red.

9-6.6.8 Provide cabinet mounted MOV based surge protection device in addition to surge protection integral to the FACP. Device shall be UL 1449 listed and shall satisfy the requirements of IEEE C62.41.

9-6.6.9 The fire alarm system shall be equipped with back-up power in the form of batteries. Batteries shall be sized and connected as required in NFPA 72 and shall be housed in a separate enclosure adjacent to control panel.

9-6.6.10 Provide combination heat/smoke detectors with sounder in each sleep room. The system shall be programmed such that when the smoke detector activates, all sounders in the module (each sleep room and common space) will sound, but the building system will not. An alarm activated by the heat detector shall sound the building alarm system. An additional heat detector shall be placed at the kitchen area. All trouble and alarm signals shall be transmitted to the central receiving station via an RF transmitter.

9-6.6.11 The transmission of fire alarm signals shall be sent to the central receiving station via the Post’s Ethernet system. Provide an additional telephone jack adjacent to the fire alarm panel for back-up connection to the central receiving station. Coordinate with Ft. Benning’s Fire Chief for phone numbers and other programming requirements for the Fire Alarm system.

9-6.7 Lightning Protection. Lightning protection shall be provided for each building. Complete protection via air terminals shall be provided. The system shall have the appropriate U.L. master label installed on the building. Down and roof conductors shall be concealed within the buildings. Lightning protection system shall be in accordance NFPA 780.

9-6.8 Transient Voltage Surge Protection (TVSP) shall be provided for each building. Surge suppressors shall parallel the operating devices in providing a path to ground for an electrical surge and limiting the magnitude of transient voltage surges on the system. Units shall be mounted adjacent to the main distribution panel in accordance with the manufacturer’s recommendation. Unit shall be hard-wired into the electrical distribution system utilizing a circuit breaker connection. Units shall be tested in accordance with IEEE C62.45 using an IEEE C62.41 Category B waveform. Units shall be UL 1449 listed and labeled. Modes of protection shall be normal mode (L-N, L-L) and common mode (L-G, N-G). The unit shall include self-diagnostic and self-testing capabilities, a resettable transient event counter, and a local audible alarm with mute capability.

9-6.9 Seismic protection shall be provided for all the buildings. Seismic design shall be in accordance with Army Technical Manual, TI 809-04, Seismic Design for Buildings, dated December 1998 and Specification Section 16070A Seismic Protection for Electrical Equipment.

9-6.10Americans with Disabilities Act (ADA). The electrical, communications and fire alarm systems shall comply with the ADA for buildings identified in the RFP with this requirement.

9-6.11References in the above narrative can be found at the following

Installation Information Infrastructure Architecture (I3A) Design and Implementation Guide – http://www.hnd.usace.army.mil/paxspt/isce/pubs.html

CHAPTER 10

UNIT DESIGN - HEATING, VENTILATING, AND AIR CONDITIONING

10-1 MECHANICAL DESIGN REFERENCES, CODES, AND STANDARD. The design and construction of the mechanical systems shall be in compliance with design criteria listed below, as required herein, and the referenced Unified Facility Guide Specifications (UFGS). Guide specifications are referenced in this RFP for their use in preparation of the design and shall be edited consistent with the criteria furnished. The most current edition of the codes, standards, and references shall be used for project design. Where there is a conflict between the RFP and the codes and standards the most stringent shall apply. When codes and standards are in conflict, the most stringent shall apply.

Design Criteria List:

- Savannah District Engineering Design Manual for Military Construction dated May 2000
- Savannah District Drafting Standards
- Technical Instructions TI 800-01, Design Criteria
- Technical Instructions TI 800-03, Technical Requirements for Design Build
- Technical Instructions TI 809-04, Seismic Design for Buildings
- Technical Instructions TI 810-10, Mechanical Design Heating, Ventilating, and Air Conditioning
- Technical Instructions TI 809-11, HVAC Control Systems
- ETL 1110-3-483, Clothes Dryer Exhaust Venting
- NBS Handbook 135, LCC Manual – Federal Energy Program
- CEGS-15951, Direct Digital Control Systems for HVAC
- American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) Manuals
- NFPA 90A, Installation of Air Conditioning and Ventilating Systems.
- NFPA 90B, Installation of Warm Air Heating and Air Heating and Air Conditioning Systems.
- National Fire Codes (NFC)
- ASHRAE Standard 62-2001, Ventilation for Acceptable Indoor Air Quality
- ASHRAE Standard 90.1-1999, Energy Standard for Buildings Except Low-Rise Residential Buildings
- Army Technical Manual TM 5-805-4, Noise and Vibration Control for Mechanical Equipment
- Department of Defense Antiterrorism Construction Standards

10-2 GENERAL. The mechanical systems design for this project shall be in accordance with ASHRAE Handbooks, TI 800-01 Design Criteria Technical Instructions, ASHRAE Standard 62 - Ventilation for Acceptable Indoor Air Quality, Savannah District Design Manual for Military Construction, Volume II of II, applicable NFPA Standards, other applicable references listed within the RFP, and governing industry standards as applicable. The Contractor’s proposal will list all pertinent standards and specifications and their applicability to the project. Catalog cuts for major equipment will include manufacturer’s published data stating that such equipment meets the applicable standard. Catalog cuts for major equipment shall be for the actual equipment proposed to be installed. Deviations and installation of equipment other than proposed are only allowed subject to Contracting Officer approval. As a minimum, the mechanical equipment rooms shall reflect the minimum clearance as specified by the equipment manufacturer in all five directions (all four sides and top). Equipment tube bundle and coil pull spaces shall be shown on mechanical room layouts. Mechanical

rooms shall be adequate to allow the layout of equipment such that the removal or replacement of one major piece of equipment shall not require removal of adjacent equipment.

10-2.1 Mechanical layouts shown on drawings are acceptable to the user, but it shall be the responsibility of the successful proposer to develop a layout to meet the final design parameters of the project.

10-2.2 New utility layout shown is a functional layout acceptable to the user, but has not been fully coordinated with all existing site conditions. It shall be the responsibility of the successful proposer to develop a layout to meet the final design parameters of the project.

10-3 HVAC SYSTEMS DESIGN

10-3.1 HVAC Design Conditions

Outdoor Conditions:

- Heating Season: 24 deg. F Dry Bulb
- Cooling Season: 93 deg. F Dry Bulb. / 76 deg. F Wet Bulb
- Air Cooled Condenser Design Condition: 95 deg. F Dry Bulb

Indoor Conditions:

- Barracks Rooms: Summer: 78 degrees F, 50 percent RH. Winter: 68 degrees F.
- Occupied Spaces: 78 degrees F, 50 percent RH. Winter: 68 degrees F.
- Barracks Corridors: Summer: 78 degrees F, 50 percent RH. Winter: 68 degrees F.
- Commons Building Occupied Spaces: 78 degrees F, 50 percent RH. Winter: 68 degrees F.
- Mechanical Rooms: Summer: Mechanically ventilate to 103 deg. F maximum (Ventilation rate shall not be lower than 20 air changes per hour). Winter: 40 deg. F for freeze protection only.
- Electrical Rooms: Summer: Mechanically ventilate to 103 deg. F maximum (Ventilation rate shall not be lower than 20 air changes per hour).
- Telecommunications Rooms: These rooms shall have a stand alone HVAC system to condition the space 24hr/day – 7days/week. Maintain temperature between 64 and 72 deg F DB. Relative humidity shall be maintained between 30% and 55% RH.

    - **Minimum Thermal Characteristics.** The buildings' R-values shall comply with ASHRAE 90.1-1999.

10-3.2 Internal Loads and Heat Gains. Refer to Appendix B3 and B4 for room occupants, operation schedule, and specific equipment.

10-3.3 Cooling Systems Design.

10-3.3.1 Chilled water coil flow rates shall be calculated based on 44 deg. F EWT and 56 deg. F LWT.

10-3.3.2 Each building’s chilled water system shall include redundant pumps.

10-3.3.3 Chilled water storage tanks shall be provided if the chilled water volume is less than 7 gallons per ton to ensure the chiller does not short cycle.

10-3.3.4 (Dixie Rd Barracks). Each Barracks building shall be served with its own air cooled chiller. Chilled water pumps and accessories shall be located in the Mechanical Room located on the first floor of the Barracks Building.

10-3.3.5 (Hospital Barracks). One air cooled chiller shall serve the Barracks

building, COF, and Commons Building. Chilled water pumps and accessories shall be located in the Mechanical Room of the Commons Building.

10-3.3.6 (Battalion Headquarters). The Battalion Headquarters Building shall be served by one air cooled chiller. Chilled water pumps and accessories shall be located in the BHQ Mechanical Room.

10-3.4 Heating System Design.

10-3.4.1 Hot water coil flow rates shall be calculated base on 180 deg. F EWT and 160 deg. F LWT.

10-3.4.2 Each building’s hot water system shall include redundant pumps

10-3.4.3 (Dixie Rd Barracks). Each Barracks buildings shall be served with its own gas fired boiler(s). Hot water pumps and accessories shall be located in the Mechanical Room located on the first floor of the Barracks Building.

10-3.4.4 (Hospital Barracks). The Barracks building, COF, and Commons Building shall be served by gas fired boilers located in the Mechanical Room of the Commons Building. Hot water pumps and accessories shall also be installed in the Mechanical Room of the Commons Building

10-3.4.5 (Battalion Headquarters). The Battalion Headquarters Building shall be served by one gas fired boiler. Hot water pumps and accessories shall be located in the BHQ Mechanical Room.

10-3.5 Air System Design and Zoning.

10-3.5.1 (Dixie Rd & Hospital Barracks). The barracks buildings shall be served by a 2-pipe fan coil system. One fan coil unit shall be provided for each of the barracks living units. The closets in each of the living units shall be conditioned. Corridors shall also be conditioned using 2-pipe fan coil units. Fan coils for the living units shall be ceiling mounted type.

10-3.5.2 (Battalion Headquarters). The Commons building shall be served by a chilled water/hot water VAV system. This system shall be zoned by functional requirements, operation schedules, environmental control conditions, and load characteristics.

10-3.5.3 (Commons Building). The Commons building shall be served by constant volume chilled water/hot water air handling units. This system shall be zoned by functional requirements, operation schedules, environmental control conditions, and load characteristics.

10-3.5.4 (COF). The COF building shall be served by constant volume chilled water/hot water air handling units. This system shall be zoned by functional requirements, operation schedules, environmental control conditions, and load characteristics.

10-3.6 Ventilation Systems Design.

10-3.6.1 Ventilation for building occupants shall be provided in accordance with ASHRAE Standard 62-2001. Outside air quantities will be sufficient to meet ventilation requirements and maintain a positive pressure at all times relative to the outdoors in the living/sleeping rooms, interior corridors, offices, conference rooms, lobby and similar occupied areas.

10-3.6.2 Fan coil unit configurations that directly utilize untreated/untempered outside air shall not be used on this project. A separate outside air system that pre-treats outside air shall be used where fan coil units are provided.

10-3.6.3 Where the outside air requirements are a significant part of the cooling load, especially where a separate outside air unit is required, the use of desiccant cooling, enthalpy wheels and similar devices for conditioning the outside air and transferring latent and sensible heat to the exhaust air shall be considered.

10-3.6.4 Exhaust systems shall be provided for all bathrooms, janitor's closets, mechanical rooms, electrical rooms, and other spaces as required.

10-3.6.5 The outside air intakes shall be located at least 10 ft. above finish grade. Outside air intakes shall be located away from fumes including vehicle exhaust, generator exhaust, toilet exhaust, etc.

10-3.6.6 Each building’s ventilation system shall have emergency switches that shut down the ventilation system. These switches should be located in easily accessible areas.

10-3.6.7 Barracks Building. The outside air quantity for each module shall be determined with the toilet exhaust fan in operation. Dedicated 100% outside air units shall be used to condition the ventilation air and deliver it to each occupied space (living/sleeping room). These units shall contain hot water and chilled water coils. The cooling coils for these units shall be sized to cool the outside air to 55 deg. F in order to dehumidify the ventilation air. The heating coils for these units shall be sized to heat the outside air to 68 deg. F. When the outside air temperature is above 65 deg. F these units shall cool the air to 55 deg. F and then reheat the air to 68 deg. F. When the outside air is below 65 deg. F these units shall heat the air to 68 deg. F.

10-3.6.7.1 (Dixie Rd Barracks). Each of the barracks buildings shall be served by three dedicated 100% outside air units. Each unit shall serve one floor of the barracks building.

10-3.6.7.2 (Hospital Barracks). The Hospital Barracks shall be served by a minimum of two dedicated 100% outside air units. Each unit shall serve one half of the barracks building. The location of ventilation equipment is to be determined by the design build team, with the requirement that it must be accessible for maintenance as well as removal and replacement.

10-3.6.7.3 Battalion Headquarters, COF & Commons Building. Ventilation for building occupants shall be provided in accordance with ASHRAE Standard 62-2001.

10-3.7 Acoustical Criteria. Design HVAC systems with respect to noise and vibration control in accordance with TM 5-805-4. This document can be found at: http://www.usace.army.mil/inet/usace-docs/armytm/tm5-805-4/entire.pdf Systems shall be designed to meet the following noise criteria:

Area	NC Level
Barracks Living Unit	30
Office Spaces	30
All other spaces	35

10-3.7.1 Acoustical treatments such as duct lining and sound attenuators shall be used to achieve these levels. Any spaces not specifically listed above shall be coordinated with the user. Vibration transmission from equipment shall be minimized with the use of vibration isolation equipment as required.

10-4 DESIGN CALCULATIONS

10-4.1 Heating/Cooling Load Calculations. Heat gain and loss calculations shall be, as a minimum, in accordance with the current edition of the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) Handbook of Fundamentals. Computer generated loads must be submitted with

complete input and output summaries during the design process. Load calculation software must be ASHRAE based. The cooling equipment shall be selected based on satisfying both the total and latent calculated loads. System shall be designed, installed, balanced, and adjusted to distribute heating and cooling to all habitable rooms, in proportion to the calculated heat losses/gains in these rooms. Heating shall also be provided to utility rooms, and other uninhabitable areas as needed to prevent pipes from freezing. Verify ventilation rates of each space with the referenced publications in this mechanical design section. Conduct air balance calculations for the space in the complex to verify total supply air, outdoor air, return air, and exhaust air. The space (airflow) pressure relationships shall be maintained. Total airflow calculations are required to verify that the building pressure is positive to the outdoors. The design shall reflect heating and cooling capacities based on the design conditions stated in paragraph 10-3.1.

10-4.2 Piping calculations. Calculations shall be provided for pressure drop calculations for all piping systems, including head loss calculations for all pumps.

10-4.3 Duct calculations. Calculations shall be provided for sizing all duct systems, including static pressure drop calculations for all fans. Ductwork layout drawings shall also be provided to indicate all fittings and devices to substantiate calculations.

10-5 MECHANICAL SYSTEMS.

10-5.1 System Selection. HVAC systems shall be capable of controlling the dew point of the supply air for all load conditions. The designer must base system selection on the capability of the air-conditioning system to control the humidity in the conditioned space continuously under full load and part load conditions. Peak latent load outdoor design conditions (the design wet bulb temperature and the mean-coincident dry bulb temperature) or low sensible loads and high latent loads (relatively cool cloudy days) will, in some cases, cause inside relative humidity to be higher than desired. If analysis indicates that this condition will occur, reheat will be used. Use energy recovery systems whenever it is feasible.

10-5.2 Mechanical Equipment. Mechanical equipment shall be in accordance the latest edition of the Corps of Engineers Unified Facilities Guide Specifications. All materials and equipment provided shall be standard catalogued products of manufacturers regularly engaged in the production of such materials and equipment shall be of the manufacturers' latest standard design. Equipment shall comply with the requirements of Underwriter's Laboratories, Inc. (UL), Air Conditioning Refrigeration Institute (ARI), American Society for Testing and Materials (ASTM), National Electric Manufacturer's Association (NEMA), American National Standards Institute (ANSI), National Fire Protection Association (NFPA), or other national trade associations as applicable.

10-5.3 Guide Specifications. The mechanical system design, submittal, and commissioning process shall conform to the latest edition of the Corps of Engineers Unified Facilities Guide Specifications. These specifications can be downloaded from http://www.ccb.org/ufgs/ufgs.htm.

10-5.4 Air Distribution. Ductwork shall be constructed of sheet metal to SMACNA HVAC Duct Construction Standards, latest edition. Each duct branch shall be fitted with a manual balancing damper. All ductwork shall be located above slab, supported from roof structures. Return air shall be ducted to unit from each space. Ceiling return air plenums shall not be used. Low pressure distribution ductwork shall be installed to SMACNA pressure class 2" wg. as a minimum. Test ductwork in accordance with SMACNA. Access must be provided to all devices or areas that may require periodic inspection, including but not limited to balancing devices, motor operated dampers, flow measuring stations, smoke/fire dampers, etc. Ductwork shall be sealed in accordance with ASHRAE 90-1-

1999.

10-5.4.1 Flexible Duct. Flexible duct shall be limited to runouts, shall be adequately supported to prevent kinks. The length of flexible duct shall not exceed 5 feet. Flexible duckwork shall be preinsulated, factory fabricated, and conform with NFPA 90 and UL 181.

10-5.4.2 Fire Dampers. Fire dampers shall be located and installed in accordance with NFPA 90A requirements, and shall be labeled in accordance with UL standard 555. Fire dampers shall be Dynamic Rated for closure against airflow in the following six installation configurations

- Vertical Mount (horizontal airflow) – Ducted and unducted
- Horizontal Mount (airflow up) – Ducted and unducted
- Horizontal Mount (airflow down) – Ducted and unducted

10-5.4.2.1 Fire damper shall be rated to close against maximum design airflow at its installed location with a 10 percent safety factor and against 8 inches water gauge maximum pressure across the closed damper. If wall, floor, or partition has a fire resistance rating of 3 hours or more, the fire damper shall have a UL 555 fire rating of 3 hours. All other fire damper shall have a UL 555 fire rating of 1½ hours. Fire dampers shall be equipped with a steel sleeve or adequately sized frame and installed such that the operation of the damper will not be impaired. Fire dampers shall not reduce the cross section area of duct or air transfer openings. Duct access doors shall be provided at all fire dampers. Design shall address access to the dampers located above ceiling, etc.

10-5.5 Ductwork Insulation. All supply, return, and outside air ductwork shall be insulated in accordance with ASHRAE 90.1-1999. Exhaust ductwork does not require insulation. Internally lined ductwork shall not be allowed. Insulation shall be faced with a vapor barrier material having a performance rating not to exceed 1.0 perm. Insulation, vapor barrier, and closure systems shall be non-combustible as defined in NFPA 255, with a flame-spread rating of not more than 25, and a smoke development rating of not more than 50, as defined in ASTM E 84.

10-5.6 Supply Diffusers and Registers. Diffusers and registers shall be located to ensure that the air distribution will completely cover all surfaces of exterior walls with a blanket of conditioned air or may be of a compact design so long as 'dead spots' within the units are avoided. At least one diffuser or registers shall be provided in each habitable room. Diffusers shall be provided with integral opposed blade damper. Diffusers shall be provided with air deflectors as required for proper air flow in the space. Plastic diffusers are prohibited. Core velocity shall be limited to 600 fpm maximum, with a maximum pressure drop of 0.1 inch water. Diffusers and registers shall be selected so that they do not exceed ASHRAE recommended noise levels for the specific space. Ceiling mounted units shall have factory finish to match ceiling color, and be installed with rims tight against ceiling. Sponge-rubber gaskets shall be provided between ceiling or wall and surface-mounted diffusers for air leakage control. Diffuser boots shall be sealed tight to the wall or ceiling they penetrate using duct mastic or caulking. Suitable trim shall be provided for flush-mounted diffusers. Duct collar connecting the duct to diffuser shall be airtight and shall not interfere with volume controller. Wall supply registers shall be installed at least 6 inches below the ceiling.

10-5.7 Return/Exhaust Registers and Grilles. Grilles shall be fixed horizontal or vertical louver. Registers shall be provided with integral opposed blade damper. Plastic units are prohibited. Core velocity shall be limited to 400 fpm maximum, with a maximum pressure drop of 0.06 inch water. Grilles and registers shall be selected so that they do not exceed ASHRAE recommended noise levels for the specific space. Grilles shall be provided with sponge rubber gasket between flanges and wall or ceiling. Register/grille boots shall be sealed tight to the wall or ceiling they penetrate using duct mastic or caulking. Wall return grilles shall be located at least 6 inches above the floor or below the ceiling.

10-5.8 Air Handling Units. Air handling units shall be in accordance with UFGS 15895A Air Supply, Distribution, Ventilation, And Exhaust System. Units shall be factory packaged, section modular type design, constructed of 2-inch thick preinsulated double wall panels. Units shall include fans, coils, airtight insulated casing, adjustable V-belt drives, belt guards for externally mounted motors, access sections for maintenance, combination sectional filter-mixing box, vibration-isolators, and appurtenances required for required operation. Air handling unit shall have published ratings based on tests performed according to ARI 430. A minimum 15 inch access section with door shall be provided upstream, between, and downstream of each coil. Inspection and access doors shall be insulated, fully gasketed, doublewall type. Coils shall be fin-and-tube type constructed of seamless copper tubes and aluminum or copper fins mechanically bonded or soldered to the tubes. Coils shall be rated and certified according to ARI 410. Maximum coil face velocities shall be limited to 500 feet per minute. Mixing boxes shall be factory or field fabricated and configured with dampers to promote mixing of return air and outdoor air streams.

10-5.9 Fan Coils. Fan coils shall be in accordance with UFGS 15895A Air Supply, Distribution, Ventilation, And Exhaust System.

10-5.10 Filtration. Filtration for the Battalion Headquarters AHU and Barracks ventilation units shall use a combination of 25- to 30-percent efficient prefilter(s) and 80- to 85- percent efficient final filter(s) as determined by the dust spot test specified in ASHRAE Standard 52. Where practical, provide separate filtration or other means to clean the outdoor air, typically equivalent to that used for the combined air stream, prior to mixing it with the return air. Separate filtration for the outdoor air will reduce the contaminants in the outdoors from entering the primary air stream. Due to the decrease in system airflow as the pressure drop across the filter increases, size fans for the “dirty” filter condition. This will ensure that each fan has adequate capacity to deliver the design airflow as the filter becomes loaded.

10-5.11 Dryer Vents. Dryer vents shall be installed as described in ETL 1110-3-483, Clothes Dryer Exhaust Venting. This document can be downloaded fromhttp://www.usace.army.mil/inet/usace-docs/eng-tech-ltrs/etl-all.html. A manifold exhaust arrangement shall not be used.

10-5.12 The above ground piping shall be in accordance with UFGS 15569A Water And Steam Heating; Oil, Gas Or Both; Up To 20 Mbtuh.

10-5.13 Heating System.

10-5.13.1 The hot water heating systems shall include gas-fired copper fin hot water boilers and circulation pumps. Manufacturer's standard packaged operation controls shall be provided to handle all aspects capacity modulation and safeguarding. Pumps shall be base mounted or in-line type and selected for non-overloading operation at all conditions. Provide a standby/redundant pump.

10-5.13.2 Piping and Accessories. Heating water piping shall be Type L copper or ASTM A53 SCH 40 black steel. Ball valves shall be utilized for sizes up to 3", larger piping shall be equipped with gate valves. Piping supports shall be in accordance with MSS SP-59 and MSS SP-69. System shall include an air separator, expansion tank, chemical bypass feeder, and makeup water connections. Equip circulation pumps with strainers, check valve, balance valve, flexible couplings and isolation valves to permit pump maintenance. Pipe pump body drain and all air vents to nearest floor drain. Provide pressure gages arranged such that pump differential pressure may be witnessed. Entire pump assembly on base mounted pumps shall be mounted on a structural steel frame equipped with housed spring vibration isolators. Provide manual balancing or automatic water flow control valves at each coil and balancing valve in each loop of piping branch.

10-5.13.3 Underground hot water piping shall be installed in a shallow concrete

trench. Underground hot water piping shall be in accordance with UFGS 02553A Heat Distribution System in Concrete Trenches.

10-5.13.4 All HVAC hot water piping shall be insulated. Piping passing through hangers shall be supported on insulation shields.

10-5.14 Cooling System.

10-5.14.1 Packaged air cooled liquid chillers. Units shall be assembled, leak-tested, charged (refrigerant and oil), and adjusted at the factory. Chiller shall be provided with factory installed insulation on surfaces subject to sweating including the liquid cooler, suction line piping, economizer, and cooling lines. Chiller shall include all customary auxiliaries deemed necessary by the manufacturer for safe, controlled, automatic operation of the equipment. Chiller shall be provided with a single point wiring connection for incoming power supply. Factory installed insulation shall be provided on all suction piping from the evaporator to the compressor and on the liquid cooler shell. Where motors are the gas-cooled type, factory installed insulation shall be provided on the cold-gas inlet connection to the motor per manufacturer's standard practice. Compressors shall be scroll, reciprocating, rotary screw or centrifugal type. Scroll and reciprocating chillers shall be constructed and rated in accordance with ARI 590. Rotary screw chillers shall be constructed and rated in accordance with ARI 550 or ARI 590 as applicable. Centrifugal chillers shall be constructed and rated in accordance with ARI 550. Chiller shall conform to ASHRAE 15. Refrigerants shall be one of the fluorocarbon gases. Refrigerants shall have number designations and safety classifications in accordance with ASHRAE 34. Refrigerants shall meet the requirements of ARI 700 as a minimum. Refrigerants shall have an Ozone Depletion Potential (ODP) of less than or equal to 0.05. Chiller shall be provided with a complete factory mounted and prewired microprocessor based control system. Controls package shall contain as a minimum a digital display or acceptable gauges, an on-auto-off switch, motor starters, power wiring, control wiring, and disconnect switches. Controls package shall provide operating controls, monitoring capabilities, programmable setpoints, safety controls, and EMCS interfaces. Chiller’s minimum efficiency shall be in accordance with ASHRAE 90.1-1999.

10-5.14.2 Chiller Warranty. The Contractor shall provide a 5 year parts only (excludes refrigerant) manufacturer's warranty on the chiller compressor(s). This warranty shall be directly from the chiller manufacturer to the Government and shall be in addition to the standard one-year warranty of construction. The manufacturer's warranty shall provide for the repair or replacement of the chiller compressor(s) that become inoperative as a result of defects in material or workmanship within 5 years after the date of final acceptance. When the manufacturer determines that a compressor requires replacement, the manufacturer shall furnish new compressor(s) at no additional cost to the Government. Upon notification that a chiller compressor has failed under the terms of the warranty, the manufacturer shall respond in no more than 24 hours. Response shall mean having a manufacturer-qualified technician onsite to evaluate the extent of the needed repairs. The warranty period shall begin on the same date as final acceptance and shall continue for the full product warranty period.

10-5.14.3 The chilled water system shall have an air cooled chiller and all required accessories. The chiller components exterior to the building shall be protected from freezing through the use of heat tape in addition to a propylene glycol solution in the chilled water system. Manufacturer's standard packaged controls shall be provided to handle all aspects of compressor staging and safeguarding, including phase loss. Pumps shall be base mounted and selected for non-overloading operation at all conditions. Special consideration will be given to designs that address lowering the sound levels of the air-cooled chiller.

10-5.14.4 Chilled Water Piping. Chilled water piping system shall include an air separator, expansion tank, chemical bypass feeder, makeup water connections, temperature and pressure ports, temperature and pressure gages, flow switch, and

all other required appurtenances. Pumps shall be equipped with strainers, check valve, balance valve, flexible couplings and isolation valves to permit pump maintenance. Provide pressure gages arranged such that pump differential pressure may be witnessed.

10-5.14.5 The above ground chilled water piping shall be in accordance with 15181A Chilled and Condenser Water Piping and Accessories.

10-5.14.6 Underground chilled water piping shall be in accordance with UFGS 02555A Prefabricated Underground Heating/Cooling Distribution System.

10-5.14.7 All chilled water piping shall be insulated. Piping passing through hangers shall be supported on insulation shields.

10-5.15 Mechanical components shall be installed and mounted in accordance with TI-809-4 "Seismic Design for Buildings."

10-5.16 All HVAC condensate drains shall be run to either a hub drain or floor drain. Condensate drains shall be tied into the sanitary system.

10-5.17 All pieces of floor mounted mechanical equipment shall be installed on a 6-inch thick concrete equipment pad. Provide pad 6 inches larger than equipment footprint on all sides. All suspended equipment shall be properly supported according to the manufacturer's instructions. Provide trapeze hangers for larger pieces of equipment. Provide adequate clearance around all pieces of equipment for periodic maintenance, inspection and cleaning. Service of one piece shall not require disturbance of adjacent equipment.

10-5.18 Fiberglass duct and internally insulated duct will not be allowed.

10-5.19 The location of all mechanical equipment must meet the force protection requirements. Refer to the Antiterrorism/Force Protection Construction Requirements.

10-5.20 Each Telecommunication room shall have standalone HVAC system.

10-5.21 A 10″x3.25″ duct for future use shall be routed to a 8.125″x4.75″ brick vent for each of the barrack’s living units. The ductwork shall be routed above the kitchen counter and shall be capped off for future use.

10-6 MECHANICAL SYSTEM MAINTAINABILITY AND ACCESSIBILITY. Ensure that filters, controls, control valves, and coils are easily accessible for servicing and cleaning. Isolation valves shall be provided for each terminal unit, zone, branch, long runs, etc. as necessary for proper isolation and maintenance. Coils shall be fully removable without requiring demolition of any building components. Piping configuration at all coils shall include unions to facilitate easy coil removal. Provide adequate clearances around all pieces of equipment for periodic maintenance, inspection and cleaning. Service of one piece of equipment shall not require disturbance of adjacent equipment.

10-7 CONTROLS. Control system shall be DDC. Provide all devices required, including current transducers, transformers, thermostats, sensors, controllers, actuators, control valves, dampers, transmitters, flow meters, etc., to provide a complete and operable system. All thermostats for systems that provide both heating and cooling shall have a deadband of 5 degrees F. All equipment and systems shall be automatically controlled and monitored by the control system. The control system shall tie into the existing EMCS system. Control system shall be Invensys Series 8000. Control system instructions shall be provided for each system. The instructions shall consist of half-size laminated drawings and shall include the control system schematic, equipment schedule, ladder diagram, sequence of operation, panel arrangement drawings, wiring diagram, and valve and damper schedules.

10-7.1 The HVAC controls design shall be in accordance with TI 810-11, HVAC Control Systems. Direct Digital Controls (DDC) shall be used to control HVAC systems and equipment. Small equipment such as unit heaters need not be included as part of the DDC system. The controls drawings shall use the Corps of Engineers standard control drawings. These drawings are available at the following website: www.sas.usace.army.mil/eng/hvac

10-7.2 Utility Metering. Metering equipment shall be provided on all main energy and water supplies to the building. Meters shall determine consumption, and not rate of consumption. All meters shall be monitored by the DDC system.

10-8 TESTING, ADJUSTING AND BALANCING.

10-8.1 Testing, adjusting and balancing of each system shall be the Contractor's responsibility. Testing and balancing of air and hydronic systems shall be accomplished by a firm certified for testing and balancing by the Associated Air Balance Council (AABC) or National Environmental Balancing Bureau (NEBB). The TAB contractor shall be an independent firm (not financially associated with any of the subcontractors on this project) hired by the prime contractor. The TAB firm shall additionally perform the following:

10-8.1.1 Final design review (report provided to COR) of HVAC construction documents to insure the HVAC design provides the proper quantity and location of balancing devices and test ports necessary for accurate TAB results.

10-8.1.2 Prior to start of TAB effort the installed systems shall be inspected (report provided to COR) by the TAB firm to insure the system components, which affect the TAB effort, are properly installed and functioning. TAB shall not begin until the TAB firm’s final report indicates all necessary corrective actions have been accomplished

10-8.2 Testing of individual items of equipment shall be performed by a person authorized to perform such testing and startup by the equipment manufacturer. The contractor shall correct all systems and equipment not found in compliance, and shall be responsible for all labor and materials required for this effort. AABC MN 1 or NEBB 01 shall be used as the standard for providing testing of air and water systems. The selected standard shall be used throughout the entire project. All recommendations and suggested practices contained in the selected standard shall be considered mandatory. Instrumentation accuracy shall be in accordance with selected standard. The provisions of the TAB standard, including checklists, report forms, etc., shall, as nearly as practical, be used to satisfy the Contract requirements.

10-8.2.1 Piping systems. Each piping system including pipe, valves, fittings and equipment shall be hydrostatically tested and proved tight at a pressure of 1-1/2 times the design working pressure, but not less than 100 psi for a period of not less than two hours with no appreciable loss in pressure. Piping shall not be insulated until testing is completed and acceptable. Upon completion of installation and prior to startup, each hydronic system shall be balanced. All balancing data, including deficiencies encountered and corrective action taken, shall be recorded. Following final acceptance of certified reports by the Contracting Officer, the setting of all HVAC adjustment devices shall be permanently marked by the Contractor's balancing engineer so that adjustment can be restored if disturbed at any time.

10-8.2.2 Air systems. Where specific systems require special or additional procedures for testing, such procedures shall be in accordance with the standard selected. All data, including deficiencies encountered and corrective action taken, shall be recorded. Following final acceptance of certified reports by the Contracting Officer, the setting of all HVAC adjustment devices shall be permanently marked by the Contractor's balancing engineer so that adjustment can be restored if disturbed at any time.

10-8.2.3 Equipment. Each item of central operating equipment provided, including boilers, air handling units,and chillers shall be tested in accordance with the equipment manufacturer's standard testing procedures. A factory representative shall be present for the startup and testing of each item of equipment. A certified report shall be provided for each item of equipment tested.

10-9 COMMISSIONING. All HVAC systems and equipment including controls shall be commissioned in accordance with Clauses 5 (Program-Phase Procedure), 6 (Design Phase), 7 (Construction Phase), 8 (Acceptance Phase) and 12 (Commissioning Documentation) in ASHRAE Guideline 1. The Commissioning Authority (CA), referenced in ASHRAE Guideline 1, shall be hired by the prime Contractor. The CA shall be completely independent from the Contractor and shall not be a Contractor's employee or be an employee or principal of a firm in a business relationship with the Contractor negating such independent status. The roles and responsibilities of the CA are defined in Annex A DIVISION 15 PART 1 Paragraph 1.03 (B.) and shall become part of the contract requirements. Clause 6.2.3 makes reference to Appendix A6.4 for a sample commissioning specification which shall become part of the contract requirements and shall be edited to suit the work to be performed. The CA must meet the following qualifications

- Be employed by an AABC or NEBB certified firm.
- Hold a management position in the firm, be able to represent the firm on all HVAC commissioning matters, and have a reputation of integrity with building owners, consultants and awarding authorities. The CA must have experience equal to either of the following;
- A Bachelor of Science engineering degree from an accredited college or university with a least five (5) years of experience in performing commissioning of HVAC systems prior to solicitation of this project or
- A minimum of ten (10) years experience in commissioning of HVAC systems prior to solicitation of this project.
- The CA shall have experience on a minimum of five (5) projects using the commissioning of facilities in accordance with ASHRAE Guideline 1 for the five phases indicated above. At least two of these projects shall be similar in size with similar HVAC systems to this project.
- Names and experience of each team member assigned to this project. The person(s) performing each of the five phases shall be included and indicated that each person has performed the function for at least (3) years prior to solicitation of the project.
- Become NEBB or AABC qualified and/or maintain NEBB or AABC qualification as a TAB supervisor for both AIR and HYDRONIC systems by passing appropriate written and practical TAB examinations.
- Demonstrate knowledge in the category or categories of HVAC commissioning.

10-10 TRAINING. The Contractor shall conduct a training course for the operating for all HVAC operating systems and individual items of equipment. The training program shall be conducted in accordance with Clause 11, Operations and Maintenance Training Program, in ASHRAE Guideline 1 in addition to the following requirements. The field instructions shall cover all of the items of equipment provided as well as the overall systems. The training period shall consist of a total of 16 hours of normal working time and shall start after the systems are functionally completed and testing, adjusting and balancing have been completed. Factory representatives shall be present to assist in training for every item of operating equipment provided. Contractor shall provide two copies of operation and maintenance instructions for each item of equipment provided. Training shall consist of startup, normal operation and shutdown, as well as demonstrations of routine maintenance operations. The Contracting Officer shall be notified at least 14 days prior to date of proposed conduction of the training course.

10-11 Extended Warranties. All proposals shall reflect the cost of providing an extended warranty for all chillers, including all chiller components. The warranty shall cover a period of 5 years beyond the parent warranty. The

warranty shall begin on the date of installation, as opposed to the ship date. During the parent warranty and the extended warranty period, any covered equipment that fails shall be repaired at no cost, parts or labor, to the Government, provided the equipment has been properly operated and maintained. The cost for this extended warranty shall be a separate, identifiable cost in the Contractors proposal. Each proposal shall clearly identify the proposed approach for satisfying the requirements of this paragraph. The successful contractor shall provide a bonafide warranty for the covered equipment prior to installation of said euipment. For each piece of equipment to which this paragraph on extended warranties apply, the successful Contractor shall provide in hard copy, along with the final 1354's, a completed form similar to the Real Property Facility Equipment form found in Appendix G to this Document.

CHAPTER 11

ENERGY CONSERVATION

11-1 Public Law 100-615 and Federal Regulation 10 CFR 435 Subpart B, require Federal buildings to be designed and constructed to reduce energy consumption in a life cycle, cost-effective manner using renewable energy sources when economical. Each system, component or feature selected that impacts the energy or water use of the facility shall be in compliance with ASHRAE Standard 90.1. ASHRAE Standard 90.1 is essentially the same as 10 CFR 435, and like 10 CFR 435, presents several conformance paths. The path selected to show compliance with ASHRAE Standard 90.1 shall be clearly identified. In addition, energy efficiency ratings for equipment shall be in the upper 25 percent of that available as long as these efficiencies are life cycle cost effective. The Department of Energy (DOE) and Federal Energy Management Program recommendations from the Buying Energy Efficient Products Guide and the Environmental Protection Agency Star products program meet these requirements. The DOE recommendations are available at www.eren.doe.gov/femp/procurement. Submittals from the successful bidder shall be in compliance with above and address energy conservation features such as economizer cycles, water side economizer, variable frequency drives, heat recovery, etc. where economically feasible.

11-1.1 Energy Calculations

11-1.2 Energy Conservation Reports. For conservation methods with an investment cost exceeding 1.00 percent of the PA, a report shall be submitted with supporting economic analyses. The report shall list the conversation features to be included in the project. The report shall include the following:

a. Title of conservation method.
b. Investment cost.
c. Net energy savings.
d. Net LCC savings (only for items exceeding 1.00 percent of the PA).
e. Simple payback (only for items exceeding 1.00 percent of the PA).
f. SIR (only for items exceeding 1.00 percent of the PA).
g. Evaluation method.
h. All pertinent backup data.
i. Complete input and output of all programs.

11-1.3 Energy Budget Calculations

A minimum requirement of the sustainable project certification is to perform an Energy Analysis to determine a design energy usage (DEU) budget. The DEU shall be calculated and compared to the maximum energy use budget value (EUB) for facility type and operating schedule below for Weather Region 11 per Table 11-1 of Chapter 11, T1 800-01. Proposers that exceed the EUB shall not be considered non-responsive, but will receive a lower rating.

Building	Type	EUB (BTU/SF/YR)	Operating Schedule
COF	A2	35,000	10 hrs/day 5 days/week
Batt HQs	A1	40,000	10 hrs/day 5 days/week
Barracks	Q1	50,000	16 hrs/day 7 days/week
Commons	A2	35,000	10 hrs/day 5 days/week

11-1.4 Energy Use Calculations. Any facility that is heated and/or cooled or heated only and exceeds 3,000sqft. of gross floor area shall be analyzed with a computer program that uses established weather data files and performs 8,760 hourly calculations. Energy calculations for buildings that do not require a computer simulation may use a computer program or appropriate methods explained in the 2001 ASHRAE Fundamentals Handbook, Chapter 29. Some acceptable programs are Trane TRACE, Carrier Hourly Analysis Program, BLAST, Energy Plus, and DOE-2. Electricity for heating is prohibited except under certain conditions dictated

in Chapter 14 of TI 800-01. This document is available from the COE web site at www.hnd.usace.army.mil/techinfo/ti/810-10/810-10.pdf

11-1.4.1 Design Energy Use Budgets. The DEU shall be in accordance with Air Force ETL 94-4, Energy Use Criteria for Facilities in the Military Construction Program. This document is available at www.afcesa.af.mil/Publications/ETLs/ETL%2094-4.pdf. This DEU shall be based on all loads except process loads. People are not process loads and should be included in the analysis. HVAC required in direct support of a process is considered part of the process. Interior lighting is not considered a process. The DEU shall be based on 100 percent availability of energy systems during the standard hours and 0 percent availability at all other times. DEU budget shall not exceed the energy use budget target.

11-1.4.2 Gross Area. The DEU shall be based on building gross area. Gross area is defined as the sum of all floor areas including basements, cellars, mezzanines, other intermediate floor tiers and penthouses. All measurements shall be from the exterior wall of the building or from the centerline of party walls.

11-1.4.3 Hot Water Energy Calculation. The following formula should be used for the DEU calculation to compute nonprocess HW energy consumption.

Q = N x A x D x (To - Ti) x 8.33
Q = HW energy usage in Btu
D = Days of HW consumption
N = Number of people served daily
To = Outlet Water Temp (F)*
A = Gallons per person **
Ti = Inlet Water Temp (F)
* See ASHRAE 1999 Handbook, HVAC Applications, Chapter 48, Table 3
** See ASHRAE 1999 Handbook, HVAC Applications, Chapter 48, Table 7

11-1.5 Process Energy. The items listed below are considered processes. People are not process loads and should be included in the analysis. HVAC required in direct support of a process is considered part of the process. Interior lighting is not considered a process.

a. Installed equipment (e.g. vending machines).
b. User equipment (e.g. copier, computer).
c. Industrial equipment.
d. Training systems.
f. Specialized ventilation systems required by OSHA.
g. Exterior perimeter lighting.

11-1.5.1 The area used in the DEU budget estimation is the gross floor area which is defined as the sum of all floor areas, measured from the outside of the exterior walls.

11-1.5.2 Conversion Factors. Energy use or savings shall be calculated using the following factors. These conversion factors are given by 10 CFR Part 436. Equipment efficiencies and system losses must be accounted for in calculations. For energy media not listed here, use current standard engineering data or other approved reference data.

ENERGY MEDIUM CONVERSION FACTORS

Natural Gas	38.4 million joules/liter
Electricity	3.6 million joules/kWh

11-1.5.3 Complete input and output for the DEU budget calculations shall be submitted.

11-2 Life Cycle Coat Analysis (LCCA). Submit all backup data related to LCCA (cost estimates, replacement costs, etc.). Lump sum cost estimates is not

acceptable. Clearly document sources of information and any assumptions made. Also, submit complete input and output for economic program computer and the Energy analysis program used. Acceptable energy analysis programs are Trane TRACE 700, Carrier Hourly Analysis, BLAST, and DOE-2. The economic program shall be the Life Cycle Cost in Design (LCCID) program, the Building Life Cycle Cost (BLCC) program or one approved by HQUSACE, CEMP-E to be the equivalent thereof. The LCCID program is available from Building Systems Laboratories at (217) 333-3977. The BLCC program is available from the FEMP web site at www.eren.doe.gov.femp.

11-3 U-Values. Utilize the U-values presented below as a starting point. These values may be modified if a life cycle cost analysis indicates that a more cost effective value should be used. The life cycle cost analysis shall be based on the Department of Energy (DOE) Federal Energy Management Program (FEMP) criteria according to the provision of the latest version of Code of Federal Regulations, 10 CFR 436A. For guidance on the methodology, refer to National Bureau of Standards Handbook 135, Life Cycle Costing Manual for the Federal Energy Management Program.

Nominal U-Values BTU/square foot - °F for Exposed Floors, Ceilings and Walls

HDD	Opaque Walls	Gross Walls	Ceiling/Roof	Floors
2406	0.150	0.270	0.057	0.100

The U-Values above are taken from T1 800-1, Table 11-4A in weather region 11. Coordinate actual U-Values with the architectural design of the facility.

11-4 PASSIVE SOLAR APPLICATIONS. Passive solar architectural applications shall routinely be considered as a part of all project designs. Unique applications such as attached sun spaces, earth sheltering, mass trombe walls, solar chimneys, solar dehumidifiers, and other innovations may be considered. Operational controls, such as shading and venting mechanisms, to control the amount of heat admitted into the building during the day, reduce the amount of heat escaping from the building at night, and provide for thermal comfort of the occupants, are parts of this system.

11-4.1 South glazing. If used as part of the solar energy system, glazing shall be of the commercially available off-the-shelf type and shall face within 20 degrees of solar south. The glazing shall be architecturally compatible with building design and the environment. It shall face directly into the living space so that the walls, floors, ceiling, and other massive objects can absorb the entering solar energy, and shall have a whole-window U value less than 0.28 ft2-degrees F/BTUH.

11-4.2 Storage mass. If thermal performance calculations indicate a need for additional mass (beyond that provided by the building structure) substantiating data will be submitted. The storage mass will be well integrated into the building design. The thermal mass surface area in the space must be a minimum of three times the glazing area. Six to nine times the glazing area is recommended to control temperature swings. The surfaces to absorb solar energy must not be more than 10% covered.

11-4.3 Shading of Glazing. Cooling season shading of glazed surfaces on the east, west and south elevations is required.

11-5 PRE-ENGINEERED ACTIVE SOLAR APPLICATIONS. Pre-engineered active solar applications proposed for domestic water heating shall be evaluated for life-cycle-cost effectiveness using a recognized process design program. Whether site-mounted or unit-mounted, systems must be designed for maximum ease of maintenance and for architectural compatibility with the UEPH complex environment. .

11-6 GEOTHERMAL. Geothermal energy sources such as wet or dry steam sources, geothermal hot water, hot dry rock, etc., when determined cost

effective, may be considered in regions with established geothermal sources. Each design utilizing geothermal sources shall address the project's environmental impact relating to discharge of hazardous, noncondensable gases or other hazardous effluents, noise emission, heat rejection, ground water contamination, land use, etc.

11-7 WIND. Wind power may be considered in regions where determined cost effective. Factors such as average wind speed, available wind power, and wind variability shall be considered when investigating the annual useful energy production potential.

11-8 CONDENSER HEAT RECOVERY. In regions authorized for cooling, consideration shall be given to installation of a heat exchanger to recover condenser heat and desuperheat for use in heating domestic water. A standard, domestic water heater shall be provided in conjunction with this system to provide hot water during the heating season. Heat pump water heaters can be considered in hot climates.

11-9 Pretreatment of Outside Air for UEPH Buildings. Dessicant cooling and other methods should be considered for pretreatment of outside air for UEPH buildings.

11-10 REBATES AND INCENTIVES. Systems and techniques which take advantage of rebates and incentives offered by utilities are preferred and shall be stated by the government and local utility districts.

CHAPTER 12

FIRE PROTECTION

12-1.1**DESIGN STANDARDS AND CODES**. The fire protection design for all facilities shall be in accordance with the current versions of the International Building Code and the National Fire Protection Association (NFPA) standards and codes.

12-1.2**FIRE PROTECTION ENGINEER**. The contractor shall provide the services of a qualified registered fire protection engineer. The fire protection engineer shall be an integral part of the design team and shall be involved in all aspects of the design of the fire protection system. The design of the fire protection features shall be by a qualified fire protection engineer meeting one of the following conditions: a.) An engineer with a Bachelor of Science or Masters of Science Degree in fire protection engineering from an accredited university engineering program, plus a minimum of 5 years' work experience in fire protection engineering. b.) A registered professional engineer who has passed the National Council of Examiners for Engineering and Surveys (NCEE) fire protection engineering written examination. c.) A registered P.E. in a related engineering discipline with a minimum of 5 years' experience dedicated to fire protection engineering. The name and credentials (education, registration, experience) of the contractor's fire protection engineer shall be submitted with the initial contract documents and approved by the District fire protection engineer prior to proceeding with fire protection design.

12-1.3**FIRE PROTECTION AND LIFE SAFETY ANALYSIS**. The fire protection engineer shall perform a fire protection and life safety design analysis of the proposed facility design in accordance with A-6 of the Design Manual for Military Construction (DMMC). The analysis shall be submitted with the preliminary design submittal. The analysis shall include type of construction; height and area limitations; classification of occupancy; building separation or exposure protection; specific compliance with NFPA codes and the IBC; requirements for fire-rated walls, doors, fire dampers, etc.; analysis of automatic suppression systems and protected areas; water supplies; smoke control systems; fire alarm system, including connection to the base-wide system; fire detection system; standpipe systems; fire extinguishers; interior finish ratings; and other pertinent fire protection data. The submittal shall include a life safety floor plan showing occupant loading, occupancy classifications and construction type, egress travel distances, exit capacities, sprinklered areas, fire extinguisher locations, ratings of fire-resistive assemblies, and other data necessary to exhibit compliance with life safety code requirements.

12-2 **HYDRANT FLOW DATA**.

12-2.1 Proposed design shall be based on current and accurate test data. Current hydrant flow test data shall be used in the hydraulic analysis and as the basis for the design of the sprinkler system, underground supply mains, and fire hydrants. The contractor shall conduct a water supply flow test to determine water supply available for the fire protection system and for hose streams and fire hydrants. The test must determine the static pressure and the residual pressure at a flow rate which is equal to or greater than the combined sprinkler and hose stream demand.

12-3 **SPRINKLER SYSTEM**.

12-3.1 **FIRE SUPPRESSION SYSTEM**. Automatic wet pipe sprinkler protection shall be provided for all buildings in this project. The requirements indicated below shall be incorporated into the design. Provide design analysis and calculations of all fire suppression systems with each submittal. Fire suppression design shall reference the latest codes and standards at the time of the awarding of the contract. The facilities shall be fully

protected with automatic wet pipe sprinkler systems. Dry pipe systems shall be provided if freeze protection is required. All floors and all areas of the facilities shall be protected. The sprinkler system designs shall be in accordance with MIL-HDBK-1008C, NFPA 13, NFPA 13R, NFPA 96, NFPA 230, and UFGS Specification Sections 13930, Wet Pipe Sprinkler System, and 13935 Dry Pipe Sprinkler System. The sprinkler hazard classifications shall be in accordance with MIL-HDBK-1008C, NFPA 13, and NFPA 230. Design densities, design areas and exterior hose streams shall be in accordance with MIL-HDBK-1008C. The sprinkler systems shall be designed and all piping sized with computer generated hydraulic calculations. The exterior hose stream demand shall be included in the hydraulic calculations. A complete sprinkler system design, including sprinklers, branch lines, floor mains and risers, shall be shown on the drawings. Barracks buildings four stories or less may be protected by wet pipe sprinkler systems designed and installed in accordance with the provisions of NFPA 13R, except that in buildings which use the sprinkler system to increase allowable floor area based on particular construction type per IBC, the wet pipe sprinkler systems shall be designed and installed in accordance with the provisions of NFPA 13.

12-3.2 **SPRINKLER SERVICE MAIN AND RISER**. The sprinkler service main shall be provided with an exterior post indicator valve with tamper switch reporting to the fire alarm control panel (FACP). The sprinkler entry riser shall include a double check backflow preventer, a fire department connection, and a wall hydrant for testing of backflow preventer. The sprinkler system shall include an indicating control valve, an alarm check valve, an alarm gong and a flow switch reporting to the FACP. All control valves shall be OS&Y type and shall be provided with tamper switches connected to the FACP. Water motor alarms will not be allowed. All main, auxiliary or test line drains shall be routed to the exterior of the building at grade level. All exterior drains shall discharge onto a 2 x 2 splash block on grade.

12-3.3 **EXTERIOR HOSE STREAM**. Exterior hose stream demand shall be in accordance with MIL-HDBK-1008C. This shall be 250 gpm for light hazard and 500 gpm for ordinary hazard. Exterior hose stream demand shall be included in the sprinkler system hydraulic calculations.

12-3.4 **BACKFLOW PREVENTER**. A double check backflow preventer shall be provided on the fire water main serving each building. This shall be located within the building. An exterior wall hydrant with OS&Y valve shall be provided to allow testing of backflow preventer at design flow as required by NFPA 13.

12-3.5 **FIRE DEPARTMENT CONNECTION**. A fire department connection shall be provided for each building with sprinkler protection. These shall be located on the street side of the building, to be directly accessible to the fire department.

12-3.6 **SYSTEM COMPONENTS AND HARDWARE**. Materials for the sprinkler system, fire pump system, and hose standpipe system shall be in accordance with Specification Sections 13930 and 13935 and with NFPA 13 and NFPA 230. Sprinkler system piping shall be black steel and shall be minimum Schedule 40 for sizes 2 inches and less and minimum Schedule 10 for sizes greater than 2 inches.

12-3.7 **PROTECTION OF PIPING AGAINST EARTHQUAKE DAMAGE**. Sprinkler and fire pump piping systems shall be protected against damage from earthquakes. Seismic protection shall include flexible and rigid couplings, sway bracing, seismic separation assemblies where piping crosses building seismic separation joints, and other features as required by NFPA 13 for protection of piping against damage from earthquakes.

12-3.8 **SPRINKLER HEADS**. All sprinkler heads located in finished areas shall be recessed pendent type.

12-4 **FIRE PUMP**. If a fire pump is required provide a fire pump design and installation in accordance with NFPA 20 and Specification Section 13920.

12-5 **STANDPIPE AND HOSE SYSTEM**. Provide standpipe and hose system for all buildings in accordance with NFPA criteria.

12-6 **BUILDING CONSTRUCTION**. Comply with the requirements of the International Building Code and with NFPA 101 Life Safety Code.

12-7 **FIRE ALARM**. Provide fire alarm and detection system conforming to requirements of NFPA 72 and NFPA 101. Fire alarm system shall be addressable (intelligent) and consist of smoke and/or heat detectors, pull stations, audiovisual devices, control/annunciation panel and tamper and/or flow connection/supervision to the sprinkler system. Heat detectors are not required in UEPH buildings. Provide supervision of fire pump where fire pump is provided. Fire alarm system shall tie into the base-wide system.

12-8 **FIRE EXTINGUISHERS AND CABINETS**. Provide portable fire extinguishers in accordance with NFPA 10. Provide semi-recessed aluminum fire extinguisher cabinets with clear view panel in public areas, and where indicated in functional and area requirements. Provide fire-rated cabinets in fire-rated wall assemblies.

CHAPTER 13

SUSTAINABLE DESIGN

13-1 SUSTAINABLE DESIGN GOALS. The goals for improving the sustainability of facilities include:

(a) use resources efficiently and minimize raw material resource consumption, including energy, water, land and materials, both during the construction process and throughout the life of the facility,
(b) maximize resource reuse, while maintaining financial stewardship,
(c) move away from fossil fuels towards renewable energy sources,
(d) create a healthy and productive work environment for all who use the facility,
(e) build facilities of long-term value, and
(f) protect and, where appropriate, restore the natural environment.

13-2 PROJECT REQUIREMENTS. Sustainable design techniques shall be considered as they relate to site and building design, construction, operation, and deconstruction. Techniques that conserve energy, improve livability, and can be justified by life cycle cost analysis as cost effective are encouraged.

13-2.1 Sustainable design is a proposal evaluation factor. The level of incorporation of sustainable design principles will be measured through use of the Army developed Sustainable Project Rating Tool (SPiRiT), available from the following website: www.cecer.army.mil/sustdesign. A copy is also included in Appendix C to this section.

13-2.2 The FY-03 Barracks Complex at Fort Benning is a sustainable design “Showcase” project. As a showcase project the sustainable design goal is a Gold or Platinum certification level. Each offeror will complete and submit the SPiRiT Facility Points Summary with the proposal; the total point score will determine the SPiRiT Sustainable Project Certification Level: SPiRiT Bronze, Silver, Gold or Platinum. The certification level will be used as a proposal evaluation factor as defined in RFP Section 00120 – Proposal Evaluation and Contract Award.

13-2.3 Proposals that do not achieve a minimum SPiRiT Bronze certification level will be considered non-conforming.

13-2.4 Proposals that do not comply with the “Required” criteria listed in the SPiRiT document will be considered non-conforming. For example: SPiRiT category *3.R3 CFC Reduction in HVAC&R Equipment* requires zero use of CFC-based refrigerants in new mechanical systems. Although no credit points are available, the requirement must be met to achieve the minimum certification level.

13-2.5 Mandatory Requirements. The SPiRiT Summary tables at Appendix E indicate what SPiRiT items are contract requirements for this project in the “Mandatory Points” column. This column also indicates the status of SPiRiT points that fall outside the scope of design and construction, such as features of the project site location.

APPENDIX A

REFERENCES

APPENDIX A

REFERENCES

GOVERNMENT PUBLICATIONS:

Code of Federal Regulations Government Printing Office Washington, DC 20402	49 CFR 192 Transportation of Natural and other Gas by Pipeline: Minimum Federal Safety Standards 40 CFR 280 Owners and Operators of Underground Storage Tanks 49 CFR 195 Transportation of Hazardous Liquids by Pipeline 10 CFR 430 Energy Conservation Program for Consumer Products
Department of the Navy Standardization Documents Order Desk 700 Robbins Avenue, Bldg. 4D Philadelphia, PA 19111-5094	MIL-HDBK-1008, Fire Protection for Facilities Engineering, Design, and Construction
U.S. Government Printing Office Superintendent of Documents U.S. Government Printing Office Washington, DC 20402	U.S. Government Printing Office (GPO) Style Manual

NON-GOVERNMENT PUBLICATIONS:

Air Movement and Control Association 30 W. University Drive Arlington Heights, IL 60004-1893	AMCA 210 (1985) Laboratory Methods of Testing Fans for Rating
Air Conditioning and Refrigeration Institute 4301 North Fairfax Drive Arlington, VA 22203	ARI 310/380 (1993) Packaged Terminal Air-Conditioners and Heat Pumps ARI 440 (1998) Room Fan-Coil and Unit Ventilator ARI 445 (1987; R 1993) Room Air-Induction Units ARI 880 (1998) Air Terminals
American Architectural Manufacturers Association (AAMA) 1827 Walden Office Square, Suite 104 Schaumburg, IL 60173-4268	AAMA 101 Voluntary Specifications for Aluminum, Vinyl and Wood Windows and Glass Doors AAMA 605 Voluntary Specification Performance Requirements and Test Procedures for High Performance

	Organic Coatings on Aluminum Extrusions and Panels
	AAMA 607.1 Voluntary Guide Specifications and Inspection Methods for Clear Anodic Finishes for Architectural Aluminum
	AAMA 1503 Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall Sections
American Bearing Manufacturers Association 1200 19th Street, NW Washington, DC 20036-4303	AFBMA Std 9 (1990) Load Ratings and Fatigue Life for Ball Bearings
	AFBMA Std 11 (1990) Load Ratings and Fatigue Life for Roller Bearings
American Boiler Manufacturers Association (ABMA) 950 N. Glebe Rd, Suite 160 Arlington, VA 22203-1824	ABMA ISEI Industry Standards and Engineering Information
American National Standards Institute 11 West 42 Street New York, NY 10036	ANSI Z21.10.1 (1993; Z21.10.1a; Z21.10.1b; Z21.10.1c) Gas Water Heaters Vol. I, Storage Water Heaters with Input Ratings of 75,000 Btu Per Hour or Less
	ANSI Z124.3 (1995) American National Standard for Plastic Lavatories.
	ANSI Z124.6 (1997) Plastic Sinks
	ANSI Z21.45 (1995) Flexible Connectors of Other Than All-Metal Construction for Gas Appliances
	ANSI C2 (1997) National Electrical Safety Code
	ANSI 70 (1996) National Electrical Code
	ANSI/TIA/EIA-569-A (1998) Commercial Building Standard for Telecommunications Pathways and Spaces
American Society for Testing and Materials 100 Bar Harbor Drive West Conshohocken, PA 19428-2959	ASTM E84 (2000) Surface Burning Characteristics of Building Materials
	ASTM D 2846/D 2846M (1999) Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Hot-and Cold-Water Distribution Systems
	ASTM D 2513 (1999; Rev. A) Thermoplastic Gas Pressure Pipe,

Tubing, and Fittings

ASTM D 2683 (1998) Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing

ASTM A 53 (1999) Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless

ASTM A 106 (1999) Seamless Carbon Steel Pipe for High-Temperature Service

ASTM B 88 (1999) Seamless Copper Water Tube

ASTM D 5686 (1995) "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Pipe Fittings, Adhesive Bonded Joint Type Epoxy Resin, for Condensate Return Lines

ASTM D 2241 (1996b) Poly(Vinyl Chloride) (PVC) Pressure-Rated-Pipe (SDR Series)

ASTM D 1784 (1999a) Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds

ASTM D 1248 (1998) Polyethylene Plastics Molding and Extrusion Materials

ASTM C 591 (1994) Unfaced Preformed Rigid Cellular Polyisocyanurate Thermal Insulation

ASTM C 518 (1998) Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus

ASTM A 134 (1996) Pipe, Steel, Electric-Fusion (Arc)-Welded (Sizes NPS 16 and Over)

ASTM A 135 (1997c) Electric-Resistance-Welded Steel Pipe

ASTM A 139 (1996el) Electric-Fusion (Arc)-Welded Steel Pipe (NPS 4 and over)

ASTM A 36/A 36M (2000) Carbon Structural Steel

	ASTM D 2310 (1997) Machine-Made "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe
	ASTM D 2996 (1996; Rev. A) Filament-Wound "Fiberglass" (Glass-Fiber-Reinforced Thermosetting Resin) Pipe
American Society of Heating, Refrigerating and Air Conditioning Engineers 1791 Tully Circle. NE Atlanta, GA 30329-2305	ASHRAE 90.1 (1989; 90.1b; 90.1c; 90.1d; 90.1e; 90.1g; 90.1i 90.11-1995; 90.1m-1995; 90.1n-1997) Energy Efficient Design of New Buildings Except Low-Rise Residential Buildings
	ASHRAE Hdbk-IP (1997) Handbook, Fundamentals I-P Edition
American Society of Mechanical Engineers International Three Park Place New York, NY 10016-5990	ASME B31.8 (1995) Gas Transmission and Distribution Piping Systems
	ASME B16.11 (1996) Forged Fittings, Socket-Welding and Threaded
	ASME B31.1 (1998; Addenda 1999 and 2000) Power Piping
	ASME BPVC SEC VII (1995; Addenda 1995, 1996, and 1997) Boiler and Pressure Vessel Code: Section VII Recommended Guidelines for the Care of Power Boilers
	ASME B16.5 (1996) Pipe Flanges and Flanged Fittings NPS 1/2 Through NPS 24
Architectural Woodwork Institute 1952 Isaac Newton Square W. Reston, VA 20190	AWI Quality Standards (1999) 7th Edition, Version 1.2
Associated Air Balance Council 1518 K Street NW, Suite 708 Washington, DC 20005	AABC MN-1 (1989) National Standards for Testing and Balancing Heating, Ventilating, and Air Conditioning Systems
Builders Hardware Manufacturers Association 355 Lexington Ave, Suite 1700 New York, NY 10017-6603	ANSI/BHMA A156.4 (2000) American National Standards for Door Controls - Closers…
Council of American Building Officials 5203 Leesburg Pike, Suite 708 Falls Church, VA 22041	CABO A117.1 (1992; Errata Jun 1993) Accessible and Usable Buildings and Facilities
Electronic Industries Association (EIA) 2500 Wilson Blvd Arlington, VA 22201-3834	EIA/TIA 568-B (2001) Commercial Building Telecommunications Cabling Standards

	EIA/TIA 569-A (2001, amendment 5) Commercial Building Standard for Telecommunications Pathways and Spaces
Illuminating Engineering Society of North America 120 Wall Street, 17th Floor New York, NY 10005-4001	IESNA RP-8 (1983; R 1993) Roadway Lighting IES LHBK (1993) Lighting Handbook, Reference and Application
Institute of Electrical and Electronics Engineers Inc. (IEEE) 445 Hoes Lane, P.O. Box 1331 Piscataway, NJ 08855-1331	Standard for Use of the International System of Units (SI): the Modern Metric System
International Approval Services (IAS) 8501 E. Pleasant Valley Rd Cleveland, OH 44131	IAS Directory (1999) IAS Directory of AGA & CGA Certified Appliances and Accessories
International Association of Plumbing and Mechanical Officials 20001 Walnut Drive South Walnut, CA 91789-2825	IAPMO Z124.1 (1995) Plastic Bathtub Units IAPMO Z124.3 (1995) Plastic Lavatories IAPMO Z124.5 (1997) Plastic Toilet (Water Closets) Seats IAPMO Z124.9 (1994) Plastic Urinal Fixtures
International Code Council, Inc. 5203 Leesburg Pike, Suite 708 Falls Church, VA 22041-3401	ICC (2000) International Building Code
International Conference of Building Officials 5360 Workman Mill Road Whittier, CA 90601-2298	ICBO (1997) Uniform Building Code
National Association of Corrosion Engineers International 1440 South Creek Drive Houston, TX 77084-4906	NACE RP0169 (1996) Control of External Corrosion on Underground or Submerged Metallic Piping Systems NACE RP0185 (1996) Extruded, Polyolefin Resin Coating Systems with Soft Adhesives for Underground or Submerged Pipe
National Association of Plumbing - Heating – Cooling Contractors 180 S. Washington Street Falls Church, VA 22046	NAPHCC Plumbing Code (1996) National Standard Plumbing Code
National Electrical Manufacturers Association 1300 N 17th Street, Suite 1847 Rosslyn, VA 22209	NEMA C12.1 (1995) Code for Electricity Metering NEMA LD3 High Pressure Decorative Laminates NEMA PB 1 (1995) Panelboards
National Environmental Balancing	NEBB Procedural Stds (1991) Procedural

Bureau 8575 Grovemont Circle Gaithersburg, MD 20877-4121	Standards for Testing Adjusting Balancing of Environmental Systems
National Fire Protection Association One Batterymarch Park Quincy, MA 02269-9101	NFPA 10 (1998) Standard for Portable Fire Extinguishers
	NFPA 30 (2000) Flammable and Combustible Liquids Code
	NFPA 31 (1997; TIA 97-11) Installation of Oil Burning Equipment
	NFPA 54 (1999) National Fuel Gas Code
	NFPA 58 (1998; Errata 58-98-1) Liquefied Petroleum Gas Code
	NFPA 70 (1999) National Electrical Code
	NFPA 80 (1999) Standard for Fire Doors and Fire Windows
	NFPA 90A (1993) Installation of Air Conditioning and Ventilating Systems
Plumbing and Drainage Institute 45 Bristol Drive, Suite 101 South Easton, MA 02375	PDI G 101 (1996) Testing and Rating Procedure for Grease Interceptors with Appendix of Sizing and Installation Data
	PDI WH201 (1992) Water Hammer Arrestors
	PDI WH 201 (1992) Water Hammer Arresters
Sheet Metal and Air Conditioning Contractor’s National Association PO Box 221230 Chantilly, VA 20153-1230	SMACNA HVAC Duct Const Stds (1995; Addenda Nov 1997)) HVAC Duct Construction Standards - Metal and Flexible
	SMACNA Arch. Manual (1993; Errata; Addenda Oct 1997) Architectural Sheet Metal Manual
Steel Door Institute (SDI) 30200 Detroit Road Cleveland, OH 44145-1967	ANSI A250.8/SDI 100 Standard Steel Doors and Frames
Steel Tank Institute (STI) 570 Oakwood Rd Lake Zurich, IL 60047	STI P3 Underground Steel Storage Tank Protection
Underwriters Laboratories 333 Pfingsten Road Northbrook, IL 60062-2096	UL 430 (1994; Rev thru Nov 1996) Waste Disposers
	UL 567 (1996; Rev thru Oct 1997) Pipe

Connectors for Petroleum Products and LP-Gas

UL 1746 (1993; Rev thru Sep 1998) External Corrosion Protection Systems for Steel Underground Storage Tanks

UL 1995 (1995; Rev thru Aug 1999) Heating and Cooling Equipment

UL 507 (1999) Electric Fans

UL 608 Modular Vault Panels

UL 746C (1995; Rev thru Jul 1999) Polymeric Materials - Use in Electric Equipment Evaluations

UL 705 (1994; Rev thru Feb 1999) Power Ventilators

UL 1316 (1994; Rev Apr 1996) Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures

APPENDIX B

FIRE PROTECTION ANALYSIS/ LIFE SAFETY CODE ANALYSIS

APPENDIX B
FIRE PROTECTION ANALYSIS/LIFE SAFETY CODE ANALYSIS
OF BUILDINGS IN THIS PROJECT

****

NOTE TO DESIGNER: This document is a preliminary analysis used for concept development. It does not contain all requirements and does not relieve the designer of complete code and criteria review, compliance and documentation responsibilities during proposal preparation and final design development.

REFERENCES:
Military Handbook MIL HDBK 1008c, Fire Protection for Facilities Engineering, Design and Construction, 10 June 1997.
Engineering Circular EC 1110-1-94, Classification of Type of Construction, 21 July 2001.
International Building Code, 2000 Edition.
NFPA 101, Life Safety Code, 2000 Edition.
NFPA 10, Standard for Portable Fire Extinguishers, 1998 Edition.

****

FIRE PROTECTION ANALYSIS/LIFE SAFETY CODE ANALYSIS
BARRACKS BUILDING (HOSPITAL SITE)

(Barracks Building and Commons Building are treated as one Building for the purpose of Code Analysis)

BUILDING DESCRIPTION:
Three (3) Story Building, Approximately 46,988 Square Feet

1. Use and Occupancy Classification
   IBC, Chapter 3
   Section 310, Residential Group R
   Paragraph 310.1
   Group R-2 (Apartment Building)

2. Use or Occupancy
   NFPA 101
   Chapter 30 - New Apartment Buildings

3. Occupancy Separation
   IBC, Chapter 3
   Table 302.3.3
   Single occupancy/None required

4. Incidental Use Areas
   IBC, Chapter 3
   Section 302.1.1
   Areas that are incidental to the main occupancy shall be separated and protected in accordance with Table 302.1.1 and shall be classified in accordance with the main occupancy of the portion of the building in which the incidental use is located.

5. General Building Heights and Areas
IBC, Chapter 5
Table 503

a. Building Height Limitation (in feet above grade)
65 Feet

b. Actual Building Height (as designed)
42 Feet, 2 Inches

c. Number of Story Limitation
Group R-2: Four (4)

d. Actual Number of Stories (as designed)
Group R-2: Three (3)

e. Area Modifications
Group R-2
Section 506 Area Modifications
Area Limitation per floor:
Unlimited
None Required

f. Actual Floor Area (as designed)
Group R-2
46,988 Square Feet (Actual Area with Commons Building: 48,764 Square Feet)

6. Type of Construction
IBC, Chapter 6
Section 602.2
Type IIA Buildings

7. Automatic Sprinkler System
MIL HDBK 1008C
Paragraph 4.1.5: Automatic Sprinkler Protection. Complete automatic sprinkler protection shall be provided for buildings which include personnel housing and lodging. NFPA 13 or NFPA 13R, Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height, sprinkler systems are permitted when listed for the specific use.
Paragraph 6.1.2 and 6.1.2a: Sprinkler protection shall be provided in the following facilities: Any new building over 15,000 square feet gross floor area.

NFPA 101
Chapter 30 – New Apartment Buildings
Paragraph 30.3.5.1: In buildings up to and including four stories in height, systems in accordance with NFPA 13R, shall be permitted.
Paragraph 30.3.5.2: All buildings shall be protected throughout by an approved, supervised automatic sprinkler system.

8. Fire-Resistance Rating Requirements for Building Elements
IBC, Chapter 6
Table 601
Type IIA Buildings

Structural Frame: 1 Hr

Including columns, girders and trusses	
Bearing Walls:	
Exterior	1 Hr
Interior	1 Hr
Nonbearing Walls and partitions:	
Exterior	Table 602
Interior	Section 602
Floor Construction	1 Hr
Including supporting beams and joists	
Roof Construction	1 Hr
Including supporting beams and joists	

9. Fire-Resistance Rating Requirements for Exterior Walls Based on Fire Separation Distance
IBC, Chapter 6
Table 602
Construction Type IIA
Group R

Fire Separation Distance (feet)	Fire-Resistance Rating
<5	1 Hr
<10	1 Hr
<30	1 Hr
>30	0

10. Allowable Area of Openings (Exterior Walls)
IBC, Chapter 7
Section 704.8
The maximum area of protected and unprotected openings permitted in an exterior wall in any story shall not exceed the values set forth in Table 704.8.

11. Shaft Enclosures
IBC, Chapter 7
Section 707, Paragraph 707.1
All openings or penetrations in floor/ceiling or roof/ceiling assemblies shall be required to be protected with a vertical shaft enclosure, except as allowed by exceptions listed in Paragraph 707.2.

12. Opening Protectives
IBC, Chapter 7
Section 714
Fire door, fire shutter and fire-protection-rated-glazing opening protection assemblies' fire-protection ratings shall be in accordance with Table 714.2.

13. Number of Means of Egress
NFPA 101
Chapter 7 – Means of Egress
Paragraph 7.4.1.1
The number of means of egress from any balcony, mezzanine, story, or portion thereof shall not be less than two (2).
Chapter 30 – New Apartment Buildings
Paragraph 30.2.4
Number of Exits Required: Two (2)
Number of Exits Provided: Two (2)

14. Marking of Means of Egress

NFPA 101
Chapter 7 – Means of Egress
Section 7.10
Chapter 30 – New Apartment Buildings
Paragraph 30.2.10
Means of egress shall have signs for marking the exits and exit paths in all buildings requiring more than one exit.

15. Common Paths of Travel
NFPA 101
Chapter 30 - New Apartment Buildings
Paragraph 30.2.5.2
Common paths of travel shall not exceed 35 feet.
Exception: In buildings protected throughout by an approved, supervised automatic sprinkler system, common paths of travel shall not exceed 50 feet.

16. Dead-End Corridors
NFPA 101
Chapter 30 - New Apartment Buildings
Paragraph 30.2.5.3
Dead-end corridors shall not exceed 35 feet.
Exception: In buildings protected throughout by an approved, supervised automatic sprinkler system, dead-end corridors shall not exceed 50 feet.

17. Travel Distance to Exits
NFPA 101
Chapter 30 – New Apartment Buildings
Paragraph 30.2.6.1
Travel distance within a dwelling unit (apartment) to a corridor door shall not exceed 75 feet.
Exception: In buildings protected throughout by an approved, supervised automatic sprinkler system, the travel distance shall not exceed 125 feet.
Paragraph 30.2.6.2
The travel distance from a dwelling unit (apartment) entrance door to the nearest exit shall not exceed 100 feet.
Exception No. 1: In buildings protected throughout by an approved, supervised automatic sprinkler system, the travel distance shall not exceed 200 feet.
Exception No. 2: Travel distance to exits shall not exceed 200 feet for exterior ways of exit access.

18. Travel Distance to Fire Extinguisher
NFPA 10
Chapter 3, Table 3-2.1
75 Feet, Maximum

19. Fire Extinguisher Cabinets
NFPA 10
Chapter 3
Cabinets for portable fire extinguishers shall be provided as required in Paragraph 3.2. Fire extinguishers for cabinets will be furnished by the Government.

20. Emergency Lighting
NFPA 101

Chapter 38 – New Business Occupancies
Paragraph 38.2.9
Furnish self-contained battery units to provide a reasonable degree of public safety within the building and for safe evacuation of the building.

21. Fire Alarms and Detection Systems
MIL HDBK 1008C
Section 7
A fire alarm/reporting system will be provided as required by MIL HDBK 1008C, FIRE ALARM SYSTEMS, Paragraphs 7.1, 7.2 and 7.3.
NFPA 101
The fire alarm system shall be designed in accordance with the applicable sections of NFPA 101. The system shall include a fire alarm control panel with battery back up, manual pull stations, automatic smoke/thermal detectors and audio/visual indicating devices meeting requirements of UFAS and ADA. The system shall include local alarms as well as annunciation to the existing central fire alarm system.

FIRE PROTECTION ANALYSIS/LIFE SAFETY CODE ANALYSIS
COMMONS BUILDING (HOSPITAL SITE)

(Barracks Building and Commons Building are treated as one Building for the purpose of Code Analysis)

BUILDING DESCRIPTION:
Two (2) Story Building, Approximately 1776 Square Feet

1. Use and Occupancy Classification
   IBC, Chapter 3
   Section 304, Business Group B
   Paragraph 304.1
   Group B (Commons Building)

2. Use or Occupancy
   NFPA 101
   Chapter 38 - New Business Occupancies

3. Occupancy Separation
   IBC, Chapter 3
   Table 302.3.3
   Single occupancy/None required

4. Incidental Use Areas
   IBC, Chapter 3
   Section 302.1.1
   Areas that are incidental to the main occupancy shall be separated and protected in accordance with Table 302.1.1 and shall be classified in accordance with the main occupancy of the portion of the building in which the incidental use is located.

5. General Building Heights and Areas
   IBC, Chapter 5
   Table 503

   a. Building Height Limitation (in feet above grade)
      65 Feet

   b. Actual Building Height (as designed)
      27 Feet, 1 Inch

   c. Number of Story Limitation
      Group B: Five (5)

   d. Actual Number of Stories (as designed)
      Group B: Two (2)

   e. Area Modifications
      Group B
      Section 506 Area Modifications
      Area Limitation per floor:
      37,500 Square Feet
      None Required

f. Actual Floor Area (as designed)
Group B
1776 Square Feet

6. Type of Construction
IBC, Chapter 6
Section 602.2
Type IIA Buildings

7. Automatic Sprinkler System
MIL HDBK 1008C
Paragraph 4.1.7: Storage areas, shops, laundry areas, and other hazardous areas shall be protected by an automatic, supervised sprinkler system as required by NFPA 101 and NFPA 13. The Commons Building shall be provided with a complete automatic sprinkler system.

NFPA 101
Chapter 38 – New Business Occupancies
Paragraph 38.3.5: Portable fire extinguishers shall be provided in every business occupancy.

8. Fire-Resistance Rating Requirements for Building Elements
IBC, Chapter 6
Table 601
Type IIA Buildings

Structural Frame:	1 Hr
Including columns, girders and trusses	
Bearing Walls:	
Exterior	1 Hr
Interior	1 Hr
Nonbearing Walls and partitions:	
Exterior	Table 602
Interior	Section 602
Floor Construction	1 Hr
Including supporting beams and joists	
Roof Construction	1 Hr
Including supporting beams and joists	

9. Fire-Resistance Rating Requirements for Exterior Walls Based on Fire Separation Distance
IBC, Chapter 6
Table 602
Construction Type IIA
Group B

Fire Separation Distance (feet)	Fire-Resistance Rating
<5	1 Hr
<10	1 Hr
<30	1 Hr
>30	0

10. Allowable Area of Openings (Exterior Walls)
IBC, Chapter 7
Section 704.8
The maximum area of protected and unprotected openings permitted in an exterior wall in any story shall not exceed the values set forth in Table 704.8.

11. Shaft Enclosures
IBC, Chapter 7
Section 707, Paragraph 707.1
All openings or penetrations in floor/ceiling or roof/ceiling assemblies shall be required to be protected with a vertical shaft enclosure, except as allowed by exceptions listed in Paragraph 707.2.

12. Opening Protectives
IBC, Chapter 7
Section 714
Fire door, fire shutter and fire-protection-rated-glazing opening protection assemblies' fire-protection ratings shall be in accordance with Table 714.2.

13. Number of Means of Egress
NFPA 101
Chapter 7 – Means of Egress
Paragraph 7.4.1.1
The number of means of egress from any balcony, mezzanine, story, or portion thereof shall not be less than two (2).
Chapter 38 – New Business Occupancies
Paragraph 38.2.4.2
Number of Exits Required: Two (2)
Number of Exits Provided: Three (3)

14. Marking of Means of Egress
NFPA 101
Chapter 7 – Means of Egress
Section 7.10
Chapter 38 – New Business Occupancies
Paragraph 38.2.10
Means of egress shall have signs for marking the exits and exit paths in all buildings requiring more than one exit.

15. Dead-End Corridor
NFPA 101
Chapter 38 – New Business Occupancies
Paragraph 38.2.5.2
Dead-end corridors shall not exceed 20 feet.
Exception: In buildings protected throughout by an approved, supervised automatic sprinkler system, dead-end corridors shall not exceed 50 feet.

16. Common Paths of Travel
NFPA 101
Chapter 38 – New Business Occupancies
Paragraph 38.2.5.3
Common paths of travel shall not exceed 75 feet.
Exception: A common path of travel shall be permitted for the first 100 feet in a building protected throughout by an approved, supervised automatic sprinkler system.

17. Travel Distance to Exits
NFPA 101
Chapter 38 – New Business Occupancies
Paragraph 38.2.6
Travel distance to exits shall not exceed 200 feet.

Exception: Travel distance shall not exceed 300 feet in buildings protected throughout by an approved, supervised automatic sprinkler system.

18. Travel Distance to Fire Extinguisher
NFPA 10
Chapter 3, Table 3-2.1
75 Feet, Maximum

19. Fire Extinguisher Cabinets
NFPA 10
Chapter 3
Cabinets for portable fire extinguishers shall be provided as required in Paragraph 3.2. Fire extinguishers for cabinets will be furnished by the Government.

20. Emergency Lighting
NFPA 101
Paragraph 38.2.9
Furnish self-contained battery units to provide a reasonable degree of public safety within the building and for safe evacuation of the building.

21. Fire Alarms and Detection Systems
MIL HDBK 1008C
Section 7
A fire alarm/reporting system will be provided as required by MIL HDBK 1008C, FIRE ALARM SYSTEMS, Paragraphs 7.1, 7.2 and 7.3.
NFPA 101
The fire alarm system shall be designed in accordance with the applicable sections of NFPA 101. The system shall include a fire alarm control panel with battery back up, manual pull stations, automatic smoke/thermal detectors and audio/visual indicating devices meeting requirements of UFAS and ADA. The system shall include local alarms as well as annunciation to the existing central fire alarm system.

FIRE PROTECTION ANALYSIS/LIFE SAFETY CODE ANALYSIS
COMPANY OPERATIONS BUILDING (HOSPITAL SITE)

BUILDING DESCRIPTION:
One (1) Story Building, Approximately 4035.8 Square Feet

1. Use and Occupancy Classification
   IBC, Chapter 3
   Section 304, Business Group B
   Paragraph 304.1
   Group B (Company Operations Building)

2. Use or Occupancy
   NFPA 101
   Chapter 38 - New Business Occupancies

3. Occupancy Separation
   IBC, Chapter 3
   Table 302.3.3
   Single occupancy/None required

4. Incidental Use Areas
   IBC, Chapter 3
   Section 302.1.1
   Areas that are incidental to the main occupancy shall be separated and protected in accordance with Table 302.1.1 and shall be classified in accordance with the main occupancy of the portion of the building in which the incidental use is located.

5. General Building Heights and Areas
   IBC, Chapter 5
   Table 503

   a. Building Height Limitation (in feet above grade)
      65 Feet

   b. Actual Building Height (as designed)
      25 Feet, 0 Inches

   c. Number of Story Limitation
      Group B: Five (5)

   d. Actual Number of Stories (as designed)
      Group B: Two (2)

   e. Area Modifications
      Group B
      Section 506 Area Modifications
      Area Limitation per floor:
      37,500 Square Feet
      None Required

   f. Actual Floor Area (as designed)
      Group B
      4035.8 Square Feet

6. Type of Construction
IBC, Chapter 6
Section 602.2
Type IIA Buildings

7. Automatic Sprinkler System
MIL HDBK 1008C
Paragraph 4.1.7: Storage areas, shops, laundry areas, and other hazardous areas shall be protected by an automatic, supervised sprinkler system as required by NFPA 101 and NFPA 13. The Company Operations Building shall be provided with a complete automatic sprinkler system.

NFPA 101
Chapter 38 – New Business Occupancies
Paragraph 38.3.5: Portable fire extinguishers shall be provided in every business occupancy.

8. Fire-Resistance Rating Requirements for Building Elements
IBC, Chapter 6
Table 601
Type IIA Buildings

Structural Frame:	1 Hr
Including columns, girders and trusses	
Bearing Walls:	
Exterior	1 Hr
Interior	1 Hr
Nonbearing Walls and partitions:	
Exterior	Table 602
Interior	Section 602
Floor Construction	1 Hr
Including supporting beams and joists	
Roof Construction	1 Hr
Including supporting beams and joists	

9. Fire-Resistance Rating Requirements for Exterior Walls Based on Fire Separation Distance
IBC, Chapter 6
Table 602
Construction Type IIA
Group B

Fire Separation Distance (feet)	Fire-Resistance Rating
<5	1 Hr
<10	1 Hr
<30	1 Hr
>30	0

10. Allowable Area of Openings (Exterior Walls)
IBC, Chapter 7
Section 704.8
The maximum area of protected and unprotected openings permitted in an exterior wall in any story shall not exceed the values set forth in Table 704.8.

11. Shaft Enclosures
IBC, Chapter 7
Section 707, Paragraph 707.1

All openings or penetrations in floor/ceiling or roof/ceiling assemblies shall be required to be protected with a vertical shaft enclosure, except as allowed by exceptions listed in Paragraph 707.2.

12. Opening Protectives
IBC, Chapter 7
Section 714
Fire door, fire shutter and fire-protection-rated-glazing opening protection assemblies' fire-protection ratings shall be in accordance with Table 714.2.

13. Number of Means of Egress
NFPA 101
Chapter 7 – Means of Egress
Paragraph 7.4.1.1
The number of means of egress from any balcony, mezzanine, story, or portion thereof shall not be less than two (2).
Chapter 38 – New Business Occupancies
Paragraph 38.2.4.2
Number of Exits Required: Two (2)
Number of Exits Provided: Three (3)

14. Marking of Means of Egress
NFPA 101
Chapter 7 – Means of Egress
Section 7.10
Chapter 38 – New Business Occupancies
Paragraph 38.2.10
Means of egress shall have signs for marking the exits and exit paths in all buildings requiring more than one exit.

15. Dead-End Corridors
NFPA 101
Chapter 38 – New Business Occupancies
Paragraph 38.2.5.2
Dead-end corridors shall not exceed 20 feet.
Exception: In buildings protected throughout by an approved, supervised automatic sprinkler system, dead-end corridors shall not exceed 50 feet.

16. Common Paths of Travel
NFPA 101
Chapter 38 – New Business Occupancies
Paragraph 38.2.5.3
Common paths of travel shall not exceed 75 feet.
Exception: A common path of travel shall be permitted for the first 100 feet in a building protected throughout by an approved, supervised automatic sprinkler system.

17. Travel Distance to Exits
NFPA 101
Chapter 38 – New Business Occupancies
Paragraph 38.2.6
Travel distance to exits shall not exceed 200 feet.
Exception: Travel distance shall not exceed 300 feet in buildings protected throughout by an approved, supervised automatic sprinkler system.

18. Travel Distance to Fire Extinguisher
NFPA 10
Chapter 3, Table 3-2.1
75 Feet, Maximum

19. Fire Extinguisher Cabinets
NFPA 10
Chapter 3
Cabinets for portable fire extinguishers shall be provided as required in Paragraph 3.2. Fire extinguishers for cabinets will be furnished by the Government.

20. Emergency Lighting
NFPA 101
Chapter 38 – New Business Occupancies
Paragraph 38.2.9
Furnish self-contained battery units to provide a reasonable degree of public safety within the building and for safe evacuation of the building.

21. Fire Alarms and Detection Systems
MIL HDBK 1008C
Section 7
A fire alarm/reporting system will be provided as required by MIL HDBK 1008C, FIRE ALARM SYSTEMS, Paragraphs 7.1, 7.2 and 7.3.

NFPA 101
The fire alarm system shall be designed in accordance with the applicable sections of NFPA 101. The system shall include a fire alarm control panel with battery back up, manual pull stations, automatic smoke/thermal detectors and audio/visual indicating devices meeting requirements of UFAS and ADA. The system shall include local alarms as well as annunciation to the existing central fire alarm system.

FIRE PROTECTION ANALYSIS/LIFE SAFETY CODE ANALYSIS
BARRACKS BUILDING (DIXIE ROAD)

(Treated as Four (4) separate Buildings)

BUILDING DESCRIPTION:
Three (3) Story Building, Approximately 37,789.1 Square Feet (each building)

1. Use and Occupancy Classification
   IBC, Chapter 3
   Section 304, Business Group B
   Paragraph 304.1
   Group B (Commons Area)
   Section 310, Residential Group R
   Paragraph 310.1
   Group R-2 (Apartment Building)

2. Use or Occupancy
   NFPA 101
   Chapter 30 - New Apartment Buildings
   Chapter 38 – New Business Occupancies

3. Occupancy Separation
   IBC, Chapter 3
   Table 302.3.3
   Mixed occupancy/Two (2) Hour separation required between Group B and Group R-2 occupancies.

4. Incidental Use Areas
   IBC, Chapter 3
   Section 302.1.1
   Areas that are incidental to the main occupancy shall be separated and protected in accordance with Table 302.1.1 and shall be classified in accordance with the main occupancy of the portion of the building in which the incidental use is located.

5. General Building Heights and Areas
   IBC, Chapter 5
   Table 503

   a. Building Height Limitation (in feet above grade)
      65 Feet

   b. Actual Building Height (as designed)
      45 Feet, 10 Inches

   c. Number of Story Limitation
      Group B: Five (5)
      Group R-2: Four (4)

   d. Actual Number of Stories (as designed)
      Group B: One (1)
      Group R-2: Three (3)

   e. Area Modifications
      Section 506 Area Modifications

Area Limitation per floor:
Group B
37,500 Square Feet
None Required
Group R-2
Unlimited
None Required

f. Actual Floor Area (as designed)
Group B
Group R-2
37,789.1 Square Feet

6. Type of Construction
IBC, Chapter 6
Section 602.2
Type IIA Buildings

7. Automatic Sprinkler System
MIL HDBK 1008C
Paragraph 4.1.5 Automatic Sprinkler Protection. Complete automatic sprinkler protection shall be provided for buildings which include personnel housing and lodging. NFPA 13 or NFPA 13R, Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height, sprinkler systems are permitted when listed for the specific use.
Paragraph 6.1.2 and 6.1.2a: Sprinkler protection shall be provided in the following facilities: Any new building over 15,000 square feet gross floor area.
Paragraph 4.1.7: Storage areas, shops, laundry areas, and other hazardous areas shall be protected by an automatic, supervised sprinkler system as required by NFPA 101 and NFPA 13.

NFPA 101
Chapter 30 – New Apartment Buildings
Paragraph 30.3.5.1: In buildings up to and including four stories in height, systems in accordance with NFPA 13R, shall be permitted within the Residential occupancy portions of the Barracks Building.
Paragraph 30.3.5.2: All buildings shall be protected throughout by an approved, supervised automatic sprinkler system.
Chapter 38 – New Business Occupancies
Paragraph 38.3.5: Portable fire extinguishers shall be provided in every business occupancy.

8. Fire-Resistance Rating Requirements for Building Elements
IBC, Chapter 6
Table 601
Type IIA Buildings

Structural Frame:	1 Hr
Including columns, girders and trusses	
Bearing Walls:	
Exterior	1 Hr
Interior	1 Hr
Nonbearing Walls and partitions:	
Exterior	Table 602
Interior	Section 602
Floor Construction	1 Hr

Including supporting beams and joists
Roof Construction 1 Hr
Including supporting beams and joists

9. Fire-Resistance Rating Requirements for Exterior Walls Based on Fire Separation Distance
IBC, Chapter 6
Table 602
Construction Type IIA
Group B

Fire Separation Distance (feet)	Fire-Resistance Rating
<5	1 Hr
<10	1 Hr
<30	1 Hr
>30	0

10. Allowable Area of Openings (Exterior Walls)
IBC, Chapter 7
Section 704.8
The maximum area of protected and unprotected openings permitted in an exterior wall in any story shall not exceed the values set forth in Table 704.8.

11. Shaft Enclosures
IBC, Chapter 7
Section 707, Paragraph 707.1
All openings or penetrations in floor/ceiling or roof/ceiling assemblies shall be required to be protected with a vertical shaft enclosure, except as allowed by exceptions listed in Paragraph 707.2.

12. Opening Protectives
IBC, Chapter 7
Section 714
Fire door, fire shutter and fire-protection-rated-glazing opening protection assemblies' fire-protection ratings shall be in accordance with Table 714.2.

13. Number of Means of Egress
NFPA 101
Chapter 7 – Means of Egress
Paragraph 7.4.1.1
The number of means of egress from any balcony, mezzanine, story, or portion thereof shall not be less than two (2).
Chapter 30 – New Apartment Buildings
Paragraph 30.2.4
Number of Exits Required: Two (2)
Number of Exits Provided: Two (2)
Chapter 38 – New Business Occupancies
Paragraph 38.2.4.2
Number of Exits Required: Two (2)
Number of Exits Provided: Two (2)

14. Marking of Means of Egress
NFPA 101
Chapter 7 – Means of Egress
Section 7.10

Chapter 30 – New Apartment Buildings
Paragraph 30.2.10
Chapter 38 – New Business Occupancies
Paragraph 38.2.10
Means of egress shall have signs for marking the exits and exit paths in all buildings requiring more than one exit.

15. Dead-End Corridors
NFPA 101
Chapter 30 - New Apartment Buildings
Paragraph 30.2.5.3
Dead-end corridors shall not exceed 35 feet.
Exception: In buildings protected throughout by an approved, supervised automatic sprinkler system, dead-end corridors shall not exceed 50 feet.
Chapter 38 – New Business Occupancies
Paragraph 38.2.5.2
Dead-end corridors shall not exceed 20 feet.
Exception: In buildings protected throughout by an approved, supervised automatic sprinkler system, dead-end corridors shall not exceed 50 feet.

16. Common Paths of Travel
NFPA 101
Chapter 30 - New Apartment Buildings
Paragraph 30.2.5.2
Common paths of travel shall not exceed 35 feet.
Exception: In buildings protected throughout by an approved, supervised automatic sprinkler system, common path of travel shall not exceed 50 feet.
Chapter 38 – New Business Occupancies
Paragraph 38.2.5.3
Common paths of travel shall not exceed 75 feet.
Exception: A common path of travel shall be permitted for the first 100 feet in a building protected throughout by an approved, supervised automatic sprinkler system.

17. Travel Distance to Exits
NFPA 101
Chapter 30 – New Apartment Buildings
Paragraph 30.2.6.1
Travel distance within a dwelling unit (apartment) to a corridor door shall not exceed 75 feet.
Exception: In buildings protected throughout by an approved, supervised automatic sprinkler system, the travel distance shall not exceed 125 feet.
Paragraph 30.2.6.2
The travel distance from a dwelling unit (apartment) entrance door to the nearest exit shall not exceed 100 feet.
Exception No. 1: In buildings protected throughout by an approved, supervised automatic sprinkler system, the travel distance shall not exceed 200 feet.
Exception No. 2: Travel distance to exits shall not exceed 200 feet for exterior ways of exit access.

Chapter 38 – New Business Occupancies
Paragraph 38.2.6
Travel distance to exits shall not exceed 200 feet.

Exception: Travel distance shall not exceed 300 feet in buildings protected throughout by an approved, supervised automatic sprinkler system.

18. Travel Distance to Fire Extinguisher
NFPA 10
Chapter 3, Table 3-2.1
75 Feet, Maximum

19. Fire Extinguisher Cabinets
NFPA 10
Chapter 3
Cabinets for portable fire extinguishers shall be provided as required in Paragraph 3.2. Fire extinguishers for cabinets will be furnished by the Government.

20. Emergency Lighting
NFPA 101
Chapter 30 – New Apartment Buildings
Paragraph 30.2.9
Emergency lighting in accordance with Section 7.9 shall be provided in all buildings with more than 12 dwelling units or more than three stories in height.
Chapter 38 – New Business Occupancies
Paragraph 38.2.9
Furnish self-contained battery units to provide a reasonable degree of public safety within the building and for safe evacuation of the building.

21. Fire Alarms and Detection Systems
MIL HDBK 1008C
Section 7
A fire alarm/reporting system will be provided as required by MIL HDBK 1008C, FIRE ALARM SYSTEMS, Paragraphs 7.1, 7.2 and 7.3.
NFPA 101
The fire alarm system shall be designed in accordance with the applicable sections of NFPA 101. The system shall include a fire alarm control panel with battery back up, manual pull stations, automatic smoke/thermal detectors and audio/visual indicating devices meeting requirements of UFAS and ADA. The system shall include local alarms as well as annunciation to the existing central fire alarm system.

FIRE PROTECTION ANALYSIS/LIFE SAFETY CODE ANALYSIS
BATTALION HEADQUARTERS

BUILDING DESCRIPTION:
One (1) Story Building, Approximately 14,000 Square Feet

1. Use or Occupancy Classification
   IBC, Chapter 3
   Section 303, Assembly Group A
   Paragraph 303.1
   Group A-3 (Classrooms)
   Section 304, Business Group B
   Paragraph 304.1
   Group B (Offices)

2. Use or Occupancy
   NFPA 101
   Chapter 12 – New Assembly Occupancies
   Chapter 38 - New Business Occupancies

3. Occupancy Separation
   IBC, Chapter 3
   Table 302.3.3
   Mixed Occupancy/Two (2) Hour separation required between Group A-3 and Group B occupancies.

4. Incidental Use Areas
   IBC, Chapter 3
   Section 302.1.1
   Areas that are incidental to the main occupancy shall be separated and protected in accordance with Table 302.1.1 and shall be classified in accordance with the main occupancy of the portion of the building in which the incidental use is located.

5. General Building Heights and Areas
   IBC, Chapter 5
   Table 503

   a. Building Height Limitation (in feet above grade)
      55 Feet

   b. Actual Building Height (as designed)
      25 Feet, 10 Inches

   c. Number of Story Limitation
      Group A-3: Two (2)
      Group B: Four (4)

   d. Actual Number of Stories (as designed)
      Group A-3: One (1)
      Group B: One (1)

   e. Area Modifications
      Section 506 Area Modifications
      Area Limitation per floor:
      Group A-3

9,500 Square Feet
None Required
Group B
23,000 Square Feet
None Required

f. Actual Floor Area (as designed)
14,000 Square Feet

6. Type of Construction
IBC, Chapter 6
Section 602.2
Type IIB Buildings

7. Automatic Sprinkler System
MIL HDBK 1008C
Paragraph 6.1.2 and 6.1.2a: Sprinkler protection shall be provided in the following facilities: Any new building over 15,000 square feet gross floor area. The Battalion Headquarters Building shall be provided with a complete automatic sprinkler system.
Paragraph 4.1.7: Storage areas, shops, laundry areas, and other hazardous areas shall be protected by an automatic, supervised sprinkler system as required by NFPA 101 and NFPA 13.

NFPA 101
Chapter 12 – New Assembly Occupancies
Paragraph 12.3.5: Buildings containing assembly occupancies with occupant loads of more than 300 shall be protected by an approved, supervised automatic sprinkler system.
Chapter 38 – New Business Occupancies
Paragraph 38.3.5: Portable fire extinguishers shall be provided in every business occupancy.

8. Fire-Resistance Rating Requirements for Building Elements
IBC, Chapter 6
Table 601
Type IIB Buildings

Structural Frame:	0 Hr
Including columns, girders and trusses	
Bearing Walls:	
Exterior	0 Hr
Interior	0 Hr
Nonbearing Walls and partitions:	
Exterior	Table 602
Interior	Section 602
Floor Construction	0 Hr
Including supporting beams and joists	
Roof Construction	0 Hr
Including supporting beams and joists	

9. Fire-Resistance Rating Requirements for Exterior Walls Based on Fire Separation Distance
IBC, Chapter 6
Table 602
Construction Type IIB
Group B

Fire Separation Distance (feet)	Fire-Resistance Rating
<5	1 Hr
<10	1 Hr
<30	0
>30	0

10. Allowable Area of Openings (Exterior Walls)
IBC, Chapter 7
Section 704.8
The maximum area of protected and unprotected openings permitted in an exterior wall in any story shall not exceed the values set forth in Table 704.8.

11. Shaft Enclosures
IBC, Chapter 7
Section 707, Paragraph 707.1
All openings or penetrations in floor/ceiling or roof/ceiling assemblies shall be required to be protected with a vertical shaft enclosure, except as allowed by exceptions listed in Paragraph 707.2.

12. Opening Protectives
IBC, Chapter 7
Section 714
Fire door, fire shutter and fire-protection-rated-glazing opening protection assemblies' fire-protection ratings shall be in accordance with Table 714.2.

13. Number of Means of Egress
NFPA 101
Chapter 7 Means of Egress
Paragraph 7.4.1.1
The number of means of egress from any balcony, mezzanine, story, or portion thereof shall not be less than two (2).
Chapter 12 – New Assembly Occupancies
Paragraph 12.2.4
Number of Exits Required: Two (2)
Number of Exits Provided: Two (2)
Chapter 38 – New Business Occupancies
Paragraph 38.2.4.2
Number of Exits Required: Two (2)
Number of Exits Provided: Two (2)

14. Marking of Means of Egress
NFPA 101
Chapter 7 – Means of Egress
Section 7.10
Chapter 12 – New Assembly Occupancies
Paragraph 12.2.10
Chapter 38 – New Business Occupancies
Paragraph 38.2.10
Means of egress shall have signs for marking the exits and exit paths in all buildings requiring more than one exit.

15. Dead-End Corridors
NFPA 101
Chapter 12 – New Assembly Occupancies

Chapter 7 – Means of Egress
Paragraph 7.5.1.6
Exit access shall be arranged so that there shall are no dead ends in corridors.
Chapter 38 – New Business Occupancies
Paragraph 38.2.5.2
Dead-end corridors shall not exceed 20 feet.
Exception: In buildings protected throughout by an approved, supervised automatic sprinkler system, dead-end corridors shall not exceed 50 feet.

16. Common Paths of Travel
NFPA 101
Chapter 12 – New Assembly Occupancies
Paragraph 12.2.5.1
Exits shall be located remotely from each other and shall be arranged to minimize the possibility that they might be blocked by an emergency.
Exception: A common path of travel shall be permitted for the first 20 feet from any point where serving any number of occupants and for the first 75 feet from any point where serving not more than 50 occupants.

Chapter 38 – New Business Occupancies
Paragraph 38.2.5.3
Common paths of travel shall not exceed 75 feet.
Exception: A common path of travel shall be permitted for the first 100 feet in a building protected throughout by an approved, supervised automatic sprinkler system.

17. Travel Distance to Exits
NFPA 101
Chapter 12 – New Assembly Occupancies
Paragraph 12.2.6
Travel distance to exits shall not exceed 150 ft.
Exception: Travel distance shall not exceed 200 feet in buildings protected throughout by an approved, supervised automatic sprinkler system.
Chapter 38 – New Business Occupancies
Paragraph 38.2.6
Travel distance to exits shall not exceed 200 feet.
Exception: Travel distance shall not exceed 300 feet in buildings protected throughout by an approved, supervised automatic sprinkler system.

18. Travel Distance to Fire Extinguisher
NFPA 10
Chapter 3, Table 3-2.1
75 Feet, Maximum

19. Fire Extinguisher Cabinets
NFPA 10
Chapter 3
Cabinets for portable fire extinguishers shall be provided as required in Paragraph 3.2. Fire extinguishers for cabinets will be furnished by the Government.

20. Emergency Lighting
NFPA 101
Chapter 12 – New Assembly Occupancies

Paragraph 12.2.9
Emergency lighting shall be provided in accordance with Section 7.9.
Chapter 38 – New Business Occupancies
Paragraph 38.2.9
Furnish self-contained battery units to provide a reasonable degree of public safety within the building and for safe evacuation of the building.

21. Fire Alarms and Detection Systems
MIL HDBK 1008C
Section 7
A fire alarm/reporting system will be provided as required by MIL HDBK 1008C, FIRE ALARM SYSTEMS, Paragraphs 7.1, 7.2 and 7.3.
NFPA 101
The fire alarm system shall be designed in accordance with the applicable sections of NFPA 101. The system shall include a fire alarm control panel with battery back up, manual pull stations, automatic smoke/thermal detectors and audio/visual indicating devices meeting requirements of UFAS and ADA. The system shall include local alarms as well as annunciation to the existing central fire alarm system.

APPENDIX C

SUSTAINABLE RATING TOOL (SpiRiT)

Sustainable Project Rating Tool (SPiRiT)

Version 1.4.1

U. S. Army Corps of Engineers
U. S. Army Assistant Chief of Staff for Installation Management

June 2002

U. S. Army Corps of Engineers Disclaimer

The contents of this document are not to be used for advertising, publication, or promotional purposes. Citation of trade names does not constitute an official endorsement or approval of the use of such commercial products. All product names and trademarks cited are the property of their respective owners.

The findings of this document are not to be construed as an official Department of the Army position unless so designated by other authorized documents. The U. S. Army Corps of Engineers does not guarantee, certify, or ensure performance of any products, systems, strategies, or technologies described in the Sustainable Project Rating Tool (SPiRiT).

U. S. Green Building Council Disclaimer

The LEED Green Building Reference Guide™ 2.0 is the second edition, support document for the LEED Green Building Rating System™. These LEED™ documents were developed by the U.S. Green Building Council, under contract number DE-FG36-97GO10268, for the U.S. Department of Energy, Energy Efficiency and Renewable Energy, Office of Building Technology, State, and Community Programs, and are intended for use by commercial building project stakeholders or project team members as a guide for green and sustainable design. They were prepared with the assistance and participation of representatives from many organizations. The views and opinions expressed represent general consensus and available information, but unanimous approval by all organizations is not implied. The views and opinions expressed also do not necessarily state or reflect those of the United States government.

Together, the LEED™ documents represent the U.S. Green Building Council's efforts to develop a standard that improves environmental and economic performance of commercial buildings using established and/or advanced industry principles, practices, materials and standards. They are subject to change from time to time in the future.

The U.S. Green Building Council authorizes you to view the LEED Green Building Reference Guide™ 2.0 for your individual use. In exchange for this authorization, you agree to retain all copyright and other proprietary notices contained in the original LEED Green Building Reference Guide™ 2.0. You also agree not to sell or modify the LEED Green Building Reference Guide™ 2.0 or to reproduce, display or distribute the LEED Green Building Reference Guide™ 2.0 in any way for any public or commercial purpose, including display on a web site or in a networked environment. Unauthorized use of the LEED Green Building Reference Guide™ 2.0 violates copyright, trademark, and other laws and is prohibited.

Please note that the text of the federal and state codes, regulations, voluntary standards, etc. reproduced in the LEED Green Building Reference Guide™ 2.0 is either used under license to the U.S. Green Building Council or, in some instances, is in the public domain. All other text, graphics, layout, and other elements of content contained in the LEED Green Building Reference Guide™ 2.0 are owned by the U.S. Green Building Council and are protected by copyright under both United States and foreign laws.

Also please note that none of the parties involved in the funding or creation of the LEED Green Building Reference Guide™ 2.0, including the U.S. Green Building Council, its members or the United States government make any warranty (express or implied) or assume any liability or responsibility, to you or any third parties for the accuracy, completeness or use of, or reliance on, any information contained in the LEED Green Building Reference Guide™ 2.0, or for any injuries, losses or damages (including, without limitation, equitable relief) arising out of such use or reliance.

As a condition of use, you covenant not to sue, and agree to waive and release the U.S. Green Building Council, its members and the United States government from any and all claims, demands and causes of action for any injuries, losses or damages (including, without limitation, equitable relief) that you may now or hereafter have a right to assert against such parties as a result of your use of, or reliance on, the LEED Green Building Reference Guide™ 2.0.

Copyright © 2000 by the U.S. Green Building Council. All rights reserved.

Content

NOTES iii

1.0 Sustainable Sites 1

- ❑ 1.R1 Erosion, Sedimentation and Water Quality Control
- ❑ 1.C1 Site Selection
- ❑ 1.C2 Installation/Base Redevelopment
- ❑ 1.C3 Brownfield Redevelopment
- ❑ 1.C4 Alternative Transportation
- ❑ 1.C5 Reduced Site Disturbance
- ❑ 1.C6 Stormwater Management
- ❑ 1.C7 Landscape and Exterior Design to Reduce Heat Islands
- ❑ 1.C8 Light Pollution Reduction
- ❑ 1.C9 Optimize Site Features
- ❑ 1.C10 Facility Impact
- ❑ 1.C11 Site Ecology

2.0 Water Efficiency 5

- ❑ 2.C1 Water Efficient Landscaping
- ❑ 2.C2 Innovative Wastewater Technologies
- ❑ 2.C3 Water Use Reduction

3.0 Energy and Atmosphere 6

- ❑ 3.R1 Fundamental Building Systems Commissioning
- ❑ 3.R2 Minimum Energy Performance
- ❑ 3.R3 CFC Reduction In HVAC&R Equipment
- ❑ 3.C1 Optimize Energy Performance
- ❑ 3.C2 Renewable Energy
- ❑ 3.C3 Additional Commissioning
- ❑ 3.C4 <<Deleted>>
- ❑ 3.C5 Measurement and Verification
- ❑ 3.C6 Green Power
- ❑ 3.C7 Distributed Generation

4.0 Materials and Resources 10

- ❑ 4.R1 Storage & Collection of Recyclables
- ❑ 4.C1 Building Reuse
- ❑ 4.C2 Construction Waste Management
- ❑ 4.C3 Resource Reuse
- ❑ 4.C4 Recycled Content
- ❑ 4.C5 Local/Regional Materials
- ❑ 4.C6 Rapidly Renewable Materials
- ❑ 4.C7 Certified Wood

5.0 Indoor Environmental Quality (IEQ) 13

- ❑ 5.R1 Minimum IAQ Performance
- ❑ 5.R2 Environmental Tobacco Smoke (ETS) Control
- ❑ 5.C1 IAQ Monitoring
- ❑ 5.C2 Increase Ventilation Effectiveness
- ❑ 5.C3 Construction IAQ Management Plan
- ❑ 5.C4 Low-Emitting Materials
- ❑ 5.C5 Indoor Chemical and Pollutant Source Control
- ❑ 5.C6 Controllability of Systems
- ❑ 5.C7 Thermal Comfort
- ❑ 5.C8 Daylight and Views
- ❑ 5.C9 Acoustic Environment /Noise Control
- ❑ 5.C10 Facility In-Use IAQ Management Plan

6.0 Facility Delivery Process 17

- ❑ 6.C1 Holistic Delivery of Facility

7.0 Current Mission 18

- ❑ 7.C1 Operation and Maintenance
- ❑ 7.C2 Soldier and Workforce Productivity and Retention

8.0 Future Missions 19

- ❑ 8.C1 Functional Life of Facility and Supporting Systems
- ❑ 8.C2 Adaptation, Renewal and Future Uses

Facility Points Summary 20

SPiRiT Comment Sheet 22

NOTES

1) This Sustainable Project Rating Tool (SPiRiT) is derived from The U. S. Green Building Council LEED 2.0 (Leadership in Energy and Environmental Design) Green Building Rating System ™.

2) The SPiRiT numbering scheme parallels, but does not match LEED 2.0. LEED does not number major sections, which it calls 'Credit Categories,' ex. 'Sustainable Sites,' rather it numbers criteria or 'credits' within each major section. SPiRiT credit numbers match those of LEED where there is a 1:1 comparison. Where additional credits have been added they fall at the end of major sections.

3) The SPiRiT Credits all follow the format: Intent, Requirement and Technologies/Strategies.

Intent: A statement of the primary goal for the credit;
Requirement: Quantifiable conditions necessary to achieve stated intent;
Technologies/Strategies: Suggested technologies, strategies and referenced guidance on the means to achieve identified requirements.

4) Projects are evaluated for each SPiRiT credit which are either 'Prerequisites' or result in a point score:

Prerequisites: These credits are a statement of minimum requirements and must be met. No further points will be awarded unless the minimum is achieved. These credits are recognizable by an 'R' in the number scheme, ex. 1.R1, and a 'Reqd.' in the score column.
Point Score: These credits are evaluated and result in a point score. Where the potential score is greater than 1, no partial points are granted.

5) SPiRiT Sustainable Project Certification Levels:

SPiRiT Bronze	25 to 34 Points
SPiRiT Silver	35 to 49 Points
SPiRiT Gold	50 to 74 Points
SPiRiT Platinum	75 to 100 Points

6) SPiRiT credits have been developed to address facility life cycle phases including programming, design, construction, and commissioning. Additional rating tools will be developed to address installation/base master planning and facilities operations and maintenance, rehabilitation, recycling, and disposal.

7) POC for U. S. Army Corps of Engineers:

Mr. Harry Goradia
U. S. Army Corps of Engineers
ATTN: CEMP-ET
441 G Street NW
Washington, DC 20314
Phone (202) 761-7170, FAX (202) 761-0633
Email harry.goradia@hq02.usace.army.mil

POC for U. S. Army Installations:

Mr. John Scharl
U. S. Army Assistant Chief of Staff for Installation Management, Directorate of Facilities & Housing
ATTN: DAIM-FDF
7701 Telegraph Road, Bldg #2594 (Room 146B),
Alexandria, VA 22315-3800
Phone (703) 428-7614, FAX (703) 428-0197
Email scharja@hqda.army.mil

8) Sustainable Project Rating Tool (SPiRiT) Authors are:
Stephen N. Flanders (Lead), U. S. Army Engineering Research & Development Center (ERDC-CRREL)
Richard L. Schneider, U. S. Army Engineering Research & Development Center (ERDC-CERL)
Donald Fournier, U. S. Army Engineering Research & Development Center (ERDC-CERL)
Annette Stumpf, U. S. Army Engineering Research & Development Center (ERDC-CERL)

9) Army/USACE employees are members of the USGBC with membership privileges accessible via the USGBC web site, http://www.usgbc.org. For information on membership and access to available LEED resources to support use of SPiRiT and sustainable design in your projects, contact Richard Schneider at (217) 373-6752 or richard.l.schneider@erdc.usace.army.mil (Annette Stumpf at (217) 352-6511 ext. 7542 or annette.l.stumpf@erdc.usace.army.mil alternate).

10) For the latest information on SPiRiT and for access to guidance, tools and resources supporting sustainable design initiatives, visit the CERL 'Sustainable Design and Development Resource' website, http://www.cecer.army.mil/SustDesign. There you may also join the CERL Sustainable Design ListServ to be directly notified of information pertinent to sustainable design.

1.0 Sustainable Sites — Score 20

1.R1 Erosion, Sedimentation, and Water Quality Control [1] — Reqd.

Intent: Control erosion and pollutants to reduce negative impacts on water and air quality.

Requirement:

- ❑ Design a site sediment and erosion control plan and a pollution prevention plan that conforms to best management practices in the EPA's Storm Water Management for Construction Activities, EPA Document No. EPA-833-R-92-001, Chapter 3, OR local Erosion and Sedimentation Control standards and codes, whichever is more stringent. The plan shall meet the following objectives:
  - Prevent loss of soil during construction by storm water runoff and/or wind erosion, including protecting topsoil by stockpiling for reuse.
  - Prevent sedimentation of storm sewer or receiving streams and/or air pollution with dust and particulate matter.
  - Prevent hazardous material discharge into storm water systems.
  - Prevent petroleum oils and lubricants (POL) discharge into storm water systems.

Technologies /Strategies: The EPA standard lists numerous measures such as silt fencing, sediment traps, oil grit separators, construction phasing, stabilization of steep slopes, maintaining vegetated ground cover and providing ground cover that will meet this prerequisite.

1.C1 Site Selection [1]

Intent: Avoid development of inappropriate sites and reduce the environmental impact from the location of a building on a site. Select site based on functional adjacencies/relationships and land use compatibility.

Requirement:

- ❑ Do not develop buildings on portions of sites that meet any one of the following criteria: **1**
  - Prime training or maneuver land.
  - Land whose elevation is lower than 5 ft. above the 100-year flood elevation as defined by FEMA.
  - Land that provides habitat for any species on the Federal or State threatened or endangered list.
  - Within 100 feet of any wetland as defined by 40 CFR, Parts 230-233 and Part 22, OR as defined by local or state rule or law, whichever is more stringent.
- ❑ Select site based on functional adjacencies/relationships and land use compatibility. **1**
  - Select sites close to existing roads and utilities or use an existing structure to minimize the need for new infrastructure.
  - Select site in area of high density.
  - Site facilities based on the strength of their relationships to other facilities/land-uses to limit travel distances. The stronger the relationship/functional interaction, the closer the distance between two facilities.
  - Select for distance to installation/base transit systems and access to pedestrian ways and bike paths.
  - Select for development previously used or developed suitable and available sites.

Technologies /Strategies: Screen potential building sites for these criteria and/or ensure that these criteria are addressed by the designer during the conceptual design phase. Utilize landscape architects, ecologists, environmental engineers, civil engineers, and similar professionals for the screening process. New wetlands constructed as part of stormwater mitigation or other site restoration efforts are not affected by the restrictions of this prerequisite.

---

[1] Adapted material not reviewed or endorsed by U. S. Green Building Council.

1.C2 Installation/Base Redevelopment [1]

Intent: Channel development to installation/base cantonment areas with existing infrastructure, protecting greenfields and preserving habitat and natural resources.

Requirement:

- ❑ Increase localized density to conform to existing or desired density goals by utilizing sites that are located within existing cantonment areas of high development density. **1**
- ❑ Select sites close to existing roads and utilities or use an existing structure to minimize the need for new infrastructure. **1**

Technologies /Strategies: During the site selection process give preference to previously developed sites with installation/base cantonment redevelopment potential such as facility reduction program cleared sites.

1.C3 Brownfield Redevelopment [1]

Intent: Rehabilitate damaged sites where development is complicated by real or perceived environmental contamination, reducing pressure on undeveloped land.

Requirement:

- ❑ Develop on a site classified as a brownfield and provide remediation as required by EPA's Brownfield Redevelopment program requirements OR Develop a brownfield site (a site that has been contaminated by previous uses). **1**

Technologies /Strategies: Screen potential damaged sites for these criteria prior to selection for rehabilitation.

Utilize EPA OSWER Directive 9610.17 and ASTM Standard Practice E1739 for site remediation where required.

1.C4 Alternative Transportation [1]

Intent: Reduce pollution and land development impacts from automobile use.

Requirement:

- ❑ Locate building within ½ mile of installation/base transit systems. **1**
- ❑ Provide suitable means for securing bicycles, with convenient changing/shower facilities for use by cyclists, for 5% or more of building occupants. **1**
- ❑ Locate building within 2 miles of alternative-fuel refueling station(s). **1**
- ❑ Size parking capacity not to exceed minimum installation/base cantonment requirements AND provide preferred parking for carpools or van pools capable of serving 5% of the building occupants, OR, add no new parking for rehabilitation projects AND provide preferred parking for carpools or van pools capable of serving 5% of the building occupants. **1**

Technologies /Strategies: Select sites near public installation/base transit served by safe, convenient pedestrian pathways.

---

[1] Adapted material not reviewed or endorsed by U. S. Green Building Council.

1.C5 Reduced Site Disturbance [1]

Intent: Conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity.

Requirement:

- ❑ On greenfield sites, limit site disturbance including earthwork and clearing of vegetation to 40 feet beyond the building perimeter, 5 feet beyond primary roadway curbs, walkways, and main utility branch trenches, and 25 feet beyond pervious paving areas that require additional staging areas in order to limit compaction in the paved area; OR, on previously developed sites, restore a minimum of 50% of the remaining open area by planting native or adapted vegetation. **1**
- ❑ Reduce the development footprint (including building, access roads and parking) to exceed the installation/base's/base's master plan local zoning's open space requirement for the site by 25% or in accordance with installation/base policy on open space set asides, whichever is greater. **1**

Technologies /Strategies: Note requirements on plans and in specifications. Establish contractual penalties for destruction of trees and site areas noted for protection. Reduce footprints by tightening program needs and stacking floor plans. Establish clearly marked construction and disturbance boundaries. Delineate laydown, recycling, and disposal areas. Use areas to be paved as staging areas. Work with local horticultural extension services, native plant societies, or installation/base agronomy staff to select indigenous plant species for site restoration and landscaping.

1.C6 Stormwater Management [1]

Intent: Limit disruption of natural water flows by minimizing storm water runoff, increasing on-site infiltration and reducing contaminants.

Requirement: Implement a stormwater management plan that results in:

- ❑ No net increase in the rate or quantity of stormwater runoff from undeveloped to developed conditions; OR, if existing imperviousness is greater than 50%, implement a stormwater management plan that results in a 25% decrease in the rate and quantity of stormwater runoff. **1**
- ❑ Treatment systems designed to remove 80% of the average annual post development total suspended solids (TSS), and 40% of the average annual post development total phosphorous (TP), by implementing Best Management Practices (BMPs) outlined in EPA's Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters (EPA-840-B-92-002 1/93). **1**

Technologies /Strategies: Significantly reduce impervious surfaces, maximize on-site stormwater infiltration, and retain pervious and vegetated areas. Capture rainwater from impervious areas of the building for groundwater recharge or reuse within building. Use green/vegetated roofs. Utilize biologically-based and innovative stormwater management features for pollutant load reduction such as constructed wetlands, stormwater filtering systems, bioswales, bio-retention basins, and vegetated filter strips. Use open vegetated swales to reduce drainage velocity and erosion, reduce system maintenance, increase vegetative variety and support wildlife habitat where space permits.

1.C7 Landscape and Exterior Design to Reduce Heat Islands [2]

Intent: Reduce heat islands (thermal gradient differences between developed and undeveloped areas) to minimize impact on microclimate and human and wildlife habitat.

Requirement:

- ❑ Provide shade (within 5 years) on at least 30% of non-roof impervious surface on the site, including parking lots, walkways, plazas, etc., OR, use light-colored/ high-albedo materials (reflectance of at least 0.3) for 30% of the site's non-roof impervious surfaces, OR place a minimum of 50% of parking space under-ground OR use open-grid pavement system (net impervious area of LESS than 50%) for a minimum of 50% of the parking lot area. **1**
- ❑ Use ENERGY STAR Roof compliant, high-reflectance AND low emissivity roofing (initial reflectance of at least .65 and three-year-aged reflectance of at least .5 when tested in accordance with ASTM E408) for a minimum of 75% of the roof surface; OR, install a "green" (vegetated) roof for at least 50% of the roof area. **1**

Technologies /Strategies: Employ design strategies, materials, and landscaping designs that reduce heat absorption of exterior materials. Note albedo/reflectance requirements in the drawings and specifications. Provide shade (calculated on June 21, noon solar time) using native or climate tolerant trees and large shrubs, vegetated trellises, or other exterior structures supporting vegetation. Substitute vegetated surfaces for hard surfaces. Explore elimination of blacktop and the use of new coatings and integral colorants for asphalt to achieve light colored surfaces.

---

[1] Adapted material not reviewed or endorsed by U. S. Green Building Council.

[2] © U. S. Green Building Council. Used by permission.

1.C8 **Light Pollution Reduction** [1]

Intent: Eliminate light trespass from the building site, improve night sky access, and reduce development impact on nocturnal environments.

Requirement: ❑ Do not exceed Illuminating Engineering Society of North America (IESNA) footcandle level requirements as stated in the Recommended Practice Manual: Lighting for Exterior Environments, AND design interior and exterior lighting such that zero direct-beam illumination leaves the building site. **1**

Technologies /Strategies: Consult IESNA Recommended Practice Manual: Lighting for Exterior Environments for Commission Internationle de l'Eclairage (CIE) zone and pre and post curfew hour descriptions and associated ambient lighting level requirements. Ambient lighting for pre-curfew hours for CIE zones range between .01 footcandles for areas with dark landscapes such as parks, rural, and residential areas, and 1.5 footcandles for areas with high ambient brightness such as installation/base areas with high levels of nighttime activity. Design site lighting and select lighting styles and technologies to have a minimal impact off-site and minimal contribution to sky glow. Minimize lighting of architectural and landscape features. Exterior lighting should be consistent with security lighting requirements.

1.C9 **Optimize Site Features**

Intent: Optimize utilization of the site's existing natural features and placement of man-made features on the site.

Requirement: ❑ Perform both of the following: **1**

- Maximize the use of free site energy.
- Plan facility, parking and roadways to "fit" existing site contours and limit cut and fill.

Technologies /Strategies: Evaluate site resources to ascertain how each can enhance the proposed project and visa versa. Work to maximum advantage of the site's solar and wind attributes. Use landscaping to optimize solar and wind conditions and to contribute to energy efficiency; Locate and orient the facility on the site to optimize solar and wind conditions.

1.C10 **Facility Impact**

Intent: Minimize negative impacts on the site and on neighboring properties and structures; avoid or mitigate excessive noise, shading on green spaces, additional traffic, obscuring significant views, etc.

Requirement: ❑ Cluster facilities to reduce impact, access distance to utilities and sufficient occupant density to support mass transit. **1**

❑ Collaborate with installation/base and community planners to identify and mitigate potential impacts of the project beyond site boundaries, and transportation planners to insure efficient public transport. **1**

Technologies /Strategies: Involve local/regional planners and community members in installation/base master planning processes. Recognize the context and the impact of a project beyond site boundaries, and integrate it with the larger installation/base/community context/land use.

1.C11 **Site Ecology**

Intent: Identify and mitigate all existing site problems including contamination of soil, water, and air, as well as any negative impacts caused by noise, eyesores, or lack of vegetation, enhancing or creating new site habitat.

Requirement: ❑ Develop site environmental management and mitigation plan. **1**

Technologies /Strategies: Understand site and surrounding ecosystem interdependence and interconnectivity. Plan landscaping scheme to incorporate biodiversity. Preserve/enhance existing trees, hydrological features, ecosystems, habitats, and cultural resources. Increase the existence of healthy habitat for native species. Reintroduce native plants and trees where they have been destroyed by previous development.

---

[1] Adapted material not reviewed or endorsed by U. S. Green Building Council.

2.0 Water Efficiency — Score 5

2.C1 Water Efficient Landscaping [2]

Intent: Limit or eliminate the use of potable water for landscape irrigation.

Requirement:

- ❑ Use high efficiency irrigation technology, OR, use captured rain or recycled site water to reduce potable water consumption for irrigation by 50% over conventional means. **1**
- ❑ Use only captured rain or recycled site water for an additional 50% reduction (100% total reduction) of potable water for site irrigation needs, OR, do not install permanent landscape irrigation systems. **1**

Technologies /Strategies: Develop a landscaping water use baseline according to the methodology outlined in the LEED Reference Guide. Specify water-efficient, native or adapted, climate tolerant plantings. High efficiency irrigation technologies include micro irrigation, moisture sensors, or weather data based controllers. Feed irrigation systems with captured rainwater, gray water, or on-site treated wastewater.

2.C2 Innovative Wastewater Technologies [2]

Intent: Reduce generation of wastewater and potable water demand, while increasing local aquifer recharge.

Requirement:

- ❑ Reduce the use of municipally provided potable water for building sewage conveyance by a minimum of 50%, OR, treat 100% of wastewater on site to tertiary standards. **1**

Technologies /Strategies: Develop a wastewater baseline according to the methodology outlined in the LEED Reference Guide. Implement decentralized on-site wastewater treatment and reuse systems. Decrease the use of potable water for sewage conveyance by utilizing gray and/or black water systems. Non-potable reuse opportunities include, toilet flushing, landscape irrigation, etc. Provide advanced wastewater treatment after use by employing innovative, ecological, on-site technologies including constructed wetlands, a mechanical recirculating sand filter, or aerobic treatment systems.

2.C3 Water Use Reduction [1]

Intent: Maximize water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.

Requirement:

- ❑ Employ strategies that in aggregate use 20% less water than the water use baseline calculated for the building (not including irrigation) after meeting Energy Policy Act (EPACT) of 1992 fixture performance requirements. **1**
- ❑ Exceed the potable water use reduction by an additional 10% (30% total efficiency increase). **1**

Technologies /Strategies: Develop a water use baseline including all water consuming fixtures, equipment, and seasonal conditions according to methodology guidance outlined in the LEED Reference Guide. Specify water conserving plumbing fixtures that exceed Energy Policy Act (EPACT) of 1992 fixture requirements in combination with ultra high efficiency or dry fixture and control technologies. Specify high water efficiency equipment (dishwashers, laundry, cooling towers, etc.). Use alternatives to potable water for sewage transport water. Use recycled or storm water for HVAC/process make up water. Install cooling tower systems designed to minimize water consumption from drift, evaporation and blowdown.

---

[2] © U. S. Green Building Council. Used by permission.

[1] Adapted material not reviewed or endorsed by U. S. Green Building Council.

3.0 Energy and Atmosphere — Score 28

3.R1 Fundamental Building Systems Commissioning [1] — Reqd.

Intent: Verify and ensure that fundamental building elements and systems are designed, installed and calibrated to operate as intended.

Requirement: ❑ Implement all of the following fundamental best practice commissioning procedures.

- Engage a commissioning authority.
- Develop design intent and basis of design documentation.
- Include commissioning requirements in the construction documents.
- Develop and utilize a commissioning plan.
- Verify installation, functional performance, training and documentation.
- Complete a commissioning report.

Technologies /Strategies: Introduce standards and strategies into the design process early, and then carry through selected measures by clearly stating target requirements in the construction documents. Tie contractor final payments to documented system performance. Perform additional commissioning in accordance with the DOE Building Commissioning Guide, Version 2.2. Refer to the LEED Reference Guide for detailed descriptions of required elements and references to additional commissioning guides. Specify pre-occupancy baseline IAQ testing at time of commissioning. Test for indoor air concentrations of CO, CO2, total VOCs and particulates. Test to assure that adequate ventilation rates have been achieved prior to initial occupancy.

3.R2 Minimum Energy Performance [1] — Reqd.

Intent: Establish the minimum level of energy efficiency for the base building and systems.

Requirement: ❑ Design to meet building energy efficiency and performance as required by TI 800-01 (Design Criteria).

Technologies /Strategies: Use building modeling and analysis techniques to establish and document compliance. ASHRAE/IESNA 90.1-1999 provides guidance for establishing building base case development and analysis. Refer to the LEED Reference Guide for a wide variety of energy efficiency strategy resources.

Use a professionally recognized and proven computer program or programs that integrate architectural features with air-conditioning, heating, lighting, and other energy producing or consuming systems. These programs will be capable of simulating the features, systems, and thermal loads used in the design. Using established weather data files, the program will perform 8760 hourly calculations. BLAST, DOE-2 or EnergyPlus are acceptable programs for these purposes.

3.R3 CFC Reduction in HVAC&R Equipment [2] — Reqd.

Intent: Reduce ozone depletion.

Requirement: ❑ Zero use of CFC-based refrigerants in new base building HVAC&R systems. When reusing existing base building HVAC equipment, complete a comprehensive CFC phaseout conversion.

Technologies /Strategies: Specify only non-CFC-based refrigerants in all base building HVAC&R systems.

---

[1] Adapted material not reviewed or endorsed by U. S. Green Building Council.

[2] © U. S. Green Building Council. Used by permission.

3.C1 Optimize Energy Performance [1]

Intent: Achieve increasing levels of energy performance above the prerequisite standard to reduce environmental impacts associated with excessive energy use.

Requirement: ❑ Reduce design energy usage (DEU) compared to the energy use budget (EUB) in joules per square meter per year for regulated energy components as described in the requirements of Chapter 11 of the TI 800-01 (Design Criteria), as demonstrated by a whole building simulation. **20**

- 1 Point will be awarded for every reduction in design energy use of 2.5% for both new and existing facilities for a maximum score of 20 points.

Regulated energy components include HVAC systems, building envelope, service hot water systems, lighting and other regulated systems as defined by ASHRAE.

Technologies /Strategies: Develop and use building modeling and analysis techniques to establish a base case that meets the minimum prerequisite standard. ASHRAE/IESNA 90.1-1999 provides guidance for establishing building base case development and analysis. Perform interactive energy use analysis for selected design elements that affect energy performance and document compliance.

Unit of measure for performance shall be annual energy usage in joules per square meter. Life-Cycle energy costs shall be determined using rates for purchased energy, such as electricity, gas, oil, propane, steam, and chilled water and approved by the adopting authority. Refer to the LEED Reference Guide or Whole Building Design Guide for a wide variety of energy efficiency resources and strategies including conservation measures, electromechanical energy efficiency technologies (for example ground-source heat pumps), passive heating and cooling strategies, solar hot water, and daylighting.

Life-Cycle costing will be done in accordance with 10 CFR 436.

Consider installation of an Energy Management and Control System (EMCS), which is compatible with exiting installation systems to optimize performance. Use sensors to control loads based on occupancy, schedule and/or the availability of natural resources use (day light or natural ventilation).

3.C2 Renewable Energy [1]

Intent: Encourage and recognize increasing levels of self-supply through renewable technologies to reduce environmental impacts associated with fossil fuel energy use.

Requirement: ❑ Supply a net fraction of the building's total energy use through the use of on-site renewable energy systems.

% of Total Annual Energy Usage in Renewables	
5%	**1**
10%	**2**
15%	**3**
20%	**4**

Technologies /Strategies: Employ the use of on-site non-polluting-source renewable technologies contributing to the total energy requirements of the project. Consider and use high temperature solar and/or geothermal, photovoltaics, wind, biomass (other than unsustainably harvested wood), and bio-gas. Passive solar, solar hot water heating, ground-source heat pumps, and daylighting do not qualify for points under this credit. Credit for these strategies is given in Energy & Atmosphere Credit 1: Optimizing Energy Performance.

[1] Adapted material not reviewed or endorsed by U. S. Green Building Council.

3.C3 Additional Commissioning [2]

Intent: Verify and ensure that the entire building is designed, constructed, and calibrated to operate as intended.

Requirement: ❑ In addition to the Fundamental Building Commissioning prerequisite, implement the following additional commissioning tasks: 1

1. Conduct a focused review of the design prior to the construction documents phase.
2. Conduct a focused review of the construction documents when close to completion.
3. Conduct a selective review of contractor submittals of commissioned equipment.
4. Develop a system and energy management manual.
5. Have a contract in place for a near-warranty end or post occupancy review.

Items 1, 2, and 3 must be performed by someone other than the designer.

Technologies /Strategies: Introduce standards and strategies into the design process early, and then carry through selected measures by clearly stating target requirements in the construction documents. Tie contractor final payments to documented system performance. Refer to the LEED Reference Guide for detailed descriptions of required elements and references to additional guidelines.

3.C4 << Deleted >> [1]

3.C5 Measurement and Verification [1]

Intent: Provide for the ongoing accountability and optimization of building energy and water consumption performance over time.

Requirement: ❑ Comply with the installed equipment requirements for continuous metering as stated in selected Measurement and Verification Methods - Option B: Retrofit Isolation of the US DOE's International Performance Measurement and Verification Protocol (IPMVP) for the following: 1

- Lighting systems and controls.
- Constant and variable motor loads.
- Variable frequency drive (VFD) operation.
- Chiller efficiency at variable loads (kW/ton).
- Cooling load.
- Air and water economizer and heat recovery cycles.
- Air distribution static pressures and ventilation air volumes.
- Boiler efficiencies.
- Building specific process energy efficiency systems and equipment.
- Indoor water risers and outdoor irrigation systems.

Technologies /Strategies: Design and specify equipment to be installed in base building systems to allow for comparison, management, and optimization of actual vs. estimated energy and water performance. Employ building automation systems to perform M&V functions where applicable. Tie contractor final payments to documented M&V system performance and include in the commissioning report. Provide for ongoing M&V system maintenance and operating plan in building operations and maintenance manuals. Consider installation/base of an Energy Management and Control System (EMCS), which is compatible with exiting installation/base systems to optimize performance.

---

[2] © U. S. Green Building Council. Used by permission.

[1] Adapted material not reviewed or endorsed by U. S. Green Building Council.

3.C6 **Green Power** [1]

Intent: Encourage the development and use of grid-source, renewable energy technologies on a net zero pollution basis.

Requirement: ❑ Engage in a two year contract to purchase the amount of power equal to projected building consumption generated from renewable sources that meet the Center for Resource Solutions (CRS) Green-E requirements. **1**

Technologies /Strategies: Purchase power from a provider that guarantees a fraction of its delivered electric power is from net nonpolluting renewable technologies. Begin by contacting local utility companies. If the project is in an open market state, investigate Green Power and Power Marketers licensed to provide power in that state. Grid power that qualifies for this credit originates from solar, wind, geothermal, biomass, or low-impact hydro sources. Low-impact hydro shall comply with the Low Impact Hydropower Certification Program.

3.C7 **Distributed Generation**

Intent: Encourage the development and use of distributed generation technologies, which are less polluting than grid-source energy.

Requirement: ❑ Reduce total energy usage and emissions by considering source energy implications and local cogeneration and direct energy conversion. Generate at least 50% of the building's projected annual consumption by on-site distributed generation sources. **1**

Technologies /Strategies: Investigate the use of integrated generation and delivery systems, such as co-generation, fuel cells, micro-turbines and off-peak thermal storage.

---

[1] Adapted material not reviewed or endorsed by U. S. Green Building Council.

4.0 Materials and Resources — Score 13

4.R1 Storage & Collection of Recyclables [1] — Reqd.

Intent: Facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills.

Requirement:
- ❑ Provide an easily accessible area that serves the entire building that is dedicated to the separation, collection and storage of materials for recycling including (at a minimum) paper, glass, plastics, and metals.

Technologies /Strategies: Establish a waste management plan which meets requirements of the installation/base environmental and/or solid waste management plans in cooperation with users to encourage recycling. Reserve space for recycling functions early in the building occupancy programming process and show areas dedicated to collection of recycled materials on space utilization plans. Broader recycling support space considerations should allow for collection and storage of the required elements and newspaper, organic waste (food and soiled paper), and dry waste. When collection bins are used, bin(s) should be able to accommodate a 75% diversion rate and be easily accessible to custodial staff and recycling collection workers. Consider bin designs that allow for easy cleaning to avoid health issues.

4.C1 Building Reuse [1]

Intent: Extend the life cycle of existing building stock, conserve resources, retain cultural resources, reduce waste, and reduce environmental impacts of new buildings as they relate to materials manufacturing and transport.

Requirement: Reuse large portions of existing structures during renovation or redevelopment projects.

- ❑ Maintain at least 75% of existing building structure and shell (exterior skin and framing excluding window assemblies). — 1
- ❑ Maintain an additional 25% (100% total) of existing building structure and shell (exterior skin and framing excluding window assemblies). — 1
- ❑ Maintain 100% of existing building structure and shell AND 50% non-shell (walls, floor coverings, and ceiling systems). — 1

Technologies /Strategies: Evaluate retention of existing structure. Consider facade preservation, particularly in installation/base areas. During programming and space planning, consider adjusting needs and occupant use patterns to fit within existing building structure and interior partition configurations. Identify and effectively address energy, structural, and indoor environmental (lead & asbestos) issues in building reuse planning and deconstruction documents. Percentage of reused non-shell building portions will be calculated as the total area (s.f.) of reused walls, floor covering, and ceiling systems, divided by the existing total area (s.f.) of walls, floor covering, and ceiling systems.

4.C2 Construction Waste Management [1]

Intent: Divert construction, demolition, and land clearing debris from landfill disposal. Redirect recyclable material back to the manufacturing process.

Requirement: Develop and implement a waste management plan, quantifying material diversion by weight:

- ❑ Recycle and/or salvage at least 50% (by weight) of construction, demolition, and land clearing waste. — 1
- ❑ Recycle and/or salvage an additional 25% (75% total by weight) of the construction, demolition, and land clearing debris. — 1

Technologies /Strategies: Develop and specify a waste management plan which meets requirements of the installation/base environmental and/or solid waste management plans that identifies licensed haulers and processors of recyclables; identifies markets for salvaged materials; employs deconstruction, salvage, and recycling strategies and processes, includes waste auditing; and documents the cost for recycling, salvaging, and reusing materials. Source reduction on the job site should be an integral part of the plan.

The plan should address recycling of corrugated cardboard, metals, concrete brick, asphalt, land clearing debris (if applicable), beverage containers, clean dimensional wood, plastic, glass, gypsum board, and carpet; evaluate the cost-effectiveness of recycling rigid insulation, engineered wood products and other materials; hazardous materials storage and management; and participation in manufacturers' "take-back" programs to the maximum extent possible. Refer to the LEED Reference Guide for guidelines and references that provide waste management plan development and implementation support including model bid specifications.

---

[1] Adapted material not reviewed or endorsed by U. S. Green Building Council.

4.C3 **Resource Reuse** [2]

Intent: Extend the life cycle of targeted building materials, reducing environmental impacts related to materials manufacturing and transport.

Requirement:

- ❑ Specify salvaged or refurbished materials for 5% of building materials. **1**
- ❑ Specify salvaged or refurbished materials for 10% of building materials. **1**

Technologies /Strategies: Commonly salvaged building materials include wood flooring/ paneling/cabinets, doors and frames, mantels, iron work and decorative lighting fixtures, brick, masonry and heavy timbers. See the LEED Reference Guide for calculation tools and guidelines. Determine percentages in terms of dollar value using the following steps:

1. Calculate total dollars* (see exclusions) of the salvaged or refurbished material.
2. Calculate total dollars (see exclusions) of all building materials.
3. Divide Step 1 by Step 2 to determine the percentage.

Exclusions: In total dollar calculations, exclude; labor costs; all mechanical and electrical material and labor costs; and project overhead and fees. *If the cost of the salvaged or refurbished material is below market value, use replacement cost to estimate the material value, otherwise use actual cost to the project.

4.C4 **Recycled Content** [1]

Intent: Increase demand for building products that have incorporated recycled content material, reducing the impacts resulting from extraction of new material.

Requirement:

- ❑ Specify a minimum of 25% of building materials that contain in aggregate a minimum weighted average of 20% post-consumer recycled content material, OR, a minimum weighted average of 40% post-industrial recycled content material. **1**
- ❑ Specify an additional 25% (50% total) of building materials that contain in aggregate, a minimum weighted average of 20% post consumer recycled content material, OR, a minimum weighted average of 40% post-industrial recycled content material. **1**

Technologies /Strategies: Specify building materials containing recycled content for a fraction of total building materials. Select products and materials with supporting information from the AIA Resource Guide or the EPA Environmentally Preferable Purchasing (EPP) Program. Common building materials and products with recycled content include; wall, partition, and ceiling materials and systems; insulation; tiles and carpets; cement, concrete, and reinforcing metals; structural and framing steel. For products/materials not listed, selection should be made on the basis of EPP criterion and/or:

- Toxicity;
- Embodied energy;
- Production use of water, energy and ozone depleting substances (ODSs);
- Production limits on toxic emissions and effluents;
- Minimal, reusable or recycled/recyclable packaging;
- Impact on indoor environmental quality (IEQ);
- Installation that limits generation of waste;
- Materials that limit waste generation over their life;
- EPA guideline compliance; and
- Harvested on a sustainable yield basis.

See the LEED Reference Guide for a summary of the EPA guidelines and calculation methodology guidelines. Determine percentages in terms of dollar value using the following steps:

1. Calculate total dollars (see exclusions) of the material that contain recycled content.
2. Calculate total dollars (see exclusions) of all building materials.
3. Divide Step 1 by Step 2 to determine the percentage.

Exclusions: Labor costs; all mechanical and electrical material and labor costs; project overhead and fees)

---

[2] © U. S. Green Building Council. Used by permission.

[1] Adapted material not reviewed or endorsed by U. S. Green Building Council.

4.C5 **Local/Regional Materials** [2]

Intent: Increase demand for building products that are manufactured locally, reducing the environmental impacts resulting from transportation, and supporting the local economy.

Requirement:

- ❑ Specify a minimum of 20% of building materials that are manufactured regionally within a radius of 500 miles. 1
- ❑ Of these regionally manufactured materials, specify a minimum of 50% that are extracted, harvested, or recovered within 500 miles. 1

Technologies /Strategies: Specify and install regionally extracted, harvested, and manufactured building materials. Contact the state and local waste management boards for information about regional building materials. See the LEED Reference Guide for calculation methodology guidelines. Determine percentages in terms of dollar value using the following steps:

1. Calculate total dollars (see exclusions) of material that is locally or regionally manufactured.
2. Calculate total dollars (see exclusions) of all building materials.
3. Divide Step 1 by Step 2 to determine the percentage.

Exclusions: Labor costs; all mechanical and electrical material and labor costs; project overhead and fees.

4.C6 **Rapidly Renewable Materials** [2]

Intent: Reduce the use and depletion of finite raw and long cycle renewable materials by replacing them with rapidly renewable materials.

Requirement:

- ❑ Specify rapidly renewable building materials for 5% of total building materials. 1

Technologies /Strategies: Rapidly renewable resources are those materials that substantially replenish them-selves faster than traditional extraction demand (e.g. planted and harvested in less than a 10 year cycle) and do not result in significant biodiversity loss, increase erosion, air quality impacts, and that are sustainably managed. See the LEED Reference Guide for calculation methodology guidelines. Determine percentages in terms of dollar value using the following steps:

1. Calculate total dollars (see exclusions) of materials that are considered to be rapidly renewable.
2. Calculate total dollars (see exclusions) of all building materials.
3. Divide Step 1 by Step 2 to determine the percentage.

Exclusions: Labor costs; all mechanical and electrical material and labor costs; project overhead and fees.

4.C7 **Certified Wood** [2]

Intent: Encourage environmentally responsible forest management.

Requirement:

- ❑ Use a minimum of 50% of wood-based materials certified in accordance with the Forest Stewardship Council guidelines for wood building components including but not limited to framing, flooring, finishes, furnishings, and non-rented temporary construction applications such as bracing, concrete form work and pedestrian barriers. 1

Technologies /Strategies: Refer to the Forest Stewardship Council guidelines for wood building components that qualify for compliance to the requirements and incorporate into material selection for the project.

---

[2] © U. S. Green Building Council. Used by permission.

5.0 Indoor Environmental Quality (IEQ) Score 17

5.R1 Minimum IAQ Performance [1] Reqd.

Intent: Establish minimum IAQ performance to prevent the development of indoor air quality problems in buildings, maintaining the health and well being of the occupants.

Requirement: ❑ Meet the minimum requirements of voluntary consensus standard ASHRAE 62-1999, Ventilation for Acceptable Indoor Air Quality and approved Addenda.

Technologies /Strategies: Include proactive design details that will eliminate some of the common causes of indoor air quality problems in buildings. Introduce standards into the design process early. Incorporate references to targets in plans and specifications. Ensure ventilation system outdoor air capacity can meet standards in all modes of operation. Locate building outdoor air intakes (including operable windows) away from potential pollutants/contaminant sources such as sporulating plants (allergens), loading areas, building exhaust fans, cooling towers, sanitary vents, dumpsters, vehicular exhaust, and other sources. Include operational testing in the building commissioning report. Design cooling coil drain pans to ensure complete draining. Include measures to control and mitigate radon buildup in areas where it is prevalent. Limit humidity to a range that minimizes mold growth and promotes respiratory health.

5.R2 Environmental Tobacco Smoke (ETS) Control [2] Reqd.

Intent: Prevent exposure of building occupants and systems to Environmental Tobacco Smoke (ETS).

Requirement: ❑ Zero exposure of nonsmokers to ETS by prohibition of smoking in the building, OR, by providing a designated smoking room designed to effectively contain, capture and remove ETS from the building. At a minimum, the smoking room shall be directly exhausted to the outdoors with no recirculation of ETS-containing air to the non-smoking area of the building, enclosed with impermeable structural deck-to-deck partitions and operated at a negative pressure compared with the surrounding spaces of at least 7 Pa (0.03 inches of water gauge). Performance of smoking rooms shall be verified using tracer gas testing methods as described in ASHRAE Standard 129-1997. Acceptable exposure in non-smoking areas is defined as less than 1% of the tracer gas concentration in the smoking room detectable in the adjoining non-smoking areas. Smoking room testing as described in the ASHRAE Standard 129-1997 is required in the contract documents and critical smoking facility systems testing results must be included in the building commissioning plan and report or as a separate document.

Technologies /Strategies: Prohibit smoking in the building and/or provide designated smoking areas outside the building in locations where ETS cannot reenter the building or ventilation system and away from high building occupant or pedestrian traffic.

5.C1 IAQ Monitoring [1]

Intent: Provide capacity for indoor air quality (IAQ) monitoring to sustain long term occupant health and comfort.

Requirement: ❑ Install a permanent carbon dioxide (CO_2) monitoring system that provides feedback on space ventilation performance in a form that affords operational adjustments, AND specify initial operational set point parameters that maintain indoor carbon dioxide levels no higher than outdoor levels by more than 530 parts per million at any time. 1

Technologies /Strategies: Install an independent system or make CO_2 monitoring a function of the building automation system. Situate monitoring locations in areas of the building with high occupant densities and at the ends of the longest runs of the distribution ductwork. Specify that system operation manuals require calibration of all of the sensors per manufacturer recommendations but not less than one year. Include sensor and system operational testing and initial set point adjustment in the commissioning plan and report. Also consider periodic monitoring of carbon monoxide (CO), total volatile organic compounds (TVOCs), and particulates (including PM10).

---

[1] Adapted material not reviewed or endorsed by U. S. Green Building Council.

[1] Adapted material not reviewed or endorsed by U. S. Green Building Council.

5.C2 **Increase Ventilation Effectiveness** [2]

Intent: Provide for the effective delivery and mixing of fresh air to building occupants to support their health, safety, and comfort.

Requirement:

- ❑ For mechanically ventilated buildings, design ventilation systems that result in an air change effectiveness (E) greater than or equal to 0.9 as determined by ASHRAE 129-1997. For naturally ventilated spaces demonstrate a distribution and laminar flow pattern that involves not less than 90% of the room or zone area in the direction of air flow for at least 95% of hours of occupancy. 1

Technologies /Strategies: Employ architectural and HVAC design strategies to increase ventilation effectiveness and prevent short-circuiting of airflow delivery. Techniques available include use of displacement ventilation, low velocity, and laminar flow ventilation (under floor or near floor delivery) and natural ventilation. Operable windows with an architectural strategy for natural ventilation, cross ventilation, or stack effect can be appropriate options with study of inlet areas and locations. See the LEED Reference Guide for compliance methodology guidelines.

5.C3 **Construction IAQ Management Plan** [2]

Intent: Prevent indoor air quality problems resulting from the construction/renovation process, to sustain long term installer and occupant health and comfort.

Requirement: Develop and implement an Indoor Air Quality (IAQ) Management Plan for the construction and pre-occupancy phases of the building as follows:

- ❑ During construction meet or exceed the minimum requirements of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guideline for Occupied Buildings under Construction, 1995, AND protect stored on-site or installed absorptive materials from moisture damage, AND replace all filtration media immediately prior to occupancy (Filtration media shall have a Minimum Efficiency Reporting Value (MERV) of 13 as determined by ASHRAE 52.2-1999). 1
- ❑ Conduct a minimum two-week building flushout with new filtration media at 100% outside air after construction ends and prior to occupancy, OR, conduct a baseline indoor air quality testing procedure consistent with current EPA protocol for Environmental Requirements, Baseline IAQ and Materials, for the Research Triangle Park Campus, Section 01445. 1

Technologies /Strategies: Specify containment control strategies including protecting the HVAC system, controlling pollutant sources, interrupting pathways for contamination, enforcing proper housekeeping and coordinating schedules to minimize disruption. Specify the construction sequencing to install absorptive materials after the prescribed dry or cure time of wet finishes to minimize adverse impacts on indoor air quality. Materials directly exposed to moisture through precipitation, plumbing leaks, or condensation from the HVAC system are susceptible to microbial contamination. Absorptive materials to protect and sequence installation include; insulation, carpeting, ceiling tiles, and gypsum products. Appoint an IEQ Manager with owner's authority to inspect IEQ problems and require mitigation as necessary.

5.C4 **Low-Emitting Materials** [2]

Intent: Reduce the quantity of indoor air contaminants that are odorous or potentially irritating to provide installer and occupant health and comfort.

Requirement: Meet or exceed VOC limits for adhesives, sealants, paints, composite wood products, and carpet systems as follows:

- ❑ Adhesives must meet or exceed the VOC limits of South Coast Air Quality Management District Rule #1168 by, AND all sealants used as a filler must meet or exceed Bay Area Air Resources Board Reg. 8, Rule 51. 1
- ❑ Paints and coatings must meet or exceed the VOC and chemical component limits of Green Seal requirements. 1
- ❑ Carpet systems must meet or exceed the Carpet and Rug Institute Green Label Indoor Air Quality Test Program. 1
- ❑ Composite wood or agrifiber products must contain no added urea-formaldehyde resins. 1

Technologies /Strategies: Evaluate and preferentially specify materials that are low emitting, non-irritating, nontoxic and chemically inert. Request and evaluate emissions test data from manufacturers for comparative products. Ensure that VOC limits are clearly stated in specifications, in General Conditions, or in each section where adhesives, sealants, coatings, carpets, and composite woods are addressed.

---

[2] © U. S. Green Building Council. Used by permission.

5.C5 Indoor Chemical and Pollutant Source Control [1]

Intent: Avoid exposure of building occupants to potentially hazardous chemicals that adversely impact air quality.

Requirement:

- ❑ Design to minimize cross-contamination of regularly occupied areas by chemical pollutants: 1
  - Employ permanent entryway systems (grills, grates, etc.) to capture dirt, particulates, etc. from entering the building at all high volume entryways, AND provide areas with structural deck to deck partitions with separate outside exhausting, no air recirculation and negative pressure where chemical use occurs (including housekeeping areas and copying/print rooms), AND provide drains plumbed for appropriate disposal of liquid waste in spaces where water and chemical concentrate mixing occurs.

Technologies /Strategies: Design to physically isolate activities associated with chemical contaminants from other locations in the building, providing dedicated systems to contain and remove chemical pollutants from source emitters at source locations. Applicable measures include eliminating or isolating high hazard areas; designing all housekeeping chemical storage and mixing areas (central storage facilities and janitors closets) to allow for secure product storage; designing copy/fax/printer/printing rooms with structural deck to deck partitions and dedicated exhaust ventilation systems; and including permanent architectural entryway system(s) to catch and hold particles to keep them from entering and contaminating the building interior.

Consider utilization of EPA registered anti-microbial treatments in carpet, textile or vinyl wall coverings, ceiling tiles or paints where microbial contamination is a concern. Utilize "breathable" wall finishes where circumstances require, to reduce moisture build-up and prevent microbial contamination. Minimize selection of fibrous materials, e.g. insulation, carpet and padding and flexible fabrics, whose exposed surfaces when exposed to the air stream or occupied space can contribute significant emissions and absorb and re-emit other contaminants over time.

5.C6 Controllability of Systems [2]

Intent: Provide a high level of individual occupant control of thermal, ventilation, and lighting systems to support optimum health, productivity, and comfort conditions.

Requirement:

- ❑ Provide a minimum of one operable window and one lighting control zone per 200 s.f. for all occupied areas within 15 feet of the perimeter wall. 1
- ❑ Provide controls for each individual for airflow, temperature, and lighting for 50% of the non perimeter, regularly occupied areas. 1

Technologies /Strategies: Provide individual or integrated controls systems that control lighting, airflow, and temperature in individual rooms and/or work areas. Consider combinations of ambient and task lighting control and operable windows for perimeter and VAV systems for non perimeter with a 1:1: 2 terminal box to controller to occupant ratio.

5.C7 Thermal Comfort [2]

Intent: Provide for a thermally comfortable environment that supports the productive and healthy performance of the building occupants.

Requirement:

- ❑ Comply with ASHRAE Standard 55-1992, Addenda 1995 for thermal comfort standards including humidity control within established ranges per climate zone. 1
- ❑ Install a permanent temperature and humidity monitoring system configured to provide operators control over thermal comfort performance and effectiveness of humidification and/or dehumidification systems in the building. 1

Technologies /Strategies: Integrated envelope and HVAC system design strategies that achieve thermal comfort conditions based on mean radiant temperature, local air velocity, relative humidity, and air temperature. Install and maintain a temperature and humidity monitoring system for key areas of the building (i.e., at the perimeter, and spaces provided with humidity control). This function can be satisfied by the building automation system. Specify in system operation manuals that all sensors require quarterly calibration. Include criteria verification and system operation in commissioning plan and report.

---

[1] Adapted material not reviewed or endorsed by U. S. Green Building Council.

[2] © U. S. Green Building Council. Used by permission.

5.C8 **Daylight and Views** [2]

Intent: Provide a connection between indoor spaces and the outdoor environment through the introduction of sunlight and views into the occupied areas of the building.

Requirement:

- ❑ Achieve a minimum Daylight Factor of 2% (excluding all direct sunlight penetration) in 75% of all space occupied for critical visual tasks, not including copy rooms, storage areas, mechanical, laundry, and other low occupancy support areas. Exceptions include those spaces where tasks would be hindered by the use of daylight or where accomplishing the specific tasks within a space would be enhanced by the direct penetration of sunlight. 1
- ❑ Direct line of sight to vision glazing from 90% of all regularly occupied spaces, not including copy rooms, storage areas, mechanical, laundry, and other low occupancy support areas. 1

Technologies /Strategies: Implement design strategies to provide access to daylight and views to the outdoors in a glare-free way using exterior sun shading, interior light shelves, and /or window treatments. Orient buildings to maximize daylighting options. Consider shallow or narrow building footprints. Employ courtyards, atriums, clerestory windows, skylights, and light shelves to achieve daylight penetration (from other than direct effect or direct rays from the sun) deep into regularly occupied areas of the building.

5.C9 **Acoustic Environment /Noise Control**

Intent: Provide appropriate acoustic conditions for user privacy and comfort.

Requirement:

- ❑ Minimize environmental noise through appropriate use of insulation, sound-absorbing materials and noise source isolation. 1

Technologies /Strategies: Evaluate each occupied environment and determine the appropriate layout, materials and furnishings design.

5.C10 **Facility In-Use IAQ Management Plan**

Intent: Insure the effective management of facility air quality during its life.

Requirement:

- ❑ Perform all of the following: 1
  - Develop an air quality action plan to include scheduled HVAC system cleaning.
  - Develop an air quality action plan to include education of occupants and facility managers on indoor pollutants and their roles in preventing them.
  - Develop an air quality action plan to include permanent monitoring of supply and return air, and ambient air at the fresh air intake, for carbon monoxide (CO), carbon dioxide (CO 2), total volatile organic compounds (TVOCs), and particulates (including PM10).

Technologies /Strategies: Provide action plan for periodic system maintenance, monitoring, occupant/manager training.

---

[2] © U. S. Green Building Council. Used by permission.

6.0 Facility Delivery Process

Score 7

6.C1 **Holistic Delivery of Facility**

Intent: Encourage a facility delivery process that actively engages all stakeholders in the design process to deliver a facility that meets all functional requirements while effectively optimizing tradeoffs among sustainability, first costs, life cycle costs and mission requirements.

Requirement:

- ❑ Choose team leaders that are experienced in holistic delivery of facilities. **1**
- ❑ Train the entire team in the holistic delivery process. The team must include all stakeholders in the facility delivery, including the users, the contracting staff, the construction representatives, project manager, and design/engineering team members. **1**
- ❑ Identify project goals and metrics. **1**
- ❑ Plan and execute charrettes with team members at critical phases of the facility delivery. **1**
- ❑ Identify and resolve tradeoffs among sustainability, first costs, life cycle costs and mission requirements through charrettes and other collaborative processes. **2**
- ❑ Document required results for each phase of project deliverables that achieve the project goals and are measurable throughout the facility life span. **1**

Technologies /Strategies:

Develop performance specifications or choose competitive range of products that meet environmental criteria.

Use automated modeling and analysis tools to assess site and facility design alternatives.

Conduct life-cycle cost analysis (LCCA) in the design process according to the Federal Facilities Council Technical Report, Sustainable Federal Facilities: A Guide To Integrating Value Engineering, Life Cycle Costing, and Sustainable Development, FFC # 142, 2000.

Conduct a full ecological assessment to include soil quality, water resources and flows, vegetation and trees, wildlife habitats and corridors, wetlands, and ecologically sensitive areas to identify the least sensitive site areas for development. Evaluate space utilization/functions to reduce overall space requirements, considering networking, flextime, flexi-place, dual-use, and other strategies to reduce space requirements/optimize facility size.

7.0 Current Mission — Score 6

7.C1 Operation and Maintenance

Intent: Encourage the development of a facility delivery process that enhances efficient operation and maintenance of the facility.

Requirement:

- ❑ Develop a facility operations and maintenance program to include: **2**
  - Commissioning instructions for all facility systems.
  - Comprehensive facility operations and maintenance instructions for system operation, performance verification procedures and results, an equipment inventory, warrantee information, and recommended maintenance schedule. The instructions should include a comprehensive, preventive maintenance program to keep all facility systems functioning as designed.
  - A periodic training program for occupants, facilities managers, and maintenance staff in all facility operations and maintenance activities.
  - Instructions on sustainable cleaning and pest control practices.
  - Develop a comprehensive site/facility recycling/waste management plan.
- ❑ Provide surfaces, furnishings, and equipment that are appropriately durable, according to life cycle cost analysis. **1**

Technologies /Strategies: Maintain facility elements, systems and subsystems on a routine maintenance schedule to ensure integrity and longevity.

Perform scheduled cleaning and maintenance activities with nontoxic environmentally preferable cleaning products and procedures. Keep air ducts clean and free of microorganisms through a structured program of preventive maintenance. Clean lighting systems following a regular maintenance schedule to ensure optimum light output and energy efficiency.

Use pesticides and herbicides sparingly and only when necessary with preference to natural methods and materials over poisons and toxic agents.

Use automated monitors and controls for energy, water, waste, temperature, moisture, and ventilation monitors and controls. Turn off the lights, computers, computer monitors, and equipment when not in use. Enable power-down features on office equipment.

7.C2 Soldier and Workforce Productivity and Retention

Intent: Provide a high-quality, functional, healthy and safe work environment to promote soldier and workforce productivity and retention.

Requirement:

- ❑ Provide a high quality indoor environment to enhance user/occupant quality of life (QOL). **1**
- ❑ Provide a highly functional work environment to promote user/occupant work productivity. **1**
- ❑ Provide a healthy and safe work environment to sustain QOL and productivity. **1**

Technologies /Strategies: Use a registered/certified interior designer to provide stimulating interior environments with pleasant colors, surface treatments, room proportions and ceiling heights, external views, natural lighting, and quality detailing for interior furnishings, equipment, materials and finishes. Use IES standards to provide light to occupied space with variations in level, comfortable contrasts, natural color rendition, natural/man-made, and adequate controls to optimize light aesthetic qualities. Provide occupant control of individual work areas configuration, and lighting, thermal and ventilation systems.

Collaborate with end users to identify functional and technical requirements and to perform adjacency studies. Configure occupied space to address the specific workers/occupants functions and activities that will be carried out there. Meet TI 800-01 Design Guide requirements. Design and configure occupied space, and select furniture and equipment using human ergonomics. Identify existing user amenities, such as dining, recreation, socialization, shopping and child care facilities. Identify what amenities should be incorporated into the project or provided in the future, nearby facility. Provide ventilation air in sufficient volume free from natural and man made contaminants.

8.0 Future Missions — Score 4

8.C1 Functional Life of Facility and Supporting Systems

Intent: Assess the functional life of a facility and its supporting systems to optimize the infrastructure investment.

Requirement:

- ❑ Identify how long the designed function is likely to occupy the current facility. **1**
- ❑ Identify how long the envelope, structure, HVAC, plumbing, communications, electrical, and other systems are likely to last before requiring replacement or upgrade. Consider economic, functional and physical obsolescence. **1**

Technologies /Strategies: Assess the typical or likely lifespan of the function(s) to be accommodated to forecast eventual adaptation to a different use(s). Assess the life spans of the various building systems/components to forecast their revision/replacement during the facility lifespan and design in a manner that facilitates revision/replacement.

Consider the life span of the weapon systems, doctrines, or other programs supported by the facility.

Use life cycle data and other sources to identify the life span of the embodied systems.

8.C2 Adaptation, Renewal and Future Uses

Intent: Encourage facility design that is responsive to change over time to maximize accommodation of future uses without creating waste and insuring maximum useful life of products.

Requirement:

- ❑ Identify possible future uses for the facility; consider alternatives that expand the list of possible future uses. AND Design the building to accommodate as wide a range of future uses, as practical. AND Design the installation of building systems to accommodate foreseeable change with a minimum amount of disruption, cost, and additional materials. **1**
- ❑ Build the smallest facility necessary to meet current mission functional requirements, using the most efficient shape and form, while taking into consideration expansion capabilities and potential future mission requirements. AND Design the facility for recycling of materials and systems. **1**

Technologies /Strategies: Create durable, long-lasting and adaptable facility shell and structural system. Create an adaptable, flexible facility design using open planning, service corridors, interstitial space, access floors, demountable walls/partitions, modular furniture and other adaptable space configuration/utilization strategies.

Select materials that are recyclable, avoiding composite materials, such as reinforced plastics and carpet fibers and backing. Consider selecting materials and labeling construction materials with identification information to facilitate recycling. Use pre-cut/pre-fabricated materials and use standard lengths and sizes (dimensional modularity) in design. Design facility systems and subsystems for reconfiguration and/or disassembly/recycling using reversible/reusable connectors.

Facility Points Summary

1.0	**Sustainable Sites (S)**	**Score**	**0**	**Max 20**
1.R1	❑ Erosion, Sedimentation and Water Quality Control			[Required]
1.C1	❑ Site Selection			2
1.C2	❑ Installation/Base Redevelopment			2
1.C3	❑ Brownfield Redevelopment			1
1.C4	❑ Alternative Transportation			4
1.C5	❑ Reduced Site Disturbance			2
1.C6	❑ Stormwater Management			2
1.C7	❑ Landscape and Exterior Design to Reduce Heat Islands			2
1.C8	❑ Light Pollution Reduction			1
1.C9	❑ Optimize Site Features			1
1.C10	❑ Facility Impact			2
1.C11	❑ Site Ecology			1
2.0	**Water Efficiency (W)**	**Score**	**0**	**Max 5**
2.C1	❑ Water Efficient Landscaping			2
2.C2	❑ Innovative Wastewater Technologies			1
2.C3	❑ Water Use Reduction			2
3.0	**Energy and Atmosphere (E)**	**Score**	**0**	**Max 28**
3.R1	❑ Fundamental Building Systems Commissioning			[Required]
3.R2	❑ Minimum Energy Performance			[Required]
3.R3	❑ CFC Reduction in HVAC&R Equipment			[Required]
3.C1	❑ Optimize Energy Performance			20
3.C2	❑ Renewable Energy			4
3.C3	❑ Additional Commissioning			1
3.C4	❑ <<Deleted>>			
3.C5	❑ Measurement and Verification			1
3.C6	❑ Green Power			1
3.C7	❑ Distributed Generation			1
4.0	**Materials and Resources (M)**	**Score**	**0**	**Max 13**
4.R1	❑ Storage & Collection of Recyclables			[Required]
4.C1	❑ Building Reuse			3
4.C2	❑ Construction Waste Management			2
4.C3	❑ Resource Reuse			2
4.C4	❑ Recycled Content			2
4.C5	❑ Local/Regional Materials			2
4.C6	❑ Rapidly Renewable Materials			1
4.C7	❑ Certified Wood			1
5.0	**Indoor Environmental Quality (IEQ) [Q]**	**Score**	**0**	**Max 17**
5.R1	❑ Minimum IAQ Performance			[Required]
5.R2	❑ Environmental Tobacco Smoke (ETS) Control			[Required]
5.C1	❑ IAQ Monitoring			1
5.C2	❑ Increase Ventilation Effectiveness			1
5.C3	❑ Construction IAQ Management Plan			2
5.C4	❑ Low-Emitting Materials			4
5.C5	❑ Indoor Chemical and Pollutant Source Control			1
5.C6	❑ Controllability of Systems			2
5.C7	❑ Thermal Comfort			2
5.C8	❑ Daylight and Views			2
5.C9	❑ Acoustic Environment /Noise Control			1
5.C10	❑ Facility In-Use IAQ Management Plan			1

Facility Points Summary (Continued)

				Maximum Points
6.0	**Facility Delivery Process (P)**	Score	0	Max 7
6.C1	❑ Holistic Delivery of Facility			7
7.0	**Current Mission**	Score	0	Max 6
7.C1	❑ Operation and Maintenance			3
7.C2	❑ Soldier and Workforce Productivity and Retention			3
8.0	**Future Missions**	Score	0	Max 4
8.C1	❑ Functional Life of Facility and Supporting Systems			2
8.C2	❑ Adaptation, Renewal and Future Uses			2

Total Score 0 Max 100

SPiRiT Sustainable Project Certification Levels

SPiRiT Bronze		25 to 34 Points
SPiRiT Silver		35 to 49 Points
SPiRiT Gold		50 to 74 Points
SPiRiT Platinum		75 to 100 Points

Project Points of Contact

SPiRiT Comment Sheet

Please forward any comments that you may have on this Sustainable Project Rating Tool, preferably by Email, to:

Mr. Harry Goradia
U. S. Army Corps of Engineers
ATTN: CEMP-ET
441 G Street NW
Washington, DC 20314
Phone (202) 761-7170, FAX (202) 761-0633
Email harry.goradia@hq02.usace.army.mil

SPiRiT Para.

APPENDIX D

SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING REPORT (PRELIMINARY)

SUBSURFACE EXPLORATION
AND
GEOTECHNICAL ENGINEERING REPORT
(PRELIMINARY)

FY-03 BARRACKS COMPLEX
L.I. 48707, FY-03
Fort Benning, Georgia

By
Soils Section
Geotechnical & HTRW Branch
U.S. Army Engineer District, Savannah

15 April 2003

TABLE OF CONTENTS

SUBJECT	PAGE
1. PURPOSE	1
2. QUALIFICATION OF REPORT	1
3. PROJECT DESCRIPTION	1
4. EXPLORATION PROCEDURES	2
a. Site Reconnaissance	2
b. Field Exploration	2
c. Laboratory Soils Testing	3
5. SUBSURFACE CONDITIONS AND GEOLOGY	3
a. Site Description	3
b. Area and Site Geology	3
c. Subsurface Conditions	4
d. Groundwater Conditions	4
6. ENGINEERING EVALUATIONS AND RECOMMENDATIONS	4
a. General	5
b. General Site Preparation	5
c. Foundation Design and Construction	5
d. Site Classification for Seismic Design	6
e. Concrete Slabs-on-Grade	6
f. Groundwater Considerations	6
g. Structural Fill	6
h. Construction Quality Control Testing	7

APPENDIX

One-Point and Two-Point Compaction Methods

SUBSURFACE EXPLORATION AND
GEOTECHNICAL ENGINEERING REPORT
(PRELIMINARY)

FY-03 BARRACKS COMPLEX
L.I. 48707, FY-03
Fort Benning, Georgia

15 April 2003

1. PURPOSE. The Government has conducted a preliminary geotechnical investigation for the proposed project. This report provides an overview of the site conditions, including subsurface soil and groundwater conditions, and preliminary recommendations pertaining to the geotechnical design and construction of the project.

2. QUALIFICATION OF REPORT. The field explorations performed for this report were made to determine the subsurface soil and groundwater conditions and were not intended to serve as an assessment of site environmental conditions. No effort was made to define, delineate, or designate any areas of environmental concern or of contamination. Any recommendations regarding drainage and earthwork construction are made on the basis that such work can be performed in accordance with applicable laws pertaining to environmental contamination.

3. PROJECT DESCRIPTION. The scope of work includes the design, site preparation and construction of two barracks complexes and a Battalion Headquarters building at Fort Benning. The proposed project is located at three different sites.

The first site is adjacent to the hospital. This site consists of two, three-story, “rectangular shaped” barracks structures with a single story Community Building attached to the barracks via an elevated bridge structure. In addition, a single story Company Operations Facilty (COF) is to be provided at this site. The COF will be accessed from the other structures only by a slab on grade sidewalk. This site will house 120 soldiers.

The second site is on Dixie Road near the Ranges. This site primarily consists of four, three-story, “L- shaped” barracks structures with accompanying small outlying structures such as open picnic shelters and gazebos. This site will house 368 soldiers.

The third site, located on Indianhead Road, is for the Battalion Headquarters building. The Battalion Headquarters building will be a single story, rectangular structure and will include administrative areas, classrooms, and support spaces.

The barracks structural exterior configuration will consist of non load-bearing metal stud with brick and EIFS veneer exterior walls with standing seam metal roof system. The Commons Building and the Company Operations Facility will have similar finishes. The Battalion Headquarters is also similar with the only exception being a shingle roof. The interior structural configuration will consist of walls of gypsum board on non load-bearing metal studs.

4. EXPLORATION PROCEDURES

a. Site Reconnaissance Prior to the field exploration, the site and surrounding areas were visually inspected by a geotechnical engineer. The observations were used in planning the exploration, in determining areas of special interest, and in relating site conditions to known geologic conditions in the area.

b. Field Exploration.

(1) Subsurface conditions at the project sites were explored by sixteen test borings (designated B-1 through B-19, excluding B-2, B-11 and B-15) drilled at the approximate locations shown on the Grading and Drainage Plans included in the drawings with this RFP. Depths of the borings ranged from 5 to 35 feet below existing ground surface.

(2) Boring locations were established in the field by an engineer by measuring distances and estimating right angles from existing buildings, roads, sidewalks, and other features. The ground surface elevation at each boring location was determined by interpolation from the site topography survey. Since the measurements were not precise, the locations shown on the boring location plan and the elevations on the boring logs should be considered approximate.

(3) The test borings were drilled by S & S Environmental Drilling Inc., Columbus, Georgia, under contract to the Savannah District. The borings were drilled with a truck-mounted CME 55 drill rig; a 2.25 inch hollow-stem auger was used to advance the boreholes. Split-barrel sampling with Standard Penetration Testing (SPT) was performed at intervals shown on the boring logs. All soil sampling and Standard Penetration Testing were in substantial accordance with ASTM D 1586. In the Standard Penetration Test, a soil sample is obtained with a standard 1½ inch I.D. by 2 inch O.D. split-barrel sampler. The sampler is first seated 6 inches and then driven an additional12 inches with blows from a 140-pound hammer falling a distance of 30 inches. The number of blows required to drive the sampler the final 12 inches is recorded and is termed the "standard penetration resistance", or the "N-value". Penetration resistance, when properly evaluated, is an index of the soil's strength, density, and foundation support capability. Groundwater levels were measured in the boreholes during drilling and again at 24 hours following completion of drilling, unless the borehole was backfilled immediately.

(4) Representative portions of the soil samples taken in the field were sealed in airtight containers and transported to the driller's laboratory where an engineer examined them to confirm the driller's field classifications. Classification of the soil samples was performed in general accordance with ASTM D 2488 (Visual-Manual Procedure for Description of Soils). The soil classifications include the use of the Unified Soil Classification System described in ASTM D 2487 (Classification of Soils for Engineering Purposes). Since the soil descriptions and classifications are based on visual examination, they should be considered approximate.

(5) Soil boring logs graphically depicting soil descriptions, standard penetration resistances, and observed groundwater levels are shown on the drawings with this RFP.

c. Laboratory Soils Testing. Twenty-five of the samples were selected for grain-size distribution and/or Atterberg limits testing. The purpose of the laboratory testing was to aid in our evaluation of the subsurface soils and in confirming the field classifications. The laboratory tests were performed in substantial accordance with applicable ASTM standards. Results of the laboratory testing are shown on the drawings included with this RFP.

5. SITE AND SUBSURFACE CONDITIONS.

a. Site Description

The proposed Barracks Complex project is to be constructed at three different sites. The first barracks complex is located adjacent to the hospital; the second barracks complex is located on Dixie Road near its intersection with Michael Street. The Battalion Headquarters is located on a third site off Indianhead Road.

Hospital Site: The site is bordered by Santa Fe Road and the helipad to the north, the existing hospital and parking to the east, Marne Road to the south, and wooded areas to the west. Beyond the woods to the west are Buildings No. 9222 and 9224. The Hospital Site is characterized by steep slopes and has significant grade changes. The area west of the existing parking lot has significant fall with grades approaching 30 to 40 percent. There are areas with more gradual slopes (10 percent).

Dixie Road Site: The Dixie Road Site is currently an undeveloped, nearly flat and gently sloping area. The triangular shaped site is bordered by Dixie Road to the south, Edwards Street to the west and Michael Street to the northeast. The area is mostly grassed with large, significant trees interspersed throughout. The grades are gradual, with a gentle slope from west to east. The primary drainage through the site is the large drainage ditch along the eastern edge of the site. Where the ditch crosses Michael Street, there is a large (48"x72") box culvert. This ditch drains south, under the Dixie Road through a large corrugated metal culvert.

Battalion Headquarters Site: This site is located in an open parking and grassed area that once housed some recently demolished buildings. The area is bordered by Indianhead road to the west, Thorson Street to the north, McGarry Street to the east, and an open grassed area to the south. Within the proposed site there is currently an asphalt parking lot for personal off-duty vehicles (POV's) for the occupants of existing barracks. There is a gravel drive within the site as well. There are also several existing and abandoned utilities that cross the site.

b. Area and Site Geology.

(1) Fort Benning is located in the Coastal Plain physiographic province immediately south of the Fall Line, the demarcation separating the Coastal Plain from the Piedmont province. The Fall Line runs roughly east to west along the northern boundary of the base. The base is located in the Fall Line Zone where Cretaceous age sedimentary formations of the Coastal Plain overlap the deeply weathered metamorphic and igneous rocks of the Piedmont. In the Fort Benning area, the Cretaceous system includes, from oldest to youngest, the Tuscaloosa Formation, Eutaw Formation, Blufftown Formation, Cusseta Sand, and the Ripley Formation. The formations consist of poorly consolidated marine deposits of coarse to fine sands, gravel,

micaceous clays, and shales. Soils derived from the Coastal Plain formations occupy about 85 percent of the land surface of Fort Benning.

(2) Younger deposits are also present at Fort Benning. Remnant terrace deposits occupy the tops of several ridges in the west-central portion of the installation; these are Pliocene in age and generally occur as isolated caps. The Main Post section of the Fort Benning Cantonment is located on high alluvial terrace deposits of the Pleistocene Age, while to the west more recent low alluvial terrace deposits occupy both sides of the Chattahoochee River. These materials were deposited during times of high sea levels in the Pleistocene Epoch. The low alluvial terrace deposits are found in the area surrounding Lawson Army Airfield. They consist of sand, gravel, clay, organic material, and silt, and are pale yellow to medium gray in color. Wood pieces and dark gray clay are locally abundant. The deposits range in thickness from to 33 to 49 feet.

c. **Subsurface Conditions**.

(1) The natural soils encountered in the borings drilled at each of the three project sites are typical coastal plain sediments. The typical soil profile consists generally of a thin layer of topsoil and grass overlying silty sand (SM) which is interbedded with layers of clayey sand (SC) and sandy lean clay (CL). The standard penetration resistances, or N-values, within the silty sand ranged from 3 to 60. Within the clayey sand and lean clay layers, the N-values ranged from 8 to 41.

(2) The above subsurface description is of a generalized nature to highlight the major subsurface stratification features and material characteristics. The boring logs shown on the drawings should be reviewed for specific information at individual boring locations. The stratifications shown on the boring logs represent the conditions only at the actual boring locations. Variations may occur and should be expected between boring locations. The stratifications represent the approximate boundary between the subsurface materials; the actual transition may be gradual.

d. Groundwater Conditions.

(1) Water levels were measured in the borings at termination of drilling. Except for soil borings B-8, B-10, B-18 and B-19, no groundwater was encountered in the soil borings. Water levels at termination of drilling of 25, 24, 15, and 12 feet were measured in the above borings, respectively.

(2) Groundwater depths or elevations shown on the boring logs represent groundwater encountered on the dates shown. Absence of groundwater data for certain borings implies that no data is available, but does not necessarily mean that groundwater will not be encountered at the locations of those borings. Groundwater levels will fluctuate with seasonal and climatic variations, variations in subsurface soil conditions, and construction operations. Therefore, groundwater conditions in the future, and at other locations on the site, may differ from the conditions encountered at the boring locations, on the dates the borings were performed.

6. ENGINEERING EVALUATIONS AND RECOMMENDATIONS.

a. General. The following conclusions and recommendations are based on the information available on the proposed structures, observations made at the project sites, interpretation of the data obtained from the soil test borings, and our experience with soils and subsurface conditions similar to those encountered at the project sites. Since the test borings represent a very small statistical sampling of the subsurface conditions, it is possible that subsurface conditions substantially different from those indicated by the test borings could be encountered during the construction. In such instances, adjustments to the design and construction of the proposed structures might be necessary, depending on the actual conditions.

b. General Site Preparation.

(1) To prepare the sites for construction, trees, existing pavements, any remnants of old foundations, and any debris should be removed from areas of the proposed structures and pavements. Then, the cleared areas should be grubbed and stripped of all vegetation, topsoil, roots and all organics, and other deleterious materials. Clean topsoil can be stockpiled and reused later in landscaped areas. It is recommended that the zone of stripping extend a minimum of 10 feet outside the outer edges of the structure. Any existing utilities in construction areas should be located and rerouted, as necessary.

(2) Areas to receive fill and excavated subgrade areas of buildings and pavements should be prepared as follows: Surface areas containing poorly graded sand and silty sand should be densified by compaction with a vibrating roller weighing at least 7 tons. Areas of cohesive soils such as clayey sands and clays, should be proofrolled with a loaded tandem-axle dump truck or similar rubber-tired equipment. Soils that are observed to rut or deflect excessively under the moving load should be undercut to firm soil and backfilled with properly compacted, suitable soils. The proofrolling should be performed only during and following a period of dry weather.

c. Foundation Design and Construction.

(1) Given the proposed sites and the proposed types of structures, it is our opinion that shallow spread foundations can be used for support of the proposed buildings.

(2) Footings should be supported on the natural in situ soils or on properly compacted structural fill. Column footings and load-bearing wall footings should have minimum dimensions of 30 and 24 inches, respectively, and should be located at a minimum depth of 24 inches below finish floor or finish grade, as appropriate. Non load-bearing wall footings should have a minimum width of 18 inches and should be located at a depth of 18 inches below finish floor or finish grade, as appropriate.

(3) Foundation excavations should be concreted as soon as practical following excavation. Exposure to the environment could weaken the soils at the footing bearing level should the foundation excavations remain open for an extended period of time. Bottoms of foundation excavations should be inspected immediately prior to placement of reinforcing steel and concrete to verify that adequate bearing soils are present and that all debris, mud, and loose, frozen or water softened soils are removed. If the bearing surface soils have been softened by surface water intrusion or by exposure, the softened soils must be removed to firm bearing, and replaced with additional concrete during the concreting, or replaced to design subgrade with No. 57 or No. 67 stone, compacted to a non-yielding condition. To minimize the exposure, the final

excavation (4 to 6 inches) to design subgrade could be delayed until just prior to placement of reinforcing steel and concreting. Foundation excavations must be maintained in a drained/dewatered condition throughout the foundation construction process.

d. Site Classification for Seismic Design. The project site should be classified as Site Class D for the purpose of determining maximum considered earth spectral response accelerations S_{MS} and S_{MI} in accordance with "NEHRP" Recommended Provisions for Seismic Regulations for New Buildings and Other Structures," 1997 Edition.

e. Concrete Slabs-On-Grade.

(1) Based upon our past experience and the subsurface conditions encountered at the site, concrete floor slabs can be supported on densified in situ soils or on fill soils placed and compacted in accordance with the recommendations presented in this report regarding structural fill. We recommend that all concrete slabs-on-grade in inhabitable areas, including storage areas, be underlain by a minimum of 4 inches of open graded, washed pea gravel, or stone, often termed "capillary water barrier," to prevent the capillary rise of groundwater. Nos. 57, 67, 78, or 89 stone could be used. We also recommend that a moisture vapor barrier consisting of lapped polyethylene sheeting having a minimum thickness of 6 mils be provided beneath the building floor slabs to reduce the potential for slab dampness from soil moisture. Concrete slabs should be jointed around columns and along supported walls to minimize cracking due to possible differential movement.

(2) Construction activities and exposure to the environment often cause deterioration of the prepared slab-on-grade subgrade. Therefore, we recommend that the slab subgrade soil be inspected and evaluated immediately prior to floor slab construction. The evaluation might include a combination of visual observations, hand rod probing and field density tests to verify that the subgrade has been properly prepared. If unstable soil is revealed, the affected soil should be removed to firm bearing, and replaced to design subgrade with suitable structural fill soil placed and compacted as recommended, or replaced with additional capillary water barrier material.

f. Groundwater Considerations.

(1) "Perched water" conditions could be encountered and the accumulation of run-off water or seepage at the base of excavations may occur during foundation construction and site work. Where seepage is encountered at shallow depths, pumping from filtered sumps and/or the use of perimeter trenches to collect and discharge the water away from the work area should be utilized.

(2) Water should not be allowed to collect near the foundation or on floor slab areas of the building either during or after construction. Undercut or excavated areas should be sloped toward one corner to facilitate removal of any collected rainwater, groundwater, or surface runoff. Positive site drainage should be provided to reduce infiltration of surface water around the perimeter of the building and beneath the floor slabs.

g. Structural Fill. In order to achieve high density structural fill, the following evaluations and recommendations are offered:

(1) Based on the soil test borings, excavated on-site soils (excluding any organics and debris) can be used as structural fill. Some moisture content adjustment will probably be necessary to achieve proper compaction. Due to the plasticity of some of the clays (CL), increase and decrease of the moisture content in these soils may require considerable effort. Furthermore, excavation of these in situ soils generally produces chunks and clods. Considerable manipulation and working with disc harrows might be required to produce uniform moisture content and a fill material of uniform texture free of chunks and clods.

(2) We recommend that the contractor have appropriate disc harrows on site during earthwork for both drying and wetting the soils.

(3) Materials selected for use as structural fill should be free from roots and other organic matter, trash, debris, and frozen soil, and stones larger than 3 inches in any dimension. The following soils represented by their Unified Soil Classification System (ASTM D 2487) group symbols will be suitable for use as structural fill: GC, GM, SP, SW, SC, SM, and (CL and CH on-site). The following soil types are considered unsuitable: Pt, OH, OL, GP, GW, MH, (CH borrow) and ML.

(4) Suitable fill soils should be placed in lifts of maximum 8 inches loose measurement. The soil should be compacted by mechanical means such as steel drum, sheepsfoot, tamping, or rubber-tired rollers. Compaction of clays is best accomplished with a sheepsfoot or tamping roller. Periodically rolling with heavily loaded, rubber-tired equipment may be desirable to seal the surface of the compacted fill, thus reducing the potential for absorption of surface water following a rain. This sealing operation is particularly important at the end of the workday and at the end of the week. Within confined areas or foundation excavations, we recommend the use of manually operated, internal combustion activated compactors ("wacker packers" or sled tamps). The compactors should have sufficient weight and striking power to produce the same degree of compaction that is obtained on the other portions of the fill by the rolling equipment as specified. Where hand operated equipment is used, the soils should be placed in lifts of maximum 4 inches loose measurement.

(5) We recommend the structural fill and subgrades be compacted to the following minimum percents of the modified Proctor maximum dry density (ASTM D 1557):

Beneath structures and building slabs, to 5 feet beyond building and structure line, around footings and in trenches	90 percent
Beneath paved areas, except top 12 inches	90 percent
Beneath paved areas, top 12 inches	95 percent
Beneath sidewalks and grassed areas	85 percent

h. Construction Quality Control Testing.

(1) Prior to initiating any structural fill placement and/or compaction operations, we recommend that representative samples of the soils which will be used as structural fill or subgrade, both suitable on-site soils and off-site soils (borrow), be obtained and tested to determine their classification and compaction characteristics. The samples should be carefully selected to represent the full range of soil types to be used. The moisture content, maximum dry density, optimum moisture content, grain-size and plasticity characteristics should be determined. These tests are required to determine if the fill and subgrade soils are acceptable and for compaction quality control of the subgrades and structural fill. Tests for the above soil properties should be in accordance with the following:

Moisture Content	ASTM D 2216
Maximum Dry Density and Optimum Moisture	ASTM D 1557
Grain-Size (Wash No. 200, less hydrometer)	ASTM D 422 and D 1140
Plasticity	ASTM D 4318

(2) A representative number of in-place field density tests should be performed in the subgrade of compacted on-site soils and in the structural fill and backfill to confirm that the required degree of compaction has been obtained. In-place density tests should be performed in accordance with the sand cone method prescribed in ASTM D 1556. We recommend at least one density test be performed for each 5000 square feet, or portion thereof, of compacted existing on-site soils, subgrades, and in <u>each</u> lift of compacted structural fill. We also recommend that at least one density test be performed for each 100 linear feet in the bearing level soils of continuous footings. Density tests should be performed at 100-foot intervals along roadway subgrade soils. In addition, a density test should be performed for each 150 linear feet of backfill placed per foot of depth in trenches for utilities systems. Where other areas are compacted separately by manually operated compactors, a minimum of one density test should be performed for every 250 square feet, or portion thereof, of fill placed per foot of depth.

(3) Compaction control of soils requires the comparison of fill water content and dry density values obtained in the field density tests with optimum water content and maximum dry density. The performance of a laboratory compaction test on material from each field density test would provide the most accurate relation of the in-place material to optimum water content and maximum density, but it is not feasible to do this as the testing could not keep pace with fill construction. We recommend that compaction control of the earthwork construction be performed using a “family” of compaction curves and the one-point or two-point compaction methods. Excerpts from construction specifications, which describe the approach and its use, are included in the Appendices of the geotechnical report of this RFP.

(4) Any area that does not meet the required compaction criteria should be reworked, and retested. If the moisture content of the soil is within the recommended range, additional compaction may be all that is necessary to increase the density. If the moisture content is not within the recommended range, then, the moisture content should be adjusted to within the range, and the area recompacted.

(5) All laboratory and field density testing should be performed by an approved commercial testing laboratory qualified in this type of work.

APPENDIX

One-Point and Two-Point Compaction Methods

Compaction Control

For fine grained (clayey and silty) soils and for sands with appreciable fines such that normal shaped compaction curves are obtained, results of all compaction tests shall be plotted on a common plot as a family of curves. For each field density test performed, a one-point compaction test, with additional points as needed, shall be performed on the same material on which the field density test was conducted. The one-point compaction test shall be performed on the dry side of the optimum moisture content. For comparison of field density data to the proper laboratory compaction test results, the procedures for the one-point and/or two-point compaction control methods as described in paragraph Compaction Procedure, shall be used. Compaction curves plotted on the family of curves shall be of such a scale that the optimum moisture content can be interpreted to the nearest 0.1 percent and the maximum dry density can be interpreted to the nearest 0.1 pcf (or 2 kg/m^3). When a one-point test plots outside the range of the family of curves, an additional five-point compaction test shall be performed.

Compaction Procedure

General

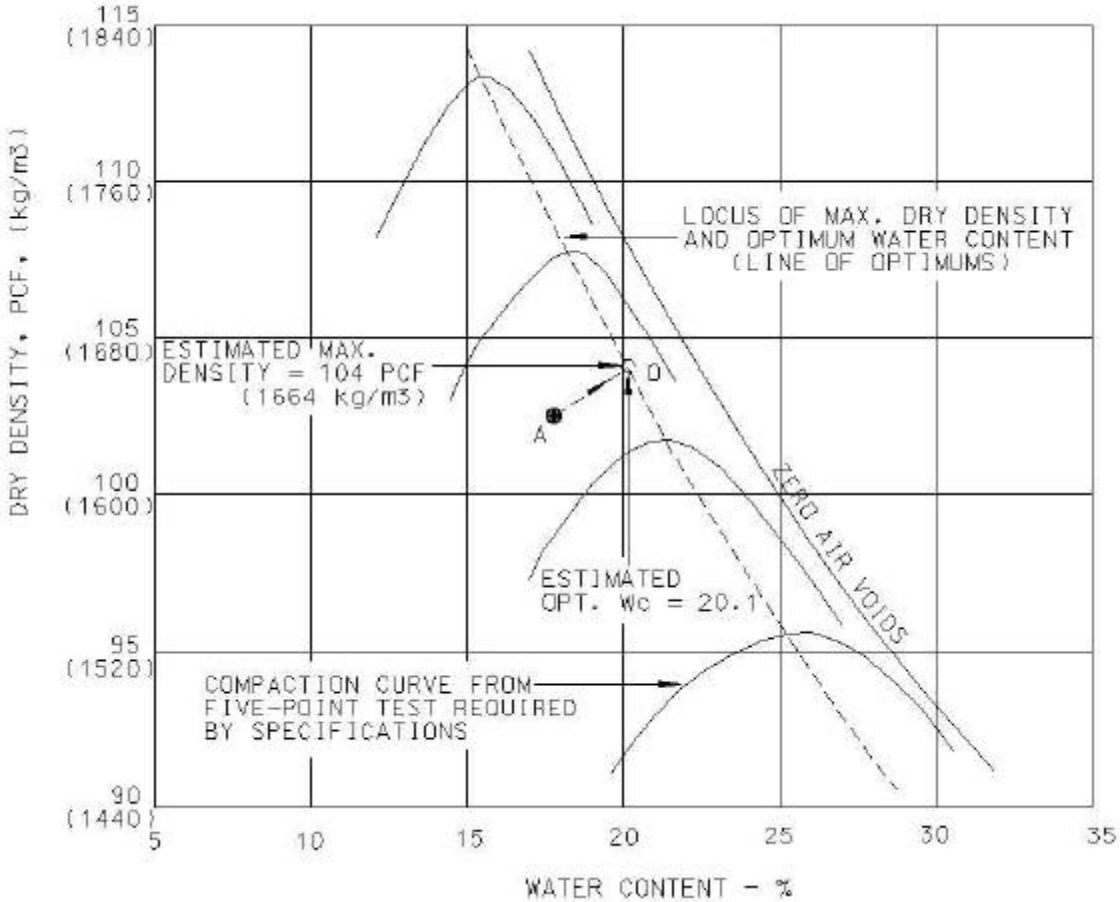
The following paragraphs describe methods of relating field density data to desired or specified values. Compaction control of soils requires comparison of fill water content and/or dry density values obtained in field density tests with optimum water content and/or maximum dry density. At a minimum, control shall be in accordance with the One-Point Compaction Method. Where conditions require, the Two-Point Compaction Method shall be used.

One-Point Compaction Method

The material from the field density test is allowed to dry to a water content on the dry side of estimated optimum, and then compacted using the same equipment and procedures used in the five-point compaction test. Thorough mixing is required to obtain uniform drying; otherwise, results obtained may be erroneous. The water content and dry density of the compacted sample are determined and then used to estimate its optimum water content and maximum dry density as illustrated in Figure 1 at the end of this section. In Figure 1, the line of optimums is well defined and the compaction curves are approximately parallel to each other, consequently, the one-point compaction method could be used with a relatively high degree of confidence. However, in Figure 2 at the end of this section, the curves are not parallel to each other and in several instances will cross if extended on the dry side. Consequently, the correct curve cannot be determined from the one-point method; therefore, the two-point compaction method should be used. The one-point method should be used only when the data define a relatively good line of optimums.

Two-Point Compaction Method

In the two-point test, one sample of material from the location of the field density test is compacted at the fill water content if thought to be at or on the dry side of optimum water content (otherwise, reduced by drying to this condition) using the same equipment and procedures used in the five-point compaction test. A second sample of material is allowed to dry back about 2 to 3 percentage points dry of the water content of the first sample and then compacted in the same manner. At least one point shall fall within 3 percent of the line of optimums. After compaction, the water contents and dry densities for the two samples are determined. The results are used to identify the appropriate compaction curve for the material being tested as shown in Figure 2 at the end of this section. The data shown in Figure 2 warrant the use of the two-point compaction test because the five-point compaction curves are not parallel. Using point A only, as in the one-point test method, would result in appreciable error as the shape of the curve would not be defined. The estimated compaction curve can be more accurately defined by two compaction points.



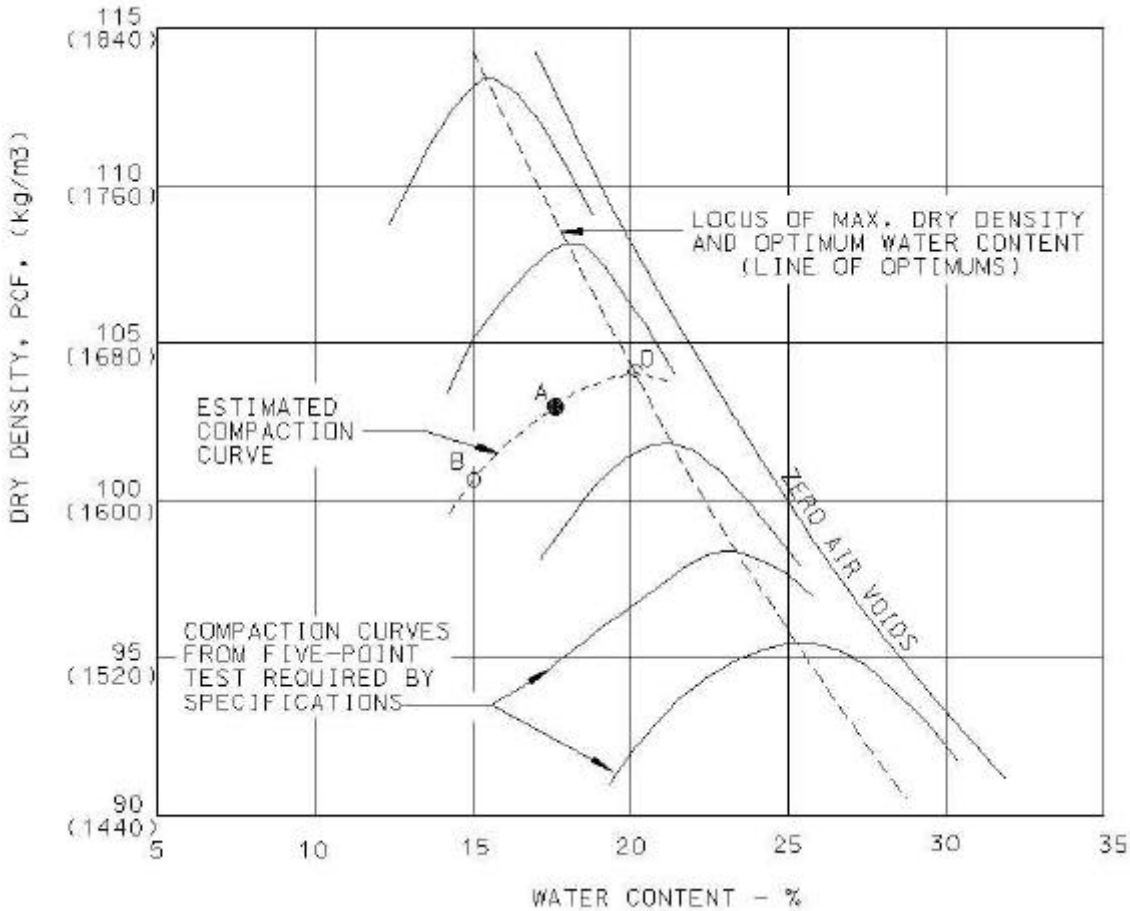
PROCEDURE:

1. Point A is the result of a one-point compaction test on material from field density test. This point must be on the dry side of optimum water content.

2. Point O is the estimated optimum water content and maximum density of the fill material based on a projection of point A approximately parallel to the adjacent compaction curves.

3. Point A must plot within 3 percent of the line of optimums.

Figure 1. Illustration of one-point compaction method.



PROCEDURE:

1. Points A and B are results of a two-point compaction test on material from field density test. Points A and B must be on the dry side of optimum water content.

2. The estimated compaction curve based on Points A and B establishes Point O on the locus, which is the estimated maximum dry density and optimum water content of the fill material.

3. One point must plot within 3 percent of the line of optimums.

Figure 2. Illustration of two-point compaction method.

APPENDIX E

SPiRiT POINT SUMMARY TABLES

APPENDIX E1

UEPH FACILITIES

	SPIRIT Summary Table - UEPH	Maximum points possible	Mandatory points	Proposed points	
PAR	**FEATURE**				**REMARKS**
NOTE: SEE SPIRIT TEXT FOR FULL DESCRIPTION OF REQUIREMENTS FOR EACH ITEM.					
COMPLIANCE IS REQUIRED IF "R" OR A NUMBER GREATER THAN ZERO APPEARS IN THE					
MANDATORY POINTS COLUMN					
1.R1	Sediment/Erosion Control Plan	R	R	R	Project Requirement
1.C1	Avoid undesirable sites	1			
	Site adjacencies/compatibility	1			
1.C2	Increase density	1			
	Minimize new infrastructure	1			
1.C3	Brownfield	1			
1.C4	Proximity to transit system	1			
	Bike racks & showers	1			
	Proximity to alternative fuel station	1			
	Parking capacity, carpool parking	1			
1.C5	Limited site disturbance , restoration	1			
	Reduced footprint	1			
1.C6	Stormwater runoff rate	1	1	1	RFP requirement
	Stormwater treatment	1			
1.C7	Reduce site heat islands	1			
	Reduce roof heat islands	1			
1.C8	Reduce light pollution	1			
1.C9	Optimize site features	1			
1.C10	Cluster facilities	1			
	Mitigate offsite impacts	1			
1.C11	Site Ecology	1			
2.C1	High efficiency irrigation/recycle site water	1	1	1	RFP requirement
	no irrigation	1			
2.C2	Innovative wastewater technologies	1			
2.C3	20% Water use reduction	1			
	30% Water use reduction	1			
3.R1	Building commissioning	R	R	R	Project Requirement
3.R2	Minimum energy performance	R	R	R	Project Requirement
3.R3	CFC Reduction	R	R	R	Project Requirement
3.C1	Optimize energy performance	20			
3.C2	5% Onsite renewable energy	1			
	10% onsite renewable energy	2			
	15% onsite renewable energy	3			
	20% onsite renewable energy	4			
3.C3	Additional commissioning	1			
3.C5	Measurement and verification	1			
3.C6	Green power	1			
3.C7	Distributed generation	1			
4.R1	Storage & collection of recyclables	R	R	R	Project Requirement

4.C1	Building reuse	3			
4.C2	Reduce construction waste	1			
	Reduce construction waste addl	1			
4.C3	Salvage/reused materials	1			
	Salvage/reused materials addl	1			
4.C4	Materials recycled content	1			
	Addl materials recycled content	1			
4.C5	Regionally manufactured materials	1			
	Regionally extracted materials	1			
4.C6	Rapidly renewable materials	1			
4.C7	Certified wood	1			
5.R1	Minimum IAQ performance	R	R	R	Project Requirement
5.R2	Environmental tobacco smoke	R	R	R	Project Requirement
5.C1	IAQ monitoring	1			
5.C2	Increase ventilation effectiveness	1			
5.C3	SMACNA/absorptive mtls/filtration	1			
	Flushout/baseline IAQ test	1			
5.C4	Adhesive/sealant VOC	1			
	Green Seal paints & coatings	1			
	CRI Green Label carpet	1			
	No urea/formaldehyde resins	1	1	1	RFP requirement
5.C5	Indoor pollutant source control	1			
5.C6	Operable windows, perimeter light controls	1	1	1	RFP requirement
	Non-perimeter controls	1	1	1	RFP requirement
5.C7	ASHRAE thermal comfort stds	1			
	Temperature/humidity monitoring	1			
5.C8	75% daylighting	1			
	90% outdoor view	1			
5.C9	Noise control	1	1	1	RFP requirement
5.C10	IAQ management plan	1			
6.C1	Team leader experience	1	1	1	RFP requirement
	Train team	1			
	Identify project goals	1			
	Charettes	1			
	Resolve tradeoffs	1			
	Document results	1			
7.C1	Develop O&M plan	2			
	Durable materials	1	1	1	RFP requirement
7.C2	Quality indoor environment	1			
	Functional work environment	1			
	Healthy work environment	1			
8.C1	Determine functional life	1	1	1	RFP requirement
	Determine building life	1	1	1	RFP requirement
8.C2	Design for future uses	1			
	Minimize building size	1			
	TOTAL	100	10	10	

APPENDIX E2

COMPANY OPERATIONS FACILITY (COF)

	SPIRIT Summary Table - COF	Maximum points possible	Mandatory points	Proposed points	
PAR	**FEATURE**				**REMARKS**
NOTE: SEE SPIRIT TEXT FOR FULL DESCRIPTION OF REQUIREMENTS FOR EACH ITEM.					
COMPLIANCE IS REQUIRED IF "R" OR A NUMBER GREATER THAN ZERO APPEARS IN THE					
MANDATORY POINTS COLUMN					
1.R1	Sediment/Erosion Control Plan	R	R	R	Project Requirement
1.C1	Avoid undesirable sites	1			
	Site adjacencies/compatibility	1			
1.C2	Increase density	1			
	Minimize new infrastructure	1			
1.C3	Brownfield	1			
1.C4	Proximity to transit system	1			
	Bike racks & showers	1	1	1	RFP requirement
	Proximity to alternative fuel station	1			
	Parking capacity, carpool parking	1	1	1	RFP requirement
1.C5	Limited site disturbance , restoration	1			
	Reduced footprint	1			
1.C6	Stormwater runoff rate	1	1	1	RFP requirement
	Stormwater treatment	1			
1.C7	Reduce site heat islands	1			
	Reduce roof heat islands	1			
1.C8	Reduce light pollution	1			
1.C9	Optimize site features	1			
1.C10	Cluster facilities	1			
	Mitigate offsite impacts	1			
1.C11	Site Ecology	1			
2.C1	High efficiency irrigation/recycle site water	1	1	1	RFP requirement
	no irrigation	1			
2.C2	Innovative wastewater technologies	1			
2.C3	20% Water use reduction	1			
	30% Water use reduction	1			
3.R1	Building commissioning	R	R	R	Project Requirement
3.R2	Minimum energy performance	R	R	R	Project Requirement
3.R3	CFC Reduction	R	R	R	Project Requirement
3.C1	Optimize energy performance	20			
3.C2	5% Onsite renewable energy	1			
	10% onsite renewable energy	2			
	15% onsite renewable energy	3			
	20% onsite renewable energy	4			
3.C3	Additional commissioning	1			
3.C5	Measurement and verification	1			
3.C6	Green power	1			
3.C7	Distributed generation	1			
4.R1	Storage & collection of recyclables	R	R	R	Project Requirement

4.C1	Building reuse	3			
4.C2	Reduce construction waste	1			
	Reduce construction waste addl	1			
4.C3	Salvage/reused materials	1			
	Salvage/reused materials addl	1			
4.C4	Materials recycled content	1			
	Addl materials recycled content	1			
4.C5	Regionally manufactured materials	1			
	Regionally extracted materials	1			
4.C6	Rapidly renewable materials	1			
4.C7	Certified wood	1			
5.R1	Minimum IAQ performance	R	R	R	Project Requirement
5.R2	Environmental tobacco smoke	R	R	R	Project Requirement
5.C1	IAQ monitoring	1			
5.C2	Increase ventilation effectiveness	1			
5.C3	SMACNA/absorptive mtls/filtration	1			
	Flushout/baseline IAQ test	1			
5.C4	Adhesive/sealant VOC	1			
	Green Seal paints & coatings	1			
	CRI Green Label carpet	1	1	1	RFP requirement
	No urea/formaldehyde resins	1	1	1	RFP requirement
5.C5	Indoor pollutant source control	1			
5.C6	Operable windows, perimeter light controls	1			
	Non-perimeter controls	1			
5.C7	ASHRAE thermal comfort stds	1			
	Temperature/humidity monitoring	1			
5.C8	75% daylighting	1			
	90% outdoor view	1			
5.C9	Noise control	1	1	1	RFP requirement
5.C10	IAQ management plan	1			
6.C1	Team leader experience	1	1	1	RFP requirement
	Train team	1			
	Identify project goals	1			
	Charettes	1			
	Resolve tradeoffs	1			
	Document results	1			
7.C1	Develop O&M plan	2			
	Durable materials	1	1	1	RFP requirement
7.C2	Quality indoor environment	1			
	Functional work environment	1	1	1	RFP requirement
	Healthy work environment	1	1	1	RFP requirement
8.C1	Determine functional life	1	1	1	RFP requirement
	Determine building life	1	1	1	RFP requirement
8.C2	Design for future uses	1			
	Minimize building size	1			
	TOTAL	100	13	13	

APPENDIX E3

BATTALION HEADQUARTERS (BHQ)

	SPIRIT Summary Table - BATTALION HEADQUARTERS	Maximum points possible	Mandatory points	Proposed points	
PAR	**FEATURE**				**REMARKS**
NOTE: SEE SPIRIT TEXT FOR FULL DESCRIPTION OF REQUIREMENTS FOR EACH ITEM.					
COMPLIANCE IS REQUIRED IF "R" OR A NUMBER GREATER THAN ZERO APPEARS IN THE					
MANDATORY POINTS COLUMN					
1.R1	Sediment/Erosion Control Plan	R	R	R	Project Requirement
1.C1	Avoid undesirable sites	1			
	Site adjacencies/compatibility	1			
1.C2	Increase density	1			
	Minimize new infrastructure	1			
1.C3	Brownfield	1			
1.C4	Proximity to transit system	1			
	Bike racks & showers	1	1	1	RFP requirement
	Proximity to alternative fuel station	1			
	Parking capacity, carpool parking	1	1	1	RFP requirement
1.C5	Limited site disturbance , restoration	1			
	Reduced footprint	1			
1.C6	Stormwater runoff rate	1	1	1	RFP requirement
	Stormwater treatment	1			
1.C7	Reduce site heat islands	1			
	Reduce roof heat islands	1			
1.C8	Reduce light pollution	1			
1.C9	Optimize site features	1			
1.C10	Cluster facilities	1			
	Mitigate offsite impacts	1			
1.C11	Site Ecology	1			
2.C1	High efficiency irrigation/recycle site water	1	1	1	RFP requirement
	no irrigation	1			
2.C2	Innovative wastewater technologies	1			
2.C3	20% Water use reduction	1			
	30% Water use reduction	1			
3.R1	Building commissioning	R	R	R	Project Requirement
3.R2	Minimum energy performance	R	R	R	Project Requirement
3.R3	CFC Reduction	R	R	R	Project Requirement
3.C1	Optimize energy performance	20			
3.C2	5% Onsite renewable energy	1			
	10% onsite renewable energy	2			
	15% onsite renewable energy	3			
	20% onsite renewable energy	4			
3.C3	Additional commissioning	1			
3.C5	Measurement and verification	1			
3.C6	Green power	1			
3.C7	Distributed generation	1			
4.R1	Storage & collection of recyclables	R	R	R	Project Requirement

4.C1	Building reuse	3			
4.C2	Reduce construction waste	1			
	Reduce construction waste addl	1			
4.C3	Salvage/reused materials	1			
	Salvage/reused materials addl	1			
4.C4	Materials recycled content	1			
	Addl materials recycled content	1			
4.C5	Regionally manufactured materials	1			
	Regionally extracted materials	1			
4.C6	Rapidly renewable materials	1			
4.C7	Certified wood	1			
5.R1	Minimum IAQ performance	R	R	R	Project Requirement
5.R2	Environmental tobacco smoke	R	R	R	Project Requirement
5.C1	IAQ monitoring	1			
5.C2	Increase ventilation effectiveness	1			
5.C3	SMACNA/absorptive mtls/filtration	1			
	Flushout/baseline IAQ test	1			
5.C4	Adhesive/sealant VOC	1			
	Green Seal paints & coatings	1			
	CRI Green Label carpet	1	1	1	RFP requirement
	No urea/formaldehyde resins	1	1	1	RFP requirement
5.C5	Indoor pollutant source control	1			
5.C6	Operable windows, perimeter light controls	1			
	Non-perimeter controls	1			
5.C7	ASHRAE thermal comfort stds	1			
	Temperature/humidity monitoring	1			
5.C8	75% daylighting	1			
	90% outdoor view	1			
5.C9	Noise control	1			
5.C10	IAQ management plan	1			
6.C1	Team leader experience	1	1	1	RFP requirement
	Train team	1			
	Identify project goals	1			
	Charettes	1			
	Resolve tradeoffs	1			
	Document results	1			
7.C1	Develop O&M plan	2			
	Durable materials	1	1	1	RFP requirement
7.C2	Quality indoor environment	1			
	Functional work environment	1	1	1	RFP requirement
	Healthy work environment	1	1	1	RFP requirement
8.C1	Determine functional life	1	1	1	RFP requirement
	Determine building life	1	1	1	RFP requirement
8.C2	Design for future uses	1			
	Minimize building size	1			
	TOTAL	100	12	12	

APPENDIX F

SPECIFICATION LIST

The project specifications shall be prepared using current UFGS guide specifications. If a UFGS guide specification cannot be found, contact the Savannah District to see if a guide specification exists. If a guide specification does not exist, the Design/Build Contractor will prepare a job specific specification. The UFGS shall be edited and adapted by the designer for this project, incorporating UFGS instructions and recommendations in the notes to specifier contained in the guide specifications. The designer is to delete inapplicable portions of the guide specification and revise and/or supplement, as required, the applicable portions to provide a complete project specification. Editing of specifications shall be for bracketed options and project requirements as stated in the RFP only. Specifications shall be submitted at final design submittal in hard copy form that shows the text added and deleted with additions underlined and deletions lined through but still readable. This feature is available in SPECSINTACT. Following is a partial list of UFGS specifications required for this project. Other UFGS sections shall be added and submitted by the Design/Build Contractor as needed to address all other portions of the work in the accepted proposal. The Division 01 GENERAL REQUIREMENTS specifications that are provided in this RFP shall be used as provided with no editing by the successful proposer.

Division 01 General Requirements

01330 SUBMITTAL PROCEDURES
01355A ENVIRONMENTAL PROTECTION
01420 SOURCE OF REFERENCE PUBLICATIONS
01451A CONTRACTOR QUALITY CONTROL
01500A TEMPORARY FACILITIES
01572A CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT
01780A AS-BUILT DRAWINGS SUBMITTALS
01781A OPERATIONS AND MAINTENANCE DATA

Division 02 Sitework

02300A EARTHWORK
02315A EXCAVATION, FILLING, AND BACKFILLING FOR BUILDINGS
02316A EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS
02364A TERMITICIDE TREATMENT FOR SUBTERRANEAN TERMITE CONTROL
02510A WATER DISTRIBUTION
02531A SANITARY SEWERS
02547 BITUMINOUS PAVEMENT WITH BASE COURSE
02553A HEAT DISTRIBUTION SYSTEM IN CONCRETE TRENCHES
02555A PREFABRICATED UNDERGROUND HEATING/COOLING DISTRIBUTION SYSTEM
02556A GAS DISTRIBUTION SYSTEM
02570A VALVE MANHOLES AND PIPING AND EQUIPMENT IN VALVE MANHOLES
02630A STORM-DRAINAGE SYSTEM
02754A CONCRETE PAVEMENTS FOR SMALL PROJECTS
02763A PAVEMENT MARKINGS
02770A CONCRETE SIDEWALKS AND CURBS AND GUTTERS
02780 CONCRETE PAVERS
02811A IRRIGATION
02870A SITE FURNISHINGS
02921A SEEDING
02922A SODDING
02923A SPRIGGING
02930A EXTERIOR PLANTING
02935A METAL EDGING

02936 TURF - BERMUDA GRASS

Division 3 Concrete
03101A FORMWORK FOR CONCRETE
03200A CONCRETE REINFORCEMENT
03300A CAST-IN PLACE STRUCTURAL CONCRETE

Division 4 Masonry
04200A MASONRY

Division 5 Metals
05090A WELDING, STRUCTURAL
05400A COLD-FORMED STEEL FRAMING
05500A MISCELLANEOUS METAL

Division 6 Woods and Plastics
06100A ROUGH CARPENTRY
06650 SOLID POLYMER (SOLID SURFACING) FABRICATIONS

Division 7 Thermal and Moisture Protection
07600A SHEET METALWORK, GENERAL
07840A FIRESTOPPING
07900A JOINT SEALING

Division 8 Doors and Windows
08110 STEEL DOORS AND FRAMES
08120 ALUMINUM DOORS AND FRAMES
08210 WOOD DOORS
08520A ALUMINUM AND ENVIRONMENTAL CONTROL WINDOWS
08710 DOOR HARDWARE
08810A GLASS AND GLAZING

Division 9 Finishes
09000 BUILDING COLOR AND FINISH SCHEDULE
09250A GYPSUM WALLBOARD
09310A CERAMIC TILE
09510A ACOUSTICAL CEILINGS
09680A CARPET
09900A PAINTS AND COATINGS

Division 10 Specialties
10180 SHOWER UNIT DOORS
10260A WALL AND CORNER PROTECTION
10430A EXTERIOR SIGNAGE
10440A INTERIOR SIGNAGE
10800A TOILET ACCESSORIES

Division 12 Furnishings
12490A WINDOW TREATMENT

Division 13 Special Construction
13080A SEISMIC PROTECTION FOR MISCELLANEOUS EQUIPMENT
13100A LIGHTNING PROTECTION
13851A FIRE DETECTION/ALARM SYSTEM, ADDRESSABLE SYSTEM
13920A FIRE PUMPS
13930A WET PIPE SPRINKLER, FIRE PROTECTION

13111A CATHODIC PROTECTION SYSTEM (STEEL WATER TANKS)
13112A CATHODIC PROTECTION SYSTEM (IMPRESSED CURRENT)

Division 14 Conveying Systems

14210A ELEVATORS ELECTRIC

Division 15 Mechanical

15070A SEISMIC PROTECTION FOR MECHANICAL EQUIPMENT
15080A THERMAL INSULATION FOR MECHANICAL SYSTEMS
15181A CHILLED AND CONDENSER WATER PIPING AND ACCESSORIES
15190A GAS PIPING SYSTEMS
15400A PLUMBING, GENERAL PURPOSE
15566A WARM AIR HEATING SYSTEMS
15569A WATER AND STEAM HEATING; OIL, GAS OR BOTH; UP TO 20 MBTUH
15620A LIQUID CHILLERS
15700A UNITARY HEATING AND COOLING EQUIPMENT
15845A ENERGY RECOVERY SYSTEMS
15895A AIR SUPPLY, DISTRIBUTION, VENTILATION, AND EXHAUST SYSTEM
15951A DIRECT DIGITAL CONTROL FOR HVAC
15990A TESTING, ADJUSTING, AND BALANCING OF HVAC SYSTEMS
15995A COMMISSIONING OF HVAC SYSTEMS

Division 16 Electrical

16070A SEISMIC PROTECTION FOR ELECTRICAL EQUIPMENT
16370A ELECTRICAL DISTRIBUTION SYSTEM, AERIAL
16375A ELECTRICAL DISTRIBUTION SYSTEM, UNDERGROUND
16415A ELECTRICAL WORK INTERIOR
16528A EXTERIOR LIGHTING INCLUDING SECURITY AND CCTV APPLICATIONS
16710A PREMISES DISTRIBUTION SYSTEM
16711A TELEPHONE SYSTEM, OUTSIDE PLANT
16815A CABLE TELEVISION PREMISES DISTRIBUTION SYSTEM

SECTION 01012

DESIGN AFTER AWARD
(DESIGN/BUILD)
01/2002

1. GENERAL

The Contractor shall furnish and be responsible for a complete set of design documents as called for in Section 01010, GENERAL PROJECT DESCRIPTION AND DESIGN REQUIREMENTS and as called for hereinafter.

1.1 Within 30 days after Notice to Proceed (NTP), the Contractor shall submit, for approval, a complete design schedule with all submittals and review times indicated in calendar dates. The Contractor shall update this schedule monthly. No design submittals will be reviewed or evaluated until after receipt and acceptance of the proposed design/review schedule. As a minimum, design submittals are required at the preliminary (60%), final (100%), and at the design complete (corrected final) stage. The requirements of each design stage are listed hereinafter. The Contractor shall reflect the number and schedules for the design submittals phases in the progress charts. As a maximum, the 60%, 100%, and design complete submittals shall be made in one consolidated package, which includes each of the major categories listed in paragraph “Contents of Design Submittals.”

1.2 To facilitate fast-track design-construction activities the Contractor shall submit a 100% Site/Utility Design as the first design submittal. Following review, resolution, and incorporation of all Government comments, and submittal of a satisfactory set of site/utility design documents, the Contracting Officer shall issue a limited Notice to Proceed (NTP) which shall allow the Contractor to proceed with site development activities within the parameters set forth in the accepted design submittal. Submittal review, comment, and resolution times from this specification apply to this initial 100% Site/Utility Design Submittal. No onsite construction activities shall begin prior to receipt of a construction NTP by the Contractor.

1.3 The Contractor shall submit the design of the buildings at different stages of design to the Government for review. The drawings shall be grouped by building type, each set complete by itself. All submittals required at each stage of design shall be submitted as a complete package at one time. No partial submittals will be reviewed.

2. DESIGNER OF RECORD

The Contractor shall identify, for approval, the Designer of Record for each area of work. One Designer of Record may be responsible for more than one area. A listed, registered Designer of Record shall account for all areas of design disciplines. The Designer(s) of Record shall stamp, sign, and date all design drawings under their responsible discipline at each design submittal stage (see SCR - "Registration of Designers").

3. DEFINITION OF DESIGN SUBMITTALS

3.1 Corrected Proposal Submittal

The Contractor shall submit 10 copies of corrected drawings and technical proposal notebooks which incorporate any corrections on clarification items or deficiencies noted during negotiations for distribution to the Users and Government agencies. Submit the drawings in half size to the project manager within 30 days after contract award. This item only applies to the successful

proposer after contract award, and only if there were requests for clarification or deficiencies were noted.

3.2 Site/Utility Design Submittal (100%)

This submittal is provided to allow the Contractor to concentrate initial efforts for the site/utility portions of the project. By allowing this work to be separated, the Contractor is given the opportunity to fast track and begin construction on the site/utility work prior to completion of the building designs. More specific submittal requirements by stage and discipline are identified in the Savannah District Design Manual. This is available on the Internet (under “Engineering Criteria”) at:

http://en.sas.usace.army.mil

This submittal shall consist of the following:

a. Design analysis, developed to 100%, site work and utility work only.

b. 100% complete site/utility drawings.

c. Final site/utility specifications.

d. Environmental permits, as required. When environmental permits are not required, the Contractor shall provide a statement with justification to that effect.

3.3 Preliminary Conformance Review Submittal (60%). This submittal is intended to insure that the Contractor's design is proceeding in accordance with the terms of the solicitation and the Contractor's original proposal as well as in a timely manner. More specific submittal requirements by stage and discipline are identified in the Savannah District Design Manual. This is available on the Internet (under “Engineering Criteria”) at:

http://en.sas.usace.army.mil.

This submittal shall consist of the following:

a. Design analysis, developed to 60%.

b. 60% complete drawings.

c. Draft specifications.

d. Site utility design information need not be included in this submittal package except where interface to the interior building systems is required.

3.4 Final Design Submittal (100%)

The review of this submittal is to insure that the design is in accordance with directions provided the Contractor during the design process as well as the original solicitation and the Contractor's proposal. More specific submittal requirements by stage and discipline are identified in the Savannah District Design Manual. This is available on the Internet (under “Engineering Criteria”) at:

http://en.sas.usace.army.mil

The Contractor shall submit the following documents for Final Design Review:

3.4.1 60% review comments and responses annotated.

3.4.2 The Design Analysis submitted for Final Design Review shall be in its final form. The Design Analysis shall include all backup material previously submitted and revised as necessary. All design calculations shall be included. The Design Analysis shall contain all explanatory material giving the design rationale for any design decisions which would not be obvious to an engineer reviewing the final drawings and specifications.

3.4.3 The contract drawings submitted for Final Design Review shall include the drawings previously submitted which have been revised and completed as necessary. The Contractor is expected to have completed all of his coordination checks and have the drawings in a design complete condition. The drawings shall be complete at this time including the incorporation of any design review comments generated by the previous design reviews. The drawings shall contain all the details necessary to assure a clear understanding of the work throughout construction. Shop drawings will not be considered as design drawings. All design shall be shown on design drawings prior to submittal of shop drawings. Each discipline has unique Final Design submittal requirements. Respective chapters of the Savannah District Design Manual should be reviewed to determine the exact nature of these requirements.

3.4.4 The draft specifications on all items of work submitted for Final Design Review shall consist of legible marked up guide specification sections.

3.4.5 Site utility design information need not be included in this submittal package except where interface to the interior building systems is required.

3.5 Design Complete Submittal (Corrected Final)

After the Final Design Review, the Contractor shall revise the Contract Documents by incorporating any comments generated during the Final Design Review and shall prepare final hard copy Contract Specifications. The Contractor shall submit the following documents for the design complete submittal:

3.5.1 Design analysis, in final 100% complete form.

3.5.2 100% complete drawings.

3.5.3 Final specifications.

3.5.4 Final review comments and responses.

3.5.5 Electronic Submission.

All CADD files in native MicroStation format, as well as all prepared technical specifications shall be provided on CD-ROM. Two copies are required.

3.6 Structural Interior Design (SID).

3.6.1 Definition: The Structural Interior Design (SID) shall involve the selection and sampling of all applied finishes including material, color, texture and patterns necessary to complete the building's interior architectural features. The SID shall also include all prewired workstation finishes and required drawings for prewired workstations. This information shall be submitted in 3-inch D-ring binders, 8-1/2 inch x 11-inch format.

3.6.2 Present architectural finish samples in an orderly arrangement according to like rooms/areas receiving like finishes. Each like room receiving like finishes will be noted as a Color Scheme. Each Color Scheme

shall have a written description of material used. This written description shall use the same material abbreviations and notes that appear on the Room Finish Schedule and Legend in the contract drawings. Present prewired workstation finishes on a color board separate from the architectural finishes. Submit the SID binders concurrently with the architectural design submittals.

3.6.3 Preliminary Submittals: The Contractor shall submit three complete sets of the initial SID package. The design philosophy shall use a warm neutral background color with appropriate accent colors. All SID proposals shall be reviewed and approved by the Government. The Interior Designer shall revise the SID binders after each review and update the SID to satisfy review comments. Each submittal will follow this method of review until the Government approves the completed SID package.

3.6.4 Final Submittal: After approval of the Preliminary Submittal, the Contractor shall submit three complete sets of the approved and final Structural Interior Design packages. Once the Contractor has submitted the SID and the Government has approved the submittal, all materials, finishes, colors, textures and pattern submitted and approved for this project are then considered as part of the contract and the Contractor shall furnish all approved SID finishes. No deviations will be considered.

3.6.5 Format: Submit all SID information and samples on 8 1/2"x 11" modules with only one foldout. The maximum foldout width shall be approximately 25 inches. No foldouts on the top or bottom of the pages. Place the project title, base, architectural firm, page number and date on the bottom of each page or module.

3.6.5.1 The module shall support and anchor all samples. Anchor large or heavy samples with mechanical fasteners, velcro or double sided foam tape. Rubber cement or glue will not be acceptable.

3.6.5.2 Assemble the 8-1/2 inch x 11-inch pages and modules in a 3-inch D-ring binder. Holes for placement of the modules in the binder shall be 3/8 inch in diameter. Each binder shall be identified on the outside spine and front cover by title, project number, percentage phase and date.

3.6.5.3 Material and finish samples shall indicate true pattern, color and texture. Carpet samples shall be large enough to indicate a complete pattern or design.

3.6.5.4 Where paint manufacturers’ color names and numbers are used indicate the finish of the paint such as gloss, semi-gloss, flat and so on.

3.6.5.5 Signage may include emblems, striping, letters, numbers and logos. The interior designer shall consider visual appearance, organization, location, structural supports (if required) and relation to other base graphics. Indicate on a separate signage sheet the location and message for all signage. Submit a sample of the signage material finish and color with the structural finishes.

3.6.5.6 No photographs or colored photocopies of materials will be accepted or approved.

3.6.6 The SID binder shall include the following information at each design submittal in this order:

==========

SEQUENCE OF SID SUBMITTAL

1. Title page

2. Table of contents

3. Design objectives - A statement of design objectives explaining the interior design philosophy of the facility shall be provided in the SID. Design objectives and the proposed method of accomplishing the objectives. Shall cover, when applicable, energy efficiency, safety, health, maintenance, image, personal performance of occupants and functional flexibility.

4. Interior floor plan

5. Interior sample finish boards (Color boards)

Scheme A
Scheme B
Scheme C

Example all restrooms could be noted as color scheme "A", all general open office finishes could be noted as color scheme "B" and the main lobby could be noted as color scheme "C".

6. Room finish schedule

7. Signage

8. Signage plan

9. Prewired workstation composite floor plans

10. Prewired workstation typicals - elevations and component inventory.

11. Prewired workstation panel identification plan with electrical outlet placement including base feed.

12. Integration and layout of ACSIM specific furniture. Plan must show suitability of proposed space to suit the furniture to be provided.

==========

4. GOVERNMENT APPROVED DESIGN SUBMITTALS

The approval of submittals by the Contracting Officer shall not be construed as a complete check, but will indicate only that the design is in conformance with the contract requirements. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor is responsible for the design and construction of all work.

5. MAILING OF SUBMITTALS

All submittals to the Government during design shall be mailed using overnight mailing service. Each copy of the submittals shall be mailed to the addresses listed below. Each submittal shall have a transmittal letter accompanying it that indicates the date, design percentage, type of submittal, list of items submitted, transmittal number and point of contact with telephone number.

Addresses and submittal distribution:

1. U.S. Army Engineer District, Savannah
ATTN: CESAS-PM-ME
100 W. Oglethorpe Avenue
P.O. Box 889
Savannah, GA 31402-0889

2. U.S. Army Corps of Engineers,
West GA Area Office (CD-BE)
Burr Street, Bldg 6, Room 412, Meloy Hall
Fort Benning, GA 31905-1009

3. Directorate of Facilities Engineering and Logistics
Attn: ATZB-ELE-R (Mr. Dean Miller)
Burr Street, Meloy Hall, Bldg 6, Rm 316
Fort Benning, GA 31905

4. Director USAISEC-FDEO
ATTN: AMSEL-IE-DE-IN-CO (Mr. Gaffney)
1435 Porter Street, Suite 200
Fort Detrick, Maryland 21702-5047

5. Eastern Paralyzed Veterans Association
Architecture & Facilities Management
75-20 Astoria Boulevard
Queens, NY 11370-1178

The following table lists the number of copies of design submittal requirements for this project:

(1) Corrected Proposal
COE 10 1/2 Size drawings
SAS 10 Revised Proposal Notebooks

	#	Item 60%	#	Item Final	#	Item Corrected Final
(1)	15	Design Anal.	15	Design Anal.	3	Design Anal.
COE	15	Drawings	15	Drawings	3	Drawings
SAS	15	Spec.	15	Spec.	3	Spec.
			8	Ann. Comments	3	Ann. Comments
	2	Permit Appl.	2	Permit Docum.	2	CD's w/all electronic files
	1	SID	1	SID		
	1	CID	1	CID		
(2)	2	Design Anal.	2	Design Anal.	1	Design Anal.
CD-BE	2	Drawings	2	Drawings	5	Drawings
	2	Spec.	2	Spec.	5	Spec.
			2	Ann. Comments	5	Ann. Comments
	2	Permit Appl.	2	Permit Docum.	2	Drawings, full size
	1	SID	1	SID	2	CD's w/ all electronic files
	1	CID	1	CID		
(3)	135	Design Anal.	135	Design Anal.	2	Design Anal.
DFEL	135	Drawings	135	Drawings	2	Drawings
	135	Spec.	135	Spec.	2	Spec.
			2	Ann. Comments	2	Ann. Comments

	2 Permit Appl. 1 SID 1 CID	2 Permit Docum. 1 SID 1 CID	2 Permit Docum. 2 CD's w/all electronic files
(4) ISEC	1 Design Anal. 2 Drawings 2 Spec.	1 Design Anal. 2 Drawings 2 Spec. 2 Ann. Comments	
(5) EPVA	1 Design Anal. 1 Drawings 1 Spec.	1 Design Anal. 1 Drawings 1 Spec. 1 Ann. Comments	

6. GOVERNMENT REVIEWS

The Government will take 21 days to review and comment on each design submittal. For each design review submittal, the COR will furnish, to the Contractor, a single consolidated listing of all comments from the various design sections and from other concerned agencies involved in the review process. The review will be for conformance with the technical requirements of the solicitation and the Successful Offeror's (Contractor's) RFP proposal. If the Contractor disagrees technically with any comment or comments and does not intend to comply with the comment, he must clearly outline, with ample justification, the reasons for noncompliance within 5 days after receipt of these comments in order that the comment can be resolved. The Contractor shall furnish disposition of all comments, in writing, with the next scheduled submittal. The Contractor is cautioned in that if he believes the action required by any comment exceeds the requirements of this contract, that he should take no action and notify the COR in writing immediately. Review conferences will be held for each design submittal at the Installation. The Contractor shall bring the appropriate design staff to the review conference. These conferences will take place the week after the receipt of the comments by the Contractor.

ProjNet/DrChecks is the required method for preparing and annotating comments. This is an Internet based database available on the Internet at:

http://65.204.17.188/projnet/home/version1/

User ID and password will be granted at the submittal stage.

6.1 If a design submittal is late by the approved schedule, the review will slip accordingly. The review process will not be shortened. Submittals date revisions must be made in writing at least 1 week prior to the effect submittal.

6.2 Post review conference action: Copies of comments, annotated with comment action agreed on, will be made available to all parties before the conference adjourns. Unresolved problems will be resolved by immediate follow-on action at the end of conferences. Valid comments will be incorporated. After receipt of final corrected design documents upon incorporation of backcheck comments the Project Manager will recommend issuance of a Construction Notice to Proceed (NTP). The Government, however, reserves the right to disapprove design document submittals if comments are significant. If final or backcheck submittal(s) are incomplete or deficient, and require correction by the Contractor and resubmittal for review, the cost of rehandling and reviewing will be deducted from payment due the Contractor at the rate of $5,000.00 per submittal.

7. COORDINATION

7.1 Written Records

The Contractor shall prepare a written record of each design site visit, meeting, or conference, either telephonic or personal, and furnish within 5 working days copies to the Contracting Officer and all parties involved. The written record shall include subject, names of participants, outline of discussion, and recommendation or conclusions. Number each written record for the particular project under design in consecutive order.

7.2 Design Needs List

Throughout the life of his contract the Contractor shall furnish the COR a monthly "needs" list for design related items. This list shall itemize in an orderly fashion design data required by the Contractor to advance the design in a timely manner. Each list shall include a sequence number, description of action item, name of the individual or agency responsible for satisfying the action item and remarks. The list will be maintained on a continuous basis with satisfied action items checked off and new action items added as required. Once a request for information is initiated, that item shall remain on the list until the requested information has been furnished or otherwise resolved. Copies of the list will be mailed to both the Administrative Contracting Officer and the agencies tasked with supplying the information. It is highly recommended that the Corps' RFI system be utilized during the design phase for this purpose. The system has report capability. User access and passwords will be furnished at the time needed with over the phone instructions.

8. DESIGN ANALYSIS

8.1 Media and Format

Present the design analysis on 8-1/2-inch by 11-inch paper except that larger sheets may be used when required for graphs or other special calculation forms. All sheets shall be in reproducible form. The material may be typewritten, hand lettered, handwritten, or a combination thereof, provided it is legible. Side margins shall be 1-inch minimum to permit side binding and head to head printing. Bottom margins shall be 1-1/4 inches, with page numbers centered 1 inch from the bottom.

8.2 Organization

Assign the several parts and sheets of the design analysis a sequential binding number and bind them under a cover indicating the name of the facility and project number, if applicable. The title page shall carry the designation of the submittal being made. The complete design analysis presented for final review with the final drawings and specifications shall carry the designation "FINAL DESIGN ANALYSIS" on the title page.

8.3 Design Calculations

Design calculations are a part of the design analysis. When they are voluminous, bind them separately from the narrative part of the design analysis. Present the design calculations in a clean and legible form incorporating a title page and index for each volume. Furnish a table of contents, which shall be an index of the indices, when there is more than one volume. Identify the source of loading conditions, supplementary sketches, graphs, formulae, and references. Explain all assumptions and conclusions. Calculation sheets shall carry the names or initials of the author and the checker and the dates of calculations and checking. No portion of the calculations shall be computed and checked by the same person.

8.4 Automatic Data Processing Systems (ADPS)

When ADPS are used to perform design calculations, the design analysis shall include descriptions of the computer programs used and copies of the ADPS input data and output summaries. When the computer output is large, it may be divided into volumes at logical division points. Precede each set of computer printouts by an index and by a description of the computation performed. If several sets of computations are submitted, they shall be accompanied by a general table of contents in addition to the individual indices. Preparation of the description which must accompany each set of ADPS printouts shall include the following:

a. Explain the design method, including assumptions, theories, and formulae.
b. Include applicable diagrams, adequately identified.
c. State exactly the computation performed by the computer.
d. Provide all necessary explanations of the computer printout format, symbols, and abbreviations.
e. Use adequate and consistent notation.
f. Provide sufficient information to permit manual checks of the results.

9. DRAWINGS

9.1 Prepare all drawings on Computer-Aided Design and Drafting (CADD) so that they are well-arranged and placed for ready reference and so that they present complete information. The Contractor shall prepare the drawings with the expectation that the Corps of Engineers, in the role of supervision, will be able to construct the facility without any additional assistance from the Contractor. Drawings shall be complete; unnecessary work such as duplicate views, notes and lettering, and repetition of details shall not be permitted. Do not show standard details not applicable to the project, and minimize unnecessary wasted space. Do not include details of standard products or items which are adequately covered by specifications on the drawings. Detail the drawings such that conformance with the RFP can be checked and to the extent that shop drawings can be checked. Do not use shop drawings as design drawings. The Contractor shall use standard Corps of Engineers title blocks and borders on all drawings. Submit an index of drawings with each submittal. The COR will furnish the Contractor file number, drawing name prefix, and specifics for inclusion in the title blocks of the drawings.

9.2 Create all drawings using CADD methods in MicroStation format. Save all Design Complete CADD files as MicroStation 5.0 or later version. The Contractor shall use EM 1110-1-1807 Standards Manual for U.S. Army Corps of Engineers Computer-Aided Design and Drafting (CADD) Systems as guidance for standard details, cell libraries, title blocks, and layer/level assignments. Drawing features not addressed in EM 1110-1-1807 shall conform to drafting standards.

9.3 Only standard fonts provided by MicroStation are allowed to be used in the creation of CADD files. No fonts created by third parties or the designer are permitted.

9.4 The uses of reference files and model files during the design stage is up to the discretion of the designers. All CADD files at Design Complete submittal shall be in separate folders by discipline or building, free standing, independent files by folder. All reference files shall be in the same folder as the design files. Example of folders, Civil, Building 1, Building 2, etc.

9.5 Submit all Design Complete CADD files on read/write CD-ROM disk.

10. SPECIFICATIONS

10.1 The Contractor shall submit marked-up and final specifications as required. The specifications shall be Unified Facilities Guide Specifications (UFGS). Edit the specifications for this project and submit in marked up or redlined draft version at the Final Review submittal stage. If the design is based on a specific product, the specification shall consist of the important features of the product. The specification shall be detailed enough such that another product meeting the specification could be substituted and it would not adversely impact the project. After incorporation of comments, submit a final, design complete specification package. Delete all marked out or redlined text and type in all inserted text. Unified Federal Guide Specifications (UFGS) and Savannah District Guide Specifications are available on the Internet at:

http://www.hnd.usace.army.mil and http://en.sas.usace.army.mil/

Specsintact software is available free of charge at:

http://si.ksc.nasa.gov/specsintact

These specifications shall be edited and tailored by the Contractor to meet the requirements of the project under design.

10.2 Submittal Register

Develop the construction submittal requirements during the design phase of the contract. List the submittal requirements in paragraph SUBMITTALS of each specification section. The SPECSINTACT program generates a submittal register from these paragraphs. Include this register at the end of Section 01330 SUBMITTAL PROCEDURES (DESIGN BUILD). The Contractor shall be responsible for listing all required submittals necessary to insure the project requirements are complied with. The submittals paragraph shall identify submittal items such as shop drawings, manufacturer's literature, certificates of compliance, material samples, guarantees, test results, etc. that the Contractor shall submit for review and/or approval action during the life of the construction contract.

11. CONTENTS OF DESIGN SUBMITTALS

11.1 The 100% site/utility design submittal shall conform with paragraph 3.2 and contain as a minimum, the following:

11.1.1 General Narratives

11.1.1.1 Site/Layout

Explanation of objectives and factors influencing siting decisions. General overview of major site features planned, such as building orientation, drainage patterns, parking provisions, traffic circulation, provisions for the handicapped, security requirements, etc. Rationale for locating major site elements (site furnishings, picnic shelters, recreation areas, and dumpster locations). Set back requirements or specific clearance requirements. Locations of borrow and spoil areas.

11.1.1.2 Utility Systems

Design narrative for the natural gas, water supply, storm drainage, and wastewater systems relating to this project. Include an analysis of the existing distribution systems capability to supply sufficient quantity at

adequate levels. If the existing distribution systems are inadequate, provide the design solution to augment the systems to provide the requirements for the new facilities.

11.1.2 All drawings included in the required technical data for the proposal submission (see Contract Clause, TECHNICAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS) shall be developed to 100 percent completion. In addition to the individual utility plans, submit a combined utility plan drawn to the same scale as the individual utility plans.

11.1.3 General Site Layout

Scale shall be included.

11.1.3.1 Site Grading and Drainage Plans

Show locations of all sediment basins, diversion ditches, and other erosion control structures. Indicate the approximate drainage areas each will service. Indicate the materials, construction and capacity of each structure. Include limits of landscaping and seeded areas. General site grading and drainage shall be indicated by contour lines with an interval of not more than approximately 1 foot [800mm].

11.1.3.2 Road Alignment Plans

Scale shall be no greater than 1"=30' and profiles showing pavement and shoulder widths, azimuths and curve data, limits of grading, and erosion control. The materials to be used shall be indicated.

11.1.3.3 Traffic Control Plan

Traffic routing and signage shall be in accordance with The Manual on Uniform Traffic Control Devices for Streets and Highways, U.S. Department of Transportation, Federal Highways Administration.

11.1.4 Parking Lots

Show the actual dimensions of parking lots and measurements from a known reference point rather than coordinates at corners. Show the number of parking spaces.

11.1.5 Sanitary Sewer Plan

Scale shall be 1"=30' and profiles showing location and elevation of pipe, thrust blocks, manholes, etc. Materials and construction of main and appurtenances shall be indicated. Specifications shall be provided.

11.1.6 Water Supply Line Plans

Scale shall be 1"=30' and profiles showing locations of valves, thrust blocks, connections, etc. Materials shall be indicated and specifications shall be provided for valves, pipes, etc.

11.1.7 Electrical Plan Requirements

11.1.7.1 Required diagrams and details on Site Electrical Drawings.

a. On-Site Electrical Distribution Plan:
b. On-Site One Line Diagram.
c. On-Site Distribution Transformer Schedule: Provide with the following headings:

Transformer Designation.
Transformer Size (KVA).
Building(s) Served.
Primary Phase(s) and Circuit to which connected.

d. On-Site Details (Site Lighting, Trenching, Pad-Mounted Transformer, etc.).

11.1.8 Specifications

Provide final specifications which include all sections which apply to site/utility work.

11.1.9 Design Analysis

Design analysis shall include design calculations fully developed to support the design of the site and utility systems included in this submittal.

11.1.10 Geotechnical

Soils analysis and geotechnical report will be furnished by the Government with the RFP. Any additional data necessary for the design will be obtained by the Contractor. Geotechnical information must be provided to support all assumptions and design parameters utilized in the presented site/utility design as applicable.

11.1.11 Lawn and Landscaping Irrigation System

The design submittal shall include drawings clearly showing the piping layout, location of sprinkler heads and drip irrigation coordinated with the landscaping plan, control valves, backflow preventers, rain check switches, controllers, etc. Indicate buildings, walks, shrubbery, trees, and other obstacles that might interfere with the proper operation of the sprinkler system. A design analysis calculating the pressures at each sprinkler head for the capacity and radius of throw is required. Details of the sprinkler head installation, valve boxes, and other irrigation appurtenances shall be submitted.

11.1.12 Landscape, Planting and Turfing

11.1.12.1 The landscape planting design narrative shall describe the analysis of existing site conditions, including an indication of existing plant materials that are to remain on the site. The statement of concept shall indicate specific site problems related to proposed development and the rationale for proposed plant locations. The narrative shall also include a list of suggested types and sizes of plant materials which are to be used, based upon the designated functional and visual criteria.

11.1.12.2 The drawings shall be prepared at a scale which corresponds with the site layout and grading plans and, likewise, shall include reference coordinates, north arrows, graphic scales and appropriate legends. An overall planting layout shall be developed and shall include enlarged detail plans of specific areas, as needed, to clarify requirements. The proposed layout shall indicate shade trees, evergreen trees, flowering trees, shrub masses, etc., according to designated functional and visual locations of planting. A legend which also indicates sizes of plants recommended for each of the above categories shall be included. The drawings and all subsequent plans shall indicate existing and proposed buildings, paved areas, signs, light standards, transformers, dumpster areas, storm drainage system, and other structures and utilities.

11.1.12.3 Landscape, Planting and Turfing

Final design drawing(s) shall include a complete schedule of plant materials that indicates their botanical and common names, plan symbols, quantities, sizes, condition furnished, and pertinent remarks. Scale of drawing shall be prepared at 1" = 30'. Drawing shall correspond with the site layout and grading plans and reference coordinates, north arrows, graphic scales and appropriate legends. An overall planting layout shall be developed and shall include enlarged detail plans of specific areas as needed, to clarify requirements. Final design drawings, indicating proposed plants by a (+) mark for the plant location and a circle which is scaled at approximately 2/3 the ultimate growth spread (diameter) of plants, shall also include a complete schedule of plant materials which indicates botanical and common names, plan symbols, quantities, sizes, condition furnished, and pertinent remarks. Final drawings shall also include the basic details for installation of tree, shrub, and ground cover planting, as well as any other applicable details for clarification of specific project requirements.

11.2 The preliminary conformance review submittal shall conform with paragraph 3.3 and shall contain as a minimum, the following:

11.2.1 Architectural

11.2.1.1 Design narrative shall provide a summary of functional space relationships, as well as circulation. There shall also be a general statement for the rationale behind the major design decisions.

11.2.1.2 Architectural Floor Plans shall indicate dimensions, columns lines, and detail references. Toilets and other specialized areas shall be drawn to 1/4" scale and shall show any needed interior features.

11.2.1.3 Finish schedule shall indicate material, finishes, colors and any special interior design features such as soffits, fascias, and lighting troughs, etc.

11.2.1.4 All required equipment shall be shown on the drawings with an equipment list.

11.2.1.5 List any special graphics requirements that will be provided.

11.2.1.6 Schedules shall be provided for both doors and windows. These schedules shall indicate sizes, types, and details for all items shown on floor plans.

11.2.1.7 Hardware sets using BHMA designations.

11.2.1.8 Composite floor plan showing all prewired workstations. Also show typical elevations of each type of workstation.

11.2.1.9 SID package.

11.2.1.10 Fire Protection and Life Safety Analysis. This analysis must be performed by a Registered Fire Protection Engineer (FPE). NICET certification is not sufficient to address this requirement.

11.2.2 Omitted
11.2.3 Omitted

11.2.4 Structural Systems

11.2.4.1 State the live loads to be used for design. Include roof and floor loads; wind loads, lateral earth pressure loads, seismic loads, etc., as applicable.

11.2.4.2 Describe the method of providing lateral stability for the structural system to meet seismic and wind load requirements. Include sufficient calculations to verify the adequacy of the method.

11.2.4.3 Furnish calculations for all principal roof, floor, and foundation members.

11.2.4.4 This submittal shall include drawings showing roof and floor framing plans as applicable. Principal members will be shown on the plans. A foundation plan shall also be furnished showing main footings and grade beams where applicable. Where beam, column, and footing schedules are used, show schedules and fill in sufficient items to indicate method to be used. Show typical bar bending diagram if applicable. Typical sections shall be furnished for roof, floor, and foundation conditions. Structural drawings for proposals and submittals shall be separate from architectural drawings.

11.2.4.5 Provide any computer analyses used. The software shall be widely accepted, commercially available programs and complete documentation of the input and output of the program must be provided.

11.2.4.6 Provide complete seismic analyses for all building structural components. Seismic calculations shall clearly demonstrate compliance with all requirements set forth in the Statement of Work.

11.2.5 Plumbing Systems

11.2.5.1 List all references used in the design including Government design documents and industry standards.

11.2.5.2 Provide justification and brief description of the types of plumbing fixtures, piping materials and equipment proposed for use.

11.2.5.3 Prepare detail calculations for systems such as sizing of domestic hot water heater and piping; natural gas piping.

11.2.5.4 Indicate locations and general arrangement of plumbing fixtures and major equipment.

11.2.5.5 Include plan and isometric riser diagrams of all areas including hot water, cold water, waste and vent piping. Piping layouts and risers should also include natural gas (and meter as required), and other specialty systems as applicable.

11.2.5.6 Include equipment and fixture connection schedules with descriptions, capacities, locations, connection sizes and other information as required.

11.2.6 Fire Protection/Suppression

11.2.6.1 List all references used in the design including Government design documents and industry standards used to generate the fire protection analysis.

11.2.6.2 Classify each building in accordance with fire zone, building floor areas and height and number of stories. This information shall be contained in the fire protection analysis.

11.2.6.3 Discuss and provide description of required fire protection requirements including extinguishing equipment, detection equipment, alarm equipment and water supply. Alarm and detection equipment shall interface to requirements of electronic systems. This information shall be contained in the fire protection design analysis.

11.2.6.4 Prepare a plan for each floor of each building that presents a compendium of the total fire protection features being incorporated into the design. Provide the following types of information:

The location and rating of any fire-resistive construction such as occupancy separations, area separations, exterior walls, shaft enclosures, corridors, stair enclosures, exit passageways, etc.

The location and coverage of any fire detection systems.

The location and coverage of any fire suppression systems (sprinkler risers, standpipes, etc.).

The location of any other major fire protection equipment.

Indicate any hazardous areas and their classification.

11.2.6.5 Prepare a schedule describing the internal systems with the following information: fire hazard and occupancy classifications, building construction type, GPM/square foot sprinkler density, area of operation and other as required.

11.2.6.6 Hydraulic calculations based on water flow test shall be prepared for each sprinkler system to insure that flow and pressure requirements can be met with current water supply. Include copies of Contractor water flow testing done to certify the available water source.

11.2.7 Low Voltage Systems

Electronic Systems responsibilities include the following:

Fire Detection and Alarm System
Fire Suppression System Control

Telephone System
Cable Television System
Special Grounding Systems
Cathodic Protection

11.2.7.1 The design analysis shall include all calculations required to support design decisions and estimates at this stage of design. The analysis shall include specific criteria furnished, conference minutes and cost analyses of all systems considered.

11.2.7.2 Design of the fire alarm and detection system shall include layout drawings for all devices and a riser diagram showing the control panel, annunciator panel, all zones, radio transmitter and interfaces to other systems (HVAC, sprinkler, etc.).

11.2.7.3 Specify all components of the fire suppression (FS) system in the FS section of the specifications. Provide a clear description of how the system will operate and interact with other systems such as the fire alarm system. Include a riser diagram on the drawings showing principal components and

interconnections with other systems. Include FS system components on drawing legend. All components shown of floor plans shall be designated as FS system components (as opposed to Fire Alarm components). Show the location of FS control panels, HVAC control devices, sensors, and 120V power panel connections on the floor plans. Indicate zoning of areas by numbers (1, 2, 3) and detectors subzoned for cross zoning by letter designations (A and B). Differentiate between ceiling mounted and underfloor detectors with distinct symbols and indicate subzone of each.

11.2.7.4 Show location of telephone outlets (including pay phones) on the plans. Include legend and symbol definition to indicate height above finished floor. Show Telephone Conduit System Riser Diagram. Size conduit on Riser Diagram. Do not show conduit runs between backboard and outlets on the floor plans. Underground telephone distribution conduit shall be shown on either the electrical or electronic site plan.

11.2.7.5 Grounding System

The specifications and drawings shall completely reflect all of the design requirements. The specifications shall require field tests (in the construction phase), witnessed by the Contracting Officer, to determine the effectiveness of the grounding system. The design shall include drawings showing existing construction. Verification of the validity of any existing drawings and/or any other data furnished by the Government shall be the responsibility of the engineering services firm.

11.2.7.6 Provide a statement describing the extent of any exterior work such as telephone lines, cable television (TV) distribution cables, duct banks, etc., outside of 5 feet from the building line.

11.2.7.7 Provide the name of the licensed corrosion engineer or NACE specialist. Provide the following for cathodic protection systems:

Clearly define areas of structures or components in soil or water to be protected.

Type system recommended, comparison of systems, cost estimates showing all equipment alternatives.

Calculations on all systems that are considered showing all information and descriptions.

11.2.7.7.1 Design of Cathodic Protection

The design shall clearly provide a thorough and comprehensive specification and drawing. The design plans and specifications shall show extent of the facilities to be protected, location and type of anodes, location of test points, details for sectionalizing an underground piping system. This design shall be complete enough to purchase equipment and build without design changes to meet criteria of protection.

11.2.7.8 Exterior work to be shown on electrical site plan.

Existing and new communications service lines, both overhead and underground, shall be properly identified.

Show removals and relocations, if any.

11.2.7.9 Provide a descriptive narrative of all electronic systems that are required for project. Define any hazardous areas (as defined in the National Electric Code) and indicate the type of equipment proposed for use in such areas. Show the location of all electronic system panels, etc., on the floor

plans. Show the proposed riser diagrams for all systems. Show sizes of all conduit, wires, cables, panels, etc. Provide a complete symbol legend for all devices or equipment shown on the plans. For work requiring removals or demolition, the designer shall show by use of drawings or narrative, how demolition work is to be done.

11.2.8 Electrical and Mechanical Systems

Provide all information as required on the 100% design submittal developed to 50% completion.

11.2.9 Specifications

Draft of specifications for housing units, including index and trade sections.

11.3 The 100% design submittal shall conform with paragraph 3.4 and shall contain, as a minimum, the following items for all submittals:

11.3.1 General

A complete set of construction documents, plans and specifications at the same level of detail as if the project were to be bid including a complete list of equipment, fixtures and materials to be used. The final drawings are an extension of the reviewed 60% drawings and are to include the 60% comments and responses. All details shall be shown on the drawings.

11.3.2 The design analysis is an extension of the reviewed 60% design analysis and supports and verifies that the design complies with the requirements of the project.

11.3.3 Submit marked up specifications. The specifications shall be coordinated with the drawings and shall describe in detail all items shown on the drawings.

11.3.4 Architectural

11.3.4.1 All architectural drawings shall be coordinated with the other engineering disciplines. Ensure that the plans are in compliance with the applicable codes. It will be the Contractor's responsibility to implement the comments generated from any design review submittal as well as verify the consistency between plans and specification. The evaluation of the Contractor's submittals shall be based on degree to which the submittal meet the requirements set forth in this document and the specifications.

11.3.4.2 Prewired Workstation Composite Floor Plans

Prewired workstation typicals - elevations and component inventory. Prewired workstation panel identification plan with electrical outlet placement including base feed.

11.3.4.3 SID package.

11.3.4.4 Fire Protection and Life Safety Analysis

This analysis must be performed by a Registered Fire Protection Engineer (FPE). NICET certification is not sufficient to address this requirement.

11.3.5 Structural Design

11.3.5.1 Furnish complete checked calculations for all structural members. Incorporate any changes required by comments on 50% Design Submittal.

11.3.5.2 Prior to this submittal, structural drawings shall be coordinated with all other design disciplines.

11.3.5.3 The final structural drawings shall contain the following information as a set of general notes:

The allowable soil bearing value.
The design stresses of structural materials used.
The design live loads used in the design of various portions of the structures.
The design wind speed.
The seismic zone and the "K", "C", "I" and "Z" values used in design.

11.3.5.4 All structural drawings and calculations shall be checked and stamped by the designer of record (a registered Professional Engineer).

11.3.6 Omitted

11.3.7 Specific Mechanical and Plumbing Requirements

11.3.7.1 Required Plans, Diagrams, Schedules and Details on Unit Mechanical Drawings

11.3.7.1.1 Mechanical Floor Plan

The floor plans shall show all principle architectural features of the building which will affect the mechanical design. The floor plans shall also show the following:

Room designations.
Mechanical legend and applicable notes.
Location of all ductwork or piping (double line ductwork required).
Location and capacity of all terminal units (i.e., registers, diffusers, grilles, hydronic baseboards).
Exhaust fan and range hood location.
Size of all ductwork and piping.
Thermostat location.
Location of heating/cooling plant (i.e., boiler, chiller, cooling tower, etc).
Location of all air handling equipment.
Return air paths (i.e., undercut doors, transfer grilles).
Flue piping size and location.
Piping diagram for forced hot water system (if used).
Fuel supply and return piping.

11.3.7.1.2 Equipment Schedule

Complete equipment schedules shall be provided. Schedule shall also include:

Capacity
Electrical characteristics
Efficiency (if applicable)
Manufacturer's name
Optional features to be provided
Physical size

11.3.7.1.3 Details: Construction details, sections, elevations, etc. shall be provided where required for clarification of methods and materials of design. Roof and exterior wall penetrations shall be detailed on the drawings.

11.3.7.2 Plumbing Floor Plan: The floor plan shall show all principal architectural features of the building which will affect the plumbing design. Separate plumbing plans will not be required if sufficient information can be shown on the mechanical plans to meet the requirements shown above. The floor plan shall also show the following:

Room designations.
Fixture Schedule.
Location of utility entrances.
Waste and water pipe location and size.
Fixture designations.

11.3.7.3 Design Analysis

Complete design calculations for mechanical systems. Include computations for sizing PM&E equipment, air duct design, HVAC piping design, HVAC load calculations and U-factors for ceilings, roofs and exterior walls and floors. Contractor shall employ commercially available energy analysis techniques to determine the energy performance of all passive systems and features. Use of hourly energy load computer simulation (e.g., TRNSYS, HAP, Trace, DOE 2.1 Blast, etc.) is required. These calculations can be used to size the mechanical systems. Based on the results of calculations, provide a complete list of the materials and equipment proposed for heating and plumbing, with the manufacturer's published cataloged product installation specifications and roughing-in data. The heating and cooling equipment data shall include the manufacturer's wiring diagrams, installation specifications, ARI certification, and the standard warranty for the equipment.

11.3.7.4 Energy calculations shall be in accordance with UFC 3-400-01. Provide ASHRAE 90.1 compliance documentation including input and output data.

11.3.8 Specific Electrical Requirements

11.3.8.1 Required Plans, Diagrams, Schedules, and Details on Unit Electrical Drawings:

11.3.8.1.1 Electrical Floor Plan

The floor plans shall show all principle architectural features of the building which will affect the electrical design. The floor plan shall also show the following:

Room designations.
Electrical legend and applicable notes.
Lighting fixtures, properly identified.
Location of all fire alarm devices.
Location of telephone and cable TV outlets.
Switches for control of lighting.
Receptacles.
Location and designation of panelboards. Plans should clearly indicate type of mounting required (flush or surface) and be reflected accordingly in specifications. Service entrance (conduit and main disconnect).
Location, designation and rating of motors and/or equipment which requires electrical service. Show method of termination and/or connection to motors and/or equipment. Show necessary junction boxes, disconnects, controllers (approximate only), conduit stubs, and receptacles required to serve the motor and/or equipment.

11.3.8.1.2 Building Riser Diagram (from pad-mounted transformer to unit load center panelboard)

Indicate the types and sizes of electrical equipment and wiring. Include grounding and metering requirements.

11.3.8.1.3 Load Center Panelboard Schedule(s)

Schedule shall indicate the following information:

Panelboard Characteristics (Panel Designation, Voltage, Phase, Wires, Main Breaker Rating and Mounting.
Branch Circuit Designations.
Load Designations.
Circuit Breaker Characteristics. (Number of Poles, Trip Rating, AIC Rating)
Branch Circuit Connected Loads (AMPS).
Special Features.

11.3.8.1.4 Lighting Fixture Schedule (Schedule shall indicate the following information:)

Fixture Designation.
General Fixture Description.
Number and Type of Lamp(s).
Type of Mounting.
Special Features.

11.3.8.1.5 Details

Construction details, sections, elevations, etc., shall be provided where required for clarification of methods and materials of design.

11.3.8.2 Required Electrical Design Analysis

Design analysis and calculations for the electrical systems shall be prepared by a licensed professional engineer with experience in family housing, and shall be stamped as such. The design analysis shall be separately bound, in one or more volumes. Show functional and engineering criteria, design information, and calculations applicable to the project. The analysis shall be organized in a format appropriate for review, approval, and record purposes. The design calculations shall indicate methods and references identified, and shall explain assumptions and conclusions.

11.3.8.2.1 Voltage Drop (VD) and Short Circuit Calculations

Select conductor sizes of primary feeders, site lighting circuits, service laterals, and unit feeder conductors. Calculate maximum length for each phase of each primary circuit, using a maximum allowable VD for each circuit. Calculate voltage drops for each conductor. Maximum allowable voltage drop for site lighting and service laterals is 3%. The combined voltage drop for the service laterals, unit feeders, and branch circuit cannot exceed 5%. Calculate the available fault current at the main breaker at each service entrance for each living unit panel. Provide a coordination study to support breaker selection.

11.3.9 Specifications

Provide final specifications. The Contractor shall make final identification of all materials and finishes at this stage.

11.4 Design Complete Submittal (Corrected Final)

11.4.1 Design Drawings

Drawings shall be 100% complete, signed and sealed by the designer of record. All previous review comments shall be incorporated.

11.4.2 Design Analysis

Complete design analysis for all design disciplines. The final Fire Protection and Life Safety Analysis shall be included in the Design Analysis.

11.4.3 Comment Response Package

Complete package showing all comments from all previous reviews and the respective response and disposition.

11.4.4 This submittal shall include all drawings and design information from the 100% site/utility submittal to form a complete design package.

12. DESIGN RELATED PRODUCTS

12.1 Architectural Renderings

Contractor shall provide the original and three copies of each ground level perspective artist's renderings of completed typical facilities with walks, parking, and landscaping. Renderings shall be no smaller than 14" x 18" or larger than 28" x 36", multi-colored, and shall be suitably titled, matted, and framed.

12.2 DD Form 1354

Three sets of DD Form 1354, Transfer and Acceptance of Military Real Property shall be prepared in accordance with DA Pamphlet 415-28 available at http://www.usapa.army.mil/gils/ and submitted to the Contracting Officer. The DD Form 1354 will require input from both the design agent and the Contractor. The form must be completed in English units.

12.3 Submittal Register, ENG FORM 4288

The Contractor shall complete and submit three copies of a "preliminary" Eng Form 4288, Submittal Register to Contracting Officer. The "preliminary" Eng Form 4288, Submittal Register shall have the column "Submittal Identification", "Specification Paragraph Number", "Description of Submittal" "Type of Submittal", and "Remarks" completed; the Contractor shall identify whether the submittal is for "Government Approval" or for "Government Information" under the column "Remarks." The "final" Eng Form 4288, Submittal Register, shall be in accordance with paragraph Submittal Register in this section.

12.4 Reproduction

Upon Government approval of 100% design documents, the original will be returned to the Contractor for reproduction purposes. The Contractor will be responsible for his own reproduction as well as reproduction for Government use. The Government will require twice the number of copies of the plans and specifications as were required for the review stages. No color boards will be required. The originals will be retained by the Contractor for recording of as-built conditions. Upon completion of the project, the original design documents corrected to reflect as-built conditions will be supplied to the Government.

13. PAYMENT DURING DESIGN

Payments, as authorized by the Authorized Representative of the Contracting Officer (COR), will be made monthly for the amount and value of the work and services performed by the Contractor. This estimate will be verified by the Contracting Officer utilizing the progress charts or the CONTRACTOR-PREPARED NETWORK ANALYSIS SYSTEM submitted by the Contractor and independent analyses of progress. See Contract Clause entitled PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS for additional information.

-- END OF SECTION --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01312A

QUALITY CONTROL SYSTEM (QCS)

08/01

1.1 GENERAL
1.1.1 Correspondence and Electronic Communications
1.1.2 Other Factors
1.2 QCS SOFTWARE
1.3 SYSTEM REQUIREMENTS
1.4 RELATED INFORMATION
1.4.1 QCS User Guide
1.4.2 Contractor Quality Control(CQC) Training
1.5 CONTRACT DATABASE
1.6 DATABASE MAINTENANCE
1.6.1 Administration
1.6.1.1 Contractor Information
1.6.1.2 Subcontractor Information
1.6.1.3 Correspondence
1.6.1.4 Equipment
1.6.1.5 Management Reporting
1.6.2 Finances
1.6.2.1 Pay Activity Data
1.6.2.2 Payment Requests
1.6.3 Quality Control (QC)
1.6.3.1 Daily Contractor Quality Control (CQC) Reports.
1.6.3.2 Deficiency Tracking.
1.6.3.3 Three-Phase Control Meetings
1.6.3.4 Accident/Safety Tracking.
1.6.3.5 Features of Work
1.6.3.6 QC Requirements
1.6.4 Submittal Management
1.6.5 Schedule
1.6.6 Import/Export of Data
1.7 IMPLEMENTATION
1.8 DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM
1.8.1 File Medium
1.8.2 Disk or CD-ROM Labels
1.8.3 File Names
1.9 MONTHLY COORDINATION MEETING
1.10 NOTIFICATION OF NONCOMPLIANCE

-- End of Section Table of Contents --

UFGS-01312A (August 2002)

SECTION 01312A

QUALITY CONTROL SYSTEM (QCS)
08/01

1.1 GENERAL

The Government will use the Resident Management System for Windows (RMS) to assist in its monitoring and administration of this contract. The Contractor shall use the Government-furnished Construction Contractor Module of RMS, referred to as QCS, to record, maintain, and submit various information throughout the contract period. This joint Government-Contractor use of RMS and QCS will facilitate electronic exchange of information and overall management of the contract. QCS provides the means for the Contractor to input, track, and electronically share information with the Government in the following areas:

Administration
Finances
Quality Control
Submittal Monitoring
Scheduling
Import/Export of Data

1.1.1 Correspondence and Electronic Communications

For ease and speed of communications, both Government and Contractor will, to the maximum extent feasible, exchange correspondence and other documents in electronic format. Correspondence, pay requests and other documents comprising the official contract record shall also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

1.1.2 Other Factors

Particular attention is directed to Contract Clause, "Schedules for Construction Contracts", Contract Clause, "Payments", Section 01320A, PROJECT SCHEDULE, Section 01330, SUBMITTAL PROCEDURES, and Section 01451A, CONTRACTOR QUALITY CONTROL, which have a direct relationship to the reporting to be accomplished through QCS. Also, there is no separate payment for establishing and maintaining the QCS database; all costs associated therewith shall be included in the contract pricing for the work.

1.2 QCS SOFTWARE

QCS is a Windows-based program that can be run on a stand-alone personal computer or on a network. The Government will make available the QCS software to the Contractor after award of the construction contract. Prior to the Pre-Construction Conference, the Contractor shall be responsible to download, install and use the latest version of the QCS software from the Government's RMS Internet Website. Upon specific justification and request by the Contractor, the Government can provide QCS on 3-1/2 inch high-density diskettes or CD-ROM. Any program updates of QCS will be made available to the Contractor via the Government RMS Website as they become

available.

1.3 SYSTEM REQUIREMENTS

The following listed hardware and software is the minimum system configuration that the Contractor shall have to run QCS:

Hardware

IBM-compatible PC with 500 MHz Pentium or higher processor

128+ MB RAM for workstation / 256+ MB RAM for server

1 GB hard drive disk space for sole use by the QCS system

3 1/2 inch high-density floppy drive

Compact disk (CD) Reader, 8x speed or higher

SVGA or higher resolution monitor (1024 x 768, 256 colors)

Mouse or other pointing devise

Windows compatible printer (Laser printer must have 4+ MB of RAM)

Connection to the Internet, minimum 56 BPS

Software

MS Windows 98, ME, NT, or 2000

Word Processing software compatible with MS Word 97 or newer

Latest version of : Netscape Navigator, Microsoft Internet Explorer, or other browser that supports HTML 4.0 or higher

Electronic mail (E-mail), MAPI compatible

Virus protection software that is regularly upgraded with all issued manufacturer's updates

1.4 RELATED INFORMATION

1.4.1 QCS User Guide

After contract award, the Contractor shall download instructions for the installation and use of QCS from the Government RMS Internet Website; the Contractor can obtain the current address from the Government. In case of justifiable difficulties, the Government will provide the Contractor with a CD-ROM containing these instructions.

1.4.2 Contractor Quality Control(CQC) Training

The use of QCS will be discussed with the Contractor's QC System Manager during the mandatory CQC Training class.

1.5 CONTRACT DATABASE

Prior to the pre-construction conference, the Government shall provide the Contractor with basic contract award data to use for QCS. The Government will provide data updates to the Contractor as needed, generally by files attached to E-mail. These updates will generally consist of submittal reviews, correspondence status, QA comments, and other administrative and QA data.

1.6 DATABASE MAINTENANCE

The Contractor shall establish, maintain, and update data for the contract in the QCS database throughout the duration of the contract. The Contractor shall establish and maintain the QCS database at the Contractor's site office. Data updates to the Government shall be submitted by E-mail with file attachments, e.g., daily reports, schedule updates, payment requests. If permitted by the Contracting Officer, a data diskette or CD-ROM may be used instead of E-mail (see Paragraph DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM). The QCS database typically shall include current data on the following items:

1.6.1 Administration

1.6.1.1 Contractor Information

The database shall contain the Contractor's name, address, telephone numbers, management staff, and other required items. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver Contractor administrative data in electronic format via E-mail.

1.6.1.2 Subcontractor Information

The database shall contain the name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor must be listed separately for each trade to be performed. Each subcontractor/trade shall be assigned a unique Responsibility Code, provided in QCS. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver subcontractor administrative data in electronic format via E-mail.

1.6.1.3 Correspondence

All Contractor correspondence to the Government shall be identified with a serial number. Correspondence initiated by the Contractor's site office shall be prefixed with "S". Letters initiated by the Contractor's home (main) office shall be prefixed with "H". Letters shall be numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C".

1.6.1.4 Equipment

The Contractor's QCS database shall contain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

1.6.1.5 Management Reporting

QCS includes a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the quality of the data input, and is maintained in the various sections

of QCS. Among these reports are: Progress Payment Request worksheet, QA/QC comments, Submittal Register Status, Three-Phase Inspection checklists.

1.6.2 Finances

1.6.2.1 Pay Activity Data

The QCS database shall include a list of pay activities that the Contractor shall develop in conjunction with the construction schedule. The sum of all pay activities shall be equal to the total contract amount, including modifications. Pay activities shall be grouped by Contract Line Item Number (CLIN), and the sum of the activities shall equal the amount of each CLIN. The total of all CLINs equals the Contract Amount.

1.6.2.2 Payment Requests

All progress payment requests shall be prepared using QCS. The Contractor shall complete the payment request worksheet and include it with the payment request. The work completed under the contract, measured as percent or as specific quantities, shall be updated at least monthly. After the update, the Contractor shall generate a payment request report using QCS. The Contractor shall submit the payment requests with supporting data by E-mail with file attachment(s). If permitted by the Contracting Officer, a data diskette may be used instead of E-mail. A signed paper copy of the approved payment request is also required, which shall govern in the event of discrepancy with the electronic version.

1.6.3 Quality Control (QC)

QCS provides a means to track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and support other contractor QC requirements. The Contractor shall maintain this data on a daily basis. Entered data will automatically output to the QCS generated daily report. The Contractor shall provide the Government a Contractor Quality Control (CQC) Plan within the time required in Section 01451A, CONTRACTOR QUALITY CONTROL. Within seven calendar days of Government acceptance, the Contractor shall submit a data diskette or CD-ROM reflecting the information contained in the accepted CQC Plan: schedule, pay activities, features of work, submittal register, QC requirements, and equipment list.

1.6.3.1 Daily Contractor Quality Control (CQC) Reports.

QCS includes the means to produce the Daily CQC Report. The Contractor may use other formats to record basic QC data. However, the Daily CQC Report generated by QCS shall be the Contractor's official report. Data from any supplemental reports by the Contractor shall be summarized and consolidated onto the QCS-generated Daily CQC Report. Daily CQC Reports shall be submitted as required by Section 01451A, CONTRACTOR QUALITY CONTROL. Reports shall be submitted electronically to the Government using E-mail or diskette within 24 hours after the date covered by the report. Use of either mode of submittal shall be coordinated with the Government representative. The Contractor shall also provide the Government a signed, printed copy of the daily CQC report.

1.6.3.2 Deficiency Tracking.

The Contractor shall use QCS to track deficiencies. Deficiencies identified by the Contractor will be numerically tracked using QC punch

list items. The Contractor shall maintain a current log of its QC punch list items in the QCS database. The Government will log the deficiencies it has identified using its QA punch list items. The Government's QA punch list items will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of both QC and QA punch list items.

1.6.3.3 Three-Phase Control Meetings

The Contractor shall maintain scheduled and actual dates and times of preparatory and initial control meetings in QCS.

1.6.3.4 Accident/Safety Tracking.

The Government will issue safety comments, directions, or guidance whenever safety deficiencies are observed. The Government's safety comments will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of the safety comments. In addition, the Contractor shall utilize QCS to advise the Government of any accidents occurring on the jobsite. This brief supplemental entry is not to be considered as a substitute for completion of mandatory reports, e.g., ENG Form 3394 and OSHA Form 200.

1.6.3.5 Features of Work

The Contractor shall include a complete list of the features of work in the QCS database. A feature of work may be associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

1.6.3.6 QC Requirements

The Contractor shall develop and maintain a complete list of QC testing, transferred and installed property, and user training requirements in QCS. The Contractor shall update all data on these QC requirements as work progresses, and shall promptly provide this information to the Government via QCS.

1.6.4 Submittal Management

The Government will provide the initial submittal register, ENG Form 4288, SUBMITTAL REGISTER, in electronic format. Thereafter, the Contractor shall maintain a complete list of all submittals, including completion of all data columns. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. The Contractor shall use QCS to track and transmit all submittals. ENG Form 4025, submittal transmittal form, and the submittal register update, ENG Form 4288, shall be produced using QCS. RMS will be used to update, store and exchange submittal registers and transmittals, but will not be used for storage of actual submittals.

1.6.5 Schedule

The Contractor shall develop a construction schedule consisting of pay activities, in accordance with Contract Clause "Schedules for Construction Contracts", or Section 01320A, PROJECT SCHEDULE, as applicable. This schedule shall be input and maintained in the QCS database either manually or by using the Standard Data Exchange Format (SDEF) (see Section 01320A

PROJECT SCHEDULE). The updated schedule data shall be included with each pay request submitted by the Contractor.

1.6.6 Import/Export of Data

QCS includes the ability to export Contractor data to the Government and to import submittal register and other Government-provided data, and schedule data using SDEF.

1.7 IMPLEMENTATION

Contractor use of QCS as described in the preceding paragraphs is mandatory. The Contractor shall ensure that sufficient resources are available to maintain its QCS database, and to provide the Government with regular database updates. QCS shall be an integral part of the Contractor's management of quality control.

1.8 DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM

The Government-preferred method for Contractor's submission of updates, payment requests, correspondence and other data is by E-mail with file attachment(s). For locations where this is not feasible, the Contracting Officer may permit use of computer diskettes or CD-ROM for data transfer. Data on the disks or CDs shall be exported using the QCS built-in export function. If used, diskettes and CD-ROMs will be submitted in accordance with the following:

1.8.1 File Medium

The Contractor shall submit required data on 3-1/2 inch double-sided high-density diskettes formatted to hold 1.44 MB of data, capable of running under Microsoft Windows 95 or newer. Alternatively, CD-ROMs may be used. They shall conform to industry standards used in the United States. All data shall be provided in English.

1.8.2 Disk or CD-ROM Labels

The Contractor shall affix a permanent exterior label to each diskette and CD-ROM submitted. The label shall indicate in English, the QCS file name, full contract number, contract name, project location, data date, name and telephone number of person responsible for the data.

1.8.3 File Names

The Government will provide the file names to be used by the Contractor with the QCS software.

1.9 MONTHLY COORDINATION MEETING

The Contractor shall update the QCS database each workday. At least monthly, the Contractor shall generate and submit an export file to the Government with schedule update and progress payment request. As required in Contract Clause "Payments", at least one week prior to submittal, the Contractor shall meet with the Government representative to review the planned progress payment data submission for errors and omissions. The Contractor shall make all required corrections prior to Government acceptance of the export file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will be returned. The Government will not process progress payments until an

acceptable QCS export file is received.

1.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification.

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01320A

PROJECT SCHEDULE

05/02

PART 1 GENERAL

1.1 REFERENCES
1.2 QUALIFICATIONS

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS
3.2 BASIS FOR PAYMENT
3.3 PROJECT SCHEDULE
3.3.1 Use of the Critical Path Method
3.3.2 Level of Detail Required
3.3.2.1 Activity Durations
3.3.2.2 Design and Permit Activities
3.3.2.3 Procurement Activities
3.3.2.4 Critical Activities
3.3.2.5 Government Activities
3.3.2.6 Responsibility
3.3.2.7 Work Areas
3.3.2.8 Modification or Claim Number
3.3.2.9 Bid Item
3.3.2.10 Phase of Work
3.3.2.11 Category of Work
3.3.2.12 Feature of Work
3.3.3 Scheduled Project Completion
3.3.3.1 Project Start Date
3.3.3.2 Constraint of Last Activity
3.3.3.3 Early Project Completion
3.3.4 Interim Completion Dates
3.3.4.1 Start Phase
3.3.4.2 End Phase
3.3.4.3 Phase X
3.3.5 Default Progress Data Disallowed
3.3.6 Out-of-Sequence Progress
3.3.7 Negative Lags
3.4 PROJECT SCHEDULE SUBMISSIONS
3.4.1 Preliminary Project Schedule Submission
3.4.2 Initial Project Schedule Submission
3.4.3 Periodic Schedule Updates
3.4.4 Standard Activity Coding Dictionary
3.5 SUBMISSION REQUIREMENTS
3.5.1 Data Disks
3.5.1.1 File Medium
3.5.1.2 Disk Label
3.5.1.3 File Name

3.5.2 Narrative Report
3.5.3 Approved Changes Verification
3.5.4 Schedule Reports
3.5.4.1 Activity Report
3.5.4.2 Logic Report
3.5.4.3 Total Float Report
3.5.4.4 Earnings Report
3.5.5 Network Diagram
3.5.5.1 Continuous Flow
3.5.5.2 Project Milestone Dates
3.5.5.3 Critical Path
3.5.5.4 Banding
3.5.5.5 S-Curves
3.6 PERIODIC PROGRESS MEETINGS
3.6.1 Meeting Attendance
3.6.2 Update Submission Following Progress Meeting
3.6.3 Progress Meeting Contents
3.6.3.1 Start and Finish Dates
3.6.3.2 Time Completion
3.6.3.3 Cost Completion
3.6.3.4 Logic Changes
3.6.3.5 Other Changes
3.7 REQUESTS FOR TIME EXTENSIONS
3.7.1 Justification of Delay
3.7.2 Submission Requirements
3.7.3 Additional Submission Requirements
3.8 DIRECTED CHANGES
3.9 OWNERSHIP OF FLOAT

-- End of Section Table of Contents --

UFGS-01320A (May 2002)

SECTION 01320A

PROJECT SCHEDULE
05/02

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of the specification to the extent referenced. The publications are referenced in the text by basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

ER 1-1-11	(1995) Progress, Schedules, and Network Analysis Systems

1.2 QUALIFICATIONS

The Contractor shall designate an authorized representative who shall be responsible for the preparation of all required project schedule reports.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Pursuant to the Contract Clause, SCHEDULE FOR CONSTRUCTION CONTRACTS, a Project Schedule as described below shall be prepared. The scheduling of design and construction shall be the responsibility of the Contractor. Contractor management personnel shall actively participate in its development. Designers, Subcontractors and suppliers working on the project shall also contribute in developing and maintaining an accurate Project Schedule. The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments.

3.2 BASIS FOR PAYMENT

The schedule shall be the basis for measuring Contractor progress. Lack of an approved schedule or scheduling personnel will result in an inability of the Contracting Officer to evaluate Contractor's progress for the purposes of payment. Failure of the Contractor to provide all information, as specified below, shall result in the disapproval of the entire Project Schedule submission and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. In the case where Project Schedule revisions have been directed by the Contracting Officer and those revisions have not been included in the Project Schedule, the Contracting Officer may hold retainage up to the maximum allowed by contract, each payment period, until revisions to the Project Schedule have been made.

3.3 PROJECT SCHEDULE

The computer software system utilized by the Contractor to produce the Project Schedule shall be capable of providing all requirements of this specification. Failure of the Contractor to meet the requirements of this specification shall result in the disapproval of the schedule. Manual methods used to produce any required information shall require approval by the Contracting Officer.

3.3.1 Use of the Critical Path Method

The Critical Path Method (CPM) of network calculation shall be used to generate the Project Schedule. The Contractor shall provide the Project Schedule in the Precedence Diagram Method (PDM).

3.3.2 Level of Detail Required

The Project Schedule shall include an appropriate level of detail. Failure to develop or update the Project Schedule or provide data to the Contracting Officer at the appropriate level of detail, as specified by the Contracting Officer, shall result in the disapproval of the schedule. The Contracting Officer will use, but is not limited to, the following conditions to determine the appropriate level of detail to be used in the Project Schedule:

3.3.2.1 Activity Durations

Contractor submissions shall follow the direction of the Contracting Officer regarding reasonable activity durations. Reasonable durations are those that allow the progress of activities to be accurately determined between payment periods (usually less than 2 percent of all non-procurement activities' Original Durations are greater than 20 days).

3.3.2.2 Design and Permit Activities

Design and permitting activities, including necessary conferences and follow-up actions and design package submission dates, shall be integrated into the schedule.

3.3.2.3 Procurement Activities

Tasks related to the procurement of long lead materials or equipment shall be included as separate activities in the project schedule. Long lead materials and equipment are those materials that have a procurement cycle of over 90 days. Examples of procurement process activities include, but are not limited to: submittals, approvals, procurement, fabrication, and delivery.

3.3.2.4 Critical Activities

The following activities shall be listed as separate line activities on the Contractor's project schedule:

a. Submission and approval of mechanical/electrical layout drawings.

b. Submission and approval of O & M manuals.

c. Submission and approval of as-built drawings.

d. Submission and approval of 1354 data and installed equipment lists.

e. Submission and approval of testing and air balance (TAB).

f. Submission of TAB specialist design review report.

g. Submission and approval of fire protection specialist.

h. Submission and approval of testing and balancing of HVAC plus commissioning plans and data.

i. Air and water balance dates.

j. HVAC commissioning dates.

k. Controls testing plan.

l. Controls testing.

m. Performance Verification testing.

n. Other systems testing, if required.

o. Prefinal inspection.

p. Correction of punchlist from prefinal inspection.

q. Final inspection.

3.3.2.5 Government Activities

Government and other agency activities that could impact progress shall be shown. These activities include, but are not limited to: approvals, design reviews, environmental permit approvals by State regulators, inspections, utility tie-in, Government Furnished Equipment (GFE) and Notice to Proceed (NTP) for phasing requirements.

3.3.2.6 Responsibility

All activities shall be identified in the project schedule by the party responsible to perform the work. Responsibility includes, but is not limited to, the subcontracting firm, contractor work force, or government agency performing a given task. Activities shall not belong to more than one responsible party. The responsible party for each activity shall be identified by the Responsibility Code.

3.3.2.7 Work Areas

All activities shall be identified in the project schedule by the work area in which the activity occurs. Activities shall not be allowed to cover more than one work area. The work area of each activity shall be identified by the Work Area Code.

3.3.2.8 Modification or Claim Number

Any activity that is added or changed by contract modification or used to justify claimed time shall be identified by a mod or claim code that changed the activity. Activities shall not belong to more than one modification or claim item. The modification or claim number of each activity shall be identified by the Mod or Claim Number. Whenever

possible, changes shall be added to the schedule by adding new activities. Existing activities shall not normally be changed to reflect modifications.

3.3.2.9 Bid Item

All activities shall be identified in the project schedule by the Bid Item to which the activity belongs. An activity shall not contain work in more than one bid item. The bid item for each appropriate activity shall be identified by the Bid Item Code.

3.3.2.10 Phase of Work

All activities shall be identified in the project schedule by the phases of work in which the activity occurs. Activities shall not contain work in more than one phase of work. The project phase of each activity shall be by the unique Phase of Work Code.

3.3.2.11 Category of Work

All Activities shall be identified in the project schedule according to the category of work which best describes the activity. Category of work refers, but is not limited, to the procurement chain of activities including such items as designs, design package submissions design reviews, review conferences, permits, submittals, approvals, procurement, fabrication, delivery, installation, start-up, and testing. The category of work for each activity shall be identified by the Category of Work Code.

3.3.2.12 Feature of Work

All activities shall be identified in the project schedule according to the feature of work to which the activity belongs. Feature of work refers, but is not limited to, a work breakdown structure for the project. The feature of work for each activity shall be identified by the Feature of Work Code.

3.3.3 Scheduled Project Completion

The schedule interval shall extend from NTP to the contract completion date.

3.3.3.1 Project Start Date

The schedule shall start no earlier than the date on which the NTP was acknowledged. The Contractor shall include as the first activity in the project schedule an activity called "Start Project". The "Start Project" activity shall have an "ES" constraint date equal to the date that the NTP was acknowledged, and a zero day duration.

3.3.3.2 Constraint of Last Activity

Completion of the last activity in the schedule shall be constrained by the contract completion date. Calculation on project updates shall be such that if the early finish of the last activity falls after the contract completion date, then the float calculation shall reflect a negative float on the critical path. The Contractor shall include as the last activity in the project schedule an activity called "End Project". The "End Project" activity shall have an "LF" constraint date equal to the completion date for the project, and a zero day duration.

3.3.3.3 Early Project Completion

In the event the project schedule shows completion of the project prior to the contract completion date, the Contractor shall identify those activities that have been accelerated and/or those activities that are scheduled in parallel to support the Contractor's "early" completion. Contractor shall specifically address each of the activities noted in the narrative report at every project schedule update period to assist the Contracting Officer in evaluating the Contractor's ability to actually complete prior to the contract period.

3.3.4 Interim Completion Dates

Contractually specified interim completion dates shall also be constrained to show negative float if the early finish date of the last activity in that phase falls after the interim completion date.

3.3.4.1 Start Phase

The Contractor shall include as the first activity for a project phase an activity called "Start Phase X" where "X" refers to the phase of work. The "Start Phase X" activity shall have an "ES" constraint date equal to the date on which the NTP was acknowledged, and a zero day duration.

3.3.4.2 End Phase

The Contractor shall include as the last activity in a project phase an activity called "End Phase X" where "X" refers to the phase of work. The "End Phase X" activity shall have an "LF" constraint date equal to the completion date for the project, and a zero day duration.

3.3.4.3 Phase X

The Contractor shall include a hammock type activity for each project phase called "Phase X" where "X" refers to the phase of work. The "Phase X" activity shall be logically tied to the earliest and latest activities in the phase.

3.3.5 Default Progress Data Disallowed

Actual Start and Finish dates shall not be automatically updated by default mechanisms that may be included in CPM scheduling software systems. Actual Start and Finish dates on the CPM schedule shall match those dates provided from Contractor Quality Control Reports. Failure of the Contractor to document the Actual Start and Finish dates on the Daily Quality Control report for every in-progress or completed activity, and failure to ensure that the data contained on the Daily Quality Control reports is the sole basis for schedule updating shall result in the disapproval of the Contractor's schedule and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. Updating of the percent complete and the remaining duration of any activity shall be independent functions. Program features which calculate one of these parameters from the other shall be disabled.

3.3.6 Out-of-Sequence Progress

Activities that have posted progress without all preceding logic being satisfied (Out-of-Sequence Progress) will be allowed only on a case-by-case approval of the Contracting Officer. The Contractor shall propose logic corrections to eliminate all out of sequence progress or justify not changing the sequencing for approval prior to submitting an updated project

schedule.

3.3.7 Negative Lags

Lag durations contained in the project schedule shall not have a negative value.

3.4 PROJECT SCHEDULE SUBMISSIONS

The Contractor shall provide the submissions as described below. The data disk, reports, and network diagrams required for each submission are contained in paragraph SUBMISSION REQUIREMENTS.

3.4.1 Preliminary Project Schedule Submission

The Preliminary Project Schedule, defining the Contractor's planned operations for the first 60 calendar days shall be submitted for approval within 20 calendar days after the NTP is acknowledged. The approved preliminary schedule shall be used for payment purposes not to exceed 60 calendar days after NTP.

3.4.2 Initial Project Schedule Submission

The Initial Project Schedule shall be submitted for approval within 40 calendar days after NTP. The schedule shall provide a reasonable sequence of activities which represent work through the entire project and shall be at a reasonable level of detail.

3.4.3 Periodic Schedule Updates

Based on the result of progress meetings, specified in "Periodic Progress Meetings," the Contractor shall submit periodic schedule updates. These submissions shall enable the Contracting Officer to assess Contractor's progress. If the Contractor fails or refuses to furnish the information and project schedule data, which in the judgement of the Contracting Officer or authorized representative is necessary for verifying the Contractor's progress, the Contractor shall be deemed not to have provided an estimate upon which progress payment may be made.

3.4.4 Standard Activity Coding Dictionary

The Contractor shall use the activity coding structure defined in the Standard Data Exchange Format (SDEF) in ER 1-1-11, Appendix A. This exact structure is mandatory, even if some fields are not used.

3.5 SUBMISSION REQUIREMENTS

The following items shall be submitted by the Contractor for the preliminary submission, initial submission, and every periodic project schedule update throughout the life of the project:

3.5.1 Data Disks

Two data disks containing the project schedule shall be provided. Data on the disks shall adhere to the SDEF format specified in ER 1-1-11, Appendix A.

3.5.1.1 File Medium

Required data shall be submitted on 3.5 disks, formatted to hold 1.44 MB of data, under the MS-DOS Version 5. or 6.x, unless otherwise approved by the Contracting Officer.

3.5.1.2 Disk Label

A permanent exterior label shall be affixed to each disk submitted. The label shall indicate the type of schedule (Preliminary, Initial, Update, or Change), full contract number, project name, project location, data date, name and telephone number or person responsible for the schedule, and the MS-DOS version used to format the disk.

3.5.1.3 File Name

Each file submitted shall have a name related to either the schedule data date, project name, or contract number. The Contractor shall develop a naming convention that will ensure that the names of the files submitted are unique. The Contractor shall submit the file naming convention to the Contracting Officer for approval.

3.5.2 Narrative Report

A Narrative Report shall be provided with the preliminary, initial, and each update of the project schedule. This report shall be provided as the basis of the Contractor's progress payment request. The Narrative Report shall include: a description of activities along the two most critical paths, a description of current and anticipated problem areas or delaying factors and their impact, and an explanation of corrective actions taken or required to be taken. The narrative report is expected to relay to the Government, the Contractor's thorough analysis of the schedule output and its plans to compensate for any problems, either current or potential, which are revealed through that analysis.

3.5.3 Approved Changes Verification

Only project schedule changes that have been previously approved by the Contracting Officer shall be included in the schedule submission. The Narrative Report shall specifically reference, on an activity by activity basis, all changes made since the previous period and relate each change to documented, approved schedule changes.

3.5.4 Schedule Reports

The format for each activity for the schedule reports listed below shall contain: Activity Numbers, Activity Description, Original Duration, Remaining Duration, Early Start Date, Early Finish Date, Late Start Date, Late Finish Date, Total Float. Actual Start and Actual Finish Dates shall be printed for those activities in progress or completed.

3.5.4.1 Activity Report

A list of all activities sorted according to activity number.

3.5.4.2 Logic Report

A list of Preceding and Succeeding activities for every activity in ascending order by activity number. Preceeding and succeeding activities shall include all information listed above in paragraph Schedule Reports. A blank line shall be left between each activity grouping.

3.5.4.3 Total Float Report

A list of all incomplete activities sorted in ascending order of total float. Activities which have the same amount of total float shall be listed in ascending order of Early Start Dates. Completed activities shall not be shown on this report.

3.5.4.4 Earnings Report

A compilation of the Contractor's Total Earnings on the project from the NTP until the most recent Monthly Progress Meeting. This report shall reflect the Earnings of specific activities based on the agreements made in the field and approved between the Contractor and Contracting Officer at the most recent Monthly Progress Meeting. Provided that the Contractor has provided a complete schedule update, this report shall serve as the basis of determining Contractor Payment. Activities shall be grouped by bid item and sorted by activity numbers. This report shall: sum all activities in a bid item and provide a bid item percent; and complete and sum all bid items to provide a total project percent complete. The printed report shall contain, for each activity: the Activity Number, Activity Description, Original Budgeted Amount, Total Quantity, Quantity to Date, Percent Complete (based on cost), and Earnings to Date.

3.5.5 Network Diagram

The network diagram shall be required on the initial schedule submission and on monthly schedule update submissions. The network diagram shall depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. The Contracting Officer will use, but is not limited to, the following conditions to review compliance with this paragraph:

3.5.5.1 Continuous Flow

Diagrams shall show a continuous flow from left to right with no arrows from right to left. The activity number, description, duration, and estimated earned value shall be shown on the diagram.

3.5.5.2 Project Milestone Dates

Dates shall be shown on the diagram for start of project, any contract required interim completion dates, and contract completion dates.

3.5.5.3 Critical Path

The critical path shall be clearly shown.

3.5.5.4 Banding

Activities shall be grouped to assist in the understanding of the activity sequence. Typically, this flow will group activities by category of work, work area and/or responsibility.

3.5.5.5 S-Curves

Earnings curves showing projected early and late earnings and earnings to date.

3.6 PERIODIC PROGRESS MEETINGS

Progress meetings to discuss payment shall include a monthly onsite meeting or other regular intervals mutually agreed to at the preconstruction conference. During this meeting the Contractor shall describe, on an activity by activity basis, all proposed revisions and adjustments to the project schedule required to reflect the current status of the project. The Contracting Officer will approve activity progress, proposed revisions, and adjustments as appropriate.

3.6.1 Meeting Attendance

The Contractor's Project Manager and Scheduler shall attend the regular progress meeting.

3.6.2 Update Submission Following Progress Meeting

A complete update of the project schedule containing all approved progress, revisions, and adjustments, based on the regular progress meeting, shall be submitted not later than 4 working days after the monthly progress meeting.

3.6.3 Progress Meeting Contents

Update information, including Actual Start Dates, Actual Finish Dates, Remaining Durations, and Cost-to-Date shall be subject to the approval of the Contracting Officer. As a minimum, the Contractor shall address the following items on an activity by activity basis during each progress meeting.

3.6.3.1 Start and Finish Dates

The Actual Start and Actual Finish dates for each activity currently in-progress or completed .

3.6.3.2 Time Completion

The estimated Remaining Duration for each activity in-progress. Time-based progress calculations shall be based on Remaining Duration for each activity.

3.6.3.3 Cost Completion

The earnings for each activity started. Payment will be based on earnings for each in-progress or completed activity. Payment for individual activities will not be made for work that contains quality defects. A portion of the overall project amount may be retained based on delays of activities.

3.6.3.4 Logic Changes

All logic changes pertaining to NTP on change orders, change orders to be incorporated into the schedule, contractor proposed changes in work sequence, corrections to schedule logic for out-of-sequence progress, lag durations, and other changes that have been made pursuant to contract provisions shall be specifically identified and discussed.

3.6.3.5 Other Changes

Other changes required due to delays in completion of any activity or group

of activities include: 1) delays beyond the Contractor's control, such as strikes and unusual weather. 2) delays encountered due to submittals, Government Activities, deliveries or work stoppages which make re-planning the work necessary. 3) Changes required to correct a schedule which does not represent the actual or planned prosecution and progress of the work.

3.7 REQUESTS FOR TIME EXTENSIONS

In the event the Contractor requests an extension of the contract completion date, or any interim milestone date, the Contractor shall furnish the following for a determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract: justification, project schedule data, and supporting evidence as the Contracting Officer may deem necessary. Submission of proof of delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is obligatory to any approvals.

3.7.1 Justification of Delay

The project schedule shall clearly display that the Contractor has used, in full, all the float time available for the work involved with this request. The Contracting Officer's determination as to the number of allowable days of contract extension shall be based upon the project schedule updates in effect for the time period in question, and other factual information. Actual delays that are found to be caused by the Contractor's own actions, which result in the extension of the schedule, will not be a cause for a time extension to the contract completion date.

3.7.2 Submission Requirements

The Contractor shall submit a justification for each request for a change in the contract completion date of under 2 weeks based upon the most recent schedule update at the time of the NTP or constructive direction issued for the change. Such a request shall be in accordance with the requirements of other appropriate Contract Clauses and shall include, as a minimum:

a. A list of affected activities, with their associated project schedule activity number.

b. A brief explanation of the causes of the change.

c. An analysis of the overall impact of the changes proposed.

d. A sub-network of the affected area.

Activities impacted in each justification for change shall be identified by a unique activity code contained in the required data file.

3.7.3 Additional Submission Requirements

For any requested time extension of over 2 weeks, the Contracting Officer may request an interim update with revised activities for a specific change request. The Contractor shall provide this disk within 4 days of the Contracting Officer's request.

3.8 DIRECTED CHANGES

If the NTP is issued for changes prior to settlement of price and/or time, the Contractor shall submit proposed schedule revisions to the Contracting

Officer within 2 weeks of the NTP being issued. The proposed revisions to the schedule will be approved by the Contracting Officer prior to inclusion of those changes within the project schedule. If the Contractor fails to submit the proposed revisions, the Contracting Officer may furnish the Contractor with suggested revisions to the project schedule. The Contractor shall include these revisions in the project schedule until revisions are submitted, and final changes and impacts have been negotiated. If the Contractor has any objections to the revisions furnished by the Contracting Officer, the Contractor shall advise the Contracting Officer within 2 weeks of receipt of the revisions. Regardless of the objections, the Contractor shall continue to update the schedule with the Contracting Officer's revisions until a mutual agreement in the revisions is reached. If the Contractor fails to submit alternative revisions within 2 weeks of receipt of the Contracting Officer's proposed revisions, the Contractor will be deemed to have concurred with the Contracting Officer's proposed revisions. The proposed revisions will then be the basis for an equitable adjustment for performance of the work.

3.9 OWNERSHIP OF FLOAT

Float available in the schedule, at any time, shall not be considered for the exclusive use of either the Government or the Contractor.

-- End of Section --

SECTION 01330/S
SUBMITTAL PROCEDURES
(DESIGN/BUILD)
10/2000

PART 1 GENERAL

1.1 SUBMITTAL IDENTIFICATION

Submittals required are identified by SD numbers and titles as follows:

SD-01 Preconstruction Submittals

SD-02 Shop Drawings

SD-03 Product Data

SD-04 Samples

SD-05 Design Data

SD-06 Test Reports

SD-07 Certificates

SD-08 Manufacturer's Instructions

SD-09 Manufacturer's Field Reports

SD-10 Operation and Maintenance Data

SD-11 Closeout Submittals

1.2 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.2.1 Designer of Record Approved.

Designer of Record approval is required for extensions of design, critical materials, any deviations from the solicitation, the accepted proposal, or the completed design, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer's Representative. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings". The Contractor shall provide the Government the number of copies designated hereinafter of all Designer of Record approved submittals. The Government may review any or all Designer of Record approved submittals for conformance to the Solicitation and Accepted Proposal. The Government will review all submittals designated as deviating from the Solicitation or Accepted Proposal, as described below.

1.2.2 Government Approved Construction Submittals.

Administrative Contracting Officer approval is required for any deviations from the Solicitation or Accepted Proposal and other items as designated by the Contracting Officer' Representative. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings".

1.2.3 Government Reviewed Extension of Design.

Government review is required for extension of design construction submittals, used to define contract conformity, and for deviation from the completed design. Review will be only for conformance with the contract requirements. Included are only those construction submittals for which the Designer of Record design documents do not include enough detail to ascertain contract compliance. Government review is not required for extensions of design such as structural steel or reinforcement shop drawings.

1.2.4 Information Only.

All submittals not requiring Designer of Record or Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

1.2.5 GOVERNMENT REVIEWED OR "APPROVED" SUBMITTALS

The Contracting Officer's Representative conformance review or approval of submittals shall not be construed as a complete check, but will indicate only that the design, general method of construction, materials, detailing and other information appear to meet the Solicitation and Accepted Proposal. Government Review or approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor, under the Design and CQC requirements of this contract, is responsible for design, dimensions, all design extensions, such as the design of adequate connections and details, etc., and the satisfactory construction of all work. After submittals have been reviewed for conformance or approved, as applicable, by the Contracting Officer' Representative, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.3 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer's Representative, obtain the Designer of Record's approval, when applicable, and promptly furnish a corrected submittal in the form an number of copies specified for the initial submittal. Any "information only" submittal found to contain errors or unapproved deviations from the Solicitation or Accepted Proposal shall be resubmitted as one requiring "approval" action, requiring both Design of Record and Government approval. If the Contractor considers any correction indicated by the Government on the submittals to constitute a change to the contract, it shall promptly provide a notice in accordance with the Contract Clause "Changes" to the Contracting Officer's Representative.

1.4 WITHHOLDING OF PAYMENT

No payment for materials incorporated in the work will be made if all required Designer of Record or required Government approvals have not been obtained. No payment will be made for any materials incorporated into the work for any conformance review submittals or information only submittals found to contain errors or deviations from the Solicitation or Accepted Proposal.

PART 2 PRODUCTS (Not used)

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) System Manager and each item shall be stamped, signed, and dated by the CQC System Manager indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

3.1.1 Design Submittals

The Contractor shall provide design submittals in accordance with Section 01012 entitled “DESIGN AFTER AWARD”.

3.2 SUBMITTAL REGISTER

The Contractor's Designer(s) of Record shall develop a complete list of submittals during design. The Designer of Record shall identify required submittals in the specifications. Use the list to prepare ENG Form 4288 Submittal Register or a computerized equivalent. The list may not be all inclusive and additional submittals may be required by other parts of the contract. The Contractor is required to complete ENG Form 4288 (including columns "a" through "r") and submit to the Contracting Officer for approval within 30 calendar days after Notice to Proceed. The approved submittal register will serve as a scheduling document for submittals and will be used to control submittal actions throughout the contract period. The submit dates and need dates used in the submittal register shall be coordinated with dates in the Contractor prepared progress schedule. Updates to the submittal register showing the Contractor action codes and actual dates with Government action codes and actual dates shall be submitted monthly or until all submittals have been

satisfactorily completed. When the progress schedule is revised, the submittal register shall also be revised and both submitted for approval. The Contractor shall maintain a submittal register for the project in accordance with Section 01312 RESIDENT MANAGEMENT SYSTEM (RMS).

3.3 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 30 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals. An additional 10 calendar days shall be allowed and shown on the register for review and approval of submittals for food service equipment and refrigeration and HVAC control systems.

3.4 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms are included in the RMS-QC software that the Contractor is required to use for this contract. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

3.5 SUBMITTAL PROCEDURE

Submittals shall be made as follows:

3.5.1 Procedures

The Contractor shall be responsible for the scheduling and control of all submittals. The Contractor is responsible for confirming that the submittal register includes all submittals required by the contract documents.

In addition to those items listed on ENG Form 4288, the Contractor will furnish submittals for any deviation from the plans or specifications. The scheduled need dates must be recorded on the document for each item for control purposes and critical items must be tied to the Contractor's approved schedule where applicable.

The Contractor will submit to the Contracting Officer for approval a minimum of five copies of all G/RE (Resident/Area Office Review), G/ED (Engineering Division Review) or G/AE (Architect-Engineer Review) level submittals. Three copies of all FIO level submittals will be provided. The number of copies of submittals specified in this portion of the contract shall be complied with in lieu of four copies as specified by FAR 52.236-21.

For those contracts requiring Network Analysis System (NAS), the Contractor will schedule on the NAS critical items of equipment

submittals and procurement activities which will, or have the potential to, significantly impact project completion. The inclusion or exclusion of critical items shall be subject to the approval of the Contracting Officer. Where ENG Form 4025 must be submitted prior to approval of the Construction Progress Schedule, the Contractor shall submit an initial annotated ENG Form 4288 upon which dates for submittal, approval and delivery of procurement items shall be included for the first 60 days of the work. Upon approval of the Construction Progress Schedule, or no later than 60 days after Notice to Proceed, the Contractor shall submit final annotated copies of ENG Form 4288. Dates shall be coordinated with the approved Construction Progress Schedule to logically interface with the sequence of construction. Critical item numbers will be shown on the listing if NAS is required.

Furnishing the schedule shall not be interpreted as relieving the Contractor of his obligation to comply with all the specification requirements for the items on the schedule. Contractor's Quality Control representative shall review the listing at least every 30 days and take appropriate action to maintain an effective system. The Contractor shall furnish a list each 30 days of all submittals on which either Government's or Contractor's action is past due. He shall also furnish revised due dates in those cases when the original submittal schedule is no longer realistic. This monthly list of delayed items shall also be annotated by the Contractor to show what corrective action he is taking with regard to slippages in submittal schedule which are attributable to actions by him, his subcontractors, or suppliers.

The Contractor shall provide a complete updated submittal register indicating the current status of all submittals when requested by the Contracting Officer in order to assure himself the schedule is being maintained.

The Contractor shall certify that each submittal is correct and in strict conformance with the contract drawings and specifications. All submittals not subject to the approval of the Contracting Officer will be submitted for information purposes only.

No Corps of Engineers action will be required prior to incorporating these items into the work, but the submittal shall be furnished to the Area/Resident Engineer not less than 2 weeks prior to procurement of Contractor certified material, equipment, etc.

These Contractor approved submittals will be used to verify that material received and used in the job is the same as that described and approved and will be used as record copies. All samples of materials submitted as required by these specifications shall be properly identified and labeled for ready identification, and upon being certified by the Contractor and reviewed by the Contracting Officer, shall be stored at the site of the work for job site use until all work has been completed and accepted by the Contracting Officer. Delegation of this approval authority to Contractor Quality Control does not relieve the Contractor from the obligation to conform to any contract requirement and will not prevent the Contracting Officer from requiring removal and replacement of construction not in contract conformance; nor does it relieve the Contractor from the requirement to furnish "samples" for testing by the Government Laboratory or check testing by the Government in those instances where the technical specifications so prescribe.

Contractor certified drawings will be subject to quality assurance review by the Government at any time during the duration of the contract. No adjustment for time or money will be allowed for corrections required as a result of noncompliance with plans and specifications.

Submittals Requiring Government Approval (G/ED Level, G/RE Level or G/AE level). Where the review authority is designated to the Government, the Contractor is required to sign the certification on ENG Form 4025 in the box beside the remarks block in Section I. The Government will code the items in block h and sign the approval action block in Section II as the approving authority.

Operating and Maintenance Instructions. Six complete sets of instructions containing the manufacturer's operating and maintenance instructions for each piece of equipment shall be furnished. Each set shall be permanently bound and shall have a hard cover. One complete set shall be furnished at the time test procedures are submitted. Remaining sets shall be furnished before the contract is completed. The following identification shall be inscribed on the covers: The words "OPERATING AND MAINTENANCE INSTRUCTIONS," name and location of the facility, name of the Contractor, and contract number. Fly sheets shall be placed before instructions covering each subject. Instruction sheets shall be approximately 8-1/2 by 11 inches, with large sheets of drawings folded in. Instructions shall include but are not limited to:

(1) System layout showing piping, valves and controls;

(2) Approved wiring and control diagrams;

(3) A control sequence describing startup, operation and shutdown;

(4) Operating and maintenance instructions for each piece of equipment, including lubrication instructions and troubleshooting guide; and

(5) Manufacturer's bulletins, cuts and descriptive data; parts lists and recommended parts.

The Government will further discuss and detail the required submittal procedures at the Pre-Construction Conference.

3.5.2 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. As stated above, the Contractor’s Designer of Record approval is required for any proposed deviations. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

3.6 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

3.7 GOVERNMENT CONFORMANCE REVIEW AND APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. Four copies of the submittal will be retained by the Contracting Officer and one copy of the submittal will be returned to the Contractor. If the Government performs a conformance review of other Designer of Record approved submittals, the submittals will be so identified and returned, as described above.

3.8 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

3.9 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

CONTRACTOR

(Firm Name)

____ Approved

____ Approved with corrections as noted on the submittal data and/or attached sheets.

SIGNATURE:_____

TITLE: (DESIGNER OF RECORD)

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01420

SOURCES FOR REFERENCE PUBLICATIONS

08/02

PART 1 GENERAL

1.1 REFERENCES
1.2 ORDERING INFORMATION

-- End of Section Table of Contents --

SECTION 01420

SOURCES FOR REFERENCE PUBLICATIONS
08/02

PART 1 GENERAL

1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the standards producing organization, (e.g. ASTM B 564 Nickel Alloy Forgings). However, when the standards producing organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

1.2 ORDERING INFORMATION

The addresses of the standards publishing organizations whose documents are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided. Documents listed in the specifications with numbers which were not assigned by the standards producing organization should be ordered from the source by title rather than by number.

ACI INTERNATIONAL (ACI)
P.O. Box 9094
Farmington Hills, MI 48333-9094
Ph: 248-848-3700
Fax: 248-848-3701
Internet: http://www.aci-int.org

AIR CONDITIONING AND REFRIGERATION INSTITUTE (ARI)
4301 North Fairfax Dr., Suite 425
ATTN: Pubs Dept.
Arlington, VA 22203
Ph: 703-524-8800
Fax: 703-528-3816
E-mail: ari@ari.org
Internet: http://www.ari.org

AIR CONDITIONING CONTRACTORS OF AMERICA (ACCA)
2800 Shirlington Road, Suite 300
Arlington, VA 22206
Ph: 703-575-4477
FAX: 703-575-4449
Internet: http://www.acca.org

AIR DIFFUSION COUNCIL (ADC)
1000 East Woodfield Road, Suite 102
Shaumburg, IL 60173-5921
Ph: 847-706-6750
Fax: 847-706-6751
Internet: http://www.flexibleduct.org

AIR MOVEMENT AND CONTROL ASSOCIATION (AMCA)
30 W. University Dr.
Arlington Heights, IL 60004-1893
Ph: 847-394-0150
Fax: 847-253-0088
Internet: http://www.amca.org

ALUMINUM ASSOCIATION (AA)

900 19th Street N.W.
Washington, DC 20006
Ph: 202-862-5100
Fax: 202-862-5164
Internet: http://www.aluminum.org

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)
1827 Walden Ofc. Sq.
Suite 104
Schaumburg, IL 60173-4268
Ph: 847-303-5664
Fax: 847-303-5774
Internet: http://www.aamanet.org

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
444 N. Capital St., NW, Suite 249
Washington, DC 20001
Ph: 800-231-3475 202-624-5800
Fax: 800-525-5562 202-624-5806
Internet: http://www.aashto.org

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)
P.O. Box 12215
Research Triangle Park, NC 27709-2215
Ph: 919-549-8141
Fax: 919-549-8933
Internet: http://www.aatcc.org

AMERICAN BEARING MANUFACTURERS ASSOCIATION (ABMA)
2025 M Street, NW, Suite 800
Washington, DC 20036
Ph: 202-367-1155
Fax: 202-367-2155
Internet: http://www.abma-dc.org

AMERICAN BOILER MANUFACTURERS ASSOCIATION (ABMA)
4001 North 9th Street, Suite 226
Arlington, VA 22203-1900
Ph: 703-522-7350
Fax: 703-522-2665
Internet: http://www.abma.com

AMERICAN CONCRETE PIPE ASSOCIATION (ACPA)
222 West Las Colinas Blvd., Suite 641
Irving, TX 75039-5423
Ph: 972-506-7216 or 800-290-2272
Fax: 972-506-7682
Internet: http://www.concrete-pipe.org

e-mail: info@concrete-pipe.org

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH)
1330 Kemper Meadow Dr.
Suite 600
Cincinnati, OH 45240
Ph: 513-742-2020
Fax: 513-742-3355
Internet: http://www.acgih.org
E-mail: pubs@acgih.org

AMERICAN FOREST & PAPER ASSOCIATION (AF&PA)
American Wood Council
ATTN: Publications Dept.
1111 Nineteenth St. NW, Suite 800
Washington, DC 20036
Ph: 800-294-2372 or 202-463-2700
Fax: 202-463-2471
Internet: http://www.afandpa.org/awc/

AMERICAN GAS ASSOCIATION (AGA)
400 N. Capitol St. N.W.Suite 450
Washington, D.C. 20001
Ph: 202-824-7000
Fax: 202-824-7115
Internet: http://www.aga.org

AMERICAN GAS ASSOCIATION LABORATORIES (AGAL)
400 N. Capitol St. N.W.Suite 450
Washington, D.C. 20001
Ph: 202-824-7000
Fax: 202-824-7115
Internet: http://www.aga.org

AMERICAN GEAR MANUFACTURERS ASSOCIATION (AGMA)
1500 King St., Suite 201
Alexandria, VA 22314-2730
Ph: 703-684-0211
Fax: 703-684-0242
Internet: http://www.agma.org

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
One East Wacker Dr., Suite 3100
Chicago, IL 60601-2001
Ph: 312-670-2400
Publications: 800-644-2400
Fax: 312-670-5403
Internet: http://www.aisc.org

AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC)
7012 So. Revere Parkway, Suite 140
Englewood, CO 80112
Ph: 303-792-9559
Fax: 303-792-0669
Internet: http://www.aitc-glulam.org

AMERICAN IRON AND STEEL INSTITUTE (AISI)
1101 17th St., NW Suite 1300
Washington, DC 20036

Ph: 202-452-7100
Internet: http://www.steel.org

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
1819 L Street, NW, 6th Floor
Washington, DC 20036
Ph: 202-293-8020
Fax: 202-293-9287
Internet: http://www.ansi.org/

Note --- Documents beginning with the letter "S" can be ordered from:

Acoustical Society of America
Standards and Publications Fulfillment Center
P. O. Box 1020
Sewickley, PA 15143-9998
Ph: 412-741-1979
Fax: 412-741-0609
Internet: http://asa.aip.org
General e-mail: asa@aip.org
Publications e-mail: asapubs@abdintl.com

AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA)
1250 I St., NW, Suite 500
Washington, DC 20005-3922
Ph: 202-789-2900
FAX: 202-789-1893
Internet: http://www.anla.org

AMERICAN PETROLEUM INSTITUTE (API)
1220 L St., NW
Washington, DC 20005-4070
Ph: 202-682-8000
Fax: 202-682-8223
Internet: http://www.api.org

AMERICAN PUBLIC HEALTH ASSOCIATION (APHA)
800 I Street, NW
Washington, DC 20001
PH: 202-777-2742
FAX: 202-777-2534
Internet: http://www.apha.org

AMERICAN RAILWAY ENGINEERING & MAINTENANCE-OF-WAY ASSOCIATION (AREMA)
8201 Corporate Dr., Suite 1125
Landover, MD 20785-2230
Ph: 301-459-3200
Fax: 301-459-8077
Internet: http://www.arema.org

AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING (ASNT)
1711 Arlingate Lane
P.O. Box 28518
Columbus, OH 43228-0518
Ph: 800-222-2768
Fax: 614-274-6899
Internet: http://www.asnt.org

AMERICAN SOCIETY FOR QUALITY (ASQ)
600 North Plankinton Avenue
Milwaukee, WI 53202-3005
Ph: 800-248-1946
Fax: 414-272-1734
Internet: http://www.asq.org

ASTM INTERNATIONAL (ASTM)

100 Barr Harbor Drive
West Conshohocken, PA 19428-2959
Ph: 610-832-9585
Fax: 610-832-9555
Internet: http://www.astm.org

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)
1801 Alexander Bell Drive
Reston, VA 20191-4400
Ph: 703-295-6300 - 800-548-2723
Fax: 703-295-6222
Internet: http://www.asce.org
e-mail: marketing@asce.org

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)
1791 Tullie Circle, NE
Atlanta, GA 30329
Ph: 800-527-4723 or 404-636-8400
Fax: 404-321-5478
Internet: http://www.ashrae.org

AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE)
901 Canterbury, Suite A
Westlake, OH 44145
Ph: 440-835-3040
Fax: 440-835-3488
E-mail: asse@ix.netcom.com
Internet: http://www.asse-plumbing.org

AMERICAN WATER WORKS ASSOCIATION(AWWA)
6666 West Quincy
Denver, CO 80235
Ph: 800-926-7337 - 303-794-7711
Fax: 303-794-7310
Internet: http://www.awwa.org

AMERICAN WELDING SOCIETY (AWS)
550 N.W. LeJeune Road
Miami, FL 33126
Ph: 800-443-9353 - 305-443-9353
Fax: 305-443-7559
Internet: http://www.amweld.org

AMERICAN WOOD-PRESERVERS' ASSOCIATION (AWPA)
P.O. Box 5690
Grandbury, TX 76049-0690
Ph: 817-326-6300
Fax: 817-326-6306

Internet: http://www.awpa.com

APA - THE ENGINEERED WOOD ASSOCIATION (APA)
P.O.Box 11700
Tacoma, WA 98411-0700
Ph: 253-565-6600
Fax: 253-565-7265
Internet: http://www.apawood.org

ARCHITECTURAL & TRANSPORTATION BARRIERS COMPLIANCE BOARD (ATBCB)

The Access Board
1331 F Street, NW, Suite 1000
Washington, DC 20004-1111
PH: 202-272-5434
FAX: 202-272-5447
Internet: http://www.access-board.gov

ARCHITECTURAL WOODWORK INSTITUTE (AWI)
1952 Isaac Newton Square West
Reston, VA 20190
Ph: 703-733-0600
Fax: 703-733-0584
Internet: http://www.awinet.org

ASBESTOS CEMENT PIPE PRODUCERS ASSOCIATION (ACPPA)
PMB114-1745 Jefferson Davis Highway
Arlington, VA 22202
Ph: 514-861-1153
Fax: 514-861-1152
Internet: None

ASM INTERNATIONAL (ASM)
9639 Kinsman Road
Materials Park, OH 44073-0002
Ph: 440-338-5151
Fax: 440-338-4634
Internet: http://www.asm-intl.org
Order Publications From:
ASM International
ATTN: MSC/Book Order
P.O. Box 473
Novelty, OH 44072-9901

ASME INTERNATIONAL (ASME)
Three Park Avenue
New York, NY 10016-5990
Ph: 212-591-7722
Fax: 212-591-7674
Internet: http://www.asme.org

ASPHALT INSTITUTE (AI)
Research Park Dr.
P.O. Box 14052
Lexington, KY 40512-4052
Ph: 859-288-4960
Fax: 859-288-4999
Internet: http://www.asphaltinstitute.org

ASSOCIATED AIR BALANCE COUNCIL (AABC)
1518 K St., NW, Suite 503
Washington, DC 20005
Ph: 202-737-0202
Fax: 202-638-4833
Internet: http://www.aabchq.com
E-mail: aabchq@aol.com

ASSOCIATION FOR THE ADVANCEMENT OF MEDICAL INSTRUMENTATION (AAMI)
1110 N. Glebe Rd., Suite 220
Arlington, VA 22201-5762
Ph: 1-800l-332-2264 or 703-525-4890
Fax: 703-276-0793
Internet: http://www.aami.org

ASSOCIATION OF EDISON ILLUMINATING COMPANIES (AEIC)
600 No. 18th St.
P.O. Box 2641
Birmingham, AL 35291
Ph: 205-257-2530
Fax: 205-257-2540
Internet: http://www.aeic.org

ASSOCIATION OF HOME APPLIANCE MANUFACTURERS (AHAM)
1111 19th St. NW., Suite 402
Washington, DC 20036
Ph: 202-872-5955
Fax: 202-872-9354
Internet: http://www.aham.org

BIFMA INTERNATIONAL (BIFMA)
2680 Horizon Drive SE, Suite A-1
Grand Rapids, MI 49546-7500
Ph: 616-285-3963
Fax: 616-285-3765
Internet: http://www.bifma.com
E-mail: email@bifma.com

BIOCYCLE, JOURNAL OF COMPOSTING AND RECYCLING (BIOCYCLE)
The JG Press Inc.
419 State Avenue
Emmaus PA. 18049
Ph: 610-967-4135
Internet: http://www.biocycle.net
E-mail: jgpress@jgpress.com

BRICK INDUSTRY ASSOCIATION (BIA)
11490 Commerce Park Dr., Suite 308
Reston, VA 22091-1525
Ph: 703-620-0010
Fax: 703-620-3928
Internet: http://www.brickinfo.org

BRITISH STANDARDS INSTITUTE (BSI)
389 Chiswick High Road
London W4 4AL
United Kingdom
Phone: +44 (0)20 8996 9000
Fax: +44 (0)20 8996 7400

Email: Info@bsi-global.com
Website: http://www.bsi-global.com

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)
355 Lexington Ave.
17th floor
New York, NY 10017-6603
Ph: 212-297-2122
Fax: 212-370-9047
Internet: http://www.buildershardware.com

CARPET AND RUG INSTITUTE (CRI)
310 Holiday Ave.
Dalton, GA 30720
P.O. Box 2048
Dalton, GA 30722-2048
Ph: 1-800-882-3176 or 706-278-0232
Fax: 706-278-8835
Internet: http://www.carpet-rug.com

CAST IRON SOIL PIPE INSTITUTE (CISPI)
5959 Shallowford Rd., Suite 419
Chattanooga, TN 37421
Ph: 423-892-0137
Fax: 423-892-0817
Internet: http://www.cispi.org

CEILINGS & INTERIOR SYSTEMS CONSTRUCTION ASSOCIATION (CISCA)
1500 Lincoln Highway, Suite 202
St. Charles, IL 60174
Ph: 630-584-1919
Fax: 630-584-2003
Internet: http://www.cisca.org

CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)

1600 Clifton Road
Atlanta, GA 30333
PH: 404-639-3311
FAX:
Internet: http://www.cdc.gov

CHEMICAL FABRICS & FILM ASSOCIATION (CFFA)

1300 Sumner Ave.
Cleveland OH 44115-2851
PH: 216-241-7333
FAX: 216-241-0105
Internet: http://www.chemicalfabricsandfilm.com/
OK 4/02

CHLORINE INSTITUTE (CI)
2001 L St., NW Suite 506
Washington, DC 20036
Ph: 202-775-2790
Fax: 202-223-7225
Internet: http://www.cl2.com

COMPRESSED AIR AND GAS INSTITUTE (CAGI)

1300 Sumner Ave.
Cleveland OH 44115-2851
PH: 216-241-7333
FAX: 216-241-0105
Internet: http://www.cagi.org/

COMPRESSED GAS ASSOCIATION (CGA)
4221 Walney Road, 5th Floor
Chantilly, VA 20151-2923
Ph: 703-788-2700
Fax: 703-961-1831
Internet: http://www.cganet.com
e-mail: Customer_Service@cganet.com

CONCRETE REINFORCING STEEL INSTITUTE (CRSI)
933 N. Plum Grove Rd.
Schaumburg, IL 60173-4758
Ph: 847-517-1200
Fax: 847-517-1206
Internet: http://www.crsi.org/

CONSUMER PRODUCT SAFETY COMMISSION (CPSC)
4330 East-West Highway
Bethesda, Maryland 20814-4408
Ph: 301-504-0990
Fx: 301-504-0124 and 301-504-0025
Internet: http://www.cpsc.gov

CONVEYOR EQUIPMENT MANUFACTURERS ASSOCIATION (CEMA)
6724 Lone Oak Blvd.
Naples, Florida 34109
Ph: 941-514-3441
Fax: 941-514-3470
Internet: http://www.cemanet.org

COOLING TECHNOLOGY INSTITUTE (CTI)
2611 FM 1960 West
Suite H-200
Houston, TX 77068-3730
Ph: 281-583-4087
Fax: 281-537-1721
Internet: http://www.cti.org

COPPER DEVELOPMENT ASSOCIATION (CDA)
260 Madison Ave.
New York, NY 10016
Ph: 212-251-7200
Fax: 212-251-7234
Internet: http://www.copper.org
E-mail: staff@cda.copper.org

CRANE MANUFACTURERS ASSOCIATION OF AMERICA (CMAA)
8720 Red Oak Blvd., Ste, 201
Charlotte, NC 28217 USA
Ph: 704-676-1190 or 800-722-6832
Fx: 704-676-1199
Internet: http://www.mhia.org/psc/psc_products_cranes.cfm

DISTRICT OF COLUMBIA MUNICIPAL REGULATIONS (DCMR)

441 4th Street NW
Wacsington DC 20001
PH: 202-727-1000
Internet: http://www.abfa.com/dcdocs/dcmrlist.htm

DOOR AND ACCESS SYSTEM MANUFACTURERS ASSOCIATION (DASMA)
1300 Sumner Avenue
Cleveland, OH 44115-2851
Ph: 216-241-7333
Fax: 216-241-0105
Internet: http://www.dasma.com
e-mail: dasma@dasma.com

DOOR AND HARDWARE INSTITUTE (DHI)
14150 Newbrook Dr.Suite 200
Chantilly, VA 20151-2223
Ph: 703-222-2010
Fax: 703-222-2410
Internet: http://www.dhi.org
e-mail: techdept@dhi.org

DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA)
245 Riverchase Parkway East, Suite 0
Birmingham, AL 35244
Ph: 205-402-8700
Fax: 205-402-8730
Internet: http://www.dipra.org
E-mail: info@dipra.org

EIFS INDUSTRY MEMBERS ASSOCIATION (EIMA)
3000 Corporate Center Drive, Suite 270
Morrow, GA 30260
Ph: 800-294-3462
Fax: 770-968-5818
Internet: http://www.eima.com

ELECTRICAL GENERATING SYSTEMS ASSOCIATION (EGSA)
1650 South Dixie Highway, Ste. 500
Boca Raton, FL 33432
Ph: 561-750-5575
Fax: 561-395-8557
Internet: http://www.egsa.org

ELECTRONIC INDUSTRIES ALLIANCE (EIA)
2500 Wilson Blvd.
Arlington, VA 22201-3834
Ph: 703-907-7500
Fax: 703-907-7501
Internet: http://www.eia.org

ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION (ERDA)
Organization abolished by Dept of Energy Act
(91 Stat 577)4 Aug 1977
Successor Organization is Department of Energy
PH:
FAX:

Internet: http://www.mbe.doe.gov/

ENGINE MANUFACTURERS ASSOCIATION (EMA)

Two North LaSalle Street, Suite 2200
Chicago, Il 60602
PH: 312-827-8700
FAX: 312-827-8737
Internet: http://www.engine-manufacturers.org/

ETL TESTING LABORATORIES (ETL)
Intertek Testing Services, ETL SEMKO
70 Codman Hill Road
Boxborough, MA 01719
PH: 1-800-967-5352
FAX: 1-800-813-9442
Internet: http://www.etlsemko.com
E-mail: info@etlsemko.com

EUROPEAN COMMITTEE FOR ELECTROTECHNICAL STANDARDIZATION (CENELEC)
CENELEC CS Info & Publications Department
Rue de Stassartstraat 35
1050 Brussels
Phone: + 32 2 519 68 71
Fax: + 32 2 519 69 19
Internet: http://www.cenelec.org

EXPANSION JOINT MANUFACTURERS ASSOCIATION (EJMA)
25 N Broadway
Tarrytown, NY 10591
Ph: 914-332-0040
Fax: 914-332-1541
Internet: http://www.ejma.org

FM GLOBAL (FM)
1301 Atwood Avenue
P.O. Box 7500
Johnston, RI 02919
Ph: (for publications) 781-255-6681
Ph: (Toll-Free): 877-364-6726
Fax: 781-255-0181
Internet: http://www.fmglobal.com

FLUID SEALING ASSOCIATION (FSA)
994 Old Eagle School Road #1019
Wayne, PA 19087
PH: 610-971-4850
FAX: 610-9971-4859
Internet: http://www.fluidsealing.com
E-mail: info@fluidsealing.com

FORESTRY SUPPLIERS (FSUP)
205 West Rankin St.
P.O. Box 8397
Jackson, MS 39284-8397
Ph: 601-354-3565
Fax: 601-292-0165
Internet: http://www.forestry-suppliers.com

FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH (FCCCHR)
University of South California
Kaprielian Hall 200
Los Angeles, CA 90089-2531
Ph: 213-740-2032
Fax: 213-740-8399
Internet: http://www.usc.edu/dept/fccchr

GEOLOGICAL SOCIETY OF AMERICA (GSA)
P.O. Box 9140
Boulder, CO 80301-9140
Ph: 800-443-4472
Fax: 303-357-1070
Internet: http://www.geosociety.org

GEOSYNTHETIC INSTITUTE (GSI)
475 Kedron Ave.
Folsom, PA 19033-1208
Ph: 610-522-8440
Fax: 610-522-8441
Internet: http://www.geosynthetic-institute.org

GLASS ASSOCIATION OF NORTH AMERICA (GANA)
2945 SW Wanamaker Drive, Suite A
Topeka, KS 66614-5321
Ph: 785-271-0208
Fax: 785-271-0166
Internet: http://www.glasswebsite.com/GANA

GYPSUM ASSOCIATION (GA)
810 First St. NE, Suite 510
Washington, DC 20002
Ph: 202-289-5440
Fax: 202-289-3707
Internet: http://www.gypsum.org

HARDWOOD PLYWOOD & VENEER ASSOCIATION (HPVA)
1825 Michael Faraday Dr.
P.O. Box 2789
Reston, VA 20195-0789
Ph: 703-435-2900
Fax: 703-435-2537
Internet: http://www.hpva.org

HEAT EXCHANGE INSTITUTE (HEI)
1300 Sumner Ave
Cleveland, OH 44115-2851
Ph: 216-241-7333
Fax: 216-241-0105
Internet: http://www.heatexchange.org
email: hei@heatexchange.org

HOIST MANUFACTURERS INSTITUTE (HMI)

8720 Red Oak Blvd., Suite 201
Charlotte, NC 28217
PH: 704-676-1190
FAX: 704-676-1199

Internet: http://www.mhia.org/psc/PSC_Products_Hoists.cfm

HOLLOW METAL MANUFACTURERS ASSOCIATION (HMMA)

NAAMM Headquarters
8 South Michigan Avenue, Suite 1000
Chicago, IL 60603
PH: 312-332-0405
FAX: 312-332-0706
Internet: http://www.naamm.org/hmma.htm

NOTE --- HMMA has merged with NAAAM.

H.P. WHITE LABORATORY (HPW)
3114 Scarboro Rd.
Street, MD 21154
Ph: 410-838-6550
fax: 410-838-2802
Internet: http://www.hpwhite.com

HYDRAULIC INSTITUTE (HI)
9 Sylvan Way, Suite 180
Parsippany, NJ 07054-3802
Ph: 888-786-7744 or 973-267-9700
Fax: 973-267-9055
Internet: http://www.pumps.org

HYDRONICS INSTITUTE DIVISION OF GAMA (HYI)
35 Russo Pl.
P.O. Box 218
Berkeley Heights, NJ 07922-0218
Ph: 908-464-8200
Fax: 908-464-7818
Internet: http://www.gamanet.org/publist/hydroordr.htm

IBM CORPORATION (IBM)
Publications
4800 Falls of the Neuse
Raleigh, NC 27609
Ph: 800-879-2755, Option 1
Fax: 800-445-9269
Internet: http://www.ibm.com/shop/publications/order

ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IESNA)
120 Wall St., 17th Floor
New York, NY 10005-4001
Ph: 212-248-5000
Fax: 212-248-5017
Internet: http://www.iesna.org

INDUSTRIAL FASTENERS INSTITUTE (IFI)
1717 East 9th St., Suite 1105
Cleveland, OH 44114-2879
Ph: 216-241-1482
Fax: 216-241-5901
Internet: http://www.industrial-fasteners.org
e-mail: indfast@aol.com

INSECT SCREENING WEAVERS ASSOCIATION (ISWA)

DEFUNCT in 1997

INSTITUTE OF CLEAN AIR COMPANIES (ICAC)
1660 L St., NW, Suite 1100
Washington, DC 20036-5603
Ph: 202-457-0911
Fax: 202-331-1388
E-mail: jsmith@icac.com
Internet: http://icac.com

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)
445 Hoes Ln, P. O. Box 1331
Piscataway, NJ 08855-1331
Ph: 732-981-0060 OR 800-701-4333
Fax: 732-981-9667
Internet: http://www.ieee.org
E-mail: customer.services@ieee.org

INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY (IEST)
940 East Northwest Highway
Mount Prospect, IL 60056
Ph: 847-255-1561
Fax: 847-255-1699
Internet: http://www.iest.org

INSULATED CABLE ENGINEERS ASSOCIATION (ICEA)
P.O. Box 1568
Carrollton, GA 30117
Ph: 770-830-0369
Fax: 770-830-8501
E-mail:
Internet: http://www.icea.net

INTERNATIONAL APPROVAL SERVICES (IAS)
8501 East Pleasant Valley Rd.
Cleveland, OH 44131
Ph: 216-524-4990
Fax: 216-328-8118
Internet: http://www.csa-international.org

INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS (IAPMO)
20001 East Walnut Dr., So.
Walnut, CA 91789-2825
Ph: 909-595-8449
Fax: 909-594-3690
Fax for Stds: 909-594-5265
Internet: http://www.iapmo.org

INTERNATIONAL CODE COUNCIL (ICC)
5203 Leesburg Pike, Suite 600
Falls Church, VA 22041
Ph: 703-931-4533
Fax: 703-379-1546
Internet: http://www.intlcode.org

INTERNATIONAL CONCRETE REPAIR INSTITUTE (ICRI)

3166 S. River Road, Suite 132

Des Plaines, IL 60018
Phone: 847-827-0830
Fax: 847-827-0832
Internet: http://www.icri.org

INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS (ICBO)
5360 Workman Mill Rd.
Whittier, CA 90601-2298
Ph: 800-284-4406
Ph: 562-699-0541
Fax: 562-692-3853
Internet: http://www.icbo.org

INTERNATIONAL ELECTRICAL TESTING ASSOCIATION (NETA)

P.O. Box 687
106 Stone Street
Morrison, Colorado 80465
PH: 303-697-8441
FAX: 303-697-8431
Internet: http://www.netaworld.org

INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)
3, rue de Varembe, P.O. Box 131
CH-1211 Geneva 20, Switzerland
Ph: 41-22-919-0211
Fax: 41-22-919-0300
Internet: http://www.iec.ch
e-mail: info@iec.ch

INTERNATIONAL GROUND SOURCE HEAT PUMP ASSOCIATION (IGSHPA)

Oklahoma State University
490 Cordell South
Stillwater OK 74078-8018
PH: 800-626-4747
FAX: 405-744-5283
Internet: http://www.igshpa.okstate.edu/

INTERNATIONAL INSTITUTE OF AMMONIA REFRIGERATION (IIAR)
1110 N. Glebe Rd., Suite 250
Arlington, VA 22201
Ph: 703-312-4200
Fax: 703-312-0065
Internet: http://www.iiar.org
e-mail: iiar@iiar.org

INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION (IMSA)
P.O. Box 539
165 East Union St.
Newark, NY 14513-0539
Ph: 315-331-2182
Ph: 800-723-4672
Fax: 315-331-8205
Internet: http://www.imsasafety.org/

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)
1, rue de Varembe'
Case Postale 56

CH-1211 Geneve 20 Switzerland
Ph: 41-22-749-0111
Fax: 41-22-733-3430
Internet: http://www.iso.ch
e-mail: central@iso.ch

INTERNATIONAL SLURRY SURFACING ASSOCIATION (ISSA)
3 Church Circle, PMB 250
Annapolis, MD 21401
Ph: 410-267-0023
Fax: 410-267-7546
Internet: http://www.slurry.org
e-mail: krissoff@slurry.org

INTERNATIONAL TELECOMMUNICATION UNION (ITU)
Order from:
U.S. Dept of Commerce
National Technical Information Service
5285 Port Royal Road.
Springfield, VA 22161
Ph: 703-605-6040
FAX: 703-605-6887
Internet: http://www.ntis.gov

For documents not avail from Dept of Commerce:
Sales Service
International Telecommunication Union
Place des Nations
CH-1211 Geneve 20
Switzerland
E-Mail: sales@itu.ch
Ph: 41.22.730.6141
Fax: 41.22.730.5194
Internet: http://www.itu.org

IPC - ASSOCIATION CONNECTING ELECTRONICS INDUSTRIES (IPC)
2215 Sanders Rd.
Northbrook, IL 60062-6135
Ph: 847-509-9700
Fax: 847-509-9798
Internet: http://www.ipc.org
e-mail: orderipc@ipc.org

IRON & STEEL SOCIETY (ISS)
186 Thorn Hill Road
Warrendale, PA 15086-7528
Ph: 724-776-1535 Ext 1
Fax: 724-776-0430
E-Mail: dennisf@iss.org
Internet: http://www.issource.org

ISA - THE INSTRUMENTATION, SYSTEMS AND AUTOMATION SOCIETY (ISA)
67 Alexander Drive
P.O. Box 12277
Research Triangle Park, NC 27709
Ph: 919-549-8411
Fax: 919-549-8288
e-mail: info@isa.org
Internet: http://www.isa.org

KITCHEN CABINET MANUFACTURERS ASSOCIATION (KCMA)
1899 Preston White Dr.
Reston, VA 20191-5435
Ph: 703-264-1690
Fax: 703-620-6530
Internet: http://www.kcma.org

L.H. BAILEY HORTORIUM (LHBH)

c/o Cornell University
Information and Referral Center
Day Hall Lobby
Ithaca, NY 14853-2801
PH: 607-254-INFO (4636)
Internet: http://www.plantbio.cornell.edu/Hortorium

MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY (MSS)
127 Park St., NE
Vienna, VA 22180-4602
Ph: 703-281-6613
Fax: 703-281-6671
Internet: http://www.mss-hq.com
e-mail: info@mss-hq.com

MAPLE FLOORING MANUFACTURERS ASSOCIATION (MFMA)
60 Revere Dr., Suite 500
Northbrook, IL 60062
Ph: 847-480-9138
Fax: 847-480-9282
Internet: http://www.maplefloor.org

MARBLE INSTITUTE OF AMERICA (MIA)
30 Eden Alley, Suite 301
Columbus, OH 43215
Ph: 614-228-6194
Fax: 614-461-1497
Internet: http://www.marble-institute.com
e-mail: info@marble-institute.com

MASTER PAINTERS INSTITUTE (MPI)
4090 Graveley Street
Burnaby, BC CANADA V5C 3T6
PH: 888-674-8937
Fx: 888-211-8708
Internet: http://www.paintinfo.com/mpi

METAL BUILDING MANUFACTURERS ASSOCIATION (MBMA)
1300 Sumner Ave.
Cleveland, OH 44115-2851
Ph: 216-241-7333
Fax: 216-241-0105
Internet: http://www.mbma.com
e-mail: mbma@mbma.com

METAL LATH/STEEL FRAMING ASSOCIATION (ML/SFA)

NAAMM Headquarters

8 South Michigan Avenue, Suite 1000
Chicago, IL 60603
PH: 312-332-0405
FAX: 312-332-0706
Internet: http://www.naamm.org/mlsfa.htm
NOTE --- ML/SFA has merged with NAAMM.

MIDWEST INSULATION CONTRACTORS ASSOCIATION (MICA)
2017 So. 139th Cir.
Omaha, NE 68144
Ph: 402-342-3463
Fax: 402-330-9702
Internet: http://www.micainsulation.org
e-mail: info@micainsulation.org

MONORAIL MANUFACTURERS ASSOCIATION (MMA)

8720 Red Oak Blvd., Suite 201
Charlotte, NC 28217
PH: 704-676-1190
FAX: 704-676-1199
Internet: http://www.mhia.org/

NACE INTERNATIONAL (NACE)
1440 South Creek Drive
Houston, TX 77084-4906
Ph: 281-228-6200
Fax: 281-228-6300
Internet: http://www.nace.org

NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (NAAMM)
8 S. Michigan Ave, Suite 1000
Chicago, IL 60603
Ph: 312-322-0405
Fax: 312-332-0706
Internet: http://www.naamm.org
e-mail: naamm@gss.net

NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS (NBBPVI)
1055 Crupper Ave.
Columbus, OH 43229-1183
Ph: 614-888-8320
Fax: 614-847-1147
Internet: http://www.nationalboard.org
e-mail: tbecker@nationalboard.org

NATIONAL CABLE TELEVISION ASSOCIATION (NCTA)
Now: National Cable Telecommunications Association
1724 Massachusetts Ave. NW
Washington, DC 20036-1969
Ph: 202-775-3550
Fax: 202-775-1055
Internet: http://www.ncta.com

NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA)
13750 Sunrise Valley Drive
Herndon, VA 20171
Ph: 703-713-1900
Fax: 703-713-1910

Internet: http://www.ncma.org

NATIONAL COUNCIL ON RADIATION PROTECTION AND MEASUREMENTS (NCRP)
7910 Woodmont Ave., Suite 800
Bethesda, MD 20814-3095
Ph: 800-229-2652
Ph. 301-657-2652
Fax: 301-907-8768
Internet: http://www.ncrp.com

NATIONAL DRILLING ASSOCIATION (NDA)

10901D Roosevelt Boulevard North, Suite 100
St. Petersburg, FL 33716
Ph: 727-577-5006
FAX: 727-577-5012
Internet: http://www.nda4u.com/
E-mail: info@nda4u.com

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
1300 N. 17th St., Suite 1847
Rosslyn, VA 22209
Ph: 703-841-3200
Fax: 703-841-3300
Internet: http://www.nema.org/
E-mail: jas_peak@nema.org

NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB)
8575 Grovemont Circle
Gaithersburg, MD 20877-4121
Ph: 301-977-3698
Fax: 301-977-9589
Internet: http://www.nebb.org

NATIONAL FENESTRATION RATING COUNCIL (NFRC)
1300 Spring Street, Suite 500
Silver Spring, MD 20910
Ph: 301-589-6372
Fax: 303-588-6342
Internet: http://www.nfrc.org
E-Mail: nfrcusa@aol.com or info@nfrc.com

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
1 Batterymarch Park
P.O. Box 9101
Quincy, MA 02269-9101
Ph: 617-770-3000
Fax: 617-770-0700
Internet: http://www.nfpa.org

NATIONAL FLUID POWER ASSOCIATION (NFLPA)
3333 N. Mayfair Rd.
Milwaukee, WI 53222-3219
Ph: 414-778-3344
Fax: 414-778-3361
Internet: http://www.nfpa.com
E-mail: nfpa@nfpa.com

NATIONAL HARDWOOD LUMBER ASSOCIATION (NHLA)

6830 Raleigh LaGrange Road
P.O. Box 34518
Memphis, TN 38184-0518
Ph: 901-377-1818
Fax: 901-382-6419
e-mail: info@natlhardwood.org
Internet: http://www.natlhardwood.org

NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES (NICET)
1420 King Street
Alexandria, VA 22314-2794
Ph: 888-476-4238
Internet: http://www.nicet.org

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)
Mail Stop C-13
4676 Columbia Parkway
Cincinnati, OH 45226-1998
Ph: 800-356-4674
Fx: 513-533-8573
Internet: http://www.cdc.gov/niosh/homepage.html
To order pubs for which a fee is charged, order from:
Superintendent of Documents
U.S. Government Printing Office
732 North Capitol Street, NW
Mailstop: SDE
Washington, DC 20401
Ph: 866-512-2800 or 202-512-1800
Fax: 202-512-2250
Internet: http://www.gpo.gov

NATIONAL INSTITUTE OF JUSTICE (NIJ)
National Law Enforcement and Corrections Technology Center
2277 Research Blvd. - Mailstop 1E
Rockville, MD 20850
Ph: 800-248-2742 or 301-519-5060
Fax: 301-519-5149
Internet: http://www.nlectc.org
e-mail: asknlectc@nlectc.org

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)
100 Bureau Drive
Stop 3460
Gaithersburg, MD 20899-3460
Ph: 301-975-NIST
Internet: http://www.nist.gov
Order Publications From:
Superintendent of Documents
U.S. Government Printing Office
732 North Capitol Street, NW
Mailstop: SDE
Washington, DC 20401
Ph: 866-512-1800 or 202-512-1800
Fax: 202-512-2250
Internet: http://www.gpo.gov
or
National Technical Information Services (NTIS)
5285 Port Royal Rd.

Springfield, VA 22161
Ph: 703-605-6000
Fax: 703-605-6900
Internet: http://www.ntis.gov

NATIONAL LIME ASSOCIATION (NLA)

200 North Glebe Road, Suite 800
Arlington, VA 22203
PH: 703-243-5463
FAX: 703-243-5489
Internet: http://www.lime.org

NATIONAL OAK FLOORING MANUFACTURERS ASSOCIATION (NOFMA)
P.O. Box 3009
Memphis, TN 38173-0009
Ph: 901-526-5016
Fax: 901-526-7022
Internet: http://www.nofma.org

NATIONAL READY-MIXED CONCRETE ASSOCIATION (NRMCA)
900 Spring St.
Silver Spring, MD 20910
Ph: 301-587-1400
Fax: 301-585-4219
Internet: http://www.nrmca.org

NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)
10255 W. higgins Rd., Suite 600
Rosemont, IL 60018
Ph: 847-299-9070
Fax: 847-299-1183
Internet: http://www.nrca.net

NATIONAL TERRAZZO & MOSAIC ASSOCIATION (NTMA)
110 East Market St., Suite 200 A
Leesburg, Virginia 20176
Ph: 703-779-1022 or 800-323-9736
Fax: 703-779-1026
Internet: http://www.ntma.com
e-mail: info@ntma.com

NATURAL RESOURCE, AGRICULTURAL AND ENGINEERING SERVICE (NRAES)

Cooperative Extension
152 Riley-Robb Hall
Ithaca, NY 14853-5701
Ph: 607-255-7654
Fax: 607-254-8770
Internet: http://www.nraes.org
E-mail: nraes@cornell.edu

NORTH AMERICAN INSULATION MANUFACTURERS ASSOCIATION (NAIMA)
44 Canal Center Plaza, Suite 310
Alexandria, VA 22314
Ph: 703-684-0084
Fax: 703-684-0427
Internet: http://www.naima.org
e-mail: insulation@naima.org

NORTHEASTERN LUMBER MANUFACTURERS ASSOCIATION (NELMA)
272 Tuttle Road
P.O. Box 87A
Cumberland Center, ME 04021
Ph: 207-829-6901
Fax: 207-829-4293
Internet: http://www.nelma.org
e-mail: info@nelma.org

NSF INTERNATIONAL (NSF)
ATTN: Publications
789 North Dixboro Rd.
P.O. Box 130140
Ann Arbor, MI 48113-0140
Ph: 734-769-8010
Fax: 734-769-0109
Toll Free: 800-NSF-MARK
Internet: http://www.nsf.org

PIPE FABRICATION INSTITUTE (PFI)
655 32nd Avenue, Suite 201
Lachine, QC, Canada H8T 3G6
Ph: 514-634-3434
Fax: 514-634-9736
Internet: http://www.pfi-institute.org
e-mail: pfi@pfi-institute.org

PLASTIC PIPE AND FITTINGS ASSOCIATION (PPFA)
800 Roosevelt Rd., Bldg C, Suite 20
Glen Ellyn, IL 60137
Ph: 630-858-6540
Fax: 630-790-3095
Internet: http://www.ppfahome.org

PLASTICS PIPE INSTITUTE (PPI)
1825 Connecticut Ave. NW
Washington, D. C. 20009
Ph: 202-462-9607
Fax: 202-462-9779
Internet: http://www.plasticpipe.org

PLUMBING AND DRAINAGE INSTITUTE (PDI)
45 Bristol Dr.
South Easton, MA 02375
Ph: 508-230-3516 or 800-589-8956
Fax: 508-230-3529
Internet: http://www.pdionline.org
E-Mail: info@pdionline.org

PLUMBING AND MECHANICAL CONTRACTORS ASSOCIATION (PMCA)
9450 SW Commerce Circle, Suite 310
Wilsonville, OR 97070-9626
Ph: 503-682-7919
Fax: 503-682-6241
Internet: http://www.pmcaoregon.com/

PLUMBING-HEATING-COOLING CONTRACTORS NATIONAL ASSOCIATION (PHCC)
180 S. Washington Street

P.O. Box 6808
Falls Church, VA 22040
Ph: 800-533-7694
Fax: 703-237-7442
Internet: http://www.phccweb.org

PORCELAIN ENAMEL INSTITUTE (PEI)
5696 Peachtree Parkway, PO Box 920220
Norcross, GA 30092
Ph: 770-242-2632
Fax: 770-446-1452
Internet: http://www.porcelainenamel.com
e-mail: penamel@aol.com

POST-TENSIONING INSTITUTE (PTI)
1717 West Northern Avenue, Suite 114
Phoenix, AZ 85021
Ph: 602-870-7540
Fax: 602-870-7541
Internet: http://www.post-tensioning.org/

PRECAST/PRESTRESSED CONCRETE INSTITUTE (PCI)
209 West Jackson Blvd.
Chicago, IL 60606-6938
Ph: 312-786-0300
Fax: 312-786-0353
Internet: http://www.pci.org
e-mail: info@pci.org

REDWOOD INSPECTION SERVICE (RIS)

405 Efrente Drive, Suite 200
Novato, CA 94949
Ph: 415-382-0662
Fax: 415-382-8531
Internet: http://www.calredwood.org
E-Mail: cjjourdain@worldnet.att.net

RUBBER MANUFACTURERS ASSOCIATION (RMA)

1400 K St., NW, Suite 900
Washington, DC 20005
Ph: 202-682-4846
Fax: 202-682-4854
Internet: http://www.rma.org
Order Publications from:
The Mail Room
P. O. Box 3147
Medina, OH 44258
Ph: 800-325-5095 EXT 242 or 330-723-2978
Fax: 330-725-0576

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

1939 Harrison Street, Suite 400
Oakland, CA 94612
Ph: 510-832-1415
FAX: 510-832-0359
Internet: http://www.scs1.com

SCREEN MANUFACTURERS ASSOCIATION (SMA)
2850 South Ocean Boulevard, Suite 114
Palm Beach, FL 33480-5535
Ph: 561-533-0991
Fax: 561-533-7466
e-mail: fitzgeraldfscott@aol.com
Internet: http://www.smacentral.org

SEMICONDUCTOR EQUIPMENT AND MATERIALS INTERNATIONAL (SEMI)

3081 Zanker Road
San Jose, CA 95134
Phone: 1.408.943.6900
Fax: 1.408.428.9600
Internet: http://www.semi.org
E-mail: semihq@semi.org

SHEET METAL & AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)
4201 Lafayette Center Dr.,
Chantilly, VA 20151-1209
Ph: 703-803-2980
Fax: 703-803-3732
Internet: http://www.smacna.org
e-mail: info@smacna.org

SPRI (SPRI)
200 Reservoir St., Suite 309A
Needham, MA 02494
Ph: 781-444-0242
Fax: 781-444-6111
Internet: http://www.spri.org
e-mail: spri@spri.org

SOCIETY OF AUTOMOTIVE ENGINEERS INTERNATIONAL (SAE)
400 Commonwealth Dr.
Warrendale, PA 15096-0001
Ph: 724-776-4841
Fax: 724-776-5760
Internet: http://www.sae.org
e-mail: custsvc@sae.org

SOCIETY OF MOTION PICTURE & TELEVISION ENGINEERS (SMPTE)

595 West Hartsdale Avenue
WhitePlains, New York 10607
PH: 914-761-1100
FAX: 914-761-3115
Internet: http://www.smpte.org

SPRAY POLYURETHANE FOAM ALLIANCE (SPFA)

American Plastics Council
1300 Wilson Boulevard, Suite 800
Arlington Virginia 22209
PH: 800-523-6154
FX: 703-252-0664

E-mail: feedback@sprayfoam.org
Internet: http://www.sprayfoam.org

SOLAR RATING AND CERTIFICATION CORPORATION (SRCC)

c/o FSEC, 1679 Clearlake Road
Cocoa, FL 32922-5703
PH: 321-638-1537
FAX: 321-638-1010
Internet: http://www.solar-rating.org

SOUTHERN CYPRESS MANUFACTURERS ASSOCIATION (SCMA)
400 Penn Center Boulevard, Suite 530
Pittsburgh, PA 15235
Ph: 412-829-0770
Fax: 412-829-0844
Internet: http://www.cypressinfo.org

SOUTHERN PINE INSPECTION BUREAU (SPIB)
4709 Scenic Highway
Pensacola, FL 32504-9094
Ph: 850-434-2611
Fax: 850-433-5594
e-mail: spib@spib.org
Internet: http://www.spib.org

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION (CDT)
Publication Distribution Unit
1900 Royal Oaks Dr.
Sacramento, CA 95815
Ph: 916-445-3520 or 916-227-7000 (CA Transportation Lab)
Fax: 916-324-8997
Internet: http://www.dot.ca.gov

STATE OF MARYLAND CODE OF MARYLAND REGULATIONS (COMAR)
1700 Margaret Avenue
Annapolis, MD 21401
phone: 410-974-2486
fax: 410-974-2546
Internet:
http://www.sos.state.md.us/sos/dsd/comar/html/comar.html

STATE OF NORTH CAROLINA ADMINISTRATIVE CODE

Internet: http://ncrules.state/nc.us

STATE OF VIRGINIA ADMINISTRATIVE CODE (VAC)
Virginia Code Commission
General Assembly Building, 2nd Floor
910 Capitol Street
Richmond, Virginia 23219
Phone: 804-786-3591
Fax: 804-692-0625
Internet:
http://legis.state.va.us/statutesandregulations/admincode.htm

STATE OF CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

Plant Health and Pest Prevention Services

Pest Exclusion Branch/Nursery, Seed and Cotton Program
1220 N Street, Room A-372
Sacramento CA 95814
PH: 916-653-0435
Internet: http://www.cdfa.ca.gov/phpps/nipm.htm

STEEL DECK INSTITUTE (SDI)
P.O. Box 25
Fox River Grove, IL 60021-0025
Ph: 847-462-1930
Fax: 847-462-1940
Internet: http://www.sdi.org
e-mail: Steve@sdi.org

STEEL DOOR INSTITUTE (SDOI)
30200 Detroit Rd.
Cleveland, OH 44145-1967
Ph: 440-899-0010
Fax: 440-892-1404
Internet: http://www.steeldoor.org

STEEL JOIST INSTITUTE (SJI)
3127 Tenth Ave., North Ext.
Myrtle Beach, SC 29577-6760
Ph: 843-626-1995
Fax: 843-626-5565
Internet: http://www.steeljoist.org

STEEL TANK INSTITUTE (STI)
570 Oakwood Rd.
Lake Zurich, IL 60047
Ph: 847-438-8265
Fax: 847-438-8766
Internet: http://www.steeltank.com

STEEL WINDOW INSTITUTE (SWI)
1300 Sumner Ave.
Cleveland, OH 44115-2851
Ph: 216-241-7333
Fax: 216-241-0105
Internet: http://www.steelwindows.com

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY (TAPPI)

P.O. Box 105113
Atlanta, GA 30348-5113
PH: 800-322-8686
FAX: 770-446-6947
Internet: http://www.tappi.org

ASSOCIATION OF THE WALL AND CEILING INDUSTRIES - INTERNATIONAL (AWCI)

803 West Broad Street
Falls Church, VA 22046
PH: 703-534-8300
FAX: 703-534-8307
Internet: http://www.awci.org

INSULATING GLASS MANUFACTURERS ALLIANCE (IGMA)

27 ave Goulburn Avenue
Ottawa, Ontario. CANADA
K1N 8C7
Phone: 613-233-1510
Fax: 613-233-1929
e-mail: info@igmaonline.org
Internet: http://www.igmaonline.org

THE SOCIETY FOR PROTECTIVE COATINGS (SSPC)
40 24th Street, 6th Floor
Pittsburgh, PA 15222-4656
Ph: 412-281-2331
Fax: 412-281-9992
Internet: http://www.sspc.org

TILE COUNCIL OF AMERICA (TCA)
100 Clemson Research Blvd
Anderson, SC 29625
Ph: 864-646-8453
FAX: 864-646-2821
Internet: http://www.tileusa.com
e-mail: literature@tileusa.com

TRUSS PLATE INSTITUTE (TPI)
583 D'Onofrio Dr., Suite 200
Madison, WI 53719
Ph: 608-833-5900
Fax: 608-833-4360
Internet: http://www.tpinst.org

TUBULAR EXCHANGER MANUFACTURERS ASSOCIATION (TEMA)
25 N. Broadway
Tarrytown, NY 10591
Ph: 914-332-0040
Fax: 914-332-1541
Internet: http://www.tema.org

TURFGRASS PRODUCERS INTERNATIONAL (TPI)
1855-A Hicks Road
Rolling Meadows, IL 60008
PH: 800-405-8873
FAX: 847-705-8347
Internet: http://www.turfgrasssod.org

UNDERWRITERS LABORATORIES (UL)
333 Pfingsten Rd.
Northbrook, IL 60062-2096
Ph: 847-272-8800
Fax: 847-272-8129
Internet: http://www.ul.com/
e-mail: northbrook@us.ul.com

UNI-BELL PVC PIPE ASSOCIATION (UBPPA)
2655 Villa Creek Dr., Suite 155
Dallas, TX 75234
Ph: 214-243-3902
Fax: 214-243-3907

Internet: http://www.uni-bell.org
e-mail: info@uni-bell.org

UNIVERSITY OF CALIFORNIA DIVISION OF AGRICULTURE AND NATURAL RESOURCES (UCDANR)
FRANKLIN BUILDING
1111 Franklin St., 6th floor
Oakland, CA 94607-5200
Internet: http://http://www.ucanr.org

U.S. AIR FORCE (USAF)
Air Force Publishing Distribution Center
Ph: 410-687-3330
E-mail: afpdc-service@pentagon.af.mil
Internet: http://www.e-publishing.af.mil/

U.S. ARMY (DA)

U.S. Army Publications Agency
Internet: http://www.usapa.army.mil/
AOK: 4/02
LOK: 7/02

U.S. ARMY CORPS OF ENGINEERS (USACE)

Order CRD-C DOCUMENTS from:
U.S. Army Engineer Waterways Experiment Station
ATTN: Technical Report Distribution Section, Services Branch, TIC
3909 Halls Ferry Rd.
Vicksburg, MS 39180-6199
Ph: 601-634-2664
Fax: 601-634-2388
Internet: http://www.wes.army.mil/SL/MTC/handbook/handbook.htm

Order Other Documents from:
USACE Publications Depot
Attn: CEIM-SP-D
2803 52nd Avenue
Hyattsville, MD 20781-1102
Ph: 301-394-0081
Fax: 301-394-0084
Internet: http://www.usace.army.mil/publications
or http://www.hnd.usace.army.mil/techinfo/index.htm

U. S. ARMY EDGEWOOD RESEARCH, DEVELOPMENT, AND ENGINEERING CENTER (EA)

Aberdeen Proving Ground, MD
Internet: Unknown

U.S. ARMY ENVIRONMENTAL CENTER (AEC)

5179 Hoadley Road
Aberdeen Proving Ground, MD 21010-5401
Internet: http://aec.army.mil
Order from:
National Technical Information Services (NTIS)
5285 Port Royal Rd.

Springfield, VA 22161
Ph: 703-605-6000
Fax: 703-605-6900
Internet: http://www.ntis.gov

U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY (USAEHA)

Now: U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM)
5158 Blackhawk Road
Aberdeen Proving Ground
MD 21010-5403
PH: 800-222-9698; website
Internet: http://chppm-www.apgea.army.mil

U.S. BUREAU OF RECLAMATION (BOR)

Denver Federal Center
P.O. Box 25007
Denver, CO 80225
Ph: 303-445-2080
Internet: http://www.usbr.gov
Order from:
National Technical Information
Services (NTIS)
5285 Port Royal Rd.
Springfield, VA 22161
Ph: 703-605-6000
Fax: 703-605-6900
Internet: http://www.ntis.gov

U.S. DEFENSE COMMUNICATIONS AGENCY (DCA)

Now: Information Systems Agency (DISA)
Washington, D.C. 20305-2000
Telephone:
FAX:
Internet: Not found

U.S. DEFENSE INTELLIGENCE AGENCY (DIA)

Defense Intelligence Analysis Center (DIAC)
MacDill Boulevard and Luke Avenue
Bolling AFB, MD
Internet: http://www.dia.mil

U.S. DEFENSE LOGISTICS AGENCY (DLA)

Andrew T. McNamara Building
8725 John J. Kingman Road
Fort Belvoir, VA 22060
Internet: http://www.dla.mil

U.S. DEPARTMENT OF AGRICULTURE (USDA)

Order AMS Publications from:
AGRICULTURAL MARKETING SERVICE (AMS)
Seed Regulatory and Testing Branch

USDA, AMS, LS Div.
Room 209, Bldg. 306, BARC-East
Beltsville, MD 20705-2325
Ph: 301-504-9430
Fax: 301-504-8098
Internet: http://www.ams.usda.gov/lsg/seed.htm
e-mail: jeri.irwin@usda.gov

Order Other Publications from:
U.S. Department of Agriculture
14th and Independence Ave., SW, Room 4028-S
Washington, DC 20250
Ph: 202-720-2791
Fax: 202-720-2166
Internet: http://www.usda.gov

U.S. DEPARTMENT OF COMMERCE (DOC)

1401 Constitution Avenue, NW
Washington, DC 20230
Internet: http://www.commerce.gov/

Order Publications From:
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
Ph: 703-605-6000
Fax: 703-605-6900
Internet: http://www.ntis.gov

U.S. DEPARTMENT OF DEFENSE (DOD)

Order DOD Documents from:
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
Ph: 703-605-6000
FAX: 703-605-6900
Internet: http://www.ntis.gov

Order Military Specifications, Standards and Related Publications from:
Department of Defense Single Stock Point for (DODSSP)
Defense Automation and Production Service (DAPS)
Bldg 4D
700 Robbins AV
Philadelphia, PA 19111-5094
Ph: 215-697-2179
Fax: 215-697-1462
Internet: http://www.dodssp.daps.mil

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD)
Order from:
HUD User
P.O. Box 6091
Rockville, MD 20849
Ph: 800-245-2691
Fax: 301-519-5767
Internet: http://www.huduser.org

e-mail: Huduser@aspensys.com

U.S. DEPARTMENT OF STATE (SD)

2201 C Street, NW
Washington, DC 20520
Ph: 202-647-4000
Internet: http://www.state.gov

U.S. DEPARTMENT OF TRANSPORTATION (DOT)
400 7th Street, SW
Washington, DC 20590
PH: 202-366-4000
Internet: http://www.dot.gov

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460
Ph: 202-260-2090
FAX: 202-260-6257
Internet: http://www.epa.gov

NOTE --- Some documents are available only from:
National Technical Information Services (NTIS)
5285 Port Royal Rd.
Springfield, VA 22161
Ph: 703-605-6000
Fax: 703-605-6900
Internet: http://www.ntis.gov

U.S. FEDERAL AVIATION ADMINISTRATION (FAA)
Order for sale documents from:
Superintendant of Documents
P.O. Box 371954
Pittsburgh, PA 15250-7954
PH: 202-512-1800 (order desk)
Internet: http://www.gpo.gov

Order free documents from:
Federal Aviation Administration
Dept. of Transportation
Ardmore East Business Center
33410 75th Avenue
Landover, MD 20785
Ph:
FAX: 301-386-5394

Internet: http://www.faa.gov

U.S. FEDERAL COMMUNICATIONS COMMISSION (FCC)
445 12th Street SW
Washington, DC 20554
Phone: 888-CALL-FCC
Fax: 202-418-0232
Internet: http://www.fcc.gov
E-mail: fccinfo@fcc.gov

U.S. FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)
500 C Street, SW
Washington, D.C. 20472
Phone: 202-566-1600
Internet: http://www.fema.gov

U.S. FEDERAL HIGHWAY ADMINISTRATION (FHWA)
Office of Highway Safety (HHS-31)
400 Seventh St., SW
Washington, DC 20590-0001
Ph: 202-366-0411
Fax: 202-366-2249
Internet: http://www.fhwa.dot.gov
Order from:

Superintendant of Documents
U. S. Government Printing Office
732 North Capitol Street, NW
Mailstop: SDE
Washington, DC 20401
Ph: 866-512-1800 or 202-512-1800
Fax: 202-512-2250
Internet: http://www.gpo.gov

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

General Services Administration
1800 F Street, NW
Washington, DC 20405
PH: 202-501-0705

Order from:
General Services Administration
Federal Supply Service Bureau
1941 Jefferson Davis Highway
Arlington, VA 22202
PH: 703-605-5400
Internet: http://www.fss.gsa.gov/pub/fed-specs.cfm

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)
700 Pennsylvania Avenue, N.W.
Washington, D.C. 20408
Phone: 866-325-7208
Internet: http://www.archives.gov

Order documents from:
Superintendent of Documents
U.S.Government Printing Office
732 North Capitol Street, NW
Washington, DC 20401
Mailstop: SDE
Ph: 866-512-1800 or 202-512-1800
Fax: 202-512-2250
Internet: http://www.gpo.gov
E-mail: gpoaccess@gpo.gov

U.S. NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC)
1510 Gilbert St.
Norfolk, VA 23511-2699

Ph: 757-322-4200
Fax: 757-322-4416
Internet: http://www.efdlant.navfac.navy.mil/LANTOPS_15

U.S. NAVAL FACILITIES ENGINEERING SERVICE CENTER (NFESC)
1100 23rd Avenue
Port Hueneme, CA 93043-4370
Ph: 805-982-4980
Internet: http://www.nfesc.navy.mil

WATER ENVIRONMENT FEDERATION (WEF)
601 Wythe St.
Alexandria, VA 22314-1994
Ph: 703-684-2452
Fax: 703-684-2492
Internet: http://www.wef.org

WATER QUALITY ASSOCIATION (WQA)
4151 Naperville Rd.
Lisle, IL 60532
Ph: 630-505-0160
Fax: 630-505-9637
Internet: http://www.wqa.org
e-mail: info@mail.wqa.org

WEST COAST LUMBER INSPECTION BUREAU (WCLIB)
P.O. Box 23145
Portland, OR 97281
Ph: 503-639-0651
Fax: 503-684-8928
Internet: http://www.wclib.org
e-mail: info@wclib.org

WESTERN WOOD PRESERVERS INSTITUTE (WWPI)
7017 N.E. Highway 99 # 108
Vancover, WA 98665
Ph: 360-693-9958
Fax: 360-693-9967
Internet: http://www.wwpinstitute.org
e-mail: info@wwpinstitute.org

WESTERN WOOD PRODUCTS ASSOCIATION (WWPA)
Yeon Bldg.
522 SW 5th Ave.
Suite 500
Portland, OR 97204-2122
Ph: 503-224-3930
Fax: 503-224-3934
Internet: http://www.wwpa.org
e-mail: info@wwpa.org

WINDOW AND DOOR MANUFACTURERS ASSOCIATION (WDMA)
1400 East Touhy Ave., Suite 470
Des Plaines, IL 60018
Ph: 847-299-5200 or 800-223-2301
Fax: 708-299-1286
Internet: http://www.wdma.com
e-mail: admin@wdma.com

WOOD MOULDING AND MILLWORK PRODUCERS ASSOCIATION (WMMPA)
507 First Street
Woodland, CA 95695
Ph: 530-661-9591 or 800-550-7889
Fax: 530-661-9586
Internet: http://www.wmmpa.com

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01451A

CONTRACTOR QUALITY CONTROL

05/02

PART 1 GENERAL

1.1 REFERENCES
1.2 PAYMENT

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS
3.2 QUALITY CONTROL PLAN
3.2.1 Content of the CQC Plan
3.2.2 Additional Requirements for Design Quality Control (DQC) Plan
3.2.3 Acceptance of Plan
3.2.4 Notification of Changes
3.3 COORDINATION MEETING
3.4 QUALITY CONTROL ORGANIZATION
3.4.1 Personnel Requirements
3.4.2 CQC System Manager
3.4.3 CQC Personnel
3.4.4 Additional Requirement
3.4.5 Organizational Changes
3.5 SUBMITTALS AND DELIVERABLES
3.6 CONTROL
3.6.1 Preparatory Phase
3.6.2 Initial Phase
3.6.3 Follow-up Phase
3.6.4 Additional Preparatory and Initial Phases
3.7 TESTS
3.7.1 Testing Procedure
3.7.2 Testing Laboratories
3.7.2.1 Capability Check
3.7.2.2 Capability Recheck
3.7.3 Onsite Laboratory
3.7.4 Furnishing or Transportation of Samples for Testing
3.8 COMPLETION INSPECTION
3.8.1 Punch-Out Inspection
3.8.2 Pre-Final Inspection
3.8.3 Final Acceptance Inspection
3.9 DOCUMENTATION
3.10 SAMPLE FORMS
3.11 NOTIFICATION OF NONCOMPLIANCE

-- End of Section Table of Contents --

UFGS-01451A (May 2002)

SECTION 01451A

CONTRACTOR QUALITY CONTROL
05/02

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3740	(2001) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM E 329	(2000b) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all design and construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The site project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.

3.2 QUALITY CONTROL PLAN

The Contractor shall furnish for review by the Government, not later than 5 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 30 days of operation. Design and construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

3.2.1 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all design and construction operations, both onsite and offsite, including work by subcontractors, designers of record, consultants, architect/engineers (AE), fabricators, suppliers, and purchasing agents:

a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.

b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.

c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.

d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, designers of record, consultants, architect engineers (AE), offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.

e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities must be approved by the Contracting Officer.)

f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

g. Procedures for tracking design and construction deficiencies from

identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.

h. Reporting procedures, including proposed reporting formats.

i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

3.2.2 Additional Requirements for Design Quality Control (DQC) Plan

The followng additional requirements apply to the Design Quality Control (DQC) plan:

(1) The Contractor's QCP Plan shall provide and maintain a Design Quality Control (DQC) Plan as an effective quality control program which will assure that all services required by this design-build contract are performed and provided in a manner that meets professional architectural and engineering quality standards. As a minimum, all documents shall be technically reviewed by competent, independent reviewers identified in the DQC Plan. The same element that produced the product shall not perform the independent technical review (ITR). In addition, the DQC Plan shall incorporate the Lessons Learned Databases provided by the Government. The Contractor shall correct errors and deficiencies in the design documents prior to submitting them to the Government.

(2) The Contractor shall include the design schedule in the master project schedule, showing the sequence of events involved in carrying out the project design tasks within the specific contract period. This should be at a detailed level of scheduling sufficient to identify all major design tasks, including those that control the flow of work. The schedule shall include review and correction periods associated with each item. This should be a forward planning as well as a project monitoring tool. The schedule reflects calendar days and not dates for each activity. If the schedule is changed, the Contractor shall submit a revised schedule reflecting the change within 7 calendar days. The Contractor shall include in the DQC Plan the discipline-specific checklists to be used during the design and quality control of each submittal. These completed checklists shall be submitted at each design phase as part of the project documentation. Example checklists can be found in ER 1110-1-12.

(3) The DQC Plan shall be implemented by an Design Quality Control Manager who has the responsibility of being cognizant of and assuring that all documents on the project have been coordinated. This individual shall be a person who has verifiable engineering or architectural design experience and is a registered professional engineer or architect. The Contractor shall notify

the Contracting Officer, in writing, of the name of the individual, and the name of an alternate person assigned to the position.

The Contracting Officer will notify the Contractor in writing of the acceptance of the DQC Plan. After acceptance, any changes proposed by the Contractor are subject to the acceptance of the Contracting Officer.

3.2.3 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of design and construction. Acceptance is conditional and will be predicated on satisfactory performance during the design and construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.4 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Postaward Conference, before start of design or construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 7 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, design activities, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager, a Design Quality Manager, and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health Manager shall receive direction and authority from the CQC System Manager and shall serve as a member of the CQC staff. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization.The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. The Contractor shall provide adequate office space,

filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, show drawing submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a graduate engineer, graduate architect, or a graduate of construction management, with a minimum of 5 years' construction experience on construction similar to this contract or a construction person with a minimum of 15 years' experience in related work. This CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned no other duties. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

3.4.3 CQC Personnel

In addition to CQC personnel specified elsewhere in the contract, the Contractor shall provide as part of the CQC organization specialized personnel to assist the CQC System Manager for the following areas: electrical, mechanical, civil, and submittals clerk. These individuals shall be directly employed by the prime Contractor and may not be employed by a supplier or sub-contractor on this project; be responsible to the CQC System Manager; be physically present at the construction site during work on their areas of responsibility; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals shall have no other duties other than quality control and shall be physically present at the construction site during work on their areas of responsibility, or no later than 60 days after notice to proceed, whichever is earlier..

Experience Matrix

	Area	Qualifications
a.	Civil	Graduate Civil Engineer with 3 years' experience in the type of work being performed on this project or technician with 10 years' related experience
b.	Mechanical	Graduate Mechanical Engineer with 3 years' experience or person with 10 years' related experience
c.	Electrical	Graduate Electrical Engineer with 3 years'

Experience Matrix

Area		Qualifications
		related experience or person with 10 years' related experience
d.	Submittals	Submittal Clerk with 1 year's experience

3.4.4 Additional Requirement

In addition to the above experience and education requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors". This course is offered on a quarterly basis within the Savannah District boundaries. CQC System Managers who have not successfully completed this course must attend the next available training session. Failure to successfully complete this training within the next available training date will be grounds for removal as CQC System Manager. There is currently a nominal fee to cover the cost of the training materials for Contractors who have current contracts with the Savannah District.

3.4.5 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements. When Section 15950A HEATING, VENTILATING AND AIR CONDITIONING (HVAC) CONTROL SYSTEMS; 15951A DIRECT DIGITAL CONTROL FOR HVAC; 15990A TESTING, ADJUSTING, AND BALANCING OF HVAC SYSTEMS; or 15995A COMMISSIONING OF HVAC SYSTEMS are included in the contract, the submittals required by those sections shall be coordinated with Section 01330 SUBMITTAL PROCEDURES to ensure adequate time is allowed for each type of submittal required.

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of the construction work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

a. A review of each paragraph of applicable specifications, reference codes, and standards. A copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field shall be made available by the Contractor at the preparatory inspection. These copies shall be maintained in the field and available for use by Government personnel until final acceptance of the work.

b. A review of the contract drawings.

c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.

d. Review of provisions that have been made to provide required control inspection and testing.

e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.

f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.

g. A review of the appropriate activity hazard analysis to assure safety requirements are met.

h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.

i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.

j. Discussion of the initial control phase.

k. The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.

b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.

c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

d. Resolve all differences.

e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.

f. The Government shall be notified at least 24 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if: the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

a. Verify that testing procedures comply with contract requirements.

b. Verify that facilities and testing equipment are available and comply with testing standards.

c. Check test instrument calibration data against certified standards.

d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.

e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2 Testing Laboratories

3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.

3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the following address:

US Army Engineer District, Savannah
Environmental & Materials Unit
200 North Cobb Parkway
Building 400, Suite 404
Marietta, GA 30062

Coordination for each specific test will be made through the Area Office.

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Near the end of the work, or any increment of the work established by a time stated in the Special Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications, the CQC Manager shall conduct an inspection of the work. A punch list of items which do not conform to the approved drawings and specifications shall be prepared and included in the CQC documentation, as required by paragraph DOCUMENTATION. The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

a. Contractor/subcontractor and their area of responsibility.

b. Operating plant/equipment with hours worked, idle, or down for repair.

c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.

d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase shall be identified (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.

e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.

f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.

g. Offsite surveillance activities, including actions taken.

h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.

i. Instructions given/received and conflicts in plans and/or specifications.

j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.10 SAMPLE FORMS

Sample forms are included in Attachment 1 to Section 00800.

3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order

stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

-- End of Section --

CEGS-01500/S (February 1997)

Superseding
CEGS-01500 (September 1993)

GUIDE SPECIFICATION FOR MILITARY CONSTRUCTION

SECTION 01500

TEMPORARY CONSTRUCTION FACILITIES
02/97

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

1.1.1 Site Plan

The Contractor shall prepare a site plan indicating the proposed location and dimensions of any area to be fenced and used by the Contractor, the number of trailers to be used, avenues of ingress/egress to the fenced area and details of the fence installation. Any areas which may have to be graveled to prevent the tracking of mud shall also be identified. The Contractor shall also indicate if the use of a supplemental or other staging area is desired.

1.1.2 Identification of Employees

The Contractor shall be responsible for furnishing to each employee, and for requiring each employee engaged on the work to display, identification as approved and directed by the Contracting Officer. Prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon release of any employee. When required, the Contractor shall obtain and provide fingerprints of persons employed on the project. Contractor and subcontractor personnel shall wear identifying markings on hard hats clearly identifying the company for whom the employee works.

1.1.3 Employee Parking

Contractor employees shall park privately owned vehicles in an area designated by the Contracting Officer. This area will be within reasonable walking distance of the construction site. Contractor employee parking shall not interfere with existing and established parking requirements of the military installation.

1.2 AVAILABILITY AND USE OF UTILITY SERVICES

1.2.1 Payment for Utility Services

The Government will make all reasonably required utilities available to the Contractor from existing outlets and supplies, as specified in the contract. Unless otherwise provided in the contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the Government or, where the utility is produced

by the Government, at reasonable rates determined by the Contracting Officer. The Contractor shall carefully conserve any utilities furnished without charge.

1.2.2 Meters and Temporary Connections

The Contractor, at its expense and in a manner satisfactory to the Contracting Officer, shall provide and maintain necessary temporary connections, distribution lines, and meter bases (Government will provide meters) required to measure the amount of each utility used for the purpose of determining charges. The Contractor shall notify the Contracting Officer, in writing, 5 working days before final electrical connection is desired so that a utilities contract can be established. The Government will provide a meter and make the final hot connection after inspection and approval of the Contractor's temporary wiring installation. The Contractor shall not make the final electrical connection.

1.2.3 Advance Deposit

An advance deposit for utilities consisting of an estimated month's usage or a minimum of $50.00 will be required. The last monthly bills for the fiscal year will normally be offset by the deposit and adjustments will be billed or returned as appropriate. Services to be rendered for the next fiscal year, beginning 1 October, will require a new deposit. Notification of the due date for this deposit will be mailed to the Contractor prior to the end of the current fiscal year.

1.2.4 Final Meter Reading

Before completion of the work and final acceptance of the work by the Government, the Contractor shall notify the Contracting Officer, in writing, 5 working days before termination is desired. The Government will take a final meter reading, disconnect service, and remove the meters. The Contractor shall then remove all the temporary distribution lines, meter bases, and associated paraphernalia. The Contractor shall pay all outstanding utility bills before final acceptance of the work by the Government.

1.2.5 Sanitation

The Contractor shall provide and maintain within the construction area minimum field-type sanitary facilities approved by the Contracting Officer. Government toilet facilities will not be available to Contractor's personnel.

1.2.6 Telephone

The Contractor shall make arrangements and pay all costs for telephone facilities desired.

1.3 BULLETIN BOARD, PROJECT SIGN, AND PROJECT SAFETY SIGN

1.3.1 Bulletin Board

Immediately upon beginning of work, the Contractor shall provide a weatherproof glass-covered bulletin board not less than 915 by 1220 mm in size for displaying the Equal Employment Opportunity poster, a copy of the

wage decision contained in the contract, Wage Rate Information poster, and other information approved by the Contracting Officer. The bulletin board shall be located at the project site in a conspicuous place easily accessible to all employees, as approved by the Contracting Officer. Legible copies of the aforementioned data shall be displayed until work is completed. Upon completion of work the bulletin board shall be removed by and remain the property of the Contractor.

1.3.2 Project Signs

The Contractor shall furnish and install a project sign at the location selected by the Contracting Officer. The project sign shall be painted on 1/2 inch thick exterior grade plywood. The sign layout shall be in accordance with the graphic format shown in Attachment 1 to Section 00800. The 4-foot by 4-foot right-hand section shall be painted white (Color No. 37875, Fed. Std. 595a) with black (Color No. 37038, Fed. Std. 595a) lettering. The 2-foot by 4-foot left-hand section shall be painted red (Color No. 12199, Fed. Std. 595a) with white lettering.

1.4 PROTECTION AND MAINTENANCE OF TRAFFIC

During construction the Contractor shall provide access and temporary relocated roads as necessary to maintain traffic. The Contractor shall maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, shall be as required by the State and local authorities having jurisdiction. The traveling public shall be protected from damage to person and property. The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with public traffic. The Contractor shall investigate the adequacy of existing roads and the allowable load limit on these roads. The Contractor shall be responsible for the repair of any damage to roads caused by construction operations.

1.4.1 Haul Roads

The Contractor will be required to use the haul routes shown on the plans unless otherwise permitted in writing by the Contracting Officer. When haul routes are not designated on the plans, the Contractor must obtain approval of the Contracting Officer of haul routes he intends to use. The Contractor shall maintain the haul routes and shall keep the dust problem under control by wetting the surface as needed. Sweeping and cleaning of pavements will be done as necessary to remove spillage resulting from the hauling operations. After all hauling has been completed, the Contractor shall restore the earth areas used for the haul routes to original condition by final grading, shaping, compacting, and grassing, and shall clean and sweep all paved areas as required. Any pavement damaged as a result of hauling operations under this contract for both the earth and other materials shall be promptly repaired by the Contractor, as approved by the Contracting Officer. The cost of maintenance and repair of the haul routes, as mentioned above, shall be considered as a subsidiary obligation of the Contractor. The axle load of earth hauling equipment operating on paved streets shall not exceed 12,000 pounds.

1.4.2 Barricades

The Contractor shall erect and maintain temporary barricades to limit public access to hazardous areas. Such barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed, clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

1.5 CONTRACTOR'S TEMPORARY FACILITIES

1.5.1 Administrative Field Offices

The Contractor shall provide and maintain administrative field office facilities within the construction areas at the designated site. Government office and warehouse facilities will not be available to the Contractor's personnel.

1.5.2 Storage Area

The Contractor shall construct a temporary 1.8 m high chain link fence around trailers and materials. The fence shall include plastic strip inserts, colored brown, so that visibility through the fence is obstructed. Fence posts may be driven, in lieu of concrete bases, where soil conditions permit. Trailers, materials, or equipment shall not be placed or stored outside the fenced area unless such trailers, materials, or equipment are assigned a separate and distinct storage area by the Contracting Officer away from the vicinity of the construction site but within the military boundaries. Trailers, equipment, or materials shall not be open to public view with the exception of those items which are in support of ongoing work on any given day. Materials shall not be stockpiled outside the fence in preparation for the next day's work. Mobile equipment, such as tractors, wheeled lifting equipment, cranes, trucks, and like equipment, shall be parked within the fenced area at the end of each work day.

1.5.3 Supplemental Storage Area

Upon Contractor's request, the Contracting Officer will designate another or supplemental area for the Contractor's use and storage of trailers, equipment, and materials. This area may not be in close proximity of the construction site but shall be within the military boundaries. Fencing of materials or equipment will not be required at this site; however, the Contractor shall be responsible for cleanliness and orderliness of the area used and for the security of any material or equipment stored in this area. Utilities will not be provided to this area by the Government.

1.5.4 Appearance of Trailers

Trailers utilized by the Contractor for administrative or material storage purposes shall present a clean and neat exterior appearance and shall be in a state of good repair. Trailers which, in the opinion of the Contracting Officer, require exterior painting or maintenance will not be allowed on the military property.

1.5.5 Maintenance of Storage Area

Fencing shall be kept in a state of good repair and proper alignment. Should the Contractor elect to traverse, with construction equipment or other vehicles, grassed or unpaved areas which are not established roadways, such areas shall be covered with a layer of gravel as necessary to prevent rutting and the tracking of mud onto paved or established roadways; gravel gradation shall be at the Contractor's discretion. Grass located within the boundaries of the construction site shall be mowed for the duration of the project. Grass and vegetation along fences, buildings, under trailers, and in areas not accessible to mowers shall be edged or trimmed neatly.

1.5.6 New Building

In the event a new building is constructed for the temporary project field office, it shall be a minimum 3.6 m in width, 5 m in length and have a minimum of 2.1 m headroom. It shall be equipped with approved electrical wiring, at least one double convenience outlet and the required switches and fuses to provide 110-120 volt power. It shall be provided with a work table with stool, desk with chair, two additional chairs, and one legal size file cabinet that can be locked. The building shall be waterproof, shall be supplied with heater, shall have a minimum of two doors, electric lights, a telephone, a battery operated smoke detector alarm, a sufficient number of adjustable windows for adequate light and ventilation, and a supply of approved drinking water. Approved sanitary facilities shall be furnished. The windows and doors shall be screened and the doors provided with dead bolt type locking devices or a padlock and heavy duty hasp bolted to the door. Door hinge pins shall be non-removable. The windows shall be arranged to open and to be securely fastened from the inside. Glass panels in windows shall be protected by bars or heavy mesh screens to prevent easy access to the building through these panels. In warm weather, air conditioning capable of maintaining the office at 50 percent relative humidity and a room temperature 11 degrees C below the outside temperature when the outside temperature is 35 degrees C, shall be furnished. Any new building erected for a temporary field office shall be maintained by the Contractor during the life of the contract and upon completion and acceptance of the work shall become the property of the Contractor and shall be removed from the site. All charges for telephone service for the temporary field office shall be borne by the Contractor, including long distance charges up to a maximum of $75.00 per month.

1.5.7 Security Provisions

Adequate outside security lighting shall be provided at the Contractor's temporary facilities. The Contractor shall be responsible for the security of its own equipment; in addition, the Contractor shall notify the appropriate law enforcement agency requesting periodic security checks of the temporary project field office.

1.6 OMITTED

1.7 PLANT COMMUNICATION

Whenever the Contractor has the individual elements of its plant so located that operation by normal voice between these elements is not satisfactory, the Contractor shall install a satisfactory means of communication, such as

telephone or other suitable devices. The devices shall be made available for use by Government personnel.

1.8 TEMPORARY PROJECT SAFETY FENCING

As soon as practicable, but not later than 15 days after the date established for commencement of work, the Contractor shall furnish and erect temporary project safety fencing at the work site. The safety fencing shall be a high visibility brown colored, high density polyethylene grid or approved equal, a minimum of 1.1 m high, supported and tightly secured to steel posts located on maximum 3 m centers, constructed at the approved location. The safety fencing shall be maintained by the Contractor during the life of the contract and, upon completion and acceptance of the work, shall become the property of the Contractor and shall be removed from the work site.

1.9 OMITTED

1.10 INSTALLATION REGULATIONS

The employees of the Contractor will be required to abide by all installation regulations as published by the Commanding Officer. A copy of these regulations can be obtained from the Area/Resident Engineer at the installation. All costs in connection therewith shall be included in the contract price for the work. All costs in connection therewith shall be included in the contract price for the work.

1.11 TESTING LABORATORIES

Testing is required to be performed by the Contractor as part of his Quality Control Program to verify contract compliance. This Quality Control Testing is to be conducted by a project or commercial laboratory which has been found adequate and qualified by a Corps of Engineers Division Laboratory Inspection Team.

1.11.1 Approved Testing Laboratories

A composite listing of approved testing laboratories within the South Atlantic Division is available upon request. The Contractor should engage the services of a laboratory contained in the composite list. Contractors may obtain the list by calling (912) 652-5236 or (770) 919-5296.

1.11.2 Other Laboratory Services

The Contractor may engage the services of a laboratory other than those approved by Corps of Engineers Division Laboratory Inspection Team if they comply with the following:

a. The Contractor identifies and proposes the unapproved laboratory a minimum of 90 days prior to the start of testing. This time is necessary to allow for scheduling an inspection by a Corps of Engineers Division Laboratory team. The time for Government inspection will not be the basis for an increase in the contract performance period.

b. All costs of Government inspection shall be the responsibility of the Contractor.

c. The Contractor may request Government inspection and approval prior to award by forwarding a written request to:

US Army Engineer District, Savannah
Environmental and Materials Unit
ATTN: Mike Wielputz
200 North Cobb Parkway
Building 400, Suite 404
Marietta, GA 30062

1.12 OMITTED

1.13 ENVIRONMENTAL EVALUATION FOR SITE CONTAMINATION - CATEGORY I

1.13.1 Site Evaluation

The job site has been evaluated for potential site contamination. The site is located in a traditionally nonhazardous location. The installation has no reason to suspect contamination.

1.13.2 Contractual Responsibilities of All Parties in the Event of Encounter with Contamination

If the Contractor encounters materials or conditions which indicate that there may be contamination on the site, the Contractor shall stop all work on the job site and report the discovery of the contaminants to the Contracting Officer's Representative (COR). The COR, will issue a written order to the Contractor to resume work or to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the Government as provided in FAR 52.212-12 - SUSPENSION OF WORK. The Government will be responsible for making an assessment of the contaminated site if this course of action is determined to be appropriate. After the assessment has been completed, the Government reserves the right to the following courses of action:

a. Direct the Contractor to resume work.

b. Clean up the contaminated site prior to directing the Contractor to resume work. The COR will determine whether the cleanup is to be accomplished by others or the Contractor.

c. Relocate the project site.

d. Terminate the contract for the convenience of the Government as provided in FAR 52.249-1 - TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (SHORT FORM) or FAR 52.249-2 - TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) - ALTERNATE I as applicable.

1.14 OMITTED.

1.15 OMITTED.

1.16 CONSTRUCTION SCHEDULE RESTRAINTS - FORT BENNING

1.16.1 Occupancy

The work to be performed is to be accomplished in populated areas where normal Post operations will be ongoing during the course of construction. It is the intent of these provisions to provide for maximum coordination between construction activities pursuant to this contract and concurrent ongoing routine activities of base personnel. Interference with and inconvenience to the occupants or routine of the areas shall be held to an absolute minimum.

1.16.2 Protection

Contractor is responsible to provide such covering, shields and barricades as are required to protect building occupants, equipment, stores, supplies, etc., from dust, debris, weather intrusion, water, moisture or other cause of damage resulting from construction.

1.16.3 Phasing and Sequence

1.16.3.1 General

In addition to the submittals required by clause SCHEDULES FOR CONSTRUCTION CONTRACTS (see SECTION 00700, FAR 52.236-15) the Contractor shall submit for approval a summary work schedule setting forth schedule dates for initiation and completion of construction in each work area. No work shall be performed prior to approval of this schedule and all work shall be performed in strict adherence thereto. If departures from this schedule appear to be required or desired, the Contracting Officer shall be promptly notified and his approval will be required prior to implementation of said departure(s).

1.16.3.2 Special Provisions / Special Work Restraints

None.

1.16.4 Time of Performance

1.16.4.1 Access to Buildings

All work requiring access to building interiors excluding attics, crawl spaces, etc., and all other work shall be performed between 7:30 a.m. and 4 p.m. (normal working hours for base where project is located) excluding official holidays, unless otherwise indicated or approved by the Contracting Officer. Requests to work during other than these normal hours shall be made in writing at least 36 hours in advance. For example, a request to work on a Saturday shall be submitted no later than Thursday at noon.

1.16.4.2 Work Requiring Outages

Work requiring outages of utilities or building systems will be accomplished after normal working hours and/or on weekends in accordance with prior approved schedule(s).

1.16.5 Outages

Contractor's work requiring outages of utility systems or building systems will require 2 weeks' advance notice and will be subject to the approval of the Contracting Officer. Notice shall include type of outage, date, and time outage will commence and estimated duration of outage.

1.16.6 Waste Disposal

All construction/demolition waste shall be disposed of off post at the expense of the Contractor.

1.16.7 Continuity

All tools, labor and materials required to complete any item of work within a given work area or requiring an outage of any building utility or system shall be available at the site prior to commencement thereof. Once work has commenced on an item of work, said work shall be continuously and diligently performed to completion and acceptance.

1.16.8 Department of the Army License

The Contractor shall complete and sign a license for use of storage and administrative areas on Government land. An application for the site license can be obtained from Mr. Dom Decarlo, 706-545-2004, Real Property Master Planning Office, DFEL, Ft. Benning, Ga., Bldg. 6 (Meloy Hall), Room 316. The application along with a copy of the site plan as required by Section 1.1.1 should be submitted to the Real Property Master Planning Office as soon after contract award as possible to allow Fort Benning’s Environmental Management Division (EMD) to clear the site. This clearance is required before the license can be completed and signed. Construction trailers and/or materials will not be allowed on site until the license is complete.

1.17 OMITTED.
1.18 OMITTED.
1.19 OMITTED.
1.20 OMITTED.
1.21 OMITTED.
1.22 OMITTED.
1.23 OMITTED.
1.24 OMITTED.

1.25 COLOR BOARDS

Six sets of color boards shall be submitted, in addition to samples required elsewhere. Such submittals shall be made not later than 60 days prior to approval date required to achieve compliance with approved project schedule. Each set of boards shall include samples of colors and finishes of all interior surfaces such as walls, toilet partitions, floors and ceilings. The samples will be presented on 8-inch by 10-1/2-inch boards (modules) with a maximum spread of 24 inches by 31-1/2 inches for foldouts. The modules shall be designed to fit in a standard looseleaf, three-ring binder. If more space is needed, more than one board per set may be submitted. The Contractor shall certify that he has reviewed the color samples in detail and that they are in strict accordance with the contract drawings and specifications, except as may be otherwise explicitly stated. If multiple material and finish (color) schemes are required, samples shall be

identified by scheme and coordinated to room names and numbers shown on the architectural floor plans and room finish and color schedule. Submittal of the color boards shall not relieve the Contractor of the responsibility to submit the samples required by technical specifications.

1.26 OMITTED.

1.27 OMITTED

1.28 REQUEST FOR INFORMATION (RFI) SYSTEM

The Government has developed an electronic database, the Request for Information (RFI) System, to track and answer Contractor questions and requests for information and clarification during construction. The use of the RFI System for all requests (the Contractor's as well as the subcontractors'/suppliers') is a contractual requirement for this project. The Contractor will enter the system over the Internet using any WEB browser and any Internet service provider. The Government will provide the Contractor a user identification and password for the system that will only allow the Contractor to enter and view the requests for this project. The Contractor will provide the Government the E-mail address for the individual(s) inputting into the system in order that E-mail messages can be sent from the Government to the Contractor indicating a response to the request. The Government will provide training in the use of the software, which is a Lotus NOTES application. The Contractor will enter all requests indicating the question, recommended solution (if applicable), and needed response date. The Government will be notified through an E-mail message that the Contractor has entered a request into the system. When the Government has answered the request, an E-mail message will be sent to the Contractor, informing the Contractor that the answer to the request is in the system. The Contractor will enter the system to retrieve the answer using the same procedure to enter the question. The RFI System assigns a unique number to each request. The Contractor will not be reimbursed separately for the required use of this system. The Contractor shall include any costs associated with the use of this system into the appropriate bid item.

1.29 PROGRESS PHOTOGRAPHS

The Contractor shall, during the progress of the project, furnish the Contracting Officer progress photographs and color slides to depict progress of construction. The photographic work shall be performed by a qualified, established, commercial photographer. The photographs and slides shall be taken between the 1st and 5th day of each month and be delivered to the Contracting Officer not later than the 20th day of the same month taken. The photographs and slides shall be taken from not less than six positions for each month as selected by the Contracting Officer. They shall show, inasmuch as practicable, work accomplished during the previous month. The photographs shall be 8-inch by 10-inch color glossy prints and the slides 35 millimeter color slides. Each photograph shall be identified showing date made, contract title and number and a brief description of work depicted and shall be sequentially numbered. The identifying data shall be placed on the back of the prints. Slides shall have a number placed on the frame corresponding to the appropriate identified print, the name of the project, the date and a brief description of work depicted. No identifying data shall appear on the face of prints or in the viewing area of slides. One copy of each photograph and the corresponding negative and slide shall be

furnished to the Contracting Officer by the time stipulated above. No separate payment will be made for these services and all costs in connection therewith shall be considered incidental to costs of the overall project.

1.30 CLEANUP

Construction debris, waste materials, packaging material and the like shall be removed from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways shall be cleaned away. Materials resulting from demolition activities which are salvageable shall be stored within the fenced area described above or at the supplemental storage area. Stored material not in trailers, whether new or salvaged, shall be neatly stacked when stored.

1.31 RESTORATION OF STORAGE AREA

Upon completion of the project and after removal of trailers, materials, and equipment from within the fenced area, the fence shall be removed and will become the property of the Contractor. Areas used by the Contractor for the storage of equipment or material, or other use, shall be restored to the original or better condition. Gravel used to traverse grassed areas shall be removed and the area restored to its original condition, including top soil and seeding as necessary.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01572

CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT

10/01

1.1 GOVERNMENT POLICY
1.2 MANAGEMENT
1.3 PLAN
1.4 RECORDS
1.5 COLLECTION
1.5.1 Source Separated Method.
1.5.2 Co-Mingled Method.
1.5.3 Other Methods.
1.6 DISPOSAL
1.6.1 Reuse.
1.6.2 Recycle.
1.6.3 Waste.

-- End of Section Table of Contents --

UFGS-01572 (October 2001)

SECTION 01572

CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT
10/01

1.1 GOVERNMENT POLICY

Government policy is to apply sound environmental principles in the design, construction and use of facilities. As part of the implementation of that policy the Contractor shall: (1) practice efficient waste management when sizing, cutting, and installing products and materials and (2) use all reasonable means to divert construction and demolition waste from landfills and incinerators and to facilitate their recycling or reuse.

1.2 MANAGEMENT

The Contractor shall take a pro-active, responsible role in the management of construction and demolition waste and require all subcontractors, vendors, and suppliers to participate in the effort. Construction and demolition waste includes products of demolition or removal, excess or unusable construction materials, packaging materials for construction products, and other materials generated during the construction process but not incorporated into the work. In the management of waste consideration shall be given to the availability of viable markets, the condition of the material, the ability to provide the material in suitable condition and in a quantity acceptable to available markets, and time constraints imposed by internal project completion mandates. The Contractor shall be responsible for implementation of any special programs involving rebates or similar incentives related to recycling of waste. Revenues or other savings obtained for salvage, or recycling shall accrue to the Contractor. Firms and facilities used for recycling, reuse, and disposal shall be appropriately permitted for the intended use to the extent required by federal, state, and local regulations.

1.3 PLAN

A waste management plan shall be submitted within 15 days after contract award and prior to initiating any site preparation work. The plan shall include the following:

a. Name of individuals on the Contractor's staff responsible for waste prevention and management.

b. Actions that will be taken to reduce solid waste generation.

c. Description of the specific approaches to be used in recycling/reuse of the various materials generated, including the areas and equipment to be used for processing, sorting, and temporary storage of wastes.

d. Characterization, including estimated types and quantities, of the waste to be generated.

e. Name of landfill and/or incinerator to be used and the estimated

costs for use, assuming that there would be no salvage or recycling on the project.

f. Identification of local and regional reuse programs, including non-profit organizations such as schools, local housing agencies, and organizations that accept used materials such as materials exchange networks and Habitat for Humanity.

g. List of specific waste materials that will be salvaged for resale, salvaged and reused, or recycled. Recycling facilities that will be used shall be identified.

h. Identification of materials that cannot be recycled/reused with an explanation or justification.

i. Anticipated net cost savings determined by subtracting Contractor program management costs and the cost of disposal from the revenue generated by sale of the materials and the incineration and/or landfill cost avoidance.

1.4 RECORDS

Records shall be maintained to document the quantity of waste generated; the quantity of waste diverted through sale, reuse, or recycling; and the quantity of waste disposed by landfill or incineration. The records shall be made available to the Contracting Officer during construction, and a copy of the records shall be delivered to the Contracting Officer upon completion of the construction.

1.5 COLLECTION

The necessary containers, bins and storage areas to facilitate effective waste management shall be provided and shall be clearly and appropriately identified. Recyclable materials shall be handled to prevent contamination of materials from incompatible products and materials and separated by one of the following methods:

1.5.1 Source Separated Method.

Waste products and materials that are recyclable shall be separated from trash and sorted into appropriately marked separate containers and then transported to the respective recycling facility for further processing.

1.5.2 Co-Mingled Method.

Waste products and recyclable materials shall be placed into a single container and then transported to a recycling facility where the recyclable materials are sorted and processed.

1.5.3 Other Methods.

Other methods proposed by the Contractor may be used when approved by the Contracting Officer.

1.6 DISPOSAL

Except as otherwise specified in other sections of the specifications, disposal shall be in accordance with the following:

1.6.1 Reuse.

First consideration shall be given to salvage for reuse since little or no re-processing is necessary for this method, and less pollution is created when items are reused in their original form. Sale or donation of waste suitable for reuse shall be considered. Salvaged materials, other than those specified in other sections to be salvaged and reinstalled, shall not be used in this project.

1.6.2 Recycle.

Waste materials not suitable for reuse, but having value as being recyclable, shall be made available for recycling whenever economically feasible.

1.6.3 Waste.

Materials with no practical use or economic benefit shall be disposed at a landfill or incinerator.

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01670

RECYCLED / RECOVERED MATERIALS

12/01

PART 1 GENERAL

1.1 REFERENCES
1.2 OBJECTIVES
1.3 EPA DESIGNATED ITEMS INCORPORATED IN THE WORK
1.4 EPA PROPOSED ITEMS INCORPORATED IN THE WORK
1.5 EPA LISTED ITEMS USED IN CONDUCT OF THE WORK BUT NOT INCORPORATED IN THE WORK

-- End of Section Table of Contents --

UFGS-01670 (December 2001)

SECTION 01670

RECYCLED / RECOVERED MATERIALS

12/01

PART 1 GENERAL

1.1 REFERENCES

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

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

40 CFR 247	Comprehensive Procurement Guideline for Products Containing Recovered Materials

1.2 OBJECTIVES

Government procurement policy is to acquire, in a cost effective manner, items containing the highest percentage of recycled and recovered materials practicable consistent with maintaining a satisfactory level of competition without adversely affecting performance requirements or exposing suppliers' employees to undue hazards from the recovered materials. The Environmental Protection Agency (EPA) has designated certain items which must contain a specified percent range of recovered or recycled materials. EPA designated products specified in this contract comply with the stated policy and with the EPA guidelines. The Contractor shall make all reasonable efforts to use recycled and recovered materials in providing the EPA designated products and in otherwise utilizing recycled and recovered materials in the execution of the work.

1.3 EPA DESIGNATED ITEMS INCORPORATED IN THE WORK

Various sections of the specifications contain requirements for materials that have been designated by EPA as being products which are or can be made with recovered or recycled materials. These items, when incorporated into the work under this contract, shall contain at least the specified percentage of recycled or recovered materials unless adequate justification (non-availability) for non-use is provided. When a designated item is specified as an option to a non-designated item, the designated item requirements apply only if the designated item is used in the work.

1.4 EPA PROPOSED ITEMS INCORPORATED IN THE WORK

Products other than those designated by EPA are still being researched and are being considered for future Comprehensive Procurement Guideline (CPG) designation. It is recommended that these items, when incorporated in the work under this contract, contain the highest practicable percentage of recycled or recovered materials, provided specified requirements are also met.

1.5 EPA LISTED ITEMS USED IN CONDUCT OF THE WORK BUT NOT INCORPORATED IN THE WORK

There are many products listed in 40 CFR 247 which have been designated or proposed by EPA to include recycled or recovered materials that may be used by the Contractor in performing the work but will not be incorporated into the work. These products include office products, temporary traffic control products, and pallets. It is recommended that these non-construction products, when used in the conduct of the work, contain the highest practicable percentage of recycled or recovered materials and that these products be recycled when no longer needed.

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01780A

CLOSEOUT SUBMITTALS

05/02

PART 1 GENERAL

1.1 SUBMITTALS
1.2 PROJECT RECORD DOCUMENTS
1.2.1 As-Built Drawings
1.2.1.1 Government Furnished Materials
1.2.1.2 Working As-Built and Final As-Built Drawings
1.2.1.3 Drawing Preparation
1.2.1.4 Computer Aided Design and Drafting (CADD) Drawings
1.2.1.5 Omitted
1.2.1.6 Payment
1.2.2 As-Built Record of Equipment and Materials
1.2.3 Final Approved Shop Drawings
1.2.4 Construction Contract Specifications
1.2.5 Real Property Equipment
1.3 WARRANTY MANAGEMENT
1.3.1 Warranty Management Plan
1.3.2 Performance Bond
1.3.3 Pre-Warranty Conference
1.3.4 Contractor's Response to Construction Warranty Service Requirements
1.3.5 Warranty Tags
1.4 MECHANICAL TESTING, ADJUSTING, BALANCING, AND COMMISSIONING
1.5 OPERATION AND MAINTENANCE MANUALS
1.6 FINAL CLEANING

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section Table of Contents --

UFGS-01780A/S (May 2002)

SECTION 01780A

CLOSEOUT SUBMITTALS
05/02

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

As-Built Drawings; G

Drawings showing final as-built conditions of the project. The final CADD as-built drawings shall consist of one set of electronic CADD drawing files in the specified format, two sets of black-line prints, and one set of the approved working as-built drawings.

SD-03 Product Data

As-Built Record of Equipment and Materials; G

Two copies of the record listing the as-built materials and equipment incorporated into the construction of the project.

Warranty Management Plan; G

Two sets of the warranty management plan containing information relevant to the warranty of materials and equipment incorporated into the construction project, including the starting date of warranty of construction. The Contractor shall furnish with each warranty the name, address, and telephone number of each of the guarantor's representatives nearest to the project location.

Warranty Tags

Two record copies of the warranty tags showing the layout and design.

Final Cleaning

Two copies of the listing of completed final clean-up items.

1.2 PROJECT RECORD DOCUMENTS

1.2.1 As-Built Drawings

This paragraph covers as-built drawings complete, as a requirement of the contract. The terms "drawings," "contract drawings," "drawing files," "working as-built drawings" and "final as-built drawings" refer to contract drawings which are revised to be used for final as-built drawings.

1.2.1.1 Government Furnished Materials

Two sets of paper drawings revised to reflect all bid amendments will be provided by the Government at the preconstruction conference for markup of as-built conditions. Electronic CADD files in Microstation format will be provided by the Government at the preconstruction conference for updating CADD file as-built drawings.

1.2.1.2 Working As-Built and Final As-Built Drawings

The Contractor shall revise two sets of paper drawings by red-line process to show the as-built conditions during the prosecution of the project. These working as-built marked drawings shall be kept current on a weekly basis and at least one set shall be available on the jobsite at all times. Changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction shall be accurately and neatly recorded as they occur by means of details and notes. Final as-built drawings shall be prepared after the completion of each definable feature of work as listed in the Contractor Quality Control Plan (Foundations, Utilities, Structural Steel, etc., as appropriate for the project). The working as-built marked prints and final as-built drawings will be jointly reviewed for accuracy and completeness by the Contracting Officer and the Contractor prior to submission of each monthly pay estimate. If the Contractor fails to maintain the working and final as-built drawings as specified herein, the Contracting Officer will deduct from the monthly progress payment an amount representing the estimated cost of maintaining the as-built drawings. This monthly deduction will continue until an agreement can be reached between the Contracting Officer and the Contractor regarding the accuracy and completeness of updated drawings. The working and final as-built drawings shall show, but shall not be limited to, the following information:

a. The actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, the as-built drawings shall show, by offset dimensions to two permanently fixed surface features, the end of each run including each change in direction. Valves, splice boxes and similar appurtenances shall be located by dimensioning along the utility run from a reference point. The average depth below the surface of each run shall also be recorded.

b. The location and dimensions of any changes within the building structure.

c. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.

d. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor; including but not limited to fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.

e. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.

f. Changes or modifications which result from the final inspection.

g. Where contract drawings or specifications present options, only the option selected for construction shall be shown on the final as-built prints.

h. If borrow material for this project is from sources on Government property, or if Government property is used as a spoil area, the Contractor shall furnish a contour map of the final borrow pit/spoil area elevations.

i. Systems designed or enhanced by the Contractor, such as HVAC controls, fire alarm, fire sprinkler, and irrigation systems.

j. Modifications (change order price shall include the Contractor's cost to change working and final as-built drawings to reflect modifications) and compliance with the following procedures.

(1) Directions in the modification for posting descriptive changes shall be followed.

(2) A Modification Circle shall be placed at the location of each deletion.

(3) For new details or sections which are added to a drawing, a Modification Circle shall be placed by the detail or section title.

(4) For minor changes, a Modification Circle shall be placed by the area changed on the drawing (each location).

(5) For major changes to a drawing, a Modification Circle shall be placed by the title of the affected plan, section, or detail at each location.

(6) For changes to schedules or drawings, a Modification Circle shall be placed either by the schedule heading or by the change in the schedule.

(7) The Modification Circle size shall be 1/2 inch diameter unless the area where the circle is to be placed is crowded. Smaller size circle shall be used for crowded areas.

1.2.1.3 Drawing Preparation

The as-built drawings shall be modified as may be necessary to correctly show the features of the project as it has been constructed by bringing the contract set into agreement with approved working as-built prints, and adding such additional drawings as may be necessary. These working as-built marked prints shall be neat, legible and accurate. These drawings are part of the permanent records of this project and shall be returned to the Contracting Officer after approval by the Government. Any drawings damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at no expense to the Government.

1.2.1.4 Computer Aided Design and Drafting (CADD) Drawings

Only personnel proficient in the preparation of CADD drawings shall be employed to modify the contract drawings or prepare additional new drawings. Additions and corrections to the contract drawings shall be equal in quality and detail to that of the originals. Line colors, line weights, lettering, layering conventions, and symbols shall be the same as the original line colors, line weights, lettering, layering conventions, and symbols. If additional drawings are required, they shall be prepared using the specified electronic file format applying the same graphic standards specified for original drawings. The title block and drawing border to be used for any new final as-built drawings shall be identical to that used on the contract drawings. Additions and corrections to the contract drawings shall be accomplished using CADD files. The Contractor will be furnished "as-designed" drawings in Microstation J format compatible with a Windows NT 2000 operating system or Windows XP. The electronic files will be supplied on compact disc, read-only memory (CD-ROM). The Contractor shall be responsible for providing all program files and hardware necessary to prepare final as-built drawings. The Contracting Officer will review final as-built drawings for accuracy and the Contractor shall make required corrections, changes, additions, and deletions.

a. Corrections shall be made in the "Model" files rather than the individual sheet file when model files are referenced. Once the model file is corrected the individual sheet file will automatically be corrected.

b. The contractor shall modify the drawings at construction completion to indicate the as-built character of all site components:

(1) These drawings will conform to the level symbology of the model files and be free of any superfluous construction detail. The intent is to show As-Built conditions and should not include any components that are not as-built, i.e., if the pre-work map showed a water line 3' from a curb and was constructed 4' from the curb, the as-built map will show only the final location of the water line.

(2) The grading model file will clearly indicate the final grade of the site at a contour interval not greater than one foot.

(3) The final inverts of all utilities will be shown on the model files. Where utilities were installed which follow the surface of the ground, the depth of that utility will be indicated. Where there is a variance in the depth of the utility, the break point and character of variance will be shown.

(4) The model files will clearly identify all utilities installed with a trace wire and/or cathodic protection.

(5) The model files will show a minimum of two tie points for all subsurface control devices to include valves, manholes, handholes, switches, etc. The tie-points will be directed such that they form a triangle with no inclusive angle less than 30° or greater than 150°. No leg of the triangle will be longer than 100'. Valid tie-points will run to identifiable above ground objects such as poles or building corners as is in keeping of good survey practice for the recovery of monuments.

(6) The model files will clearly indicate the entry point and character of all utilities running to or from structures.

c. When final revisions have been completed, the cover sheet drawing shall show the wording "RECORD DRAWING AS-BUILT" followed by the name of the Contractor in letters at least 3/16 inch high. All other contract drawings shall be marked either "AS-Built" drawing denoting no revisions on the sheet or "Revised As-Built" denoting one or more revisions. Original contract drawings shall be dated in the revision block.

d. Within 10 days for contracts less than $5 million or 20 days for contracts $5 million and above after Government approval of all of the working as-built drawings for a phase of work, the Contractor shall prepare the final CADD as-built drawings for that phase of work and submit two sets of blue-lined prints of these drawings for Government review and approval. The Government will promptly return one set of prints annotated with any necessary corrections. Within 7 days for contracts less than $5 million or 10 days for contracts $5 million and above the Contractor shall revise the CADD files accordingly at no additional cost and submit one set of final prints for the completed phase of work to the Government. Within 10 days for contracts less than $5 million or 20 days for contracts $5 million and above of substantial completion of all phases of work, the Contractor shall submit the final as-built drawing package for the entire project. The submittal shall consist of one set of electronic files on compact disc, read-only memory (CD-ROM), two sets of blue-line prints and one set of the approved working as-built drawings. They shall be complete in all details and identical in form and function to the contract drawing files supplied by the Government. Any transactions or adjustments necessary to accomplish this is the responsibility of the Contractor. The Government reserves the right to reject any drawing files it deems incompatible with the customer's CADD system. Paper prints, drawing files and storage media submitted will become the property of the Government upon final approval. Failure to submit final as-built drawing files and marked prints as specified shall be cause for withholding any payment due the Contractor under this contract. Approval and acceptance of final as-built drawings shall be accomplished before final payment is made to the Contractor.

1.2.1.5 Omitted

1.2.1.6 Payment

No separate payment will be made for as-built drawings required under this contract, and all costs accrued in connection with such drawings shall be considered a subsidiary obligation of the Contractor.

1.2.2 As-Built Record of Equipment and Materials

The Contractor shall furnish one copy of preliminary record of equipment and materials used on the project 15 days prior to final inspection. This preliminary submittal will be reviewed and returned 2 days after final inspection with Government comments. Two sets of final record of equipment and materials shall be submitted 10 days after final inspection. The designations shall be keyed to the related area depicted on the contract drawings. The record shall list the following data:

RECORD OF DESIGNATED EQUIPMENT AND MATERIALS DATA

Description	Specification Section	Manufacturer and Catalog, Model, and Serial Number	Composition and Size	Where Used

RECORD OF DESIGNATED EQUIPMENT AND MATERIALS DATA

1.2.3 Final Approved Shop Drawings

The Contractor shall furnish final approved project shop drawings 30 days after transfer of the completed facility.

1.2.4 Construction Contract Specifications

The Contractor shall furnish final as-built construction contract specifications, including modifications thereto, 30 days after transfer of the completed facility.

1.2.5 Real Property Equipment

The Contractor shall furnish a list of installed equipment furnished under this contract. The list shall include all information usually listed on manufacturer's name plate. The "EQUIPMENT-IN-PLACE LIST" shall include, as applicable, the following for each piece of equipment installed: description of item, location (by room number), model number, serial number, capacity, name and address of manufacturer, name and address of equipment supplier, condition, spare parts list, manufacturer's catalog, and warranty. A draft list shall be furnished at time of transfer. The final list shall be furnished 30 days after transfer of the completed facility.

1.3 WARRANTY MANAGEMENT

1.3.1 Warranty Management Plan

The Contractor shall develop a warranty management plan which shall contain information relevant to the clause Warranty of Construction in Section 00800. At least 30 days before the planned pre-warranty conference, the Contractor shall submit the warranty management plan for Government approval. The warranty management plan shall include all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan shall be in narrative form and contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below shall include due date and whether item has been submitted or was accomplished. Warranty information made available during the construction phase shall be submitted to the Contracting Officer for approval prior to each monthly pay estimate. Approved information shall be assembled in a binder and shall be turned over to the Government upon acceptance of the work. The construction warranty period shall begin on the date of project acceptance and shall continue for the full product warranty period. A joint 4 month and 9 month warranty inspection shall be conducted, measured from time of acceptance, by the Contractor, Contracting Officer and the Customer Representative. Information contained in the warranty management plan shall include, but shall not be limited to, the following:

a. Roles and responsibilities of all personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the Contractors, subcontractors, manufacturers or suppliers involved.

b. Listing and status of delivery of all Certificates of Warranty for

extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and for all commissioned systems such as fire protection and alarm systems, sprinkler systems, lightning protection systems, etc.

c. A list for each warranted equipment, item, feature of construction or system indicating:

(1) Name of item.
(2) Model and serial numbers.
(3) Location where installed.
(4) Name and phone numbers of manufacturers or suppliers.
(5) Names, addresses and telephone numbers of sources of spare parts.
(6) Warranties and terms of warranty. This shall include one-year overall warranty of construction. Items which have extended warranties shall be indicated with separate warranty expiration dates.
(7) Cross-reference to warranty certificates as applicable.
(8) Starting point and duration of warranty period.
(9) Summary of maintenance procedures required to continue the warranty in force.
(10) Cross-reference to specific pertinent Operation and Maintenance manuals.
(11) Organization, names and phone numbers of persons to call for warranty service.
(12) Typical response time and repair time expected for various warranted equipment.

d. The Contractor's plans for attendance at the 4 and 9 month post-construction warranty inspections conducted by the Government.

e. Procedure and status of tagging of all equipment covered by extended warranties.

f. Copies of instructions to be posted near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

1.3.2 Performance Bond

The Contractor's performance bond shall remain effective throughout the construction period.

a. In the event the Contractor fails to commence and diligently pursue any construction warranty work required, the Contracting Officer will have the work performed by others, and after completion of the work, will charge the remaining construction warranty funds of expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.

b. In the event sufficient funds are not available to cover the construction warranty work performed by the Government at the Contractor's expense, the Contracting Officer will have the right to recoup expenses from the bonding company.

c. Following oral or written notification of required construction warranty repair work, the Contractor shall respond in a timely manner. Written verification will follow oral instructions. Failure of the Contractor to respond will be cause for the Contracting Officer to proceed against the Contractor.

1.3.3 Pre-Warranty Conference

Prior to contract completion, and at a time designated by the Contracting Officer, the Contractor shall meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of this section. Communication procedures for Contractor notification of construction warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer for the execution of the construction warranty shall be established/reviewed at this meeting. In connection with these requirements and at the time of the Contractor's quality control completion inspection, the Contractor shall furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue construction warranty work action on behalf of the Contractor. This point of contact will be located within the local service area of the warranted construction, shall be continuously available, and shall be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of its responsibilities in connection with other portions of this provision.

1.3.4 Contractor's Response to Construction Warranty Service Requirements

Following oral or written notification by the Contracting Officer, the Contractor shall respond to construction warranty service requirements in accordance with the "Construction Warranty Service Priority List" and the three categories of priorities listed below. The Contractor shall submit a report on any warranty item that has been repaired during the warranty period. The report shall include the cause of the problem, date reported, corrective action taken, and when the repair was completed. If the Contractor does not perform the construction warranty within the timeframes specified, the Government will perform the work and backcharge the construction warranty payment item established.

a. First Priority Code 1. Perform onsite inspection to evaluate situation, and determine course of action within 4 hours, initiate work within 6 hours and work continuously to completion or relief.

b. Second Priority Code 2. Perform onsite inspection to evaluate situation, and determine course of action within 8 hours, initiate work within 24 hours and work continuously to completion or relief.

c. Third Priority Code 3. All other work to be initiated within 3 work days and work continuously to completion or relief.

d. The "Construction Warranty Service Priority List" is as follows:

Code 1-Air Conditioning Systems
(1) Recreational support.
(2) Air conditioning leak in part of building, if causing damage.
(3) Air conditioning system not cooling properly.

Code 1-Doors
(1) Overhead doors not operational, causing a security, fire, or safety problem.
(2) Interior, exterior personnel doors or hardware, not functioning properly, causing a security, fire, or safety problem.

Code 3-Doors

(1) Overhead doors not operational.
(2) Interior/exterior personnel doors or hardware not functioning properly.

Code 1-Electrical
(1) Power failure (entire area or any building operational after 1600 hours).
(2) Security lights
(3) Smoke detectors

Code 2-Electrical
(1) Power failure (no power to a room or part of building).
(2) Receptacle and lights (in a room or part of building).

Code 3-Electrical
Street lights.

Code 1-Gas
(1) Leaks and breaks.
(2) No gas to family housing unit or cantonment area.

Code 1-Heat
(1). Area power failure affecting heat.
(2). Heater in unit not working.

Code 2-Kitchen Equipment
(1) Dishwasher not operating properly.
(2) All other equipment hampering preparation of a meal.

Code 1-Plumbing
(1) Hot water heater failure.
(2) Leaking water supply pipes.

Code 2-Plumbing
(1) Flush valves not operating properly.
(2) Fixture drain, supply line to commode, or any water pipe leaking.
(3) Commode leaking at base.

Code 3 -Plumbing
Leaky faucets.

Code 3-Interior
(1) Floors damaged.
(2) Paint chipping or peeling.
(3) Casework.

Code 1-Roof Leaks
Temporary repairs will be made where major damage to property is occurring.

Code 2-Roof Leaks
Where major damage to property is not occurring, check for location of leak during rain and complete repairs on a Code 2 basis.

Code 2-Water (Exterior)
No water to facility.

Code 2-Water (Hot)

No hot water in portion of building listed.

Code 3-All other work not listed above.

1.3.5 Warranty Tags

At the time of installation, each warranted item shall be tagged with a durable, oil and water resistant tag approved by the Contracting Officer. Each tag shall be attached with a copper wire and shall be sprayed with a silicone waterproof coating. The date of acceptance and the QC signature shall remain blank until project is accepted for beneficial occupancy. The tag shall show the following information.

a. Type of product/material_____.

b. Model number_____.

c. Serial number_____.

d. Contract number_____.

e. Warranty period_____from_____to_____.

f. Inspector's signature_____.

g. Construction Contractor_____.

Address_____.

Telephone number_____.

h. Warranty contact_____.

Address_____.

Telephone number_____.

i. Warranty response time priority code_____.

j. WARNING - PROJECT PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE DURING THE WARRANTY PERIOD.

1.4 MECHANICAL TESTING, ADJUSTING, BALANCING, AND COMMISSIONING

Prior to final inspection and transfer of the completed facility; all reports, statements, certificates, and completed checklists for testing, adjusting, balancing, and commissioning of mechanical systems shall be submitted to and approved by the Contracting Officer as specified in applicable technical specification sections.

1.5 OPERATION AND MAINTENANCE MANUALS

Operation manuals and maintenance manuals shall be submitted as specified. Operation manuals and maintenance manuals provided in a common volume shall be clearly differentiated and shall be separately indexed.

1.6 FINAL CLEANING

The premises shall be left broom clean. Stains, foreign substances, and

temporary labels shall be removed from surfaces. Carpet and soft surfaces shall be vacuumed. Equipment and fixtures shall be cleaned to a sanitary condition. Filters of operating equipment shall be replaced. Debris shall be removed from roofs, drainage systems, gutters, downspouts and boot wash areas. Paved areas shall be swept and landscaped areas shall be raked clean. The site shall have waste, surplus materials, and rubbish removed. The project area shall have temporary structures, barricades, project signs, fences and construction facilities removed. A list of completed clean-up items shall be submitted on the day of final inspection.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section --

SECTION TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01781

OPERATION AND MAINTENANCE DATA

12/01

PART 1 GENERAL

1.1 SUBMISSION OF OPERATION AND MAINTENANCE DATA
1.1.1 Package Quality
1.1.2 Package Content
1.1.3 Changes to Submittals
1.2 TYPES OF INFORMATION REQUIRED IN O&M DATA PACKAGES
1.2.1 Operating Instructions
1.2.1.1 Safety Precautions
1.2.1.2 Operator Prestart
1.2.1.3 Startup, Shutdown, and Post-Shutdown Procedures
1.2.1.4 Normal Operations
1.2.1.5 Emergency Operations
1.2.1.6 Operator Service Requirements
1.2.1.7 Environmental Conditions
1.2.2 Preventive Maintenance
1.2.2.1 Lubrication Data
1.2.2.2 Preventive Maintenance Plan and Schedule
1.2.3 Corrective Maintenance (Repair)
1.2.3.1 Troubleshooting Guides and Diagnostic Techniques
1.2.3.2 Wiring Diagrams and Control Diagrams
1.2.3.3 Maintenance and Repair Procedures
1.2.3.4 Removal and Replacement Instructions
1.2.3.5 Spare Parts and Supply Lists
1.2.4 Corrective Maintenance Work-Hours
1.2.5 Appendices
1.2.6 Parts Identification
1.2.6.1 Warranty Information
1.2.6.2 Personnel Training Requirements
1.2.6.3 Testing Equipment and Special Tool Information
1.2.6.4 Contractor Information
1.3 SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES
1.3.1 Data Package 1
1.3.2 Data Package 2
1.3.3 Data Package 3
1.3.4 Data Package 4
1.3.5 Data Package 5

PART 2 PRODUCTS

PART 3 EXECUTION

-- End of Section Table of Contents --

SECTION 01781

OPERATION AND MAINTENANCE DATA
12/01

PART 1 GENERAL

1.1 SUBMISSION OF OPERATION AND MAINTENANCE DATA

Submit Operation and Maintenance (O&M) Data specifically applicable to this contract and a complete and concise depiction of the provided equipment, product, or system. Organize and present information in sufficient detail to clearly explain O&M requirements at the system, equipment, component, and subassembly level. Include an index preceding each submittal. Submit in accordance with this section and Section 01330, "Submittal Procedures."

1.1.1 Package Quality

Documents must be fully legible. Poor quality copies and material with hole punches obliterating the text or drawings will not be accepted.

1.1.2 Package Content

Data package content shall be as shown in the paragraph titled "Schedule of Operation and Maintenance Data Packages." Comply with the data package requirements specified in the individual technical sections, including the content of the packages and addressing each product, component, and system designated for data package submission.

1.1.3 Changes to Submittals

Manufacturer-originated changes or revisions to submitted data shall be furnished by the Contractor if a component of an item is so affected subsequent to acceptance of the O&M Data. Changes, additions, or revisions required by the Contracting Officer for final acceptance of submitted data, shall be submitted by the Contractor within 30 calendar days of the notification of this change requirement.

1.2 TYPES OF INFORMATION REQUIRED IN O&M DATA PACKAGES

1.2.1 Operating Instructions

Include specific instructions, procedures, and illustrations for the following phases of operation:

1.2.1.1 Safety Precautions

List personnel hazards and equipment or product safety precautions for all operating conditions.

1.2.1.2 Operator Prestart

Include procedures required to set up and prepare each system for use.

1.2.1.3 Startup, Shutdown, and Post-Shutdown Procedures

Provide narrative description for Startup, Shutdown and Post-shutdown operating procedures including the control sequence for each procedure.

1.2.1.4 Normal Operations

Provide narrative description of Normal Operating Procedures. Include Control Diagrams with data to explain operation and control of systems and specific equipment.

1.2.1.5 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 other foreseeable contingencies. Provide guidance and procedures for emergency operation of all utility systems including required valve positions, valve locations and zones or portions of systems controlled.

1.2.1.6 Operator Service Requirements

Include instructions for services to be performed by the operator such as lubrication, adjustment, inspection, and recording gage readings.

1.2.1.7 Environmental Conditions

Include a list of Environmental Conditions (temperature, humidity, and other relevant data) that are best suited for the operation of each product, component or system. Describe conditions under which the item equipment should not be allowed to run.

1.2.2 Preventive Maintenance

Include the following information for preventive and scheduled maintenance to minimize corrective maintenance and repair.

1.2.2.1 Lubrication Data

Include preventative maintenance lubrication data, in addition to instructions for lubrication provided under paragraph titled "Operator Service Requirements":

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

b. Charts with a schematic diagram of the equipment showing lubrication points, recommended types and grades of lubricants, and capacities.

c. A Lubrication Schedule showing service interval frequency.

1.2.2.2 Preventive Maintenance Plan and Schedule

Include manufacturer's schedule for routine preventive maintenance, inspections, tests and adjustments required to ensure proper and economical operation and to minimize corrective maintenance. Provide manufacturer's projection of preventive maintenance work-hours on a daily, weekly, monthly, and annual basis including craft requirements by type of craft. For periodic calibrations, provide manufacturer's specified frequency and

procedures for each separate operation.

1.2.3 Corrective Maintenance (Repair)

Include manufacturer's recommended procedures and instructions for correcting problems and making repairs.

1.2.3.1 Troubleshooting Guides and Diagnostic Techniques

Include step-by-step procedures to promptly isolate the cause of typical malfunctions. Describe clearly why the checkout is performed and what conditions are to be sought. Identify tests or inspections and test equipment required to determine whether parts and equipment may be reused or require replacement.

1.2.3.2 Wiring Diagrams and Control Diagrams

Wiring diagrams and control diagrams shall be point-to-point drawings of wiring and control circuits including factory-field interfaces. Provide a complete and accurate depiction of the actual job specific wiring and control work. On diagrams, number electrical and electronic wiring and pneumatic control tubing and the terminals for each type, identically to actual installation configuration and numbering.

1.2.3.3 Maintenance and Repair Procedures

Include instructions and alist of tools required to repair or restore the product or equipment to proper condition or operating standards.

1.2.3.4 Removal and Replacement Instructions

Include step-by-step procedures and a list required tools and supplies for removal, replacement, disassembly, and assembly of components, assemblies, subassemblies, accessories, and attachments. Provide tolerances, dimensions, settings and adjustments required. Instructions shall include a combination of text and illustrations.

1.2.3.5 Spare Parts and Supply Lists

Include lists of spare parts and supplies required for maintenance and repair to ensure continued service or operation without unreasonable delays. Special consideration is required for facilities at remote locations. List spare parts and supplies that have a long lead-time to obtain.

1.2.4 Corrective Maintenance Work-Hours

Include manufacturer's projection of corrective maintenance work-hours including requirements by type of craft. Corrective maintenance that requires completion or participation of the equipment manufacturer shall be identified and tabulated separately.

1.2.5 Appendices

Provide information required below and information not specified in the preceding paragraphs but pertinent to the maintenance or operation of the product or equipment. Include the following:

1.2.6 Parts Identification

Provide identification and coverage for all parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Include special hardware requirements, such as requirement to use 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 that will cross-reference the illustrated part to the listed part. Parts shown in the listings shall be grouped by components, assemblies, and subassemblies in accordance with the manufacturer's standard practice. Parts data may cover more than one model or series of equipment, components, assemblies, subassemblies, attachments, or accessories, such as typically shown in a master parts catalog

1.2.6.1 Warranty Information

List and explain the various warranties and include the servicing and technical precautions prescribed by the manufacturers or contract documents in order to keep warranties in force. Include warranty information for primary components such as the compressor of air conditioning system.

1.2.6.2 Personnel Training Requirements

Provide information available from the manufacturers that is needed for use in training designated personnel to properly operate and maintain the equipment and systems.

1.2.6.3 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.

1.2.6.4 Contractor Information

Provide a list that includes the name, address, and telephone number of the General Contractor and each Subcontractor who installed the product or equipment, or system. For each item, also provide the name address and telephone number of the manufacturer's representative and service organization most convenient to the project site. Provide the name, address, and telephone number of the product, equipment, and system manufacturers.

1.3 SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES

Furnish the O&M data packages specified in individual technical sections. The required information for each O&M data package is as follows:

1.3.1 Data Package 1

a. Safety precautions

b. Maintenance and repair procedures

c. Warranty information

d. Contractor information

e. Spare parts and supply list

1.3.2 Data Package 2

a. Safety precautions

b. Normal operations

c. Environmental conditions

d. Lubrication data

e. Preventive maintenance plan and schedule

f. Maintenance and repair procedures

g. Removal and replacement instructions

h. Spare parts and supply list

i. Parts identification

j. Warranty information

k. Contractor information

1.3.3 Data Package 3

a. Safety precautions

b. Normal operations

c. Emergency operations

d. Environmental conditions

e. Lubrication data

f. Preventive maintenance plan and schedule

g. Troubleshooting guides and diagnostic techniques

h. Wiring diagrams and control diagrams

i. Maintenance and repair procedures

j. Removal and replacement instructions

k. Spare parts and supply list

l. Parts identification

m. Warranty information

n. Testing equipment and special tool information

o. Contractor information

1.3.4 Data Package 4

a. Safety precautions

b. Operator prestart

c. Startup, shutdown, and post-shutdown procedures

d. Normal operations

e. Emergency operations

f. Operator service requirements

g. Environmental conditions

h. Lubrication data

i. Preventive maintenance plan and schedule

j. Troubleshooting guides and diagnostic techniques

k. Wiring diagrams and control diagrams

l. Maintenance and repair procedures

m. Removal and replacement instructions

n. Spare parts and supply list

o. Corrective maintenance man-hours

p. Parts identification

q. Warranty information

r. Personnel training requirements

s. Testing equipment and special tool information

t. Contractor information

1.3.5 Data Package 5

a. Safety precautions

b. Operator prestart

c. Start-up, shutdown, and post-shutdown procedures

d. Normal operations

e. Environmental conditions

f. Preventive maintenance plan and schedule

g. Troubleshooting guides and diagnostic techniques

h. Wiring and control diagrams

i. Maintenance and repair procedures

j. Spare parts and supply list

k. Testing equipments and special tools

l. Warranty information

m. Contractor information

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --