AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES	
J	1	2

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO.(If applicable)
0011	23-Apr-2004	W68MD9-3253-1172	

6. ISSUED BY CODE W912DW

USA ENGINEER DISTRICT, SEATTLE
ATTN: CENWS-CT
4735 EAST MARGINAL WAY SOUTH
SEATTLE WA 98134-2329

7. ADMINISTERED BY (If other than item 6) CODE

See Item 6

8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)

CODE FACILITY CODE

X	9A. AMENDMENT OF SOLICITATION NO. W912DW-04-R-0003
X	9B. DATED (SEE ITEM 11) 31-Oct-2003
	10A. MOD. OF CONTRACT/ORDER NO.
	10B. DATED (SEE ITEM 13)

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

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

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning 0 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

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

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

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

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

[ ] D. OTHER (Specify type of modification and authority)

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

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

FY04 Whole Barracks Renewal, Ft. Lewis WA -- see continuation.

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

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) TEL: EMAIL:	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY (Signature of Contracting Officer)	16C. DATE SIGNED 23-Apr-2004

EXCEPTION TO SF 30
APPROVED BY OIRM 11-84

30-105-04

STANDARD FORM 30 (Rev. 10-83)
Prescribed by GSA
FAR (48 CFR) 53.243

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

The following items are applicable to this modification:

CONTINUATION

A. The purposes of this amendment are as follows:

(1) Provide a new SF 1442 for submission of revised proposals.

(2) Revise the Bid Schedule.

(3) Revise Section 00700, removing FAR Clause 52.225-5 Trade Agreements Jun 2003.

(4) Remove Washington Wage Decision WA030001 dated 13 Feb 2004 and replace it with Washington Wage Decision WA030001 dated 16 April 2004.

(5) Remove Washington Wage Decision WA030002 dated 13 Feb 2004 and replace it with Washington Wage Decision WA030002 dated 12 March 2004.

(6) Revise Section 00860 – at paragraphs 4-17.2, 8-4.6, 9.4.3, and 9.9 and modify RFP Drawings by notation in the specifications under Attachment 14.

(7) Revise Section 00890 OUTLINE SPECIFICATIONS under Section 08710 Door Hardware.

(8) Extend the due date for receipt of proposals to **2:00 PM Pacific Time on 30 April 2004.**

B. The attached revised pages supersede and replace the corresponding pages. The attached revised specification sections supersede and replace the corresponding specification sections. Specification changes are generally identified, for convenience, by strikeout for deletions, and underlining of text for additions. All portions of the revised or new pages shall apply whether or not changes have been indicated.

C. NOTICE TO OFFERORS: Offerors must acknowledge receipt of this amendment by number and date on Standard Form 1442, BACK, Block 19, or by telegram.

D. All amendments are available for download this date on the Army Corps of Engineers website at http://www.nws.usace.army.mil/ct/.

Enclosures:
SF 1442
Revised Bid Schedule
Revised Section 00700
Revised Wage Decision WA030001
Revised Wage Decision WA030002
Revised Section 00860
Revised Section 00890

SOLICITATION, OFFER, AND AWARD *(Construction, Alteration, or Repair)*	1. SOLICITATION NUMBER W912DW-04-R-0003	2. TYPE OF SOLICITATION ☐ SEALED BID *(IFB)* ☒ NEGOTIATED *(RFP)*	3. DATE ISSUED 05 November 2003	PAGE OF PAGES 1

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

4. CONTRACT NUMBER	5. REQUISITION/PURCHASE REQUEST NUMBER W68MD9-3027-6329	6. PROJECT NUMBER

7. ISSUED BY CODE W68MD9

Seattle District, Corps of Engineers
ATTN: CENWS-CT-CB-MU
PO Box 3755
Seattle, WA 98124-3755

8. ADDRESS OFFER TO

Seattle District, Corps of Engineers
PO Box 3755 ATTN: CENWS-CT-CB-MU
Seattle, WA 98124-3755

HAND CARRY: Seattle District Corps of Engineers
Contracting Division
4735 East Marginal Way South
Seattle, WA 98134-2329

9. FOR INFORMATION CALL ▶	A. NAME Sherrye Schmahl	B. TELEPHONE NUMBER *(Include area code) (NO COLLECT CALLS)* 206-764-6588

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 number, date):*

Furnish all labor, materials and equipment and perform all work for FY04 Whole Barracks Renewal, Fort Lewis, Washington in accordance with the attached Contract Clauses, Special Clauses, Technical Specifications and Drawings.

11. The Contractor shall begin performance within 10 calendar days and complete it within R0011 calendar days after receiving

☐ award, ☒ notice to proceed. This performance period is ☒ mandatory, ☐ negotiable. *(See* * Paragraph SC-1, 00800 *.)*

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

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 00010-2 copies to perform the work required are due at the place specified in Item 8 by 2:00 p.m. *(hour)* local time 30 April 2004 *(date).* If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed envelc 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 ☒ 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 referenc

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

OFFER *(Must be fully completed by offeror)*

14. NAME AND ADDRESS OF OFFEROR *(Include ZIP Code)*	15. TELEPHONE NUMBER *(Include area code)* Fax No.:
Tax ID No: DUNS No: eMail: CODE FACILITY CODE	16. REMITTANCE ADDRESS *(Include only if different than Item 14)*

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 accepted by the Government in writing within_____ calendar days after the date offers are due. *(Insert any number equal or greater than the minimum requirement stated in 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)*

AMOUNTS ▶ See Page 00010-5

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

19. ACKNOWLEDGEMENT 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 ▶ ITEM 26 *(4 copies unless otherwise specified)*	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 USACE - Seattle District Northwest Area Office PO Box 92146 Tillicum, WA 98492-0146	27. PAYMENT WILL BE MADE BY US Army Corps of Engineers Finance Center CEFC-AO-P 5722 Integrity Drive Millington, TN 38054-500

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

☐ 28. NEGOTIATED AGREEMENT *(Contractor is required to sign this document and return _____ copies to the issuing office.)* Contractor agrees to furnish and deliver all items or perform all work requirements 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 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)*	
30B. SIGNATURE	30C. DATE	31B. UNITED STATES OF AMERICA BY	31C. AWARD DATE

STANDARD FORM 1442 BACK (REV. 4-85

SCHEDULE

Item No.	Description of Item	Quantity	Unit	Unit Price	Amount
	BASE ITEMS				
0001	All Work For the Complete Design of FY 04 Whole Barracks Renewal, Fort Lewis, WA	1	JOB	L.S.	$_____
0002	All Work to Construct the Barracks Buildings within a Line 1500 mm Outside the Building Walls	1	JOB	L.S.	$_____
0003	All Work to Construct the four (4) Lawnmower Storage Buildings within a line 1500 mm Outside the Building Walls	1	JOB	L.S.	$_____
0004	All Work to Construct the three (3) Company Operations Facilities within a line 1500 mm Outside the Building Walls	1	JOB	L.S.	$_____
0005	All Work to Construct One ~~two~~ (1) Battalion Headquarters Building within a line 1500 mm Outside the Building Walls	1	JOB	L.S.	$_____
0006	All Work for Sitework and Utilities Outside of the 1500 mm Lines, Except the Propane Tank Farm for Alpha Block	1	JOB	L.S.	$_____
0007	All Work for As-Built Drawings as specified in Section 01702 from preparation to final approval	1	JOB	L.S.	$25,000.00
0008	All Work for O&M Manuals as specified in Section 01701 from preparation to final approval	1	JOB	L.S.	$60,000.00
0009	All Work for Form 1354 Checklist and Equipment in Place List as specified in Sections 01704 and 01705 from preparation to final approval	1	JOB	L.S.	$12,000.00
	TOTAL BASE ITEMS				$_____
	OPTIONAL ITEMS				
0010	All Work to Construct Landmark Feature at Intersection of 41st Division Drive and A Street.	1	JOB	L.S.	$_____

This page left blank

SCHEDULE (Cont.)

Item No.	Description of Item	Quantity	Unit	Unit Price	Amount
	OPTIONAL ITEMS				
0011	All Work to Construct One (1) Battalion Headquarters Building - General Administration Variant within a Line 1500 mm Outside the Building Walls	1	JOB	L.S.	$_____
0012	All Work to Construct the Propane Tank Farm for Alpha Block within a 1500 mm Line Outside the Tank Farm Fence	1	JOB	L.S.	$_____
	TOTAL OPTIONAL ITEMS				$_____
	TOTAL BASE AND OPTIONAL ITEMS				$_____

NOTE: The dollar amounts established in Items No. 0007, 0008, and 0009 shall not be revised by bidders.

52.201-4001	Successor Contracting Officers	DEC 1999
52.202-1 Alt I	Definitions (Dec 2001) --Alternate I	MAY 2001
52.203-3	Gratuities	APR 1984
52.203-5	Covenant Against Contingent Fees	APR 1984
52.203-6	Restrictions On Subcontractor Sales To The Government	JUL 1995
52.203-7	Anti-Kickback Procedures	JUL 1995
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity	JAN 1997
52.203-10	Price Or Fee Adjustment For Illegal Or Improper Activity	JAN 1997
52.203-12	Limitation On Payments To Influence Certain Federal Transactions	JUN 2003
52.204-4	Printed or Copied Double-Sided on Recycled Paper	AUG 2000
52.209-6	Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment	JUL 1995
52.212-4007	Environmental Litigation	NOV 1999
52.215-2	Audit and Records--Negotiation	JUN 1999
52.215-8	Order of Precedence--Uniform Contract Format	OCT 1997
52.215-11	Price Reduction for Defective Cost or Pricing Data--Modifications	OCT 1997
52.215-13	Subcontractor Cost or Pricing Data--Modifications	OCT 1997
52.215-19	Notification of Ownership Changes	OCT 1997
52.215-19	Notification of Ownership Changes	OCT 1997
52.215-21	Requirements for Cost or Pricing Data or Information Other Than Cost or Pricing Data--Modifications	OCT 1997
52.217-9	Option To Extend The Term Of The Contract	MAR 2000
52.219-4	Notice of Price Evaluation Preference for HUBZone Small Business Concerns	JAN 1999
52.219-8	Utilization of Small Business Concerns	OCT 2000
52.219-9	Small Business Subcontracting Plan	JAN 2002
52.219-14	Limitations On Subcontracting	DEC 1996
52.219-16	Liquidated Damages-Subcontracting Plan	JAN 1999
52.219-25	Small Disadvantaged Business Participation Program--Disadvantaged Status and Reporting	OCT 1999
52.222-1	Notice To The Government Of Labor Disputes	FEB 1997
52.222-3	Convict Labor	JUN 2003
52.222-4	Contract Work Hours and Safety Standards Act - Overtime Compensation	SEP 2000
52.222-6	Davis Bacon Act	FEB 1995
52.222-7	Withholding of Funds	FEB 1988
52.222-8	Payrolls and Basic Records	FEB 1988
52.222-9	Apprentices and Trainees	FEB 1988
52.222-10	Compliance with Copeland Act Requirements	FEB 1988
52.222-11	Subcontracts (Labor Standards)	FEB 1988
52.222-12	Contract Termination-Debarment	FEB 1988
52.222-13	Compliance with Davis-Bacon and Related Act Regulations.	FEB 1988
52.222-14	Disputes Concerning Labor Standards	FEB 1988
52.222-15	Certification of Eligibility	FEB 1988
52.222-21	Prohibition Of Segregated Facilities	FEB 1999
52.222-26	Equal Opportunity	APR 2002

52.222-27	Affirmative Action Compliance Requirements for Construction	FEB 1999
52.222-35	Equal Opportunity For Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans	DEC 2001
52.222-36	Affirmative Action For Workers With Disabilities	JUN 1998
52.222-37	Employment Reports On Special Disabled Veterans, Veterans Of The Vietnam Era, and Other Eligible Veterans	DEC 2001
52.223-3	Hazardous Material Identification And Material Safety Data	JAN 1997
52.223-5	Pollution Prevention and Right-to-Know Information	AUG 2003
52.223-6	Drug-Free Workplace	MAY 2001
52.223-9	Estimate of Percentage of Recovered Material Content for EPA-Designated Products	AUG 2000
52.223-14	Toxic Chemical Release Reporting	AUG 2003
52.224-1	Privacy Act Notification	APR 1984
52.224-2	Privacy Act	APR 1984
~~52.225-5~~	~~Trade Agreements~~	~~JUN 2003~~
~~52.225-9~~	~~Buy American Act--Construction Materials~~	~~JUN 2003~~
52.225-11	Buy American Act--Construction Materials Under Trade Agreements	JUN 2003
52.225-12	-Notice of Buy American Act Requirement-Construction Materials under Trade Agreements	MAY 2002
52.225-13 (Dev)	Restriction on Certain Foreign Purchases	JUN 2003
52.227-1	Authorization and Consent	JUL 1995
52.228-11	Pledges Of Assets	FEB 1992
52.228-12	Prospective Subcontractor Requests for Bonds	OCT 1995
52.228-13	Alternative Payment Protections	JUL 2000
52.228-14	Irrevocable Letter of Credit	DEC 1999
52.228-15	Performance and Payment Bonds--Construction	JUL 2000
52.228-4001	Information Regarding Performance and Payment Bonds (FAR 28.102)	FEB 2001
52.229-3	Federal, State And Local Taxes	APR 2003
52.230-3	Disclosure And Consistency Of Cost Accounting Practices	APR 1998
52.232-5	Payments under Fixed-Price Construction Contracts	SEP 2002
52.232-23	Assignment Of Claims	JAN 1986
52.232-27	Prompt Payment for Construction Contracts	FEB 2002
52.232-33	Payment by Electronic Funds Transfer--Central Contractor Registration	OCT 2003
52.233-1	Disputes	JUL 2002
52.233-1	Disputes	JUL 2002
52.233-3	Protest After Award	AUG 1996
52.236-2	Differing Site Conditions	APR 1984
52.236-3	Site Investigation and Conditions Affecting the Work	APR 1984
52.236-5	Material and Workmanship	APR 1984
52.236-6	Superintendence by the Contractor	APR 1984
52.236-7	Permits and Responsibilities	NOV 1991
52.236-8	Other Contracts	APR 1984
52.236-9	Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements	APR 1984
52.236-10	Operations and Storage Areas	APR 1984
52.236-11	Use and Possession Prior to Completion	APR 1984
52.236-12	Cleaning Up	APR 1984
52.236-13	Accident Prevention	NOV 1991
52.236-14	Availability and Use of Utility Services	APR 1984

52.236-15	Schedules for Construction Contracts	APR 1984
52.236-17	Layout of Work	APR 1984
52.236-21	Specifications and Drawings for Construction	FEB 1997
52.236-22	Design within Funding Limitations	APR 1984
52.236-23	Responsibility of the Architect-Engineer Contractor	APR 1984
52.236-26	Preconstruction Conference	FEB 1995
52.242-13	Bankruptcy	JUL 1995
52.242-14	Suspension of Work	APR 1984
52.243-4	Changes	AUG 1987
52.243-5	Changes and Changed Conditions	APR 1984
52.244-2	Subcontracts	AUG 1998
52.244-4	Subcontractors and Outside Associates and Consultants (Architect-Engineer Services)	AUG 1998
52.244-5	Competition In Subcontracting	DEC 1996
52.244-6	Subcontracts for Commercial Items	APR 2003
52.246-12	Inspection of Construction	AUG 1996
52.248-3	Value Engineering-Construction	FEB 2000
52.249-2 Alt I	Termination for Convenience of the Government (Fixed-Price) (Sep 1996) - Alternate I	SEP 1996
52.249-10	Default (Fixed-Price Construction)	APR 1984
52.252-2	Clauses Incorporated By Reference	FEB 1998
52.253-1	Computer Generated Forms	JAN 1991
252.201-7000	Contracting Officer's Representative	DEC 1991
252.203-7001	Prohibition On Persons Convicted of Fraud or Other Defense-Contract-Related Felonies	MAR 1999
252.203-7002	Display Of DOD Hotline Poster	DEC 1991
252.204-7000	Disclosure Of Information	DEC 1991
252.204-7003	Control Of Government Personnel Work Product	APR 1992
252.209-7004	Subcontracting With Firms That Are Owned or Controlled By The Government of a Terrorist Country	MAR 1998
252.215-7000	Pricing Adjustments	DEC 1991
252.223-7004	Drug Free Work Force	SEP 1988
252.223-7006	Prohibition On Storage And Disposal Of Toxic And Hazardous Materials	APR 1993
252.225-7031	Secondary Arab Boycott Of Israel	APR 2003
~~252.225-7036~~	~~Buy American--North American Free Trade Agreement Implementation Act--Balance of Payments Program~~	~~APR 2003~~
252.226-7001	Utilization of Indian Organizations and Indian-Owned Economic Enterprises, and Hawaiian Small Business Concerns	OCT 2003
252.227-7023	Drawings and Other Data to become Property of Government	MAR 1979
252.227-7033	Rights in Shop Drawings	APR 1966
252.231-7000	Supplemental Cost Principles	DEC 1991
252.236-7000	Modification Proposals -Price Breakdown	DEC 1991
252.242-7000	Postaward Conference	DEC 1991
252.243-7001	Pricing Of Contract Modifications	DEC 1991
252.243-7002	Requests for Equitable Adjustment	MAR 1998
252.244-7000	Subcontracts for Commercial Items and Commercial Components (DoD Contracts)	MAR 2000
252.247-7023	Transportation of Supplies by Sea	MAY 2002
252.247-7024	Notification Of Transportation Of Supplies By Sea	MAR 2000
PIL 2003-06	Security Contract Language for all Corps of Engineers' Unclassified Contracts	FEB 2003

CLAUSES INCORPORATED BY FULL TEXT

Successor Contracting Officers (52.201-4001)

The Contracting Officer who signed this contract is the primary Contracting Officer for the contract. Neverthless, any Contracting Officer assigned to the Seattle District and acting within his/her authority may take formal action on this contract when a contract action needs to be taken and the primary Contracting Officer is unavailable.

52.202-1 DEFINITIONS (MAY 2001) --ALTERNATE I (MAR 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) 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).

(d) 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.

(e) 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.

(f) "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.

(g) Except as otherwise provided in this contract, the term "subcontracts" includes, but is not limited to, purchase orders and changes and modifications to purchase orders under this contract.

(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 Contractor or subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind under a prime contract.

"Subcontractor," as used in this clause, (1) means any person, other than the prime Contractor, who offers to furnish or furnishes any supplies, materials, equipment, or 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 2003)

(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 emp loyed 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, or an outlying area 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 finished 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, postconsumer 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," for 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)

52.212-4007 ENVIRONMENTAL LITIGATION

(a) If the performance of all or any part of the work is suspended, delayed, or interrupted due to an order of a court of competent jurisdiction as a result of environmental litigation, as defined below, the Contracting Officer, at the request of the Contractor, shall determine whether the order is due in any part to the acts or omissions of the Contractor or a Subcontractor at any tier not required by the terms of this contract. If it is determined that the order is not due in any part to acts or omissions of the Contractor or a Subcontractor at any tier other than as required by the terms of this contract, such suspension, delay, or interruption shall be considered as if ordered by the Contracting Officer in the administration of this contract under the terms of the "Suspension of Work" clause of this contract. The period of such suspension, delay or interruption shall be considered unreasonable, and an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) as provided in that clause, subject to all the provisions thereof.

(b) The term "environmental litigation", as used herein, means a lawsuit alleging that the work will have an adverse effect on the environment or that the Government has not duly considered, either substantially or procedurally, the effect of the work on the environment.

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)

52.215-8 ORDER OF PRECEDENCE--UNIFORM CONTRACT FORMAT (OCT 1997)

Any inconsistency in this solicitation or contract shall be resolved by giving precedence in the following order:

(a) The Schedule (excluding the specifications).

(b) Representations and other instructions.

(c) Contract clauses.

(d) Other documents, exhibits, and attachments.

(e) The specifications.

(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)

52.215-19 NOTIFICATION OF OWNERSHIP CHANGES (OCT 1997)

(a) The Contractor shall make the following notifications in writing:

(1) When the Contractor becomes aware that a change in its ownership has occurred, or is certain to occur, that could result in changes in the valuation of its capitalized assets in the accounting records, the Contractor shall notify the Administrative Contracting Officer (ACO) within 30 days.

(2) The Contractor shall also notify the ACO within 30 days whenever changes to asset valuations or any other cost changes have occurred or are certain to occur as a result of a change in ownership.

(b) The Contractor shall--

(1) Maintain current, accurate, and complete inventory records of assets and their costs;

(2) Provide the ACO or designated representative ready access to the records upon request;

(3) Ensure that all individual and grouped assets, their capitalized values, accumulated depreciation or amortization, and remaining useful lives are identified accurately before and after each of the Contractor's ownership changes; and

(4) Retain and continue to maintain depreciation and amortization schedules based on the asset records maintained before each Contractor ownership change.

The Contractor shall include the substance of this clause in all subcontracts under this contract that meet the applicability requirement of FAR 15.408(k).

(End of clause)

52.215-19 NOTIFICATION OF OWNERSHIP CHANGES (OCT 1997)

(a) The Contractor shall make the following notifications in writing:

(1) When the Contractor becomes aware that a change in its ownership has occurred, or is certain to occur, that could result in changes in the valuation of its capitalized assets in the accounting records, the Contractor shall notify the Administrative Contracting Officer (ACO) within 30 days.

(2) The Contractor shall also notify the ACO within 30 days whenever changes to asset valuations or any other cost changes have occurred or are certain to occur as a result of a change in ownership.

(b) The Contractor shall--

(1) Maintain current, accurate, and complete inventory records of assets and their costs;

(2) Provide the ACO or designated representative ready access to the records upon request;

(3) Ensure that all individual and grouped assets, their capitalized values, accumulated depreciation or amortization, and remaining useful lives are identified accurately before and after each of the Contractor's ownership changes; and

(4) Retain and continue to maintain depreciation and amortization schedules based on the asset records maintained before each Contractor ownership change.

The Contractor shall include the substance of this clause in all subcontracts under this contract that meet the applicability requirement of FAR 15.408(k).

(End of clause)

52.215-21 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA--MODIFICATIONS (OCT 1997)

(a) Exceptions from cost or pricing data. (1) In lieu of submitting cost or pricing data for modifications under this contract, for price adjustments expected to exceed the threshold set forth at FAR 15.403-4 on the date of the agreement on price or the date of the award, whichever is later, the Contractor may submit a written request for exception by submitting the information described in the following subparagraphs. The Contracting Officer may require additional supporting information, but only to the extent necessary to determine whether an exception should be granted, and whether the price is fair and reasonable--

(i) Identification of the law or regulation establishing the price offered. If the price is controlled under law by periodic rulings, reviews, or similar actions of a governmental body, attach a copy of the controlling document, unless it was previously submitted to the contracting office.

(ii) Information on modifications of contracts or subcontracts for commercial items. (A) If--

(1) The original contract or subcontract was granted an exception from cost or pricing data requirements because the price agreed upon was based on adequate price competition or prices set by law or regulation, or was a contract or

subcontract for the acquisition of a commercial item; and

(2) The modification (to the contract or subcontract) is not exempted based on one of these exceptions, then the Contractor may provide information to establish that the modification would not change the contract or subcontract from a contract or subcontract for the acquisition of a commercial item to a contract or subcontract for the acquisition of an item other than a commercial item.

(B) For a commercial item exception, the Contractor shall provide, at a minimum, information on prices at which the same item or similar items have previously been sold that is adequate for evaluating the reasonableness of the price of the modification. Such information may include--

(1) For catalog items, a copy of or identification of the catalog and its date, or the appropriate pages for the offered items, or a statement that the catalog is on file in the buying office to which the proposal is being submitted. Provide a copy or describe current discount policies and price lists (published or unpublished), e.g., wholesale, original equipment manufacturer, or reseller. Also explain the basis of each offered price and its relationship to the established catalog price, including how the proposed price relates to the price of recent sales in quantities similar to the proposed quantities.

(2) For market-priced items, the source and date or period of the market quotation or other basis for market price, the base amount, and applicable discounts. In addition, describe the nature of the market.

(3) For items included on an active Federal Supply Service Multiple Award Schedule contract, proof that an exception has been granted for the schedule item.

(2) The Contractor grants the Contracting Officer or an authorized representative the right to examine, at any time before award, books, records, documents, or other directly pertinent records to verify any request for an exception under this clause, and the reasonableness of price. For items priced using catalog or market prices, or law or regulation , access does not extend to cost or profit information or other data relevant solely to the Contractor's determination of the prices to be offered in the catalog or marketplace.

(b) Requirements for cost or pricing data. If the Contractor is not granted an exception from the requirement to submit cost or pricing data, the following applies:

(1) The Contractor shall submit cost or pricing data and supporting attachments in accordance with Table 15-2 of FAR 15.408.

As soon as practicable after agreement on price, but before award (except for unpriced actions), the Contractor shall submit a Certificate of Current Cost or Pricing Data, as prescribed by FAR 15.406-2.

(End of clause)

52.217-9 OPTION TO EXTEND THE TERM OF THE CONTRACT (MAR 2000)

(a) The Government may extend the term of this contract by written notice to the Contractor within **ten (10) days before completion of the contract**; provided that the Government gives the Contractor a preliminary written notice of its intent to extend at least **sixty (60)** days before the contract expires. The preliminary notice does not commit the Government to an extension.

(b) If the Government exercises this option, the extended contract shall be considered to include this option clause.

(c) The total duration of this contract, including the exercise of any options under this clause, shall not exceed **720**

calendar days.
(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 of 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)

(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) The offeror, upon request by the Contracting Officer, shall submit and negotiate a subcontracting plan, where applicable, that separately addresses subcontracting with small business, veteran-owned small business, HUBZone small business concerns, 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-owned 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 the 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)

52.219-25 SMALL DISADVANTAGED BUSINESS PARTICIPATION PROGRAM—DISADVANTAGED STATUS AND REPORTING (OCT 1999)

(a) Disadvantaged status for joint venture partners, team members, and subcontractors. This clause addresses disadvantaged status for joint venture partners, teaming arrangement members, and subcontractors and is applicable if this contract contains small disadvantaged business (SDB) participation targets. The Contractor shall obtain representations of small disadvantaged status from joint venture partners, teaming arrangement members, and subcontractors through use of a provision substantially the same as paragraph (b)(1)(i) of the provision at FAR 52.219-22, Small Disadvantaged Business Status. The Contractor shall confirm that a joint venture partner, team member, or subcontractor representing itself as a small disadvantaged business concern, is identified as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net) or by contacting the SBA's Office of Small Disadvantaged Business Certification and Eligibility.

(b) Reporting requirement. If this contract contains SDB participation targets, the Contractor shall report on the participation of SDB concerns at contract completion, or as otherwise provided in this contract. Reporting may be on Optional Form 312, Small Disadvantaged Business Participation Report, or in the Contractor's own format providing the same information. This report is required for each contract containing SDB participation targets. If this contract contains an individual Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan, reports may be submitted with the final Subcontracting Report for Individual Contracts (Standard Form 294) at the completion of the contract.

(End of clause)

52.222-1 NOTICE TO THE GOVERNMENT OF LABOR DISPUTES (FEB 1997)

If the Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay the timely performance of this contract, the Contractor shall immediately give notice, including all relevant information, to the Contracting Officer.

(End of clause)

52.222-3 CONVICT LABOR (JUN 2003)

(a) Except as provided in paragraph (b) of this clause, the Contractor shall not employ in the performance of this contract any person undergoing a sentence of imprisonment imposed by any court of a State, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, or the U.S. Virgin Islands.

(b) The Contractor is not prohibited from employing persons--

(1) On parole or probation to work at paid employment during the term of their sentence;

(2) Who have been pardoned or who have served their terms; or

(3) Confined for violation of the laws of any of the States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, or the U.S. Virgin Islands who are authorized to work at paid employment in the community under the laws of such jurisdiction, if--

(i) The worker is paid or is in an approved work training program on a voluntary basis;

(ii) Representatives of local union central bodies or similar labor union organizations have been consulted;

(iii) 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;

(iv) 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

(v) 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.

(2) 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.

(ii) 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).

(3) 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 EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS (DEC 2001)

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

All employment openings means 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.

Executive and top management means any employee--

(1) Whose primary duty consists of the management of the enterprise in which the individual is employed or of a customarily recognized department or subdivision thereof;

(2) Who customarily and regularly directs the work of two or more other employees;

(3) Who has the authority to hire or fire other employees or whose suggestions and recommendations as to the hiring or firing and as to the advancement and promotion or any other change of status of other employees will be given particular weight;

(4) Who customarily and regularly exercises discretionary powers; and

(5) Who does not devote more than 20 percent or, in the case of an employee of a retail or service establishment, who does not devote more than 40 percent of total hours of work in the work week to activities that are not directly and closely related to the performance of the work described in paragraphs (1) through (4) of this definition. This paragraph (5) does not apply in the case of an employee who is in sole charge of an establishment or a physically separated branch establishment, or who owns at least a 20 percent interest in the enterprise in which the individual is employed.

Other eligible veteran means any other veteran who served on active duty during a war or in a campaign or expedition for which a campaign badge has been authorized.

Positions that will be filled from within the Contractor's organization means employment openings for which the Contractor will give no consideration to persons outside the Contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings 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.

Qualified special disabled veteran means a special disabled veteran who satisfies the requisite skill, experience, education, and other job-related requirements of the employment position such veteran holds or desires, and who, with or without reasonable accommodation, can perform the essential functions of such position.

Special disabled veteran means--

(1) A veteran who is entitled to compensation (or who but for the receipt of military retired pay would be entitled to compensation) under laws administered by the Department of Veterans Affairs for a disability--

(i) Rated at 30 percent or more; or

(ii) Rated at 10 or 20 percent in the case of a veteran who has been determined under 38 U.S.C. 3106 to have a serious employment handicap (i.e., a significant impairment of the veteran's ability to prepare for, obtain, or retain employment consistent with the veteran's abilities, aptitudes, and interests); or

(2) A person who was discharged or released from active duty because of a service-connected disability.

Veteran of the Vietnam era means a person who--

(1) Served on active duty for a period of more than 180 days and was discharged or released from active duty with other than a dishonorable discharge, if any part of such active duty occurred--

(i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or

(ii) Between August 5, 1964, and May 7, 1975, in all other cases; or

(2) Was discharged or released from active duty for a service-connected disability if any part of the active duty was performed--

(i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or

(ii) Between August 5, 1964, and May 7, 1975, in all other cases.
(b) General. (1) The Contractor shall not discriminate against the individual because the individual is a special disabled veteran, a veteran of the Vietnam era, or other eligible veteran, regarding any position for which the employee or applicant for employment is qualified. The Contractor shall take affirmative action to employ, advance in employment, and otherwise treat qualified special disabled veterans, veterans of the Vietnam era, and other eligible veterans without discrimination based upon their disability or veterans' status 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) Rate 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 apprenticeship, and on-the-job training under 38 U.S.C. 3687, 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 shall comply with the rules, regulations, and relevant orders of the Secretary of Labor issued under the Vietnam Era Veterans' Readjustment Assistance Act of 1972 (the Act), as amended (38 U.S.C. 4211 and 4212).

(c) Listing openings. (1) The Contractor shall immediately list all employment openings that exist at the time of the execution of this contract and those which occur during the performance of this contract, including those not generated by this contract, and including those occurring at an establishment of the Contractor other than the one where the contract is being performed, but excluding those of independently operated corporate affiliates, at an appropriate local public employment service office of the State wherein the opening occurs. Listing employment openings with the U.S. Department of Labor's America's Job Bank shall satisfy the requirement to list jobs with the local employment service office.

(2) The Contractor shall make the listing of employment openings with the local employment service office at least concurrently with using any other recruitment source or effort and shall involve the normal obligations of placing a bona fide job order, including accepting referrals of veterans and nonveterans. This listing of employment openings 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.

(3) Whenever the Contractor becomes contractually bound to the listing terms of this clause, it shall advise the State public employment agency 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 agency, it need not advise the State agency of subsequent contracts. The Contractor may advise the State agency 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, the Commonwealth of the Northern Mariana Islands, American Samoa, Guam, the Virgin Islands of the United States, and Wake Island.

(e) Postings. (1) The Contractor shall post employment notices in conspicuous places that are available to employees and applicants for employment.

(2) The employment notices shall--

(i) State the rights of applicants and employees as well as the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified employees and applicants who are special disabled veterans, veterans of the Vietnam era, and other eligible veterans; and

(ii) Be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance Programs, Department of Labor (Deputy Assistant Secretary of Labor), and provided by or through the Contracting Officer.

(3) The Contractor shall ensure that applicants or employees who are special disabled veterans are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled veteran, or may lower the posted notice so that it can be read by a person in a wheelchair).

(4) 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 special disabled veterans, veterans of the Vietnam era, and other eligible veterans.

(f) Noncompliance. If the Contractor does not comply with the requirements of this clause, the Government may take appropriate actions under the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.

(g) Subcontracts. The Contractor shall insert the terms of this clause in all subcontracts or purchase orders of $25,000 or more unless exempted by rules, regulations, or orders of the Secretary of Labor. The Contractor shall act as specified by the Deputy Assistant Secretary of Labor 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 SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS (DEC 2001)

(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)

52.223-3 HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA (JAN 1997)

(a) "Hazardous material", as used in this clause, includes any material defined as hazardous under the latest version of Federal Standard No. 313 (including revisions adopted during the term of the contract).

(b) The offeror must list any hazardous material, as defined in paragraph (a) of this clause, to be delivered under this contract. The hazardous material shall be properly identified and include any applicable identification number, such as National Stock Number or Special Item Number. This information shall also be included on the Material Safety Data Sheet submitted under this contract.

Material (If none, insert "None")	Identification No.
_____	_____
_____	_____
_____	_____

(c) This list must be updated during performance of the contract whenever the Contractor determines that any other material to be delivered under this contract is hazardous.

(d) The apparently successful offeror agrees to submit, for each item as required prior to award, a Material Safety Data Sheet, meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous material identified in paragraph (b) of this clause. Data shall be submitted in accordance with Federal Standard No. 313, whether or not the apparently successful offeror is the actual manufacturer of these items. Failure to submit the Material Safety Data Sheet prior to award may result in the apparently successful offeror being considered nonresponsible and ineligible for award.

(e) If, after award, there is a change in the composition of the item(s) or a revision to Federal Standard No. 313, which renders incomplete or inaccurate the data submitted under paragraph (d) of this clause, the Contractor shall promptly notify the Contracting Officer and resubmit the data.

(f) Neither the requirements of this clause nor any act or failure to act by the Government shall relieve the Contractor of any responsibility or liability for the safety of Government, Contractor, or subcontractor personnel or property.

(g) Nothing contained in this clause shall relieve the Contractor from complying with applicable Federal, State, and local laws, codes, ordinances, and regulations (including the obtaining of licenses and permits) in connection with hazardous material.

(h) The Government's rights in data furnished under this contract with respect to hazardous material are as follows:

(1) To use, duplicate and disclose any data to which this clause is applicable. The purposes of this right are to--

(i) Apprise personnel of the hazards to which they may be exposed in using, handling, packaging, transporting, or disposing of hazardous materials;

(ii) Obtain medical treatment for those affected by the material; and

(iii) Have others use, duplicate, and disclose the data for the Government for these purposes.

(2) To use, duplicate, and disclose data furnished under this clause, in accordance with subparagraph (h)(1) of this clause, in precedence over any other clause of this contract providing for rights in data.

(3) The Government is not precluded from using similar or identical data acquired from other sources.

(End of clause)

52.223-5 POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION (AUG 2003)

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

Priority chemical means a chemical identified by the Interagency Environmental Leadership Workgroup or, alternatively, by an agency pursuant to section 503 of Executive Order 13148 of April 21, 2000, Greening the Government through Leadership in Environmental Management.

"Toxic chemical means a chemical or chemical category listed in 40 CFR 372.65."

(b) Executive Order 13148 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).

(c) The Contractor shall provide all information needed by the Federal facility to comply with the following:

(1) The emergency planning reporting requirements of section 302 of EPCRA.

(2) The emergency notice requirements of section 304 of EPCRA.

(3) The list of Material Safety Data Sheets, required by section 311 of EPCRA.

(4) The emergency and hazardous chemical inventory forms of section 312 of EPCRA.

(5) The toxic chemical release inventory of section 313 of EPCRA, which includes the reduction and recycling information required by section 6607 of PPA.

(6) The toxic chemical, priority chemical, and hazardous substance release and use reduction goals of sections 502 and 503 of Executive Order 13148.

(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)

52.223-9 ESTIMATE OF PERCENTAGE OF RECOVERED MATERIAL CONTENT FOR EPA-DESIGNATED PRODUCTS (AUG 2000)

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

Postconsumer material means a material or finished 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."

Recovered material means waste materials and by-products recovered or diverted from solid waste, but the term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

(b) The Contractor, on completion of this contract, shall--

(1) Estimate the percentage of the total recovered material used in contract performance, including, if applicable, the percentage of postconsumer material content; and

(2) Submit this estimate to **Susan K. Sherrell, Contracting Office, U.S. Army Corps of Engineers, Seattle District**.

(End of clause)

52.223-14 TOXIC CHEMICAL RELEASE REPORTING (AUG 2003)

(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 in 40 CFR 372.65;

(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 the following Standard Industrial Classification (SIC) codes or their corresponding North American Industry Classification System sectors:

(i) Major group code 10 (except 1011, 1081, and 1094.

(ii) Major group code 12 (except 1241).

(iii) Major group codes 20 through 39.

(iv) Industry code 4911, 4931, or 4939 (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce).

(v) Industry code 4953 (limited to facilities regulated under the Resource Conservation and Recovery Act, Subtitle C (42 U.S.C. 6921, et seq.)), 5169, 5171, or 7389 (limited to facilities primarily engaged in solvent recovery services on a contract or fee basis); or

(5) The facility is not located in the United States or its outlying areas.

(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)

52.224-1 PRIVACY ACT NOTIFICATION (APR 1984)

The Contractor will be required to design, develop, or operate a system of records on individuals, to accomplish an agency function subject to the Privacy Act of 1974, Public Law 93-579, December 31, 1974 (5 U.S.C. 552a) and applicable agency regulations. Violation of the Act may involve the imposition of criminal penalties.

(End of clause)

52.224-2 PRIVACY ACT (APR 1984)

(a) The Contractor agrees to--

(1) Comply with the Privacy Act of 1974 (the Act) and the agency rules and regulations issued under the Act in the design, development, or operation of any system of records on individuals to accomplish an agency function when the contract specifically identifies--

(i) The systems of records; and

(ii) The design, development, or operation work that the contractor is to perform;

(2) Include the Privacy Act notification contained in this contract in every solicitation and resulting subcontract and in every subcontract awarded without a solicitation, when the work statement in the proposed subcontract requires the redesign, development, or operation of a system of records on individuals that is subject to the Act; and

(3) Include this clause, including this subparagraph (3), in all subcontracts awarded under this contract which requires the design, development, or operation of such a system of records.

(b) In the event of violations of the Act, a civil action may be brought against the agency involved when the violation concerns the design, development, or operation of a system of records on individuals to accomplish an agency function, and criminal penalties may be imposed upon the officers or employees of the agency when the violation concerns the operation of a system of records on individuals to accomplish an agency function. For purposes of the Act, when the contract is for the operation of a system of records on individuals to accomplish an agency function, the Contractor is considered to be an employee of the agency.

(c)(1) "Operation of a system of records," as used in this clause, means performance of any of the activities associated with maintaining the system of records, including the collection, use, and dissemination of records.

(2) "Record," as used in this clause, means any item, collection, or grouping of information about an individual that is maintained by an agency, including, but not limited to, education, financial transactions, medical history, and criminal or employment history and that contains the person's name, or the identifying number, symbol, or other identifying particular assigned to the individual, such as a fingerprint or voiceprint or a photograph.

(3) "System of records on individuals," as used in this clause, means a group of any records under the control of any agency from which information is retrieved by the name of the individual or by some identifying number, symbol, or

other identifying particular assigned to the individual.

(End of clause)

52.225-11 BUY AMERICAN ACT--CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS (JUN 2003)

(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, 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, the District of Columbia, and outlying areas.

(b) Construction materials. (1) This clause implements the Buy American Act (41 U.S.C. 10a-10d) and the Balance of Payments Program 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 this 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 modify 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)

52.225-12 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 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)

52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JUN 2003) (DEVIATION)

(a) Except as authorized by the Office of Foreign Assets Control (OFAC) in the Department of the Treasury, agencies and their contractors and subcontractors must not acquire any supplies or services, if any Executive order administered by OFAC's regulations set forth at 31 CFR Chapter V would prohibit such a transaction by a person subject to the jurisdiction of the United States.

(b) Except as authorized by OFAC most transactions involving Cuba, Iran, Libya, and Sudan are prohibited, as are most imports into the United States from North Korea. Lists of entities and individuals subject to economic sanctions are included in OFAC's List of Specially Designated Nationals and Blocked Persons. More information about these restrictions as well as updates with respect to restrictions imposed after April 2003, is available in OFAC's regulations at 31 DFR Chapter V and/or OFAC's website at http://www.treas.gov/ofac.

(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)

52.228-11 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)

52.228-13 ALTERNATIVE PAYMENT PROTECTIONS (JULY 2000)

(a) The Contractor shall submit one of the following payment protections:

Irrevocable Letter of Credit
Payment Bond

(b) The amount of the payment protection shall be 100 percent of the contract price.

(c) The submission of the payment protection is required within **ten (10)** days of contract award.

(d) The payment protection shall provide protection for the full contract performance period plus a one-year period.

(e) Except for escrow agreements and payment bonds, which provide their own protection procedures, the Contracting Officer is authorized to access funds under the payment protection when it has been alleged in writing by a supplier of labor or material that a nonpayment has occurred, and to withhold such funds pending resolution by administrative or judicial proceedings or mutual agreement of the parties.

(f) When a tripartite escrow agreement is used, the Contractor shall utilize only suppliers of labor and material that signed the escrow agreement.

(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 and 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 Article 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)

INFORMATION REGARDING PERFORMANCE AND PAYMENT BONDS (FAR 28.102) (52.228-4001) FEB 2001

Within 10 days after the prescribed forms are presented to the bidder to whom award is made, unless a shorter time is prescribed in the contract, two bonds, namely a performance bond (Standard Form 25) and a payment bond (Standard Form 25A), shall be executed and furnished to the Government, each with good and sufficient surety or sureties acceptable to the Government. The penal sums of such bonds shall be as follows:

(1) Performance Bond. The penal sum of the performance bond shall equal one hundred percent (100%) of the contract price.
(2) Payment Bond. The penal sum of the payment bond shall equal one hundred percent (100%) of the contract price.

Any bonds furnished must be furnished by the Contractor to the Government prior to commencement of contract performance.

52.229-3 FEDERAL, STATE, AND LOCAL TAXES (APR 2003)

(a) As used in this clause--

"Contract date" 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" 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" 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" 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.

Local taxes includes taxes imposed by a possession or territory of the United States, Puerto Rico, or the Northern Mariana Islands, if the contract is performed wholly or partly in any of those areas.

(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)

52.230-3 DISCLOSURE AND CONSISTENCY OF COST ACCOUNTING PRACTICES (APR 1998)

(a) The Contractor, in connection with this contract, shall--

(1) Comply with the requirements of 48 CFR 9904.401, Consistency in Estimating, Accumulating, and Reporting Costs; 48 CFR 9904.402, Consistency in Allocating Costs Incurred for the Same Purpose; 48 CFR 9904.405, Accounting for Unallowable Costs; and 48 CFR 9904.406, Cost Accounting Standard--Cost Accounting Period, in effect on the date of award of this contract as indicated in 48 CFR Part 9904.

(2) (CAS-covered Contracts Only) If it is a business unit of a company required to submit a Disclosure Statement, disclose in writing its cost accounting practices as required by 48 CFR 9903.202-1 through 9903.202-5. If the Contractor has notified the Contracting Officer that the Disclosure Statement contains trade secrets and commercial or financial information which is privileged and confidential, the Disclosure Statement shall be protected and shall not be released outside of the Government.

(3)(i) Follow consistently the Contractor's cost accounting practices. A change to such practices may be proposed, however, by either the Government or the Contractor, and the Contractor agrees to negotiate with the Contracting Officer the terms and conditions under which a change may be made. After the terms and conditions under which the change is to be made have been agreed to, the change must be applied prospectively to this contract, and the Disclosure Statement, if affected, must be amended accordingly.

(ii) The Contractor shall, when the parties agree to a change to a cost accounting practice and the Contracting Officer has made the finding required in 48 CFR 9903.201-6(b), that the change is desirable and not detrimental to the interests of the Government, negotiate an equitable adjustment as provided in the Changes clause of this contract. In the absence of the required finding, no agreement may be made under this contract clause that will increase costs paid by the United States.

(4) Agree to an adjustment of the contract price or cost allowance, as appropriate, if the Contractor or a subcontractor fails to comply with the applicable CAS or to follow any cost accounting practice, and such failure results in any increased costs paid by the United States. Such adjustment shall provide for recovery of the increased costs to the United States together with interest thereon computed at the annual rate of interest established under the Internal Revenue Code of 1986 (26 U.S.C. 6621), from the time the payment by the United States was made to the time the adjustment is effected.

(b) If the parties fail to agree whether the Contractor has complied with an applicable CAS, rule, or regulation as specified in 48 CFR 9903 and 9904 and as to any cost adjustment demanded by the United States, such failure to agree will constitute a dispute under the Contract Disputes Act (41 U.S.C. 601).

(c) The Contractor shall permit any authorized representatives of the Government to examine and make copies of any documents, papers, and records relating to compliance with the requirements of this clause.

(d) The Contractor shall include in all negotiated subcontracts, which the Contractor enters into, the substance of this clause, except paragraph (b), and shall require such inclusion in all other subcontracts of any tier, except that--

(1) If the subcontract is awarded to a business unit which pursuant to 48 CFR 9903.201-2 is subject to other types of CAS coverage, the substance of the applicable clause set forth in subsection 30.201-4 of the Federal Acquisition Regulation shall be inserted.

(2) This requirement shall apply only to negotiated subcontracts in excess of $500,000.

(3) The requirement shall not apply to negotiated subcontracts otherwise exempt from the requirement to include a CAS clause as specified in 48 CFR 9903.201-1.

(End of clause)

52.232-5 PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (SEP 2002)

(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) All payments due to subcontractors and suppliers from previous payments received under the contract have been made, 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)

52.232-23 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)

52.232-27 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 (OCT 2003)

(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) 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.

(f) 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.

(g) 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 separately in the CCR database and shall be paid by EFT in accordance with the terms of this clause. Notwithstanding any other requirement of this contract, payment to an ultimate recipient other than the Contractor, or a financial institution properly recognized under an assignment of claims pursuant to subpart 32.8, is not permitted. 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.

(h) 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.

(i) 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. (JUL 2002)

(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. 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. 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)

52.233-1 DISPUTES. (JUL 2002)

(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. 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. 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)

(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.

(c) 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.

(4) The Contractor shall insert this clause, including this paragraph (e), with appropriate changes in the designation of the parties, in subcontracts.

(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)

52.236-15 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 exe cuting 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 $43.25M.

(End of clause)

52.236-23 RESPONSIBILITY OF THE ARCHITECT-ENGINEER CONTRACTOR (APR 1984)

(a) The Contractor shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and other services furnished by the Contractor under this contract. The Contractor shall, without additional compensation, correct or revise any errors or deficiencies in its designs, drawings, specifications, and other services.

(b) 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, and the Contractor shall be and remain liable to the Government in accordance with applicable law for all damages to the Government caused by the Contractor's negligent performance of any of the services furnished under this contract.

(c) The rights and remedies of the Government provided for under this contract are in addition to any other rights and remedies provided by law.

(d) If the Contractor is comprised of more than one legal entity, each such entity shall be jointly and severally liable hereunder.

(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)

52.242-13 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)

52.243-4 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)

52.243-5 CHANGES AND CHANGED CONDITIONS (APR 1984)

(a) The Contracting Officer may, in writing, order changes in the drawings and specifications within the general scope of the contract.

(b) The Contractor shall promptly notify the Contracting Officer, in writing, of subsurface or latent physical conditions differing materially from those indicated in this contract or unknown unusual physical conditions at the site before proceeding with the work.

(c) If changes under paragraph (a) or conditions under paragraph (b) increase or decrease the cost of, or time required for performing the work, the Contracting Officer shall make an equitable adjustment (see paragraph (d)) upon submittal of a "proposal for adjustment" (hereafter referred to as proposal) by the Contractor before final payment under the contract.

(d) The Contracting Officer shall not make an equitable adjustment under paragraph (b) unless--

(1) The Contractor has submitted and the Contracting Officer has received the required written notice; or

(2) The Contracting Officer waives the requirement for the written notice.

(e) Failure to agree to any adjustment shall be a dispute under the Disputes clause.

(End of clause)

52.244-2 SUBCONTRACTS (AUG 1998)

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

Approved purchasing system means a Contractor's purchasing system that has been reviewed and approved in accordance with Part 44 of the Federal Acquisition Regulation (FAR).

Consent to subcontract means the Contracting Officer's written consent for the Contractor to enter into a particular subcontract.

Subcontract means any contract, as defined in FAR Subpart 2.1, entered into by a subcontractor to furnish supplies or services for performance of the prime contract or a subcontract. It includes, but is not limited to, purchase orders, and changes and modifications to purchase orders.

(b) This clause does not apply to subcontracts for special test equipment when the contract contains the clause at FAR 52.245-18, Special Test Equipment.

(c) When this clause is included in a fixed-price type contract, consent to subcontract is required only on unpriced contract actions (including unpriced modifications or unpriced delivery orders), and only if required in accordance with paragraph (d) or (e) of this clause.

(d) If the Contractor does not have an approved purchasing system, consent to subcontract is required for any subcontract that--

(1) Is of the cost-reimbursement, time-and-materials, or labor-hour type; or

(2) Is fixed-price and exceeds--

(i) For a contract awarded by the Department of Defense, the Coast Guard, or the National Aeronautics and Space Administration, the greater of the simplified acquisition threshold or 5 percent of the total estimated cost of the contract; or

(ii) For a contract awarded by a civilian agency other than the Coast Guard and the National Aeronautics and Space Administration, either the simplified acquisition threshold or 5 percent of the total estimated cost of the contract.

(e) If the Contractor has an approved purchasing system, the Contractor nevertheless shall obtain the Contracting Officer's written consent before placing the following subcontracts:

_____
_____

(f)(1) The Contractor shall notify the Contracting Officer reasonably in advance of placing any subcontract or modification thereof for which consent is required under paragraph (c), (d), or (e) of this clause, including the following information:

(i) A description of the supplies or services to be subcontracted.

(ii) Identification of the type of subcontract to be used.

(iii) Identification of the proposed subcontractor.

(iv) The proposed subcontract price.

(v) The subcontractor's current, complete, and accurate cost or pricing data and Certificate of Current Cost or Pricing Data, if required by other contract provisions.

(vi) The subcontractor's Disclosure Statement or Certificate relating to Cost Accounting Standards when such data are required by other provisions of this contract.

(vii) A negotiation memorandum reflecting--

(A) The principal elements of the subcontract price negotiations;

(B) The most significant considerations controlling establishment of initial or revised prices;

(C) The reason cost or pricing data were or were not required;

(D) The extent, if any, to which the Contractor did not rely on the subcontractor's cost or pricing data in determining the price objective and in negotiating the final price;

(E) The extent to which it was recognized in the negotiation that the subcontractor's cost or pricing data were not accurate, complete, or current; the action taken by the Contractor and the subcontractor; and the effect of any such defective data on the total price negotiated;

(F) The reasons for any significant difference between the Contractor's price objective and the price negotiated; and

(G) A complete explanation of the incentive fee or profit plan when incentives are used. The explanation shall identify each critical performance element, management decisions used to quantify each incentive element, reasons for the incentives, and a summary of all trade-off possibilities considered.

(2) The Contractor is not required to notify the Contracting Officer in advance of entering into any subcontract for which consent is not required under paragraph (c), (d), or (e) of this clause.

(g) Unless the consent or approval specifically provides otherwise, neither consent by the Contracting Officer to any subcontract nor approval of the Contractor's purchasing system shall constitute a determination--

(1) Of the acceptability of any subcontract terms or conditions;

(2) Of the allowability of any cost under this contract; or

(3) To relieve the Contractor of any responsibility for performing this contract.

(h) No subcontract or modification thereof placed under this contract shall provide for payment on a cost-plus-a-percentage-of-cost basis, and any fee payable under cost-reimbursement type subcontracts shall not exceed the fee limitations in FAR 15.404-4(c)(4)(i).

(i) The Contractor shall give the Contracting Officer immediate written notice of any action or suit filed and prompt notice of any claim made against the Contractor by any subcontractor or vendor that, in the opinion of the Contractor, may result in litigation related in any way to this contract, with respect to which the Contractor may be entitled to reimbursement from the Government.

(j) The Government reserves the right to review the Contractor's purchasing system as set forth in FAR Subpart 44.3.

(k) Paragraphs (d) and (f) of this clause do not apply to the following subcontracts, which were evaluated during negotiations:

_____
_____

(End of clause)

52.244-4 SUBCONTRACTORS AND OUTSIDE ASSOCIATES AND CONSULTANTS (ARCHITECT-ENGINEER SERVICES) (AUG 1998)

Any subcontractors and outside associates or consultants required by the Contractor in connection with the services covered by the contract will be limited to 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 subcontractors, associates, or consultants.

(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 (APR 2003)

(a) Definitions.

"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 (APR 2003) (46 U.S.C. Appx 1241 and 10 U.S.C. 2631) (flow down required in accordance with paragraph (d) of FAR clause 52.247-64).

(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)

52.246-12 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 request, 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)

52.248-3 VALUE ENGINEERING--CONSTRUCTION (FEB 2000)

(a) General. The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP's) voluntarily. The Contractor shall share in any instant contract savings realized from accepted VECP's, in accordance with paragraph (f) below.

(b) Definitions. "Collateral costs," as used in this clause, means agency costs of operation, maintenance, logistic support, or Government-furnished property.

"Collateral savings," as used in this clause, means those measurable net reductions resulting from a VECP in the agency's overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.

"Contractor's development and implementation costs," as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.

"Government costs," as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistic support. The term does not include the normal administrative costs of processing the VECP.

"Instant contract savings," as used in this clause, means the estimated reduction in Contractor cost of performance resulting from acceptance of the VECP, minus allowable Contractor's development and implementation costs, including subcontractors' development and implementation costs (see paragraph (h) below).

"Value engineering change proposal (VECP)" means a proposal that--

(1) Requires a change to this, the instant contract, to implement; and

(2) Results in reducing the contract price or estimated cost without impairing essential functions or characteristics; provided, that it does not involve a change--

(i) In deliverable end item quantities only; or

(ii) To the contract type only.

(c) VECP preparation. As a minimum, the Contractor shall include in each VECP the information described in subparagraphs (1) through (7) below. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:

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

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

(3) A separate, detailed cost estimate for

(i) the affected portions of the existing contract requirement and

(ii) the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (h) below.

(4) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.

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

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

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

(d) Submission. The Contractor shall submit VECP's to the Resident Engineer at the worksite, with a copy to the Contracting Officer.

(e) Government action.

(1) The Contracting Officer will notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer will notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it shall not be liable for any delay in acting upon a VECP.

If the VECP is not accepted, the Contracting Officer will notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.

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

(f) Sharing.

(1) Rates. The Government's share of savings is determined by subtracting Government costs from instant contract savings and multiplying the result by

(i) 45 percent for fixed-price contracts or

(ii) 75 percent for cost-reimbursement contracts.

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

(i) Accept the VECP;

(ii) Reduce the contract price or estimated cost by the amount of instant contract savings; and

(iii) Provide the Contractor's share of savings by adding the amount calculated to the contract price or fee.

(g) Collateral savings. If a VECP is accepted, the Contracting Officer will increase the instant contract amount by 20 percent of any projected collateral savings determined to be realized in a typical year of use after subtracting any Government costs not previously offset. However, the Contractor's share of collateral savings will not exceed the contract's firm-fixed-price or estimated cost, at the time the VECP is accepted, or $100,000, whichever is greater. The Contracting Officer is the sole determiner of the amount of collateral savings.

(h) Subcontracts. The Contractor shall include an appropriate value engineering clause in any subcontract of $50,000 or more and may include one in subcontracts of lesser value. In computing any adjustment in this contract's price under paragraph (f) above, the Contractor's allowable development and implementation costs shall include any subcontractor's allowable development and implementation costs clearly resulting from a VECP accepted by the Government under this contract, but shall exclude any value engineering incentive payments to a subcontractor. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; provided, that these payments shall not reduce the Government's share of the savings resulting from the VECP.

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

"These data, furnished under the Value Engineering-- Construction clause of contract . . . . . , shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations." If a VECP is accepted, the Contractor hereby grants the Government unlimited rights in the VECP and supporting data, except that, with respect to data qualifying and submitted as limited rights technical data, the Government shall have the rights specified in the contract modification implementing the VECP and shall appropriately mark the data. (The terms "unlimited rights" and "limited rights" are defined in Part 27 of the Federal Acquisition Regulation.)

(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 Officer 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)

52.249-10 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)

52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

[Insert one or more Internet addresses]

(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.

(5) 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 of the 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.

(6) 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)

252.209-7004 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)

252.223-7004 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 objectives 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)

252.225-7031 SECONDARY ARAB BOYCOTT OF ISRAEL (APR 2003)

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

(1) Foreign person means any person (including any individual, partnership, corporation, or other form of association) other than a United States person.

(2) United States person is defined in 50 U.S.C. App. 2415(2) and means--

(i) Any United States resident or national (other than an individual resident outside the United States who is employed by other than a United States person);

(ii) Any domestic concern (including any permanent domestic establishment of any foreign concern); and

(iii) Any foreign subsidiary or affiliate (including any permanent foreign establishment) of any domestic concern that is controlled in fact by such domestic concern.

(b) Certification. If the offeror is a foreign person, the offeror certifies, by submission of an offer, 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. 2407(a) prohibits a United States person from taking.

(End of provision)

252.226-7001 UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC ENTERPRISES, AND HAWAIIAN SMALL BUSINESS CONCERNS (OCT 2003)

(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.

Native Hawaiian small business concern means an entity that is --

(1) A small business concern as defined in section 3 of the Small Business Act (15 U.S.C. 632) and relevant implementing regulations; and

(2) Owned and controlled by a Native Hawaiian as defined in 25 U.S.C. 4221(9).

(b) The Contractor shall use its best efforts to give Indian organizations, Indian-owned economic enterprises, and Native Hawaiian small business concerns 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, Indian-owned economic enterprise, or Native Hawaiian small business concern as to its eligibility, unless an 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--

(1) For matters relating to Indian organizations or Indian-owned economic enterprises: 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.

(2) For matters relating to Native Hawaiian small business concerns: Department of Hawaiian Home Lands, PO Box 1879, Honolulu, HI 96805. The Department of Hawaiian Home Lands will determine the eligibility and will notify the Contracting Officer.

(e) No incentive payment will be made--

(1) While a challenge is pending; or

(2) If a subcontractor is determined to be an ineligible participant.

(f)(1) The Contractor, on its own behalf or on behalf of a subcontractor at any tier, may request an incentive payment in accordance with this clause.

(2) The incentive amount that may be requested is 5 percent of the estimated cost, target cost, or fixed price included in the subcontract at the time of award to the Indian organization, Indian-owned economic enterprise, or Native Hawaiian small business concern.

(3) In the case of a subcontract for commercial items, the Contractor may receive an incentive payment only if the subcontracted items are produced or manufactured in whole or in part by an Indian organization, Indian-owned economic enterprise, or Native Hawaiian small business concern.

(4) The Contractor has the burden of proving the amount claimed and shall assert its request for an incentive payment prior to completion of contract performance.

(5) 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 estimated cost, target cost, or fixed price included in the subcontract awarded to the Indian organization, Indian-owned economic enterprise, or Native Hawaiian small business concern.

(6) If the Contractor requests and receives an incentive payment on behalf of a subcontractor, the Contractor is obligated to pay the subcontractor the incentive amount.

(g) The Contractor shall insert the substance of this clause, including this paragraph (g), in all subcontracts exceeding $500,000 for which further subcontracting opportunities may exist.

(End of clause)

252.227-7023 DRAWINGS AND OTHER DATA TO BECOME PROPERTY OF GOVERNMENT. (MAR 1979)

All designs, drawings, specifications, notes and other works developed in the performance of this contract shall become the sole property of the Government and may be used on any other design or construction without additional compensation to the Contractor. The Government shall be considered the "person for whom the work was prepared" for the purpose of authorship in any copyrightable work under 17 U.S.C. 201(b). With respect thereto, the Contractor agrees not to assert or authorize others to assert any rights nor establish any claim under the design patent or copyright laws. The Contractor for a period of three (3) years after completion of the project agrees to furnish all retained works on the request of the Contracting Officer. Unless otherwise provided in this contract, the Contractor shall have the right to retain copies of all works beyond such period.

(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.

252.231-7000 SUPPLEMENTAL COST PRINCIPLES (DEC 1991)

When the allowability of costs under this contract is determined in accordance with part 31 of the Federal Acquisition Regulation (FAR), allowability shall also be determined in accordance with part 231 of the Defense FAR Supplement, in effect on the date of this contract.

(End of clause)

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 representation 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	CONTRACT	QUANTITY

DESCRIPTION LINE ITEMS

_____
_____
_____
_____
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)

Security Contract Language for all Corps of Engineers' Unclassified Contracts (PIL 2003-06, 19 Feb 03)

All Contractor employees (U.S. citizens and Non-U.S. citizens) working under this contract (*to include grants, cooperative agreements and task orders*) who require access to Automated Information Systems (AIS), (stand alone computers, network computers/systems, e-mail) shall, at a minimum, be designated into an ADP-III position (non-sensitive) in accordance with DoD 5220-22-R, Industrial Security Regulation. The investigative requirements for an ADP-III position are a favorable National Agency Check (NAC), SF-85P, Public Trust Position. The contractor shall have each applicable employee complete a SF-85P and submit to the Seattle District, U.S. Army, Corps of Engineers, PO Box 3755, Seattle, WA 98124-3755, Security Officer within three (3) working days after award of any contract or task order, and shall be submitted prior to the individual being permitted access to an AIS. Contractors that have a commercial or government entity (CAGE) Code and Facility Security Clearance through the Defense Security Service shall process the NACs and forward visit requests/results of NAC to the Seattle District, U.S. Army, Corps of Engineers, PO Box 3755, Seattle, WA 98124-3755, Security Officer. For those contractors that do not have a CAGE Code or Facility Security Clearance, the Seattle District, U.S. Army, Corps of Engineers, PO Box 3755, Seattle, WA 98124-3755, Security Office will process the investigation in coordination with the Contractor and contract employees.

In accordance with Engineering Regulation, ER 380-1-18, Section 4, foreign nationals who work on Corps of Engineers' contracts or task orders shall be approved by the HQUSACE Foreign Disclosure Officer or higher before beginning work on the contract/task order. This regulation includes subcontractor employees. (NOTE: exceptions to the above requirement include foreign nationals who perform janitorial and/or ground maintenance services.) The contractor shall submit to the Division/District Contract Office, the names of all foreign nationals proposed for performance under this contract/task order, along with documentation to verify that he/she was legally admitted into the United States and has authority to work and/or go to school in the US. Such documentation may include a US passport, Certificate of US citizenship (INS Form N-560 or N-561), Certificate of Naturalization (INS Form N-550 or N-570), foreign passport with I-551 stamp or attached INS Form I-94 indicating employment authorization, Alien Registration Receipt Card with photograph (INS Form I-151 or I-551), Temporary Resident Card (INS Form I-688), Employment Authorization Card (INS Form I-688A), Reentry Permit (INS Form I-327), Refugee Travel Document (INS Form I-571), Employment Authorization Document issued by the INS which contains a photograph (INS Form I-688B).

Classified contracts require the issuance of a DD Form 254 (Department of Defense Contract Security Classification Specification).

(End of Clause)

GENERAL DECISION: WA20030001 04/16/2004 WA1

Date: April 16, 2004
General Decision Number: WA20030001 04/16/2004

Superseded General Decision Number: WA020001

State: Washington

Construction Types: Heavy (Heavy, and Dredging) and Highway

Counties: Washington Statewide.

HEAVY AND HIGHWAY AND DREDGING CONSTRUCTION PROJECTS (Excludes D.O.E. Hanford Site in Benton and Franklin Counties)

Modification Number	Publication Date
0	06/13/2003
1	01/23/2004
2	02/06/2004
3	02/13/2004
4	03/05/2004
5	03/12/2004
6	04/16/2004

CARP0001-008 06/01/2003

	Rates	Fringes
Carpenters:		
COLUMBIA RIVER AREA - ADAMS, BENTON, COLUMBIA, DOUGLAS (EAST OF THE 120TH MERIDIAN), FERRY, FRANKLIN, GRANT, OKANOGAN (EAST OF THE 120TH MERIDIAN) AND WALLA WALLA COUNTIES		
GROUP 1	$ 23.88	6.75
GROUP 2	$ 24.99	6.75
GROUP 3	$ 24.15	6.75
GROUP 4	$ 23.88	6.75
GROUP 5	$ 59.17	6.75
GROUP 6	$ 28.02	6.75
SPOKANE AREA: ASOTIN, GARFIELD, LINCOLN, PEND OREILLE, SPOKANE, STEVENS AND WHITMAN COUNTIES		
GROUP 1	$ 23.21	6.75
GROUP 2	$ 24.31	6.75
GROUP 3	$ 23.47	6.75
GROUP 4	$ 23.21	6.75
GROUP 5	$ 57.50	6.75
GROUP 6	$ 27.30	6.75

CARPENTERS CLASSIFICATIONS

GROUP 1: Carpenter; Burner-Welder; Rigger and Signaler; Insulators (all types), Acoustical, Drywall and Metal Studs, Metal Panels and Partitions; Floor Layer, Sander, Finisher and Astro Turf; Layout Carpenters; Form Builder; Rough Framer; Outside or Inside Finisher, including doors, windows, and jams; Sawfiler; Shingler (wood, composition) Solar, Fiberglass, Aluminum or Metal; Scaffold Erecting and Dismantling; Stationary Saw-Off Bearer; Wire, Wood and Metal Lather Applicator

GROUP 2: Millwright, machine erector

GROUP 3: Piledriver - includes driving, pulling, cutting, placing collars, setting, welding, or creosote treated material, on all piling

GROUP 4: Bridge, dock and wharf carpenters

GROUP 5: Divers

GROUP 6: Divers Tender

DEPTH PAYY FOR DIVERS:

Each foot over 50-100 feet	$1.00
Each foot over 100-175 feet	2.25
Each foot over 175-250 feet	5.50

HAZMAT PROJECTS:

Anyone working on a HAZMAT job (task), where HAZMAT certification is required, shall be compensated at a premium, in addition to the classification working in as follows:

LEVEL D + $.25 per hour - This is the lowest level of protection. No respirator is used and skin protection is minimal.
LEVEL C + $.50 per hour - This level uses an air purifying respirator or additional protective clothing.

LEVEL B + $.75 per hour - Uses same respirator protection as Level A. Supplied air line is provided in conjunction with a chemical "splash suit".

LEVEL A +$1.00 per hour - This level utilizes a fully encapsulated suit with a self-contained breathing apparatus or a supplied air line.

CARP0003-006 06/01/2003

SOUTHWEST WASHINGTON: CLARK, COWLITZ, KLICKITAT, LEWIS(Piledriver only), PACIFIC (South of a straight line made by extending the north boundary line of Wahkiakum County west to Willapa Bay to the Pacific Ocean), SKAMANIA AND WAHKIAKUM COUNTIES and INCLUDES THE ENTIRE PENINSULA WEST OF WILLAPA BAY

SEE ZONE DESCRIPTION FOR CITIES BASE POINTS

ZONE 1:

	Rates	Fringes
Carpenters:		
CARPENTERS; ACOUSTICAL.....	$ 26.94	10.33
DIVERS TENDERS.....	$ 29.45	10.33
DIVERS.....	$ 64.00	10.33
DRYWALL.....	$ 26.94	10.33
FLOOR LAYERS & FLOOR FINISHERS (the laying of all hardwood floors nailed and mastic set, parquet and wood-type tiles, and block floors, the sanding and finishing of floors, the preparation of old and new floors when the materials mentioned above are to be installed); INSULATORS (fiberglass and similar irritating materils.....	$ 27.09	10.33
MILLWRIGHTS.....	$ 27.44	10.33
PILEDRIVERS.....	$ 27.44	10.33

DEPTH PAY:
50 TO 100 FEET $1.00 PER FOOT OVER 50 FEET
100 TO 150 FEET 1.50 PER FOOT OVER 100 FEET
150 TO 200 FEET 2.00 PER FOOT OVER 150 FEET

Zone Differential (Add up Zone 1 rates):
Zone 2 - $0.85
Zone 3 - 1.25
Zone 4 - 1.70
Zone 5 - 2.00
Zone 6 - 3.00

BASEPOINTS: ASTORIA, LONGVIEW, PORTLAND, THE DALLES, AND VANCOUVER, (NOTE: All dispatches for Washington State Counties: Cowlitz, Wahkiakum and Pacific shall be from Longview Local #1707 and mileage shall be computed from that point.)

ZONE 1: Projects located within 30 miles of the respective city hall of the above mentioned cities
ZONE 2: Projects located more than 30 miles and less than 40 miles of the respective city of the above mentioned cities
ZONE 3: Projects located more than 40 miles and less than 50 miles of the respective city of the above mentioned cities
ZONE 4: Projects located more than 50 miles and less than 60 miles of the respective city of the above mentioned cities.
ZONE 5: Projects located more than 60 miles and less than 70 miles of the respective city of the above mentioned cities
ZONE 6: Projects located more than 70 miles of the respected

city of the above mentioned cities

CARP0770-003 06/01/2003

	Rates	Fringes
Carpenters:		
CENTRAL WASHINGTON: CHELAN, DOUGLAS (WEST OF THE 120TH MERIDIAN), KITTITAS, OKANOGAN (WEST OF THE 120TH MERIDIAN) AND YAKIMA COUNTIES		
ACCOUSTICAL WORKERS	$ 20.98	9.22
CARPENTERS AND DRYWALL APPLICATORS	$ 20.72	9.22
CARPENTERS ON CREOSOTE MATERIAL	$ 20.82	9.22
DIVERS TENDER	$ 31.17	9.50
DIVERS	$ 70.07	9.50
INSULATION APPLICATORS	$ 20.72	9.22
MILLWRIGHT AND MACHINE ERECTORS	$ 29.40	9.22
PILEDRIVER, BRIDGE DOCK AND WHARF CARPENTERS	$ 28.40	9.22
PILEDRIVER, DRIVING, PULLING, CUTTING, PLACING COLLARS, SETTING, WELDING OR CRESOTE TREATED MATERIAL, ALL PILING	$ 28.60	9.22
SAWFILERS, STATIONARY POWER SAW OPERATORS, FLOOR FINISHER, FLOOR LAYER, SHINGLER, FLOOR SANDER OPERATOR AND OPERATORS OF OTHER STATIONARY WOOD WORKING TOOLS	$ 20.85	9.22
WESTERN WASHINGTON: CLALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS (excludes piledrivers only), MASON, PACIFIC (North of a straight line made by extending the north boundary line of Wahkiakum County west to the Pacific Ocean), PIERCE, SAN JUAN, SKAGIT, SNOHOMISH, THURSTON AND WHATCOM COUNTIES		
ACOUSTICAL WORKERS	$ 28.56	9.50

CARPENTERS AND DRYWALL APPLICATORS	$ 28.40	9.50
CARPENTERS ON CREOSOTE MATERIAL	$ 28.50	9.50
DIVERS TENDER	$ 31.17	9.50
DIVERS	$ 70.07	9.50
INSULATION APPLICATORS	$ 28.40	9.50
MILLWRIGHT AND MACHINE ERECTORS	$ 29.40	9.50
PILEDRIVER, BRIDGE, DOCK & WHARF CARPENTERS	$ 28.40	9.50
PILEDRIVER, DRIVING, PULLING, CUTTING, PLACING COLLARS, SETTING, WELDING OR CRESOTE TREATED MATERIAL, ALL PILING	$ 28.60	9.50
SAWFILERS, STATIONARY POWER SAW OPERATORS, FLOOR FINISHER, FLOOR LAYER, SHINGLER, FLOOR SANDER OPERATOR AND OPERATORS OF OTHER STATIONARY WOOD WORKING TOOLS	$ 28.53	9.50

(HOURLY ZONE PAY: WESTERN AND CENTRAL WASHINGTON - ALL CLASSIFICATIONS EXCEPT MILLWRIGHTS AND PILEDRIVERS

Hourly Zone Pay shall be paid on jobs located outside of the free zone computed from the city center of the following listed cities:

Seattle	Olympia	Bellingham
Auburn	Bremerton	Anacortes
Renton	Shelton	Yakima
Aberdeen-Hoquiam	Tacoma	Wenatchee
Ellensburg	Everett	Port Angeles
Centralia	Mount Vernon	Sunnyside
Chelan	Pt. Townsend	

Zone Pay:

0 -25 radius miles	Free
25-35 radius miles	$1.00/hour
35-45 radius miles	$1.15/hour
45-55 radius miles	$1.35/hour
Over 55 radius miles	$1.55/hour

(HOURLY ZONE PAY: WESTERN AND CENTRAL WASHINGTON - MILLWRIGHT AND PILEDRIVER ONLY)

Hourly Zone Pay shall be computed from Seattle Union Hall, Tacoma City center, and Everett City center

Zone Pay:

0 -25 radius miles	Free

25-45 radius miles $ .70/hour
Over 45 radius miles $1.50/hour

ELEC0046-001 12/01/2003

CALLAM, JEFFERSON, KING AND KITSAP COUNTIES

	Rates	Fringes
Cable splicer	$ 36.85	3%+11.56
Electrician	$ 33.50	3%+11.56

ELEC0048-003 01/01/2004

CLARK, KLICKITAT AND SKAMANIA COUNTIES

	Rates	Fringes
Cable splicer	$ 31.40	3%+12.35
Electrician	$ 31.15	3%+12.35

ELEC0073-001 07/01/2003

ADAMS, FERRY, LINCOLN, PEND OREILLE, SPOKANE, STEVENS, WHITMAN COUNTIES

	Rates	Fringes
Cable splicer	$ 24.37	3%+11.03
Electrician	$ 23.97	3%+11.03

ELEC0076-002 07/01/2003

GRAYS HARBOR, LEWIS, MASON, PACIFIC, PIERCE, AND THURSTON COUNTIES

	Rates	Fringes
Cable splicer	$ 33.32	3%+12.06
Electrician	$ 30.02	3%+12.06

ELEC0077-002 02/01/2003

	Rates	Fringes
Line Construction:		
CABLE SPLICERS	$ 37.95	3.875%+7.45
GROUNDMEN	$ 23.72	3.875%+5.70
LINE EQUIPMENT MEN	$ 29.14	3.875%+5.70

LINEMEN, POLE SPRAYERS,
HEAVY LINE EQUIPMENT MAN....$ 33.88 3.875%+7.45
POWDERMEN, JACKHAMMERMEN....$ 25.41 3.875%+5.70
TREE TRIMMER.....$ 23.81 3.875%+5.70

ELEC0112-005 06/01/2003

ASOTIN, BENTON, COLUMBIA, FRANKLIN, GARFIELD, KITTITAS, WALLA WALLA, YAKIMA COUNTIES

	Rates	Fringes
Cable splicer.....	$ 30.71	3%+10.98
Electrician.....	$ 29.25	3%+10.98

ELEC0191-003 09/01/2003

ISLAND, SAN JUAN, SNOHOMISH, SKAGIT AND WHATCOM COUNTIES

	Rates	Fringes
Cable splicer.....	$ 33.72	3%+9.83
Electrician.....	$ 30.66	3%+9.83

ELEC0191-004 09/01/2003

CHELAN, DOUGLAS, GRANT AND OKANOGAN COUNTIES

	Rates	Fringes
Cable splicer.....	$ 29.33	3%+9.78
Electrician.....	$ 26.66	3%+9.78

ELEC0970-001 06/01/2003

COWLITZ AND WAHKIAKUM COUNTIES

	Rates	Fringes
Cable splicer.....	$ 31.57	3%+9.40
Electrician.....	$ 28.70	3%+9.40

ENGI0302-003 06/01/2003

CHELAN (WEST OF THE 120TH MERIDIAN), CLALLAM, DOUGLAS (WEST OF THE 120TH MERIDIAN), GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, KITTITAS, MASON, OKANOGAN (WEST OF THE 120TH MERIDIAN), SAN JUNA, SKAGIT, SNOHOMISH, WHATCOM AND YAKIMA (WEST OF THE

120TH MERIDIAN) COUNTIES

PROJECTS: CATEGORY A PROJECTS (EXCLUDES CATEGORY B PROJECTS, AS SHOWN BELOW)

Zone 1 (0-25 radius miles):

	Rates	Fringes
Power equipment operators:		
Group 1A	$ 30.30	9.40
Group 1AA	$ 30.82	9.40
Group 1AAA	$ 31.33	9.40
Group 1	$ 29.79	9.40
Group 2	$ 29.34	9.40
Group 3	$ 28.97	9.40
Group 4	$ 26.80	9.40

Zone Differential (Add to Zone 1 rates):
Zone 2 (26-45 radius miles) - $ .70
Zone 3 (Over 45 radius miles) - $1.00

BASEPOINTS: Aberdeen, Bellingham, Bremerton, Everett, Kent, Mount Vernon, Port Angeles, Port Townsend, Seattle, Shelton, Wenatchee, Yakima

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1AAA - Cranes-over 300 tons, or 300 ft of boom (including jib with attachments)

GROUP 1AA - Cranes 200 to 300 tons, or 250 ft of boom (including jib with attachments); Tower crane over 175 ft in height, base to boom

GROUP 1A - Cranes, 100 tons thru 199 tons, or 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 100 tons and over; Tower crane up to 175 ft in height base to boom; Loaders-overhead, 8 yards and over; Shovels, excavator, backhoes-6 yards and over with attachments

GROUP 1 - Cableway; Cranes 45 tons thru 99 tons, under 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 45 tons thru 99 tons; Derricks on building work; Excavator, shovel, backhoes over 3 yards and under 6 yards; Hard tail end dump articulating off-road equipment 45 yards and over; Loader- overhead 6 yards to, but not including 8 yards; Mucking machine, mole, tunnel, drill and/or shield; Quad 9, HD 41, D-10; Remote control operator on rubber tired earth moving equipment; Rollagon; Scrapers-self propelled 45 yards and over; Slipform pavers; Transporters, all truck or track type

GROUP 2 - Barrier machine (zipper); Batch Plant Operaor-Concrete; Bump Cutter; Cranes, 20 tons thru 44 tons with attachments; Crane-overhead, bridge type-20 tons through 44 tons; Chipper; Concrete Pump-truck mount with boom

attachment; Crusher; Deck Engineer/Deck Winches (power); Drilling machine; Excavator, shovel, backhoe-3 yards and under; Finishing Machine, Bidwell, Gamaco and similar equipment; Guardrail punch; Horizontal/directional drill operator; Loaders-overhead under 6 yards; Loaders-plant feed; Locomotives-all; Mechanics-all; Mixers-asphalt plant; Motor patrol graders-finishing; Piledriver (other than crane mount); Roto-mill,roto-grinder; Screedman, spreader, topside operator-Blaw Knox, Cedar Rapids, Jaeger, Caterpillar, Barbar Green; Scraper-self propelled, hard tail end dump, articulating off-road equipment-under 45 yards; Subgrade trimmer; Tractors, backhoes-over 75 hp; Transfer material service machine-shuttle buggy, blaw knox-roadtec; Truck crane oiler/driver-100 tons and over; Truck Mount portable conveyor; Yo Yo Pay dozer

GROUP 3 - Conveyors; Cranes-thru 19 tons with attachments; A-frame crane over 10 tons; Drill oilers-auger type, truck or crane mount; Dozers-D-9 and under; Forklift-3000 lbs. and over with attachments; Horizontal/directional drill locator; Outside hoists-(elevators and manlifts), air tuggers, strato tower bucket elevators; Hydralifts/boom trucks over 10 tons; Loader-elevating type, belt; Motor patrol grader-nonfinishing; Plant oiler- asphalt, crusher; Pumps-concrete; Roller, plant mix or multi-lift materials; Saws-concrete; Scrpers-concrete and carry-all; Service engineer-equipment; Trenching machines; Truck Crane Oiler/Driver under 100 tons; Tractors, backhoe 75 hp and under

GROUP 4 - Assistant Engineer; Bobcat; Brooms; Compressor; Concrete finish mahine-laser screed; Cranes-A frame-10 tons and under; Elevator and Manlift-permanent or shaft type; Gradechecker, Stakehop; Forklifts under 3000 lbs. with attachments; Hydralifts/boom trucks, 10 tons and under; Oil distributors, blower distribution and mulch seeding operator; Pavement breaker; Posthole digger, mechanical; Power plant; Pumps, water; Rigger and Bellman; Roller-other than plant mix; Wheel Tractors, farmall type; Shotcrete/gunite equipment operator

CATEGORY B PROJECTS: 95% OF THE BASIC HOURLY RATE FOR EACH GROUP PLUS FULL FRINGE BENEFITS APPLICABLE TO CATEGORY A PROJECTS SHALL APPLY TO THE FOLLOWING PROJECTS. REDUCED RATES MAY BE PAID ON THE FOLLOWING:

1. Projects involving work on structures such as buildings and bridges whose total value is less than $1.5 million excluding mechanical, electrical, and utility portions of the contract.
2. Projects of less than $1 million where no building is involved. Surfacing and paving including, but utilities excluded.
3. Marine projects (docks, wharfs, ect.) less than $150,000.

HANDLING OF HAZARDOUS WASTE MATERIALS: Personnel in all craft classifications subject to working inside a federally designed hazardous perimeter shall be elgible for compensation in

accordance with the following group schedule relative to the level of hazardous waste as outlined in the specific hazardous waste project site safety plan.

H-1 Base wage rate when on a hazardous waste site when not outfitted with protective clothing.
H-2 Class "C" Suit - Base wage rate plus $.25 per hour.
H-3 Class "B" Suit - Base wage rate plus $.50 per hour.
H-4 Class "A" Suit - Base wage rate plus $.75 per hour.

ENGI0302-009 06/01/2002

CHELAN (WEST OF THE 120TH MERIDIAN), CLALLAM, DOUGLAS (WEST OF THE 120TH MERIDIAN), GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, KITTITAS, MASON, OKANOGAN (WEST OF THE 120TH MERIDIAN), SAN JUNA,SKAGIT, SNOHOMISH, WHATCOM AND YAKIMA (WEST OF THE 120TH MERIDIAN) COUNTIES

ON PROJECTS DESCRIBED IN FOOTNOTE A BELOW, THE RATE FOR EACH GROUP SHALL BE 95% OF THE BASE RATE PLUS FULL FRINGE BENEFITS. ON ALL OTHER WORK, THE FOLLOWING RATES APPLY.

WORK PERFORMED ON HYDRAULIC DREDDGES:
Zone 1 (0-25 radius miles):

	Rates	Fringes
Power equipment operators:		
GROUP 1		
TOTAL PROJECT COST $300,000 AND OVER	$ 28.51	9.40
TOTAL PROJECT COST UNDER $300,000	$ 26.96	8.40
GROUP 2		
TOTAL PROJECT COST $300,000 AND OVER	$ 28.62	9.40
TOTAL PROJECT COST UNDER $300,000	$ 27.06	8.40
GROUP 3		
TOTAL PROJECT COST $300,000 AND OVER	$ 28.97	9.40
TOTAL PROJECT COST UNDER $300,000	$ 27.38	8.40
GROUP 4		
TOTAL PROJECT COST $300,000 AND OVER	$ 29.02	9.40
TOTAL PROJECT COST UNDER $300,000	$ 27.43	8.40
GROUP 5		
TOATL PROJECT COST $300,000 AND OVER	$ 30.45	9.40
TOTAL PROJECT COST UNDER $300,000	$ 28.75	8.40
GROUP 6		
TOTAL PROJECT COST $300,000 AND OVER	$ 28.51	9.40

TOTAL PROJECT COST
UNDER $300,000.....$ 26.96 8.40

Zone Differential (Add to Zone 1 rates):
Zone 2 (26-45 radius miles) - $ .70
Zone 3 (Over 45 radius miles) - $1.00

BASEPOINTS: Aberdeen, Bellingham, Bremerton, Everett, Kent, Mount Vernon, Port Angeles, Port Townsend, Seattle, Shelton, Wenatchee, Yakima

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1 - ASSISTANT MATE (DECKHAND)
GROUP 2 - OILER
GROUP 3 - ASSISTANT ENGINEER (ELECTRIC, DIESEL, STEAM OR BOOSTER PUMP); MATES AND BOATMEN
GROUP 4 - CRANEMAN, ENGINEER WELDER
GROUP 5 - LEVERMAN, HYDRAULIC
GROUP 6 - MAINTENANCE

CATEGORY B PROJECTS: 95% OF THE BASIC HOURLY RATE FOR EACH GROUP PLUS FULL FRINGE BENEFITS APPLICABLE TO CATEGORY A PROJECTS SHALL APPLY TO THE FOLLOWING PROJECTS. REDUCED RATES MAY BE PAID ON THE FOLLOWING:

1. Projects involving work on structures such as buildings and bridges whose total value is less than $1.5 million excluding mechanical, electrical, and utility portions of the contract.
2. Projects of less than $1 million where no building is involved. Surfacing and paving including, but utilities excluded.
3. Marine projects (docks, wharfs, ect.) less than $150,000.

HEAVY WAGE RATES (CATEGORY A) APPLIES TO CLAM SHELL DREDGE, HOE AND DIPPER, SHOVELS AND SHOVEL ATTACHMENTS, CRANES AND BULLDOZERS.

HANDLING OF HAZARDOUS WASTE MATERIALS: Personnel in all craft classifications subject to working inside a federally designed hazardous perimeter shall be elgible for compensation in accordance with the following group schedule relative to the level of hazardous waste as outlined in the specific hazardous waste project site safety plan.

H-1 Base wage rate when on a hazardous waste site when not outfitted with protective clothing.
H-2 Class "C" Suit - Base wage rate plus $.25 per hour.
H-3 Class "B" Suit - Base wage rate plus $.50 per hour.
H-4 Class "A" Suit - Base wage rate plus $.75 per hour.

ENGI0370-002 08/01/2003

ADAMS, ASOTIN, BENTON, CHELAN (EAST OF THE 120TH MERIDIAN), COLUMBIA, DOUGLAS (EAST OF THE 120TH MERIDIAN), FERRY, FRANKLIN, GARFIELD, GRANT, LINCOLN, OKANOGAN (EAST OF THE 120TH

MERIDIAN), PEND OREILLE, SPOKANE, STEVENS, WALLA WALLA, WHITMAN AND YAKIMA (EAST OF THE 120TH MERIDIAN) COUNTIES

ZONE 1:

	Rates	Fringes
Power equipment operators:		
GROUP 1A	$ 20.94	7.37
GROUP 1	$ 21.49	7.37
GROUP 2	$ 21.81	7.37
GROUP 3	$ 22.42	7.37
GROUP 4	$ 22.58	7.37
GROUP 5	$ 22.74	7.37
GROUP 6	$ 23.02	7.37
GROUP 7	$ 23.29	7.37
GROUP 8	$ 24.39	7.37

ZONE DIFFERENTIAL (Add to Zone 1 rate): Zone 2 - $2.00

Zone 1: Within 45 mile radius of Spokane, Moses Lake, Pasco, Washington; Lewiston, Idaho

Zone 2: Outside 45 mile radius of Spokane, Moses Lake, Pasco, Washington; Lewiston, Idaho

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1A: Boat Operator; Crush Feeder; Oiler; Steam Cleaner

GROUP 1: Bit Grinders; Bolt Threading Machine; Compressors (under 2000 CFM, gas, diesel, or electric power); Deck Hand; Drillers Helper (Assist driller in making drill rod connections, service drill engine and air compressor, repair drill rig and drill tools, drive drill support truck to and on the job site, remove drill cuttings from around bore hole and inspect drill rig while in operation); Fireman & Heater Tender; Grade Checker; Hydro-seeder, Mulcher, Nozzleman; Oiler Driver, & Cable Tender, Mucking Machine; Pumpman; Rollers, all types on subgrade, including seal and chip coatings (farm type, Case, John Deere & similar, or Compacting Vibrator), except when pulled by Dozer with operable blade; Welding Machine

GROUP 2: A-frame Truck (single drum); Assistant Refrigeration Plant (under 1000 ton); Assistant Plant Operator, Fireman or Pugmixer (asphalt); Bagley or Stationary Scraper; Belt Finishing Machine; Blower Operator (cement); Cement Hog; Compressor (2000 CFM or over, 2 or more, gas diesel or electric power); Concrete Saw (multiple cut); Distributor Leverman; Ditch Witch or similar; Elevator Hoisting Materials; Dope Pots (power agitated); Fork Lift or Lumber Stacker, hydra-lift & similar; Gin Trucks (pipeline); Hoist, single drum; Loaders (bucket elevators and conveyors); Longitudinal Float; Mixer (portable-concrete); Pavement Breaker, Hydra-Hammer & similar; Power Broom; Railroad

Ballast Regulation Operator (self-propelled); Railroad Power Tamper Operator (self-propelled); Railroad Tamper Jack Operator (self-propelled; Spray Curing Machine (concrete); Spreader Box (self-propelled); Straddle Buggy (Ross & similar on construction job only); Tractor (Farm type R/T with attachment, except Backhoe); Tugger Operator

GROUP 3: A-frame Truck (2 or more drums); Assistant Refrigeration Plant & Chiller Operator (over 1000 ton); Backfillers (Cleveland & similar); Batch Plant & Wet Mix Operator, single unit (concrete); Belt-Crete Conveyors with power pack or similar; Belt Loader (Kocal or similar); Bending Machine; Bob Cat; Boring Machine (earth); Boring Machine (rock under 8 inch bit) (Quarry Master, Joy or similar); Bump Cutter (Wayne, Saginau or similar); Canal Lining Machine (concrete); Chipper (without crane); Cleaning & Doping Machine (pipeline); Deck Engineer; Elevating Belt-type Loader (Euclid, Barber Green & similar); Elevating Grader-type Loader (Dumor, Adams or similar); Generator Plant Engineers (diesel or electric); Gunnite Combination Mixer & Compressor; Locomotive Engineer; Mixermobile; Mucking Machine; Posthole Auger or Punch; Pump (grout or jet); Soil Stabilizer (P & H or similar); Spreader Machine; Tractor (to D-6 or equivalent) and Traxcavator; Traverse Finish Machine; Turnhead Operator

GROUP 4: Concrete Pumps (squeeze-crete, flow-crete, pump-crete, Whitman & similar); Curb Extruder (asphalt or concrete); Drills (churn, core, calyx or diamond)(operate drilling machine, drive or transport drill rig to and on job site and weld well casing); Equipment Serviceman; Greaser & Oiler; Hoist (2 or more drums or Tower Hoist); Loaders (overhead & front-end, under 4 yds. R/T); Refrigeration Plant Engineer (under 1000 ton); Rubber-tired Skidders (R/T with or without attachments); Surface Heater & Plant Machine; Trenching Machines (under 7 ft. depth capacity); Turnhead (with re-screening); Vacuum Drill (reverse circulation drill under 8 inch bit)

GROUP 5: Backhoe (under 45,000 gw); Backhoe & Hoe Ram (under 3/4 yd.); Carrydeck & Boom Truck (under 25 tons); Cranes (25 tons & under), all attachments including clamshell, dragline; Derricks & Stifflegs (under 65 tons); Drilling Equipment(8 inch bit & over) (Robbins, reverse circulation & similar)(operates drilling machine, drive or transport drill rig to and on job site and weld well casing); Hoe Ram; Piledriving Engineers; Paving (dual drum); Railroad Track Liner Operaotr (self-propelled); Refrigeration Plant Engineer (1000 tons & over); Signalman (Whirleys, Highline Hammerheads or similar)

GROUP 6: Asphalt Plant Operator; Automatic Subgrader (Ditches & Trimmers)(Autograde, ABC, R.A. Hansen & similar on grade wire); Backhoe (45,000 gw and over to 110,000 gw); Backhoes & Hoe Ram (3/4 yd. to 3 yd.); Batch Plant (over 4 units); Batch & Wet Mix Operator (multiple units, 2 & incl. 4); Blade Operator (motor patrol & attachments, Athey & Huber); Boom

Cats (side); Cable Controller (dispatcher); Clamshell Operator (under 3 yds.); Compactor (self-propelled with blade); Concrete Pump Boom Truck; Concrete Slip Form Paver; Cranes (over 25 tons, to and including 45 tons), all attachments including clamshell, dragline; Crusher, Grizzle & Screening Plant Operator; Dozer, 834 R/T & similar; Draglines (under 3 yds.); Drill Doctor; H.D. Mechanic; H.D. Welder; Loader Operator (front-end & overhead, 4 yds. incl. 8 yds.); Multiple Dozer Units with single blade; Paving Machine (asphalt and concrete); Quad-Track or similar equipment; Rollerman (finishing asphalt pavement); Roto Mill (pavement grinder); Scrapers, all, rubber-tired; Screed Operator; Shovel(under 3 yds.); Tractors (D-6 & equilvalent & over); Trenching Machines (7 ft. depth & over); Tug Boat Operator Vactor guzzler, super sucker

GROUP 7: Backhoe (over 110,000 gw); Backhoes & Hoe Ram (3 yds & over); Blade (finish & bluetop) Automatic, CMI, ABC, Finish Athey & Huber & similar when used as automatic; Cableway Operators; Concrete Cleaning/Decontamination machine operator; Cranes (over 45 tons to but not including 85 tons), all attachments including clamshell and dragine; Derricks & Stiffleys (65 tons & over); Elevating Belt (Holland type); Heavy equipment robotics operator; Loader (360 degrees revolving Koehring Scooper or similar); Loaders (overhead & front-end, over 8 yds. to 10 yds.); Rubber-tired Scrapers (multiple engine with three or more scrapers); Shovels (3 yds. & over); Whirleys & Hammerheads, ALL

GROUP 8: Cranes (85 tons and over, and all climbing, overhead,rail and tower), all attachments including clamshell, dragline; Loaders (overhead and front-end, 10 yards and over); Helicopter Pilot

BOOM PAY: (All Cranes, Including Tower)

180 ft to 250 ft	$ .30 over scale
Over 250 ft	$ .60 over scale

NOTE:
In computing the length of the boom on Tower Cranes, they shall be measured from the base of the Tower to the point of the boom.

HAZMAT:
Anyone working on HAZMAT jobs, working with supplied air shall receive $1.00 an hour above classification.

ENGI0370-006 06/01/2002

ADAMS, ASOTIN, BENTON, CHELAN (EAST OF THE 120TH MERIDIAN), COLUMBIA, DOUGLAS (EAST OF THE 120TH MERIDIAN), FERRY, FRANKLIN, GARFIELD, GRANT, LINCOLN, OKANOGAN (EAST OF THE 120TH MERIDIAN), PEND OREILLE, SPOKANE, STEVENS, WALLA WALLA, WHITMAN AND YAKIMA (EAST OF THE 120TH MERIDIAN) COUNTIES

WORK PERFORMED ON HYDRAULIC DREDGES

	Rates	Fringes
Hydraulic Dredge		
GROUP 1:.....	$ 24.73	6.27
GROUP 2:.....	$ 25.10	6.27
GROUP 3:.....	$ 25.13	6.27
GROUP 4:.....	$ 25.52	6.27
GROUP 5:.....	$ 24.63	6.27

GROUP 1: Assistant Mate (Deckhand) and Oiler
GROUP 2: Assistant Engineer (Electric, Diesel, Steam, or Booster Pump); Mates and Boatmen
GROUP 3: Engineer Welder
GROUP 4: Leverman, Hydraulic
GROUP 5: Maintenance

HEAVY WAGE RATES APPLIES TO CLAM SHELL DREDGE, HOE AND DIPPER, SHOVELS AND SHOVEL ATTACHMENTS, CRANES AND BULLDOZERS.

ENGI0612-001 06/01/2002

LEWIS, PIERCE, PACIFIC (THAT PORTION WHICH LIES NORTH OF A PARALLEL LINE EXTENDED WEST FROM THE NORTHERN BOUNDARY OF WAHKAIKUM COUNTY TO THE SEA IN THE STATE OF WASHINGTON) AND THURSTON COUNTIES

PROJECTS:
CATEGORY A PROJECTS (excludes Category B projects, as shown below)

	Rates	Fringes
Power equipment operators:		
WORK PERFORMED ON HYDRAULIC DREDGES:Total Project cost $300,000 and over		
GROUP 1.....	$ 28.51	9.40
GROUP 2.....	$ 28.62	9.40
GROUP 3.....	$ 28.97	9.40
GROUP 4.....	$ 29.02	9.40
GROUP 5.....	$ 30.45	9.40
GROUP 6.....	$ 28.51	9.40
WORK PERFORMED ON HYDRAULIC DREDGES:Total Project Cost under $300,000		
GROUP 1.....	$ 26.96	8.40
GROUP 2.....	$ 27.06	8.40
GROUP 3.....	$ 27.38	8.40
GROUP 4.....	$ 27.43	8.40
GROUP 5.....	$ 28.75	8.40
GROUP 6.....	$ 26.96	8.40

ZONE 2 (26-45 radius miles) - Add $.70 to Zone 1 rates
ZONE 3 (Over 45 radius miles) - Add $1.00 to Zone 1 rates

BASEPOINTS: Tacoma, Olympia, and Centralia

CATEGORY B PROJECTS - 95% of the basic hourly rate for each group plus full fringe benefits applicable to Category A projects shall apply to the following projects: Reduced rates may be paid on the following:
1. Projects involving work on structures such as buildings and structures whose total value is less than $1.5 million excluding mechanical, electrical, and utility portions of the contract.
2. Projects of less than $1 million where no building is involved. Surfacing and paving included, but utilities excluded.
3. Marine projects (docts, wharfs, etc.) less than $150,000

WORK PERFORMED ON HYDRAULIC DREDGES:

GROUP 1: Assistant Mate (Deckhand
GROUP 2: Oiler
GROUP 3: Assistant Engineer (Electric, Diesel, Steam or Booster Pump); Mates and Boatmen
GROUP 4: Craneman, Engineer Welder
GROUP 5: Leverman, Hydraulic GROUP 6: Maintenance

HEAVY WAGE RATES APPLIES TO CLAM SHEEL DREDGE, HOE AND DIPPER, SHOVELS AND SHOVEL ATTACHMENTS, CRANES AND BULLDOZERS

HANDLING OF HAZARDOUS WASTE MATERIALS

H-1 - When not outfitted with protective clothing of level D equipment - Base wage rate
H-2 - Class "C" Suit - Base wage rate + $.25 per hour
H-3 - Class "B" Suit - Base wage rate + $.50 per hour
H-4 - Class "A" Suit - Base wage rate +$.75 per hour

ENGI0612-002 06/01/2003

LEWIS, PIERCE, PACIFIC (portion lying north of a parallel line extending west from the northern boundary of Wahkaikum County to the sea) AND THURSTON COUNTIES

ON PROJECTS DESCRIBED IN FOOTNOTE A BELOW, THE RATE FOR EACH GROUP SHALL BE 90% OF THE BASE RATE PLUS FULL FRINGE BENEFITS. ON ALL OTHER WORK, THE FOLLOWING RATES APPLY.

Zone 1 (0-25 radius miles):

	Rates	Fringes
Power equipment operators:		
GROUP 1A	$ 30.30	9.40
GROUP 1AA	$ 30.82	9.40
GROUP 1AAA	$ 31.33	9.40
GROUP 1	$ 29.79	9.40
GROUP 2	$ 29.34	9.40
GROUP 3	$ 28.97	9.40

GROUP 4.....$ 26.80 9.40

Zone Differential (Add to Zone 1 rates):
Zone 2 (26-45 radius miles) = $ .70
Zone 3 (Over 45 radius miles) - $1.00

BASEPOINTS: CENTRALIA, OLYMPIA, TACOMA

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1 AAA - Cranes-over 300 tons or 300 ft of boom (including jib with attachments)

GROUP 1AA - Cranes- 200 tonsto 300 tons, or 250 ft of boom (including jib with attachments; Tower crane over 175 ft in height, bas to boom

GROUP 1A - Cranes, 100 tons thru 199 tons, or 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 100 tons and over; Tower crane up to 175 ft in height base to boom; Loaders-overhead, 8 yards and over; Shovels, excavator, backhoes-6 yards and over with attachments

GROUP 1 - Cableway; Cranes 45 tons thru 99 tons under 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 45 tons thru 99 tons; Derricks on building work; Excavator, shovel, backhoes over 3 yards and under 6 yards; Hard tail end dump articulating off-road equipment 45 yards and over; Loader- overhead, 6 yards to, but not including, 8 yards; Mucking machine, mole, tunnel, drill and/or shield; Quad 9 HD 41, D-10; Remote control operator on rubber tired earth moving equipment; Rollagon; Scrapers-self-propelled 45 yards and over; Slipform pavers; Transporters, all track or truck type

GROUP 2 - Barrier machine (zipper); Batch Plant Operator-concrete; Bump Cutter; Cranes, 20 tons thru 44 tons with attachments; Crane-Overhead, bridge type, 20 tons through 44 tons; Chipper; Concrete pump-truck mount with boom attachment; Crusher; Deck engineer/deck winches (power); Drilling machine; Excavator, shovel, backhoe-3 yards and under; Finishing machine, Bidwell, Gamaco and similar equipment; Guardrail punch; Loaders, overhead under 6 yards; Loaders-plant feed; Locomotives-all; Mechanics- all; Mixers, asphalt plant; Motor patrol graders, finishing; Piledriver (other than crane mount); Roto-mill, roto- grinder; Screedman, spreader, topside operator-Blaw Knox, Cedar Rapids, Jaeger, Caterpillar, Barbar Green; Scraper-self-propelled, hard tail end dump, articulating off-road equipment- under 45 yards; Subgrader trimmer; Tractors, backhoe over 75 hp; Transfer material service machine-shuttle buggy, Blaw Knox- Roadtec; Truck Crane oiler/driver-100 tons and over; Truck Mount Portable Conveyor; Yo Yo pay

GROUP 3 - Conveyors; Cranes through 19 tons with attachments; Crane-A-frame over 10 tons; Drill oilers-auger type, truck or crane mount; Dozer-D-9 and under; Forklift-3000 lbs. and over

with attachments; Horizontal/directional drill locator; Outside Hoists-(elevators and manlifts), air tuggers, strato tower bucket elevators; Hydralifts/boom trucks over 10 tons; Loaders-elevating type, belt; Motor patrol grader-nonfinishing; Plant oiler- asphalt, crusher; Pump-Concrete; Roller, plant mix or multi-lfit materials; Saws-concrete; Scrapers, concrete and carry all; Service engineers-equipment; Trenching machines; Truck crane oiler/driver under 100 tons; Tractors, backhoe under 75 hp

GROUP 4 - Assistant Engineer; Bobcat; Brooms; Compressor; Concrete Finish Machine-laser screed; Cranes A-frame 10 tons and under; Elevator and manlift (permanent and shaft type); Forklifts-under 3000 lbs. with attachments; Gradechecker, stakehop; Hydralifts/boom trucks, 10 tons and under; Oil distributors, blower distribution and mulch seeding operator; Pavement breaker; Posthole digger-mechanical; Power plant; Pumps-water; Rigger and Bellman; Roller-other than plant mix; Wheel Tractors, farmall type; Shotcrete/gunite equipment operator

FOOTNOTE A- Reduced rates may be paid on the following:
1. Projects involving work on structures such as buildings and bridges whose total value is less than $1.5 million excluding mechanical, electrical, and utility portions of the contract.

2. Projects of less than $1 million where no building is involved. Surfacing and paving included, but utilities excluded.

3. Marine projects (docks, wharfs, etc.) less than $150,000.

HANDLING OF HAZARDOUS WASTE MATERIALS: Personnel in all craft classifications subject to working inside a federally designated hazardous perimeter shall be elgible for compensation in accordance with the following group schedule relative to the level of hazardous waste as outlined in the specific hazardous waste project site safety plan.
H-1 Base wage rate when on a hazardous waste site when not outfitted with protective clothing
H-2 Class "C" Suit - Base wage rate plus $ .25 per hour.
H-3 Class "B" Suit - Base wage rate plus $ .50 per hour.
H-4 Class "A" Suit - Base wage rate plus $ .75 per hour.

ENGI0701-002 01/01/2004

CLARK, COWLITZ, KLICKKITAT, PACIFIC (SOUTH), SKAMANIA, AND WAHKIAKUM COUNTIES

	Rates	Fringes
Power equipment operators:		
(See Footnote A)		
ZONE 1:		
GROUP 1	$ 29.51	9.70

GROUP 1A	$ 30.99	9.70
GROUP 1B	$ 32.46	9.70
GROUP 2	$ 28.25	9.70
GROUP 3	$ 27.47	9.70
GROUP 4	$ 26.93	9.70
GROUP 5	$ 26.32	9.70
GROUP 6	$ 23.91	9.70

Zone Differential (add to Zone 1 rates):
Zone 2 - $1.50
Zone 3 - 3.00

For the following metropolitan counties: MULTNOMAH; CLACKAMAS; MARION; WASHINGTON; YAMHILL; AND COLUMBIA; CLARK; AND COWLITZ COUNTY, WASHINGTON WITH MODIFICATIONS AS INDICATED:

All jobs or projects located in Multnomah, Clackamas and Marion Counties, West of the western boundary of Mt. Hood National Forest and West of Mile Post 30 on Interstate 84 and West of Mile Post 30 on State Highway 26 and West of Mile Post 30 on Highway 22 and all jobs or projects located in Yamhill County, Washington County and Columbia County and all jobs or porjects located in Clark & Cowlitz County, Washington except that portion of Cowlitz County in the Mt. St. Helens "Blast Zone" shall receive Zone I pay for all classifications.

All jobs or projects located in the area outside the identified boundary above, but less than 50 miles from the Portland City Hall shall receive Zone II pay for all classifications.

All jobs or projects located more than 50 miles from the Portland City Hall, but outside the identified border above, shall receive Zone III pay for all classifications.

For the following cities: ALBANY; BEND; COOS BAY; EUGENE; GRANTS PASS; KLAMATH FALLS; MEDFORD; ROSEBURG

All jobs or projects located within 30 miles of the respective city hall of the above mentioned cities shall receive Zone I pay for all classifications.

All jobs or projects located more than 30 miles and less than 50 miles from the respective city hall of the above mentioned cities shall receive Zone II pay for all classifications.

All jobs or projects located more than 50 miles from the respective city hall of the above mentioned cities shall receive Zone III pay for all classifications.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: CONCRETE: Batch Plant and/or Wet Mix Operator, three units or more; CRANE: Helicopter Operator, when used in erecting work; Whirley Operator, 90 ton and over; LATTICE

BOOM CRANE: Operator 200 tons through 299 tons, and/or over 200 feet boom; HYDRAULIC CRANE: Hydraulic Crane Operator 90 tons through 199 tons with luffing or tower attachments; FLOATING EQUIPMENT: Floating Crane, 150 ton but less than 250 ton

GROUP 1A: HYDRAULIC CRANE: Hydraulic Operator, 200 tons and over (with luffing or tower attachment); LATTICE BOOM CRANE: Operator, 200 tons through 299 tons, with over 200 feet boom; FLOATING EQUIPMENT: Floating Crane 250 ton and over

GROUP 1B: LATTICE BOOM CRANE: Operator, 300 tons through 399 tons with over 200 feet boom; Operator 400 tons and over; FLOATING EQUIPMENT: Floating Crane 350 ton and over

GROUP 2: ASPHALT: Asphalt Plant Operator (any type); Roto Mill, pavement profiler, operator, 6 foot lateral cut and over; BLADE: Auto Grader or "Trimmer" (Grade Checker required); Blade Operator, Robotic; BULLDOZERS: Bulldozer operator over 120,000 lbs and above; Bulldozer operator, twin engine; Bulldozer Operator,tandem, quadnine, D10, D11, and similar type; Bulldozere Robotic Equipment (any type; CONCRETE: Batch Plant and/or Wet Mix Operator, one and two drum; Automatic Concrete Slip Form Paver Operator; Concrete Canal Line Operator; Concrete Profiler, Diamond Head; CRANE: Cableway Operator, 25 tons and over; HYDRAULIC CRANE: Hydraulic crane operator 90 tons through 199 tons (with luffing or tower attachment); TOWER/WHIRLEY OPERATOR: Tower Crane Operator; Whirley Operator, under 90 tons; LATTICE BOOM CRANE: 90 through 199 tons and/or 150 to 200 feet boom; CRUSHER: Crusher Plant Operator; FLOATING EQUIPMENT: Floating Clamshell, etc.operator, 3 cu. yds. and over; Floating Crane (derrick barge) Operator, 30 tons but less than 150 tons; LOADERS: Loader operator, 120,000 lbs. and above; REMOTE CONTROL: Remote controlled earth-moving equipment; RUBBER-TIRED SCRAPERS: Rubber- tired scraper operator, with tandem scrapers, multi-engine; SHOVEL, DRAGLINE, CLAMSHELL, SKOOPER OPERATOR: Shovel, Dragline, Clamshell, operator 5 cu. yds and over; TRENCHING MACHINE: Wheel Excavator, under 750 cu. yds. per hour (Grade Oiler required); Canal Trimmer (Grade Oiler required); Wheel Excavator, over 750 cu. yds. per hour; Band Wagon (in conjunction with wheel excavator); UNDERWATER EQUIPMENT: Underwater Equipment Operator, remote or otherwise; HYDRAULIC HOES-EXCAVATOR: Excavator over 130,000 lbs.

GROUP 3: BULLDOZERS: Bulldozer operator, over 70,000 lbs. up to and including 120,000 lbs.; HYDRAULIC CRANE: Hydraulic crane operator, 50 tons through 89 tons (with luffing or tower attachment); LATTICE BOOM CRANES: Lattice Boom Crane-50 through 89 tons (and less than 150 feet boom); FORKLIFT: Rock Hound Operator; HYDRAULIC HOES-EXCAVATOR: excavator over 80,000 lbs. through 130,000 lbs.; LOADERS: Loader operator 60,000 and less than 120,000; RUBBER-TIRED SCRAPERS: Scraper Operator, with tandem scrapers; Self-loading, paddle wheel, auger type, finish and/or 2 or more units; SHOVEL, DRAGLINE, CLAMSHELL,SKOOPER OPERATOR: Shovel, Dragline, Clamshell

operators 3 cu. yds. but less than 5 cu yds.

GROUP 4: ASPHALT: Screed Operator; Asphalt Paver operator (screeman required); BLADE: Blade operator; Blade operator, finish; Blade operator, externally controlled by electronic, mechanical hydraulic means; Blade operator, multi-engine; BULLDOZERS: Bulldozer Operator over 20,000 lbs and more than 100 horse up to 70,000 lbs; Drill Cat Operator; Side-boom Operator; Cable-Plow Operator (any type); CLEARING: Log Skidders; Chippers; Incinerator; Stump Splitter (loader mounted or similar type); Stump Grinder (loader mounted or similar type; Tub Grinder; Land Clearing Machine (Track mounted forestry mowing & grinding machine); Hydro Axe (loader mounted or similar type); COMPACTORS SELF-PROPELLED: Compactor Operator, with blade; Compactor Operator, multi-engine; Compactor Operator, robotic; CONCRETE: Mixer Mobile Operator; Screed Operator; Concrete Cooling Machine Operator; Concrete Paving Road Mixer; Concrete Breaker; Reinforced Tank Banding Machine (K-17 or similar types); Laser Screed; CRANE: Chicago boom and similar types; Lift Slab Machine Operator; Boom type lifting device, 5 ton capacity or less; Hoist Operator, two (2) drum; Hoist Operator, three (3) or more drums; Derrick Operator, under 100 ton; Hoist Operator, stiff leg, guy derrick or similar type, 50 ton and over; Cableway Operator up to twenty (25) ton; Bridge Crane Operator, Locomotive, Gantry, Overhead; Cherry Picker or similar type crane; Carry Deck Operator; Hydraulic Crane Operator, under 50 tons; LATTICE BOOM CRANE OPERATOR: Lattice Boom Crane Operator, under 50 tons; CRUSHER: Generator Operator; Diesel-Electric Engineer; Grizzley Operator; Drill Doctor; Boring Machine Operator; Driller-Percussion, Diamond, Core, Cable, Rotary and similar type; Cat Drill (John Henry); Directional Drill Operator over 20,000 lbs pullback; FLOATING EQUIPMENT: Diesel-electric Engineer; Jack Operator, elevating barges, Barge Operator, self- unloading; Piledriver Operator (not crane type) (Deckhand required); Floating Clamshelll, etc. Operator, under 3 cu. yds. (Fireman or Diesel-Electric Engineer required); Floating Crane (derrick barge) Operator, less than 30 tons; GENERATORS: Generator Operator; Diesel-electric Engineer; GUARDRAIL EQUIPMENT: Guardrail Punch Operator (all types); Guardrail Auger Operator (all types); Combination Guardrail machines, i.e., punch auger, etc.; HEATING PLANT: Surface Heater and Planer Operator; HYDRAULIC HOES EXCAVATOR: Robotic Hydraulic backhoe operator, track and wheel type up to and including 20,0000 lbs. with any or all attachments; Excavator Operator over 20,000 lbs through 80,000 lbs.; LOADERS: Belt Loaders, Kolman and Ko Cal types; Loaders Operator, front end and overhead, 25,000 lbs and less than 60,000 lbs; Elevating Grader Operator by Tractor operator, Sierra, Euclid or similar types; PILEDRIVERS: Hammer Operator; Piledriver Operator (not crane type); PIPELINE, SEWER WATER: Pipe Cleaning Machine Operator; Pipe Doping Machine Operator; Pipe Bending Machine Operator; Pipe Wrapping Machine Operator; Boring Machine Operator; Back Filling Machine Operator; REMOTE CONTROL: Concrete Cleaning Decontamination Machine Operator; Ultra High Pressure Water

Jet Cutting Tool System Operator/Mechanic; Vacuum Blasting Machine Operator/mechanic; REPAIRMEN, HEAVY DUTY: Diesel Electric Engineer (Plant or Floating; Bolt Threading Machine operator; Drill Doctor (Bit Grinder); H.D. Mechanic; Machine Tool Operator; RUBBER-TIRED SCRAPERS: Rubber-tired Scraper Operator,single engine, single scraper; Self-loading, paddle wheel, auger type under 15 cu. yds.; Rubber-tired Scraper Operator, twin engine; Rubber-tired Scraper Operator, with push- ull attachments; Self Loading, paddle wheel, auger type 15 cu. yds. and over, single engine; Water pulls, water wagons; SHOVEL, DRAGLINE, CLAMSHELL, SKOOPER OPERATOR: Diesel Electric Engineer; Stationay Drag Scraper Operator; Shovel, Dragline, Clamshell, Operator under 3 cy yds.; Grade-all Operator; SURFACE (BASE) MATERIAL: Blade mounted spreaders, Ulrich and similar types; TRACTOR-RUBBERED TIRED: Tractor operator, rubber-tired, over 50 hp flywheel; Tractor operator, with boom attachment; Rubber-tired dozers and pushers (Michigan, Cat, Hough type); Skip Loader, Drag Box; TRENCHING MACHINE: Trenching Machine operator, digging capacity over 3 ft depth; Back filling machine operator; TUNNEL: Mucking machine operator

GROUP 5: ASPHALT: Extrusion Machine Operator; Roller Operator (any asphalt mix); Asphalt Burner and Reconditioner Operator (any type); Roto-Mill, pavement profiler, ground man; BULLDOZERS: Bulldozer operator, 20,000 lbs. or less or 100 horse or less; COMPRESSORS: Compressor Operator (any power), over 1,250 cu. ft. total capacity; COMPACTORS: Compactor Operator, including vibratory; Wagner Pactor Operator or similar type (without blade); CONCRETE: Combination mixer and Compressor Operator, gunite work; Concrete Batch Plant Quality Control Operator; Beltcrete Operator; Pumpcrete Operator (any type); Pavement Grinder and/or Grooving Machine Operator (riding type); Cement Pump Operator, Fuller-Kenyon and similar; Concrete Pump Operator; Grouting Machine Operator; Concrete mixer operator, single drum, under (5) bag capacity; Cast in place pipe laying machine; maginnis Internal Full slab vibrator operator; Concrete finishing mahine operator, Clary, Johnson, Bidwell, Burgess Bridge deck or similar type; Curb Machine Operator, mechanical Berm, Curb and/or Curb and Gutter; Concrete Joint Machine Operator; Concrete Planer Operator; Tower Mobile Operator; Power Jumbo Operator setting slip forms in tunnels; Slip Form Pumps, power driven hydraulic lifting device for concrete forms; Concrete Paving Machine Operator; Concrete Finishing Machine Operator; Concrete Spreader Operator; CRANE: Helicopter Hoist Operator; Hoist Operator, single drum; Elevator Operator; A-frame Truck Operator, Double drum; Boom Truck Operator; HYDRAULIC CRANE OPERATOR: Hydraulic Boom Truck, Pittman; DRILLING: Churm Drill and Earth Boring Machine Operator; Vacuum Truck; Directional Drill Operator over 20,000 lbs pullback; FLOATING EQUIPMENT: Fireman; FORKLIFT: Fork Lift, over 10 ton and/or robotic; HYDRAULIC HOES EXCAVATORS: Hydraulic Backhoe Operator, wheel type (Ford, John Deere, Case type); Hydraulic Backhoe Operator track type up to and including 20,000 lbs.; LOADERS: Loaders, rubber- tired type, less than 25,000 lbs; Elevating Grader

Operator, Tractor Towed requiring Operator or Grader; Elevating loader operator, Athey and similar types; OILERS: Service oiler (Greaser); PIPELINE-SEWER WATER: Hydra hammer or simialr types; Pavement Breaker Operator; PUMPS: Pump Operator, more than 5 (any size); Pot Rammer Operator; RAILROAD EQUIPMENT: Locomotive Operator, under 40 tons; Ballast Regulator Operator; Ballast Tamper Multi-Purpose Operator; Track Liner Operator; Tie Spacer Operator; Shuttle Car Operator; Locomotive Operator, 40 tons and over; MATERIAL HAULRS: Cat wagon DJBs Volvo similar types; Conveyored material hauler; SURFACING (BASE) MATERIAL: Rock Spreaders, self-propelled; Pulva-mixer or similar types; Chiip Spreading machine operator; Lime spreading operator, construction job siter; SWEEPERS: Sweeper operator (Wayne type) self-propelled construction job site; TRACTOR-RUBBER TIRED: Tractor operator, rubber-tired, 50 hp flywheel and under; Trenching machine operator, maximum digging capacity 3 ft depth; TUNNEL: Dinkey

GROUP 6: ASPHALT: Plant Oiler; Plant Fireman; Pugmill Operator (any type); Truck mounted asphalt spreader, with screed; COMPRESSORS: Compressor Operator (any power), under 1,250 cu. ft. total capacity; CONCRETE: Plant Oiler, Assistant Conveyor Operator; Conveyor Operator; Mixer Box Operator (C.T.B., dry batch, etc.); Cement Hog Operator; Concrete Saw Operator; Concrete Curing Machine Operator (riding type); Wire Mat or Brooming Machine Operator; CRANE: Oiler; Fireman, all equipment; Truck Crane Oiler Driver; A-frame Truck Operator, single drum; Tugger or Coffin Type Hoist Operator; CRUSHER: Crusher Oiler; Crusher Feederman; CRUSHER: Crusher oiler; Crusher feederman; DRILLING: Drill Tender; Auger Oiler; FLOATING EQUIPMENT: Deckhand; Boatman; FORKLIFT: Self-propelled Scaffolding Operator, construction job site (exclduing working platform); Fork Lift or Lumber Stacker Operator, construction job site; Ross Carrier Operator, construction job site; Lull Hi-Lift Operator or Similar Type; GUARDRAIL EQUIPMENT: Oiler; Auger Oiler; Oiler, combination guardrail machines; Guardrail Punch Oiler; HEATING PLANT: Temporary Heating Plant Operator; LOADERS: Bobcat, skid steer (less than 1 cu yd.); Bucket Elevator Loader Operator, BarberGreene and similar types; OILERS: Oiler; Guardrail Punch Oiler; Truck Crane Oiler-Driver; Auger Oiler; Grade Oiler, required to check grade; Grade Checker; Rigger; PIPELINE-SEWER WATER: Tar Pot Fireman; Tar Pot Fireman (power agitated); PUMPS: Pump Operator (any power); Hydrostatic Pump Operator; RAILROAD EQUIPMENT: Brakeman; Oiler; Switchman; Motorman; Ballast Jack Tamper Operator; SHOVEL, DRAGLINE, CLAMSHELL, SKOOPER, ETC. OPERATOR: Oiler, Grade Oiler (required to check grade); Grade Checker; Fireman; SWEEPER: Broom operator, self propelled, construction job site; SURFACING (BASE) MATERIAL: Roller Operator, grading of base rock (not asphalt); Tamping Machine operartor, mechanical, self-propelled; Hydrographic Seeder Machine Operator; TRENCHING MACHINE: Oiler; Grade Oiler; TUNNEL: Conveyor operator; Air filtration equipment operator

---

ENGI0701-003 06/01/2003

CLARK, COWLITZ, KLICKITAT, PACIFIC (SOUTH), SKAMANIA, AND WAHKIAKUM COUNTIES

DREDGING:

	Rates	Fringes
Dredging:		
ZONE A		
ASSISTANT ENGINEER	$ 30.74	9.25
ASSISTANT MATE	$ 26.96	9.25
LEVERMAN, DIPPER, FLOATING CLAMSHELL	$ 32.99	9.25
LEVERMAN, HYDRAULIC	$ 32.99	9.25
TENDERMAN	$ 29.71	9.25
ZONE B		
ASSISTANT ENGINEER	$ 32.74	9.25
ASSISTANT MATE	$ 28.96	9.25
LEVERMAN, DIPPER, FLOATING CLAMSHELL	$ 34.99	9.25
LEVERMAN, HYDRAULIC	$ 34.99	9.25
TENDERMAN	$ 31.71	9.25
ZONE C		
ASSISTANT ENGINEER	$ 33.74	9.25
ASSISTANT MATE	$ 29.96	9.25
LEVERMAN, DIPPER, FLOATING CLAMSHELL	$ 35.99	9.25
LEVERMAN, HYDRAULIC	$ 35.99	9.25
TENDERMAN	$ 32.71	9.25

ZONE DESCRIPTION FOR DREDGING:

ZONE A - All jobs or projects located within 30 road miles of Portland City Hall.
ZONE B - Over 30-50 road miles from Portland City Hall.
ZONE C - Over 50 road miles from Portland City Hall.

*All jobs or projects shall be computed from the city hall by the shortest route to the geographical center of the project.

IRON0014-005 07/01/2003

ADAMS, ASOTIN, BENTON, COLUMBIA, DOUGLAS, FERRY, FRANKLIN, GARFIELD, GRANT, LINCOLN, OKANOGAN, PEND ORIELLE, SPOKANE, STEVENS, WALLA WALLA AND WHITMAN COUNTIES

	Rates	Fringes
Ironworker	$ 26.32	12.45

IRON0029-002 07/01/2003

CLARK, COWLITZ, KLICKITAT, PACIFIC, SKAMANIA, AND WAHKAIKUM COUNTIES

	Rates	Fringes
Ironworker	$ 27.82	12.45

IRON0086-002 07/01/2003

YAKIMA, KITTITAS AND CHELAN COUNTIES

	Rates	Fringes
Ironworker	$ 27.47	12.45

IRON0086-004 07/01/2003

CLALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS, MASON, PIERCE, SKAGIT, SNOHOMISH, THURSTON, AND WHATCOM COUNTIES

	Rates	Fringes
Ironworker	$ 28.57	12.45

LABO0001-002 07/01/2003

ZONE 1:

	Rates	Fringes
Laborers:		
CALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC (NORTH OF STRAIGHT LINE MADE BY EXTENDING THE NORTH BOUNDARY WAHKIAKUM COUNTY WEST TO THE PACIFIC OCEAN), PIERCE, SAN JUAN, SKAGIT, SNOHOMISH, THURSTON AND WHATCOM COUNTIES		
GROUP 1	$ 17.71	7.20
GROUP 2	$ 20.03	7.20
GROUP 3	$ 24.71	7.20
GROUP 4	$ 25.19	7.20
GROUP 5	$ 25.55	7.20
CHELAN, DOUGLAS (WEST OF THE 120TH MERIDIAN), KITTITAS AND YAKIMA COUNTIES		
GROUP 1	$ 14.59	7.20
GROUP 2	$ 16.91	7.20
GROUP 3	$ 18.63	7.20
GROUP 4	$ 19.11	7.20
GROUP 5	$ 19.47	7.20

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):
ZONE 2 - $ .70
ZONE 3 - $1.00

BASE POINTS: CHELAN, SUNNYSIDE, WENATCHEE, AND YAKIMA

ZONE 1 - Projects within 25 radius miles of the respective city hall
ZONE 2 - More than 25 but less than 45 radius miles from the respective city hall
ZONE 3 - More than 45 radius miles from the respective city hall

BASE POINTS: BELLINGHAM, MT. VERNON, EVERETT, SEATTLE, KENT, TACOMA, OLYMPIA, CENTRALIA, ABERDEEN, SHELTON, PT. TOWNSEND, PT. ANGELES, AND BREMERTON

ZONE 1 - Projects within 25 radius miles of the respective city hall
ZONE 2 - More than 25 but less than 45 radius miles from the respective city hall
ZONE 3 - More than 45 radius miles from the respective city hall

LABORERS CLASSIFICATIONS

GROUP 1: Landscaping and Planting; Watchman; Window Washer/Cleaner (detail clean-up, such as but not limited to cleaning floors, ceilings, walls, windows, etc., prior to final acceptance by the owner)

GROUP 2: Batch Weighman; Crusher Feeder; Fence Laborer; Flagman; Pilot Car

GROUP 3: General Laborer; Air, Gas, or Electric Vibrating Screed; Asbestos Abatement Laborer; Ballast Regulator Machine; Brush Cutter; Brush Hog Feeder; Burner; Carpenter Tender; Cement Finisher Tender; Change House or Dry Shack; Chipping Gun (under 30 lbs.); Choker Setter; Chuck Tender; Clean-up Laborer; Concrete Form Stripper; Curing Laborer; Demolition (wrecking and moving including charred material); Ditch Digger; Dump Person; Fine Graders; Firewatch; Form Setter; Gabian Basket Builders; Grout Machine Tender; Grinders; Guardrail Erector; Hazardous Waste Worker (Level C); Maintenance Person; Material Yard Person; Pot Tender; Rip Rap Person; Riggers; Scale Person; Sloper Sprayer; Signal Person; Stock Piler; Stake Hopper; Toolroom Man (at job site); Topper-Tailer; Track Laborer; Truck Spotter; Vinyl Seamer

GROUP 4: Cement Dumper-Paving; Chipping Gun (over 30 lbs.); Clary Power Spreader; Concrete Dumper/Chute Operator; Concrete Saw Operator; Drill Operator (hydraulic, diamond, aiartrac); Faller and Bucker Chain Saw; Grade Checker and Transit Person; Groutmen (pressure) including post tension beams; Hazardous Waste Worker (Level B); High Scaler;

Jackhammer; Laserbeam Operator; Manhole Builder-Mudman; Mortarman and Hodcarrier; Nozzleman (concrete pump, green cutter when using combination of high pressure air and water on concrete and rock, sandblast, gunite, shotcrete, water blaster, vacuum blaster); Pavement Breaker; Pipe Layer and Caulker; Pipe Pot Tender; Pipe Reliner (not insert type); Pipe Wrapper; Power Jacks; Railroad Spike Puller-Power; Raker-Asphalt; Rivet Buster; Rodder; Sloper (over 20 ft); Spreader (concrete); Tamper and Similar electric, air and glas operated tool; Timber Person-sewer (lagger shorer and cribber); Track Liner Power; Tugger Operator; Vibrator; Well Point Laborer

GROUP 5: Caisson Worker; Miner; Powderman; Re-Timberman; Hazardous Waste Worker (Level A).

LABO0238-004 06/01/2003

ADAMS, ASOTIN, BENTON, COLUMBIA, DOUGLAS (EAST OF THE 120TH MERIDIAN), FERRY, FRANKLIN, GARFIELD, GRANT, LINCOLN, OKANOGAN, PEND OREILLE, STEVENS, SPOKANE, WALLA WALLA AND WHITMAN COUNTIES

	Rates	Fringes
Laborers:		
ZONE 1:		
GROUP 1	$ 17.36	6.50
GROUP 2	$ 19.46	6.50
GROUP 3	$ 19.73	6.50
GROUP 4	$ 20.00	6.50
GROUP 5	$ 20.28	6.50
GROUP 6	$ 21.65	6.50

Zone Differential (Add to Zone 1 rate): $2.00

BASE POINTS: Spokane, Moses Lake, Pasco, Lewiston

Zone 1: 0-45 radius miles from the main post office.
Zone 2: 45 radius miles and over from the main post office.

LABORERS CLASSIFICATIONS

GROUP 1: Flagman; Landscape Laborer; Scaleman; Traffic Control Maintenance Laborer (to include erection and maintenance of barricades, signs and relief of flagperson); Window Washer/Cleaner (detail cleanup, such as, but not limited to cleaning floors, ceilings, walls, windows, etc. prior to final acceptance by the owner)

GROUP 2: Asbestos Abatement Worker; Brush Hog Feeder; Carpenter Tender; Cement Handler; Clean-up Laborer; Concrete Crewman (to include stripping of forms, hand operating jacks on slip form construction, application of concrete curing compounds, pumpcrete machine, signaling, handling the nozzle of squeezcrete or similar machine,6 inches and smaller); Confined Space Attendant; Concrete Signalman; Crusher Feeder;

Demolition (to include clean-up, burning, loading, wrecking and salvage of all material); Dumpman; Fence Erector; Firewatch; Form Cleaning Machine Feeder, Stacker; General Laborer; Grout Machine Header Tender; Guard Rail (to include guard rails, guide and reference posts, sign posts, and right-of-way markers); Hazardous Waste Worker, Level D (no respirator is used and skin protection is minimal); Miner, Class "A" (to include all bull gang, concrete crewman, dumpman and pumpcrete crewman, including distributing pipe, assembly & dismantle, and nipper); Nipper; Riprap Man; Sandblast Tailhoseman; Scaffold Erector (wood or steel); Stake Jumper; Structural Mover (to include separating foundation, preparation, cribbing, shoring, jacking and unloading of structures); Tailhoseman (water nozzle); Timber Bucker and Faller (by hand); Track Laborer (RR); Truck Loader; Well-Point Man; All Other Work Classifications Not Specially Listed Shall Be Classified As General Laborer

GROUP 3: Aspahlt Raker; Asphalt Roller, walking; Cement Finisher Tender; Concrete Saw, walking; Demolition Torch; Dope Pot Firemen, non-mechanical; Driller Tender (when required to move and position machine); Form Setter, Paving; Grade Checker using level; Hazardous Waste Worker, Level C (uses a chemical "splash suit" and air purifying respirator); Jackhammer Operator; Miner, Class "B" (to include brakeman, finisher, vibrator, form setter); Nozzleman (to include squeeze and flo-crete nozzle); Nozzleman, water, air or steam; Pavement Breaker (under 90 lbs.); Pipelayer, corrugated metal culvert; Pipelayer, multi- plate; Pot Tender; Power Buggy Operator; Power Tool Operator, gas, electric, pneumatic; Railroad Equipment, power driven, except dual mobile power spiker or puller; Railroad Power Spiker or Puller, dual mobile; Rodder and Spreader; Tamper (to include operation of Barco, Essex and similar tampers); Trencher, Shawnee; Tugger Operator; Wagon Drills; Water Pipe Liner; Wheelbarrow (power driven)

GROUP 4: Air and Hydraulic Track Drill; Brush Machine (to include horizontal construction joint cleanup brush machine, power propelled); Caisson Worker, free air; Chain Saw Operator and Faller; Concrete Stack (to include laborers when laborers working on free standing concrete stacks for smoke or fume control above 40 feet high); Gunite (to include operation of machine and nozzle); Hazardous Waste Worker, Level B (uses same respirator protection as Level A. A supplied air line is provided in conjunction with a chemical "splash suit"); High Scaler; Laser Beam Operator (to include grade checker and elevation control); Miner, Class C (to include miner, nozzleman for concrete, laser beam operator and rigger on tunnels); Monitor Operator (air track or similar mounting); Mortar Mixer; Nozzleman (to include jet blasting nozzleman, over 1,200 lbs., jet blast machine power propelled, sandblast nozzle); Pavement Breaker (90 lbs. and over); Pipelayer (to include working topman, caulker, collarman, jointer, mortarman, rigger, jacker, shorer, valve or meter installer); Pipewrapper; Plasterer Tender; Vibrators (all)

GROUP 5 - Drills with Dual Masts; Hazardous Waste Worker, Level A (utilizes a fully encapsulated suit with a self-contained breathing apparatus or a supplied air line); Miner Class "D", (to include raise and shaft miner, laser beam operator on riases and shafts)

GROUP 6 - Powderman

LABO0238-006 07/01/2003

COUNTIES EAST OF THE 120TH MERIDIAN: ADAMS, ASOTIN, BENTON, COLUMBIA, DOUGLAS, FERRY, FRANKLIN, GARFIELD, GRANT, LINCOLN, OKANOGAN, PEND OREILLE, STEVENS, SPOKANE, WALLA WALLA, WHITMAN

	Rates	Fringes
Hod Carrier	$ 20.95	6.50

LABO0335-001 06/01/2003

CLARK, COWLITZ, KLICKITAT, PACIFIC (SOUTH OF A STRAIGHT LINE MADE BY EXTENDING THE NORTH BOUNDARY LINE OF WAHKIAKUM COUNTY WEST TO THE PACIFIC OCEAN), SKAMANIA AND WAHKIAKUM COUNTIES

	Rates	Fringes
Laborers:		
ZONE 1:		
GROUP 1	$ 22.92	7.40
GROUP 2	$ 23.44	7.40
GROUP 3	$ 23.84	7.40
GROUP 4	$ 24.18	7.40
GROUP 5	$ 20.70	7.40
GROUP 6	$ 18.54	7.40
GROUP 7	$ 15.71	7.40

Zone Differential (Add to Zone 1 rates):
Zone 2 $ 0.65
Zone 3 - 1.15
Zone 4 - 1.70
Zone 5 - 2.75

BASE POINTS: GOLDENDALE, LONGVIEW, AND VANCOUVER

ZONE 1: Projects within 30 miles of the respective city all.
ZONE 2: More than 30 miles but less than 40 miles from the respective city hall.
ZONE 3: More than 40 miles but less than 50 miles from the respective city hall.
ZONE 4: More than 50 miles but less than 80 miles from the respective city hall.
ZONE 5: More than 80 miles from the respective city hall.

LABORERS CLASSIFICATIONS

GROUP 1: Asphalt Plant Laborers; Asphalt Spreaders; Batch Weighman; Broomers; Brush Burners and Cutters; Car and Truck Loaders; Carpenter Tender; Change-House Man or Dry Shack Man; Choker Setter; Clean-up Laborers; Curing, Concrete; Demolition, Wrecking and Moving Laborers; Dumpers, road oiling crew; Dumpmen (for grading crew); Elevator Feeders; Guard Rail, Median Rail Reference Post, Guide Post, Right of Way Marker; Fine Graders; Fire Watch; Form Strippers (not swinging stages); General Laborers; Hazardous Waste Worker; Leverman or Aggregate Spreader (Flaherty and similar types); Loading Spotters; Material Yard Man (including electrical); Pittsburgh Chipper Operator or Similar Types; Railroad Track Laborers; Ribbon Setters (including steel forms); Rip Rap Man (hand placed); Road Pump Tender; Sewer Labor; Signalman; Skipman; Slopers; Spraymen; Stake Chaser; Stockpiler; Tie Back Shoring; Timber Faller and Bucker (hand labor); Toolroom Man (at job site); Tunnel Bullgang (above ground); Weight-Man-Crusher (aggregate when used)

GROUP 2: Applicator (including pot power tender for same), applying protective material by hand or nozzle on utility lines or storage tanks on project; Brush Cutters (power saw); Burners; Choker Splicer; Clary Power Spreader and similar types; Clean- up Nozzleman-Green Cutter (concrete, rock, etc.); Concrete Power Buggyman; Concrete Laborer; Crusher Feeder; Demolition and Wrecking Charred Materials; Gunite Nozzleman Tender; Gunite or Sand Blasting Pot Tender; Handlers or Mixers of all Materials of an irritating nature (including cement and lime); Tool Operators (includes but not limited to: Dry Pack Machine; Jackhammer; Chipping Guns; Paving Breakers); Pipe Doping and Wrapping; Post Hole Digger, air, gas or electric; Vibrating Screed; Tampers; Sand Blasting (Wet); Stake-Setter; Tunnel-Muckers, Brakemen, Concrete Crew, Bullgang (underground)

GROUP 3: Asbestos Removal; Bit Grinder; Drill Doctor; Drill Operators, air tracks, cat drills, wagon drills, rubber-mounted drills, and other similar types including at crusher plants; Gunite Nozzleman; High Scalers, Strippers and Drillers (covers work in swinging stages, chairs or belts, under extreme conditions unusual to normal drilling, blasting, barring-down, or sloping and stripping); Manhole Builder; Powdermen; Concrete Saw Operator; Pwdermen; Power Saw Operators (Bucking and Falling); Pumpcrete Nozzlemen; Sand Blasting (Dry); Sewer Timberman; Track Liners, Anchor Machines, Ballast Regulators, Multiple Tampers, Power Jacks, Tugger Operator; Tunnel-Chuck Tenders, Nippers and Timbermen; Vibrator; Water Blaster

GROUP 4: Asphalt Raker; Concrete Saw Operator (walls); Concrete Nozzelman; Grade Checker; Pipelayer; Laser Beam (pipelaying)-applicable when employee assigned to move, set up, align; Laser Beam; Tunnel Miners; Motorman-Dinky Locomotive-Tunnel; Powderman-Tunnel; Shield Operator-Tunnel

GROUP 5: Traffic Flaggers

GROUP 6: Fence Builders

GROUP 7: Landscaping or Planting Laborers

LABO0335-010 06/01/2003

CLARK, COWLITZ, KLICKITAT, PACIFIC (SOUTH OF A STRAIGHT LINE MADE BY EXTENDING THE NORTH BOUNDARY LINE OF WAHKIAKUM COUNTY WEST TO THE PACIFIC OCEAN), SKAMANIA AND WAHKIAKUM COUNTIES

	Rates	Fringes
Hod Carrier	$ 24.69	7.40

---

* PAIN0005-002 06/01/2003

STATEWIDE EXCEPT CLARK, COWLITZ, KLICKITAT, PACIFIC (SOUTH), SKAMANIA, AND WAHKIAKUM COUNTIES

	Rates	Fringes
Painters:		
STRIPERS	$ 21.25	6.42

PAIN0005-004 03/01/2004

CLALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS, MASON, PIERCE, SAN JUAN, SKAGIT, SNOHOMISH, THURSTON AND WHATCOM COUNTIES

	Rates	Fringes
Painter	$ 24.36	6.41

PAIN0005-006 07/01/2003

ADAMS, ASOTIN; BENTON AND FRANKLIN (EXCEPT HANFORD SITE); CHELAN, COLUMBIA, DOUGLAS, FERRY, GARFIELD, GRANT, KITTITAS, LINCOLN, OKANOGAN, PEND OREILLE, SPOKANE, STEVENS, WALLA WALLA, WHITMAN AND YAKIMA COUNTIES

	Rates	Fringes
Painters:		
Application of Cold Tar Products, Epoxies, Polyure thanes, Acids, Radiation Resistant Material, Water and Sandblasting, Bridges, Towers, Tanks, Stacks, Steeples	$ 19.97	6.22
Brush, Roller,		

Striping,
Steam-cleaning and Spray....$ 18.97 6.22
Lead Abatement,
Asbestos Abatement.....$ 19.97 6.22
TV Radio, Electrical
Transmission Towers.....$ 20.72 6.22

*$.70 shall be paid over and above the basic wage rates listed for work on swing stages and high work of over 30 feet.

PAIN0055-002 07/01/2003

CLARK, COWLITZ, KLICKITAT, PACIFIC, SKAMANIA, AND WAHKIAKUM COUNTIES

	Rates	Fringes
Painters:		
Brush & Roller.....	$ 17.61	6.12
High work - All work 60 ft. or higher.....	$ 18.36	6.12
Spray and Sandblasting.....	$ 18.21	6.12

PAIN0055-007 06/01/2003

CLARK, COWLITZ, KLICKITAT, SKAMANIA and WAHKIAKUM COUNTIES

	Rates	Fringes
Painters:		
HIGHWAY AND PARKING LOT STRIPER.....	$ 24.79	5.75

PLAS0072-004 06/01/2003

ADAMS, ASOTIN, BENTON, CHELAN, COLUMBIA, DOUGLAS, FERRY, FRANKLIN, GARFIELD, GRANT, KITTITAS, LINCOLN, OKANOGAN, PEND OREILLE, SPOKANE, STEVENS, WALLA WALLA, WHITMAN, AND YAKIMA COUNTIES

	Rates	Fringes
Cement Mason		
ZONE 1:.....	$ 22.33	7.03

Zone Differential (Add to Zone 1 rate): Zone 2 - $2.00

BASE POINTS: Spokane, Pasco, Moses Lake, Lewiston
Zone 1: 0 - 45 radius miles from the main post office
Zone 2: Over 45 radius miles from the main post office

PLAS0528-001 06/01/2003

CLALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC (NORTH), PIERCE, SAN JUAN, SKAGIT, SNOHOMISH,

THURSTON, AND WHATCOM COUNTIES

	Rates	Fringes
Cement Masons:		
CEMENT MASON	$ 28.52	10.42
COMPOSITION, COLOR MASTIC, TROWEL MACHINE, GRINDER, POWER TOOLS, GUNNITE NOZZLE	$ 28.77	10.42

PLAS0555-002 12/01/2003

CLARK, COWLITZ, KLICKITAT, PACIFIC (SOUTH), SKAMANIA, AND WAHKIAKUM COUNTIES

ZONE 1:

	Rates	Fringes
Cement Masons:		
CEMENT MASONS DOING BOTH COMPOSITION/POWER MACHINERY AND SUSPENDED/HANGING SCAFFOLD	$ 25.96	10.50
CEMENT MASONS ON SUSPENDED, SWINGING AND/OR HANGING SCAFFOLD	$ 25.50	10.50
CEMENT MASONS	$ 25.04	10.50
COMPOSITION WORKERS AND POWER MACHINERY OPERATORS	$ 25.50	10.50

Zone Differential (Add To Zone 1 Rates):
Zone 2 - $0.65
Zone 3 - 1.15
Zone 4 - 1.70
Zone 5 - 2.75

BASE POINTS: BEND, CORVALLIS, EUGENE, LONGVIEW, MEDFORD, PORTLAND, SALEM, THE DALLES, VANCOUVER

ZONE 1: Projects within 30 miles of the respective city hall
ZONE 2: More than 30 miles but less than 40 miles from the respective city hall.
ZONE 3: More than 40 miles but less than 50 miles from the respective city hall.
ZONE 4: More than 50 miles but less than 80 miles from the respective city hall.
ZONE 5: More than 80 miles from the respective city hall

PLUM0032-002 01/01/2004

CLALLAM, KING AND JEFFERSON COUNTIES

	Rates	Fringes
Plumbers and Pipefitters.....$	34.43	14.33

PLUM0032-003 01/01/2004

CHELAN, KITTITAS (NORTHERN TIP), DOUGLAS (NORTH), AND OKANOGAN (NORTH) COUNTIES

	Rates	Fringes
Plumbers and Pipefitters.....$	26.38	11.68

PLUM0044-003 06/01/2003

ADAMS (NORTHERN PART), ASOTIN (CLARKSTON ONLY), FERRY (EASTERN PART), LINCOLN (EASTERN PART), PEND ORIELLE, STEVENS, SPOKANE, AND WHITMAN COUNTIES

	Rates	Fringes
Plumbers and Pipefitters.....$	26.01	10.74

PLUM0082-001 01/01/2004

CLARK (NORTHERN TIP INCLUDING WOODLAND), COWLITZ, GRAYS HARBOR, LEWIS, MASON (EXCLUDING NE SECTION), PACIFIC, PIERCE SKAMANIA, THURSTON AND WAHKIAKUM COUNTIES

	Rates	Fringes
Plumbers and Pipefitters.....$	30.40	13.17

PLUM0265-003 01/01/2004

ISLAND, SKAGIT, SNOHOMISH,SAN JUAN AND WHATCOM COUNTIES

	Rates	Fringes
Plumbers and Pipefitters.....$	30.20	13.17

PLUM0290-003 10/01/2003

CLARK (ALL EXCLUDING NORTHERN TIP INCLUDING CITY OF WOODLAND)

	Rates	Fringes
Plumbers and Pipefitters.....$	32.53	13.28

PLUM0598-005 06/01/2003

ADAMS (SOUTHERN PART), ASOTIN (EXCLUDING THE CITY OF CLARKSTON), BENTON, COLUMBIA, DOUGLAS (EASTERN HALF), FERRY (WESTERN PART), FRANKLIN, GARFIELD, GRANT, KITTITAS (ALL BUT NORTHERN TIP), KLICKITAT, LINCOLN (WESTERN PART), OKANOGAN (EASTERN), WALLA WALLA AND YAKIMA COUNTIES

	Rates	Fringes
Plumber	$ 30.38	14.20

PLUM0631-001 01/01/2004

MASON (NE SECTION), AND KITSAP COUNTIES

	Rates	Fringes
Plumbers and Pipefitters		
All new construction, additions, and remodeling of commercial building projects such as: cocktail lounges and taverns, professional buildings, medical clinics, retail stores, hotels and motels, restaurants and fast food types, gasoline service stations, and car washes where the plumbing and mechanical cost of the project is less than $100,000	$ 20.85	4.58
All other work where the plumbing and mechanical cost of the project is $100,000 and over	$ 29.29	13.17

TEAM0037-002 06/01/2003

CLARK, COWLITZ, KLICKITAT, PACIFIC (South of a straight line made by extending the north boundary line of Wahkiakum County west to the Pacific Ocean), SKAMANIA, AND WAHKIAKUM COUNTIES

	Rates	Fringes
Truck drivers:		
ZONE 1		
GROUP 1	$ 23.90	8.78
GROUP 2	$ 24.02	8.75
GROUP 3	$ 24.15	8.75
GROUP 4	$ 24.41	8.75

GROUP 5.....$ 24.63 8.75
GROUP 6.....$ 24.79 8.75
GROUP 7.....$ 24.99 8.75

Zone Differential (Add to Zone 1 Rates):
Zone 2 - $0.65
Zone 3 - 1.15
Zone 4 - 1.70
Zone 5 - 2.75

BASE POINTS: ASTORIA, THE DALLES, LONGVIEW AND VANCOUVER

ZONE 1: Projects within 30 miles of the respective city hall.

ZONE 2: More than 30 miles but less than 40 miles from the respective city hall.

ZONE 3: More than 40 miles but less than 50 miles from the respective city hall.

ZONE 4: More than 50 miles but less than 80 miles from the respective city hall.

ZONE 5: More than 80 miles from the respective city hall.

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: A Frame or Hydra lifrt truck w/load bearing surface; Articulated dump truck; Battery Rebuilders; Bus or Manhaul Driver; Concrete Buggies (power operated); Concrete pump truck; Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations there of: up to and including 10 cu. yds.; Lift Jitneys, Fork Lifts (all sizes in loading, unloading and transporting material on job site); Loader and/or Leverman on Concrete Dry Batch Plant (manually operated); Pilot Car; Pickup truck; Solo Flat Bed and misc. Body Trucks, 0-10 tons; Truck Tender; Truck Mechanic Tender; Water Wagons (rated capacity) up to 3,000 gallons; Transit Mix and Wet or Dry Mix - 5 cu. yds. and under; Lubrication Man, Fuel Truck Driver, Tireman, Wash Rack, Steam Cleaner or combinations; Team Driver; Slurry Truck Driver or Leverman; Tireman

GROUP 2: Boom truck/hydra lift or retracting crane; Challenger; Dumpsters or similar equipment all sizes; Dump Trucks/articulated dumps 6 cu to 10 cu.; Flaherty Spreader Driver or Leverman; Lowbed Equipment, Flat Bed Semi-trailer or doubles transporting equipment or wet or dry materials; Lumber Carrier, Driver-Straddle Carrier (used in loading, unloading and transporting of materials on job site); Oil Distributor Driver or Leverman; Transit mix and wet or dry mix trcuks: over 5 cu. yds. and including 7 cu. yds.; Vacuum trucks; Water truck/Wagons (rated capacity) over 3,000 to 5,000 gallons

GROUP 3: Ammonia nitrate distributor driver; Dump trucks,

side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: over 10 cu. yds. and including 30 cu. yds. includes Articulated dump trucks; Selfpropelled street sweeper; Transit mix and wet or dry mix truck: over 7 cu yds. and including 11 cu yds.; Truck Mechanic-Welder-Body Repairman; Utility and cleanup truck; Water Wagons (rated capacity) over 5,000 to 10,000 gallons

GROUP 4: Asphalt burner; Dump Trucks, side, end and bottom cumps, including Semi-Trucks and Trains or combinations thereof: over 30 cu. yds. and including 50 cu. yds. includes articulated dump trucks; Fire guard; Transit Mix and Wet or Dry Mix Trucks, over 11 cu. yds. and including 15 cu. yds.; Water Wagon (rated capacity) over 10,000 gallons to 15,000 gallons

GROUP 5: Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: over 50 cu. yds. and including 60 cu. yds. includes articulated dump trucks

GROUP 6: Bulk cement spreader w/o auger; Dry prebatch concrete mix trucks; Dump trucks, side, end and bottom dumps, including Semi Trucks and Trains of combinations thereof: over 60 cu. yds. and including 80 cu. yds., and includes articulated dump trucks; Skid truck

GROUP 7: Dump Trucks, side, end and bottom dumps, including Semi Trucks and Trains or combinations thereof: over 80 cu. yds. and including 100 cu. yds., includes articulated dump trucks; Industrial lift truck (mechanical tailgate)

TEAM0174-001 06/01/2003

CLALLAM, GRAYS HARBOR, ISLAND, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC (North of a straight line made by extending the north boundary line of Wahkiakum County west to the Pacific Ocean), PIERCE, SAN JUAN, SKAGIT, SNOHOMISH, THURSTON AND WHATCOM COUNTIES

	Rates	Fringes
Truck drivers:		
ZONE A:		
GROUP 1:.....	$ 26.14	10.33
GROUP 2:.....	$ 25.56	10.33
GROUP 3:.....	$ 23.16	10.33
GROUP 4:.....	$ 18.91	10.33
GROUP 5:.....	$ 25.90	10.33

ZONE B (25-45 miles from center of listed cities*): Add $.70 per hour to Zone A rates.
ZONE C (over 45 miles from centr of listed cities*): Add $1.00 per hour to Zone A rates.

*Zone pay will be calculated from the city center of the following listed cities:

BELLINGHAM	CENTRALIA	RAYMOND	OLYMPIA
EVERETT	SHELTON	ANACORTES	BELLEVUE
SEATTLE	PORT ANGELES	MT. VERNON	KENT
TACOMA	PORT TOWNSEND	ABERDEEN	BREMERTON

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1 - "A-frame or Hydralift" trucks and Boom trucks or similar equipment when "A" frame or "Hydralift" and Boom truck or similar equipment is used; Buggymobile; Bulk Cement Tanker; Dumpsters and similar equipment, Tournorockers, Tournowagon, Tournotrailer, Cat DW series, Terra Cobra, Le Tourneau, Westinghouse, Athye Wagon, Euclid Two and Four-Wheeled power tractor with trailer and similar top-loaded equipment transporting material: Dump Trucks, side, end and bottom dump, including semi-trucks and trains or combinations thereof with 16 yards to 30 yards capacity: Over 30 yards $.15 per hour additional for each 10 yard increment; Explosive Truck (field mix) and similar equipment; Hyster Operators (handling bulk loose aggregates); Lowbed and Heavy Duty Trailer; Road Oil Distributor Driver; Spreader, Flaherty Transit mix used exclusively in heavy construction; Water Wagon and Tank Truck-3,000 gallons and over capacity

GROUP 2 - Bulllifts, or similar equipment used in loading or unloading trucks, transporting materials on job site; Dumpsters, and similar equipment, Tournorockers, Tournowagon, Turnotrailer, Cat. D.W. Series, Terra Cobra, Le Tourneau, Westinghouse, Athye wagon, Euclid two and four-wheeled power tractor with trailer and similar top-loaded equipment transporting material: Dump trucks, side, end and bottom dump, including semi-trucks and trains or combinations thereof with less than 16 yards capacity; Flatbed (Dual Rear Axle); Grease Truck, Fuel Truck, Greaser, Battery Service Man and/or Tire Service Man; Leverman and loader at bunkers and batch plants; Oil tank transport; Scissor truck; Slurry Truck; Sno-Go and similar equipment; Swampers; Straddler Carrier (Ross, Hyster) and similar equipment; Team Driver; Tractor (small, rubber-tired)(when used within Teamster jurisdiction); Vacuum truck; Water Wagon and Tank trucks-less than 3,000 gallons capacity; Winch Truck; Wrecker, Tow truck and similar equipment

GROUP 3 - Flatbed (single rear axle); Pickup Sweeper; Pickup Truck. (Adjust Group 3 upward by $2.00 per hour for onsite work only)

GROUP 4 - Escort or Pilot Car

GROUP 5 - Mechanic

HAZMAT PROJECTS

Anyone working on a HAZMAT job, where HAZMAT certification is required, shall be compensated as a premium, in addition to the classification working in as follows:

LEVEL C: +$.25 per hour - This level uses an air purifying respirator or additional protective clothing.
LEVEL B: +$.50 per hour - Uses same respirator protection as Level A. Supplied air line is provided in conjunction with a chemical "splash suit."
LEVEL A: +$.75 per hour - This level utilizes a fully-encapsulated suit with a self-contained breathing apparatus or a supplied air line.

TEAM0760-002 06/01/2003

ADAMS, ASOTIN, BENTON, CHELAN, COLUMBIA, DOUGLAS, FERRY, FRANKLIN, GARFIELD, GRANT KITTITAS, LINCOLN, OKANOGAN, PEND OREILLE, SPOKANE, STEVENS, WALLA WALLA, AND WHITMAN COUNTIES

	Rates	Fringes
Truck drivers: (ANYONE WORKING ON HAZMAT JOBS SEE FOOTNOTE A BELOW)		
ZONE 1: (INCLUDES ALL OF YAKIMA COUNTY)		
GROUP 1	$ 17.93	9.00
GROUP 2	$ 20.20	9.00
GROUP 3	$ 20.70	9.00
GROUP 4	$ 21.03	9.00
GROUP 5	$ 21.14	9.00
GROUP 6	$ 21.31	9.00
GROUP 7	$ 21.84	9.00
GROUP 8	$ 22.17	9.00

Zone Differential (Add to Zone 1 rate: Zone 2 - $2.00)

BASE POINTS: Spokane, Moses Lake, Pasco, Lewiston
Zone 1: 0-45 radius miles from the main post office.
Zone 2: 45 radius miles and over from the main post office

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Escort Driver or Pilot Car; Employee Haul; Power Boat Hauling Employees or Material

GROUP 2: Fish Truck; Flat Bed Truck; Fork Lift (3000 lbs. and under); Leverperson (loading trucks at bunkers); Trailer Mounted Hydro Seeder and Mulcher; Seeder & Mulcher; Stationary Fuel Operator; Tractor (small, rubber-tired, pulling trailer or similar equipment)

GROUP 3: Auto Crane (2000 lbs. capacity); Buggy Mobile & Similar; Bulk Cement Tanks & Spreader; Dumptor (6 yds. & under); Flat Bed Truck with Hydraullic System; Fork Lift (3001-16,000 lbs.); Fuel Truck Driver, Steamcleaner & Washer; Power Operated Sweeper; Rubber-tired Tunnel Jumbo; Scissors Truck; Slurry Truck Driver; Straddle Carrier (Ross, Hyster, & similar); Tireperson; Transit Mixers & Truck Hauling Concrete (3 yd. to & including 6 yds.); Trucks, side, end, bottom & articulated end dump (3 yards to and including 6 yds.);

Warehouseperson (to include shipping & receiving); Wrecker & Tow Truck

GROUP 4: A-Frame; Burner, Cutter, & Welder; Service Greaser; Trucks, side, end, bottom & articulated end dump (over 6 yards to and including 12 yds.); Truck Mounted Hydro Seeder; Warehouseperson; Water Tank truck (0-8,000 gallons)

GROUP 5: Dumptor (over 6 yds.); Lowboy (50 tons & under); Self- loading Roll Off; Semi-Truck & Trailer; Tractor with Steer Trailer; Transit Mixers and Trucks Hauling Concrete (over 6 yds. to and including 10 yds.); Trucks, side, end, bottom and end dump (over 12 yds. to & including 20 yds.); Truck-Mounted Crane (with load bearing surface either mounted or pulled, up to 14 ton); Vacuum Truck (super sucker, guzzler, etc.)

GROUP 6: Flaherty Spreader Box Driver; Flowboys; Fork Lift (over 16,000 lbs.); Dumps (Semi-end); Mechanic (Field); Semi-end Dumps; Transfer Truck & Trailer; Transit Mixers & Trucks Hauling Concrete (over 10 yds. to & including 20 yds.); Trucks, side, end, bottom and articulated end dump (over 20 yds. to & including 40 yds.); Truck and Pup; Tournarocker, DWs & similar with 2 or more 4 wheel-power tractor with trailer, gallonage or yardage scale, whichever is greater Water Tank Truck (8,001- 14,000 gallons)

GROUP 7: Oil Distributor Driver; Stringer Truck (cable oeprated trailer); Transit Mixers & Trucks Hauling Concrete (over 20 yds.); Truck, side, end, bottom end dump (over 40 yds. to & including 100 yds.); Truck Mounted Crane (with load bearing surface either mounted or pulled (16 through 25 tons);

GROUP 8: Prime Movers and Stinger Truck; Trucks, side, end, bottom and articulated end dump (over 100 yds.); Helicopter Pilot Hauling Employees or Materials

Footnote A - Anyone working on a HAZMAT job, where HAZMAT certification is required, shall be compensated as a premium, in additon to the classification working in as follows:
LEVEL C-D: - $.50 PER HOUR (This is the lowest level of protection. This level may use an air purifying respirator or additional protective clothing.
LEVEL A-B: - $1.00 PER HOUR (Uses supplied air is conjunction with a chemical spash suit or fully encapsulated suit with a self-contained breathing apparatus.

NOTE:
Trucks Pulling Equipment Railers: shall receive $.15/hour over applicable truck rate

---

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 (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the 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, DC 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, DC 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, DC 20210

4.) All decisions by the Administrative Review Board are final.

==========

END OF GENERAL DECISION

WAIS Document Retrieval
GENERAL DECISION: WA20030002 03/12/2004 WA2

Date: March 12, 2004
General Decision Number: WA20030002 03/12/2004

Superseded General Decision Number: WA020002

State: Washington

Construction Types: Building

Counties: Chelan, Clallam, Grays Harbor, Jefferson, King, Kitsap, Kittitas, Lewis, Mason, Pacific, Pierce, Snohomish and Thurston Counties in Washington.

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	06/13/2003
1	02/06/2004
2	02/13/2004
3	03/05/2004
4	03/12/2004

ASBE0007-001 07/01/2003

	Rates	Fringes
Asbestos Workers/Insulator (Includes application of all insulating materials, protective coverings, coating and finishes to all types of mechanical systems)	$ 30.46	9.40

BOIL0242-003 01/01/2004

CHELAN AND KITTITAS COUNTIES

	Rates	Fringes
Boilermaker	$ 28.10	15.37

BOIL0502-001 01/01/2004

CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC, SNOHOMISH AND THURSTON COUNTIES

	Rates	Fringes
Boilermaker	$ 28.10	15.37

BRWA0001-001 06/01/2003

CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC (northern part), PIERCE, SNOHOMISH AND THURSTON COUNTIES

	Rates	Fringes
Bricklayer	$ 29.16	9.21

BRWA0001-005 06/01/2003

PACIFIC COUNTY (SOUTHERN PART)

	Rates	Fringes
Bricklayer	$ 27.02	10.80
Marble Mason	$ 28.02	10.80

BRWA0001-006 05/01/2003

PACIFIC (SOUTHERN PORTION) COUNTY

	Rates	Fringes
Terrazzo Worker & Tile Setter	$ 24.15	8.78
Tile & Terrazzo Finisher	$ 18.14	6.62

BRWA0001-007 06/01/2003

CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP,LEWIS, MASON, PACIFIC (NORTHERN HALF), PIERCE, THURSTON AND SNOHOMISH COUNTIES

	Rates	Fringes
Tile & Terrazzo Finisher	$ 20.86	8.60
Tile & Terrazzo Worker	$ 26.58	9.05

BRWA0003-001 06/01/2003

CHELAN AND KITTITAS COUNTIES

	Rates	Fringes
Bricklayer	$ 23.16	9.21

BRWA0003-005 06/01/2003

CHELAN AND KITTITAS

	Rates	Fringes
Tile & Terrazzo Finisher	$ 14.70	7.13

BRWA0003-006 06/01/2003

CHELAN AND KITTITAS

	Rates	Fringes
Tile Layer/Terrazzo Worker	$ 18.50	7.13

CARP0770-004 06/01/2003

	Rates	Fringes
Carpenters:		
CENTRAL WASHINGTON:		
CHELAN AND KITTITAS		
COUNTIES		
ACCOUSTICAL WORKERS	$ 20.98	9.22
CARPENTERS AND DRYWALL APPLICATORS	$ 20.72	9.22
CARPENTERS ON CREOSOTED MATERIALS	$ 20.82	9.22
DIVERS TENDER	$ 31.17	9.50
DIVERS	$ 70.07	9.50
INSULATION APPLICATORS	$ 20.72	9.22
MILLWRIGHTS AND MACHINE ERECTORS	$ 29.40	9.22
PILDRIVER, DRIVING, PULLING, CUTTING, PLACING COLLARS, SETTING, WELDING, OR CREOSOTE TREATED MATERIAL, ALL PILING	$ 28.60	9.22
PILEDRIVER, BRIDGE DOCK & WHARF		

CARPENTERS.....$ 28.40 9.22
SAWFILER, STATIONARY
POWER SAW OPERATORS,
FLOOR FINISHER,
FLOOR LAYER,
SHINGLERS, FLOOR
SANDER OPERATOR AND
OPERATORS OF OTHER
STATIONARY WOOD
WORKING TOOLS.....$ 20.85 9.22

WESTERN WASHINGTON:
CLALLAM, GRAYS HARBOR,
JEFFERSON, KING,
KITSAP, LEWIS, MASON,
PACIFIC (NORTH),
PIERCE, SNOHOMISH AND
THURSTON COUNTIES

ACOUSTICAL WORKERS.....$ 28.56 9.50
CARPENTERS AND
DRYWALL APPLICATORS.....$ 28.40 9.50
CARPENTERS ON
CREOSOTE MATERIAL.....$ 28.50 9.50
DIVERS TENDER.....$ 31.17 9.50
DIVERS.....$ 70.07 9.50
INSULATION APPLICATORS....$ 28.40 9.50
MILLWRIGHT AND
MACHINE ERECTORS.....$ 29.40 9.50
PILDRIVER, BRIDGE
DOCK & WHARF
CARPENTERS.....$ 28.40 9.50
PILEDRIVER, DRIVING,
PULLING, CUTTING,
PLACING COLLARS,
SETTING, WELDING OR
CRESOTE TREATED
MATERIAL, ALL PILING.....$ 28.60 9.50
SAWFILERS, STATIONARY
POWER SAW OPERATORS,
FLOOR FINISHER, FLOOR
LAYER, SHINGLER,
FLOOR SANDER
OPERATORS OF OTHER
STATIONARY WOOD
WORKING TOOLS.....$ 28.53 9.50

(HOURLY ZONE PAY:WESTERN WASHINGTON AND CENTRAL WASHINGTON CARPENTERS ONLY)

Hourly Zone Pay shall be paid on jobs located outside of the free zone computed from the city center of the following listed cities:

Seattle	Olympia	Bellingham
Auburn	Bremerton	Anacortes
Renton	Shelton	Yakima
Aberdeen-Hoquiam	Tacoma	Wenatchee
Ellensburg	Everett	Port Angeles
Centralia	Mount Vernon	Sunnyside
Chelan	Pt. Townsend	

Zone Pay:

0 -25 radius miles	Free
25-35 radius miles	$1.00/hour
35-45 radius miles	$1.15/hour
45-55 radius miles	$1.35/hour
Over 55 radius miles	$1.55/hour

(HOURLY ZONE PAY:WESTERN AND CENTRAL WASHINGTON-MILLWRIGHTS AND PILEDRIVERS ONLY)

Hour Zone Pay shall be computed from Seattle Union Hall, Tacoma City center, and Everett City center

Zone Pay:

0 -25 radius miles	Free
25-45 radius miles	$ .70/hour
Over 45 radius miles	$1.50/hour

Millwrights and Piledrivers who reside in Aberdeen, Bellingham, Port Angeles, Mount Vernon, Olympia, Wenatchee, or Yakima Local Union jurisdication areas, working on jobs in their respective area, shall have their Zone Pay measured from their respective city center

---

CARP9003-001 06/01/2003

PACIFIC COUNTY (South of a straight line made by extending the north boundary line of Wahkiakum County west to Willapa Bay to the Pacific Ocean, and thence north through the natural waterway to the Pacific Ocean (this will include the entire peninsula west of Willapa Bay)

SEE ZONE DESCRIPTION FOR CITIES BASE POINTS

ZONE 1:

	Rates	Fringes
Carpenters:		
CARPENTERS	$ 26.94	10.33
DIVERS TENDERS	$ 29.45	10.33
DIVERS	$ 64.00	10.33
DRYWALL, ACOUSTICAL & LATHERS	$ 26.94	10.33

FLOOR LAYERS & FLOOR FINISHERS (the laying of all hardwood floors nailed and mastic set, parquet and wood-type tiles, and block floors, the sanding and finishing of floors, the prepara- tion of old and new floors when the materials mentioned above are to be installed; INSULATORS (fiberglass and similar irritating material).....$ 27.09 10.33
MILLWRIGHTS.....$ 27.44 10.33
PILEDRIVERS.....$ 27.44 10.33

Zone Differential (Add to Zone 1 rates):
Zone 2 - $0.85
Zone 3 - 1.25
Zone 4 - 1.70
Zone 5 - 2.00
Zone 6 - 3.00

BASEPOINTS: GOLDENDALE, LONGVIEW, AND VANCOUVER

ZONE 1: Projects located within 30 miles of the respective city hall of the above mentioned cities

ZONE 2: Projects located more than 30 miles and less than 40 miles of the respective city of the above mentioned cities

ZONE 3: Projects located more than 40 miles and less than 50 miles of the respective city of the above mentioned cities

ZONE 4: Projects located more than 50 miles and less than 60 miles of the respective city of the above mentioned cities.

ZONE 5: Projects located more than 60 miles and less than 70 miles of the respective city of the above mentioned cities

ZONE 6: Projects located more than 70 miles of the respected city of the above mentioned cities

---

* ELEC0046-002 12/01/2003

CALLAM, JEFFERSON, KING AND KITSAP COUNTIES

	Rates	Fringes
Cable splicer.....	$ 36.85	3%+11.56

Electrician.....$ 33.50 3%+11.56

ELEC0046-003 03/03/2003

CALLAM, JEFFERSON, KING, KITSAP COUNTIES

	Rates	Fringes
Sound & Communication Technician.....	$ 21.39	4.63

SCOPE OF WORK:

Includes the installation, testing, service and maintenance, of the following systems which utilize the trabsmission and/or transference of voice, sound vision and digital for commercial, education, security and entertainment purposes for the following: TV monitoring and surveillance, background-foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call system, radio page, school intercom and sound, burglar alarms, fire alarms and life safety systems (hang, terminate devices and panels and to conduct functional and systems tests), and low voltage master clock systems.

WORK EXCLUDED:

Raceway systems are not covered (excluding Ladder-Rack for the purpose of the above listed systems). Chases and/or nipples (not to exceed 10 feet) may be installed on openwiring systems.

---

* ELEC0076-001 07/01/2003

GRAYS HARBOR, LEWIS, MASON, PACIFIC, PIERCE, THURSTON COUNTIES

	Rates	Fringes
Cable splicer.....	$ 33.32	3%+12.06
Electrician.....	$ 30.02	3%+12.06

ELEC0076-003 06/01/2001

GRAYS HARBOR, LEWIS, MASON, PACIFIC, PIERCE AND THURSTON COUNTIES

	Rates	Fringes

Sound & Communication
Technician.....$ 18.77 5.97

SCOPE OF WORK

Includes the installation, testing, service and maintenance, of the following systems which utilize the transmission and/or transference of voice, sound, vision and digital for commercial, education, security and entertainment purposes for the following: TV monitoring and surveillance, background-foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call system, radio page, school intercom and sound, burglar alarms and low voltage master clock systems.

A. Communication systems that transmit or receive information and/or control systems that are intrinsic to the above listed systems: SCADA (Supervisory control/data acquisition PCM (Pulse code modulation) Inventory control systems Digital data systems Broadband & baseband and carriers Point of sale systems VSAT data systems Data communication systems RF and remote control systems Fiber optic data systems

B. Sound and Voice Transmission/Transference Systems: Background-Foreground Music Intercom and Telephone Interconnect Systems Sound and Musical Entertainment Systems Nurse Call Systems Radio Page Systems School Intercom and Sound Systems Burglar Alarm Systems Low-Voltage Master Clock Systems Multi-Media/Multiplex Systems Telephone Systems RF Systems and Antennas and Wave Guide

C. *Fire Alarm Systems-installation, wire pulling and testing.

D. Television and Video Systems: Television Monitoring and Surveillance Systems Video Security Systems Video Entertainment Systems Video Educational Systems Microwave Transmission Systems CATV and CCTV

E. Security Systems: Perimeter Security Systems Vibration Sensor Systems Sonar/Infrared Monitoring Equipment Access Control Systems Card Access Systems

*Fire Alarm Systems:
1. Fire Alarms-In Raceways
a. Wire and cable pulling, in raceways, performed at the current electrician wage rate and fringe benefits.
b. Installation and termination of devices, panels, startup, testing and programming performed by the technician.

2. Fire Alarms-Open Wire Systems
a. Open wire systems installed by the technician.

ELEC0112-002 06/01/2003

KITTITAS COUNTY

	Rates	Fringes
Cable splicer	$ 30.71	3%+10.98
Electrician	$ 29.25	3%+10.98

ELEC0112-007 06/01/2002

KITTTITAS COUNTY

	Rates	Fringes
Sound & Communication Technician	$ 19.97	5.93

SCOPE OF WORK

The work covered shall include the installation, testing, service and maintenance, of the following systems that utilize the transmission and/or transference of voice, sound, vision and digital for commercial, education, security and entertainment purposes for TV monitoring and surveillance, background foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call system, radio page, school intercom and sound, burglar alarms and low voltage master clock systems.

A. Communication systems that transmit or receive information and/or control systems that are intrinsic to the above listed systems: SCADA (Supervisory control/data acquisition PCM (Pulse code modulation) Inventory control systems Digital data systems Broadband & baseband and carriers Point of sale systems VSAT data systems Data communication systems RF and remote control systems Fiber optic data systems

B. Sound and Voice Transmission/Transference Systems: Background-Foreground Music Intercom and Telephone Interconnect Systems Sound and Musical Entertainment Systems Nurse Call Systems Radio Page Systems School Intercom and Sound Systems Burglar Alarm Systems Low-Voltage Master Clock Systems Multi-Media/Multiplex Systems Telephone Systems RF Systems and Antennas and Wave Guide

C. *Fire Alarm Systems-installation, wire pulling and testing.

D. Television and Video Systems: Television Monitoring and Surveillance Systems Video Security Systems Video Entertainment Systems Video Educational System Microwave Transmission Systems CATV and CCTV

E. Security Systems: Perimeter Security Systems Vibration Sensor Systems Sonar/Infrared Monitoring Equipment Access Control Systems Card Access Systems

*Fire Alarm Systems:
1. Fire Alarms-In Raceways
a. Wire and cable pulling, in raceways, performed at the current electrician wage rate and fringe benefits.
b. Installation and termination of devices, panels, startup, testing and programing performed by the technician.

2. Fire Alarms-Open Wire Systems
a. Open wire systems installed by the technician.

---

* ELEC0191-001 09/01/2003

CHELAN COUNTY

	Rates	Fringes
Cable splicer	$ 29.33	3%+9.78
Electrician	$ 26.66	3%+9.78

ELEC0191-005 06/01/2003

CHELAN AND SNOHOMISH COUNTIES

	Rates	Fringes
Sound & Communication Technician	$ 22.50	4.87

SCOPE OF WORK

The work covered shall include the installation, testing, service and maintenance, of the following systems that utilize the transmission and/or transference of voice, sound, vision and digital for commercial, education, security and entertainment purposes for TV monitoring and surveillance, background foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call system,

radio page, school intercom and sound, burglar alarms and low voltage master clock systems.

A. Communication systems that transmit or receive information and/or control systems that are intrinsic to the above listed systems: SCADA (Supervisory control/data acquisition PCM (Pulse code modulation) Inventory control systems Digital data systems Broadband & baseband and carriers Point of sale systems VSAT data systems Data communication systems RF and remote control systems Fiber optic data systems

B. Sound and Voice Transmission/Transference Systems: Background-Foreground Music Intercom and Telephone Interconnect Systems Sound and Musical Entertainment Systems Nurse Call Systems Radio Page Systems School Intercom and Sound Systems Burglar Alarm Systems Low-Voltage Master Clock Systems Multi-Media/Multiplex Systems Telephone Systems RF Systems and Antennas and Wave Guide

C. *Fire Alarm Systems-installation, wire pulling and testing.

D. Television and Video Systems: Television Monitoring and Surveillance Systems Video Security Systems Video Entertainment Systems Video Educational Systems Microwave Transmission Systems CATV and CCTV

E. Security Systems:
Perimeter Security Systems Vibration Sensor Systems Sonar/Infrared Monitoring Equipment Access Control Systems Card Access Systems

*Fire Alarm Systems:
1. Fire Alarms-In Raceways
a. Wire and cable pulling, in raceways, performed at the current electrician wage rate and fringe benefits.
b. Installation and termination of devices, panels, startup, testing and programming performed by the technician.

2. Fire Alarms-Open Wire Systems
a. Open wire systems installed by the tchnician.

---

* ELEC0191-010 09/01/2003

SNOHOMISH COUNTY

	Rates	Fringes
Cable splicer.....	$ 33.72	3%+9.83
Electrician.....	$ 30.66	3%+9.83

ELEV0019-001 01/01/2004

CHELAN, CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, KITTITAS, LEWIS, MASON, PIERCE, SNOHOMISH AND THURSTON COUNTIES

	Rates	Fringes
Elevator Mechanic.....	$ 35.335	10.765 + A

FOOTNOTE: a. Employer contributes 8% of the basic hourly rate for over 5 year's service and 6% of the basic hourly rate for 6 months to 5 years' of service as vacation paid credit. Seven paid holidays: New Year's Day; Memorial Day; Independence Day; Labor Day, Thanksgiving Day; Friday after Thanksgiving and Christmas Day

---

ELEV0023-002 01/01/2004

PACIFIC COUNTY

	Rates	Fringes
Elevator Mechanic.....	$ 35.505	10.415+a

FOOTNOTE
a: Vacation Pay: 8% with 5 or more years of service, 6% for 6 months to 5 years service. Paid Holidays: Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Friday after, and Christmas Day, and New Years Day.

ENGI0302-001 06/01/2003

CHELAN (WEST OF THE 120TH MERIDIAN), CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, KITTITAS, MASON AND SNOHOMISH COUNTIES

ON PROJECTS DESCRIBED IN FOOTNOTE A BELOW, THE RATE FOR EACH GROUP SHALL BE 95% OF THE BASE RATE PLUS FULL FRINGE BENEFITS. ON ALL OTHER WORK, THE FOLLOWING RATES APPLY.

Zone 1 (0-25 radius miles):

	Rates	Fringes
Power equipment operators:		
Group 1A.....	$ 30.30	9.40
Group 1AA.....	$ 30.82	9.40
Group 1AAA.....	$ 31.33	9.40
Group 1.....	$ 29.79	9.40
Group 2.....	$ 29.34	9.40
Group 3.....	$ 28.97	9.40

Group 4.....$ 26.80 9.40

Zone Differential (Add to Zone 1 rates):
Zone 2 (26-45 radius miles) - $ .70
Zone 3 (Over 45 radius miles) - $1.00

BASEPOINTS: Aberdeen, Bellingham, Bremerton, Everett, Kent, Mount Vernon, Port Angeles, Port Townsend, Seattle, Shelton, Wenatchee, Yakima

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1AAA - Cranes-over 300 tons, or 300 ft of boom (including jib with attachments)

GROUP 1AA - Cranes 200 to 300 tons, or 250 ft of boom (including jib with attachments); Tower crane over 175 ft in height, base to boom

GROUP 1A - Cranes, 100 tons thru 199 tons, or 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 100 tons and over; Tower crane up to 175 ft in height base to boom; Loaders-overhead, 8 yards and over; Shovels, excavator, backhoes-6 yards and over with attachments

GROUP 1 - Cableway; Cranes 45 tons thru 99 tons, under 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 45 tons thru 99 tons; Derricks on building work; Excavator, shovel, backhoes over 3 yards and under 6 yards; Hard tail end dump articulating off-road equipment 45 yards and over; Loader- overhead 6 yards to, but not including 8 yards; Mucking machine, mole, tunnel, drill and/or shield; Quad 9, HD 41, D-10; Remote control operator on rubber tired earth moving equipment; Rollagon; Scrapers-self propelled 45 yards and over; Slipform pavers; Transporters, all truck or track type

GROUP 2 - Barrier machine (zipper); Batch Plant Operaor-Concrete; Bump Cutter; Cranes, 20 tons thru 44 tons with attachments; Crane-overhead, bridge type-20 tons through 44 tons; Chipper; Concrete Pump-truck mount with boom attachment; Crusher; Deck Engineer/Deck Winches (power); Drilling machine; Excavator, shovel, backhoe-3 yards and under; Finishing Machine, Bidwell, Gamaco and similar equipment; Guardrail punch; Horizontal/directional drill operator; Loaders-overhead under 6 yards; Loaders-plant feed; Locomotives-all; Mechanics-all; Mixers-asphalt plant; Motor patrol graders-finishing; Piledriver (other than crane mount); Roto-mill,roto-grinder; Screedman, spreader, topside operator-Blaw Knox, Cedar Rapids, Jaeger, Caterpillar, Barbar Green; Scraper-self propelled, hard tail end dump, articulating off-road equipment-under 45 yards; Subgrade

trimmer; Tractors, backhoes-over 75 hp; Transfer material service machine-shuttle buggy, blaw knox-roadtec; Truck crane oiler/driver-100 tons and over; Truck Mount portable conveyor; Yo Yo Pay dozer

GROUP 3 - Conveyors; Cranes-thru 19 tons with attachments; A-frame crane over 10 tons; Drill oilers-auger type, truck or crane mount; Dozers-D-9 and under; Forklift-3000 lbs. and over with attachments; Horizontal/directional drill locator; Outside hoists-(elevators and manlifts), air tuggers, strato tower bucket elevators; Hydralifts/boom trucks over 10 tons; Loader-elevating type, belt; Motor patrol grader-nonfinishing; Plant oiler- asphalt, crusher; Pumps-concrete; Roller, plant mix or multi-lift materials; Saws-concrete; Scrpers-concrete and carry-all; Service engineer-equipment; Trenching machines; Truck Crane Oiler/Driver under 100 tons; Tractors, backhoe 75 hp and under

GROUP 4 - Assistant Engineer; Bobcat; Brooms; Compressor; Concrete finish mahine-laser screed; Cranes-A frame-10 tons and under; Elevator and Manlift-permanent or shaft type; Gradechecker, Stakehop; Forklifts under 3000 lbs. with attachments; Hydralifts/boom trucks, 10 tons and under; Oil distributors, blower distribution and mulch seeding operator; Pavement breaker; Posthole digger, mechanical; Power plant; Pumps, water; Rigger and Bellman; Roller-other than plant mix; Wheel Tractors, farmall type; Shotcrete/gunite equipment operator

FOOTNOTE A- Reduced rates may be paid on the following:

1. Projects involving work on structures such as buildings and bridges whose total value is less than $1.5 million excluding mechanical, electrical, and utility portions of the contract.
2. Projects of less than $1 million where no building is involved. Surfacing and paving including, but utilities excluded.
3. Marine projects (docks, wharfs, ect.) less than $150,000.

HANDLING OF HAZARDOUS WASTE MATERIALS: Personnel in all craft classifications subject to working inside a federally designed hazardous perimeter shall be elgible for compensation in accordance with the following group schedule relative to the level of hazardous waste as outlined in the specific hazardous waste project site safety plan.

H-1 Base wage rate when on a hazardous waste site when not outfitted with protective clothing.
H-2 Class "C" Suit - Base wage rate plus $.25 per hour.
H-3 Class "B" Suit - Base wage rate plus $.50 per hour.
H-4 Class "A" Suit - Base wage rate plus $.75 per hour.

ENGI0370-008 08/01/2003

CHELAN (EAST OF THE 120TH MERIDIAN) COUNTY

ZONE 1:

	Rates	Fringes
Power equipment operators:		
GROUP 1	$ 20.99	7.37
GROUP 1A	$ 20.44	7.37
GROUP 2	$ 21.31	7.37
GROUP 3	$ 21.92	7.37
GROUP 4	$ 22.08	7.37
GROUP 5	$ 22.24	7.37
GROUP 6	$ 22.52	7.37
GROUP 7	$ 22.79	7.37
GROUP 8	$ 23.89	7.37

ZONE DIFFERENTIAL (Add to Zone 1 rate):
Zone 2 - $2.00

Zone 1: Within 45 mile radius of Spokane, Moses Lake, Pasco, Washington; Lewiston, Idaho
Zone 2: Outside 45 mile radius of Spokane, Moses Lake, Pasco, Washington; Lewiston, Idaho

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1A: Boat Operator; Crush Feeder; Oiler; Steam Cleaner

GROUP 1: Bit Grinders; Bolt Threading Machine; Compressors (under 2000 CFM, gas, diesel, or electric power); Deck Hand; Drillers Helper (assist driller in making drill rod connections, service drill engine and air compressor, repair drill rig and drill tools; drive drill support truck to and on the job site, remove drill cuttings from around bore hole and inspect drill rig while in operation); Fireman & Heat Tender; Grade Checker; Hydro- seeder, Mulcher, Nozzleman; Oiler Driver, & Cable Tender, Mucking Machine; Pumpman; Rollers, all types on subgrade, including seal and chip coatings (farm type, Case, John Deere & similar, or Compacting Vibrator), except when pulled by Dozer with operable blade; Welding Machine

GROUP 2: A-frame Truck (single drum); Assistant Refrigeration Plant (under 1000 ton); Assistant Plant Operator, Fireman or Pugmixer (asphalt); Bagley or Stationary Scraper; Belt Finishing Machine; Blower Operator (cement); Cement Hog;

Compressor (2000 CFM or over, 2 or more, gas diesel or electric power); Concrete Saw (multiple cut); Distributor Leverman; Ditch Witch or similar; Elevator Hoisting Materials; Dope Pots (power agitated); Fork Lift or Lumber Stacker, hydra-lift & similar; Gin Trucks (pipeline); Hoist, single drum; Loaders (bucket elevators and conveyors); Longitudinal Float; Mixer (portable-concrete); Pavement Breaker, Hydra-Hammer & similar; Power Broom; Railroad Ballast Regulation Operator (self-propelled); Railroad Power Tamper Operator (self-propelled); Railroad Tamper Jack Operator (self-propelled; Spray Curing Machine (concrete); Spreader Box (self-propelled); Straddle Buggy (Ross & similar on construction job only); Tractor (Farm type R/T with attachment, except Backhoe); Tugger Operator

GROUP 3: A-frame Truck (2 or more drums); Assistant Refrigeration Plant & Chiller Operator (over 1000 ton); Backfillers (Cleveland & similar); Batch Plant & Wet Mix Operator, single unit (concrete); Belt-Crete Conveyors with power pack or similar; Belt Loader (Kocal or similar); Bending Machine; Bob Cat; Boring Machine (earth); Boring Machine (rock under 8 inch bit) (Quarry Master, Joy or similar); Bump Cutter (Wayne, Saginau or similar); Canal Lining Machine (concrete); Chipper (without crane); Cleaning & Doping Machine (pipeline); Deck Engineer; Elevating Belt-type Loader (Euclid, Barber Green & similar); Elevating Grader-type Loader (Dumor, Adams or similar); Generator Plant Engineers (diesel or electric); Gunnite Combination Mixer & Compressor; Locomotive Engineer; Mixermobile; Mucking Machine; Posthole Auger or Punch; Pump (grout or jet); Soil Stabilizer (P & H or similar); Spreader Machine; Tractor (to D-6 or equivalent) and Traxcavator; Traverse Finish Machine; Turnhead Operator

GROUP 4: Concrete Pumps (squeeze-crete, flow-crete, pump-crete, Whitman & similar); Curb Extruder (asphalt or concrete); Drills (churn, core, calyx or diamond)(Operate drilling machine, drive or transport drill rig to and on job site and weld well casing); Equipment Serviceman, Greaser & Oiler; Hoist (2 or more drums or Tower Hoist); Loaders (overhead & front-end, under 4 yds. R/T); Refrigeration Plant Engineer (under 1000 ton); Rubber-tired Skidders (R/T with or without attachments); Surface Heater & Planer Machine; Trenching Machines (under 7 ft. depth capacity); Turnhead (with re-screening); Vacuum Drill (reverse circulation drill under 8 inch bit)

GROUP 5: Backhoe (under 45,000 gw); Backhoe and Hoe Ram (under 3/4 yd.); Carrydeck & boom truck (under 25 tons); Cranes (25 tons & under),all attachments including clamshell, dragline); Derricks & Stifflegs (under 65 tons); Drilling Equipment (8 inch bit & over) (Robbins, reverse circulation &

similar)(operates drill machine, drive or transport drill rig to and on job site and weld well casing); Hoe Ram; Piledriving Engineers; Paving (dual drum); Railroad Track Liner Operator(self-propelled); Refrigeration Plant Engineer (1000 tons & over); Signalman (Whirleys, Highline Hammerheads or similar)

GROUP 6: Asphalt Plant Operator; Automatic Subgrader (Ditches & Trimmers) (Autograde, ABC, R.A. Hansen & similar on grade wire); Backhoe (45,000 gw and over to 110,000 gw); Backhoes & Hoe Ram (3/4 yd. to 3 yd.); Batch Plant (over 4 units); Batch & Wet Mix Operator (multiple units, 2 & incl. 4); Blade Operator (Motor Patrol & Attachments, Athey & Huber); Boom Cats (side); Cableway Controller (dispatcher); Clamshell Operator (under 3 yds.); Compactor (self-propelled with blade); Concrete Pump Boom Truck; Concrete Slip Form Paver; Cranes (over 25 tons including 45 tons), all attachments including clamshell, dragline; Crusher, Grizzle & Screening Plant Operator; Dozer, 834 R/T & similar; Draglines (under 3 yds.); Drill Doctor; H.D.Mechanic; H.D. Welder; Loader Operator (front-end & overhead, 4 yds. incl. 8 yds.), Multiple Dozer Units with single blade; Paving Machine (asphalt and concrete); Quad-Track or similar equipment; Rollerman (finishing asphalt pavement); Roto Mill (pavement grinder); Scrapers, all rubber-tired; Screed Operator; Shovel (under 3 yds.); Tractors (D-6 & equilvalent & over); Trenching Machines (7 ft. depth & over); Tug Boat Operator; Vactor Guzzler, super sucker

GROUP 7: Backhoe (over 110,000 gw); Backhoes & Hoe Ram (3 yds. & over); Blade (finish & bluetop), Automatic, CMI, ABC, Finish Athey & Huber & similar when used as automatic; Cableway Operators; Clamshell Operator (3 yds. & over); Cranes (over 45 tons to but not including 85 tons), all attachments including clamshell and dragline; Derricks & Stifflegs (65 tons & over); Draglines (3 yds. & over); Elevating Belt (Holland type); Heavy Equipment Robotics Operator; Loader (360 degrees revolving Koehring Scooper or similar); Loaders (overhead & front-end, over 8 yds. to 10 yds.); Rubber-tired Scrapers (multiple engine with three or more scrapers); Shovels (3 yds. & over); Ultra High Pressure Wateriet Cutting Tool System Operator (30,000 psi); Vacuum Blasting Machine Operator; Whirleys & Hammerheads, ALL

GROUP 8: Cranes (85 tons and over, and all climbing, overhead, rail and tower); Loaders (overhead and front-end, 10 yards and over); Helicopter Pilot

BOOM PAY: (All Cranes, Including Tower

180 ft to 250 ft	$.30 over scale
Over 250 ft	$.60 over scale

NOTE:
In computing the length of the boom on Tower Cranes, they shall be measured from the base of the tower to the point of the boom.

HAZMAT: Anyone working on HAZMAT jobs, working with supplied air shall receive $1.00 an hour above classification.

ENGI0612-002 06/01/2003

LEWIS, PIERCE, PACIFIC (portion lying north of a parallel line extending west from the northern boundary of Wahkaikum County to the sea) AND THURSTON COUNTIES

ON PROJECTS DESCRIBED IN FOOTNOTE A BELOW, THE RATE FOR EACH GROUP SHALL BE 90% OF THE BASE RATE PLUS FULL FRINGE BENEFITS. ON ALL OTHER WORK, THE FOLLOWING RATES APPLY.

Zone 1 (0-25 radius miles):

	Rates	Fringes
Power equipment operators:		
GROUP 1A	$ 30.30	9.40
GROUP 1AA	$ 30.82	9.40
GROUP 1AAA	$ 31.33	9.40
GROUP 1	$ 29.79	9.40
GROUP 2	$ 29.34	9.40
GROUP 3	$ 28.97	9.40
GROUP 4	$ 26.80	9.40

Zone Differential (Add to Zone 1 rates):
Zone 2 (26-45 radius miles) = $ .70
Zone 3 (Over 45 radius miles) - $1.00

BASEPOINTS: CENTRALIA, OLYMPIA, TACOMA

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1 AAA - Cranes-over 300 tons or 300 ft of boom (including jib with attachments)

GROUP 1AA - Cranes- 200 tonsto 300 tons, or 250 ft of boom (including jib with attachments; Tower crane over 175 ft in height, bas to boom

GROUP 1A - Cranes, 100 tons thru 199 tons, or 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 100 tons and over; Tower crane up to 175 ft in height base to boom; Loaders-overhead, 8 yards and over; Shovels, excavator, backhoes-6 yards and over with attachments

GROUP 1 - Cableway; Cranes 45 tons thru 99 tons under 150 ft of boom (including jib with attachments); Crane-overhead, bridge type, 45 tons thru 99 tons; Derricks on building work; Excavator, shovel, backhoes over 3 yards and under 6 yards; Hard tail end dump articulating off-road equipment 45 yards and over; Loader- overhead, 6 yards to, but not including, 8 yards; Mucking machine, mole, tunnel, drill and/or shield; Quad 9 HD 41, D-10; Remote control operator on rubber tired earth moving equipment; Rollagon; Scrapers-self-propelled 45 yards and over; Slipform pavers; Transporters, all track or truck type

GROUP 2 - Barrier machine (zipper); Batch Plant Operator-concrete; Bump Cutter; Cranes, 20 tons thru 44 tons with attachments; Crane-Overhead, bridge type, 20 tons through 44 tons; Chipper; Concrete pump-truck mount with boom attachment; Crusher; Deck engineer/deck winches (power); Drilling machine; Excavator, shovel, backhoe-3 yards and under; Finishing machine, Bidwell, Gamaco and similar equipment; Guardrail punch; Loaders, overhead under 6 yards; Loaders-plant feed; Locomotives-all; Mechanics- all; Mixers, asphalt plant; Motor patrol graders, finishing; Piledriver (other than crane mount); Roto-mill, roto- grinder; Screedman, spreader, topside operator-Blaw Knox, Cedar Rapids, Jaeger, Caterpillar, Barbar Green; Scraper-self-propelled, hard tail end dump, articulating off-road equipment- under 45 yards; Subgrader trimmer; Tractors, backhoe over 75 hp; Transfer material service machine-shuttle buggy, Blaw Knox- Roadtec; Truck Crane oiler/driver-100 tons and over; Truck Mount Portable Conveyor; Yo Yo pay

GROUP 3 - Conveyors; Cranes through 19 tons with attachments; Crane-A-frame over 10 tons; Drill oilers-auger type, truck or crane mount; Dozer-D-9 and under; Forklift-3000 lbs. and over with attachments; Horizontal/directional drill locator; Outside Hoists-(elevators and manlifts), air tuggers, strato tower bucket elevators; Hydralifts/boom trucks over 10 tons; Loaders-elevating type, belt; Motor patrol grader-nonfinishing; Plant oiler- asphalt, crusher; Pump-Concrete; Roller, plant mix or multi-lfit materials; Saws-concrete; Scrapers, concrete and carry all; Service engineers-equipment; Trenching machines; Truck crane oiler/driver under 100 tons; Tractors, backhoe under 75 hp

GROUP 4 - Assistant Engineer; Bobcat; Brooms; Compressor; Concrete Finish Machine-laser screed; Cranes A-frame 10 tons and under; Elevator and manlift (permanent and shaft type); Forklifts-under 3000 lbs. with attachments; Gradechecker, stakehop; Hydralifts/boom trucks, 10 tons and under; Oil distributors, blower distribution and mulch seeding operator; Pavement breaker; Posthole digger-mechanical; Power plant; Pumps-water; Rigger and Bellman; Roller-other than plant mix;

Wheel Tractors, farmall type; Shotcrete/gunite equipment operator

FOOTNOTE A- Reduced rates may be paid on the following:
1. Projects involving work on structures such as buildings and bridges whose total value is less than $1.5 million excluding mechanical, electrical, and utility portions of the contract.

2. Projects of less than $1 million where no building is involved. Surfacing and paving included, but utilities excluded.

3. Marine projects (docks, wharfs, etc.) less than $150,000.

HANDLING OF HAZARDOUS WASTE MATERIALS: Personnel in all craft classifications subject to working inside a federally designated hazardous perimeter shall be elgible for compensation in accordance with the following group schedule relative to the level of hazardous waste as outlined in the specific hazardous waste project site safety plan.
H-1 Base wage rate when on a hazardous waste site when not outfitted with protective clothing
H-2 Class "C" Suit - Base wage rate plus $ .25 per hour.
H-3 Class "B" Suit - Base wage rate plus $ .50 per hour.
H-4 Class "A" Suit - Base wage rate plus $ .75 per hour.

ENGI0701-008 01/01/2004

PACIFIC (remaining portion) COUNTY

	Rates	Fringes
Power equipment operators:		
(See Footnote A)		
ZONE 1:		
GROUP 1A	$ 30.99	9.70
GROUP 1B	$ 32.46	9.70
GROUP 1	$ 29.51	9.70
GROUP 2	$ 28.25	9.70
GROUP 3	$ 27.47	9.70
GROUP 4	$ 26.93	9.70
GROUP 5	$ 26.32	9.70
GROUP 6	$ 23.91	9.70

Zone Differential (add to Zone 1 rates):
Zone 2 - $1.50
Zone 3 - 3.00

For the following metropolitan counties: MULTNOMAH; CLACKAMAS; MARION; WASHINGTON; YAMHILL; AND COLUMBIA; CLARK;

AND COWLITZ COUNTY, WASHINGTON WITH MODIFICATIONS AS INDICATED:

All jobs or projects located in Multnomah, Clackamas and Marion Counties, West of the western boundary of Mt. Hood National Forest and West of Mile Post 30 on Interstate 84 and West of Mile Post 30 on State Highway 26 and West of Mile Post 30 on Highway 22 and all jobs or projects located in Yamhill County, Washington County and Columbia County and all jobs or porjects located in Clark & Cowlitz County, Washington except that portion of Cowlitz County in the Mt. St. Helens "Blast Zone" shall receive Zone I pay for all classifications.

All jobs or projects located in the area outside the identified boundary above, but less than 50 miles from the Portland City Hall shall receive Zone II pay for all classifications.

All jobs or projects located more than 50 miles from the Portland City Hall, but outside the identified border above, shall receive Zone III pay for all classifications.

For the following cities: ALBANY; BEND; COOS BAY; EUGENE; GRANTS PASS; KLAMATH FALLS; MEDFORD; ROSEBURG

All jobs or projects located within 30 miles of the respective city hall of the above mentioned cities shall receive Zone I pay for all classifications.

All jobs or projects located more than 30 miles and less than 50 miles from the respective city hall of the above mentioned cities shall receive Zone II pay for all classifications.

All jobs or projects located more than 50 miles from the respective city hall of the above mentioned cities shall receive Zone III pay for all classifications.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: CONCRETE: Batch Plant and/or Wet Mix Operator, three units or more; CRANE: Helicopter Operator, when used in erecting work; Whirley Operator, 90 ton and over; LATTICE BOOM CRANE: Operator 200 tons through 299 tons, and/or over 200 feet boom; HYDRAULIC CRANE: Hydraulic Crane Operator 90 tons through 199 tons with luffing or tower attachments; FLOATING EQUIPMENT: Floating Crane, 150 ton but less than 250 ton

GROUP 1A: HYDRAULIC CRANE: Hydraulic Operator, 200 tons and over (with luffing or tower attachment); LATTICE BOOM CRANE: Operator, 200 tons through 299 tons, with over 200 feet boom;

FLOATING EQUIPMENT: Floating Crane 250 ton and over

GROUP 1B: LATTICE BOOM CRANE: Operator, 300 tons through 399 tons with over 200 feet boom; Operator 400 tons and over; FLOATING EQUIPMENT: Floating Crane 350 ton and over

GROUP 2: ASPHALT: Asphalt Plant Operator (any type); Roto Mill, pavement profiler, operator, 6 foot lateral cut and over; BLADE: Auto Grader or "Trimmer" (Grade Checker required); Blade Operator, Robotic; BULLDOZERS: Bulldozer operator over 120,000 lbs and above; Bulldozer operator, twin engine; Bulldozer Operator,tandem, quadnine, D10, D11, and similar type; Bulldozere Robotic Equipment (any type; CONCRETE: Batch Plant and/or Wet Mix Operator, one and two drum; Automatic Concrete Slip Form Paver Operator; Concrete Canal Line Operator; Concrete Profiler, Diamond Head; CRANE: Cableway Operator, 25 tons and over; HYDRAULIC CRANE: Hydraulic crane operator 90 tons through 199 tons (with luffing or tower attachment); TOWER/WHIRLEY OPERATOR: Tower Crane Operator; Whirley Operator, under 90 tons; LATTICE BOOM CRANE: 90 through 199 tons and/or 150 to 200 feet boom; CRUSHER: Crusher Plant Operator; FLOATING EQUIPMENT: Floating Clamshell, etc.operator, 3 cu. yds. and over; Floating Crane (derrick barge) Operator, 30 tons but less than 150 tons; LOADERS: Loader operator, 120,000 lbs. and above; REMOTE CONTROL: Remote controlled earth-moving equipment; RUBBER-TIRED SCRAPERS: Rubber- tired scraper operator, with tandem scrapers, multi-engine; SHOVEL, DRAGLINE, CLAMSHELL, SKOOPER OPERATOR: Shovel, Dragline, Clamshell, operator 5 cu. yds and over; TRENCHING MACHINE: Wheel Excavator, under 750 cu. yds. per hour (Grade Oiler required); Canal Trimmer (Grade Oiler required); Wheel Excavator, over 750 cu. yds. per hour; Band Wagon (in conjunction with wheel excavator); UNDERWATER EQUIPMENT: Underwater Equipment Operator, remote or otherwise; HYDRAULIC HOES-EXCAVATOR: Excavator over 130,000 lbs.

GROUP 3: BULLDOZERS: Bulldozer operator, over 70,000 lbs. up to and including 120,000 lbs.; HYDRAULIC CRANE: Hydraulic crane operator, 50 tons through 89 tons (with luffing or tower attachment); LATTICE BOOM CRANES: Lattice Boom Crane-50 through 89 tons (and less than 150 feet boom); FORKLIFT: Rock Hound Operator; HYDRAULIC HOES-EXCAVATOR: excavator over 80,000 lbs. through 130,000 lbs.; LOADERS: Loader operator 60,000 and less than 120,000; RUBBER-TIRED SCRAPERS: Scraper Operator, with tandem scrapers; Self-loading, paddle wheel, auger type, finish and/or 2 or more units; SHOVEL, DRAGLINE, CLAMSHELL,SKOOPER OPERATOR: Shovel, Dragline, Clamshell operators 3 cu. yds. but less than 5 cu yds.

GROUP 4: ASPHALT: Screed Operator; Asphalt Paver operator (screeman required); BLADE: Blade operator; Blade operator,

finish; Blade operator, externally controlled by electronic, mechanical hydraulic means; Blade operator, multi-engine; BULLDOZERS: Bulldozer Operator over 20,000 lbs and more than 100 horse up to 70,000 lbs; Drill Cat Operator; Side-boom Operator; Cable-Plow Operator (any type); CLEARING: Log Skidders; Chippers; Incinerator; Stump Splitter (loader mounted or similar type); Stump Grinder (loader mounted or similar type; Tub Grinder; Land Clearing Machine (Track mounted forestry mowing & grinding machine); Hydro Axe (loader mounted or similar type); COMPACTORS SELF-PROPELLED: Compactor Operator, with blade; Compactor Operator, multi-engine; Compactor Operator, robotic; CONCRETE: Mixer Mobile Operator; Screed Operator; Concrete Cooling Machine Operator; Concrete Paving Road Mixer; Concrete Breaker; Reinforced Tank Banding Machine (K-17 or similar types); Laser Screed; CRANE: Chicago boom and similar types; Lift Slab Machine Operator; Boom type lifting device, 5 ton capacity or less; Hoist Operator, two (2) drum; Hoist Operator, three (3) or more drums; Derrick Operator, under 100 ton; Hoist Operator, stiff leg, guy derrick or similar type, 50 ton and over; Cableway Operator up to twenty (25) ton; Bridge Crane Operator, Locomotive, Gantry, Overhead; Cherry Picker or similar type crane; Carry Deck Operator; Hydraulic Crane Operator, under 50 tons; LATTICE BOOM CRANE OPERATOR: Lattice Boom Crane Operator, under 50 tons; CRUSHER: Generator Operator; Diesel-Electric Engineer; Grizzley Operator; Drill Doctor; Boring Machine Operator; Driller-Percussion, Diamond, Core, Cable, Rotary and similar type; Cat Drill (John Henry); Directional Drill Operator over 20,000 lbs pullback; FLOATING EQUIPMENT: Diesel-electric Engineer; Jack Operator, elevating barges, Barge Operator, self- unloading; Piledriver Operator (not crane type) (Deckhand required); Floating Clamshelll, etc. Operator, under 3 cu. yds. (Fireman or Diesel-Electric Engineer required); Floating Crane (derrick barge) Operator, less than 30 tons; GENERATORS: Generator Operator; Diesel-electric Engineer; GUARDRAIL EQUIPMENT: Guardrail Punch Operator (all types); Guardrail Auger Operator (all types); Combination Guardrail machines, i.e., punch auger, etc.; HEATING PLANT: Surface Heater and Planer Operator; HYDRAULIC HOES EXCAVATOR: Robotic Hydraulic backhoe operator, track and wheel type up to and including 20,0000 lbs. with any or all attachments; Excavator Operator over 20,000 lbs through 80,000 lbs.; LOADERS: Belt Loaders, Kolman and Ko Cal types; Loaders Operator, front end and overhead, 25,000 lbs and less than 60,000 lbs; Elevating Grader Operator by Tractor operator, Sierra, Euclid or similar types; PILEDRIVERS: Hammer Operator; Piledriver Operator (not crane type); PIPELINE, SEWER WATER: Pipe Cleaning Machine Operator; Pipe Doping Machine Operator; Pipe Bending Machine Operator; Pipe Wrapping Machine Operator; Boring Machine Operator; Back Filling Machine Operator; REMOTE CONTROL: Concrete Cleaning

Decontamination Machine Operator; Ultra High Pressure Water Jet Cutting Tool System Operator/Mechanic; Vacuum Blasting Machine Operator/mechanic; REPAIRMEN, HEAVY DUTY: Diesel Electric Engineer (Plant or Floating; Bolt Threading Machine operator; Drill Doctor (Bit Grinder); H.D. Mechanic; Machine Tool Operator; RUBBER-TIRED SCRAPERS: Rubber-tired Scraper Operator,single engine, single scraper; Self-loading, paddle wheel, auger type under 15 cu. yds.; Rubber-tired Scraper Operator, twin engine; Rubber-tired Scraper Operator, with push- ull attachments; Self Loading, paddle wheel, auger type 15 cu. yds. and over, single engine; Water pulls, water wagons; SHOVEL, DRAGLINE, CLAMSHELL, SKOOPER OPERATOR: Diesel Electric Engineer; Stationay Drag Scraper Operator; Shovel, Dragline, Clamshell, Operator under 3 cy yds.; Grade-all Operator; SURFACE (BASE) MATERIAL: Blade mounted spreaders, Ulrich and similar types; TRACTOR-RUBBERED TIRED: Tractor operator, rubber-tired, over 50 hp flywheel; Tractor operator, with boom attachment; Rubber-tired dozers and pushers (Michigan, Cat, Hough type); Skip Loader, Drag Box; TRENCHING MACHINE: Trenching Machine operator, digging capacity over 3 ft depth; Back filling machine operator; TUNNEL: Mucking machine operator

GROUP 5: ASPHALT: Extrusion Machine Operator; Roller Operator (any asphalt mix); Asphalt Burner and Reconditioner Operator (any type); Roto-Mill, pavement profiler, ground man; BULLDOZERS: Bulldozer operator, 20,000 lbs. or less or 100 horse or less; COMPRESSORS: Compressor Operator (any power), over 1,250 cu. ft. total capacity; COMPACTORS: Compactor Operator, including vibratory; Wagner Pactor Operator or similar type (without blade); CONCRETE: Combination mixer and Compressor Operator, gunite work; Concrete Batch Plant Quality Control Operator; Beltcrete Operator; Pumpcrete Operator (any type); Pavement Grinder and/or Grooving Machine Operator (riding type); Cement Pump Operator, Fuller-Kenyon and similar; Concrete Pump Operator; Grouting Machine Operator; Concrete mixer operator, single drum, under (5) bag capacity; Cast in place pipe laying machine; maginnis Internal Full slab vibrator operator; Concrete finishing mahine operator, Clary, Johnson, Bidwell, Burgess Bridge deck or similar type; Curb Machine Operator, mechanical Berm, Curb and/or Curb and Gutter; Concrete Joint Machine Operator; Concrete Planer Operator; Tower Mobile Operator; Power Jumbo Operator setting slip forms in tunnels; Slip Form Pumps, power driven hydraulic lifting device for concrete forms; Concrete Paving Machine Operator; Concrete Finishing Machine Operator; Concrete Spreader Operator; CRANE: Helicopter Hoist Operator; Hoist Operator, single drum; Elevator Operator; A-frame Truck Operator, Double drum; Boom Truck Operator; HYDRAULIC CRANE OPERATOR: Hydraulic Boom Truck, Pittman; DRILLING: Churm Drill and Earth Boring Machine Operator; Vacuum Truck; Directional Drill Operator

over 20,000 lbs pullback; FLOATING EQUIPMENT: Fireman; FORKLIFT: Fork Lift, over 10 ton and/or robotic; HYDRAULIC HOES EXCAVATORS: Hydraulic Backhoe Operator, wheel type (Ford, John Deere, Case type); Hydraulic Backhoe Operator track type up to and including 20,000 lbs.; LOADERS: Loaders, rubber- tired type, less than 25,000 lbs; Elevating Grader Operator, Tractor Towed requiring Operator or Grader; Elevating loader operator, Athey and similar types; OILERS: Service oiler (Greaser); PIPELINE-SEWER WATER: Hydra hammer or simialr types; Pavement Breaker Operator; PUMPS: Pump Operator, more than 5 (any size); Pot Rammer Operator; RAILROAD EQUIPMENT: Locomotive Operator, under 40 tons; Ballast Regulator Operator; Ballast Tamper Multi-Purpose Operator; Track Liner Operator; Tie Spacer Operator; Shuttle Car Operator; Locomotive Operator, 40 tons and over; MATERIAL HAULRS: Cat wagon DJBs Volvo similar types; Conveyored material hauler; SURFACING (BASE) MATERIAL: Rock Spreaders, self-propelled; Pulva-mixer or similar types; Chiip Spreading machine operator; Lime spreading operator, construction job siter; SWEEPERS: Sweeper operator (Wayne type) self-propelled construction job site; TRACTOR-RUBBER TIRED: Tractor operator, rubber-tired, 50 hp flywheel and under; Trenching machine operator, maximum digging capacity 3 ft depth; TUNNEL: Dinkey

GROUP 6: ASPHALT: Plant Oiler; Plant Fireman; Pugmill Operator (any type); Truck mounted asphalt spreader, with screed; COMPRESSORS: Compressor Operator (any power), under 1,250 cu. ft. total capacity; CONCRETE: Plant Oiler, Assistant Conveyor Operator; Conveyor Operator; Mixer Box Operator (C.T.B., dry batch, etc.); Cement Hog Operator; Concrete Saw Operator; Concrete Curing Machine Operator (riding type); Wire Mat or Brooming Machine Operator; CRANE: Oiler; Fireman, all equipment; Truck Crane Oiler Driver; A-frame Truck Operator, single drum; Tugger or Coffin Type Hoist Operator; CRUSHER: Crusher Oiler; Crusher Feederman; CRUSHER: Crusher oiler; Crusher feederman; DRILLING: Drill Tender; Auger Oiler; FLOATING EQUIPMENT: Deckhand; Boatman; FORKLIFT: Self-propelled Scaffolding Operator, construction job site (exclduing working platform); Fork Lift or Lumber Stacker Operator, construction job site; Ross Carrier Operator, construction job site; Lull Hi-Lift Operator or Similar Type; GUARDRAIL EQUIPMENT: Oiler; Auger Oiler; Oiler, combination guardrail machines; Guardrail Punch Oiler; HEATING PLANT: Temporary Heating Plant Operator; LOADERS: Bobcat, skid steer (less than 1 cu yd.); Bucket Elevator Loader Operator, BarberGreene and similar types; OILERS: Oiler; Guardrail Punch Oiler; Truck Crane Oiler-Driver; Auger Oiler; Grade Oiler, required to check grade; Grade Checker; Rigger; PIPELINE-SEWER WATER: Tar Pot Fireman; Tar Pot Fireman (power agitated); PUMPS: Pump Operator (any power); Hydrostatic Pump Operator; RAILROAD EQUIPMENT: Brakeman;

Oiler; Switchman; Motorman; Ballast Jack Tamper Operator; SHOVEL, DRAGLINE, CLAMSHELL, SKOOPER, ETC. OPERATOR: Oiler, Grade Oiler (required to check grade); Grade Checker; Fireman; SWEEPER: Broom operator, self propelled, construction job site; SURFACING (BASE) MATERIAL: Roller Operator, grading of base rock (not asphalt); Tamping Machine operartor, mechanical, self-propelled; Hydrographic Seeder Machine Operator; TRENCHING MACHINE: Oiler; Grade Oiler; TUNNEL: Conveyor operator; Air filtration equipment operator

---

IRON0086-001 07/01/2003

CHELAN AND KITTITAS COUNTIES

	Rates	Fringes
Ironworker	$ 27.47	12.45

IRON0086-003 07/01/2003

CALLAM,GRAYS HARBOR, JEFFERSON, KING,KITSAP, LEWIS, MASON, PACIFIC, PIERCE, SNOHOMISH AND THURSTON COUNTIES

	Rates	Fringes
Ironworker	$ 28.57	12.45

LABO0001-003 07/01/2003

	Rates	Fringes
Laborers:		
CHELAN AND KITTITAS COUNTIES ZONE 1:		
GROUP 1	$ 14.59	7.20
GROUP 2	$ 16.91	7.20
GROUP 3	$ 18.63	7.20
GROUP 4	$ 19.11	7.20
GROUP 5	$ 19.47	7.20
CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC (North of a straight line made by extending the north boundary of Wahkiakum County west to the Pacific Ocean), PIERCE, SNOHOMISH AND THURSTON COUNTIES ZONE 1:		

GROUP 1	$ 17.71	7.20
GROUP 2	$ 20.03	7.20
GROUP 3	$ 24.71	7.20
GROUP 4	$ 25.19	7.20
GROUP 5	$ 25.55	7.20

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):
ZONE 2 - $ .70
ZONE 3 - $1.00

BASE POINTS: CHELAN, SUNNYSIDE, WENATCHEE, AND YAKIMA

ZONE 1 - Projects within 25 radius miles of the respective city hall
ZONE 2 - More than 25 but less than 45 radius miles from the respective city hall
ZONE 3 - More than 45 radius miles from the respective city hall

BASE POINTS: BELLINGHAM, MT. VERNON, EVERETT, SEATTLE, KENT, TACOMA, OLYMPIA, CENTRALIA, ABERDEEN, SHELTON, PT. TOWNSEND, PT. ANGELES, AND BREMERTON

ZONE 1 - Projects within 25 radius miles of the respective city hall
ZONE 2 - More than 25 but less than 45 radius miles from the respective city hall
ZONE 3 - More than 45 radius miles from the respective city hall

LABORERS CLASSIFICATIONS

GROUP 1: Landscaping and Planting; Watchman; Window Washer/Cleaner (detail clean-up, such as but not limited to cleaning floors, ceilings, walls, windows, etc., prior to final acceptance by the owner)

GROUP 2: Batch Weighman; Crusher Feeder; Fence Laborer; Flagman; Pilot Car

GROUP 3: General Laborer; Air, Gas, or Electric Vibrating Screed; Asbestos Abatement Laborer; Ballast Regulator Machine; Brush Cutter; Brush Hog Feeder; Burner; Carpenter Tender; Cement Finisher Tender; Change House or Dry Shack; Chipping Gun (under 30 lbs.); Choker Setter; Chuck Tender; Clean-up Laborer; Concrete Form Stripper; Curing Laborer; Demolition (wrecking and moving including charred material); Ditch Digger; Dump Person; Fine Graders; Firewatch; Form Setter; Gabian Basket Builders; Grout Machine Tender; Grinders; Guardrail Erector; Hazardous Waste Worker (Level C); Maintenance Person; Material Yard Person; Pot Tender; Rip Rap Person; Riggers; Scale Person; Sloper Sprayer; Signal

Person; Stock Piler; Stake Hopper; Toolroom Man (at job site); Topper-Tailer; Track Laborer; Truck Spotter; Vinyl Seamer

GROUP 4: Cement Dumper-Paving; Chipping Gun (over 30 lbs.); Clary Power Spreader; Concrete Dumper/Chute Operator; Concrete Saw Operator; Drill Operator (hydraulic, diamond, aiartrac); Faller and Bucker Chain Saw; Grade Checker and Transit Person; Groutmen (pressure) including post tension beams; Hazardous Waste Worker (Level B); High Scaler; Jackhammer; Laserbeam Operator; Manhole Builder-Mudman; Mortarman and Hodcarrier; Nozzleman (concrete pump, green cutter when using combination of high pressure air and water on concrete and rock, sandblast, gunite, shotcrete, water blaster, vacuum blaster); Pavement Breaker; Pipe Layer and Caulker; Pipe Pot Tender; Pipe Reliner (not insert type); Pipe Wrapper; Power Jacks; Railroad Spike Puller-Power; Raker-Asphalt; Rivet Buster; Rodder; Sloper (over 20 ft); Spreader (concrete); Tamper and Similar electric, air and glas operated tool; Timber Person-sewer (lagger shorer and cribber); Track Liner Power; Tugger Operator; Vibrator; Well Point Laborer

GROUP 5: Caisson Worker; Miner; Powderman; Re-Timberman; Hazardous Waste Worker (Level A).

LABO0238-008 07/01/2003

CHELAN COUNTY

	Rates	Fringes
Hod Carrier	$ 20.95	6.50

---

* LABO0335-003 06/01/2003

PACIFIC (South of a straight line made by extending the north Boundary line of Wahkiakum County west to the Pacific Ocean) COUNTY

	Rates	Fringes
Laborers:		
ZONE 1:		
GROUP 1	$ 22.92	7.40
GROUP 2	$ 23.44	7.40
GROUP 3	$ 23.84	7.40
GROUP 4	$ 24.18	7.40
GROUP 5	$ 20.70	7.40
GROUP 6	$ 18.54	7.40
GROUP 7	$ 15.71	7.40

LABORERS CLASSIFICATIONS

GROUP 1: Asphalt Plant Laborers; Asphalt Spreaders; Batch Weighman; Broomers; Brush Burners and Cutters; Car and Truck Loaders; Carpenter Tender; Change-House Man or Dry Shack Man; Choker Setter; Clean-up Laborers; Curing-concrete; Demolition, Wrecking, and Moving Laborers; Dumpers, road oiling crew; Dumpmen (for grading crew); Elevator Feeders; Guard Rail, Median Rail, Reference Post, Guide Post, Right-of-way Marker; Fine Graders; Fire Watch; Form Strippers (not swinging stages); General Laborers; Hazardous Waste Worker; Leverman or Aggregate Spreader (Flaherty and similar types); Loading Spotters; Material Yard Man (including electrical); Pittsburgh Chipper Operator or similar types; Railroad Track Laborers; Ribbon Setters (including steel forms); Rip Rap Man (hand placed); Road Pump Tender; Sewer Laborer; Signalman; Skipman; Slopers; Spraymen; Stake Chaser; Stockpiler; Tie Back Shoring; Timber Faller and Bucker (hand labor); Toolroom Man (at job site); Tunnel Bullgang (above ground); Weight-Man-Crusher (aggregate when used)

GROUP 2: Applicator (including pot power tender for same), applying protective material by hand or nozzle on utility lines or storage tanks on project; Brush (power saw); Burners; Choker Splicer; Clary Power Spreader and similar types; Clean up-nozzleman-Green cutter (concrete, rock, etc.); Concrete Laborer; Concrete Power Buggyman; Crusher Feeder; Demolition and Wrecking Charred Materials; Gunite Nozzleman Tender; Gunite or Sand Blasting Pot Tender; Handlers or Mixers of all Materials of an irritating nature (including cement and lime); Pipe Doping & Wrapping; Tool Operators (includes but not limited to: Dry pack machine, Jackhammer, Chipping guns, Paving breakers); Post Hole Digger, air, gas or electric; Vibrating Screed; Tampers; Sand Blasting (wet); Stake-Setter; Tunnel-Muckers, Brakemen, Concrete Crew, Bull gang (Underground)

GROUP 3: Asbestos Removal (structural removal only); Bit Grinder; Drill Doctor; Drill Operators, air tracks cat drills, wagon drills, rubber-mounted drills, and other similar types; Concrete Saw Operator; Gunite Nozzleman; High scalers, strippers and drillers (covers work in swinging stages, chairs or belts, under extreme conditions unusual to normal drilling, blasting, barring-down, or sloping and stripping); Manhole Builder; Powdermen; Power Saw Operators (Bucking and Falling); Pumpcrete Nozzlemen; Sand Blasting (dry); Sewer Timberman; Track Liners; Anchor Machines; Ballast Regulators; Multiple Tampers; Power Jacks; Tugger Operator; Tunnel-Chuck Tenders, Nippers and Timbermen; Vibrator; Water Blaster

GROUP 4: Asphalt Raker; Concrete Saw Operator (walls); Concrete Nozzelman; Grade Checker; Pipelayer; Laser Beam (Tunnel) applicable when assigned to move, set up, align laser beam; Miner-Tunnel; Motorman-dinky Locomotive-Tunnel; Powderman-Tunnel; Shield Operator-Tunnel

GROUP 5: Traffic Flaggers

GROUP 6: Fence Builders

GROUP 7: Landscaping and Planting Laborers

ZONE DIFFERENTIAL (ADD TO ZONE 1 RATES):
ZONE 2 - $0.65
ZONE 3 - 1.15
ZONE 4 - 1.70
ZONE 5 - 2.75

ZONE DEFINITIONS

BASE POINTS: GOLDENDALE, LONGVIEW, AND VANCOUVER

ZONE 1: Projects within 30 miles of the respective city hall

ZONE 2: More than 30 miles but less than 40 miles from the respective city hall.
ZONE 3: More than 40 miles but less than 50 miles from the respective city hall.
ZONE 4: More than 50 miles but less than 80 miles from the respective city hall.
ZONE 5: More than 80 miles from the respective city hall.

LABO0335-009 06/01/2003

PACIFIC(south of a straight line made by extending the north boundary of Wahkiakum County west to the Pacific Ocean)

	Rates	Fringes
Hod Carrier	$ 24.69	7.40

---

* PAIN0005-001 03/01/2004

CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, LEWIS, MASON, PIERCE, SNOHOMISH AND THURSTON COUNTIES

	Rates	Fringes
Painter	$ 24.36	6.41

---

* PAIN0005-003 07/01/2003

CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, LEWIS, MASON, PIERCE, SNOHOMISH AND THURSTON COUNTIES

	Rates	Fringes
Drywall Finisher	$ 27.22	11.37

PAIN0005-007 07/01/2003

CHELAN AND KITTITAS COUNTIES

	Rates	Fringes
Painters:		
BRUSH, PAPERHANGER, STEAM-CLEANING, STRIPING and SPRAY	$ 18.97	6.22
TV, RADIO, ELECTRICAL TRANSMISSION TOWERS	$ 20.72	6.22

PAIN0005-013 07/01/2003

CALLAM, GRAYS HARBOR, JEFFERSON, LEWIS, MASON, PACIFIC (NORTHERN PORTION), PIERCE AND THURSTON COUNTIES

	Rates	Fringes
Soft Floor Layer	$ 21.56	8.83

PAIN0054-003 06/01/2003

CHELAN AND KITTITAS COUNTIES

	Rates	Fringes
Drywall Finisher (TAPER)	$ 20.19	6.85

---

* PAIN0054-008 09/01/2003

CHELAN AND KITTITAS COUNTIES

	Rates	Fringes
Glazier	$ 18.00	5.26

PAIN0055-008 02/01/2004

PACIFIC COUNTY

	Rates	Fringes
Drywall Finisher	$ 26.38	10.04

PAIN0055-009 07/01/2003

PACIFIC COUNTY

	Rates	Fringes
Painters:		
Brush & Roller	$ 17.61	6.12
High work - All work 60 ft. or higher	$ 18.36	6.12
Spray and Sandblasting	$ 18.21	6.12

PAIN0188-001 01/01/2004

CLALLAM, JEFFERSON, KING, KITSAP, LEWIS, MASON, PIERCE, SNOHOMISH, THURSTON COUNTIES

	Rates	Fringes
Glazier	$ 28.57	10.39
Glazier (THURSTON COUNTY)	$ 28.52	10.44

---

* PAIN0188-002 07/01/2003

GRAYS HARBOR AND PACIFIC COUNTIES

	Rates	Fringes
Glazier	$ 12.72	8.05

PAIN1238-001 07/01/2003

KING, KITSAP AND SNOHOMISH COUNTIES

	Rates	Fringes
Soft Floor Layer	$ 22.42	8.85

PLAS0072-002 06/01/2003

CHELAN AND KITTITAS COUNTIES

Zone 1:

	Rates	Fringes
Cement Mason.....	$ 21.51	7.03

Zone Differential (Add to Zone 1 rates): Zone 2 - $2.00

BASE POINTS: Spokane, Pasco, Moses Lake, and Lewiston

Zone 1: 0 - 45 radius miles from the main post office

Zone 2: 45 radius miles from the main post office

PLAS0082-003 06/01/2003

PACIFIC (South of a straight line made by extending the north boundary line of Wahkiakum County west to the Pacific Ocean) COUNTY

	Rates	Fringes
Plasterer.....	$ 25.64	8.13

PLAS0528-002 06/01/2003

CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC (North of a straight line made by extending the north boundary line of Wahkiakum Count, west to the Pacific Ocean), PIERCE, SNOHOMISH AND THURSTON COUNTIES

	Rates	Fringes
Cement Mason.....	$ 28.52	10.42

PLUM0032-001 01/01/2004

CHELAN AND KITTITAS (NORTHERN TIP) COUNTIES

	Rates	Fringes
Plumbers and Pipefitters.....	$ 26.38	11.68

PLUM0032-002 01/01/2004

CLALLAM, KING AND JEFFERSON COUNTIES

	Rates	Fringes
Plumbers and Pipefitters.....	$ 34.43	14.33

---

* PLUM0082-004 01/01/2004

GRAYS HARBOR, LEWIS, MASON (EXCLUDING NE SECTION), PACIFIC, PIERCE AND THURSTON COUNTIES

	Rates	Fringes
Plumbers and Pipefitters.....	$ 30.40	13.17

---

* PLUM0265-001 01/01/2004

SNOHOMISH COUNTY

	Rates	Fringes
Plumbers and Pipefitters.....	$ 30.20	13.17

PLUM0598-002 06/01/2003

KITTITAS (ALL BUT NORTHERN TIP)

	Rates	Fringes
Plumbers and Pipefitters.....	$ 30.38	14.20

---

* PLUM0631-001 01/01/2004

MASON (NE SECTION), AND KITSAP COUNTIES

	Rates	Fringes
Plumbers and Pipefitters All new construction, additions, and remodeling of commercial building projects such as: cocktail lounges and taverns, professional buildings, medical clinics, retail stores, hotels and motels,		

restaurants and fast
food types, gasoline
service stations, and
car washes where the
plumbing and mechanical
cost of the project is
less than $100,000.....$ 20.85 4.58
All other work where
the plumbing and
mechanical cost of the
project is $100,000 and
over.....$ 29.29 13.17

ROOF0054-001 06/01/2003

CLALLAM, JEFFERSON, KING, KITSAP, MASON AND SNOHOMISH COUNTIES

	Rates	Fringes
Roofer	$ 25.62	8.91

ROOF0153-001 06/01/2003

GRAYS HARBOR, LEWIS, PACIFIC, PIERCE AND THURSTON COUNTIES

	Rates	Fringes
Roofer	$ 25.25	6.69

ROOF0189-001 07/01/2003

CHELAN COUNTY

	Rates	Fringes
Roofer	$ 19.95	6.40

ROOF0189-004 07/01/2003

KITTITAS COUNTY

	Rates	Fringes
Roofer	$ 20.88	6.15

SFWA0699-001 01/01/2004

KING, KITSAP, PIERCE, SNOHOMISH AND THURSTON COUNTIES

	Rates	Fringes
Sprinkler Fitter	$ 33.34	12.90

SHEE0066-003 06/01/2003

CHELAN COUNTY

	Rates	Fringes
Sheet Metal Worker	$ 21.13	8.81

---

* SHEE0066-004 10/01/2003

CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC, PIERCE, SNOHOMISH AND THURSTON COUNTIES

	Rates	Fringes
Sheet Metal Worker	$ 32.15	13.25

SHEE0066-010 06/01/2003

KITTITAS COUNTY

	Rates	Fringes
Sheet Metal Worker	$ 25.72	10.59

---

* TEAM0174-002 06/01/2003

CLALLAM, GRAYS HARBOR, JEFFERSON, KING, KITSAP, LEWIS, MASON, PACIFIC (North of a straight line made by extending the north boundary line of Wahkiakum County west to the Pacific Ocean), PIERCE, SNOHOMISH AND THURSTON COUNTIES

	Rates	Fringes
Truck drivers:		
ZONE A:		
GROUP 1:	$ 26.14	10.33
GROUP 2:	$ 25.56	10.33
GROUP 3:	$ 23.16	10.33
GROUP 4:	$ 18.91	10.33
GROUP 5:	$ 25.90	10.33

ZONE B (25-45 miles from center of listed cities*): Add $.70 per hour to Zone A rates. ZONE C (over 45 miles from centr of listed cities*): Add $1.00 per hour to Zone A rates.

*Zone pay will be calculated from the city center of the following listed cities:

BELLINGHAM	CENTRALIA	RAYMOND	OLYMPIA
EVERETT	SHELTON	ANACORTES	BELLEVUE
SEATTLE	PORT ANGELES	MT. VERNON	KENT
TACOMA	PORT TOWNSEND	ABERDEEN	BREMERTON

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1 -"A-frame or Hydralift" trucks and Boom trucks or similar equipment when "A" frame or "Hydralift" and Boom truck or similar equipment is used; Buggymobile; Bulk Cement Tanker; Dumpsters and similar equipment, Tournorockers, Tournowagon, Tournotrailer, Cat DW series, Terra Cobra, Le Tourneau, Westinghouse, Athye Wagon, Eucid Two and Four-Wheeled power tractor with trailer and similar top-loaded equipment transporting material: Dump Trucks, side, end and bottom dump, including semi-trucks and trains or combinations thereof with 16 yards to 30 yards capacity: Over 30 yards $.15 per hour additional for each 10 yard increment; Explosive Truck (field mix) and similar equipment; Hyster Operators (handling bulk loose aggregates); Lowbed and Heavy Duty Trailer; Road Oil Distributor Driver; Spreader, Flaherty Transit mix used exclusively in heavy construction; Water Wagon and Tank Truck-3,000 gallons and over capacity

GROUP 2 - Bulllifts, or similar equipment used in loading or unloading trucks, transporting materials on job site; Dumpsters, and similar equipment, Tournorockers, Tournowagon, Turnotrailer, Cat. D.W. Series, Terra Cobra, Le Tourneau, Westinghous, Athye wagon, Euclid two and four-wheeled power tractor with trailer and similar top-loaded equipment transporting material, Dump trucks, side, end and bottom dump, including semi-trucks and trains or combinations thereof with less than 16 yards capacity; Flatbed: (Dual Rear Axle); Grease Truck, Fuel Truck, Greaser, Battery Service Man and/or Tire Service Man; Leverman and loader at bunkers and batch plants; Oil tank transport; Scissor, Slurry Truck; Sno-Go and similar equipment; Swampers; Straddler Carrier (Ross, Hyster) and similar equipment; Team Driver; Tractor (small rubber-tired (when used within Teamster jurisdiction); Vacuum truck; Water Wagon and Tank trucks-less than 3,000 gallons capacity; Winch truck; Wrecker, tow truck and similar equipment

GROUP 3 - Flatbed: single rear axle; Pickup sweeper, Pickup Truck (Adjust upward by $2.00 per hour for onsite work)

GROUP 4 - Escort or pilot driver

GROUP 5 - Mechanic

HAZMAT PROJECTS

Anyone working on a HAZMAT job, where HAZMAT certification is required, shall be compensated as a premium, in addition to the classification working in as follows:
LEVEL C: +$.25 per hour - This level uses an air purifying respirator or additional protective clothing.
LEVEL B: +$.50 per hour - Uses same respirator protection as Level A. Supplied air line is provided in conjunction with a chemical "splash suit."
LEVEL A: +$.75 per hour - This level utilizes a fully-encapsulated suit with a self-contained breathing apparatus or a supplied air line.

TEAM0760-004 06/01/2003

CHELAN AND KITTITAS COUNTIES

(ANYONE WORKING ON HAZMAT JOBS SEE FOOTNOTE A BELOW)

	Rates	Fringes
Truck drivers:		
GROUP 1	$ 19.53	9.00
GROUP 2	$ 22.17	9.00
GROUP 3	$ 22.28	9.00
GROUP 4	$ 22.61	9.00
GROUP 5	$ 22.72	9.00
GROUP 6	$ 22.88	9.00
GROUP 7	$ 23.42	9.00
GROUP 8	$ 23.74	9.00

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Escort Driver or Pilot Car; Employee Haul; Power Boat Hauling Employees or Material

GROUP 2: Fish Truck; Flat Bed Truck; Fork Lift (3000 lbs. and under); Trailer Mounted Hydro Seeder and Mulcher; Leverperson (loading trucks at bunkers); Seeder & Mulcher; Stationary Fuel Operator; Tractor (small, rubber-tired, pulling trailer or similar equipment)

GROUP 3: Auto Crane (2000 lbs. capacity); Buggy Mobile & Similar; Bulk Cement Tanks & Spreader; Dumptor (6 yds. & under); Flat Bed Truck with Hydraulic System; Fork Lift (3001-16,000 lbs.); Fuel Truck Driver; Steamcleaner & Washer; Power Operated Sweeper; Rubber-tired Tunnel Jumbo; Scissors

Truck; Slurry Truck Driver; Straddle Carrier (Ross, Hyster, & similar); Tireperson; Transit Mixers & Truck Hauling Concrete (3 yd. to & including 6 yds.); Trucks, side, end, bottom and articulated end dump (3 yards to and including 6 yds.); Warehouseperson (to include shipping & receiving); Wrecker & Tow Truck

GROUP 4: A-Frame; Burner, Cutter, & Welder; Service Greaser; Trucks, side, end, bottom and articulated end dump (over 6 yds. to & including 12 yds.); Truck Mounted Hydro Seeder; Warehouseperson; Water Tank truck (0-8000 gallons)

GROUP 5: Dumpster (over 6 yds.); Lowboy (50 tons & under); Self- Loading Roll Off; Semi-Truck & Trailer; Tractor with Steer Trailer; Transit Mixers and Trucks Hauling Concrete (over 6 yds. to and including 10 yds.); Trucks, side, end, bottom and articulated end dump (over 12 yds. to & including 20 yds.); Truck-Mounted Crane (with load bearing surface either mounted or pulled)(up to 14 ton); Vacuum Truck (super sucker, guzzler, etc.)

GROUP 6: Flaherty Spreader Box Driver; Flowboys; Fork Lift (over 16,000 lbs.); Dumps (Semi-end); Lowboy (over 50 tons); Mechanic (Field); Transfer Truck and Trailer; Transit Mixers & Trucks Hauling Concrete (over 10 yds. to & including 20 yds.); Trucks, side, end, bottom and end dump (over 20 yds. to & including 40 yds.); Truck and Pup; Tournarocker, DWs & similar with 2 or more 4 wheel-power tractor with trailer, gallonage or yardage scale, whichever is greater; Water Tank Truck (8,001- 14,000 gallons)

GROUP 7: Oil Distributor Driver; Stringer Truck (cable operated trailer); Transit Mixers & Hauling Concrete (over 20 yds.); Truck, side, end, bottom and articulated end dump (over 40 yds. to & including 100 yds.); Truck Mounted Crane (with load bearing surface either mounted or pulled (16 through 25 tons)

GROUP 8: Prime Movers and Stinger Truck; Trucks, side, end, bottom and articulated end dump (over 100 yds.); Helicopter Pilot Hauling Employees or Materials

Footnote A- Anyone working on a HAZMAT job, where HAZMAT certification is required, shall be compensated as a premium, in additon to the classification working in as follows:

LEVEL D: - $.25 PER HOUR (This is the lowest level of protection. No respirator is used and skin protection is minimal.

LEVEL C: - $.50 PER HOUR (This level uses an air purifying respirator or additional protective clothing.

LEVEL B: - $.75 PER HOUR (Uses same respirator protection as Level A. Supplied air line is provided in conjunction with a chemical "spash suit."

LEVEL A: - $1.00 PER HOUR (this level utilizes a fully encapsulated suit with a self-contained breathing apparatus or a supplied air line.

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 (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the 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, DC 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, DC 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, DC 20210

4.) All decisions by the Administrative Review Board are final.

==========

END OF GENERAL DECISION

SECTION 00860

STATEMENT OF WORK

This page intentionally left blank.

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 (UEHP) and support facilities. This contract shall consist of the design and construction of barracks, including common support spaces (either within the barracks or in a stand alone "Soldier Community Building (SCB)), for 300 soldiers, company operations facilities (COF), battalion headquarters (BTN HQ), site work, site utilities and associated facilities on Government-owned land at North Fort Lewis, Washington. In addition, the design and construction of a landmark feature is included as an optional item.

1-1.1 **Site Area**. The sites are described on the RFP drawings included as part of this solicitation and include surface areas of approximately 3.0 hectares (total) on "Echo" block and 5.5 hectares on "Alpha" block. Alpha block is bounded by 41st Division Drive, "A" street, "D" Street and 8th Street. In addition, a small area south of the intersection of 41st Division Drive and "A" Street is included as the site of a landmark feature for Alpha block. Echo block is defined by 17th Street, "A" street, "D" Street and East Drive.

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, clearing, grading, erosion control, site drainage, utility systems, pavements, pedestrian and vehicular circulation systems, outdoor recreation facilities, landscaping, physical security and force protection measures, fencing, and site furnishings.

1-1.3 **Special Utilities and Supplementary Construction**. This project also includes a secondary propane/air fuel distribution system to be designed and installed in parallel with a natural gas distribution system.

1-1.4 **Demolition Considerations and Requirements**. Demolition of buildings will not be a required component of this work. Selective demolition of existing utility systems will be required where these systems extend under the "footprint" of new structures. Demolition of pavements, particularly for the Alpha block will also be required. Tree removal may be required in Alpha block.

1-1.5 **Environmental Considerations and Mitigation Requirements**. There are no requirements for remediation of site contamination nor will environmental mitigation be necessary.

1-1.6 **Terminology**. In this RFP the term "Barracks Complex" shall mean the entire group of facilities and site features described by the Statement of Work. "Barracks" and "unaccompanied enlisted personnel housing (UEPH)" may be used interchangeably to describe the buildings with troop housing including the facility identified as the "Soldier Community Building".

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. 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 strict adherence to mission enabling functional requirements, demonstrated environmental sustainability, integration of buildings with the site, selection of building systems for low-cost maintenance and operation, optimization of interior planning and an overall balance of aesthetics and functionality. Creation of facilities with long-term durability and minimal maintenance requirements are also important design quality criteria.

1-4 **DESIGN FREEDOM**. Requirements stated in this RFP are minimums. Innovative, creative, or cost-saving proposals, which meet or exceed these requirements are encouraged and will be considered more favorably. Designs may incorporate factory fabricated components or modules. However, offerors are cautioned to carefully note and incorporate all mandatory design criteria and regulations related to military construction, such as force protection and security standards, that must be incorporated in any design.

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 Lewis Installation Design Guide, excerpts of which are contained in attachment 9 to this Statement of Work.

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 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. Barrack common support spaces (lobby, mailroom, mailboxes, toilet rooms, etc) and corridors accessing these shall be accessible. It is not necessary to provide accessibility for the disabled within corridors accessing only barracks room modules. Access for the disabled is not required at the COF's on either the first or second floors. However, incorporation of accessible features is encouraged wherever possible. All areas of the Battalion Headquarters building shall be accessible and fully compliant with the referenced standards. The following specific areas shall also be accessible:

1-7.1 Areas that may be used by non-military army or contractor employees or visitors. Specific areas are indicated in the Statement of Work.

1-7.2 Accessible visitor and non-military employee parking spaces near UEPH and other buildings as indicated in Chapter 3 of the Statement of Work.

1-7.3 A minimum of one accessible pedestrian route linking accessible parking areas with accessible building entrances.

1-8 **FORCE PROTECTION & ANTI-TERRORISM CONSIDERATIONS**. Project design and construction shall comply with UFC 4-010-01 Department of Defense Minimum Antiterrorism Standards for Buildings and UFC 4-010-10 Department of Defense Minimum Antiterrorism Standoff Distances for Buildings, excerpts of which are contained in an attachment to the Statement of Work. Offerors are cautioned to read the Antiterrorism Standards carefully with consideration of their specific applicability to this project. In particular review the requirements for window construction, and the analysis requirements for progressive collapse prevention. Further clarification of the analysis requirements for progressive collapse prevention is provided in Attachment 10, 'Progress Collapse Analysis Guidelines'.

1-9 **ORGANIZATIONAL STRUCTURE**. The barrack facilities designed and constructed under this solicitation will be occupied by enlisted soldiers. Each soldier is assigned to a company. Company operations facilities (COF) 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, enlisted personnel living off-post and non-enlisted personnel.

A number of companies comprise a battalion. Battalion headquarters (BTN HQ) house the administrative and command functions of the battalion, and provide training and support areas for soldiers. A brigade is composed of a number of battalions. Brigade headquarters house the administrative and command functions of the brigade.

1-10 **SUSTAINABLE DESIGN.** Fort Lewis has a strong commitment to the incorporation of sustainable design strategies and practices into all facilities and operations on the installation. Review Chapter 13 of this section for discussion of the installation's sustainability goals as well as proposal and project requirements. To measure the level of successful sustainable design integration, the LEED project checklist will be the verification metric. A very important design objective (and indicator of contractor success) for the FY 04 Whole Barracks Renewal project is to maximize the incorporation of sustainable design features as documented by the LEED credits score. While a "Silver" rating is the minimum design requirement, increasing the credit points total or identified certification category as permitted by available project budget and schedule is encouraged.

This page intentionally left blank.

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: Occupied attic areas where average clear height does not exceed 2 130 mm; 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.

2-1.1.3 **Building Code Area**. The exclusions and half space allowances permitted above are to be used only for calculation of nominal gross areas to verify conformance with the Statement of Work maximum authorized gross building areas. All building and life safety code analysis shall be performed using the actual floor areas consistent with the measurement standards of each code.

2-1.2 **Gross area limitations**. Maximum authorized gross building areas for each facility are included in this paragraph. Proposals that exceed authorized gross area limitations may be considered non-conforming. All areas are expressed in square meters:

FACILITY	Per Building	Project Total
UEPH Barracks*	na	10,200
Lawnmower Stor. /Recycling/Dumpster Buildings (4 req.)	11	45
Large Company Operations Facilities (3 required)	1,860	5,580
Large Battalion Headquarters Building (2 required)	1,524	3,048

* The barracks area indicated is consistent with the maximum gross project area of 34 m^2 per occupant (300) permitted by regulation. Barracks constructed for this project shall be no more than 3 stories to be consistent with existing North Fort barracks complexes.

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**. Free-standing (non-permanent) furnishings shall not be provided by the offeror for any of the facilities developed by this project. However, design effort associated with the preparation of Building Related Interior Design (BRID) and Furniture Related Interior Design (FRID) documents is required. The offeror shall design the buildings to accommodate furnishings that would typically occur in a given space; or shall design for furniture requirements that are specifically identified by this RFP. Careful coordination with Fort Lewis is required throughout the design and construction period to facilitate the installation of furnishings by others.

2-2 **UEPH FACILITIES FUNCTIONAL AND AREA REQUIREMENTS.** The UEPH building(s) shall consist of living units (room modules), common areas, and support spaces. Each living unit shall be designed to be occupied by two soldiers. Living units designed for other than two occupants are not permitted. Provide 150 Two-person living units to house a total of 300 enlisted personnel in grades E1 through E6. Living units, common areas and support spaces may comprise a single building, or multiple buildings. Total gross building area of UEPH buildings shall not exceed 10 200 square meters (m^2). Maximum gross area is limited to 34 m^2 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, particularly the "Living /Sleeping" room, provide the required support and common areas, and strictly comply with the overall gross building area limitation.

Building spaces and areas shall be as follows:

2-2.1 **Areas Comprising the <u>Two-Person Living Unit</u> (Room Module)**. Each Two-Person living unit, or module, will contain two individual living/sleeping rooms with closets, a shared service area with kitchenette, and a shared bathroom. Spaces are as follows.

2-2.1.1 **Individual Living/Sleeping Room**. Minimum net area 13 m^2. Maximum net area 17 m^2. Provide two per module.

2-2.1.1.1 Function: Private bedroom and living space for one enlisted person.

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. Provide 750 mm wide door between service area and living/sleeping room. If living/sleeping room is entered directly from interior corridor, provide 900 mm wide entry door swinging into room.

2-2.1.1.3 Furnishings/Fixtures/Equipment: Design the room to accommodate, the following furnishings:

- one twin bed with headboard and footboard (1 020 mm x 2 083mm)
- one entertainment center for occupant's television and sound system (864 mm wide x 635 mm deep x 1 930 mm high)
- one chest of drawers (712 mm wide x 458 mm deep x 661 mm high)
- one nightstand (485 mm wide x 435 mm deep x 535 mm high)
- one desk (1 524 mm wide x 762 deep (with keyboard tray retracted) x 762 mm high) and
- one desk chair (500 mm wide x 535 mm deep x 851 mm high)

2-2.1.1.4 Minimum Finishes:

- Floor: carpet 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 service area and living/sleeping room shall have Unican 1000 series (1021B) lockset (living/sleeping room is secure side). If provided, door between public corridor and living/sleeping room shall have mortise dormitory function (F13) lockset. Any door accessing living/sleeping room shall be equipped with view port.
- Provide minimum of two combination telephone/data outlet in each Living /Sleeping room. Provide minimum of two cable television outlet in each Living/Sleeping room. Coordinate outlet locations with furniture arrangement. Refer to Chapter 9 Electrical Systems
- Partitions that provide separation between room modules and between a room module and common or support spaces shall have a minimum STC of 55.
- Partitions that separate living and sleeping rooms within a room module shall have a minimum STC of 55

2-2.1.2 **Closet**. Minimum net area 3 m^2. Provide one closet 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 700 mm wide door between living/sleeping room and closet. Door shall swing out of closet to preserve maximum amount of useable floor area within closet. Locate door to minimize loss of functional wall area in living/sleeping room.

2-2.1.2.3 Furnishings/Fixtures/Equipment (FFE): Provide minimum 2.5 linear meters of clothes rod and storage shelf.

2-2.1.2.4 Minimum Finishes:

- Floor: vinyl composition tile (carpet is prohibited)
- 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 passage function (F75) latchset, and be equipped with a hasp/staple or staple pair (preferred) so the occupant can provide own padlock to secure the closet. Hasp and staple hardware shall be quality consistent with other module door hardware. Fence gate type hardware is unacceptable. When hasp and/or staples are not in use, they shall not interfere with door operation.

2-2.1.3 **Service Area**. Provide one per module.

2-2.1.3.1 Function: Circulation space, food preparation area, eating area and laundry for occupants.

2-2.1.3.2 Adjacency requirements: Adjacent to living/sleeping rooms and bathroom. If service area is entered from public corridor provide 900 mm wide entry door swinging into room.

2-2.1.3.3 Furnishings/Fixtures/Equipment: Provide (except for items noted as government furnished and government installed (GFGI)) and design the room to accommodate the following:

- Refrigerator-freezer (minimum 9 total cubic feet) (GFGI).
- Microwave oven (min .9 cubic feet, 800 watts) composite with refrigerator (GFGI) or mounted under wall cabinets.
- Electric four burner smooth surface cooktop, with separate self-cleaning wall oven or electric drop in range with smooth surface cooktop and self-cleaning oven.
- Range exhaust hood with ducted exterior exhaust.
- Minimum 1 500 linear mm of 600 mm deep kitchen base cabinets and countertop (including cooktop/range width). Base cabinets shall have minimum of two 300 mm wide drawers.
- Minimum 2 100 linear mm of 300 mm deep wall cabinets. Wall cabinets shall be minimum 600 mm high; provide 600 mm clear between countertop and bottom of wall cabinets at sink.
- Plastic laminate countertop with side and backsplashes at walls.
- Single compartment, stainless steel kitchen sink with food strainer/stopper, minimum inside dimensions 400 mm x 400 mm x 175 mm deep, with chrome-plated, single handle, washerless mixing faucet (refer to Chapter 8).
- One dining table for two persons, 750 mm square x 725 mm high with two armless dining chairs (if space permits) (GFGI). Table may be designed to fold against or into wall (if table is permanently attached to the wall it becomes a contractor furnished item – CFI).
- Fire extinguisher (GFGI) mounted inside base cabinet.

- Stacked washier / dryer unit (GFCI). Normal size 690 mm W X 920 nn D X 1850 mm H. Gas dryer and electric washer. Provide ducted to exterior dryer exhaust.

2-2.1.3.4 Minimum Finishes:

- Floor: vinyl composition tile (carpet is prohibited)
- 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. It is desirable, but not required, to have exterior window in room. Window shall not be located adjacent to an exterior corridor. Door between public corridor and service area (entry door into module) shall have mortise dormitory function (F13) lockset and view port.

2-2.1.4 **Bathroom**. Provide minimum of one bathroom per module.

2-2.1.4.1 Function: Bathing and toilet facilities for either occupant; separate storage for both occupants' bath articles.

2-2.1.4.2 Adjacency requirements: Adjacent to service area or interior hallway. Provide 600mm minimum width door between bathroom and service area or hallway.

2-2.1.4.3 Furnishings/Fixtures/Equipment (FFE): Provide and design the room to accommodate the following:

- Lavatory shall be minimum 475 mm x 475 mm self-rimming vitreous china, or cast-filled acrylic or solid surfacing material integrally molded to countertop.
- Chrome-plated washerless faucet with pop-up drain (refer to Chapter 8).
- Countertop shall be minimum 900 mm wide cast-filled acrylic, acrylic solid surfacing material, or plastic laminate with integrally molded, 100 mm high coved backsplash and 100 mm high side splash at side walls.
- Plastic laminate surfaced vanity base cabinet with hinged door(s) and minimum two 225 mm wide drawers.
- 6 mm thick x minimum 1 050 mm high mirror glass, full width of vanity countertop, with wall mounted vanity light fixture above mirror (refer to Chapter 9).
- Two recessed or semi-recessed medicine cabinets, two soap holders, two toothbrush/tumbler holders.
- Wall or floor mounted toilet with full seat and seat cover (lid).
- Bathtub, chrome-plated brass showerhead, and anti-scald single-handle mixing valve with faucet (refer to Chapter 8).
- Two minimum 600 mm long towel bars mounted on walls outside tub/shower enclosure,
- Two wall mounted soap holders in the tub/shower
- One door mounted robe hook with two hooks
- Wall mounted retractable clothesline across tub/shower.

- Mildew-resistant vinyl shower curtain with stainless steel curtain hooks and chrome-plated brass shower curtain rod.
- Single roll toilet tissue dispenser.

2-2.1.4.4 Minimum Finishes:

- Floor: ceramic tile or seamless resinous floor preferred (carpet is prohibited)
- Base: ceramic tile sanitary cove base or coved resinous base
- Walls: painted water-resistant gypsum wallboard or painted veneer plaster, or ceramic tile, or ceramic tile wainscot. Ceramic tile mounted on cementitious backerboard.
- Shower/tub enclosure walls shall be full height ceramic tile, solid surfacing or material with equivalent scratch-resistance, 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 to the exterior; refer to Chapter 10. Door shall have privacy function (F76) lockset and be insulated for sound. Partitions that separate the bathroom from the remainder of the room module shall have a minimum STC of 49.

2-2.1.4.6 Alternative Lavatory locations: In lieu of lavatory location in bathroom, lavatory and vanity cabinet may be located adjacent to the Service Area, or a lavatory and vanity cabinet may be provided within each living/sleeping room.

2-2.1.5 **Module Mechanical Area**. Mechanical units for heating and ventilation shall be located in separate mechanical closets, accessible from the public corridor. Refer to Chapter 10. The following requirements apply:

2-2.1.5.1 Function: Houses HV unit for the module. Room shall not be used for storage or any purpose not related to the mechanical system. Access will be limited to maintenance personnel.

2-2.1.5.2 Adjacency requirements: Adjacent to and accessible only from exterior or public corridor.

2-2.1.5.3 Furnishings/Fixtures/Equipment: Provide mechanical system. Refer to Chapter 10.

2-2.1.5.4 Minimum Finishes:

- Floor: sealed concrete
- Base: none required
- Walls: painted gypsum wallboard, painted veneer plaster, or painted concrete masonry units.
- Ceiling: painted gypsum wallboard, or painted veneer plaster, or painted underside of precast concrete structural floor planks

2-2.1.5.5 Other requirements: Provide swinging door (or door pair) sized to allow maintenance and removal of mechanical unit(s). Door(s) shall have storeroom function (F86) lockset. Room and door construction shall comply with fire and smoke separation requirements of applicable codes.

2-2.2 **One-Person Living Unit (Room Module)**. One-Person living units, or modules, are prohibited in this project.

2-2.3 **UEPH Common Areas**. Common areas shall be located within a building containing living units. A separate free standing building, referred to as the "Soldier Community Building" (SCB) in previous designs, is prohibited in this project. Entry lobby, CQ station, toilet rooms, mail room, and public telephones 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 and 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. Any waiting area should be near the laundry room.

2-2.3.1.3 Furnishings/Fixtures/Equipment: Provide and design space to accommodate a minimum of:

- six upholstered modular waiting-area seating units (GFGI)
- two modular end table units (GFGI).
- ceiling or wall mounted television bracket with locking tray. Arrange seating to allow viewing of television (TV is government furnished, government installed).
- wall mounted electric water coolers (standard and accessible heights).

2-2.3.1.4 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: Meet all ADA accessibility requirements. Provide conduit and junction box for cable television service to wall or ceiling mounted television. Provide entrance door pair of at least 1800 mm combined width.

2-2.3.2 **Entry Vestibules**. Optional at each exterior entrance to lobby area (or SCB). If an entry vestibule is not provided, a recessed entry mat is still required.

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: No requirement.

2-2.3.2.4 Finishes:

- Floor: Provide recessed entry mat full depth of vestibule x full width of doors; porcelain tile, or quarry tile in remainder of room. Provide entry mat at exterior entrance doors even if vestibule entry is not provided.
- 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: Meet all ADA accessibility requirements.

2-2.3.3 **Charge of Quarters (CQ) Station**. Provide one area, approximately 6.5 m^2

2-2.3.3.1 Function: Reception area for visitors; duty desk for barracks manager. Position is occupied on a 24-hour basis.

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 and design the room to accommodate the following:

- reception desk and counter (built-in casework) minimum 2 450 mm long, to accommodate computer and monitor (not in contract), security system monitor, telephone and 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 Finishes: Match entry lobby.

2-2.3.3.5 Other requirements: Meet all ADA accessibility requirements. Entire CQ Station shall be capable of being secured behind a door, wall, rolling grille and/or window when the occupant is absent.

2-2.3.4 **Main Stair**. Provide as required to allow circulation from lobby to all upper floors, and to comply with applicable code egress requirements. If allowable by applicable code, it is preferable to provide a main (monumental) stair that is open to the lobby.

2-2.3.4.1 Function: Central vertical circulation for the building. Means of egress if so designed.

2-2.3.4.2 Adjacency requirements: Adjacent to entry lobby. Connects all floors of the building.

2-2.3.4.3 Furnishings/Fixtures/Equipment (FFE): Stairs shall be steel construction with concrete-filled treads, or cast-in-place concrete construction. Open risers are prohibited. Provide decorative trim and detailing to integrate stair into lobby design. Provide metal railing or other guardrail system between open stair and adjacent spaces. Provide mechanical and electrical systems to comply with applicable codes.

2-2.3.4.4 Finishes:

- Landing floors: porcelain tile, quarry tile, or resilient tile.
- Base: porcelain tile, quarry tile, or resilient cove base.
- Treads: porcelain tile, quarry tile, or resilient treads. Provide slip-resistant nosing if tile is used.
- Risers: painted steel, porcelain tile, or quarry tile
- Walls: Impact resistant gypsum wallboard with vinyl wallcovering or painted finish; Prefinished or painted metal railings.
- Ceiling: suspended acoustical panel ceiling, painted gypsum wallboard, painted veneer plaster, painted Portland cement plaster, or painted underside of precast concrete structural floor planks

2-2.3.4.5 Other requirements: Meet all ADA accessibility requirements.

2-2.3.5 **Toilet Rooms**. Provide one for each gender.

2-2.3.5.1 Function: Single occupant, accessible toilet rooms for use by visitors and CQ.

2-2.3.5.2 Adjacency requirements: Adjacent to entry lobby and CQ station.

2-2.3.5.3 Furnishings/Fixtures/Equipment: Provide in each room.

- Floor or wall mounted toilet
- Urinal in Men's (preferred)
- Wall hung lavatory
- Recessed multifold paper towel dispenser/trash receptacle
- Two roll toilet tissue dispenser
- Sanitary napkin disposal in Women's
- Liquid soap dispenser
- Wall mounted mirror over lavatory
- Wall mounted grab bars at toilet per ADAAG.

2-2.3.5.4 Finishes:

- Floor: Ceramic tile, or porcelain tile
- Base: Coved Ceramic tile, or porcelain tile
- Walls: Ceramic tile, or ceramic tile wainscot and 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.

2-2.3.5.5 Other requirements: Meet all ADA accessibility requirements. Entry door shall have privacy function (F76) lockset.

2-2.3.6 **Janitor Closet**. Provide one on each floor of building. Minimum area 2.8 m^2 each.

2-2.3.6.1 Function: Sink, and storage of cleaning supplies.

2-2.3.6.2 Adjacency requirements: Near toilet rooms on first floor; preferred location on upper floors is adjacent to laundry areas (if laundry is dispersed).

2-2.3.6.3 Furnishings/Fixtures/Equipment: Provide:

- Floor mop sink
- Mop rack for three mops,
- Minimum 1 850 linear mm of wall mounted stainless steel shelving.

2-2.3.6.4 Finishes:
- Floor: ceramic tile, or sealed concrete
- Base: coved ceramic tile base, or resilient cove base (concrete floor)
- 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.

2-2.3.6.5 Other requirements: door shall have classroom function (F84) lockset. Provide power outlet.

2-2.3.7 **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.

2-2.3.7.1 Function: Space for soft drink and snack vending machines (3 vending machines minimum, NIC), and dispensing type ice machine.

2-2.3.7.2 Adjacency requirements: Near entry lobby.

2-2.3.7.3 Furnishings/Fixtures/Equipment: Provide and design the room to accommodate the following:

- One dispensing type ice cube machine 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. Provide water supply and drain connections per ice machine manufacturer's requirements.
- Space to accommodate four full-size soft drink and snack vending machines (government furnished, government installed). Provide water supply and waste connections for 1 vending machine.

2-2.3.7.4 Finishes: Match entry lobby or adjacent corridor or breezeway.

2-2.3.7.5 Other requirements: First floor vending areas shall meet ADA accessibility requirements. Provide floor drain near ice machine(s); locate drain outside of traffic area. If

door is provided, door shall have classroom function (F84) lockset. Provide dedicated power outlets and telephone wall jacks for each vending machine.

2-2.3.8 **Public Telephone Area**. Provide one area.

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 and design the room to accommodate the following:

- Two 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. Offeror shall coordinate with AAFES on installation requirements for payphones.
- Telephone station shall be wall enclosure type with divider panels to enhance acoustical privacy. Enclosure shall have built in shelf for phone book. One station shall meet all ADA requirements for accessibility. Provide capability to mount portable TDD at accessible station. Materials shall be vandal resistant and easily cleaned.

2-2.3.8.4 Finishes: Match entry lobby.

2-2.3.8.5 Other requirements: Meet ADA accessibility requirements.

2-2.3.9 **Mail Room**. Provide one. Room shall be sized to allow access to all rear-loading mailboxes (preferred). Alternative is to provide front loading/front receipt mailboxes remote from the mailroom. Provide minimum 1 850 mm clear between back of mailboxes and any obstructions. To comply with force protection minimum standards, locate away from occupied areas and on perimeter walls. Avoid routing key utilities (including communications, fire detection and alarm, water mains, etc.) through or on common walls to mail room. All walls shall be full height and tightly sealed. Doors accessing the room shall be fully gasketed.

2-2.3.9.1 Function: Secure area for sorting incoming mail and distributing to rear-loading mailboxes (if used), holding area for parcel awaiting pick up.

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 and design room to accommodate:

- Plastic laminate-faced sorting counter (built-in casework) 760 mm deep x minimum 2 450 mm long x 900 mm high.
- United States Postal Service approved mailbox for each resident of the facility, vertical or horizontal (if rear access used) with key type cylinder lock.
- One outgoing mail collection box accessible from public corridor.

2-2.3.9.4 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.

2-2.3.9.5 Other requirements: Provide 900 mm wide door into room; door shall have mortise dormitory function (F13) lockset. Room shall meet ADA requirements for accessibility. Design shall comply with United States Postal Service and Army Postal regulations. Entire room shall have expanded metal fabric in walls and ceiling between gypsum wallboard and studs/joists to provide additional security from intrusion.

2-2.3.10 **Mailbox Access Area**. Provide an area from which residents may access mailboxes to pick up their mail. Access may be from an interior lobby, corridor or dedicated space. Rear loading mailboxes will be loaded from the interior of the mail room (preferred). Alternative is front loading/front receipt mailboxes that may be remote from the mail room. If UEPH is a single building, all mailboxes shall be grouped. If multiple buildings are used, all mailboxes shall be grouped in one common area or mailboxes for occupants of a given building shall be grouped in that building. Mailbox access area must be an interior space.

2-2.3.10.1 Function: Mail pickup area for residents.

2-2.3.10.2 Adjacency requirements: Adjacent to mail room (if rear loading). Located on ground floor, near CQ station and entry lobby.

2-2.3.10.3 Furnishings/Fixtures/Equipment: Provide and design room/area as required to accommodate:

- Plastic laminate-faced counter (built-in casework) minimum 300 mm deep x minimum 1 500 mm long x 900 mm high.
- United States Postal Service approved mailbox for each resident of the facility, vertical or horizontal front loading clusters (unless provided as part of Mail Room) with key type cylinder lock.
- Built in waste container for discarded mail.

2-2.3.10.4 Finishes: Interior: match entry lobby.

2-2.3.10.5 Other requirements: If access area is provided adjacent to corridor, design to maintain adequate clearance for circulation. Design shall comply with United States Postal Service regulations.

2-2.3.11 **Laundry Area(s)**. Common laundry areas, while used in previous designs, are prohibited in this project. Each room module shall have space for a stacked washer and dryer.

2-2.3.12 **Mud Room**. Area to have outside door. Provide a minimum of one Mud Room located on ground floor. Locate boot wash facility at exterior, adjacent to Mud Room entrance.

2-2.3.12.1 Function: Large laundry sinks for cleaning soldier's clothing and gear following field exercises.

2-2.3.12.2 Adjacency requirements: Locate Mud rooms adjacent to other barracks common areas. For noise considerations, it is preferable not to locate Mud rooms adjacent to living units (shared walls).

2-2.3.12.3 Furnishings/Fixtures/Equipment: Provide and design the room to accommodate:

- Provide plastic laminate or solid surface shelf (minimum size:1200 mm x 450 mm) above laundry sinks.
- Provide a minimum of 6 large/deep laundry sinks (leg mounted) constructed of durable, high impact capacity materials. Waste drains shall have easy access for debris/sediment cleanout. Include a common sediment trap / sump.

2-2.3.12.4 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 plaster, painted Portland cement plaster, or painted underside of precast concrete structural floor planks

2-2.3.12.5 Other requirements:
- Conceal utilities from view, but provide easy maintenance access.
- Provide a floor drain; locate outside of traffic area.
- Partitions around Mud rooms shall have minimum STC of 58, and shall extend to underside of floor above.
- Provide 900 mm wide exterior door into room. Door shall have classroom function (F84) locksets (or exit devices if required by applicable code).

2-2.4 **UEPH Support Areas**. Support areas include circulation spaces such as stairs and corridors; mechanical, electrical, and communications spaces; and boot wash facilities. 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. Due to security, climate, and force protection concerns, interior corridors are the preferred means of circulation between living units and other building spaces with a given building. Multiple buildings without weather protection between buildings is an acceptable scheme.

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 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 wallcovering or painted finish.
- 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: Meet ADA requirements for accessibility.

2-2.4.2 **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 required within buildings.

2-2.4.2.1 Function: Circulation and means of egress.

2-2.4.2.2 Adjacency requirements: Adjacent to corridors. Connects all floors of the building.

2-2.4.2.3 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.

2-2.4.2.4 Finishes:

- Landing floor: 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

2-2.4.2.5 Other requirements: Stairs shall comply with disabled accessibility requirements of applicable codes and the ADA. Railings shall be painted galvanized steel, or prefinished aluminum.

2-2.4.3 **Exterior Stairs**. Provide as required for access to ground floor of UEPH only. Ground floor of UEPH buildings (with room modules) shall be 1 000 mm above grade for increased privacy and security. Due to security, climate, and force protection concerns, exterior (exposed to weather) stairs are not permitted between floors. Exterior stairs are not required to be covered.

2-2.4.3.1 Function: Circulation and means of egress.

2-2.4.3.2 Adjacency requirements: None.

2-2.4.3.3 Furnishings/Fixtures/Equipment (FFE): Exterior stairs shall be cast-in-place concrete construction. Open risers and metal grating treads are prohibited.

2-2.4.3.4 Finishes: Landing floor: sealed concrete with slip-resistant finish texture.

- Base: none
- Treads: Sealed concrete with slip-resistant finish texture. Provide cast-in-place slip-resistant nosing.
- Risers: Sealed concrete.
- Walls: exterior wall materials at buildings, concrete where serving guardrail function.
- Ceiling: painted exterior gypsum soffit board, painted Portland cement plaster, or painted underside of concrete structure above

2-2.4.3.5 Other requirements: Stairs shall comply with accessibility requirements of applicable codes and the ADA. Railings shall be prefinished/anodized aluminum. Ferrous metals, including galvanized steel are prohibited.

2-2.4.4 **Mechanical Areas**. Provide dedicated interior spaces for plumbing, fire protection, and HVAC equipment. Location of mechanical equipment on the exterior of buildings or above grade on site is prohibited. Size and locate rooms to allow removal of any piece of equipment without the disassembly or removal of other equipment. Design of mechanical areas shall facilitate operation and maintenance activities. Provide floor openings and vertical shaft spaces as necessary. Where travel distance within Mechanical Rooms exceeds 10 meters to primary entrance, provide a secondary exit path through a door or hatch.

2-2.4.4.1 Function: Mechanical support spaces for the UEPH building(s).

2-2.4.4.2 Adjacency requirements: Locate main mechanical room on ground floor with door pair opening to exterior. Mechanical support spaces shall not be used for storage or other purposes; access to mechanical spaces will be limited to authorized personnel. Locate air intakes and openings in exterior walls to comply with force protection standards. Do not locate mechanical equipment rooms adjacent to living units (shared walls).

2-2.4.4.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-2.4.4.4 Finishes:

- Floor: sealed concrete
- Base: resilient cove base
- Walls: painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units
- Ceiling: none required, however, exposed metal decking and/or structural steel shall be painted.

2-2.4.4.5 Other requirements: Locate air intake and exhaust openings to provide optimum indoor air quality. Roof mounted equipment shall not be used. Doors shall have storeroom function (F86) locksets.

2-2.4.5 **Electrical Rooms**. Provide dedicated interior spaces 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 building, with one room per floor in large floor plan UEPH.

2-2.4.5.1 Function: Electrical support spaces for the UEPH building(s).

2-2.4.5.2 Adjacency requirements: Locate main electrical equipment room on ground floor with door opening to the exterior. Electrical rooms on upper floors should be located to allow efficient distribution. Electrical rooms shall not be used for storage or other purposes; access to electrical rooms will be limited to authorized personnel.

2-2.4.5.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-2.4.5.4 Finishes:

- Floor: sealed concrete
- Base: resilient cove base
- Walls: painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units
- Ceiling: none required

2-2.4.5.5 Other requirements: Electrical service to the building shall be underground. Comply with force protection standards for location of exterior, pad mounted transformers. Door shall have storeroom function (F86) lockset.

2-2.4.6 **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 2 150 mm x 3 050 mm. Provide minimum of one communication room per Barrack building on first floor. If a single main communication room serves the entire 300 occupants, its size shall be a minimum of 3250 mm X 3900 mm. Where cable lengths will exceed EIA/TIA 569.A maximum travel distance, provide secondary communication rooms.

2-2.4.6.1 Function: Telephone and cable television support spaces for the UEPH building.

2-2.4.6.2 Adjacency requirements: Provide a main communications room on ground floor for entrance point of services. Locate additional rooms 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 authorized personnel. Access to communications rooms shall be from public corridors on the interior of the building.

2-2.4.6.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-2.4.6.4 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, or painted underside of concrete structure above

2-2.4.6.5 Other requirements: Communication service to the building shall be underground. Provide minimum 900 mm wide door with storeroom function (F86) lockset. Provide floor

openings and vertical shaft spaces as necessary. Provide a minimum of three 102 mm diameter empty conduits between vertically stacked communication rooms. Communication rooms shall be compliant with ANSI EIA/TIA 569-A.

2-2.4.7 **Boot Wash Areas**. Provide paved exterior boot wash area at mudroom entrance(s) to the UEPH building(s) or SCB. Design area for use by one soldier at a time.

2-2.4.7.1 Function: Exterior area for washing footgear prior to entering building.

2-2.4.7.2 Adjacency requirements: Locate on ground floor building exterior, adjacent to Mud Rooms.

2-2.4.7.3 Furnishings/Fixtures/Equipment: See detail in Attachment 2 (plate A113).

- Provide drainage assembly with aluminum or stainless steel grating, with non-slip surface, supported by cast-in-place frame and concrete sump. Strainer shall hold debris in sump.
- Provide freeze-proof wall hydrant with aerator nozzle and control valve mounted approximately 600 mm above grating. Top of grating and concrete structure shall align with adjacent concrete sidewalk.
- Provide concrete sidewalk between boot wash area and entrance sidewalk.

2-2.4.7.4 Finishes: refer to exterior building material requirements.

2-2.4.7.5 Other requirements: Provide adequate drainage away from building.

2-3 COMPANY OPERATIONS FACILITIES (COF) FUNCTIONAL AND AREA REQUIREMENTS.

The company operations facilities (COF) building(s) shall consist of administrative areas and supply areas for each company, support spaces, and common locker/shower facilities (refer to Attachment 3 for drawings of previous designs). A range of 11-16 personnel will staff each COF. Provide facilities for 6 large companies housed in three “duplex” buildings. Net areas of all spaces are the same for each company. Total gross area of each COF duplex shall not exceed 1 860 m2. Total gross building area of all COF buildings shall not exceed 5 580 m^2. Buildings shall be two stories in height. Supply and locker/shower areas shall be located on the first floor; administrative functions shall be located on the second floor. COF’s are intended for occupancy only by able-bodied military so an elevator is not required for accessibility. However, designs should incorporate general ADA requirements for accessibility, where practicable.

Each company must function independently, and must be secured from other COFs. Provide separate exterior entrances to the administrative and supply areas of each COF. Common mechanical rooms may be used, but mechanical and electrical systems must provide each company with independent operation and control. Locker/shower spaces may be combined and shared by all companies in a building, or combined locker/shower spaces may be located in a separate building. To the greatest extent possible, buildings shall be arranged to allow future reconfiguration of company sizes.

Net room sizes listed below are based on the previous large COF facilities constructed on Echo Block at North Fort Lewis (see Attachment 3). The space tabulation spreadsheet (see

Attachment 3) is consistent with the room areas that are listed in this chapter. All areas are the minimum requirement. Offerors shall meet or exceed the specific minimum areas presented. Areas without specific area designation shall be designed for functional use and conformance with building and life safety codes. Regardless of the net room areas presented, the gross building area may not exceed the programmatic limitations listed above.

All furnishings listed below are Government furnished and not in contract unless indicated otherwise. Furnishings listed for each room are provided as general guidance for component type and size to assist with room configuration and design. All furnishings and room design shall be coordinated with the required Building Related Interior Design (BRID) and Furniture Related Interior Design (FRID) products described in section 00810 of this RFP.

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. Although only able-bodied military personnel will be on staff, all administrative spaces except private shower rooms shall comply with UFAS and ADA requirements (this requirement applies whether administrative spaces are located on first or second floor). Provide the following areas for each company:

2-3.1.1 **Company Commander (CO)**. Provide one; 13.6 m^2. Room shall be accessed through the Admin Office. Occupants: 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: Design room to accommodate Government Furnished/Government Installed (GFGI):

- one desk 1830 x 915 with return 1070 x 610,
- one bookcase 915 x 2080 x 510,
- two legal-size four-drawer file cabinets,
- one conference table 760 x 1675,
- four side chairs,
- one desk chair.

2-3.1.1.4 Finishes:

- Floor: carpet tile
- Base: resilient base or wood base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-3.1.1.5 Other requirements: Provide 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.

2-3.1.2 **Executive Officer (XO)**. Provide one; 8.9 m^2. 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: Design room to accommodate GFGI:

- one desk 1675 x 915 with return 1070 x 610,
- one bookcase 915 x 2080 x 510,
- two legal-size four-drawer file cabinets,
- one side chair
- one desk chair.
- Provide a floor anchor for one GFGI security safe, approximate dimensions 410 H x 380 W x 350 D, weight 55 kg. Coordinate anchor location with furniture layout; refer to paragraph 5-6.6.

2-3.1.2.4 Finishes:
Floor: carpet tile
Base: resilient base or wood base
Walls: painted gypsum wallboard or painted veneer plaster
Ceiling: suspended acoustical panel ceiling

2-3.1.2.5 Other requirements: Provide 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.

2-3.1.3 **First Sergeant (1 SGT)**. Provide one; 10.3 m^2. 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: Design room to accommodate GFGI:

- one desk 1675 x 915 with return 1070 x 610,
- one bookcase 915 x 2080 x 510,
- two legal-size four-drawer file cabinets,
- two side chairs
- one desk chair.

- Provide a floor anchor for one GFGI security safe, approximate dimensions 410 H x 380 W x 350 D, weight 55 kg. Coordinate anchor location with furniture layout; refer to paragraph 5-6.6.

2-3.1.3.4 Finishes:
- Floor: carpet tile
- Base: resilient base or wood base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-3.1.3.5 Other requirements: Provide 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.

2-3.1.4 **Training Officer**. Provide one; 8.6 m^2. 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: Design room to accommodate GFGI:

- one desk 1675 x 915 with return 1070 x 610,
- one bookcase 915 x 2080 x 510,
- two legal-size four-drawer file cabinets,
- two side chairs
- one desk chair.
- Provide a floor anchor for one GFGI security safe, approximate dimensions 410 H x 380 W x 350 D, weight 55 kg. Coordinate anchor location with furniture layout; refer to paragraph 5-6.4.

2-3.1.4.4 Finishes:
- Floor: carpet tile
- Base: resilient base or wood base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-3.1.4.5 Other requirements: Provide 900 mm wide door into room; door shall have entry function (F81) lockset. Exterior window is desirable. Partitions shall have minimum STC rating of 55.

2-3.1.5 **Admin Office**. Provide one area; minimum 39.9 m^2, including interior circulation. Room shall be accessed through the Waiting Area. Occupants: 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. Adjacent to or near Conference Room. Near main entrance to Administrative Area.

2-3.1.5.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- 2 clerk desks 1525 x 760 with returns 1070 x 610 and desk chairs
- Provide reception counter (built-in casework) with solid surfacing, minimum 1 800 mm long separating the Admin Office from the Waiting Area. The counter shall be 1 000 mm high x 600 mm deep.
- Provide a floor anchor for one GFGI security safe, approximate dimensions 410 H x 380 W x 350 D, weight 55 kg. Coordinate anchor location with furniture layout; refer to paragraph 5-6.6.

2-3.1.5.4 Finishes:
- Floor: carpet tile
- Base: resilient base or wood base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-3.1.5.5 Other requirements: Provide 900 mm wide entry door into room from Waiting Area; door shall have entry function (F81) lockset. Exterior window is desirable.

2-3.1.6 **Administrative Storage**. Provide one; minimum area 1.7 m^2 . 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:

2-3.1.6.4 Finishes:
- Floor: carpet 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 **Administrative Area 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 1 800 mm. Administrative area corridor shall be capable of being secured from exterior entrances and from any adjacent public, unsecure 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, unsecure 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 standard height and one accessible electric water cooler. Provide fire extinguishers in semi-recessed fire extinguisher cabinets to comply with applicable codes.

2-3.1.7.4 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: All exterior doors shall have an exit device Type 5 function 8 lockset with lever trim.

2-3.1.8 **Waiting Area**. Provide one area, approximately 8.0 m^2 incorporated into the Administrative Area 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.

2-3.1.8.1 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 if room configuration allows area for seating. Provide one 1 200 mm high x 1 800 mm wide wall mounted bulletin board.

2-3.1.8.4 Finishes: Match Administrative Area Corridor.

2-3.1.8.5 Other requirements:

2-3.1.9 **Entry Vestibule**. Provide at main exterior entrance to Administrative Area Corridor.

2-3.1.9.1 Function: Primary entry point into the COF and 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 Finishes:

- Floor: Provide recessed entry mat full depth of vestibule x full width of doors; porcelain tile, or quarry tile in remainder of room.
- 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 (optional) corridor sides of vestibule. Additional aluminum storefront area (sidelights, transoms) is desirable. Provide minimum 1 800 mm deep exterior covered area (entry porch) full width of storefront. Provide location for company identification signage on exterior wall above or adjacent to entrance.

2-3.1.10 **Platoon Office**. Provide five, each 8.0 m^2 to 9.0 m^2. Offices shall be accessed directly from the Administrative Area Corridor, or through a common space that is accessed from the Administrative Area Corridor. Occupants: 1 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. Near Admin Office.

2-3.1.10.3 Furnishings/Fixtures/Equipment: Design each office to accommodate GFGI:

- one desk 1675 x 915 with return 1070 x 610,
- one side chair and one desk chair

2-3.1.10.4 Finishes:

- Floor: vinyl composition tile
- 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.

2-3.1.11 **Conference Room**. Provide one; 41.6 m^2. Room shall be accessed from the Waiting Area (preferable), or through the Admin Office, or from the Administrative Area Corridor. Admin clerks shall have visual control of Conference Room door (preferred). 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:

- one marker board (minimum 2 400 mm wide x 1 200 mm high)
- one 2 400 mm wide wall mounted pull-down projection screen.

Design room to accommodate GFGI:

- one conference table, boat shaped, 1 220 by 4 250
- 20 side chairs

2-3.1.11.4 Finishes:
- Floor: carpet tile
- 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.

2-3.1.12 **Conference Room Storage**. Provide one; minimum area 1.7 m^2. Room shall be accessed from the Conference Room.

2-3.1.12.1 Function: Closet for storage of folding tables, display easels, etc.

2-3.1.12.2 Adjacency requirements: Adjacent to Conference Room.

2-3.1.12.3 Furnishings/Fixtures/Equipment: none

2-3.1.12.4 Finishes:
- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling, painted gypsum wallboard, or painted veneer plaster

2-3.1.12.5 Other requirements: Door(s) shall have classroom function (F84) lockset.

2-3.1.13 **Men's Toilet/Shower**. Provide one private toilet room with single shower stall. Room shall be sized and configured to comply with ADA accessibility requirements, except for shower stall and access to shower stall. Room shall be accessed from Administrative Area Corridor.

2-3.1.13.1 Function: Men's single-occupant toilet, lavatory and shower for use by staff and visitors. Private shower and dressing room for use by company leadership after physical training.

2-3.1.13.2 Adjacency requirements: Adjacent to Administrative Area Corridor. Near Women's Toilet/Shower. However, Men's and Women's Toilet/Shower may be on separate floors if space planning requires.

2-3.1.13.3 Furnishings/Fixtures/Equipment (FFE): Provide and design room to accommodate:

- one floor mounted toilet,
- one wall-hung lavatory,
- mirror with shelf above lavatory,
- paper towel dispenser/waste receptacle,
- soap dispenser,
- toilet tissue dispenser,
- wall mounted grab bars at toilet.
- Shower stall with single piece drain pan, single handle mixing valve and shower head
- Shower shall have recessed ceramic soap/towel holder and wall mounted grab bar
- Shower curtain rod with vinyl shower curtain
- four towel/robe hooks,
- wall mounted full-length mirror 600 mm x 1 800 mm

2-3.1.13.4 Finishes:
- Floor: porcelain tile, or ceramic tile.
- Base: porcelain tile, or ceramic tile.
- Walls: ceramic tile
- Shower: ceramic tile all walls
- 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. Provide floor drain at dressing area located outside of circulation path.

2-3.1.14 **Women's Toilet/Shower**. Provide one private toilet room. Room shall be sized and configured to comply with ADA accessibility requirements, except for shower stall and access to shower stall. Room shall be accessed from Administrative Area Corridor.

2-3.1.14.1 Function: Women's single-occupant toilet and lavatory, for use by staff and visitors. Private shower and dressing room for use by company leadership after physical training.

2-3.1.14.2 Adjacency requirements: Adjacent to Administrative Area Corridor. Near Men's Toilet/shower. However, Men's and Women's Toilet/Shower may be on separate floors if space planning requires.

2-3.1.14.3 Furnishings/Fixtures/Equipment (FFE): Provide and design room to accommodate:

- 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,
- wall mounted grab bars at toilet.
- Shower stall with single piece drain pan, single handle mixing valve and shower head
- Shower shall have recessed ceramic soap/towel holder and wall mounted grab bar
- Shower curtain rod with vinyl shower curtain
- four towel/robe hooks,
- wall mounted full-length mirror, 600 mm x 1 800 mm

2-3.1.14.4 Finishes:

- Floor: porcelain tile, or ceramic tile.
- Base: porcelain tile, or ceramic tile.
- Walls: ceramic tile
- Shower: ceramic tile all walls
- 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. Provide floor drain at dressing area located outside of circulation path.

2-3.1.15 **Janitor Closet**. Provide one. Minimum area 4.0 m^2. Room shall be accessed from Administrative Area Corridor.

2-3.1.15.1 Function: Sink and storage of cleaning supplies, soap, and paper products.

2-3.1.15.2 Adjacency requirements: Adjacent to Administrative Area Corridor. Near Toilet/Shower rooms.

2-3.1.15.3 Furnishings/Fixtures/Equipment (FFE): Provide and design room to accommodate:

- one floor mounted mop sink,
- mop rack for three mops,
- minimum 1 500 linear mm of wall mounted stainless steel shelving.

2-3.1.15.4 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

2-3.1.15.5 Other requirements: Door shall have classroom function (F84) lockset.

2-3.1.16 **Communication Room**. Provide dedicated interior room(s) for communication distribution equipment. A main communication room shall be provided on the ground floor. If this room is accessed directly from the exterior it may serve both companies located within the building (two companies in duplex buildings). If the main communication room is accessed from an interior corridor, two separate rooms shall be provided with each dedicated to one company. Communication rooms shall not be combined with mechanical or electrical

rooms. Room(s) may be accessed from exterior, Administrative Area Corridor, public unsecure corridor (if provided), or Equipment Maintenance Area. Main communication room(s) shall have minimum size of 3050 mm x 3650 mm. Provide additional communication rooms as needed (minimum one per floor); to ensure that all spaces having telephone or computer data outlets shall be located to provide a maximum cable length of 90 m between the outlet and communication room. Minimum dimensions of secondary communication rooms shall be 2750 mm x 3050 mm. Provide floor openings and vertical shaft spaces as necessary.

2-3.1.16.1 Function: Telephone, data network, and cable television entrance point and support spaces for the COF.

2-3.1.16.2 Adjacency requirements: Locate to allow efficient distribution. Communication rooms shall not be used for storage or other purposes; access will be limited to authorized personnel.

2-3.1.16.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-3.1.16.4 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

2-3.1.16.5 Other requirements: Room shall have minimum 900 mm wide door with storeroom function (F86) lockset. Air conditioning shall be provided for the Main Communications Room. Communication rooms shall be compliant with ANSI EIA/TIA 569-A.

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. Individual TA-50 gear lockers shall be provided for company soldiers. Main entrance to supply areas will be from paved service area; service area will be used for loading company equipment on and off of 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; accessibility consistent with the ADA is not required. However, incorporation of ADA compliant accessible design is preferred. Steel stud and gypsum wallboard, or concrete masonry unit, 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. **Equipment Maintenance Area**. Provide one area. Minimum area: 95.6 m^2. Main exterior entry shall open to paved service yard. Provide interior access from COF administrative area via administrative area corridor, stairs, or public unsecure corridor connecting other COFs in the building.

2-3.2.1.1 Function: Equipment cleaning, repair and access to COF storage spaces.

2-3.2.1.2 Adjacency requirements: Adjacent to exterior paved area for loading equipment on large vehicles. Adjacent to Arms Vault, TA-50 Lockers, and storage spaces. Adjacent to, or near Administrative Area.

2-3.2.1.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate:

- stainless steel equipment cleaning sinks 710 mm x 710 mm x 170 mm deep, locate near exterior doors.
- fire extinguishers in semi-recessed fire extinguisher cabinets to comply with applicable codes. (extinguishers are GFGI)
- Shelving, minimum 3000 linear mm. (all shelving is N.I.C.)

2-3.2.1.4 Finishes:

- Floor: sealed concrete
- Base: resilient cove base
- Walls: painted impact resistant gypsum wallboard or painted concrete masonry units at exterior walls, walls separating COFs and walls separating storage areas from Equipment Maintenance.
- Painted concrete walls will separate Arms Storage from Equipment Maintenance.
- Ceiling: painted exposed structure.

2-3.2.1.5 Other requirements: Provide an uncovered mud removal area for equipment cleaning outside of the building at the paved service yard, near the Equipment Maintenance Area. This area will consist of freeze-proof hose bibbs mounted 600 mm above a concrete slab with a removable non-slip grate cover. The slab should be designed to allow water to drain to the storm drainage system, and allow easy collection and disposal of mud removed during the cleaning process. Provide the following number of hose bibbs: 16 for large company. Provide a pair of 900 mm wide hollow metal doors opening onto the paved service yard; doors shall have hold open devices. All entry doors into Equipment Maintenance Area shall have 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).

2-3.2.2. **Arms Vault**. Provide one. Area: Large company 55.8 m^2. (Note: Size is an increase from previous design). Construction of Arms Vault shall comply with paragraph 5-6.2. Room shall be accessed from Equipment Maintenance area. One part time occupant.

2-3.2.2.1 Function: Storage and issue of weapons. **Note:** On an occasional basis small volumes of ammunition and/or other explosives will be temporarily stored in this area. Therefore, the High-Hazard occupancy Group H-1 requirements of the International Building Code will apply. Assume that explosive storage will not be greater than 2 pounds, and will be stored in an approved cabinet, so H-1 and B occupancies may occur within the same building. Provide signage on the interior and exterior of the Arms Vault that states/limits incidental, overnight storage to not more than 2 pounds.

2-3.2.2.2 Adjacency requirements: Adjacent to Equipment Maintenance Area

2-3.2.2.3 Furnishings/Fixtures/Equipment: Provide arms rack anchor rings on all walls inside Arms Vault; refer to paragraph 5-6.4.6. Arms racks are not in contract. Provide explosives storage cabinet meeting IBC and NFPA requirements for small volume storage.

2-3.2.2.4 Finishes:

- Floor: sealed concrete
- Base: none.
- Walls: painted concrete
- Ceiling: painted concrete.

2-3.2.2.5 Other requirements: Intrusion detection system (ICIDS) is required, see Chapter 9 paragraph 9.6. Provide humidity control meeting Army requirements for weapons storage.

2-3.2.3. **Unit Storage**. Provide one area. Minimum area: 98.8 m^2 Exterior entry shall open to paved service yard. Provide access from Equipment Maintenance Area and from exterior service yard.

2-3.2.3.1 Function: Secure storage of general unit supplies files, records and miscellaneous dry goods. Contents do not present a high risk of fire.

2-3.2.3.2 Adjacency requirements: Adjacent to exterior paved area for loading equipment on large vehicles. Adjacent to Equipment Maintenance Area.

2-3.2.3.3 Furnishings/Fixtures/Equipment: none

2-3.2.3.4 Finishes:

- Floor: sealed concrete
- Base: resilient cove base
- Walls: Wire mesh partitions will separate Unit Storage area from Equipment Maintenance and adjacent storage areas within the COF. 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 900 mm wide hollow metal door opening onto the exterior; door shall have hold open device and entry function (F82) lockset with auxiliary deadlock (thumb turn inside, keyed cylinder outside), or function F08 exit device (if exit devices are required by code). Provide a pair of 900 mm wide swinging doors with keyed cylinder lock in partition wall at Equipment Storage. Partitions shall extend to underside of structure above.

2-3.2.4. **General Storage**. Minimum area: 37.0 m^2. General Storage was provided in previous designs, however this space will be combined with the TA-50 Gear Storage room in this project to provide the maximum possible floor area for TA-50 lockers.

2-3.2.4.1 Function: deleted

2-3.2.4.2 Adjacency requirements: na

2-3.2.4.3 Furnishings/Fixtures/Equipment: na

2-3.2.4.4 Finishes: na

2-3.2.4.5 Other requirements: na

2-3.2.5. **Nuclear, Biological and Chemical Equipment (NBC) Storage**. Provide one area. Minimum area: 15.8 m^2. Provide access from Equipment Maintenance Area.

2-3.2.5.1 Function: Secure storage of equipment for use in defense of nuclear, biological or chemical warfare.

2-3.2.5.2 Adjacency requirements: Adjacent to Equipment Maintenance Area.

2-3.2.5.3 Furnishings/Fixtures/Equipment: none.

2-3.2.5.4 Finishes:
- Floor: sealed concrete
- Base: resilient cove base
- Walls: Partitions will separate NBC Storage area from Equipment Maintenance and adjacent storage areas within the COF. Provide painted impact resistant gypsum wallboard, or painted concrete masonry units at exterior walls and walls separating NBC Storage from adjacent COFs.
- Ceiling: painted exposed structure.

2-3.2.5.5 Other requirements: Provide 900 mm wide swinging door with keyed cylinder lock in partition at Equipment Storage. Provide partitions to underside of structure above.

2-3.2.6. **Communications Storage**. Provide one area. Minimum area: 15.8 m^2. Provide access from Equipment Maintenance Area.

2-3.2.6.1 Function: Secure storage of radios and communications field gear.

2-3.2.6.2 Adjacency requirements: Adjacent to Equipment Maintenance Area.

2-3.2.6.3 Furnishings/Fixtures/Equipment: none.

2-3.2.6.4 Finishes:
- Floor: sealed concrete
- Base: resilient cove base
- Walls: Partitions will separate Communications Storage area from Equipment Maintenance and adjacent storage areas within the COF. Provide painted impact resistant gypsum wallboard, or painted concrete masonry units at exterior walls and walls separating Communications Storage from adjacent COFs.
- Ceiling: painted exposed structure.

2-3.2.6.5 Other requirements: Provide 900 mm wide swinging door with keyed cylinder lock in partition at Equipment Storage. Provide partitions to underside of structure above.

2-3.2.7. **TA-50 Storage**. Provide one area. Size and configure area to accommodate the maximum number of TA-50 lockers per company. Allow minimum 1 200 mm clearance between parallel rows of lockers and minimum 900 mm between open locker doors and

obstructions. Provide access from Equipment Maintenance Area if located on first floor. Provide additional exits as required by applicable codes.

2-3.2.7.1 Function: Gear lockers for storage of individual soldier's TA-50 field gear.

2-3.2.7.2 Adjacency requirements: Adjacent to Equipment Maintenance Area if located on first floor.

2-3.2.7.3 Furnishings/Fixtures/Equipment: Provide TA-50 gear lockers, nominal locker size: 1 220 mm W x 610 mm D x 1830 mm H; refer to Section 00890, 10505 Metal Lockers and Locker Benches, for requirements.

2-3.2.7.4 Finishes:

- Floor: sealed concrete
- Base: resilient cove base.
- Walls: Partitions will separate TA-50 Storage area from Equipment Maintenance and adjacent storage areas within the COF. TA- 50 Storage room shall be separately securable from the remainder of the COF. Provide painted impact resistant gypsum wallboard, or painted concrete masonry units at exterior walls and walls separating TA-50 Storage from adjacent COF occupancies.
- Ceiling: painted exposed structure.

2-3.2.7.5 Other requirements: Provide 900 mm wide swinging door(s) with keyed cylinder lock in partition at TA-50 Storage. Provide partitions to underside of structure above.

2-3.3 **COF Support Areas**. Provide the following areas in each COF building. Stairs shall be provided in two-story structures. Only able-bodied personnel will occupy COF support areas; accessibility for the disabled is not required, however, stairs and corridors shall comply with general ADA and UFAS accessibility requirements and applicable codes.

2-3.3.1. **Mechanical Room(s)**. Provide dedicated areas for mechanical equipment. Each company shall have independent operation and control of HVAC system for its own spaces, but co-located 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 authorized personnel. Size and locate room(s) to allow equipment removal and maintenance. Provide floor openings and vertical shaft spaces as necessary.

2-3.3.1.1 Function: Spaces for HVAC, water heating, and other plumbing and mechanical equipment.

2-3.3.1.2 Adjacency requirements: Locate to allow efficient distribution. Main mechanical room shall be located on the ground floor with a 1 800 mm wide door pair opening to the exterior. Mechanical rooms on other floors shall be accessed from corridors or dedicated access stairs.

2-3.3.1.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-3.3.1.4 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; exposed deck and structure shall be painted.

2-3.3.1.5 Other requirements: Doors shall have storeroom function (F86) locksets.

2-3.3.2. **Electrical Room(s)**. Provide dedicated areas for electrical equipment. The main electrical room for the building shall contain the service entrance, metering equipment, and main distribution panel. Metering equipment shall be integrated and coordinated with the existing UMCS/EMCS system. Electrical rooms shall not be used for storage or other purposes. Access will be limited to 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. Main electrical room(s) shall be located on the ground floor and accessed from the exterior.

2-3.3.2.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-3.3.2.4 Finishes:

- Floor: sealed concrete
- Base: resilient cove base
- Walls: painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units
- Ceiling: none required; exposed deck and structure shall be painted.

2-3.3.2.5 Other requirements: Electrical service to buildings shall be underground. Doors shall be minimum 900 mm wide, open to the exterior, and have storeroom function (F86) locksets.

2-3.3.3 **Interior Stairs**. Provide as required to allow circulation to upper floor of the building, and to comply with applicable code egress requirements. At least one stair connecting second and first floors shall be an interior stair.

2-3.3.3.1 Function: Circulation and means of egress.

2-3.3.3.2 Adjacency requirements: Adjacent to corridors. Connects all floors of the building.

2-3.3.3.3 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.

2-3.3.3.4 Finishes:

- Landing floor: 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, or painted Portland cement plaster.

2-3.3.3.5 Other requirements: Stairs shall comply with ADA accessibility requirements and applicable codes. Railings shall be painted steel, or prefinished aluminum.

2-3.3.4 **Exterior Stairs**. Provide as required to allow circulation to upper floor of the building. Comply with applicable code egress requirements. Exterior stairs may be open or covered.

2-3.3.4.1 Function: Circulation and means of egress.

2-3.3.4.2 Adjacency requirements: Adjacent to corridors. Connects all floors of the building.

2-3.3.4.3 Furnishings/Fixtures/Equipment (FFE): Exterior stairs shall be cast-in-place concrete construction. Open risers and metal grating treads are prohibited.

2-3.3.4.4 Finishes: Landing floor: sealed concrete with slip-resistant finish texture.

- Base: none required
- Treads: sealed concrete with slip-resistant cast-in-place nosing
- Risers: sealed concrete
- Walls: exterior wall materials
- Ceiling: painted exterior gypsum soffit board, painted Portland cement plaster, or painted underside of concrete structure above

2-3.3.4.5 Other requirements: Stairs shall comply with ADA accessibility requirements and applicable codes. Railings shall be prefinished aluminum.

2-3.4 **Common Locker/Shower Areas**. Provide one group of men's and one group of women's common locker/shower areas per company. Locate on ground floor. Quantities of lockers and plumbing fixtures for men and women vary by company size. At minimum provide the quantity of lockers and fixtures indicated in the table below. Soldiers will use locker rooms before and after physical training. Accessibility by disabled persons is not required. Provide exterior entrance(s) with adjacent boot wash area. Additional entrances may be provided from a common public corridor in the COF. Entrances shall be separate and distinct from the entrances to company supply and administrative areas. Entrance vestibules shall be provided and shall provide visual privacy into the spaces. It is preferred that the locker rooms be adjacent and that a demising wall or door be included that allows the number of toilet stalls and shower stalls to be adjusted between genders if the composition of the occupying unit changes.

Table 2.1 Minimum Locker Room Plumbing Fixture and Locker Quantities:

	MEN	**WOMEN**
Lockers	70	10
Toilets	2	2
Urinals	2	-
Lavatories	2	1
Showers	8	2

2-3.4.1 **Women's Locker Room**. Provide one or more rooms, sized to accommodate the number of lockers and plumbing fixtures required for each company served. Provide exterior entrance(s) with airlock vestibule. Locker room may also 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. Ground floor exterior entrance.

2-3.4.1.3 Furnishings/Fixtures/Equipment (FFE): Provide and design room to accommodate:

- floor mounted toilets,
- wall-hung lavatories,
- ceramic tile shower enclosures
- double tier lockers
- toilet partitions at each toilet
- 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;
- two double pin robe hooks for each shower;
- one robe hook on each toilet partition door;
- one sanitary napkin and tampon vending machine.
- provide 300 mm of locker room bench per 5 lockers provided.
- one wall mounted electric hair dryer per each lavatory (or fraction thereof); mount adjacent to mirrors.
- Provide fire extinguishers in semi-recessed fire extinguisher cabinets to comply with applicable codes

2-3.4.1.4 Finishes:

- Floor: porcelain tile, or ceramic tile.
- Base: porcelain tile, or ceramic tile.
- Walls: ceramic tile, or 1 800 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: Provide floor drains in locker rooms; floor drains and/or trench drains in shower area.

2-3.4.2 **Men's Locker Room**. Provide one or more rooms, sized to accommodate the number of lockers and plumbing fixtures required for each company served. Provide exterior entrance(s) with airlock vestibule. Locker room may also 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 and design rooms to accommodate:

- floor mounted toilets,
- wall-hung lavatories,
- wall-hung urinals,
- ceramic tile shower enclosures
- double tier lockers
- toilet partitions at each toilet
- 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;
- two double pin robe hooks for each shower;
- one robe hook on each toilet partition door;
- provide 300 mm of locker room bench per 5 lockers provided.
- 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 1 800 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: Provide floor drains in locker rooms; floor drains and/or trench drains in shower area.

2-3.4.3 **Janitor Closet**. Provide one at each group of Locker Rooms. Minimum area: 4.0 m^2. Room shall be accessed from a common interior space (corridor or vestibule); access directly from Men's or Women's Locker Room is not acceptable.

2-3.4.3.1 Function: Sink and storage of cleaning supplies, soap, paper products.

2-3.4.3.2 Adjacency requirements: Adjacent to Men's and Women's locker rooms.

2-3.4.3.3 Furnishings/Fixtures/Equipment (FFE): Provide one floor mounted mop sink, mop rack for three mops, and minimum 3 000 linear mm of wall mounted stainless steel shelving.

2-3.4.3.4 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 Portland cement plaster

2-3.4.3.5 Other requirements: Door shall have classroom function (F84) lockset.

2-3.4.4. **Boot Wash Areas**. Provide paved exterior boot wash area at each exterior entrance to the COF Administrative Area. Design area for use by one soldier at a time.

2-3.4.4.1 Function: Exterior area for washing footgear prior to entering building.

2-3.4.4.2 Adjacency requirements: near entrance to locker rooms.

2-3.4.4.3 Furnishings/Fixtures/Equipment: Provide drainage assembly: Removable aluminum or stainless steel grating, with non-slip surface, supported by cast-in-place perimeter frame with concrete sump. See details on plate A113 in Attachment 2. Filtered runoff shall be piped to storm drainage system. Provide freeze-proof wall hydrant with aerator nozzle with control valve mounted approximately 600 mm above grating. Top of grating and concrete structure shall align with adjacent concrete sidewalk. Provide concrete sidewalk between boot wash area and entrance sidewalk.

2-3.4.4.4 Finishes: refer to exterior building material requirements.

2-3.4.4.5 Other requirements: Provide adequate surface drainage away from building.

2-4 BATTALION HEADQUARTERS FUNCTIONAL AND AREA REQUIREMENTS.

The Battalion Headquarters (BN HQ) building shall consist of administrative areas, soldier services (chaplain) areas, classrooms, and support spaces. Provide facilities for large battalions. Total gross area of each battalion HQ shall not exceed 1 524 m^2. Each battalion

shall occupy a separate building. Buildings shall be two stories in height. All classroom area, service core, soldier support offices, personnel administration clerk (PAC), and S-4 offices shall be located on the first floor; The command section, service core, S-1, S-2, and S-3 offices may be located on the second floor. One elevator is required. 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-2, S-3, S-4, and PAC). Soldiers will visit the facility to conduct administrative business, attend training classes, or meet with support personnel (Chaplain's office). 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, communication, and elevator machine rooms) shall comply with ADA accessibility requirements. In addition, fully accessible shower rooms shall be provided.

Net room sizes listed below are based on the previous (FY 03) Battalion Headquarters facilities designed for Echo Block at North Fort Lewis (see Attachment 4). The space tabulation spreadsheet (see Attachment 4) is consistent with the room areas that are listed in this chapter. All areas are the minimum requirement. Offerors shall meet or exceed the specific minimum areas presented. Areas without specific area designation shall be designed for functional use and conformance with building and life safety codes. Regardless of the net room areas presented, the gross building area may not exceed the programmatic limitations listed above.

NOTE: This Battalion Headquarters building is located on the south side of the Training Area. For discussion of the Battalion Headquarters (General Administration (GA) variant) that is located on the north side of the Training Area, refer to paragraph 2-5. The BN GA variant design, while the same building in structure and exterior appearance as the BN HQ, has significantly different requirements for floor plan and functional areas.

Functions and areas of the BN HQ are as follows:

2-4.1 **Command Section**. Provide one group of offices, with accompanying reception area, coffee area and private toilet. In a two-story building locate Command Section on the second floor. 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; 22.8 m^2. 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, S-1 Clerical /Central Files. Adjacent to command section toilet, coffee area, Executive Officer and Command Sergeant Major offices.

2-4.1.1.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- one desk: 1 830 x 915
- one credenza 1 830 x 610
- one bookcase 915 x 2 080 x 510
- two legal-size four-drawer file cabinets,
- one conference table 915 x 1 830,
- six side chairs, and one desk chair.

2-4.1.1.4 Finishes:
- Floor: carpet tile
- Base: resilient base or wood base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.1.1.5 Other requirements: Provide 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.

2-4.1.2 **Executive Officer (XO)**. Provide one; 16.8 m^2. Room shall be accessed through the Reception Area. Occupants: 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, S-1 Clerical /Central Files. Adjacent to or near, coffee area, CO office and Command Sergeant Major office.

2-4.1.2.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:
- one desk 1 830 with return 915,
- one bookcase 915 x 2 080 x 510,
- two legal-size four-drawer file cabinets,
- one side chair, and one desk chair.

2-4.1.2.4 Finishes:
- Floor: carpet tile
- Base: resilient base or wood base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.1.2.5 Other requirements: Provide 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.

2-4.1.3 **Command Sergeant Major (CSM)**. Provide one; 16.6 m^2. Room shall be accessed through the Reception Area. Occupants: 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, S-1 Clerical /Central Files. Adjacent to or near coffee area, CO office and XO office.

2-4.1.3.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- one desk 1 830 x 915 with return 1 070 x 610,
- one bookcase 915 x 2 080 x 510,
- two legal-size four-drawer file cabinets,
- one side chair, and one desk chair.

2-4.1.3.4 Finishes:

- Floor: carpet tile
- Base: resilient base or wood base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.1.3.5 Other requirements: Provide 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.

2-4.1.4 **Reception Area**. Provide one; 13.9 m^2, (within Command/S-1 Section in FY 03 design) to accommodate reception desk and waiting area. Reception area shall be accessed through S-1 Clerical/Central Files. Occupants: 1, and space for four visitors.

2-4.1.4.1 Function: Receptionist workstation and waiting area for visitors to the CO, XO, CSM offices.

2-4.1.4.2 Adjacency requirements: Adjacent (and open to) S-1 Clerical /Central Files area. Adjacent to coffee area, CO, XO and Command Sergeant Major offices.

2-4.1.4.3 Furnishings/Fixtures/Equipment: Design area to accommodate GFGI:

- one reception desk (systems furniture workstation type, nominal area 7.0 m^2),
- four side chairs
- one magazine table.

2-4.1.4.4 Finishes:

- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.1.4.5 Other requirements: Provide 900 mm wide door into room; door shall have entry function (F81) lockset..

2-4.1.5 **Command Section Toilet**. Provide one private toilet room for use by the commanding officer. Room is not required to comply with ADA accessibility requirements. Room shall be accessed directly from the CO office.

2-4.1.5.1 Function: single-occupant toilet and lavatory, for use by commander.

2-4.1.5.2 Adjacency requirements: Adjacent to CO office.

2-4.1.5.3 Furnishings/Fixtures/Equipment (FFE): Provide and design room to accommodate:

- one floor mounted toilet,
- one vanity mounted lavatory,
- mirror above lavatory,
- paper towel dispenser/waste receptacle,
- soap dispenser,
- toilet tissue dispenser.

2-4.1.5.4 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.

2-4.1.5.5 Other requirements: Door shall have privacy function (F76) lockset. Arrange space so that door is not visible from entrance door of CO office. Partitions shall have minimum STC rating of 49.

2-4.1.6 **Coffee Area**. Provide one. Area shall have countertop with kitchen sink; comply with ADA accessibility requirements. Area may be open to reception.

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. Near CO, XO, and CSM offices. Locate to avoid conflicts with circulation pattern.

2-4.1.6.3 Furnishings/Fixtures/Equipment (FFE): Provide and design room to accommodate:

- minimum 1 200 mm wide x 600 mm deep plastic laminate or solid surface countertop,
- stainless steel kitchen sink.
- minimum 1 200 mm of base and wall cabinets; wall cabinets mounted to provide 600 mm clearance above countertop.
- dedicated electrical receptacle for coffee maker (coffee maker not in contract).

2-4.1.6.4 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.

2-4.1.6.5 Other requirements: None

2-4.2 **S-1 Section**. Provide one group of offices. In a two-story building locate S-1 Section on the second floor. Locate S-1 Section adjacent to S-2 and/or S-3 Sections. Command Section shall be accessed through the S-1 Clerical/Central Files area.

2-4.2.1 **S-1 Officer**. Provide one; 8.8 m^2. (Not included in FY 03 design). Room shall be accessed through the S-1 Clerical/Central Files area. Occupants: 1, and occasional visitors.

2-4.2.1.1 Function: Private office for S-1 officer.

2-4.2.1.2 Adjacency requirements: Adjacent to S-1 Clerical /Central Files. Near Command Section offices.

2-4.2.1.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- one desk 1 675 x 915 with return 1 070 x 610,
- one bookcase 915 x 2 080 x 510,
- two legal-size four-drawer file cabinets,
- one side chair, and one desk chair.

2-4.2.1.4 Finishes:
- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.2.1.5 Other requirements: Provide 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.

2-4.2.2 **S-1 Clerical/Central Files**. Provide one; 49.5 m^2. S-1 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, and reception area. Occupants: 7 staff and occasional visitors.

2-4.2.2.1 Function: Open office area for S-1 admin staff; access to S-1 and Command offices.

2-4.2.2.2 Adjacency requirements: Adjacent to lobby or corridor. Adjacent to S-1 and Command private offices. Adjacent (and open to) reception area.

2-4.2.2.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- seven systems furniture workstations with nominal area of 6.0 m^2 each.

2-4.2.2.4 Finishes:
- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.2.2.5 Other requirements: Provide 900 mm 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 2 650 mm.

2-4.3 **S-2 Section**. Provide one group of offices. In a two-story building locate S-2 Section on the second floor. Locate S-2 Section adjacent to S-1 and/or S-3 Sections.

2-4.3.1 **S-2 Officer**. Provide one; 8.8 m^2. (Not included in FY 03 design). Room shall be accessed through the S-2 Clerical/Central Files area. Occupants: 1, and occasional visitors.

2-4.3.1.1 Function: Private office for S-2 officer.

2-4.3.1.2 Adjacency requirements: Adjacent to S-2 Clerical /Central Files.

2-4.3.1.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- one desk 1 675 x 915 with return 1 070 x 610,
- one bookcase 915 x 2 080 x 510,
- two legal-size four-drawer file cabinets,
- one side chair, and one desk chair.

2-4.3.1.4 Finishes:
- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.3.1.5 Other requirements: Provide 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.

2-4.3.2 **Office**. Provide two; each 8.8 m^2. Area may be a private office or a systems furniture workstation accessed through the S-2 Clerical/Central Files area. Occupants: 1 in each office.

2-4.3.2.1 Function: Private office for use by S-2 personnel.

2-4.3.2.2 Adjacency requirements: Adjacent to S-2 Clerical /Central Files.

2-4.3.2.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- one desk 1 675 x 915 with return 1 070 x 610,
- one bookcase 915 x 2 080 x 510,
- two legal-size four-drawer file cabinets,
- one side chair, and one desk chair.

2-4.3.2.4 Finishes:
- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.3.2.5 Other requirements: Exterior window is desirable. If drywall partitions are used, provide 900 mm wide door into each room; door shall have entry function (F81) lockset. Drywall partitions shall have minimum STC rating of 49.

2-4.3.3 **S-2 Clerical/Central Files**. Provide one; 39.2 m^2. S-2 Clerical/Central Files shall be accessed from the lobby or corridor. The area shall have direct access to S-2 private offices, and the Secured Documents Vault. Occupants: 6 staff, and occasional visitors.

2-4.3.3.1 Function: Open office area for S-2 admin staff; access to other S-2 spaces.

2-4.3.3.2 Adjacency requirements: Adjacent to lobby or corridor. Adjacent to S-2 private offices and Secured Documents Vault.

2-4.3.3.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- six systems furniture workstations with nominal area of 6.0 m^2 each.

2-4.3.3.4 Finishes:
- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.3.3.5 Other requirements: Provide 900 mm 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 2 650 mm.

2-4.3.4 **Secured (Crypto)Documents Vault**. Provide one room; 10.3 m^2. 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: 1.

2-4.3.4.1 Function: Storage of documents classified ‘secret’ and below. Workspace for one clerk.

2-4.3.4.2 Adjacency requirements: Adjacent to and accessed from S-2 Clerical/Central Files.

2-4.3.4.3 Furnishings/Fixtures/Equipment: Design room to accommodate:

- one desk 1 525 x 760
- shelving 300 x 5 000 total length
- File cabinets 3, 4 drawer legal size ,
- one desk chair.

2-4.3.4.4 Finishes:
- Floor: carpet tile or vinyl composition tile
- Base: resilient base
- Walls: painted or pre-finished modular vault panels
- Ceiling: painted or pre-finished modular vault panels

2-4.3.4.5 Other requirements: Provide one SIPRNET connection. Intrusion Detection System is required; see Paragraph 9-6.

2-4.4 **S-3 Section**. Provide one group of offices. In a two-story building locate S-3 Section on the second floor. Locate S-3 Section adjacent to S-1 and/or S-2 Sections.

2-4.4.1 **S-3 Officer**. Provide one; 8.9 m^2. Room shall be accessed through the S-3 Clerical/Central Files 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 S-3 Clerical /Central Files.

2-4.4.1.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- one desk 1 675 x 915 with return ,
- one bookcase 915 x 2 080 x 510,
- two legal-size four-drawer file cabinets,
- one side chair, and one desk chair.

2-4.4.1.4 Finishes:
- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.4.1.5 Other requirements: Provide 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.

2-4.4.2 **S-3 Clerical/Central Files**. Provide one; 30.9 m^2. S-3 Clerical/Central Files shall be accessed from the lobby or corridor. The area shall have direct access to S-3 private offices. Occupants: 5 staff, and occasional visitors.

2-4.4.2.1 Function: Open office area for S-3 admin staff; access to S-3 offices.

2-4.4.2.2 Adjacency requirements: Adjacent to lobby or corridor. Adjacent to S-3 private offices.

2-4.4.2.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- five systems furniture workstations with nominal area of 6.0 m^2 each.

2-4.4.2.4 Finishes:
- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.4.2.5 Other requirements: Provide 900 mm 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 2 650 mm.

2-4.5 **Conference Room**. Provide one; 40.8 m^2. Room shall be located to allow direct access from the main corridor/lobby and the Command Section/S-1 Section. In a two-story building, conference room will be located on the second floor. Occupants: up to 26 persons.

2-4.5.1 Function: Conference room for battalion leadership, staff, and visitors. Functions will include staff meetings, hearings, disciplinary sessions, and training.

2-4.5.2 Adjacency requirements: Adjacent to lobby or main corridor, S-1 Section, Command Section. Near S-2 and S-3 Sections.

2-4.5.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- Conference table 1 220 x 5 490
- Side chairs 26

Provide and design room to accommodate:

- one marker board (minimum 2 400 mm wide x 1 200 mm high)
- one 2 400 mm wide wall mounted pull-down projection screen.

2-4.5.3 Finishes:

- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.5.4 Other requirements: Provide 900 mm wide doors into room; doors shall have classroom function (F84) lockset. Partitions shall have minimum STC rating of 55. Minimum ceiling height 2 650 mm.

2-4.6 **S-4 Section**. Provide one group of offices. In a two-story building locate S-4 Section on the first floor. Locate S-4 Section adjacent to PAC Section.

2-4.6.1 **S-4 Officer**. Provide one; 9.0 m^2. Room shall be accessed through the S-4 Clerical/Central Files area. Occupants: 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 S-4 Clerical /Central Files.

2-4.6.1.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- one desk 1 675 with return 610,
- one bookcase 915 x 2 080 x 510,
- two legal-size four-drawer file cabinets,
- one side chair, and one desk chair.

2-4.6.1.4 Finishes:

- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.6.1.5 Other requirements: Provide 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.

2-4.6.2 **S-4 Clerical/Central Files**. Provide one; 67.7 m^2. 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: 8 staff, and occasional visitors.

2-4.6.2.1 Function: Open office area for S-4 admin staff; access to S-4 offices.

2-4.6.2.2 Adjacency requirements: Adjacent to lobby or corridor. Adjacent to S-4 private offices.

2-4.6.2.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- eight systems furniture workstations with nominal area of 6.0 m^2 each.

2-4.6.2.4 Finishes:

- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.6.2.5 Other requirements: Provide 900 mm 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 2 650 mm.

2-4.6.3 **S-4 Storage & Supplies**. Provide one; 11.4 m^2 of general storage space. Room shall be under control of, and accessed from, S-4/Clerical/Central Files area.

2-4.6.3.1 Function: Storage of administrative files and general office supplies .

2-4.6.3.2 Adjacency requirements: Adjacent to S-4 Clerical/Central Files and building exterior.

2-4.6.3.3 Furnishings/Fixtures/Equipment: no requirement

2-4.6.3.4 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

2-4.6.4.4 Other requirements: Provide door pair, ea leaf 900 mm wide, into room from S-4/Clerical/Central Files. Doors shall have storeroom function (F86) locksets

2-4.7 **Personnel Administration Center (PAC) Section**. Provide one group of offices. In a two-story building locate PAC Section on the first floor. Locate PAC Section adjacent to S-4 Section.

2-4.7.1. **PAC Officer**. Provide one; 8.8 m^2. Room shall be accessed through the PAC Clerical/Central Files area. Occupants: 1, and occasional visitors.

2-4.7.1.1 Function: Private office for S-4 officer.

2-4.7.1.2 Adjacency requirements: Adjacent to PAC Clerical /Central Files.

2-4.7.1.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- one desk 1 675 x 915 with return 1 070 x 610,
- one bookcase 915 x 2 080 x 510,
- two legal-size four-drawer file cabinets,
- one side chair, and one desk chair.

2-4.7.1.4 Finishes:
- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.7.1.5 Other requirements: Provide 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.

2-4.7.2 **Office**. Provide one; each 11.2 m^2. Area may be a private office or a systems furniture workstation accessed through the PAC Clerical/Central Files area. Occupants: 1 in each office.

2-4.7.2.1 Function: Private office or systems furniture workstation for use by PAC personnel.

2-4.7.2.2 Adjacency requirements: Adjacent to PAC Clerical /Central Files

2-4.7.2.3 Furnishings/Fixtures/Equipment: Design each area to accommodate GFGI:

- one desk 1 675 x 915 with return 1 070 x 610,
- one bookcase 915 x 2 080 x 510,
- two legal-size four-drawer file cabinets,
- one side chair, and one desk chair.

2-4.7.2.4 Finishes:
- Floor: carpet tile
- Base: resilient base

- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.7.2.5 Other requirements: Exterior window is desirable. If drywall partitions are used, provide 900 mm wide door into each room; door shall have entry function (F81) lockset. Drywall partitions shall have minimum STC rating of 49.

2-4.7.3 PAC Clerical/Central Files. Provide one; 74.6 m^2. S-4 Clerical/Central Files shall be accessed from the lobby or corridor. The area shall have direct access to PAC private offices. Occupants: 8 staff, and occasional visitors.

2-4.7.3.1 Function: Open office area for PAC admin staff; access to PAC offices and Message Mail Center.

2-4.7.3.2 Adjacency requirements: Adjacent to lobby or corridor. Adjacent to PAC private offices and Message Mail Center. Near Duty Officer.

2-4.7.3.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- eight systems furniture workstations, with nominal area of 6.0 m^2 each.

2-4.7.3.4 Finishes:
- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.7.3.5 Other requirements: Provide 900 mm 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 2 650 mm

2-4.7.4 **Duty Officer**. Provide one; 6.5 m^2. Room shall be accessed from the main lobby. Occupants: 1.

2-4.7.4.1 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.

2-4.7.4.2 Adjacency requirements: Adjacent to lobby and main entrance; near PAC Clerical /Central Files.

2-4.7.4.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- one desk 1 675 x 915 with return 1 070 x 610,
- one legal-size four-drawer file cabinet,
- one side chair, and one desk chair.

2-4.7.4.4 Finishes:
- Floor: carpet tile
- Base: resilient base

- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.7.4.5 Other requirements: Provide 900 mm wide door into room; door shall have entry function (F81) lockset and glass vision panel. Provide duty officer counter (built-in casework) minimum 1 800 mm long separating the Duty Officer room from the lobby/corridor. The counter on the corridor side shall be minimum 1 500 mm wide x 1 000 mm high x 300 mm deep; provide locking overhead coiling shutter to secure the opening when unattended; shutter hood shall not be visible from corridor side.

2-4.7.5 **Message Mail Center**. Provide one; 24.0 m^2. Room shall be accessed from the PAC Clerical/Central Files area. Occupants: 2.

2-4.7.5.1 Function: Mail sorting and general administrative tasks.

2-4.7.5.2 Adjacency requirements: Adjacent to corridor and PAC Clerical /Central Files.

2-4.7.5.3 Furnishings/Fixtures/Equipment: no furniture requirements:

2-4.7.5.4 Finishes:

- Floor: vinyl composition tile, or porcelain tile
- Base: resilient base, or porcelain tile base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.7.5.5 Other requirements: Provide 900 mm wide door into room; door shall have entry function (F81) lockset and glass vision panel. Provide counter (built-in casework) minimum 1 800 mm long separating the Message Mail Center from the corridor. The counter on the corridor side shall be minimum 1 500 mm wide x 1 000 mm high x 300 mm deep; provide locking overhead coiling shutter to secure the opening when unattended; shutter hood shall not be visible from corridor side.

2-4.8 **Soldier Services**. Provide one group of offices. In a two-story building locate soldier services on the first floor. Soldier services are unrelated to other battalion administration functions.

2-4.8.1 **Chaplain's Assistant**. Provide one; 9.5 m^2. Room shall be accessed from the lobby or main corridor. Occupants: 1, and visitors.

2-4.8.1.1 Function: Private office for Chaplain's Assistant and waiting area for visitors to Chaplain's office.

2-4.8.1.2 Adjacency requirements: Adjacent to lobby or main corridor.

2-4.8.1.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- one desk 1 675 x 915 with return 1 070 x 610,
- one bookcase 915 x 2 080 x 510,
- four side chairs, and one desk chair.

2-4.8.1.4 Finishes:

- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.8.1.5 Other requirements: Provide 900 mm wide door into room; door shall have entry function (F81) lockset. Exterior window is desirable. Partitions shall have minimum STC rating of 55.

2-4.8.2 **Chaplain**. Provide one; 13.0 m^2. Room shall be accessed from the Chaplain's Assistant office. Occupants: 1, and visitors.

2-4.8.2.1 Function: Private office for Chaplain and visitors.

2-4.8.2.2 Adjacency requirements: Adjacent to Chaplain's Assistant. May have additional door to corridor.

2-4.8.2.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- one desk 1 675 x 915 with return 1 070 x 610,
- one bookcase 915 x 2 080 x 510,
- one desk chair,
- two side chairs

2-4.8.2.4 Finishes:

- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-4.8.2.5 Other requirements: Provide 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.

2-4.9 **Classroom Areas**. Provide one group of classrooms and adjacent Learning Resource Center for each battalion. In a two-story building locate Classroom Area on the first floor. Classrooms and Learning 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. Classroom areas shall be located on the west end of the

building to provide immediate adjacency to classroom zones in BN HQ buildings constructed in preceding contracts.

2-4.9.1 **Classroom**. Provide three; total area 227 m^2, minimum area 74.0 m^2 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 60 persons in each room.

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. Provide near by toilet rooms.

2-4.9.1.3 Furnishings/Fixtures/Equipment: Provide and design each room to accommodate:

- Walls separating classrooms shall be operable panel partitions with minimum STC rating of 47.
- one marker board (minimum 3 650 mm wide x 1 200 mm high)
- one 2 400 mm wide wall mounted pull-down projection screen
- wall mounted television support brackets for 27” monitor/television (NIC) and VCR (NIC)
- cable television outlets and electrical outlets wall mounted at each television support bracket.
- floor and wall mounted power and communications outlets to support computer use by all students. Floor outlets shall be flushed with finished surface and designed for foot, furnature and caster loads. Provide a minimum of 30 floor outlets in each classroom. Provide wall outlets in a raceway system that permits relocation of outlet position. Proved on set of power and communication outlets for each 2000 mm of wall length.

2-4.9.1.4 Finishes:

- Floor: carpet tile
- 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 900 mm wide doors into room; doors shall have classroom function (F84) lockset. Permanent partitions shall have minimum STC rating of 49. Minimum ceiling height 2 600 mm at perimeter, 3 050 mm in main portion of room.

2-4.9.2 **Learning Resource Center**. Provide one; minimum area 34.9 m^2. Provide direct access from the main corridor/lobby. In a two-story building, Learning Resource Center will be located on the first floor. Occupants: up to 22 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. Near classrooms and toilets.

2-4.9.2.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate:

- Provide one marker board (minimum 2 400 mm wide x 1 200 mm high)
- one 2 400 mm wide wall mounted pull-down projection screen.
- no additional furniture requirements

2-4.9.2.4 Finishes:
- Floor: carpet tile
- 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 900 mm wide doors into room; doors shall have classroom function (F84) lockset. Permanent partitions shall have minimum STC rating of 49. Minimum ceiling height 2 650 mm at perimeter, 3 050 mm in main portion of room.

2-4.10 **Battalion HQ Common Areas**. Provide the following areas in each building. Meet all ADA accessibility requirements 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 2 450 mm; minimum width of other main corridors shall not be less than 1 800 mm. 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 and design room to accommodate:

- wall mounted electric water cooler (standard and accessible heights)
- mechanical and electrical systems to comply with applicable codes.
- fire extinguishers in semi-recessed fire extinguisher cabinets to comply with applicable codes.
- recessed space for three vending machines per building (machines are not in contract).
- interior signage to identify major spaces.
- two recessed trophy cases (minimum size: 2 400 mm wide x 1 500 high x 400 mm deep)
- one recessed building directory near each main entrance; in a two-story building, provide one recessed building directory near second floor elevator doors.
- one 1 200 mm high x 1 800 mm wide wall mounted bulletin board.

2-4.10.1.4 Finishes:

- Floor: porcelain tile, vinyl composition tile, or carpet.
- 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: Meet ADA accessibility requirements.

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: None.

2-4.10.2.4 Finishes:

- Floor: Provide recessed entry mat full depth of vestibule x full width of doors; porcelain tile, or quarry tile in remainder of room.
- 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: Meet ADA accessibility requirements.

2-4.10.3 **Interior Stairs**. Provide as required to allow circulation to upper floor of the building, and to comply with applicable code egress requirements.

2-4.10.3.1 Function: Circulation and means of egress.

2-4.10.3.2 Adjacency requirements: Adjacent to corridors. Connects all floors of the building.

2-4.10.3.3 Furnishings/Fixtures/Equipment: 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.

2-4.10.3.4 Finishes:

- Landing floor: 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 gypsum wallboard, or painted concrete masonry units.
- Ceiling: suspended acoustical panel ceiling, painted gypsum wallboard, painted veneer plaster, or painted Portland cement plaster.

2-4.10.3.5 Other requirements: Stairs shall comply with ADA accessibility requirements and applicable codes. Railings shall be painted steel, or prefinished aluminum.

2-4.10.4 **Men's Toilet Room(s)**. Provide one or more rooms, sized to accommodate at least the number of plumbing fixtures required. In a two-story structure, a minimum of one additional toilet fixture, one urinal and one lavatory shall be provided in a male toilet room on the second floor. Toilet rooms will be accessed from corridors. Arrange entrance to provide visual privacy.

2-4.10.4.1 Function: Restrooms for male occupants.

2-4.10.4.2 Adjacency requirements: Adjacent to corridor.

2-4.10.4.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate:

- 3 lavatories
- 3 floor mounted toilets
- 3 wall-hung urinals
- Lavatories in single-occupant toilet rooms shall be wall-hung; lavatories in gang toilets shall be countertop mounted.
- Countertops shall be plastic laminate or solid surfacing material.
- Toilet partitions at each toilet, and urinal partitions between urinals.
- 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.

2-4.10.4.4 Finishes:

- Floor: porcelain tile, or ceramic tile.
- Base: porcelain tile, or ceramic tile.
- Walls: ceramic tile, or 1 800 mm 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 sloped floors with floor drains located out of circulation path. Line of sight view of toilets or urinals from corridor is not acceptable.

2-4.10.5 **Women's Toilet Room(s)**. Provide one or more rooms, sized to accommodate the number of plumbing fixtures required. In a two-story structure, women's toilet room(s) may be located on the first floor only. Toilet rooms will be accessed from corridors. Arrange entrance to provide visual privacy.

2-4.10.5.1 Function: Restrooms for female occupants.

2-4.10.5.2 Adjacency requirements: Adjacent to corridor.

2-4.10.5.3 Furnishings/Fixtures/Equipment: Provide and design room(s) to accommodate:

- 3 lavatories
- 3 floor mounted toilets
- Lavatories in single-occupant toilet rooms shall be wall-hung; lavatories in gang toilets shall be countertop mounted.
- Countertops shall be plastic laminate or solid surfacing material.
- toilet partitions at each toilet.
- 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 sanitary napkin disposal at each toilet;
- one robe hook on each toilet partition door.

2-4.10.5.4 Finishes:

- Floor: porcelain tile, or ceramic tile.
- Base: porcelain tile, or ceramic tile.
- Walls: ceramic tile, or 1829 mm 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 sloped floors with floor drains located out of circulation path. Line of sight view of toilets or urinals from corridor is not acceptable

2-4.10.6 **Shower Room(s)**. Provide a minimum of three single occupant shower rooms. One of these shall meet all ADA accessibility requirements. All other shower rooms shall be used by able-bodied military personnel only. Provide one common (male occupants only) shower/locker room with a minimum of three individual shower stalls. Rooms shall be accessed from Administrative Area Corridor. Shower room shall not be combined with toilet rooms. In a two-story building, shower rooms may be located on first and second floors.

2-4.10.6.1 Function: Shower and dressing rooms for use by battalion staff.

2-4.10.6.2 Adjacency requirements: Adjacent to corridor. Near toilets.

2-4.10.6.3 Furnishings/Fixtures/Equipment: Provide and design rooms to accommodate:

- 6 ceramic tile shower stall with rod and shower curtain.
- ceramic soap holder and wall mounted grab bar at each stall
- dressing area at single occupant shall have bench, four towel/robe hooks, and wall mounted full-length mirror.
- dressing area at common access shower room shall have bench, six lockers, and wall mounted full-length mirror.

2-4.10.6.4 Finishes:
- Floor: ceramic tile.
- Base: ceramic tile.
- Walls: ceramic tile
- Ceiling: painted Portland cement plaster.

2-4.10.6.5 Other requirements: Provide sink in common access shower room.

2-4.10.7 **Janitor Closet**. Provide one on each floor of the building. Minimum area: 2.4 m^2. 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 and configure rooms to accommodate:

- one floor mounted mop sink,
- mop rack for two mops,
- minimum 1 800 linear mm of wall mounted stainless steel shelving.

2-4.10.7.4 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 Portland cement plaster

2-4.10.7.5 Other requirements: Door shall have classroom function (F84) lockset.

2-4.10.8 **Storage**. Provide minimum 4.6 m^2 of general storage space. In a two-story building provide half of the area on each floor. Storage rooms will be accessed from the corridor.

2-4.10.8.1 Function: Storage of general office supplies for the battalion.

2-4.10.8.2 Adjacency requirements: Adjacent to corridor.

2-4.10.8.3 Furnishings/Fixtures/Equipment: no requirements:

2-4.10.8.4 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. Accessibility consistent with the ADA is not required in mechanical rooms, electrical rooms, communications closets, and elevator machine room. All other support spaces shall be handicap accessible.

2-4.11.1 **Mechanical Room(s)**. Provide dedicated areas for mechanical equipment. Mechanical rooms shall not be used for storage or other purposes. Access will be limited to authorized personnel. Size and locate room(s) to allow equipment removal and maintenance. Provide floor openings and vertical shaft spaces as necessary. Main mechanical room shall be located on the ground floor.

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 a door pair (900 mm minimum width for each leaf) 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 Finishes:

- Floor: sealed concrete
- Base: resilient cove base.
- Walls: painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units
- Ceiling: none required

2-4.11.1.5 Other requirements: Doors shall have storeroom function (F86) locksets.

2-4.11.2 **Electrical Room(s)**. Provide dedicated areas for electrical equipment. The main electrical room for the building shall contain the service entrance, metering equipment, and main distribution panel. Metering equipment shall be integrated and coordinated with the existing UMCS/EMCS system. Electrical rooms shall not be used for storage or other purposes. Access will be limited to authorized personnel. Size and locate room(s) to allow equipment removal and maintenance. Main electrical room shall be located on the ground floor.

2-4.11.2.1 Function: Spaces for electrical equipment.

2-4.11.2.2 Adjacency requirements: Locate to allow efficient distribution. Main electrical room on the ground floor shall be accessed from the exterior. All other electrical rooms shall be accessed from corridors.

2-4.11.2.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-4.11.2.4 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 **Communication Room**. Provide dedicated room(s) for communication distribution equipment. Each room shall not be combined with mechanical or electrical rooms. Provide each battalion with one main communication room; minimum size 3240mm x 3888mm. In two-story buildings, the main communication room shall be located on the first floor and secondary rooms shall be on the each floor. Provide additional communication rooms as needed; all spaces having telephone or computer data outlets shall be located to allow a maximum cable length of 90 meters between outlet and communication room. Minimum dimensions of secondary communication rooms shall be in accordance with ANSI EIA/TIA 569-A but not less than 3240mm x 3240mm. Provide floor openings and vertical shaft spaces as necessary. Rooms shall be accessed from corridors. Exterior access is prohibited. Access will be limited to 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 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

2-4.11.3.5 Other requirements: Door shall have minimum 900 mm wide door with storeroom function (F86) lockset. Provide three 102 mm empty conduits connecting vertically stacked communication rooms. Communication rooms shall be compliant with ANSI EIA/TIA 569-A.

2-4.11.4 **Elevator Machine Room**. Provide one in each two-story battalion HQ building. Size to comply with equipment and code requirements.

2-4.11.4.1 Function: Space for hydraulic elevator equipment.

2-4.11.4.2 Adjacency requirements: Adjacent to elevator and corridor.

2-4.11.4.3 Furnishings/Fixtures/Equipment: As required by Statement of Work

2-4.11.4.4 Finishes:

- Floor: sealed concrete
- Base: resilient cove base
- Walls: painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units
- Ceiling: none required.

2-4.11.4.5 Other requirements: Partition walls shall have a minimum STC rating of 45.

2-4.11.5 **Elevator**. Provide one hydraulic passenger elevator.

2-4.11.5.1 Function: Vertical conveyance of people and furniture.

2-4.11.5.2 Adjacency requirements: Adjacent to lobby or main corridor.

2-4.11.5.3 Furnishings/Fixtures/Equipment: Provide and design space to accommodate:

Passenger elevator: 2,500 lb. capacity, minimum 75 feet per minute speed; center opening doors. Refer to Chapter 5 for additional requirements.

2-4.11.5.4 Cab finishes:

- Floor: carpet tile
- Walls: plastic laminate
- Ceiling: suspended aluminum egg crate
- Car door and front: satin finish stainless steel
- Hoistway entrance doors and frame: satin finish stainless steel

2-4.11.5.5 Other requirements: Meet ADA requirements for accessibility.

2-5 BATTALION HEADQUARTERS – GENERAL ADMINISTRATION VARIANT - (BN GA) FUNCTIONAL AND AREA REQUIREMENTS.

The Battalion Headquarters General Administration variant (BN GA) building shall consist of administrative open office areas, two document vaults, a conference room and support spaces. Total gross area of the building shall not exceed 1 524 m^2. Building shall be two stories in height. Distribution of various rooms that are in common with the BN HQ shall be located in the same position and the same size. One elevator is required. To the greatest extent possible, this building shall be arranged to allow future reconfiguration to support full battalion functionality matching the BN HQ version in this project. Internal reorganizations of fixed elements such as toilets, equipment rooms, and core areas shall be avoided. Locate and organize administrative spaces to maximize furniture flexibility. Any partitions separating administrative spaces should not be bearing walls.

Leadership and staff will manage the organization, receive visitors, and conduct the business of the occupant units from the administrative areas. Soldiers will visit the facility to conduct administrative business. Military personnel will staff the facility; military and non-military personnel will visit the facility. Although only able-bodied military personnel will be on staff,

all spaces except shower rooms, and utility areas (janitor closets, mechanical, electrical, communication, and elevator machine rooms) shall comply with ADA accessibility requirements. In addition, at least one fully accessible shower room shall be provided.

Net room sizes listed below are consistent with the concept design for a BN GA provided with this RFP (see Attachment 4). The space tabulation spreadsheet (see Attachment 4) is consistent with the room areas that are listed in this chapter. All areas are the minimum requirement. Offerors shall meet or exceed the specific minimum areas presented. Areas without specific area designation shall be designed for functional use and conformance with building and life safety codes. Regardless of the net room areas presented, the gross building area may not exceed the programmatic limitations listed above.

NOTE: This Battalion Headquarters (General Administration) variant is located on the north side of the Training Area. For discussion of the Battalion Headquarters (BN HQ) that is located on the south side of the Training Area, refer to paragraph 2-4. The BN GA variant design, while the same building in structure and exterior appearance as the BN HQ, has significantly different requirements for floor plan and function.

Functions and areas of the BN GA are as follows:

2-5.1 **Command Section**. Provide a single office on the second floor, without accompanying reception area, coffee area and private toilet.

2-5.1.1 **Commanding Officer (CO)**. Provide one; 22.8 m^2. Room shall be accessed through Open Office Area. Occupants: 1, and occasional visitors.

2-5.1.1.1 Function: Private office for commanding officer.

2-5.1.1.2 Adjacency requirements: Adjacent to Open Office Area and Conference Room.

2-5.1.1.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- one desk: 1 830 x 915
- one credenza 1 830 x 610
- one bookcase 915 x 2 080 x 510
- two legal-size four-drawer file cabinets,
- one conference table 915 x 1 830,
- six side chairs, and one desk chair.

2-5.1.1.4 Finishes:
- Floor: carpet tile
- Base: resilient base or wood base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-5.1.1.5 Other requirements: Provide 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.

2-5.1.2 **Conference Room**. Provide one; 40.8 m^2. Room shall be located to allow direct access from the second floor lobby and the Command Section. In a two-story building, conference room will be located on the second floor. Occupants: up to 26 persons.

2-5.1.2.1 Function: Conference room for leadership, staff, and visitors. Functions will include staff meetings, hearings, disciplinary sessions, and training.

2-5.1.2.2 Adjacency requirements: Adjacent to upper lobby or main corridor and Command Section.

2-5.1.2.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- Conference table 1 220 x 5 490
- Side chairs 26

- Provide and design room to accommodate:
- one marker board (minimum 2 400 mm wide x 1 200 mm high)
- one 2 400 mm wide wall mounted pull-down projection screen.

2-5.1.2.4 Finishes:
- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-5.1.2.5 Other requirements: Provide 900 mm wide doors into room; doors shall have classroom function (F84) lockset. Partitions shall have minimum STC rating of 55. Minimum ceiling height 2 650 mm.

2-5.2 **Special Function Rooms**. Provide the following special function and/or construction rooms:

2-5.2.1 **Secured Documents Vaults**. Provide two rooms, one per floor, each 10.3 m^2 stacked vertically. Vaults 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: 1 per room.

2-5.2.1.1 Function: Storage of documents classified ‘secret’ and below. Workspace for one clerk in each vault.

2-5.2.1.2 Adjacency requirements: Adjacent to and accessed from Open Office Areas.

2-5.2.1.3 Furnishings/Fixtures/Equipment: Design room to accommodate:

- one desk 1 525 x 760
- shelving 300 x 5 000 total length
- File cabinets 3, 4 drawer legal size ,
- one desk chair.

2-5.2.1.4 Finishes:

- Floor: carpet tile or vinyl composition tile
- Base: resilient base
- Walls: painted or pre-finished modular vault panels
- Ceiling: painted or pre-finished modular vault panels

2-5.2.1.5 Other requirements: Provide one SIPRNET connection in each vault. Accessing the vaults directly from corridor is prohibited.

2-5.2.2 **Conference Room (1st Floor)**. In place of the "Learning Resource Center" room included in the design for the BN HQ facility, provide a conference room. Room shall have a minimum area of 34.9 m^2. Provide direct access from the main corridor/lobby and Open Office Area 1. Occupants: up to 22 persons.

2-5.2.2.1 Function: Soldier training and other meetings.

2-5.2.2.2 Adjacency requirements: Adjacent to lobby or main corridor. Near classrooms and toilets.

2-5.2.2.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate:

- Provide one marker board (minimum 2 400 mm wide x 1 200 mm high)
- one 2 400 mm wide wall mounted pull-down projection screen.
- no additional furniture requirements

2-5.2.2.4 Finishes:

- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling, and painted gypsum wallboard or painted veneer plaster

2-5.2.2.5 Other requirements: Provide 900 mm wide doors into room; doors shall have classroom function (F84) lockset. Permanent partitions shall have minimum STC rating of 49. Minimum ceiling height 2 650 mm at perimeter, 3 050 mm in main portion of room.

2-5.2.3 **Duty Officer**. Provide one; 6.6 m^2. Room shall be accessed from the main lobby. Occupants: 1.

2-5.2.3.1 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.

2-5.2.3.2 Adjacency requirements: Adjacent to lobby and main entrance; near PAC Clerical /Central Files.

2-5.2.3.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- one desk 1 675 x 915 with return 1 070 x 610,
- one legal-size four-drawer file cabinet,
- one side chair, and one desk chair.

2-5.2.3.4 Finishes:
- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-5.2.3.5 Other requirements: Provide 900 mm wide door into room; door shall have entry function (F81) lockset and glass vision panel. Provide duty officer counter (built-in casework) minimum 1 800 mm long separating the Duty Officer room from the lobby/corridor. The counter on the corridor side shall be minimum 1 500 mm wide x 1 000 mm high x 300 mm deep; provide locking overhead coiling shutter to secure the opening when unattended; shutter hood shall not be visible from corridor side.

2-5.3 **Open Office Areas**. Provide the following open office areas with design consistent with flexible installation of systems furniture or modular components. Mechanical, electrical and communications design shall be sized and configured to accommodate a minimum of one occupant per 9.5 m^2 of floor area.

2-5.3.1 **Open Office 1**. Provide one; 227 m^2. Open Office 1 shall be created in the area occupied by classrooms in the BN HQ building version. All built in features and systems consistent with the classroom configuration (including movable wall partitions) shall be installed in this space for future use in a classroom conversion. This area shall be accessed from the lobby or corridor.

2-5.3.1.1 Function: Open office area for normal administrative functions.

2-5.3.1.2 Adjacency requirements: Adjacent to lobby or corridor.

2-5.3.1.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- Up to twenty four (24) systems furniture workstations with nominal area of 6.0 m^2 each.

2-5.3.1.4 Finishes:
- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-5.3.1.5 Other requirements: Provide 900 mm 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 2 650 mm.

2-5.3.2 **Open Office 2**. Provide one; 100 m^2. This area shall be accessed from the lobby or main corridor. Maximize opportunity for natural light.

2-5.3.2.1 Function: Open office area for normal administrative functions.

2-5.3.2.2 Adjacency requirements: Adjacent to lobby or corridor.

2-5.3.2.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- Up to ten (10) systems furniture workstations with nominal area of 6.0 m^2 each.

2-5.3.2.4 Finishes:
- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-5.3.2.5 Other requirements: Provide 900 mm 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 2 650 mm.

2-5.3.3 **Open Office 3**. Provide one; 120 m^2. This area shall be accessed from the lobby or main corridor. Maximize opportunity for natural light.

2-5.3.3.1 Function: Open office area for normal administrative functions.

2-5.3.3.2 Adjacency requirements: Adjacent to lobby or corridor.

2-5.3.3.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- Up to twelve (12) systems furniture workstations with nominal area of 6.0 m^2 each.

2-5.3.3.4 Finishes:
- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-5.3.3.5 Other requirements: Provide 900 mm 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 2 650 mm.

2-5.3.4 **Open Office 4**. Provide one; 101 m^2. This area shall be accessed from the lobby or main corridor. Maximize opportunity for natural light.

2-5.3.4.1 Function: Open office area for normal administrative functions.

2-5.3.4.2 Adjacency requirements: Adjacent to lobby or corridor.

2-5.3.4.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- Up to ten (10) systems furniture workstations with nominal area of 6.0 m^2 each.

2-5.3.4.4 Finishes:
- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-5.3.4.5 Other requirements: Provide 900 mm 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 2 650 mm.

2-5.3.5 **Open Office 5**. Provide one; 103 m^2. This area shall be accessed from the lobby or main corridor. Maximize opportunity for natural light.

2-5.3.5.1 Function: Open office area for normal administrative functions.

2-5.3.5.2 Adjacency requirements: Adjacent to lobby or corridor.

2-5.3.5.3 Furnishings/Fixtures/Equipment: Design room to accommodate GFGI:

- Up to ten (10) systems furniture workstations with nominal area of 6.0 m^2 each.

2-5.3.5.4 Finishes:
- Floor: carpet tile
- Base: resilient base
- Walls: painted gypsum wallboard or painted veneer plaster
- Ceiling: suspended acoustical panel ceiling

2-5.3.5.5 Other requirements: Provide 900 mm 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 2 650 mm.

2-5.4 **Battalion GA Common Areas**. Provide the following areas in each building. Meet all ADA accessibility requirements in all common areas except janitor closet and shower rooms. One shower room shall be configured consistent with ADAAG requirements.

2-5.4.1 **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 2 450 mm; minimum width of other main corridors shall not be less than 1 800 mm. Corridor width shall comply with applicable egress codes.

2-5.4.1.1 Function: Entry to the facility; egress and circulation through the building.

2-5.4.1.2 Adjacency requirements: Adjacent to main entrances and vertical circulation. It is preferable to enter lobby/main corridor from two sides of the building.

2-5.4.1.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate:

- wall mounted electric water cooler (standard and accessible heights)
- mechanical and electrical systems to comply with applicable codes.
- fire extinguishers in semi-recessed fire extinguisher cabinets to comply with applicable codes.
- recessed space for three vending machines per building (machines are not in contract).
- interior signage to identify major spaces.
- two recessed trophy cases (minimum size: 2 400 mm wide x 1 500 high x 400 mm deep)
- one recessed building directory near each main entrance; in a two-story building, provide one recessed building directory near second floor elevator doors.
- one 1 200 mm high x 1 800 mm wide wall mounted bulletin board.

2-5.4.1.4 Finishes:

- Floor: porcelain tile, vinyl composition tile, or tile.
- Base: porcelain tile, stained wood base, or resilient cove base.
- Walls: painted gypsum wallboard, or painted veneer plaster.
- Ceiling: suspended acoustical panel ceiling

2-5.4.1.5 Other requirements: Meet ADA accessibility requirements.

2-5.4.2 **Entry Vestibules**. Provide at each exterior entrance to lobby/main corridor area.

2-5.4.2.1 Function: Primary entry point into the facility; weather protection for interior spaces.

2-5.4.2.2 Adjacency requirements: Adjacent to lobby/main corridor.

2-5.4.2.3 Furnishings/Fixtures/Equipment: None.

2-5.4.2.4 Finishes:

- Floor: Provide recessed entry mat full depth of vestibule x full width of doors; porcelain tile, or quarry tile in remainder of room.
- 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.

2-5.4.2.5 Other requirements: Meet ADA accessibility requirements.

2-5.4.3 **Interior Stairs**. Provide as required to allow circulation to upper floor of the building, and to comply with applicable code egress requirements. Exterior stairs are prohibited.

2-5.4.3.1 Function: Circulation and means of egress.

2-5.4.3.2 Adjacency requirements: Adjacent to corridors. Connects all floors of the building.

2-5.4.3.3 Furnishings/Fixtures/Equipment: 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.

2-5.4.3.4 Finishes:

- Landing floor: 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 gypsum wallboard, or painted concrete masonry units.
- Ceiling: suspended acoustical panel ceiling, painted gypsum wallboard, painted veneer plaster, or painted Portland cement plaster.

2-5.4.3.5 Other requirements: Stairs shall comply with ADA accessibility requirements and applicable codes. Railings shall be painted steel, or prefinished aluminum.

2-5.4.4 **Men's Toilet Room(s)**. Provide one or more rooms, sized to accommodate at least the number of plumbing fixtures required. In a two-story structure, a minimum of one additional toilet fixture, one urinal and one lavatory shall be provided in a male toilet room on the second floor. Toilet rooms will be accessed from corridors. Arrange entrance to provide visual privacy.

2-5.4.4.1 Function: Restrooms for male occupants.

2-5.4.4.2 Adjacency requirements: Adjacent to corridor.

2-5.4.4.3 Furnishings/Fixtures/Equipment: Provide and design room to accommodate:

- 3 lavatories
- 3 floor mounted toilets
- 3 wall-hung urinals
- Lavatories in single-occupant toilet rooms shall be wall-hung; lavatories in gang toilets shall be countertop mounted.
- Countertops shall be plastic laminate or solid surfacing material.
- Toilet partitions at each toilet, and urinal partitions between urinals.
- 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.

2-5.4.4.4 Finishes:

- Floor: porcelain tile, or ceramic tile.
- Base: porcelain tile, or ceramic tile.
- Walls: ceramic tile, or 1 800 mm 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.

2-5.4.4.5 Other requirements: Provide sloped floors with floor drains located out of circulation path. Line of sight view of toilets or urinals from corridor is not acceptable.

2-5.4.5 **Women's Toilet Room(s)**. Provide one or more rooms, sized to accommodate the number of plumbing fixtures required. In a two-story structure, women's toilet room(s) may be located on the first floor only. Toilet rooms will be accessed from corridors. Arrange entrance to provide visual privacy.

2-5.4.5.1 Function: Restrooms for female occupants.

2-5.4.5.2 Adjacency requirements: Adjacent to corridor.

2-5.4.5.3 Furnishings/Fixtures/Equipment: Provide and design room(s) to accommodate:

- 3 lavatories
- 3 floor mounted toilets
- Lavatories in single-occupant toilet rooms shall be wall-hung; lavatories in gang toilets shall be countertop mounted.
- Countertops shall be plastic laminate or solid surfacing material.
- toilet partitions at each toilet.
- 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 sanitary napkin disposal at each toilet;
- one robe hook on each toilet partition door.

2-5.4.5.4 Finishes:
- Floor: porcelain tile, or ceramic tile.
- Base: porcelain tile, or ceramic tile.
- Walls: ceramic tile, or 1829 mm 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.

2-5.4.5.5 Other requirements: Provide sloped floors with floor drains located out of circulation path. Line of sight view of toilets or urinals from corridor is not acceptable

2-5.4.6 **Shower Room(s)**. Provide a minimum of three single occupant shower rooms on first floor. One of these shall meet all ADA accessibility requirements. All other shower rooms shall be used by able-bodied military personnel only. Provide one common (male occupants only) shower/locker room with a minimum of three individual shower stalls on second floor. Rooms shall be accessed from Administrative Area Corridor. Shower room shall not be combined with toilet rooms. In a two-story building, shower rooms may be located on first and second floors.

2-5.4.6.1 Function: Shower and dressing rooms for use by battalion staff.

2-5.4.6.2 Adjacency requirements: Adjacent to corridor. Near toilets.

2-5.4.6.3 Furnishings/Fixtures/Equipment: Provide and design rooms to accommodate:

- 6 ceramic tile shower stall with rod and shower curtain.
- ceramic soap holder and wall mounted grab bar at each stall
- dressing area at single occupant shall have bench, four towel/robe hooks, and wall mounted full-length mirror.
- dressing area at common access shower room shall have bench, six lockers, and wall mounted full-length mirror.

2-5.4.6.4 Finishes:
- Floor: ceramic tile.
- Base: ceramic tile.
- Walls: ceramic tile
- Ceiling: painted Portland cement plaster.

2-5.4.6.5 Other requirements: Provide sink in common access shower room.

2-5.4.7 **Janitor Closet**. Provide one on each floor of the building. Minimum area: 2.4 m^2. Room shall be accessed from the corridor.

2-5.4.7.1 Function: Sink and storage of cleaning supplies, soap, paper products.

2-5.4.7.2 Adjacency requirements: Near toilets and shower rooms.

2-5.4.7.3 Furnishings/Fixtures/Equipment: Provide and configure rooms to accommodate:

- one floor mounted mop sink,
- mop rack for two mops,
- minimum 1 800 linear mm of wall mounted stainless steel shelving.

2-5.4.7.4 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 Portland cement plaster

2-5.4.7.5 Other requirements: Door shall have classroom function (F84) lockset.

2-5.4.8 **Storage**. Provide minimum 4.6 m^2 of general storage space. In a two-story building provide half of the area on each floor. Storage rooms will be accessed from the corridor.

2-5.4.8.1 Function: Storage of general office supplies for the battalion.

2-5.4.8.2 Adjacency requirements: Adjacent to corridor.

2-5.4.8.3 Furnishings/Fixtures/Equipment: no requirements:

2-5.4.8.4 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

2-5.4.8.5 Other requirements: Door shall have storeroom function (F86) lockset.

2-5.5 **Battalion HQ Support Areas**. Provide the following areas in each battalion HQ building. Accessibility consistent with the ADA is not required in mechanical rooms, electrical rooms, communications closets, and elevator machine room. All other support spaces shall be handicap accessible.

2-5.5.1 **Mechanical Room(s)**. Provide dedicated areas for mechanical equipment. Mechanical rooms shall not be used for storage or other purposes. Access will be limited to authorized personnel. Size and locate room(s) to allow equipment removal and maintenance. Provide floor openings and vertical shaft spaces as necessary. Main mechanical room shall be located on the ground floor.

2-5.5.1.1 Function: Spaces for HVAC, water heating, and other plumbing and mechanical equipment.

2-5.5.1.2 Adjacency requirements: Locate to allow efficient distribution. Mechanical rooms located on the ground floor shall have a door pair (900 mm minimum width for each leaf) opening to the exterior. Mechanical rooms on second floor shall be accessed from corridors.

2-5.5.1.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-5.5.1.4 Finishes:

- Floor: sealed concrete
- Base: resilient cove base.
- Walls: painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units
- Ceiling: none required

2-5.5.1.5 Other requirements: Doors shall have storeroom function (F86) locksets.

2-5.5.2 **Electrical Room(s)**. Provide dedicated areas for electrical equipment. The main electrical room for the building shall contain the service entrance, metering equipment, and main distribution panel. Metering equipment shall be integrated and coordinated with the existing UMCS/EMCS system. Electrical rooms shall not be used for storage or other purposes. Access will be limited to authorized personnel. Size and locate room(s) to allow equipment removal and maintenance. Main electrical room shall be located on the ground floor.

2-5.5.2.1 Function: Spaces for electrical equipment.

2-5.5.2.2 Adjacency requirements: Locate to allow efficient distribution. Main electrical room on the ground floor shall be accessed from the exterior. All other electrical rooms shall be accessed from corridors.

2-5.5.2.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-5.5.2.4 Finishes:

- Floor: sealed concrete
- Base: resilient cove base
- Walls: painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units
- Ceiling: none required.

2-5.5.2.5 Other requirements: Electrical service to buildings shall be underground. Doors shall have storeroom function (F86) locksets.

2-5.5.3 **Communication Room**. Provide dedicated room(s) for communication distribution equipment. Each room shall not be combined with mechanical or electrical rooms. Provide each battalion with one main communication room; minimum size 3 050 mm x 3650 mm on the first floor. In two-story buildings, a second communication room shall be located on the second floor. Provide additional communication rooms as needed; all spaces having telephone or computer data outlets shall be located to allow a maximum cable length of 90 meters between outlet and communication room. Minimum dimensions of secondary communication rooms shall be 2750 mm x 3 050 mm. Provide floor openings and vertical shaft spaces as necessary. Rooms shall be accessed from corridors. Exterior access is prohibited. Access will be limited to authorized personnel.

2-5.5.3.1 Function: Distribution areas for telephone, data network, and cable television.

2-5.5.3.2 Adjacency requirements: Adjacent to corridor. Locate to allow efficient distribution.

2-5.5.3.3 Furnishings/Fixtures/Equipment: As required by Statement of Work.

2-5.5.3.4 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

2-5.5.3.5 Other requirements: Door shall have minimum 900 mm wide door with storeroom function (F86) lockset. Provide three 102 mm empty conduits connecting vertically stacked communication rooms. Communications rooms shall be compliant with ANSI EIA/TIA 569-A.

2-5.5.4 **Elevator Machine Room**. Provide one. Size to comply with equipment and code requirements.

2-5.5.4.1 Function: Space for hydraulic elevator equipment.

2-5.5.4.2 Adjacency requirements: Adjacent to elevator and corridor.

2-5.5.4.3 Furnishings/Fixtures/Equipment: As required by Statement of Work

2-5.5.4.4 Finishes:

- Floor: sealed concrete
- Base: resilient cove base
- Walls: painted gypsum wallboard or painted veneer plaster, or painted concrete masonry units
- Ceiling: none required.

2-5.5.4.5 Other requirements: Partition walls shall have a minimum STC rating of 45.

2-5.5.5 **Elevator**. Provide one hydraulic passenger elevator.

2-5.5.5.1 Function: Vertical conveyance of people and furniture.

2-5.5.5.2 Adjacency requirements: Adjacent to lobby or main corridor.

2-5.5.5.3 Furnishings/Fixtures/Equipment: Provide and design space to accommodate:

- Passenger elevator: 2,500 lb. capacity, minimum 75 feet per minute speed; center opening doors. Refer to Chapter 5 for additional requirements.

2-5.5.5.4 Cab finishes:

- Floor: carpet tile
- Walls: plastic laminate
- Ceiling: suspended aluminum egg crate
- Car door and front: satin finish stainless steel
- Hoistway entrance doors and frame: satin finish stainless steel

2-5.5.5.5 Other requirements: Meet ADA requirements for accessibility.

2-6 Lawnmower Storage Building. Provide four separate, enclosed, weatherproof storage buildings, with attached covered recycling collection areas and three sided dumpster enclosure. Dumpster enclosure will typically be used for one10 cubic yard dumpster (1 830 mm W x 1 680 mm D x 2 140 mm H) however, the enclosure shall be sized to accommodate two 10 cubic yard dumpsters. Reference drawing A501 in Attachment 5 for an example of this building type. Drawing is provided for illustration only. Offeror is free to propose other designs, however, buildings of this type used on Echo block shall be consistent with, and complementary to, similar structures constructed as part of the FY 02 and FY 03 programs.

2-6.1 Function: Enclosed storage for the following items (not in contract): lawn mowers, landscape maintenance equipment, snow removal equipment, tools, and one flammable storage cabinet for storing maximum of one five-gallon safety can of gasoline, and twelve one-quart containers of motor oil. Centralized collection point and storage for recyclable materials. Aesthetic enclosure of dumpster.

2-6.2 Adjacency requirements: Locate remote from UEPH and other occupied buildings (COF's and Battalion HQ), yet within normal pedestrian pathway between UEPH/SCB and POV parking area(s). Locate the lawnmower storage building adjacent to access drive or parking lot to facilitate maneuvering of garbage and recycling trucks. Comply with building code setback requirements. Provide minimum force protection separation of 25 meters between UEPH buildings and the dumpster. Building shall also meet force protection separation distances for other inhabited buildings.

2-6.3 Furnishings/Fixtures/Equipment:

- Provide one interior light fixture with safety cage, controlled by occupancy sensor switch.
- Provide exterior electrical receptacles.
- Provide freeze resistant hose bib inside dumpster enclosure

2-6.4 Building materials:

- Floor: sealed concrete slab on grade.
- Exterior wall material: match materials used on buildings.
- Structure: Non-combustible materials. Fire-retardant wood or plywood shall not be used.
- Roofing: match roof of UEPH building.
- Interior wall finish: painted impact resistant gypsum wallboard or painted concrete masonry units.
- Ceiling: painted exposed structure.

2-6.5 Other Requirements:

- Provide wall louvers to allow natural cross-ventilation.
- Roof penetrations are not acceptable.
- Gates of any type on dumpster enclosure are not acceptable.
- Provide hollow metal door pair and frame with storeroom function (F86) lockset.
- Comply with NFPA 30 requirements for storage of flammable materials.
- Provide minimum 1 200 mm wide sidewalk from entry door to adjacent pavement or sidewalk.
- Provide bracket-mounted fire extinguisher on interior.
- Recycling storage area(s) shall be weather protected with extension of building roof.
- Recycling area(s) shall provide area for 6 fifty gallon, wheeled plastic refuse containers (NIC).

2-6.6 Locations
UEPH complex on Alpha Block
LCOF pair on Echo Block (south)
MCOF pair on Echo Block (north – FY02 bldgs.)
LCOF pair on Echo Block (north – FY02/04 bldgs.)

This page intentionally left blank.

CHAPTER 3

SITE PLANNING AND DESIGN

3-1 SCOPE OF WORK.

3-1.1 Echo Block Build Out

3-1.1.1 The functional requirement for the FY04 Whole Barracks Renewal is to site three Large Company Operations Facilities and two Large Battalion Headquarters with classroom within the existing master plan for Echo Block. The master plan projects that the final build out of Echo Block will consist of 3 barracks complexes to accommodate 800 soldiers and 3 Soldier Community Buildings, 4 medium duplex Company Operations Facilities, 4 large duplex Company Operations Facilities and 4 Large Battalion Headquarters with classroom and a Brigade Headquarters.

3.1.1.2 Parking for soldiers and other administrative personnel shall be located for each building in close proximity to the associated building. Force protection requirements restrict parking within 10 and 25 meters depending on classification of building (see Force Protection paragraph). Accessible parking spaces near building entrance are required.

3.1.1.3 Limited upgrade to the street network is required under the FY04 Whole Barracks Renewal. The FY02 Whole Barracks Renewal upgrades the existing street network and continues the design set forth in the recently completed barracks project at North Fort. The Echo Block complex incorporates a pedestrian friendly design, encouraging walking between the barracks and administrative buildings and this theme is maintained in the FY04 Whole Barracks Renewal. A lawnmower storage building is required at the pair of large company headquarters buildings on the south side of the site, and at each pair of medium company headquarters and large company headquarters on the north side of the site. See Site Plans, Plates C102 and C103.

3.1.2 ALPHA BLOCK FY04 PROJECT.

The portions of FY04 project that are to be developed on Alpha Block are a 300-person barracks, the associated parking, a lawnmower storage building, a half basketball court and sand volleyball court, and road access along C Street into the barracks parking area, and a landmark feature. Parking shall be provided for 80% of barracks occupants. In addition, the area between “C” Street and “D” Street and 41st Division Drive and 12th Street shall be developed as an informal recreation area with a fitness par course and running trail. A sidewalk shall be provided along the west side of 41st Division Drive. The remainder of Alpha Block development will occur in subsequent years as FY05 and FY06 build out. Imaginative site design is encouraged. However, the site boundaries and project composition are fixed. Based on the graphic and narrative descriptions of site opportunities and constraints provided, the offeror shall verify that the site meets the program requirements. See Site Plans, Plates C107 and C108.

3-2 **SITE VERIFICATION.** Graphic and narrative descriptions of site opportunities and constraints have been provided. See Site Plans, Plates C107 and C108.

3-3 **EXISTING CONDITIONS.** The offeror shall be provided with a digital topographic survey for this site by the Government. 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 that are found in the Government furnished survey shall be brought to the immediate attention of the Contracting Officer for clarification.

3-3.1 **Utility Plans.** Plans of the existing utility distribution systems are shown on Plates C104 and C109. The locations of existing utilities shown on the site survey and utility maps are approximate only. The offeror shall field verify utility locations before starting construction. Immediately contact the Contracting Officer if actual conditions vary from the topographic survey.

3-4 **EXCAVATION PERMITS.** The Contractor shall obtain approved installation excavation permits from Public Works 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) and Battalion Headquarters Facilities requirements, and landmark feature. 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.

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. See Fort Lewis Real Property Master Plan.

3-5.2 **Buffer Area.** Provide appropriate buffer areas to separate and visually isolate the Unaccompanied Enlisted Personnel Housing (UEPH) Units, Company Operations Facilities (COF) and Battalion and Brigade Headquarters Facilities. Parking Lots shall provide buffers between UEPH and administration buildings. Landscaping and undeveloped areas shall provide buffers along "A" Street and between "C" and "D" Streets.

3-5.3 **Orientation of Company Operations Facilities (COF).** Orient the Company Operations Facilities (COF) within the constraints of the site available to facilitate pedestrian traffic within the complex. Orientation shall be similar to adjacent buildings.

3-5.4 **Orientation of Battalion Headquarters Facilities.** Orient the Battalion Headquarters Facilities to the maximum extent possible within the constraints of the site available to facilitate pedestrian traffic within the complex. Orientation shall be similar to adjacent buildings.

3-6 **GRADING AND DRAINAGE.** The grading should maintain existing topography while recognizing standard gradients. There should be a balance of the quantity of cut and fill soils which would create a smooth transition of graded areas into the existing natural site. The plan should reflect selective site clearing that preserves groups of trees. Grading should

manage site runoff to maintain rate of flow and quantity to pre-construction levels, or reduce site runoff where possible. 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. Federal, State and local regulations regarding the design of stormwater management systems shall be considered the minimum design criteria. 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. The Contractor shall confine all work, except utility upgrades, to the project boundaries indicated on the attached drawings. Provide drainage away from all buildings on all sides with a minimum slope of 2 percent for 3 meters (m). The maximum grade in unpaved areas shall not exceed 5 percent where possible. Drainage system shall be properly coordinated with surrounding properties to insure that runoff does not cause damage to other properties. Surface drainage shall flow away from each building and no collection swales shall be closer than 6 m to any building. Ensure that foundation planting beds are designed to positively drain so that water will not pond next to the foundation.

3-7 **GENERAL SITE DESIGN CRITERIA.** The following are to be used as guidance for site design. Minimum spacing between buildings shall be 10m. 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, a minimum of 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, etc. The site shall be accessible to physically disabled persons the design shall conform to the Uniform Federal Accessibility Standards (UFAS) Federal Standard 795, and the Americans With Disabilities Act Accessibility Guidelines (ADAAG).

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: two sports courts at the barracks complex and an open space/recreation area.

3-7.1.a Sports Courts. A half basketball court and a sand volleyball court shall be placed on the barracks site in locations that allow good access from the FY04 barracks complex as well as future barracks complexes planned to the north and south of the FY04 barracks. Sports court locations shall consider potential noise impacts to barracks occupants.

3-7.1.b Open Space/Recreation Area. The Offeror shall develop the area located between “C” and “D” Streets and 41st Division Drive and 12th as an informal open space/recreation area with a fitness par course and running path. Existing trees and shrubs shall be retained whenever possible. This area shall require minimal maintenance and no permanent irrigation system shall be used. Gravel, concrete and other building materials remaining from previous development shall be removed and replaced with topsoil as needed to restore area with low maintenance field grasses. Recreation features shall include benches, exercise equipment stations

(par course), and two 1.8m wide asphalt concrete running paths. The running paths shall meander through the area, generally running parallel to “C” and “D” Streets. Both ends of the paths shall extend to sidewalks located along 12th Street and 41st Division Drive for connection to paths planned in future projects.

3-7.2 Landmark Feature. The FY04 project includes a significant landmark feature welcoming all to North Fort Lewis. The landmark feature shall be a gateway or entry structure that is located south of the intersection of 41st Division Drive and ‘A’ Street, on each side of 41st Division Drive see Plate C108. The gateway shall be a focal point to North Fort and be one of the first features people see as they enter the North Fort area. It will serve as a symbolic entry into North Fort but will not function as a working gate. The materials, colors, style, and scale or the feature shall be compatible with the Whole Barracks architectural theme. Accent lights shall be provided to highlight the feature. If the gateway is designed to span or arch over the road, the minimum vehicle clearance height shall be 4.9 m. The landmark feature shall not be designed as a memorial.

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:

a. TM 5-822-2 General Provisions and Geometric Designs for Roads, Streets, Walks and Open Storage Areas, July 1987.

b. Installation Design Guide, Fort Lewis, Washington, April 1987.

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-semitrailer 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.

3-9 **DEFINITIONS.**

3-9.1 **Entrance and Intersection Design.** For site entrances and drive aisle intersections, provide "T" intersection offsets of at least 38.1 m. The preferred angle of intersection is right-angle (90 degrees).

3-9.2 **Drive Aisle Design.** The selected design vehicle templates determine dimensions for drive aisles for parking lots. Separation, corner clearances, and sight distance are established when the design vehicle templates and speed limits are selected. Design pavements for the wheel load associated with the design vehicle.

3-9.3 **Privately Owned Vehicle (POV) Parking.** POV stalls without vehicle overhang shall be a 2.7 m x 5.5 m. The design vehicle template that is used to design this space shall be described.

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. Sidewalk setback on "C" Street shall be 1.2 m. Sidewalk setback on 41st Division Drive and 12th Street shall be 4.6 m.

3-10 **SIDEWALK DESIGN.** The network of walks throughout the complex shall be designed to facilitate pedestrian traffic among facilities, and minimize the need to use vehicles. Sidewalks shall be provided on both sides of 12th street. Sidewalks shall be provided on the south side of "C" Street and the west side of 41st Division Drive. Walks shall be a minimum of 1.2 m wide exclusive of curb width, and made non-reinforced concrete with a minimum thickness of 100 mm. The sidewalk on 'C' Street shall be 1.2 m wide. Where walks are adjacent to the curb, the curb width is not to be included as sidewalk. Ramps for handicapped individuals shall be provided at intersections by depressing street curbs and adjacent sidewalk.

3-11 **LANDSCAPE PLAN.**

3-11.1 **General.** The offeror shall obtain and use the services of a registered landscape architect, experienced in site planning and planting design. A complete, integrated landscape-planting plan shall be provided for the overall project. Provide an energy-conscious, maintenance-efficient, self-sustaining and aesthetically pleasing landscape design.

Landscaping shall be in accordance with force protection criteria (in particular Standard 3. Unobstructed Space) and Sustainable Design Goals. Force protection criteria do not prohibit the use of vegetation within the 10m unobstructed zone. However, vegetation shall not permit the obstruction of objects 150 mm or greater in height. Previous WBR projects have primarily used low groundcovers, turf, and inorganic mulches (such as river rock) within 10 meters of buildings. Sparsely limbed or upright deciduous shrubs that do not allow the obstruction of objects 150 mm or greater in height can be used to a limited extent. Individual deciduous trees are allowed within the 10-meter zone but shall be located far enough apart from adjacent trees so that there is good visibility around trunks.

Plants: Plant materials shall be selected on the basis of plant hardiness (drought tolerance), climate, soil conditions, and quality. Plant materials shall be low maintenance and tolerant of the specific site conditions. A plant list of prohibited plants and acceptable plants is provided in Attachment 14. The Contracting Officer shall approve plants other than those on the acceptable list. They shall meet sustainable design goals and force protection criteria. The

use of native vegetation is encouraged. Fast growing ground covers and mulch shall be used to minimize weeding requirements and maintain soil moisture during establishment. Planting, sodding, or seeding shall occur only during periods when beneficial results can be obtained. Topsoil shall be applied at a minimum depth of 150 mm for turf and 200 mm for planting areas other than turf. Areas that are disturbed by construction activities that are not part of the designed landscape(all areas outside paved, rock-mulched, planted or developed areas of the project) shall receive a minimum depth of 100 mm of topsoil and be seeded to a low-maintenance, field grass mix to control erosion.

3-11.2 Landscape Design Goals

3-11.2.1 **Echo Block.** See Plate L101 General Landscape Concepts for examples of the type of landscape designed for previous years (WBR FY02 and FY03). This drawing is provided for illustration only. Offeror is free to propose other designs, however, landscapes of this type used on Echo block shall be consistent with, and complementary to, landscapes constructed as part of the WBR FY 02 and FY 03 programs.

a) Patio or courtyards areas shall be provided adjacent to each administrative buildings for small gatherings.

b) Special paving surfaces shall be provided in the higher intensity areas such as the Company Operations Facility COF and Battalion Headquarters Facility patios and front entrances. Special paving materials shall include concrete patterning/texturing. Consider the use of other landscape material such as concrete pavers, rock mulches, and large landscape rocks in the design.

c) Provide adequate outdoor seating at each (COF) and Battalion Headquarters Facility, see goal (j).

d) Enhance site security throughout the site by considering how planting affects visibility and lighting design.

e) Maintain 4.6-meter setback for all new and existing trees from underground utility lines, whenever possible. Setbacks shall be a minimum of 3.1 m for new trees. Landscaping shall be fully coordinated with existing and proposed utilities.

f) When possible, co-locate aboveground utility boxes within planting areas to minimize visual clutter. For areas outside the force protection 10-meter unobstructed zone, screen aboveground utilities boxes (with the exception of transformers) with vegetation when possible. Transformers shall have a minimum clear zone (no trees, shrubs or ground covers) of 2.4 m for maintenance access.

g) Limit lawn areas to those required for functional open space to reduce water required for irrigation.

h) Maintain existing trees whenever possible if determined to be of good health and location in relation to roads, parking, and buildings. Protect existing trees to be retained from damage during construction**.** See paragraph 4-4 Clearing and Grubbing and Section 00890, 02230 Clearing and Grubbing specification.

i) A cast-in-place concrete mow edge shall be provided between lawns and plant beds, and between building perimeters and lawns.

j) All site furnishings shall be well integrated into the site and landscape design and shall be compatible with the architectural design of the COF and Battalion Headquarters Facilities. Site furnishings shall include benches [four (4) minimum per building], and trash/ash receptacles (1 minimum per building). At minimum, the LEED point for bike racks (Credit 4.2: Alternative Transportation, Bicycle Storage & Changing Rooms) shall be attained. Site furnishings shall comply with force protection criteria.

k) Large-growing deciduous shade trees shall be provided for parking lots (around perimeter and in islands). At minimum, parking lot islands with trees shall be provided for every ten (10) to twelve (12) parking spaces. Parking lot islands and perimeter planting areas shall be a minimum of 3.1 m wide and a preferred size of 4.6 m wide.

l) Signs and guidons shall be provided for COF and Battalion Headquarters Facilities . For signs see 00890 and detail A701 in Attachment 7. Two signs shall be provided for each (COF--one for each company), and one sign shall be provided for each Battalion Headquarters Facilities. For COF guidon detail, see Plate C111**.** A total of six guidons shall be provided: two for each COF (one per company). Guidons shall be located near the main building entrance. See Plate L101 for COF guidon and sign locations**.** The Battalion Headquarters Facilities signs shall be prominently located on each building site near the main entry sidewalk leading from the building to the parking lot.

m) The landscape design shall be water efficient. At minimum, a LEED point for Credit 1.1: "Water Efficient landscaping, Reduce by 50%," shall be achieved.

3-11.2.2 **Alpha Block.** See Plate L101 for an example of the type of barracks complex landscape designs used on WBR Echo Block in FY02 and FY03.. This plan provides a very general guideline for the type of landscape requested for this project: the following goals are required.

a) Develop a "soldier friendly" environment that is distinct from the everyday working environment.

b) Courtyards or central landscaped areas in the barracks complex that allow privacy and passive (relaxing) recreation areas as well as areas for group social activities such as picnicking and troop barbecues shall be provided.

c) Special paving surfaces shall be provided in the higher intensity areas such as building patios and front entrances. Consider the use of other landscape material such as, pavers, rock mulches, and large landscape rocks in the design.

d) Areas within the Unaccompanied Enlisted Personnel Housing (UEPH) complex that allow open play/passive recreation (Frisbee, catch) shall be provided. A half basketball/sport court and sand volleyball court shall be provided, see 3-7.1. An open space/recreation area shall be provided for the block between "C" and "D" Streets and 41st Division Drive and 12th Street, see 3-7.1.

e) Provide adequate outdoor seating along walks, in courtyards, and near recreation facilities. Consider weather protection (shelter, shade trees).

f) Enhance site security throughout the site by considering how planting affects visibility and lighting design.

g) Boulevard (street tree) planting shall be provided along all streets within a 4.6 meter-wide planting area (setback) between the road (as measured from face of curb) and sidewalk as shown on Plate L101, C107 and C108. Street trees shall be planted 10.6 m to 13.7 m on center (o.c.). An exception to the 4.6 m plant area and street tree planting is the area located on 'C' Street, between 12th Street and 41st Division Drive(see Plate C107). This area contains a row of existing Ponderosa pine and Douglas-fir trees that shall be preserved. The 1.2 meter-wide sidewalk shall be moved closer to 'C' Street to preserve these trees and provide safe pedestrian access (a 1.2 m setback from street instead of standard 4.6 m). These trees shall be fenced along the project boundary line during construction with a 1.8 meter-high portable chain-link fence as shown on Plate C107. No construction activities shall be allowed other than minimal grading that is required for sidewalk grades to meet with existing grade. If cutting or filling of 125 mm or greater is required within 4.6 meters of tree trunks to meet sidewalk grades, low concrete curbs/walls shall be used to maintain existing tree grades within this area.

h) Maintain 4.6-meter setback for all new and existing trees from underground utility lines, whenever possible. Setbacks shall be a minimum of 3.1 m for new trees. Landscaping shall be fully coordinated with existing and proposed utilities.

i) When possible, co-locate aboveground utility boxes within planting areas to minimize visual clutter. For areas outside the 10-meter unobstructed zone, screen aboveground utilities boxes (with the exception of transformers) with vegetation when possible. Transformers shall have a minimum clear zone (no trees, shrubs or ground covers) of 2.4 m for maintenance access.

j) Limit lawn areas to those required for recreation and functional open space to reduce water required for irrigation.

k) Large-growing deciduous shade trees shall be provided for parking lots (around perimeter and in islands). At minimum, parking lot islands with trees shall be provided for every ten (10) to twelve (12) parking spaces. Parking lot islands and perimeter planting areas shall be a minimum of 3.1 m wide and a preferred size of 4.6 m wide. Maintain existing trees whenever possible if determined to be of good health and location in relation to roads, parking, and buildings. Protect existing trees to be retained from damage during construction.

m) A cast-in-place concrete mow edge shall be provided between lawns and plant beds, and between building perimeters and lawns.

n) All site furnishings shall be well integrated into the site and landscape design and shall be compatible with the architectural design of the barracks buildings. Site furnishings for the barracks complex shall include benches [ten (10) minimum], trash/ash receptacles [four (4) minimum], picnic tables [eight (8) minimum including two (2) covered universally accessible tables], and outdoor barbeque grills [two (2) minimum with a minimum of two (2) that are universally accessible] per building. At minimum, a LEED point for bike racks (Credit 4.2: Alternative Transportation, Bicycle Storage & Changing Rooms) shall be achieved. Site furnishings shall comply with force protection criteria. Incorporate trellises, arbors or other landscape structures or features when possible to enhance the quality of life for soldiers.

o) The landscape design shall be water efficient. At minimum, a LEED point for Credit 1.1: "Water Efficient landscaping, Reduce by 50%," shall be achieved.

3-11.3 **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.

3-11.3.1 **Quality.** Well-shaped, well-grown, vigorous, healthy plants having healthy and well-branched root systems in accordance with ANLA Z60.1 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.

3-11.3.2 **Measurement.** Plant measurements shall be in accordance with ANLA Z60.1.

3-11.3.3 **Percolation Test.** Test for percolation shall be done to determine positive drainage of plant pits and beds. A positive percolation shall consist of a minimum 25 mm per 3 hours; when a negative percolation test occurs, a shop drawing shall be submitted indicating the corrective measures.

3-11.3.4 **Soil Test.** A soil test shall be performed for delivered topsoil for particle size, pH, organic matter content, textural class, chemical analysis, soluble salts 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. See 00890 for topsoil requirements. Soil tests shall be certified reports of inspections and laboratory tests, prepared by an independent testing agency, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used and compliance with recognized test standards shall be described. The soil test shall be submitted to the Contracting Officer for approval. A soil test shall be required for every topsoil source (manufacturer).

3-11.3.5 **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 current industry standards. 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. Organic mulch shall be provided for plants after installation.

3-11.3.6 **Pruning.** Pruning shall be accomplished by trained and experienced personnel. Tree pruning shall be in accordance with ANSI A300. Only dead, diseased, or broken material shall be pruned from installed trees. 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." Existing trees to retain shall be pruned according to 00860, 4-4 Clearing and Grubbing.

3-11.3.7 **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.

3-11.3.8 **Plant Establishment Period.** On completion of the last day of the planting, seeding and sodding 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.

3-11.3.9 **Maintenance During Establishment Period.** The maintenance of plants shall include straightening plants, tightening stakes and guying material (if staking is required, see 00890), protecting plant areas from erosion, maintaining erosion material, supplementing mulch, 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. When application of a pesticide becomes necessary to remove a pest or disease, a pesticide treatment plan shall be coordinated with the Installation Pest Management Coordinator.

3-11.3.10 **Unhealthy Plant.** A tree shall be considered unhealthy or dead when the main leader has died back, or up to a maximum 25 percent of the crown has died. A shrub or groundcover shall be considered unhealthy or dead when over 25 percent of the plant has died. This condition shall be determined by scraping on a branch an area 2 mm square, maximum, to determine if there is a green cambium layer below the bark. Unhealthy or dead plants shall be removed immediately and shall be replaced in accordance with the following warranty paragraph. The Contractor shall determine the cause for unhealthy plant material and shall replace the plant in-kind as soon as seasonal conditions permit and with the same size as the plant being replaced or provide alternative recommendations for replacement (substitutions to be approved by Contracting Officer).

3-11.3.11 **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.

3.11.4 **Turf.** Turf consists of seed and sod.

3.11.4.1 **Seed.** State-certified 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 AMS seed laws and applicable State seed laws. Seed mixtures shall be proportioned by weight. Weed seed shall not exceed one percent by weight of the total mixture.

3-11.4.2 **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 25 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 32 mm within a tolerance of 6

mm excluding top growth and thatch. Measurement for thickness shall exclude top growth and thatch. The limitation of time between harvesting and installing sod shall be a maximum of 36 hours.

3-11.4.3 **Soil Test.** A soil test shall be performed for delivered topsoil for particle size, pH, organic matter content, textural class, chemical analysis, soluble salts 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. See 00890 for topsoil requirements. Soil tests shall be certified reports of inspections and laboratory tests, prepared by an independent testing agency, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used and compliance with recognized test standards shall be described. The soil test shall be submitted to the Contracting Officer for approval. A soil test shall be required for every topsoil source (manufacturer).

3-11.4.4 **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 grass 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.

3-11.4.5 **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.

3-11.4.7 **Maintenance During Establishment Period.** The maintenance of the turf 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. When application of a pesticide becomes necessary to remove a pest or disease, a pesticide treatment plan shall be coordinated with the Installation Pest Management Coordinator.

3-12 SPRINKLER /IRRIGATION SYSTEM.

This scope of work includes two sites. The first site is Echo Block which has buildings either existing or still under construction. The second site is Alpha Block which is a totally new construction site.

Irrigation shall be required for all landscape areas. The following requirements apply to both blocks:

1) All permanent systems shall be a commercial-grade automatic irrigation system with controls covering all lawn and planting areas.
2) Design the system to function with available water pressure. Investigate and employ methods of irrigation based on sustainable design principles, where practical and feasible.

3) Irrigation designs will be stamped by a Registered Landscape Architect or Certified Irrigation Designer.

Echo Block

This block will receive a 100% permanent, complete and operational irrigation system covering all landscape areas with head to head coverage. This site consists of four remaining regions to be irrigated. Three of the regions "I", "M", and "N" will require tying into an existing irrigation system consisting of a 25mm point of connection, 50mm or 64mm mainline, and controller. The mainlines and wire have been stubbed out beyond the existing landscape so trenching thru the existing landscaping is not required. The remaining region "L" will require a new 25mm point of connection and controller.

Region "I" is a Large Company HQ located NE of the only Large Company HQ constructed under FY02. This controller is sized to accommodate the expansion of FY04. One common, one spare, and 10 hot wires have been extended into the FY04 area.

Region "M" is a Battalion located NE of the only Medium Battalion HQ constructed under FY02. This controller is sized to accommodate the expansion of FY04. One common, one spare, and 12 hot wires have been extended into the FY04 area.

Region "N" is a Battalion located NE of the only Large Battalion HQ constructed under FY03. This controller is sized to accommodate the expansion of FY04. A minimum of one common, one spare, and 12 hot wires have been extended into the FY04 area.

Region "L" is located between the Medium Company Facility and Large Battalion HQ constructed under FY03. This region consists of two Large Company Facilities and requires a 100% complete irrigation system to be installed. There are no provisions existing from previous contracts. Connection to an existing system shall not be allowed.

See Plate L 102 for specific irrigation regions.

Alpha Block

Alpha Block will receive a 300-man barracks. This site (the same as for Echo Block region "L") will require a 100% complete irrigation system as this is the first construction on this site.

The contractor shall determine how the irrigation system is to be fed with water. This system can use only potable water, non-potable water, or a combination of both. If non-potable water is used, the irrigation contractor will be required to use products specific to non-potable uses. If potable water is used, all new services shall be metered. Tap into domestic water line and install setter, meter, and concrete meter box.

The Alpha Block irrigation system shall be designed to receive a 100% permanent, complete and operational irrigation system in all landscaped areas.

3-13 **SITE FURNITURE:** Site furniture shall be permanently installed, low maintenance, with durable materials and finishes (no concrete or pre-cast concrete shall be used) and shall be in compliance with force protection criteria. Site furniture colors, finishes and styles shall be well coordinated with each other and with buildings to create a cohesive visual character.

Finish colors for Echo Block site furniture shall be bronze, brown and/or black and shall be as similar as possible to WBR FY02 and FY03 Echo Block furniture colors.

CHAPTER 4

SITE ENGINEERING

4-1 SOILS.

4-1.1 **Geotechnical Report.** A Geotechnical Report is provided as part of this RFP (See Attachment 8). The report provides an overview of subsurface conditions, general recommendations for design, and is furnished for informational purposes. The offeror to whom this contract is awarded, shall perform a geotechnical investigation specific to the proposed project to provide any additional geotechnical information that is not contained in the furnished Geotechnical Report to be used for design The Contractor shall submit a project specific geotechnical report, certified by a professional engineer experienced in geotechnical engineering, to include, but not limited to: description and classification of geologic, soil, rock, and groundwater conditions; subsurface profiles, boring logs and location plans; summary of laboratory and field test results; local seismic conditions; local soil, rock, and groundwater problems; extent of boulders; soil resistivity, moisture, and chemistry for cathodic protection; infiltration and permeability conditions; surface and subsurface drainage conditions; description of existing foundation systems; bearing capacity of soil; settlement type and potential; recommendations for type and depth of foundation systems, pavement sections, slab on grade sections; recommendations for foundation drainage systems; general earthwork, compaction, dewatering, erosion and sediment control, excavation and safety requirements; recommendations for field tests or any other information necessary for design.

4-1.1.1 **Certification.** The offeror and his or her professional geotechnical engineer 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 First Site/Utility Design Submittal (65%) . If revisions are made to the design submission, a new certification shall be provided with the next design submission.

4-1.1.2 **Changed Conditions**. As noted in paragraph 4-1.1.1, the geotechnical report in the RFP is for informational purposes and the offeror awarded the contract is responsible for conducting his or her own project specific geotechnical investigation and report. If the Contractor encounters conditions different than provided in the RFP, the Contractor shall notify the Government with the submission of the Contractor project specific geotechnical report differences that can impact cost such as rock or groundwater elevations; discovery of soil, rock, and groundwater problems; discovery of contamination; changes required for foundations or pavements; changes in earthwork requirements; etc. The Government shall evaluate the notification to determine if a Changed Condition exists prior to the approval to initiate construction.

4-1.2 **Soil Compaction.** Soil compaction shall be achieved by equipment approved by a professional geotechnical engineer. Material shall be moistened or aerated as necessary to provide the moisture content that will readily facilitate obtaining the compaction specified with the equipment used. Compact each layer to not less than the percentage of maximum density specified in Table 4-1, determined in accordance with ASTM D 1557, Method D.

TABLE 4-1 Soil Compaction

Subgrade Preparation, Fills, Embankments, and Backfills	Compaction Requirements (Percentage of Maximum Density)
Structures & Building Slabs	95
Streets, Paved Areas, Bike Paths	95
Sidewalks	90
Grassed and Planted Areas	85

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 stated compaction requirements shall require the approval of the Contracting Officer.

4-1.3 **Capillary Water Barrier.** A capillary water barrier is required for all interior slabs on grade, including garages, carports and storage rooms. As a minimum, the capillary water barrier shall consist of clean, crushed, nonporous rock, crushed gravel, or uncrushed gravel. The maximum particle size shall be 37.5 mm and no more than 2 percent by weight shall pass the 4.75 mm size sieve.

4-1.4 **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 ASTM E1465.

4-2 **EROSION AND SEDIMENT CONTROL.** Erosion and Sediment Control Facilities shall be required in accordance with Fort Lewis Design Standards and as described in Specification Section 01410: Environmental Protection. The management of erosion and sedimentation from construction sites and new developments involves the design and implementation of a control system. Design a sediment and erosion control plan, specific to the site, that conforms to United States Environmental Protection Agency (EPA) Document No. EPA 832/R92-0005 (September 1992), Storm Water Management for Construction Activities, 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 stormwater runoff and/or wind erosion, including protecting topsoil by stockpiling for reuse.
- Prevent sedimentation of storm sewer or receiving streams.
- Prevent polluting the air with dust and particulate matter.

4-3 **DEMOLITION.** Existing pavement scheduled for demolition includes as shown on the plans. Materials not owned by the Government and not used in construction shall be disposed of off Government property. Obtain required demolition permits and disposal permits from Fort Lewis DPW. Obtain approval of the disposal site from the Contracting Officer.

4-4 **CLEARING AND GRUBBING.** Clear and grub all trees and vegetation necessary for construction; but, save as many healthy trees as possible. Unless otherwise noted, a qualified tree specialist (International Society of Arboriculture (ISA) Certified Arborist, urban forester, or horticulturist) shall determine the health and safety of trees. Trees within the project site limits of work and which are indicated to be left in place, shall be protected by a 1.8 m portable chain-link fence. Existing trees to be preserved shall be crown-pruned to remove all dead, broken, or crossing branches within the crown of the tree. Pruning shall be accomplished by trained and experienced personnel in accordance with ANSI A300. Any existing vegetation designated to remain that is damaged during the work under this contract shall be replaced in kind in accordance with Section 01410 Environmental Protection. See also Section 00890, 02220 Demolition and 02230 Clearing and Grubbing. All timber removed from the project site shall remain the property of the Government, unless otherwise indicated or specified.

4-4.1 **Grubbing**

Material to be grubbed, together with logs and other organic or metallic debris not suitable for foundation purposes, shall be removed to a depth of not less than 450mm below the original surface level of the ground in areas indicated to be grubbed. Tree stumps shall be removed by grinding to a minimum depth of 450mm below original ground surface. Depressions made by grubbing shall be filled with suitable material and compacted to make the surface conform with the original adjacent surface of the ground.

4-4.2 **Tree Removal**

Where indicated or directed, trees and stumps that are designated as trees shall be removed from areas outside those areas designated for clearing and grubbing. This work shall include the felling of such trees and the removal of their stumps and roots as specified in paragraph Grubbing. Trees shall be disposed of as specified in paragraph **Disposal of Materials**.

4-4.3 **Disposal of Materials**

4-4.3.1 **Salable Timber**

4-4.3.1.1 **Salable Timber**: Forest products cut on construction sites shall be classified as Sawlogs, Fuelwood, and Trash. Sawlogs and Fuelwood shall be yarded as described below. Trash shall become property of the Contractor.

4-4.3.1.2 Sawlogs are made from trees that are 200mm Diameter Breast Height (DBH) (1350mm above ground level) and larger. Cleanly limb trees flush with tree trunk and top at 150 mm Diameter Inside Bark (DIB). The minimum size for a sawlog is 150mm diameter on the small end and 4.8 meters in length.

4-4.3.1.2.1 If a log cannot be handled in one length, buck one or more 9.6 meters logs, plus standard trim allowance 300mm, from the butt until the remainder of the tree is less than 9.6 meters in length.

4-4.3.1.3 Fuelwood is made from trees small than 200mm DBH, and the tops of trees used for sawlogs. Limb tree, or top, and top at 50 mm DIB. The minimum size for a fuel wood log is 125mm diameter on the large end and 2.4meters in length.

4-4.3.1.4 Trash shall be any forest product not classified as sawlogs or fuelwood.

4-4.3.1.5 Disposition: Yard sawlogs and fuelwood to a local area, as directed by the Contracting Officer, that does not interfere with the construction project and will be accessible at a later date for salvage disposal action. Deck sawlogs and fuelwood separately. All decks, sawlogs, and fuelwood shall be kept free of limbs and other debris. Trash shall be disposed of in accordance with the following paragraph.

4-4.4 Materials Other Than Salable Timber

Logs, stumps, roots, brush, rotten wood, and other refuse from the clearing and grubbing operations, except for salable timber, shall be disposed of outside the limits of Government-controlled land at the Contractor's responsibility, except when otherwise directed in writing. Such directive will state the conditions covering the disposal of such products and will also state the areas in which they may be placed.

4-5 **WETLANDS.** Jurisdictional wetlands have not been identified on the project site.

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 licensed and permitted existing sources off Government property.

4-8 **WATER DISTRIBUTION SYSTEM.** The design of the water distribution system shall be in accordance with the American Waterworks Association (AWWA), TM 5-813-5 Water Supply Water Distribution November, 1986 and Fort Lewis Design Standards. The Contractor shall determine the domestic and the fire demands for the facilities 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. Sizes shown on drawings are minimum sizes. The following water flow data is from tests in 2001 and is provided for information only and shall not be used as a basis for the design of the fire sprinkler systems:

Alpha Block at A Street and 41st Division Drive: Static Pressure – 503 kPa (73 psig), Flow – 4626 lpm (1222 gpm) at residual pressure – 365 kPa (53 psig).

Echo Block at D Street and East Drive: Static Pressure – 538 kPa (78 psig), Flow – 4920 lpm (1300 gpm) at residual pressure – 414 kPa (60 psig).

4-8.1 **Analysis of Existing System Capacity.** The Contractor shall provide design calculations that show the existing system is capable of handling the additional flows.

4-8.2 **Connections to Water Mains and Building Service Lines.** The Contractor shall be responsible for the design of the sizes, locations, and means of connections to the existing system based on Facility requirements and system conditions. See Utility Plans for connections to the existing systems. In Echo block, the infrastructure for the water distribution system was constructed under the FY02 Whole Barracks Renewal and was installed parallel to the developed street network, 17th Street, 19th Street, 22nd Street, 24th Street, East Drive, A Street and C Street. Water supply lines to the new buildings will be

provided. These new lines will connect to the stub-outs provided in the FY02 Whole Barracks Renewal. Existing asbestos cement lines in the project will be abandoned. Abandoned asbestos cement lines will be removed in locations where they would fall under building footprints, or abandoned in place and filled with concrete if below the footing cuts. In Alpha Block, existing waterlines within the project limits will be abandoned and new waterlines installed. Service lines to existing buildings will remain active. Stubouts for future buildings, which will include two 200-person barracks, shall be provided. All existing waterlines are assumed to be asbestos cement.

4-8.2.1 **Connections to Water Mains.** Design the connections to the station water system including the meter assemblies 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 and fire sprinkler system 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 150 mm. 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 AWWA or Fort Lewis design standards for a 1034 kPa working pressure system.

4-8.2.2 **Building Connections.** Design and construction shall be in accordance with the International Plumbing 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 915 mm. Adequate cover must be provided for freeze protection. Sufficient cover must also be provided to protect the pipe against structural damage due to superimposed surface loads. Lines installed with less cover than the minimums stated shall be concrete encased with a minimum concrete thickness of 150mm.

4-8.4 **Fire hydrants.** Hydrants and valves shall conform to AWWA and Fort Lewis Design Standards requirements. Fire 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 150 m apart . In addition, a hydrant shall be provided so that all parts of the facilities can be reached by hose lines not over 105 m 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 95 liters per second of fire protection regardless of existing pressures or water line capacity. A fire hydrant shall be located within 15m from any fire department connection provided. Hydrant laterals shall be 150 mm minimum size, and shall not exceed 15 m in length, and shall have an underground shutoff valve. Valve box, at each lateral, shall be located within 3 m 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.** Meters shall be provided with both local and remote monitoring features. Remote monitoring meters shall be equipped with electronic or radio frequency transmitters for remote monitoring. The method of remote monitoring must be integrated and coordinated with the installation UMCS/EMCS/DDC systems. Water meters shall be located inside of the mechanical room.

4-8.7 **Materials.** Materials for the water distribution system shall be in accordance with the Fort Lewis design standards. Copper water service lines, if used, will be dielectrically isolated from ferrous pipe. Dielectric isolation shall conform to the requirements of AWWA. 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.

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 Contracting Officer 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 Standards and Fort Lewis Design Standards.

4-9 **SANITARY SEWERAGE SYSTEM.** The design of the sanitary sewer distribution system shall be in accordance with the Fort Lewis design standards and TM 5-814-1 Sanitary and Industrial Wastewater Collection – Gravity Sewers and Appurtenances, March 1985. The Contractor shall determine the sewerage contribution for the facilities and shall verify the design of all components of the sanitary sewer system. Existing sanitary sewer mains within Echo Block were replaced under the FY02 Whole Barracks Renewal. Barracks projects at North Fort have placed new sanitary sewer mains beneath the streets. Stub-outs under streets and pavements placed under previous projects will allow easy connection for services to the buildings constructed under the FY04 Whole Barracks Renewal. The route for the new sanitary sewer mains is under 17th Street and 22nd Street from A Street to the connection with the existing mains on D Street. The sanitary sewer mains are relatively shallow and will require that special attention be given to the selection of the buildings' finished floor elevations in order to maintain flow via gravity. Existing sanitary sewer mains in Alpha Block shall be abandoned under the FY04 Whole Barracks Renewal. A new sanitary sewerline shall collect effluent from the barracks complex and two future 200-person barracks, and discharge into an existing manhole at the intersection of 41st Division Drive and D Street.

4-9.1 **Analysis of Existing System Capacity.** The Contractor shall provide design calculations that show the existing system is capable of handling the additional flows.

4-9.2 **Calculate Sewage Contribution.** Calculate the sewage contribution from the new facilities in accordance with the TM 5-814-1 Sanitary and Industrial Wastewater Collection – Gravity Services and Appurtenances, March 1985.

4-9.3 **Connections to Sewage Collection Mains and Building Service Lines.** The Contractor shall be responsible for the design of the sizes, locations, 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 Plumbing Code 2000 or latest edition. Minimum diameter for laterals shall be 150 mm while maintaining a minimum velocity of 45 meters per minute. Contractor shall provide No. 12 insulated tracer wire directly above non-metallic lines and install marking tape.

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 122 m apart. Curved sewers are prohibited. Pipes shall be designed to maintain a minimum velocity of 37 meters per minute for average flow and 45 meters per minute for peak diurnal flow. 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 3m.

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 TM 5-814-1, Sanitary and Industrial Wastewater Collection – Gravity Sewers and Appurtenances.

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 915mm unless pipe materials are used and/or unless the pipe is concrete encased with a minimum of 150 mm thickness of concrete.

4-9.7 **Sewage Pump Station and Force Main.** Pump stations and force mains shall only be used when gravity flow is impossible. If required, pump stations and force mains shall be designed in accordance with TM 5-814-2 Sanitary and Industrial Wastewater Collection – Plumbing Stations and Force Mains, March 1985.

4-9.8 **Field Quality Control for Sanitary Sewer Distribution System.** The Contracting Officer will conduct field inspections and witness field test specified. The Contractor shall perform field tests, and provide labor, equipment, and incidentals required for testing.

4-10 **STORMWATER MANAGEMENT SYSTEMS.** The design of the stormwater collection system shall be in accordance with the Stormwater Management Manual for Western Washington. 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.

Design storm water management systems in accordance with the applicable requirements of "Controlling Urban Runoff: A Practical Manual for Planning and Designing Urban BMPS", by the Washington State Department of Ecology or in accordance with the requirements of the Washington State Department of Ecology NPDES permit. The calculation of runoff and the evaluation of existing storm sewer drainage systems shall be as described in paragraph **Storm Drainage Collection Systems and Grading**. Obtain required permits from the Department of Ecology prior to construction. On Echo Block, use of the existing stormwater collection system is allowable. On Alpha Block, 50 percent of the runoff must be retained onsite. There are numerous methods available for runoff retention or water reuse which include:

1. Runoff from roofs collected in vaults and used to flush toilets.

2. Stormwater from parking areas directed to biofiltration swales.

3. The use of pervious pavement in parking lots.

4. Collection of stormwater in vaults and used for irrigation.

5. Runoff collected from landscaped areas could be directed to onsite infiltration systems.

Stormwater collected from streets shall be collected in catch basins and discharged to the stormwater collection system.

4-10.1 **Analysis of Existing System Capacity.** The Contractor shall provide design calculations that show the existing system is capable of handling the runoff from the improved site.

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 capacity of the receiving system. For Alpha Block, 50 percent of runoff shall be retained onsite.

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 GED requirements of the removal of 80 percent of the average annual post development total suspended solids (TSS) and 40 percent of the average post development total phosphorus (TP).

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.** Connection to building roof or area drain lines shall be designed and constructed in accordance with the International Building Code 2000 or latest edition. Contractor shall provide No. 12 insulated tracer wire directly above non-metallic lines and install marking tape.

4-11.3 **Storm Sewer System.** The storm sewer gravity drainage collection system shall be designed and constructed in accordance with the requirements of Fort Lewis base standards. Storm sewer system shall be designed for a minimum of a 10-year return frequency and pipes shall be sized for full flow. The minimum velocity of flow in conduits during a design storm shall be 45 meters per minute. 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 shall be located at intersections and changes in alignment or grade. Intermediate manhole maximum spacing shall be 75 m for pipes 900mm or less in diameter or box drains with the smallest dimension less than 900 mm. Maximum spacing for intermediate manholes on larger pipes and drain boxes shall be 150 M. Manholes and manhole appurtenances shall be pre-cast concrete and shall conform to the Fort Lewis design standards. Shape manhole inverts to the shape of the pipe with cast in place concrete after installing pipes. The manhole lid shall have a 600mm 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 150 mm. Minimum slopes across grass surfaces shall be one percent. In grass areas, overland sheet flow shall be held to a maximum length of 30 M; then, a swale or an inlet must be used. Minimum slopes in swale centerlines shall be 0.5 percent. Maximum swale side slopes shall be 1V:4H and suggested maximum swale depth shall be 600 mm. Ditches shall not be permitted. Storm drain pipe, sheet flow surfaces, and swales shall be designed to prevent standing water under normal conditions for not less than 48 hours.

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 1:48 and the maximum cross slope shall be 1:32. 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 0.30 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. The amount of runoff to any one inlet in roads and parking areas shall not exceed the capacity of that inlet.

4-11.7 **Materials.** All materials shall be in accordance with Fort Lewis Design standards. Pipe for culverts and storm drains may be of reinforced concrete, smooth wall, ABS, PVC or HDPE.

4-11.8 **Field Quality Control for Storm Drainage System.** The Contracting Officer will conduct field inspections. Testing procedures and requirements shall comply with the Fort Lewis Design Standards.

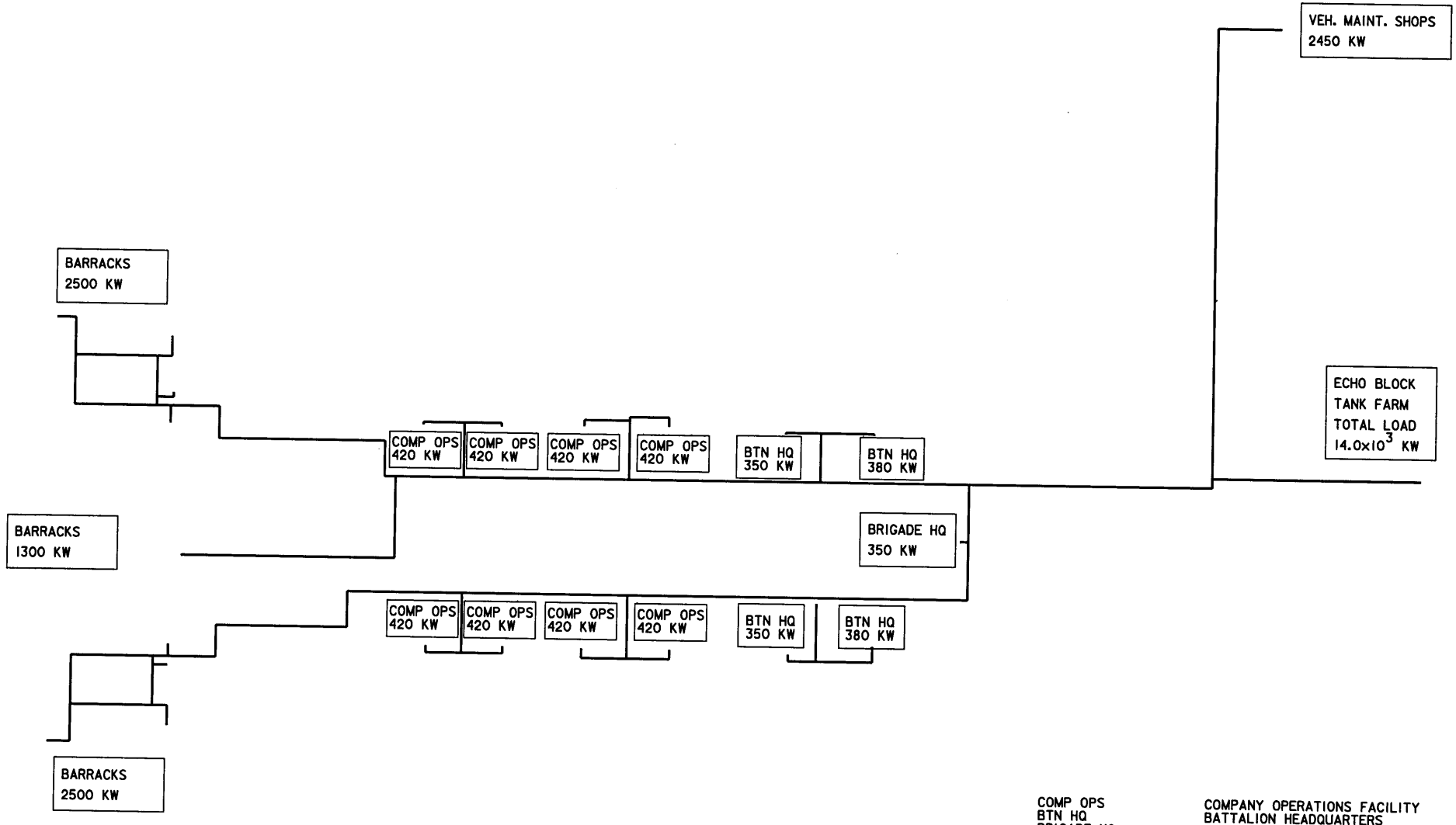
4-12 **PAVEMENT DESIGN CRITERIA.** Pavement design shall be in accordance with the Fort Lewis Design Standards. Concrete curb and curb/gutter shall be required at the perimeter of all streets, roads, parking areas and interior islands. For streets and roads, the design vehicle for this facility is a multi-axled truck; the anticipated axle load for design is 142 kilonewtons. The Contractor shall design the pavement based on a California Bearing Ratio (CBR) of 30 for the compacted subgrade soils. Designs for streets, walks, roads and parking

areas shall include adequate space for trees. Include landscape islands at the ends of rows of parking and every 10 to 12 parking spaces. The minimum width for parking lot islands and perimeter parking lot planting areas shall be 3.1 m the preferred width is 4.6 m.

4-13 **PERMIT REQUIREMENTS.** Timely acquisition of all the necessary design related permits shall be the responsibility of the Government; including the erosion and control permit, storm water management permit, discharge permit, and the health department permit(s). Operating permits and licenses shall be the responsibility of the Contractor, in accordance with Section 00721, "Contract Clauses". Timely acquisition of all the necessary design and construction related permits shall be the responsibility of the contractor. As some permit process times take 6 months or more, the Contractor, upon notice to proceed, shall immediately begin working on the permits so as not to delay completion of the project. The following permits have been identified as being required for this project: Health Department Permits for Sanitary Sewer and Water, Storm Water Management, Erosion and Sediment Control, National Pollution Discharge Elimination Service Excavation Permit, Demolition Permit, and Disposal Permit.

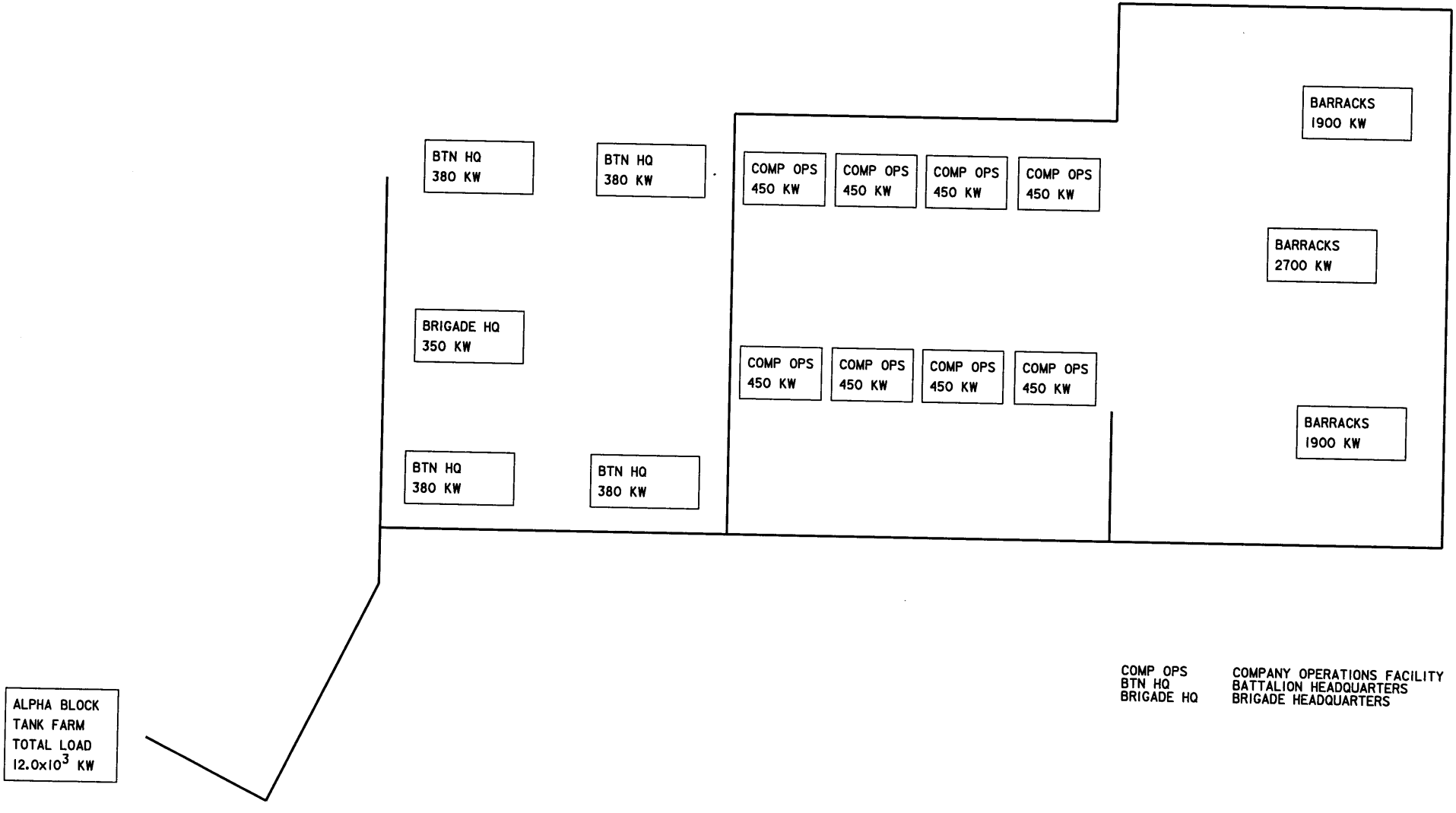
4-14 **GAS DISTRIBUTION SYSTEM.** Natural gas will be the primary heating source with a propane/air mixture as the secondary source of fuel. This backup capability will allow the installation commander flexibility to provide mission support during specific natural gas supply interruption and to take advantage of the interruptible rates.
New natural gas distribution piping shall be the responsibility of Puget Sound Energy (PSE) Co. Contractor shall coordinate with PSE for the installation of the new natural gas piping. 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 regulator and provision for future installation of an individual gas meter to monitor fuel use shall be provided for each building structure. The building service entrance shall be installed at a height sufficient to allow for future installation of the gas meter. 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.
The propane/air piping shall be the responsibility of the Contractor. The central propane storage facilities shall be located at the northeast end of Echo block and the southwest end of Alpha Block. The estimated gas loads at Echo Block and Alpha Block are shown on Schematics 4-14A and 4-14B, respectively. The central propane storage facility shall consist of all propane storage tanks, truck unloading stations, air compressors with air dryer, propane vaporizers, propane/air mixers and the propane transfer pumps. Mixing with air is required to burn propane in equipment set up for natural gas. A mixture will be provided which has a Wobbe Index Number roughly equivalent to that of natural gas. The Wobbe Index Number is defined as the Gross Heat Value divided by the square root of the Specific Gravity. When the Wobbe Index Number is roughly equivalent between two gaseous fuel sources, then the burner equipment setups do not require any alteration to switch between the fuel sources, and the equipment maintains the same heating capacity. The Contractor shall coordinate the propane/air connection point with propane/air piping that are installed under the FY02 and FY03 WBR projects. Propane/air connection for the FY02 WBR project buildings are adjacent to the cathodic protection boxes located near the gas meters.

Propane tanks shall comply with requirements of NFPA 58 and the ASME Code, Section VII, Pressure Vessels. Tanks shall be pad mounted, and shall not be located inside any building. Tanks shall be provided with all required gauges, shut off valves, safety devices, and suction connections. Shut off valves shall be installed at each tank, at the service entry to the building (if not in sight of the tank), and at each heating unit. No shut off valve shall be installed between a safety device and tank. Propane pressure shall be reduced to a minimum service pressure of 3.5 kPa [½ psi] prior to the building entrance. Propane pipe connectors shall be in accordance with UL 567.



COMP OPS	COMPANY OPERATIONS FACILITY
BTN HQ	BATTALION HEADQUARTERS
BRIGADE HQ	BRIGADE HEADQUARTERS
VEH. MAINT. SHOPS	VEHICLE MAINTENANCE SHOPS

ECHO BLOCK ESTIMATED GAS LOADS SCHEMATIC 14-4A



ALPHA BLOCK ESTIMATED GAS LOADS SCHEMATIC 4-14B

4-14.1 Materials. Materials and appurtenances shall be free of defects and suitable to accomplish the stated objectives of gas distribution systems. Pipe shall be polyethylene or steel as described below.

4-14.1.1 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.

4-14.1.2 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 40 mm [1-1/2 inch] and smaller. Fittings 40 mm [1-1/2 inch] and smaller shall conform to ASME B16.11. Pipe flanges and flanged fittings larger than 40 mm [1-1/2 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.

4-14.2 Testing. Prove that the entire system of gas mains and service lines is gas-tight by an air test, in accordance with ANSI B31.8. The test shall continue for at least 24 hours between initial and final readings of pressure and temperature.

4-14.3 Drips. Unless high pressure natural gas is used, drips shall be installed at the low points, immediately following reduction from high pressure to medium pressure (at supply points) and at occasional low points throughout the system to provide for blowing out the lines.

4-14.4 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.

4-14.5 Mains and service lines. Lines shall not be placed under any buildings. Lines shall be placed with a minimum of 0.6 m [2 ft] of earth cover. Protective casings shall be provided to protect lines from superimposed street or heavy traffic loads.

4-14.6 Electrical and Communications. Provide complete electrical and communications systems at the tank farm. All work shall comply with NFPA 58 and the requirements of the NEC Class 1, Division 2 hazardous locations. Contractor shall determine the nearest source for power and communications and shall route an underground ductbank to the tank farm. Ductbank shall have, as a minimum, 2 - 103mm conduits for power and 2 - 103mm conduits for communications. One of the communications conduits shall have 4 - 27mm innerducts with pullwires. Coordinate with Ft. Lewis DOIM for telephone and alarm system requirements. Electrical system shall include power for all equipment installed, monitoring and control equipment, and lighting for security and night operations.

4-15 **HEATING HOT WATER DISTRIBUTION.** (For exterior, underground heat distribution system as applicable) Prefabricated piping system shall be installed to supply and return heating hot 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.

4-15.1 Piping 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.

4-15.2 Casing 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 mm)	Minimum Thickness (in mm)
250 and smaller	3
250 to 450	4
450 to 600	5
over 600	6

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 mm)	Minimum Thickness (in mm)
200 and smaller	1.2
250	2.0
300	2.7
350	2.9
400 to 450	3.0
500	3.2
600	3.9

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

4-15.3 End 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.

4-15.4 Insulation.

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 32 kg per cubic meter (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 20mm (0.9inches). The insulation thermal conductivity factor shall not exceed the numerical value of 0.02 W/mK at 24 degrees C (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.

4-15.5 Thrust 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.

4-15.6 Expansion Compensation. Expansion loops, expansion slip joints or 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, joints or bends shall be shipped to the jobsite in the maximum size sections feasible to minimize the number of field joints. The expansion loops, joints or 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 , joints or bends, and the number shall be kept to a minimum.

4-15.7 Manholes 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.

4-15.8 Installation. 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.

4-15.9 Testing. 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 ELECTRICAL DISTRIBUTION. The existing power distribution system on North Fort Lewis is a 13.8 kV, single point grounded wye system. The existing feeders are controlled by the Sequalitchew Substation, which is located southeast of the North Fort site along Vancouver Road. Two aerial feeders extend from Sequalitchew to supply the North Fort and other remote loads. In the FY95 and FY97 Whole Barracks Projects, portions of the system were converted to an underground system with the main feeder and switches installed along D Street. The system can be described as a loop system. The feeder starts at the substation, loops through the feeder-load area, and returns to the substation. Laterals have been tapped off the loop main to obtain the load area coverage. The loop is operated normally open by having one of the tie switches open at some point around the loop. When operated normally open, each half is similar to a straight radial feeder. Fault energy at the substation primary is 11073 Amps three-phase and 6748 Amps line to ground.

4-16.1 ECHO BLOCK

In the FY02 Whole Barracks Project, the infrastructure that had been installed along D Street was expanded to cover Echo Block. The utility design in FY02 mirrored the existing configuration used for previous years projects. Three Large Company Operations Facilities and two Large Battalion Headquarters shall be constructed by this project and connected to the existing distribution system.

4-16.2 ALPHA BLOCK

The design for Alpha Block is based upon the North Fort Utilities Study, which has been further developed by the Seattle District. The Alpha Block Master Plan includes the upgrade of the electrical distribution system within the area bounded by D Street and A Street, between 41st Division Drive and 8th Street. Future connections will be made to the systems laid out along D Street and then extended into Alpha Block as it is developed. These runs will be connected to the main trunk line along D Street to create a loop through Alpha Block. In the FY95 and FY97 Whole Barracks Renewal Projects, a primary ductbank was routed along 41st Division Drive between D Street and 32nd Division Drive. The Athletic Complex project extended the ductbank along 41st Division Drive from D Street to C Street. The ductbank crosses C Street and is capped. In the FY04 Whole Barracks project, the barracks site is

located along 41st Division Drive midway between C Street and A Street. Starting at C Street, extend the infrastructure along 41st Division Drive to provide primary power to the barracks site. The existing street lighting circuit along 41st Division Drive may be used for power for the landmark feature.

4-16.3 Underground Distribution. System shall consist of buried conduit and copper conductors. Design shall be in accordance with ANSI C2 and NFPA 90. A common ductbank system for communications and power will be utilized as much as practical with 10 meter separation between communications and power vaults.

4-16.3.1 ECHO BLOCK

The utility design for Echo Block was done in the FY02 Whole Barracks project and expanded in the FY03 project. The facilities to be installed, as part of this portion of the FY04 project, shall be connected to the systems installed in the previous projects.

4-16.3.2 ALPHA BLOCK

Primary power shall be installed in underground concrete encased schedule 40 PVC ductbanks. As a minimum, each power ductbank will contain one active 103 mm conduit and one spare 103 mm conduit. Electrical vaults and manholes shall be installed as required. Primary cables shall be medium voltage (15 kV), copper with ethylene-propylene-rubber in accordance with NEMA WC-7 and shall have 133 percent insulation. A fourth conductor, included in the underground cabling for ground connection, shall be a bare copper conductor and placed in the concrete encasement of the ductbank. Taps for the laterals to pad-mounted transformers shall be done using underground junctions. In-line splicing of the primary conductor is prohibited. Provide underground junctions where splices are required. Manholes shall be provided with stub-outs in the direction of the future barracks sites along 41st Division Drive. The primary run shall be terminated in a manhole at the corner of B Street and 41st Division Drive. Provide stub-outs from the manhole to be used as a connection point for the future projects to create a primary loop through Alpha Block.

4-16.4 Service Entrance. Service entrance equipment and installation shall be in accordance with NFPA 70.

4-16.5 Transformers. Transformers shall be pad mount, oil insulated, self-cooled, mounted on vaults, with high efficiency core. The high voltage compartment shall contain incoming primary feeder, load break switch, fuse protection and surge protection. The nameplate rating for the transformer shall not be less than 90 percent of the KVA demand load calculated for the transformer. Primary protection shall be drawout drywell mounted current limiting fuses in series with an internal expulsion fuse, with the current limiting fuse clearing high current faults, and the expulsion fuse clearing low current faults. Accessories include load break gang operated primary switch, loop feed, and surge protection. Primaries are dead front construction; secondaries are live front. MOV type lightning arresters, warning signs, grounding connection pads in high and low voltage compartments, dial type thermometer, liquid level gauge, and drain valve with built in sampling tube shall be specified for the transformers to be installed in this project. The transformer shall have two four point grounding systems consisting of four copper clad steel ground rods, 3 meters long, connected together with #1/0 stranded bare copper wire, one system for the neutral and one for the arrester/equipment ground. Primary conductors within the transformer vault shall be looped, racked, and firetaped.

4-16.6 Street and Area lighting.

4-16.6.1 ECHO BLOCK. The street lighting for Echo Block was done in the FY02 Whole Barracks project and does not require modification for this project. Parking and walkway lighting for the facilities to be installed, as part of this portion of the FY04 project, shall match the fixtures installed in the previous projects around the buildings and Troop Training Area.

4-16.6.2 ALPHA BLOCK. Residential roadway lighting, including collector streets, shall be provided in accordance with the IES Lighting Handbook. Provide lighting at roadway intersections, and at intervals not exceeding 60.9 m (200 ft) between intersections. Area lighting shall be provided at intervals not exceeding 60.9 m (200 ft) along area walkways not otherwise illuminated, common area walks, and at all steps in area walkways. Area lighting shall be provided in accordance with the IES Lighting Handbook. Bollard lighting shall be used in pedestrian areas. Bollards shall be concrete with high-pressure sodium lamps. Square concrete poles fitted with shoebox style high-pressure sodium lighting shall be used in parking lots. Luminaries shall be actuated by photoelectric control, one photocell per circuit and time clocks. Exterior lighting circuits shall be provided with manual override.

4-16.7 Metering. A digital circuit monitor shall be provided for metering, voltage and current display, and UMCS/EMCS/DDC connection. Metering includes kWh meter with 15-minute demand. The monitor consolidates functions at a reasonable price. Overcurrent protection is by circuit breakers. Meters shall be installed at all service entrance distribution switchboards and/or panelboards.

4-17 TELEPHONE. The Contractor will furnish and install distribution cables for the Army telephone system, only. Qwest shall supply and install the cables for their system. Trenching and backfill required to install the conduits, ductbanks and manholes shall be included in the construction contract. Coordinate with Installation Director of Information Management (DOIM) for specific requirements.

4-17.1 ECHO BLOCK

The communications design for Echo Block was done in the FY02 Whole Barracks project and expanded in the FY03 project. The facilities to be installed, as part of this portion of the FY04 project, shall be connected to the systems installed in the previous projects. A minimum of four 103 mm PVC, concrete encased, entrance conduits will be provided from the existing communications manholes into the main communications room of each building. One of the 103mm conduits shall contain four 27mm innerducts, each equipped with a pullwire. From the existing trunk cables, copper telephone and fiber optic building entrance cable shall be provided and protected according to NFPA 70, NEC 2002. Building entrance protectors shall be sized for 100 pair cable, shall be balanced solid state self restoring arresters, shall incorporate heat coils for additional sneak current protection, and shall be grounded and located in the main communications room according to NFPA 70, NEC 2002. The output side of the protector units shall be 66-type insulation displacement contact (IDC) wiring block. A 24 strand fiber optic cable shall be brought into each building.

4-17.2 ALPHA BLOCK

In the FY95 and FY97 Whole Barracks projects, an RSU building was constructed at 32nd Division Drive and 17th Street. A communications ductbank was installed from the RSU along 32nd Division Drive to 41st Division Drive and down 41st Division Drive to D Street. The Athletic Complex project increased the number of ducts in the ductbank from 4 to 12 and extended the ductbank along 41st Division Drive from D Street to C Street. The ductbank crosses C Street and has been extended down 41st Division Drive by the Ft. Lewis DOIM. There are three barracks complexes planned along 41st Division Drive between C Street and A Street. However, only one site is to be developed as part of this project. Therefore, the existing ductbank will be adequate for this site. Manholes shall be provided as required. A minimum of six 103 mm PVC, concrete encased, entrance conduits shall be provided from the new communications manhole into the main communications room. Four 27mm innerducts, each equipped with a pull rope, shall be installed in one of the 103mm conduits from the communications manhole into the main communications room. From the main communications room to each of the barracks buildings, provide four 103mm conduits. Four 27mm innerducts, each equipped with a pull rope, shall be installed in one of the four 103mm conduits routed to the barracks buildings.

A new 12 way concrete ductbank with stubouts shall be added as indicated on sheet E103. The new ductbank starts at the existing manhole at the corner of 41st Division Drive and C Street and ends parallel to 12th street at the project boundary as shown.

The communications systems consist of Army telephone, Qwest telephone, Army fiber, Qwest fiber, and vendor CTV. The systems shall utilize a common supporting structure, per agreement between parties, which consists of ductbanks and manholes. Note that individual ducts are not shared because of liability issues; Army, Qwest, and TV each have separate ducts. Service to the Barracks shall consist of Qwest supplied dial tone to outlets in the living units and Army supplied dial tone to outlets in the administration areas.

Fiber
Three 24-strand fiber optic cables shall be installed to an area distribution node (ADN) in the Soldier Community Building of the Barracks. From this ADN, fiber optic cabling will be routed to the administrative areas of the future barracks. The ADNs consist of cabling and space provisions only; future projects will install equipment. Fiber optic cables shall be installed from the Soldier Community Building to the individual barracks buildings for the DDC network connections. Coordinate with the DOIM for the specific requirements.

Telephone
Cabling is sized to connect the facilities constructed under this project. Cabling is provided only within the site area of the barracks construction and the landmark feature. Copper telephone building entrance cable for the Army supplied communications shall be provided and protected according to NFPA 70, NEC 2002. Building entrance protectors shall be sized for 100 pair cable, shall be balanced solid state self restoring arresters, shall incorporate heat coils for additional sneak current protection, and shall be grounded and located in the main communications room according to NFPA 70, NEC 2002. The output side of the protector units will be 66-type insulation displacement contact (IDC) wiring block.

(a) **Army Telephone Cables**. The barracks will receive Army cables for administration telephones, and facility alarm and monitoring equipment, such as IDS and EMCS.

(b) **Qwest Cables**. To serve the barracks, Qwest provides outside plant cable from their DCO and all inside plant cable from the main communications room to each living module, in Army supporting structures. Qwest provides dial tone and residents arrange directly with Qwest for service.

4-18 TELEVISION. To support the commercial television systems, the Contractor shall provide all trenching, conduit, and backfilling required to install the ductbank system and all interior conduits. The cable television company shall provide and install their cables and equipment in all facilities.

4-19 CATHODIC PROTECTION. Cathodic Protection (CP) is mandatory on buried ferrous metallic structures as described below:

4-19.1 Department 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.

4-19.2 Corrosion 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.

4-19.3 Design 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.

4-19.4 Compatibility. 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.

4-19.5 Tracer 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.

4-19.6 Coatings. CP and protective coatings shall be provided for the following buried and submerged ferrous metallic structures regardless of soil or water resistivity.

4-19.6.1 Natural gas and propane/air piping.

4-19.6.2 Fire protection piping.

4-19.6.3 Ductile or cast iron piping. Required for pressurized piping under floor (slab on grade) in soil.

4-19.6.4 Conduit piping systems. Required for underground heat distribution and chilled water piping in ferrous metallic conduit.

4-19.6.5 Hazardous storage structures. Structures with hazardous products as identified by the installation.

4-19.7 Cast iron pipe. Shall be treated as follows:

4-19.7.1 Below 10,000 Ohm-cm: For soil resistivity below 10,000 Ohm-cm at pipeline installation depth, provide CP, bonded joints, and protective coatings.

4-19.7.2 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.

4-19.7.3 Copper water service lines: Piping will be dielectrically isolated from ferrous pipe. Dielectric isolation shall conform with NACE RP-0286.

4-19.8 Ductile 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.

4-19.9 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:

4-19.9.1 Potable water lines.

4-19.9.2 Concentric neutral cable.

4-19.9.3 Other structures. Buried and submerged ferrous metallic structures not covered above.

4-19.10 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 consistent with a military installation.
- create facilities that are a source of pride for residents, occupants, other facility users, and the installation.
- meet all functional requirements of the occupying unit's mission.
- develop a sustainable facility that minimizes its environmental impact and contributes to improved occupant health and welfare.

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. On the Echo block site provide an extension of the existing master plan, and FY 02/03 construction programs, that preserves the visual continuity of the entire superblock.

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 consistent and 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. Design consistent with the weather conditions experience on this site, particularly the rainy fall and winter season. All buildings shall maintain the existing "neo – Georgian" style used at North Fort.

5-1.3 **Interior Design Objectives**. Arrange spaces in an efficient, functional manner. Provide simple circulation schemes that allow easy way finding within buildings. Use durable materials and finishes that can be easily maintained and provide a long service life without replacement. Materials and finishes that must be periodically replaced shall be avoided where possible and made easily removable when used. 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 and patterns. 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 and cable television 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 codes and standards. Major criteria references for building design are listed below; additional requirements are included throughout the RFP. Where these criteria conflict, the most conservative requirements shall govern the design. 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) as amended by "Design: General Building Requirements (UFC 1-200-01).

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 "Department of Defense Minimum Antiterrorism Standards for Buildings" (UFC 4-010-01, 31 July 2002).

5-2.5 The Fort Lewis Installation Design Guide (IDG), excerpts of which are included in Attachment 9 to the Statement of Work.

5-2.6 "Design: Fire Protection Engineering for Facilities" (UFC 3-600-01).

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.

5-3.2 **Application.** Use of the IBC shall be consistent with the modifications incorporated in UFC 1-200-01 (see Attachment 13). Where UFC 1-200-01 refers to MIL-HDBK-1008C, substitute use of the superceding standard, UFC 3-600-01. In general, UFC 3-600-01 requires the use of NFPA 101 code requirements for building egress and life safety issues.

5-3.3 **UEPH Buildings**. Occupancy classification: Residential Group R-2. If Soldier Community Building is a separate facility (with less than 50 occupants): Business Group B.

5-3.4 **Company Operations Facilities**. Limited amounts of ammunition or other explosives will be periodically stored in the Arms Vault for periods of hours or days. Accordingly, the IBC will require classification of the space as a High-Hazard Group H-1. Assume that the total amount of explosive material will not exceed the maximum allowable quantity per control area (2 pounds when stored in an approved cabinet). Therefore, a separate building for hazardous storage will not be required. The Arms Vault shall also have interior and exterior signage indicating the weight of explosives limitation. Occupancy classification of administrative areas, and locker room facilities serving less than 50 occupants: Business Group B. Occupancy classification of supply areas: Storage Group S-2. Common Locker Rooms for 50 or more occupants: Assembly Group A-3.

5-3.5 **Battalion Headquarters**. Occupancy classification of administrative areas: Business Group B. Occupancy classification of classroom areas: Assembly, Group A-3.

5-3.6 **Lawnmower Storage Buildings**. Occupancy classification shall be Utility, Group U.

5-3.7 **IBC-NFPA 101 Occupancy Comparisons.** For the purposes of this project the following NFPA 101 occupancies shall be applied when the use of NFPA 101 is directed:

IBC	NFPA 101
Group A-3	New Assembly
Group B	New Business
Group H-1	no equivalent for partial occupancy
Group R-2	New Apartment
Group S-2	no equivalent for partial occupancy
Group U	Storage

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. All exterior materials and colors for COF and BTN HQ facilities on Echo block shall be selected to blend with and complement the facilities constructed under the FY 02 and FY 03 programs. Conversely, the UEPH facilities located on Alpha block may develop a new material and color palette. The general Alpha block appearance should be compatible with the themes used throughout North Fort Lewis.

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. Exterior insulation finish systems (EIFS) shall not be used as a primary wall surface material, but may be employed as an accent material. All walls at the first story level shall be resistant to damage and soiling resulting from pedestrian or vehicle contact. Wood and vinyl siding materials are not permitted on any facilities.

5-4.3 **Roofs**. Sloped roofs with a standard pitch of 5:10 shall be used on all buildings. Minimum roof pitch shall be 2.5:10. At COF, BN HQ and BN GA buildings and associated lawnmower storage buildings, the roof material shall be flat concrete tile with color matching tile used on other Echo block buildings. Alpha block roofing material and colors shall comply with the IDG. All roofing systems used shall have Underwriters Laboratory (UL) Class A rating for fire resistance and UL 90 wind resistance rating or Factory Mutual (FM) 1-90 fire and wind resistance rating. COE regulations prohibit the use of fire retardant treated wood panel products in roof systems due to accelerated decomposition.

5-4.3.1 **Metal Roofing**. System shall be a structural standing seam utilizing a concealed clip system. Provide manufacturers 20-year finish warranty. Finish shall be PVF^2 type.

5-4.3.2 **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.

5-4.3.3 **Concrete Tile Roofing**. System shall conform to the design criteria and installation instructions of the “Concrete and Clay Roof Tile Installation Manual for Moderate

Climate Regions" by the Roof Tile Institute and Western States Roofing Contractors Association (1 January 2002 or current edition). Provide self-adhering rubberized ice and water shield underlayment at all valleys, and roof perimeter.

5-4.3.4 **Photovoltaic (PV) Roof Systems**. Use of an integrated PV roof system (PV tiles) as a demonstration project is encouraged, but not required.

5-4.3.5 **Fall Protection Anchors**. Permanent fall protection anchors points meeting OSHA regulations shall be provided on roof ridges. Anchor spacing shall not exceed 4000 mm.

5-4.4 **Trim and Flashing**. Materials and colors shall comply with IDG. Gutters, downspouts, and fascias shall be prefinished metal. All flashings used with concrete roof tile systems shall be copper, 16 ounce minimum weight. Detailing of all sheet metal components shall comply with SMACNA Architectural Sheet Metal Manual. Provide 20-year manufacturers finish warranty. Finish shall be PVF^2 type.

5-4.5 **Miscellaneous Exterior Elements**. Comply with IDG. The use of exposed wood on building exteriors is prohibited. Do not use ferrous metals for access doors, louvers, vents, light fixtures and similar items. Metal and finishes selected shall provide zero maintenance weathering regardless of exposure. All exterior metal railings shall be anodized aluminum or stainless steel.

5-4.6 **Exterior Signage**. Comply with IDG. Provide and install construction signage as indicated in specification Section 01501 included in section 00890. Provide the following permanent site and exterior building signage. Refer to standardized signage details in Attachment 7.

5-4.6.1 **Building Numbers**: Each independent building shall be provided with Building Number signs. Building numbers will be provided by the Government. Signage shall be consistent with Fort Lewis Signage regulation 420-18 and Detail F, Plate A702, Attachment 7. Provide four building number signs on each building, with one sign each side of diagonal corners.

5-4.6.2 **UEPH Entrance**: If a UEPH building scheme is used that employs multiple buildings and/or multiple building entrances to a limited number of room modules, provide signage at the entrance door identifying the room modules accessed by that entrance. See Detail E, Plate 702, Attachment 7 for an example.

5-4.6.3 **COF Building/Unit Signs**: COF signs shall be constructed to match those used at Echo Block facilities developed in the FY 02 and FY 03 projects. See Company Sign detail on Plate A701, Attachment 7. For specifications, see 00890, Section 02870 Site Furniture. For approximate locations, see Plate L101.

5-4.6.4 **BN HQ and BN GA Buildings/Unit Signs**: BN signs shall be constructed to match those used at Echo Block facilities developed in the FY 02 and FY 03 projects. See Battalion Sign detail on Plate A701, Attachment 7. For specifications, see 00890, Section 02870 Site Furniture.

5-4.6.5 **Guidons**: Guidons (support base for unit commander's flag) are required at each separate COF unit/facility (2 required per building). See detail on Plate C111 in Attachment

1. For specifications, see 00890, Section 02870 Site Furniture. For approximate locations, see Plate L101.

5-4.6.6 **Fire Department Signage**: Provide building mounted locator signs that identify the locations of "Fire Department Connection" and "Gas Shut Off" at each building. Position (height) of signage shall ensure that the sign is not obstructed by site features or vegetation and is visible to approaching vehicles. See Detail G, Plate A702, Attachment 7 for example.

5-4.6.7 **Site Signage**: Provide and install site signage at Alpha Block and Echo Block streets and parking installed under this contract and meeting installation and Washington State standards for traffic control signage. See details on Plate A701, Attachment 7 for examples of configuration and materials.

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 45 mm 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, seamless; 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 ½" x 4 ½ ", non-ferrous base metal, non-removable pins. Use geared hinges at doors with high frequency use, such as building entrances and stair exits, or where exposed to the wind.

5-4.7.3.2 **Locksets on Aluminum Entry Doors**. ANSI/BHMA A156.13; mortise lockset with removable core; non-ferrous base metal. Coordination of hardware by Aluminum Door supplier. Use fixed pulls for entrance, use exit devices where required by code.

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. Lockset function consistent with room function.

5-4.7.3.4 **Exit (Panic) Devices**. ANSI/BHMA 156.3; heavy-duty, modern 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. Install in tandem with door stops to ensure that door position is not maintained by closers alone.

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 such as flush bolts, astragals, meeting styles, etc., as necessary for a complete installation. Coordinate location of floor stops to reduce tripping hazards.

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.

5-4.7.3.9 **Kick Plates**. ANSI/BHMA A156.6; non-ferrous metal. Provide at all doors with closers.

5-4.7.3.10 See Section 00890 – 08710 for additional direction on door hardware requirements.

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). All exterior windows (including glazed doors) shall also comply with UFC 4-010-01, paragraph B-3.1 and subparagraphs. 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 secondary egress requirements of NFPA 101 and IBC. Operable windows shall have locks. At vents provide fiberglass or aluminum insect screens removable from the inside.

5-4.8.1 **Exterior Glass and Glazing**. All glass and glazing shall comply with antiterrorism minimum standards. Single glazing and the inner pane of insulated glass assemblies in exterior windows and doors shall be minimum 6 mm annealed laminated glass. Provide thicker glass section as required by window area and loading criteria.

5-4.8.2 **Window Frames and Structural Subframes.** Exterior frames, mullions and window hardware shall comply with antiterrorism minimum standards (UFC 4-010-01). In particular, review paragraph B-3.1.2 of attachment 12. Offerors are cautioned to carefully evaluate this standard as it may require the use of a dedicated structural subframe at each window to accommodate the loads stipulated.

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. Review use of foamed in place insulations for exterior wall construction to minimize U-values while limiting air migration through the wall system. Design of

insulation/wall systems shall include vapor retarders and air barriers to reduce damage from trapped moisture.

5-4.10 **Exterior Noise Control**. There are no exceptional exterior noise problems at these sites. However, due to twenty four hour work schedules, windows in barracks room modules shall be designed to mitigate ambient noise levels that would disturb day sleepers.

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.

5-5.1.1 **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.

5-5.1.2 **Carpet Tile**. Refer to Section 09685, provided in the RFP, for criteria on carpet tile materials and installation.

5-5.2 **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. All UEPH room modules require acoustic isolation from each other and adjacent corridors. In addition, each living/sleeping room shall be acoustically independent from the paired living/sleeping room in that module. See sound transmission requirements listed in Chapter 2 of the Statement of Work.

5-5.2.1 **Metal Support Systems**. Non-load bearing metal studs and furring used in interior partitions 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: 406 mm on center. Provide galvanized finish.

5-5.2.2 **Gypsum Board**. Comply with ASTM C 36. Minimum panel thickness: 16 mm. Provide Type X panels in fire-rated assemblies. Provide moisture resistant panels at locations subject to moisture. Provide abuse-resistant or impact resistant panels where indicated in functional and area requirements. Corridor and stair walls in barracks shall be constructed with abuse resistant GWB. Joint treatment: ASTM C 475. Screws ASTM C 646. Drywall installation: ASTM C 840.

5-5.2.3 **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.

5-5.3 **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. Suspended acoustic ceilings are prohibited in barracks buildings.

5-5.4 **Interior Doors and Frames**. Provide hollow metal doors, or flush solid core wood doors at UEPH and offices/administrative spaces. Provide hollow metal doors at COF supply rooms. All frames shall be hollow metal.

5-5.4.1 **Wood Doors**. Provide flush wood solid core doors complying with Wood Door Manufacturer's Association (WDMA) I.S.-1A. Stile edges shall be non-finger jointed hardwood compatible with face veneer. Door construction/appearance shall be consistent with WDMA Premium grade or American Woodwork Institute (AWI) Custom grade. Use AWI Grade A hardwood face veneer for transparent finished doors; provide AWI Sound Grade hardwood face veneer for painted doors. Use book matched, balanced veneer pattern. Transparent finished doors are preferred.

5-5.4.2 **Hollow Metal Doors**. Comply with ANSI A250.8/SDI 100. Doors shall be Level 2, physical performance Level B, Model 2, seamless; factory primed.

5-5.4.3 **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. Frames in steel stud framed walls shall be grouted with gypsum type grout.

5-5.4.4 **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. Protect labels during painting. Illegible labels shall be cause for rejection of the door and/or frame.

5-5.4.5 **Interior Door Finish Hardware**.

5-5.4.5.1 **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 ½" x 4 ½ ".

5-5.4.5.2 **Locksets on Living Unit (Room Module) Entry Doors**. Programmable push button type – ILCO Unican 4000 series with lever trim.

5-5.4.5.3 **Locksets on Interior Doors**. ANSI/BHMA A156.2; series 4000, Grade 1, non-ferrous base metal, removable core. Room module living/sleeping room doors shall have a Unican 1000 Series (1021B) lockset.

5-5.4.5.4 **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.

5-5.4.5.5 **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. Select closer type to place closers on room side of doors. Avoid closers exposed to view in lobbies, corridors and other public areas of buildings.

5-5.4.5.6 **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. Coordinate requirement for solid blocking behind wall stops in all stud walls.

5-5.4.5.7 **Kick Plates and Mop Plates**. ANSI/BHMA A156.6; non-ferrous metal. Provide kick plates at all doors with closers. Provide mop plates at all rooms (public toilets, locker rooms, shower rooms, etc.) with floors requiring wet mop type maintenance.

5-5.4.5.8 See Section 00890 – 08710 for additional direction on door hardware requirements.

5-5.5 **Limitations on Use, Classification, and Flame Spread and Smoke Developed Ratings of Interior Finishes**. Refer to paragraph 12-4.2.

5-5.6 **Casework**.

5-5.6.1 **Service Areas in Living Units (Room Module) and Coffee Areas in Admin Areas**. 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 .050” thick; vertical laminate: nominal .028” thick. Door and drawer edges shall be heavy-duty 3 mm extruded polyvinyl chloride with self-locking serrated tongue. Countertop shall be post-formed high-pressure decorative laminate or solid surfacing material. Countertop shall have no-drip waterfall front edge and integral coved backsplash. Provide side splash where countertop adjoins sidewall(s).

5-5.6.2 **Bathroom Vanity in Living Units**. 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 .048” thick; vertical laminate nominal .028” thick. Door and drawer edges shall be heavy-duty 3 mm extruded polyvinyl chloride with self-locking serrated tongue. Vanity countertop shall be post-formed high- pressure decorative laminate or solid surfacing material. Countertop shall have no-drip waterfall front edge and integral coved backsplash with side splash at adjacent walls.

5-5.6.3 **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 .048” thick; vertical laminate: nominal .028” thick. Door and drawer edges shall be heavy-duty 3 mm extruded polyvinyl chloride with self-locking serrated tongue. Work surfaces and counter shall be high-pressure decorative laminate, or solid surfacing material. Reception desk should be designed as an entrance accent feature.

5-5.6.4 **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 .050” thick; vertical laminate: nominal .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 or solid surfacing material. Countertop shall have waterfall front edge and integral coved backsplash with side splash at adjacent walls.

5-5.6.5 **Casework in Public Areas of Battalion HQ**. Special function architectural casework, including but not limited to Bulletin Boards, Break Room Cabinets and Display Cases, shall comply with AWI Section 400, Premium Grade cabinets with clear finish hardwood veneer. Work surfaces and counter shall be high-pressure decorative laminate, or solid surfacing material.

5-5.6.6 **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 .050" thick; vertical laminate: nominal .028" thick. Door and drawer edges shall be heavy-duty 3 mm extruded polyvinyl chloride with self-locking serrated tongue. Work surfaces and counter shall be high-pressure decorative laminate, or solid surfacing material.

5-5.7 **Window Treatments**. Provide horizontal aluminum mini-blinds at all exterior windows, except windows and storefront in corridors and lobbies. Blinds shall have 25 mm wide x 0.2 mm thick slats with anti-static, anti-microbial polyester baked enamel finish. Provide heavy duty 25 mm x 38 mm steel headrail, and tubular steel bottom rail finished to match slats.

5-5 .8 **Window Sills**. Sills at living units (room modules) shall be solid surface material. Sills at all other locations shall be solid surface, hardwood or plastic laminate. Gypsum board sills are prohibited.

5-5.9 **Interior Signage**. Comply with requirements of ADAAG and UFAS for sign locations, text size and contrast. Include the use of Braille text on signage. Reference details on Plate A702, Attachment 7 for examples of interior signage. Provide interior room identification signage for the following spaces and functions:

5-5.9.1 **UEPH**

- Room number/occupant name signs at each room module entrance door
- Room I.D. and number signs at all building service rooms, storage rooms, stairs and administrative spaces. Include pictograms as required by code and/or ADAAG.
- Directional Signage shall be provided as necessary for wayfinding throughout the building.

5-5.9.2 **SCB** (if provided as separate building)

- Room I.D. and number signs at all rooms.
- Directional Signage shall be provided as necessary for wayfinding throughout the building.

5-5.9.3 **COF's**

- Room I.D. and number signs at all rooms.
- Directional Signage shall be provided as necessary for wayfinding throughout the building.

5-5.9.4 **BN HQ and BN GA**

- Room I.D. and number signs at all rooms.
- Directional Signage shall be provided as necessary for wayfinding throughout the building.

5-5.9.5 **Lawnmower Storage Building**: No interior signage is required for this building.

5-5.10 **Elevators**. The offeror shall provide the services of an elevator inspector employed by an independent testing company to inspect the elevator, witness the final testing, and certify elevator. The inspector shall meet all qualification requirements of ASME QEI-1 and shall be certified in accordance with ASME QEI-1. The inspector shall be licensed to perform elevator inspections in the State of Washington. The offeror shall provide an elevator certificate signed by the inspector for each elevator. Elevators shall have State of Washington certification. The certificate shall be provided to the Contracting Officer within 30 days of the completion of testing.

5-6 **PHYSICAL SECURITY REQUIREMENTS**.

5-6.1 **Anti Terrorism / Force Protection**. Comply with the minimum construction standards of UFC 4 – 010 – 01, Department of Defense Antiterrorism Standards for Buildings (ASB). Offerors are strongly encouraged to review the entire ASB, see Attachment 12. Risk and threat assessment performed by Fort Lewis indicates that only the minimum level of protection as described by the ASB is required. For the purposes of antiterrorism/force protection design, North Fort Lewis is within a "Controlled Perimeter". As threat levels are an evolving issue, the contractor shall continue to review all appropriate design considerations with the Government during the course of the design process.

5-6.1.1 **ASB Building Types**. A central concept of the ASB is the classification of building type as "Troop Billeting", "Primary Gathering" or "Inhabited". This type classification drives fundamental facility site setback requirements. For the purposes of this project, the building types are classified as follows:

- UEPH buildings: troop billeting
- SCB's incorporated into UEPH: troop billeting;
- SCB's in a separate building, with assembly areas for more than 50 personnel: primary gathering
- SCB's in a separate building, without assembly areas, or assembly areas for less than 50 personnel: inhabited buildings
- COFs: inhabited building
- Battalion HQ and GA: primary gathering structures
- Lawnmower Storage Buildings: uninhabited building

5-6.1.2 **ASB Standards**. A total of 23 site planning and design standards are included in Appendix B of the ASB. It is mandatory that the design meet all of these standards. There is no opportunity to obtain a "waiver" or similar exemption from compliance. Careful and comprehensive coordination between design disciplines is essential to the development of a quality solution. In the proposal narrative section discussing design issues associated with the antiterrorism standards provide a clear discussion of the methodology and/or solution to be used for each standard:

- Standard 1 - Minimum Standoff Distances
- Standard 2 – Building Separation
- Standard 3 – Unobstructed Space
- Standard 4 – Drive-up/Drop-Off Areas
- Standard 5 – Access Roads
- Standard 6 – parking Beneath Buildings or on Rooftops
- Standard 7 – Progressive Collapse Avoidance

- Standard 8 – Structural Isolation
- Standard 9 – Building Overhangs
- Standard 10 – Exterior Masonry Walls
- Standard 11 – Windows and Glazed Doors
- Standard 12 – Building Entrance Layout
- Standard 13 – Exterior Doors
- Standard 14 – Mailrooms
- Standard 15 – Roof Access
- Standard 16 – Overhead Mounted Architectural Features
- Standard 17 – Air Intakes
- Standard 18 – Mailroom Ventilation
- Standard 19 – Emergency Air Distribution Shutoff
- Standard 20 – Utility Distribution and Installation
- Standard 21 – Equipment Bracing
- Standard 22 – Under Building Access
- Standard 23 – Mass Notification

5-6.1.3 **ASB Recommendations**. There are a total of 16 recommended site planning and design measures listed in Appendix C of the ASB. Incorporation of these recommendations in the design, as they apply to the specific requirements of this project, are encouraged but optional.

5-6.1.4 **Standoff Distances**. Offerors are strongly cautioned to use care in coordinating the design and siting of all facilities with respect to standoff distances to roads and parking areas. Failure to maintain the minimum standoff distances mandates additional structural analysis of a building to verify adequate performance in response to blast effects. Any blast resistant design analysis must be performed by a structural engineer with demonstrated experience in this type of analysis. Potentially, proximity to roads or parking can require the hardening of building architectural and/or structural features to blast effects.

5-6.1.5 **Critical Facilities**. None of the facilities in this project are considered “critical” per ASB definition.

5-6.2 **Arms Vaults at Company Operations Facilities**. Each company shall be provided with its’ own arms vault (2 vaults per COF duplex). Unless more stringent construction features are required by life safety or building codes, minimum construction requirements shall be as follows:

5-6.2.1 **Floor**. 150 mm slab on grade; reinforced with minimum 152 mm x 152 mm MW 25.8 x MW 25.8 welded wire fabric, on vapor barrier, on 150 mm deep porous fill.

5-6.2.2 **Walls**. 210 mm thick cast-in-place concrete reinforced with 15m bars at 150 mm on center, each way, each face.

5-6.2.3 **Ceiling**. 210 mm thick cast-in-place concrete reinforced with 15m bars at 150 mm on center, each way, each face.

5-6.2.4 **Door and Frame**. Class 5 vault door and frame complying with Federal Specification AA-D-00600C. Locks shall be Underwriters Laboratory listed Group 1 or 1R combination lock. Provide metal ramp type threshold. Provide wire mesh, dutch door style daygate with

shelf for issuing arms and ammo. Daygate shall have lock operated from outside by key, and from inside by handle. Vault door shall be on corridor side of opening and swing out, daygate shall be on interior (vault) side of opening and swing in. Comply with egress requirements of applicable codes.

5-6.2.5 **Penetrations**. Penetrations through any part of the vault shall be minimized. All openings or penetrations in Vault floor, walls or ceiling greater than 0.062 m^2 shall be protected with welded steel rod-and-bar grid weighing 39.6 kg/m2, consisting of 25.4 mm x 4.8 mm vertical bearing bars at 25 mm on center, and 8 mm diameter horizontal rods at 50 mm on center; or equivalent protection.

5-6.2.6 **Arms Rack Anchor Rings**. Provide 10 mm diameter stainless steel bar bent into U-shape (25 mm inside radius) with 50 mm long 90-degree returns at ends of horizontal legs. Overall length of legs shall be 126 mm; embed 76 mm of horizontal legs (open end) in concrete such that 50 mm of U-shaped end will protrude from wall to provide anchorage for GFGI arms racks. Orient the projecting U-shape vertically, so that centerline of the U is 1 200 mm above the floor slab. Provide anchor rings at 900 mm on center along all walls inside the Arms Vault. Verify all dimensions with user during design to confirm compatibility with user selected arms rack configuration for various weapon combinations.

5-6.3 **Secured Documents Vaults at Battalion HQs**. 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 daygate with lock operated from outside by key, and from inside by handle. Vault door shall be on adjacent room) side of opening and swing out, daygate shall be on interior (vault) side of opening and swing in. 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 0.062 m^2 shall be protected with welded steel rod-and-bar grid weighing 39.6 kg/m2, consisting of 25.4 mm x 4.8 mm vertical bearing bars at 25 mm on center, and 8 mm diameter horizontal rods at 50 mm on center; or equivalent protection.

5-6.3.2 **SIPRNET**. Provide conduit pathway and outlet box for one SIPRNET connection per document vault.

5.6.4 Floor Anchors for GFGI Security Safes. Provide 10 mm diameter stainless steel bar bent into U-shape (25 mm inside radius) with 50 mm long 90-degree returns at ends of vertical legs. Overall height shall be 130 mm; embed 76 mm of vertical legs (open end) in concrete floor slab; 50 mm 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. Spread footings, piles, drilled piers or others as required by the geotechnical investigation.

6-2.2 Ground floor slab systems. Slab on grade, pile supported or framed over crawl space as recommended by the geotechnical investigation.

6-2.3 Load Bearing Walls, including masonry or concrete acting as primary vertical load carrying members and/or shear walls. The use of wood or cold-formed steel construction in a stud-type bearing wall application is prohibited. The use of non-bearing cold-formed steel framing for the lateral support of exterior wall systems is acceptable.

6-2.4 Vertical Framing Members, including steel or concrete columns, or masonry pilasters.

6-2.5 Horizontal Framing Members, including roof and floor systems. The use of wood or cold-formed steel construction is prohibited in Horizontal Framing of floor systems. The use of wood construction is prohibited in Horizontal Framing (including rafters and trusses) of roof systems.

6-2.6 Interconnection Details, including all fastening requirements.

6-2.7 Special Conditions, such as expansion, construction, and control joints, and changes in floor levels.

6-2.8 Attachment provisions for architectural, mechanical, and electrical elements.

6-2.9 Site structures and foundations.

6-3 **DESIGN CRITERIA**. All structural loads (including dead, live, earth, snow, wind, and seismic loads) and design shall be in accordance with the International Building Code (IBC) and all codes referenced therein, except as modified by Unified Facilities Criteria (UFC) 1-200-01, dated 31 July 2002 (available at http://65.204.17.188//report/doc_ufc.html) and as noted elsewhere in this RFP.

6-3.1 **Minimum Live Load Requirements**:

UEPH Floor	3 kPa (60 psf)
UEPH Corridors	5 kPa (100psf)
Corridors other than in UEPH's	5 kPa (100 psf)
Stairwells	5 kPa (100 psf)
Roof	1 kPa (20 psf)
Ground Snow Load	1.5 kPa (30 psf)

6-3.2 All other building live loads shall be in accordance with the International Building Code (IBC).

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 I fabricating plant.

6-5.2 **Anti-terrorism Force Protection Systems**: Designs shall conform to United Facilities Criteria (UFC) 4-010-01 DOD Minimum Antiterrorism Standards for Buildings, latest edition. Offerors are cautioned to read the A/T structural requirements carefully with consideration of their specific applicability to this project. In particular, review the requirements for window construction and the analysis requirements for progressive collapse prevention. Further clarification of the analysis requirements for progressive collapse prevention is provided in Attachment 10, 'Progress Collapse Analysis Guidelines'.

This page intentionally left blank.

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. Vapor barrier shall have a maximum perm rating of 0.5. 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. Ft Lewis does not fall within the humid climate zone and therefore, humid design is not applicable for this project.

7-4 **INFILTRATION**. To limit air infiltration, 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) and the National Standard Plumbing Code. 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), etc.

8-1.2 System design and installation must conform to the following mandatory energy and water conservation criteria: ASHRAE Standard 90.1-2001.

8-2 **DESIGN CALCULATIONS**.

8-2.1 Hot water heater calculations. Design shall be based on the methods described in the American Society of Plumbing Engineers (ASPE) Volume I, Fundamentals of Plumbing Design and ETL 1110-3-489. Submit calculations for determining storage capacity and recovery rate. Hot water shall be stored at 60 C to reduce the potential for Legionella Pneumophila (Legionnaire's Disease). Include a cross connection with a mixing valve between the hot water and cold water supply lines to limit the temperature of water distributed to plumbing fixtures to 43.3 C .

8-2.2 Piping. Design shall be based on the International Plumbing Code and National Standard Plumbing Code for domestic water, sanitary waste and vent piping. All water piping shall be sized in accordance with methods outlined in these documents, to limit water velocity in the pipe to 2440 mm/sec unless a lower velocity is recommended by the plumbing fixture manufacturer(s). An isometric diagram of the water system shall be included in the design submittal. An isometric diagram of the sanitary sewer system shall be included in the design submittal.

8-3 **EQUIPMENT**.

8-3.1 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 both the inlet and outlet. Circulating systems need not have heat traps installed. The water heater relief drain shall be manufacturer approved, and shall be indirectly connected to the building sanitary sewer system. Water heaters shall be sized in accordance with paragraph 8-2.1 for a 10 degrees C rise. Minimum water heater efficiencies shall be in accordance with DOE Buying Energy Efficient Product Recommendations (refer to

www.eren.doe.gov/femp/procurement) 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, power vented, or sealed combustion water heaters.

8-3.1.1 Gas fired water heater. Gas fired water heaters shall be in accordance with ANSI Z21.10.1, Water Heaters, Gas, Volume I, Storage Type, 22 kW Input or less, and shall be sealed combustion high efficiency type. Units shall be UL listed. Gas fired hot water boilers for the Barracks shall be in accordance with ANSI Z21.13, Gas Fired Hot Water Boilers.

8-3.1.2 Electric water heater. Electric water heaters will not be allowed in this project, except as noted in Paragraph 8-8, Description of Domestic Water Heater System.

8-3.1.3 Pumps. Recirculating pumps shall be inline type and shall be provided whenever hot water piping extends further than 15.24 meters from a tank.

8-3.1.4 All water heaters of over 400 gallon capacity shall be provided with at least a 10 year tank replacement limited warranty.

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.

8-4.1 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). 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, copper alloy adjustable-bent tube, 20-gauge brass. Concealed traps do not have to be chromium plated. Plastic (ABS) traps are prohibited.

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 .158 L/s from any faucet.

8-4.4 Shower and bath combination shall be controlled by a diverter valve. Diverter shall be integral with single mixing valves. 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 0.158 L/s at pressures between 137.9 to 413.7 kPa. Provide access panels (or doors) to allow access to bathtub overflow fittings.

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.

8-4.6 Water closets. Water closets shall be ~~have regular bowl with inclined tank, close coupled~~ siphon jet, floor outlet with wax gasket, closed-front seat and cover.~~, and an anti-siphon float valve.~~ Water consumption shall be no more than 6 L per complete flushing cycle. Water closet trim shall conform to ANSI A112.19.5, Trim for Water-Closet Bowls, Tanks, and Urinals (Dimensional Standards). Shall be ~~tank~~ flush valve type for floor or wall mounted, water saver type and shall meet the requirements of the code.

8-4.7 Urinals. Urinals shall be wall mounted, waterless type and shall meet the requirements of the code.

8-4.8 Lavatories. Lavatories shall be rectangular counter top type, minimum 508 by 457 mm in size or oval minimum 480 by 410 mm in size. Lavatories shall be vitreous china, cast iron rimless type (without rings), or cross-link acrylic molded counter top with integral bowl. Lavatories shall have pop-up drains and shall meet the requirements of the code.

8-4.9 Bathtubs. Bathtubs shall be slip resistant and shall be constructed of enameled cast iron or porcelain enameled formed steel.

8-4.10 Showers. Shower heads shall be adjustable spray type and shall include a non-removable, tamperproof device to limit water flow to 0.16 liters per second when tested in accordance with ASME A112.18.1M.

8-4.11 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 370 watts . Strainer and plug shall be eliminated where food waste disposers are provided and shall meet the requirements of the code.

8-4.12 Mop sinks. Mop sinks shall be neo-angle, enameled cast iron, acid resistant, floor mounted type conforming to IAPMO Z124.6.

8-4.13 Electric water coolers. Units shall be electric refrigerated type and shall conform to the requirements of ARI 1010 and the Lead Contamination Control Act of 1988.

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 Gas. 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, as well as Puget Sound Energy requirements. A seismic shut-off valve shall be provided downstream of the gas meter. 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 dryers 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 1000 mm long. Provide accessible gas shutoff valve and coupling for each gas equipment item. Comply with UBC or model code seismic requirements. Exposed horizontal piping shall not be installed farther than 150 mm from the nearest parallel wall in laundry areas or areas where clothes hanging could be attempted.

8-5.2 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.

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 shall be type K or L hard-drawn copper. Additional consideration in the technical evaluation shall be given to designs using copper types K or L. 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 Chlorinated Polyvinyl Chloride (CPVC) Plastic Pipe. <u>The use of CPVC plastic piping shall be limited to water service for the water closets using reclaimed rainwater. The CPVC piping used for this service shall be clearly identified as “Non-potable water”.</u>

8-5.2.3 Soil, waste, vent, and drain. Piping and fittings shall be cast iron, copper, acrylonitrile-butadiene-styrene (ABS) or polyvinyl chloride (PVC) plastic pipe. Cleanouts shall be provided as required by the code.

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 National Standard Plumbing Code, at the base of all soil and waste stacks and at the building service entrance. All cleanouts shall be permanently accessible. Ground cleanouts shall be installed in a 305-mm by 305-mm 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 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 frostproof, and shall be supplied with an integral vacuum breaker. Provide as required by the code.

8-6.3 Wall hydrants. Provide every 45.7 meters along the perimeter of the building.

8-6.4 Backflow preventers. Provide as required by the code and Ft Lewis installation standards..

8-6.5 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 50-mm drain, 20-mm 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 865 mm above the finish floor. Electrical outlets for both washer and dryer shall also be provided.

8-6.6 Trap Primers. Provide trap primer devices for all floor drains except those in latrines in barracks.

8-6.7 Isolation Valves. Provide isolation valves so as to allow for maintenance of portions of the plumbing system without having to shut down the entire building. As a minimum, isolation valves shall be provided at each water hammer arrester, trap primer valve, plumbing fixture group of two or more fixtures, each wing and floor of the building, all equipment, outside hose bibs and hot water circulation piping. Balancing valves are not considered isolation valves.

8-7 **PIPE INSULATION.** Insulation type shall be cellular glass, mineral fiber, flexible elastomeric cellular, 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 90.1.

8-7.2 Domestic service cold water piping shall be insulated with a minimum of 13-mm insulation with vapor jacket.

8-7.3 Roof drain piping. Provide 25-mm thickness insulation on all horizontal piping.

8-8 DESCRIPTION OF DOMESTIC WATER HEATER SYSTEM

8-8.1 The Barracks domestic water heating system shall be integrated with and controlled by the building DDC system. Equipment shall be interlocked and controlled to optimize heater efficiency, so that the system as a whole is operating in the most efficient manner. A suggested system is described below; the contractor is allowed to submit a proposal for an alternate system if it improves overall system efficiency over this design.

8-8.2 The domestic hot water system shall consist of one or more high-efficiency gas fired domestic hot water heaters (primary heaters), in parallel, one or more stainless steel storage tanks, in series, and a heater loop domestic hot water (DHW) pump for each hot water heater, as well as a building loop DHW return pump, a small gas fired water heater, and a small electric water heater. Storage tanks shall be sized to contain enough water at 60° C to provide hot water for the morning shower cycle, assuming 7.5 minute showers for every occupant and 2 minutes of lavatory hot water use, and assuming that for shared barracks modules, one shower directly follows the other. Hot-water storage tanks shall be constructed by one manufacturer, in accordance with ASME BPV VIII, Div. 1, and ASME stamped for the working pressure of at least 517 kPa (125 psi), and shall have the National Board (AMSE) registration. The tank shall be stainless steel (304L Mill Finished) type in accordance with applicable portions of AWWA D100.

8-8.3 The storage tank(s) shall be set up such that the outlet from the primary heater(s) flows into the first (or only) storage tank through a connection at the top of the tank. Also, there shall be a cold water (CW) connection to the last (or only) storage tank at the bottom of the tank, sized and arranged to provide low velocity entrance and subsequent quiescent flow into the tank. If there are two or more tanks, the bottom of each tank shall have a low

velocity CW connection. The connections between tanks shall allow flow in either direction, between the low velocity CW connection on the first tank and the top of the second tank, and from the low velocity CW connection on the second tank and the top of the third tank, etc until the bottom of the last tank is connected to the CW supply as described above. The last (or only) tank shall have an additional connection at the bottom of the tank to allow flow from the tank to the primary heater(s) via the heater loop DHW pump(s). The first tank shall have an additional connection at the top of the tank to allow flow from the tank to the mixing valve, where hot water from the first tank shall mix with cold water to provide 43.3° C water to the building loop.

8-8.4 The small gas fired water heater shall be located between the outlet in the bottom of the last tank and the heater loop DHW pump(s). The small electric water heater shall be set at 43.3° C, and located on the 43.3° C loop at the outlet of the building loop DHW return pump, with a connection from the outlet of the heater to the building hot water supply line, downstream of the mixing valve.

8-8.5 A schematic for the domestic hot water system can be found in Figure A.

8-8.6 The hot water heaters and storage tanks shall operate as described below:

During morning showers, stored hot water shall be depleted, and cold water shall be directly supplied to the storage tanks to replace the depleted hot water. Hot water shall leave through the connection at the top of the first tank and cold water shall enter at the bottom of the last tank quiescently, so as to prevent mixing and to maintain stratification of hot water at the top of the tank and cold water at the bottom. Cold water will gradually fill the last tank, then the next to last tank, etc. until the first tank is depleted. The first tank should not fill completely with cold water until the peak shower demand has dropped off.

While the hot water is being depleted from the storage tanks, the DHW circulating pump(s) and primary heater(s) shall operate to draw cold water supply through the heater(s), into the top of the first tank. Automatic flow control valves shall limit the flow through the heaters to maintain a heater outlet temperature above 60° C. Once the demand has dropped off, the heater(s) shall to continue to operate by drawing water from the bottom of the last tank and delivering hot water to the top of the first tank, until the temperature in (all) the tank(s) has reached 60° C.

Once the return temperature from the last tank has exceeded 60° C, the primary heater(s) shall be shut out and the small gas fired heater shall be energized and shall cycle on and off, to maintain the temperature in the storage tanks. If the demand increases and the small heater can no longer maintain the temperature, the primary heater(s) shall be enabled.

Return hot water from the building loop shall continuously pass through the electric hot water heater, and the heater shall maintain an outlet temperature set point of 43.3° C.

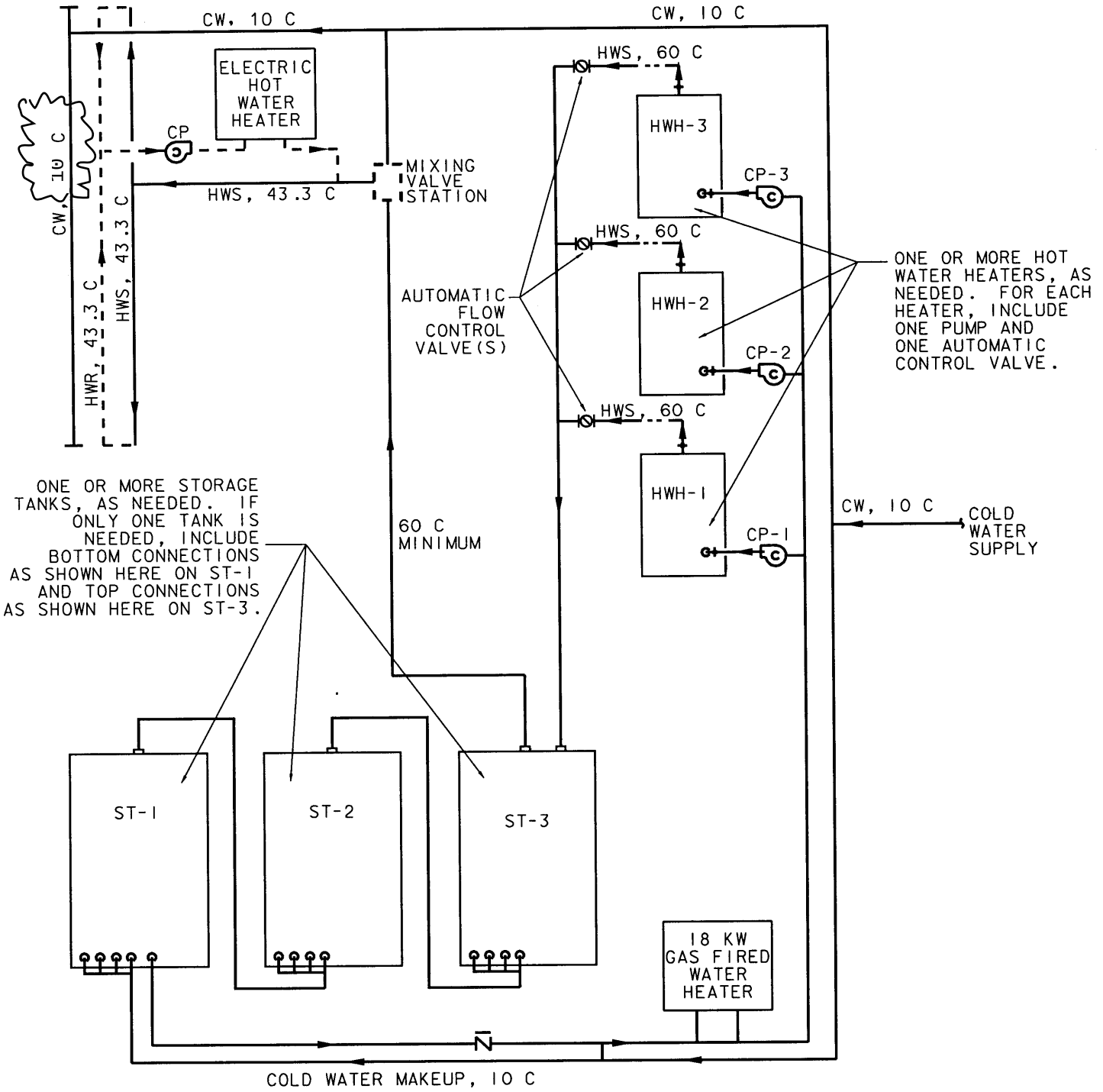


FIGURE A

TYPICAL BARRACKS DOMESTIC PLUMBING SCHEMATIC

CHAPTER 9

ELECTRICAL SYSTEMS

9.1 DESIGN STANDARDS AND CODES. The electrical design for all facilities shall be in accordance with the current version of the National Electrical Code.

9.1.1 Facility Energy Conservation Requirements. The entire facility design, including siting, building envelope, plumbing systems, lighting, electrical systems, and HVAC systems form a complete assembly/structure which is in compliance with ASHRAE 90.1-2001.

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, roadways 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). Additionally, conductors for 20 ampere branch circuits of 120 volts more than 30.5 meters, and of 277 volts more than 70 meters, shall not be smaller than No. 10 AWG.

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 organization.

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.

9.3.2.1 Interior - Conductors shall be copper and shall be run in conduit. Conduit shall be installed above the ceiling and in the walls. Conduit may be electrical metallic tubing, except rigid or intermediate metal conduit shall be used where exposed and subject to damage.

Conductor insulation is type TW (60° C) for conductors No. 1 AWG and smaller, and THW (75°C) for conductors No. 1/0 AWG and larger. For circuit design, conductor sizes shall be based on ampacities of TW and THW. The Contractor may use THWN and THHN for conductor installation. Feeders serving computer loads shall be provided with an isolated ground wire and a separate neutral conductor. Use solid copper wire for sizes No. 12 AWG and smaller diameter, and Class B, stranded copper wire for sizes No. 10 AWG and larger diameter.

9.3.2.2 Exterior - Wiring consists of insulated conductors installed in ducts. Conductor insulation type USE shall be used for low voltage circuits and service entrance. Insulation for medium voltage circuits shall be ethylene propylene rubber, as permitted for “long life” projects. Also, medium voltage circuits shall have drain wire insulation shielding. Conductors are copper. Secondary conductors for building electric service shall be installed underground in concrete-encased Schedule 40 PVC ductbank and rigid galvanized steel conduit encased in concrete under building footings (1.5 meters each site) and will terminate in a main distribution switchboard located in the Electrical Room. A minimum of one (1) spare conduit with pull wire shall be provided in the secondary ductbank. Ducts run elsewhere will be direct buried plastic; except concrete encasement will be used under traffic areas. All medium voltage conductors shall be in concrete encased ducts.

9.3.3 Motors. Motors shall be high energy efficient type. Motors rated one-half horsepower and larger shall be three phase. Motors smaller than one-half horsepower 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. The main service entrance equipment shall be provided with separate sections for cable pull, main and metering, and distribution. The distribution system shall be a fully rated, selectively coordinated type system. The entrance equipment system shall be designed with 10 to 20 percent spare capacity and space to accommodate future expansion. Panelboards and switchboards shall have copper busses. Panels feeding computer loads shall be provided with an isolated ground bus and 200 percent size neutral bus. 10 percent spare breakers and 10 percent space will be provided in all panels. Space is defined as bussing provisions for future breakers.

9.4 LIGHTING.

9.4.1 Interior. Lighting shall conform to Illumination Engineering Society (IES) recommended levels and in general shall be energy efficient fluorescent with electronic ballast. Lighting in occupied areas shall be color corrected with a Color Rendering Index (CRI) of 85 or better. For energy conservation dual switch, automatic dimming, or occupancy sensors shall be

considered. Light fixtures shall be located where possible to be maintainable with a 1.8m (6-foot) stepladder. Fluorescent lamps shall not exceed 1200mm(4 feet) in length.

9.4.2 Exterior. Site and area lighting shall be high intensity discharge (HID). Exterior walkways shall be illuminated using high-pressure sodium (HPS) lamps in bollards. The walkway illumination level shall be 5 lux (0.5 FC), average, with an average-to-minimum uniformity ratio of 5:1. The walkway lighting shall not flood the site with illumination. Parking areas shall be illuminated using high-pressure sodium lamps in the architectural “shoebox” style fixtures on 10 meter concrete, round, tapered poles. The parking area illumination level shall be 5 lux (0.5 FC), average, with an average-to-minimum uniformity ratio of 4:1. All measurements shall be taken at the pavement.

Exterior lighting shall be controlled by a combination of individual photocells, contactors and H-O-A switches. Place photocells on building to be accessible from a 2.4m (8-foot) ladder.

9.4.3 Emergency Lighting. Provide emergency source for egress/exit lighting IAW Fort Lewis Design Standards. Emergency power for exit and means of egress lighting shall be provided from single source such as lighting inverter ~~or generator~~ that meets the requirements of NFPA 101, Life Safety Code, and Section 5-9. Battery systems shall incorporate maintenance free lead acid or lead calcium batteries. Battery operated emergency lighting equipment shall be self-testing / self-diagnostic that automatically performs a minimum 30 second test and diagnostic routine at least every 30 days and indicates failures and alarms. Status, test, and alarm information shall be stored in memory and retrievable from unit display. Provide provisions for remote alarm indications and condition monitoring. Emergency power sources shall be located in dedicated electrical equipment rooms readily accessible to maintenance personnel independent of building occupants.

9.5 Telecommunications.

Army cable shall be Category 6 or higher, such as Category 7, per EIA/TIA 568A, Commercial Building Telecommunications Cabling Standard. For all voice and data wire runs, cable shall be 4 pair, 100 ohm, unshielded twisted pair (UTP), 24 AWG, insulated solid conductor. Four pair for data shall be terminated on rack mounted, 48 port patch panels. Provide a patch cord manager above and below each 48-port patch panel. Four pair for voice shall be terminated on wall mounted 66-type insulation displacement contact (IDC) wiring blocks. Provide jumper management above and below each vertical column of 600 pair of wiring blocks. Voice wiring blocks will be mounted on the same wall with and adjacent to building entrance cables or riser backbone cables. Four pair UTP cable for data shall have a blue jacket, while voice shall have a gray or white jacket.

9.5.1 Communications Rooms. Follow requirements of ANSI/TIA/EIA-569-A for telecommunications closets and equipment rooms. Space shall be provided in the main communications rooms for Qwest to install their cables where required. All walls shall be covered with plywood. The plywood shall be painted with two coats of fire retardant paint to match the room color. As a minimum, the main Communications Room shall have one 483mm (19-inch) equipment rack, mounted to the floor. A 20 ampere, 120 volt dedicated receptacle circuit shall be provided at each backboard and to each equipment rack. Communications rooms will be minimally sized according to EIA/TIA 569-A Standards. All communications rooms shall have communications cable tray mounted on the walls around

the entire room. The bottom of the cable tray will be 2.13 meters above the finished floor (AFF).

9.5.2 Telecommunication outlet locations. Coordinate outlet locations with furniture arrangement. Administrative areas in the Barracks complex, the Company Operations Facilities, and the Battalion Headquarters shall be provided with multimedia outlets that have two six-pin modular jacks for voice and two eight-pin modular jacks for data. Within office areas and conference rooms, multimedia outlets shall be placed adjacent to receptacles. Each sleeping space within a Barracks' living module shall be provided with two telephone outlets; however, each outlet shall have only one six-pin modular jack. One 27mm conduit shall be routed to each telephone outlet.

9.6 SECURITY SYSTEM(S). An Integrated Commercial Intrusion Detection System, ICIDS II, by MDI Security Systems shall be provided for the arms vaults and secured document rooms within the Company Operations Facilities and the Battalion Headquarters. The system shall consist of balanced magnetic switches at the entrance of each secure room, and passive infrared detectors (PIR), keypad, duress alarm, tamper switches and the Remote Terminal Unit (RTU-195 series) local processor within each secure room. The preprocessing unit (PPU-100) shall be installed in the RSU Building.. The IDS system shall be an extension of the existing system installed at Ft. Lewis. The contractor shall provide and install all the necessary equipment, including fiber optic cables between buildings and the RSU, and system programming to provide a complete and functioning security system. The contractor shall coordinate the programming of the front-end equipment for the security system with the Physical Security Officer. See Section 13721 for additional information on ICIDS requirements.

Closed-circuit security camera surveillance has not been provided.

9.7 SPECIAL SYSTEMS. None

9.8 CABLE TELEVISION (CTV) SYSTEM. Space shall be provided in the Communications rooms for the CTV equipment that will be provided and installed by the CTV vendor. CTV vendor will supply and install all CTV-coaxial service entrance cables. Amplification equipment will be provided and located by the CTV vendor. Provide supporting structures that consist of conduit with pull wires, outlets with blank faceplates, and backboards in closets. Refer to the "Installation Information Infrastructure Architecture (I3A) Design and Implementation Guide". Provide TV outlets in the UEPH buildings per guide requirements, except provide a minimum of two CTV outlets in each Living/Sleeping room. In COF, Battalion HQ, and Brigade HQ provide CTV outlets in the locations designated by the user. Outlets are single run, per vendor requirements, with one 27mm conduit with a pullwire to each outlet. In the barracks, each resident will arrange with the vendor for service.

9.9 RSU BUILDING. Renovations are required in the existing facility to the mechanical equipment and voice/data racks. Coordinate all work within the facility with the DOIM. For the mechanical requirements refer to Chapter 10. Relocate the existing fiber optic racks and cables to the area once occupied by the mechanical equipment. Extend the existing telephone distribution frame into the area once occupied by the fiber optic equipment. Assume all equipment rack relocations require cable splicing of both the copper and fiber optic cables

CHAPTER 10

UNIT DESIGN - HEATING AND VENTILATION

10-1 **DESIGN STANDARDS AND CODES**. The HV design shall be in accordance with ASHRAE Handbooks, 10 CFR Part 434 and the current version of the International Mechanical Code. Air conditioning will not be provided, except for the RSU Building as described. Cooling during the summer shall be accomplished by mechanical ventilation (economizer).

10-1.1 **Facility Energy Conservation Requirements.** The entire facility design, including siting, building envelope, plumbing systems, lighting, electrical systems, and HV systems form a complete assembly/structure that is in compliance with ASHRAE 90.1-2001.

10-2 **DESIGN CALCULATIONS**.

10-2.1 Heat loss calculations. Heating loads shall be in accordance with the current edition of the ASHRAE Handbook of Fundamentals. Computer-generated load calculations shall be provided, and shall include complete input and output summaries. Equipment shall be sized to meet the total load determined by computer calculation. Equipment may be oversized to no more than 115 percent of the computer-generated load. Design shall be based on weather data from UFC 3-400-02, Engineering Weather Data; from ASHRAE Handbook of Fundamentals; or from other recognized and authoritative sources of weather data. Room airflow requirements shall be computed based on the individual room load. Minimum space heating and ventilation shall be provided in spaces normally unoccupied, such as bulk storage and equipment rooms.

TABLE 10-1 – WEATHER DATA

Type of Design /Design Information	Metric	
Heating		
Indoor Design Temperature	21 °C	
Unoccupied Space Design Temperature	13 °C	
Outdoor Design Temperature	-4 °C	

Metric data are based on Celsius degree-days to a base of 18° C.

10-2.1.1 Load design criteria –UEPH Facilities (Barracks): The internal loads shown in Table 10-2 shall be included for each space listed. The degree of activity for all people shall be moderately active office work. Lights shall be included for the actual quantity provided. Any additional equipment furnished under this contract shall also be included in the appropriate space.

TABLE 10-2 – INTERNAL LOADS

Space	People	Equipment
Sleeping/Living Room	1	1 PC, 1 TV
Kitchen	0	1 Refrigerator
Bathroom	0	None

10-2.1.2 Load design criteria – Company Operations Facilities. The internal loads shown in Table 10-3 shall be included for each applicable space listed. The degree of activity for all people shall be moderately active office work. Lights shall be included for the actual quantity provided. Any additional equipment furnished under this contract shall also be included in the appropriate space.

TABLE 10-3 – INTERNAL LOADS

Space	People	Equipment
Office	1 / 142 sf	1 PC/ person
Conference Room	1 / 20 sf	1 PC
Lobby	1 / 33 sf	1 Coffee Pot
Activities Room	1 / 20 sf	1 PC
Mail Room	1 / 100 sf	None
TV Lounge/Waiting Room	1 / 20 sf	1 TV
Kitchen	1 / 100 sf	1 KW
Toilet, Janitor Closet	0	None
Corridor/Balcony/Vending	1 / 300 sf	None
Laundry	0	None

10-2.1.3 Load design criteria – Battalion Operations Facilities. The internal loads shown in Table 10-4 shall be included for each space listed. The degree of activity for all people shall be moderately active office work. Lights shall be included for the actual quantity provided. Any additional equipment furnished under this contract shall also be included in the appropriate space.

TABLE 10-4 – INTERNAL LOADS

Space	People	Equipment
Offices	1 / 142 sf	1 PC/person
Conference Room	1 / 20 sf	1 PC
Lobby	1 / 33 sf	Coffee Pot
Classroom	1 / 20 sf	1 PC/person
Toilet, Janitor Closet	0	None
Corridor	1 / 300 sf	None

10-2.2 Ventilation air. Calculations determining minimum outside ventilation air and exhaust shall be provided for each building space. Ventilation rates shall be in accordance with the current edition of the International Mechanical Code and ASHRAE 62. Outside air quantities will be sufficient to meet ventilation requirements and maintain a positive pressure relative to the outdoors in the living/sleeping rooms, interior corridors, offices, conference rooms, lobby and similar occupied areas.

10-2.3 Piping calculations. Calculations shall be provided for pressure drop calculations for all piping systems, including head loss calculations for all pumps.

10-2.4 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.

10-3 **MECHANICAL SYSTEMS**. Space heating for the barracks complex, to include the company and battalion buildings, shall be provided by hot water generators supplying hot water to the heating coils and convectors. Hot water generators and associated components shall be installed in the respective mechanical rooms. The heating systems shall be designed, installed, balanced, and adjusted to distribute heat to all habitable rooms, as well as bathrooms, in proportion to the calculated load requirements of these spaces. UEPH buildings shall be limited to fan coils, or similar units with individual adjustable thermostat and fan switch in each module. Fan coils and similar units for UEPH modules shall not be ceiling mounted or located in the living/sleeping room area; floor mounted units shall be provided for ease of maintenance. Additional consideration in the technical evaluation will be given to systems utilizing energy efficient equipment, additional space in the mechanical room and closets, and other features that contribute to ease of system operation and maintenance. Additional consideration will also be given to designs that provide measures to increase energy conservation or occupant comfort such as division of each unit into more than one conditioning zone for increased control.

10.3.1 Incremental equipment. Fan coil units with hydronic heating shall be provided for each module and shall be installed in the mechanical closets.

10.3.2 Air distribution systems. Heating will be provided by fan coil units installed in the mechanical closets. Fan coil units shall deliver air to each conditioned space. Outside air shall be supplied to each of the fan coil units to satisfy indoor air quality as established by ASHRAE 62.

10-3.3 Hydronic distribution systems. Provide hot water piping system with a standby pump provided for each system pump provided. Hot water will be provided from the hot water generator located in the mechanical room.

10-3.4 Provide unit heaters, fin tube radiators, cabinet heaters or convectors to ancillary spaces such as mechanical, communication, and electrical rooms. Remote spaces shall also be provided with unit heaters or convectors if an economic analysis proves that a ducted air system may not be cost effective.

10-3.5 Central heating equipment. Provide natural gas fired hot water generator. A propane/air mixture with natural gas properties will be used as an alternate fuel source. Ft Lewis desires a single hot water generator unit to reduce the maintenance burden. However, multiple units shall be considered to best match the building heating profile and maximize on boiler operation. Additional consideration in the technical evaluation will be given to a heating system that adequately addresses the use of a single or multiple boiler configuration to best match the load profiles for the building. Perform an economic analysis based on first cost, operating cost and maintenance cost. The hot water generator and the controls shall be provided as a system by a single manufacturer. The burner and controls shall be fully modulating type.

10-3.6 Exhaust systems. Provide central building continuous exhaust systems for the barracks toilet exhausts. Provide a single exhaust fan installed in the attic space of the barracks buildings. Provide individual thermostatically controlled exhaust fans for laundries, mechanical/electrical rooms and other spaces where ventilation only is required. Provide exhaust hoods individually and directly ducted to the exterior for all residential type ranges and cooking surfaces. If a central exhaust system is provided for the kitchen exhaust, design shall include provisions for operating various numbers of range hoods. Maintaining minimum air velocities in the duct shall be considered.

10-3.7 Dehumidification systems. Provide packaged refrigerated type dehumidifiers for the Arms Vaults and TA-50 Storage areas in the Company Operations Facilities. Dehumidifiers shall be capable of removing at least 22 liters of water per day at 60% relative humidity and 26 degrees C.

10-3.8 RSU Building. Remove existing air conditioning system, including ductwork, and all associated services located in the ESS Room in the RSU Building and provide a new air conditioning system located outside of the ESS Room. Two “Data Aire” floor mounted air conditioning units are presently installed in the ESS Room with two air-cooled condensers located outside in the screened equipment yard. Each unit has approximately 70 kW (20 tons) of cooling capacity. The original design was based on an internal sensible heat load of 51 kW (174 kBTU/hr) from the telephone equipment. The existing system provides a 100% redundant high efficiency computer room type air conditioning system to maintain temperatures in the ESS and Battery Rooms between 23.3 ± 2.8 degrees C (74 ± 5 degrees F) dry bulb and 50 ± 10 percent relative humidity year round, 24 hours a day. The existing system consists of split package direct expansion computer room air conditioning units with fans, compressors, evaporative coils, hot water reheat coils, humidifiers, controls and alarms

located in the ESS Room and matching outdoor condensers with fans and coils, capable of providing both heat and humidity control. The two units operate on a 24 hour alternating primary and standby duty cycle. At any time upon the failure of the system on primary duty, the system on standby duty automatically starts and provides the required environmental control. The air conditioning alarms signal high and low humidity levels at the units and at the telephone switch alarm panel and minor and major (2.2 degrees C (4 degrees F) above the minor alarm high temperature level) alarms at the units and telephone switch alarm panel. The minor alarm causes an automatic switch over to the standby unit and remains on until the cause of the minor alarm is corrected. The major alarm indicates that neither unit can maintain the proper ESS Room temperature. The Battery Room is air conditioned by ductwork from the ESS Room units. The Battery Room air conditioning shall provide a minimum of 70 liters per second (150 CFM) air flow. Because of the North Fort Lewis expansion, additional space is required for telephone equipment where the existing air conditioning units are located. The new air conditioning units are expected to have a capacity of approximately 88 kW (25 tons) of cooling capacity each, assuming an increase in internal heat load of 17.6 kW (60 kBTU/hr). The proposed location of the new equipment is on the southwest side of the RSU Building, adjacent to the screened equipment yard. An extension to the building shall be provided for the equipment or the equipment shall be designed for outdoor use if installed directly outdoors without any protection. Existing system shall not be removed until the new system has been tested and commissioned. Wall, floor and ceiling surfaces of the vacated space are to be patched and finished to match adjacent surfaces.

10-4 **INCREMENTAL EQUIPMENT**. The following equipment will be acceptable for the facilities on this project except where noted otherwise for specific buildings. Minimum equipment efficiencies shall be in accordance with DOE Buying Energy Efficient Products Recommendations (refer to www.eren.doe.gov/femp/procurement for recommended efficiencies) or Energy Star.

10-4.1 Unit heaters. Units shall be horizontal or vertical air discharge types complete with fans, hot water coils, housing and discharge vanes or diffuser.

10-4.2 Fin tube radiation. Units shall be complete with plate fin heating elements and enclosures. Enclosures shall be constructed of sheet steel not less than 20 gauge.

10-4.3 Cabinet heater. Units shall be complete with fans, heating elements and enclosing cabinets. Heating elements shall be constructed of cast iron or of nonferrous material. Cabinets shall be constructed of sheet steel not less than 20 gauge.

10-4.4 Convectors. Units shall be complete with heating elements and enclosing cabinets having bottom recirculating opening, manual control damper and top supply grille. Heating elements shall be constructed of cast iron or of nonferrous alloys. Cabinets shall be constructed of black sheet steel not less than 20 gauge.

10-4.5 Exhaust fans. Fans shall be centrifugal or propeller type, roof or wall mounted, direct or V-belt driven with backward inclined, non-overloading wheel. Motor compartment housing shall be hinged or removable and weatherproof, constructed of heavy gauge aluminum. Fans shall be provided with bird screen, disconnect switch, gravity or motorized dampers. Lubricated bearings shall be provided. Fans shall be tested and rated according to AMCA 210.

10-4.6 In-line fans. Fans shall have centrifugal, backward inclined blades, stationary discharge conversion vanes, internal and external belt guards, and adjustable motor mounts. Fans shall be mounted in a welded tubular casing. Air shall enter and leave the fan axially. Inlets shall be streamlined with conversion vanes to eliminate turbulence and provide smooth discharge airflow. Fan bearings and drive shafts shall be enclosed and isolated from the air stream. Fan bearings shall be sealed against dust and dirt and shall be permanently lubricated, and shall be precision self-aligning ball or roller type. Fans shall be tested and rated according to AMCA 210.

10-4.7 Ceiling exhaust fans. Suspended cabinet-type ceiling exhaust fans shall be centrifugal type, direct-driven. Fans shall have acoustically insulated housing. Integral backdraft damper shall be chatter-proof. The integral face grille shall be of egg-crate design or louver design. Fan motors shall be mounted on vibration isolators. Unit shall be provided with mounting flange for hanging unit from above. Fans shall be U.L. listed.

10-4.8 Range hoods. Kitchen range exhaust fans shall be two-speed, and shall be sized for an exhaust rate of 7.6 (L/s)/m2 . Maximum allowable noise level shall be 6 sones as installed.

10-4.9 Dryer Vents. Dryer vents that are vented individually shall be rigid aluminum with exterior wall cap and backdraft damper. Individual dryer vent pipes shall be a maximum of 6100 mm long, with no more than three right angle elbows (with minimum radius of 150 mm), and have a maximum vertical run of 3660 mm. Common venting systems with booster fans can have longer runs and shall include provisions for operating variable number of dryers. Means shall be provided for cleaning entire length of dryer vents. Dryer vents shall not exhaust near entry doors, patio or balconies. Dryer vents shall not run through non-accessible spaces.

10-5 AIR DISTRIBUTION EQUIPMENT. Minimum equipment efficiencies shall be in accordance with DOE Buying Energy Efficient Products Recommendations (refer to www.eren.doe.gov/femp/procurement for recommended efficiencies) or Energy Star.

10-5.1 Air handling units. 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. All sections shall be constructed of a minimum 18 gauge galvanized steel, or 18 gauge steel outer casing protected with a corrosion resistant paint finish. Casing shall be designed and constructed with an integral structural steel frame such that exterior panels are non-load bearing. Casings shall be provided with inspection doors, access sections, and access doors. Inspection and access doors shall be insulated, fully gasketed, double-wall type, of a minimum 18 gauge outer and 20 gauge inner panels. Coils shall be fin-and-tube type constructed of seamless copper tubes and aluminum fins mechanically bonded or soldered to the tubes. Coils shall be rated and certified according to

ARI 410. Filters shall be listed according to requirements of UL 900. Filters shall be 50 mm depth, sectional, disposable type of the size indicated and shall have an average efficiency of 25 to 30 percent when tested according to ASHRAE 52.1. Filters shall be UL Class 2. Fans shall be double-inlet, centrifugal type with each fan in a separate scroll. Fan bearings shall be sealed against dust and dirt and shall be precision self-aligning ball or roller type. Bearing life shall be L50 rated at not less than 200,000 hours as defined by AFBMA Std 9 and AFBMA Std 11. Bearings shall be permanently lubricated or lubricated type with lubrication fittings readily accessible at the drive side of the unit.

Rooftop air handling units shall not be used.

10-6 HEATING EQUIPMENT. Minimum equipment efficiencies shall be in accordance with DOE Buying Energy Efficient Products Recommendations (refer to www.eren.doe.gov/femp/procurement for recommended efficiencies) or Energy Star.

10-6.1 Hot water generators (HWG). Hot water generators shall be designed, constructed and equipped in accordance with the ASME Boiler Pressure Vessel Code, Section IV, Heating Boilers. Each boiler shall be self contained, steel, horizontal, 3 pass or greater, wetback scotch marine packaged type complete with all accessories, mounted on a structural steel base . The HWG capacity shall be based on the ratings shown in HYI-01 or as certified by the American Boiler Manufacturers Association, or American Gas Association. HWG shall be designed to burn natural gas. A propane/air mixture with natural gas properties will be used as an alternate fuel source. Each HWG shall comply with Federal, state, and local emission regulations. Burners shall be UL approved, fully modulating, mechanical draft burners with all air necessary for combustion supplied by a blower where the operation is coordinated with the burner. Burners shall be provided complete with gas supply system in conformance with UL 795, ANSI Z21.13 or NFPA 8501. Combustion safety controls and equipment shall be UL or IRI listed and conform to ASME CSD-1. Flame safeguard control shall be Honeywell 7800 series. Hot water generators shall be provided with a water flow interlocking device.

10-7 AIR DISTRIBUTION SYSTEMS. Provide duct systems conforming to the recommendations of the SMACNA Duct Construction Standards including seal class requirements. Fire dampers shall be provided where required by code. Balancing dampers shall be provided at all branch takeoffs and for all supply outlets. Permanent access to dampers shall be provided.

10-7.1 Ductwork. All ductwork including fittings and components shall conform to SMACNA HVAC Duct Construction Standards. Seal class shall be as recommended by SMACNA. Pressure sensitive tape shall not be used as a sealant. Duct board shall not be used.

10-7.2 Supply diffusers and registers. Diffusers 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 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 airflow in the space. Plastic diffusers are prohibited. Core velocity shall be limited to 3 m/sec [600 fpm] maximum, with a maximum pressure drop of 0.82 Pa/m [0.1 inch water]. Airflow from any single diffuser shall be limited to 94.4 L/s [200 cfm] maximum. 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 150 mm [6 inches] below the ceiling.

10-7.3 Return/exhaust registers and grilles. Grilles shall be fixed horizontal or vertical louver type similar in appearance to the supply diffuser face. Registers shall be provided with integral opposed blade damper. Plastic units are prohibited. Core velocity shall be limited to 2 m/sec [400 fpm] maximum, with a maximum pressure drop of 0.5 Pa/m [0.06 inch water]. 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 150 mm [6 inches] above the floor or below the ceiling.

10-7.4 Flexible duct. Shall be limited to runouts, shall be adequately supported to prevent kinks and shall not exceed 3.2 m [10 feet] in length. Runouts shall be preinsulated, factory fabricated, and conform to NFPA 90 and UL 181.

10-7.5 Fire dampers. Fire dampers shall be located and installed in accordance with NFPA requirements, and shall conform to the requirements of UL 555. Fire dampers shall be automatic operating, and shall be rated for the maximum system velocity and pressure. Fire dampers shall be equipped with a steel sleeve or adequately sized frame installed in such a manner that disruption of the attached ductwork, if any, will not impair the operation of the damper. Dampers shall not reduce the duct or the air transfer opening cross-sectional area. Access doors shall be provided at all fire dampers.

10-7.6 Balancing dampers. Provide in ducts serving each supply, return and exhaust air device.

10-7.7 Access doors. Provide in ductwork and plenums at all air flow measuring devices, automatic dampers, fire dampers, coils, thermostats and other devices requiring service and inspection.

10-8 HYDRONIC DISTRIBUTION SYSTEMS.

10-8.1 Pumps. Provide inline or base-mounted centrifugal pump for each hydronic system provided. Provide flexible connections and pressure gauges on pump inlet and outlet. Provide suction diffusers on pump connections. Provide primary and backup pump for each hydronic system provided.

10-8.2 Air separator. Provide air separator for each closed hydronic system provided.

10-8.3 Expansion. Provide a bladder tank expansion tank for each closed hydronic system provided.

10-8.4 Chemical feed systems. Provide means for chemical treatment for each hydronic system provided. Provide automatic chemical treatment systems for all open water systems. Provide initial treatment and one-year supply of chemicals for each system provided.

10-8.5 Makeup water. Provide backflow preventers and pressure reducing valves on each makeup water system provided. Each hydronic system shall have a separate pressure-reducing valve.

10-9 PIPING SYSTEMS. Piping systems shall be in accordance with the following subparagraphs. Fittings and valves shall be compatible for the piping systems in which installed. Provide dielectric unions where required. Provide flexible connections where necessary to prevent vibrations from transmitting from equipment to the piping system. Expansion loops, expansion joints and offsets shall provide with adequate anchors and guides where required to prevent excessive forces within the piping systems. All piping shall be properly and adequately supported. Pipe supports shall conform to MSS SP-58 and MSS SP-69.

10-9-1 Hot water. Shall be steel piping conforming to ASTM A 53/A 53M, Type E or S, Grade A or B, black steel, schedule 40 or copper tubing conforming to ASTM B 88, ASTM B 88M, Type K or L.

10-10 INSULATION. Pipe and duct insulation shall be in accordance with ASHRAE 90.1. Equipment insulation shall be a minimum of 50 mm [2 inch] thickness or as necessary to prevent the surface temperature from exceeding 60 degrees C [140 degrees F].

10-10.1 Duct insulation. Provide on the exterior of all supply and outside air ducts and plenums and on all return ducts in unconditioned spaces. Exhaust ductwork does not require insulation. 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. Where insulated ducts pass through firewalls, fire partitions, above grade floors, and fire rated chase walls, the penetration shall be sealed with fire stopping materials.

10-10.2 Pipe. Provide on all aboveground hot and cold piping systems except PVC condensate drains. Insulation shall form a continuous thermal retarder and shall have a vapor retardant to prevent condensation on cold piping systems. Installation shall be with full-length units of insulation and using a single cut piece to complete a run. Cut pieces or scraps abutting each other shall not be used. Supply the insulation with manufacturers recommended factory-applied jacket except for flexible cellular. Piping exposed to weather shall be insulated and an aluminum jacket or PVC jacket shall be applied. Where insulated pipes pass through firewalls, fire partitions, above grade floors, and fire rated chase walls, the penetration shall be sealed with fire stopping materials.

10-10.2.1 Cold aboveground piping. Insulation for minus 34.5 degrees to plus 15.6 degrees C [minus 30 degrees to plus 60 degrees F] for outdoor, indoor, exposed or concealed applications, shall be as follows:

10-10.2.1.1 Cellular Glass: ASTM C 552, Type II, and Type III.

10-10.2.1.2 Flexible Cellular Insulation: ASTM C 534, Type I or II, with vapor retarder skin on both sides.

10-10.2.1.3 Phenolic Insulation: ASTM C 1126, Type III.

10-10.2.1.4 Polyisocyanurate Insulation: ASTM C 591, Type I.

10-10.2.2 Hot aboveground piping. Insulation for above 15.6 degrees C [60 degrees F] for outdoor, indoor, exposed or concealed applications, shall be as follows:

10-10.2.2.1 Mineral Fiber: ASTM C 547, Types I, II or III.

10-10.2.2.2 Cellular Glass: ASTM C 552, Type II and Type III.

10-10.2.2.3 Flexible Cellular Insulation: ASTM C 534, Type I or II to 93 degrees C [200 degrees F] service.

10-11 **EQUIPMENT**. Provide on all equipment when temperatures are below 16 degrees C [60 degrees F], above 40 degrees C [104 degrees F] or where condensation can occur. Insulation shall be suitable for the temperature encountered. Insulation shall be formed or fabricated to fit the equipment. Removable insulation sections shall be provided to cover parts of equipment that must be opened periodically for maintenance including vessel covers, fasteners, flanges and accessories. Supply the insulation with manufacturer's recommended factory applied jacket.

10-12 **CONTROLS**. Provide a DDC system as a distributed control system. The system shall have standalone interoperable LonMark or LonWorks, or BACnet digital controllers, a communications Network with Network Access Controllers (NAC's) in each facility, capable of serving as a WEB browser server if specified. Provide all devices required, including air compressors, refrigerated dryers, 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 heating shall have a deadband of 2.8 degrees C [5 degrees F]. All equipment and systems shall be automatically controlled and monitored by the control system. The control system shall tie and integrated into the existing UMCS/EMCS system using the Tridium based Jace controllers and Web supervisor software. 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.

10-13 **TESTING, ADJUSTING AND BALANCING**. 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), National Environmental Balancing Bureau (NEBB) or Testing, Adjusting and Balancing Bureau (TABB). Prior to testing, adjusting, and balancing, the Contractor shall verify that the systems have been properly installed and are operating as specified. 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, NEBB-01, SMACNA-07 or ASHRAE 111 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.

10-13.1 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 699 kPa [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.

10-13.2 Air systems. (Leakage test is not required for a duct system with static pressure of 125, 250 or 500 Pa) Prior to adjusting and balancing, duct pressure testing of air systems shall be performed on 10 percent of the systems that have been randomly selected by the Contracting Officer. No additional testing will be required if at least 90 percent of the tested systems pass the air leakage test requirements. If less than 90 percent of the tested systems pass the air leakage test, an additional 10 percent of the systems shall be tested. This process shall continue until 90 percent of the total number of tested systems pass. Maximum leakage allowed shall be in accordance with SMACNA Duct Leakage Test Manual. 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.

10-13.3 Equipment. Each item of central operating equipment provided, including boilers 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.

10-14 **COMMISSIONING**. All HV systems and equipment including controls shall be commissioned in accordance with ASHRAE Guideline 1 The commissioning specification, UFGS 15995A, which the contractor tailors based on the ASHRAE Guideline 1 and actual equipment and components installed, is a detailed description of the scope and objective of the construction, acceptance, and post-acceptance phases of the HVAC commissioning process. The commissioning specification is required to contractually implement the post-design phases of the process. It must be project specific.
A separate commissioning review, plan and execution by a commissioning authority independent of the design team shall be provided and performed to obtain a point towards the LEED program. See Chapter 13, Sustainable Design.

10-15 **TRAINING**. The Contractor shall conduct a training course for all HV operating systems and individual items of equipment. 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 24 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.

CHAPTER 11

ENERGY CONSERVATION

11-1 **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.

11-1.1 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 1.6 square meter-Kelvin (K)/watt [0.28 ft2-degrees F/BTUH].

11-1.2 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.

11-1.3 Shading of Glazing. Cooling season shading of glazed surfaces on the east, west and south elevations is required.

11-2 **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. .

11-3 **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.

11-4 **ENERGY RECOVERY EQUIPMENT**.

11-4.1 Plate heat exchangers. Unit shall be a factory fabricated and tested assembly for stationary air-to-air energy recovery by transfer of sensible heat from exhaust air to supply air stream. Heat transfer surface shall be constructed of aluminum. Enclosure shall be fabricated from galvanized steel and shall include maintenance access provisions.

11-4.2 Rotary heat exchangers. Unit shall be a factory fabricated and tested assembly for air-to-air energy recovery by transfer of sensible heat from exhaust air to supply air stream. Device performance shall be according to ASHRAE 84. Exchange media shall

be chemically inert, moisture-resistant, fire-retardant, laminated, nonmetallic material that complies with NFPA 90A. Exhaust and supply streams shall be isolated by seals which are static, field adjustable, and replaceable. Chain drive mechanisms shall be fitted with ratcheting torque limiter or slip-clutch protective device. Enclosure shall be fabricated from galvanized steel and shall include maintenance access provisions.

11-4.3 Heat recovery coils. Coil assembly shall be factory fabricated and tested air-to-liquid-to-air energy recovery system for transfer of sensible heat from exhaust air to supply air stream. System shall deliver an energy transfer effectiveness without cross-contamination with maximum energy recovery at minimum life cycle cost. Components shall be computer optimized for capacity, effectiveness, number of coil fins per inch, number of coil rows, flow rate and frost control. Coils, pumps, controls and piping materials shall conform to Chapter 10 – Heating and Ventilation.

11-4.4 Heat pipe. Device shall be a factory fabricated, assembled and tested, counterflow arrangement, air-to-air heat exchanger for transfer of sensible heat between exhaust and supply streams. Device shall deliver an energy transfer effectiveness without cross-contamination. Heat exchanger tube core shall be seamless aluminum or copper tube with extended surfaces, utilizing wrought aluminum Alloy 3003 or Alloy 5052, temper to suit. Tubes shall be fitted with internal capillary wick, filled with an ASHRAE 15, Group 1 refrigerant working fluid, selected for system design temperature range, and hermetically sealed. Heat exchanger frame shall be constructed of not less than 16 gauge galvanized steel and fitted with intermediate tube supports, and flange connections. Tube end-covers and a partition of galvanized steel to separate exhaust and supply air streams without cross-contamination and in required area ratio shall be provided. A drain pan constructed of welded Type 300 series stainless steel shall be provided. Coil shall be fitted with pleated flexible connectors.

11-5 **REBATES AND INCENTIVES**. Systems and techniques that 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 **DESIGN STANDARDS AND CODES**. The fire protection design for all facilities shall be in accordance with the current versions of the International Building Code, the National Fire Protection Association (NFPA) standards and codes and UFC 3-600-01.

12-1.1 **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.

12-1.2 **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. 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, the IBC and UFC 3-600-01; 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 A preliminary hydraulic analysis performed using recent flow test data indicates that the sprinkler system design for this facility will not require a fire pump and storage tank. Proposed design shall be based on test data as described below.

Flow Data:
Date and Location of Test: 6 inch line at East Drive and D Street
Static Pressure Measured: 78 psi
Residual Pressure of: 60 psi Flowing 2,445 gpm

12-2.2 The contractor shall provide detailed calculations that demonstrate that the systems designed meet the flow demands of the sprinkler systems within the facility and the fire department hose stream requirements from the fire hydrants.

12-3 **SPRINKLER SYSTEM**.

12-3.1 Wet pipe sprinkler system. The entire building shall be protected by a wet pipe sprinkler system. Sprinkler system shall be designed and installed in accordance with the provisions of UFC 3-600-01 and NFPA 13, Standard for the Installation of Sprinkler Systems. UEPH building four stories or less may be protected by a wet pipe sprinkler system designed and installed in accordance with the provisions of NFPA 13R, except that buildings, which use the sprinkler system to increase allowable floor area based on particular construction type, shall be designed and installed in accordance with the provisions of NFPA 13. Provide hydraulic calculations to support design of the system.

12-3.2 Sprinkler Heads. All sprinkler heads located in finished areas shall be recessed pendent type, unless noted otherwise. Sprinkler heads located in barracks room modules shall be concealed type. Residential sprinklers shall be fast response type.

12-4 BUILDING CONSTRUCTION. Comply with requirements of International Building Code, NFPA 101Life Safety Code and UFC 3-600-01.

12-4.1 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.

12-4.2 Interior Wall and Ceiling Finishes. Wall and ceiling finishes and movable partitions shall conform to the requirements of the IBC, NFPA 101, UFC 3-600-01 and the following:

12-4.2.1 Interior finish for exits, exit passageways, sleeping rooms shall be Class A only.

12-4.2.2 Flame spread (FS) and smoke development (SD) shall be tested in accordance with ASTM E84. Tests shall not exceed FS rating of 25 and SD rating of 50 for Class A materials; FS rating of 75 and SD rating of 100 for Class B materials; and FS rating of 200 and SD rating of 200 for Class C materials. Class C materials shall only be permitted in fully sprinklered buildings.

12-4.2.3 Cellular plastics shall not be used as interior wall and ceiling materials.

12-4.2.4 Carpeting and other textile wall coverings shall not be applied as an interior finish.

12.5 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. Mechanical HVAC systems shall be separately zoned and duct detected in accordance with NFPA 90A.

Detection shall be provided for all areas, including above drop ceilings, where the ceiling space is accessible. Detectors shall be photoelectric (installation request, i.e., ionization disposal), smoke or heat. Detection in the barracks living units shall be by photoelectric smoke detector with local alarm. The central core area is sprinkled and is provided with flow

switches; except the mechanical room, which is provided with fixed temperature heat detectors. Combination fixed temperature/rate-of-rise heat detectors with general alarm are provided in areas that do not have sprinklers. In the administrative buildings detection shall be in accordance with NFPA 72, consisting of manual pull stations located at each primary exterior door, and smoke and heat detectors in unoccupied spaces and common spaces. Activation of any manual station or sprinkler shall sound the general alarm. Notification appliances for general alarm are horns with strobe lights; and in addition, audible devices in the living unit smoke detector shall sound with general alarm. The fire alarm control panel shall be located in the main electrical room with a graphic annunciator at the main building entry for the Company Operations Facilities, the Battalion Headquarters, and each Barracks building.

12.5.1 The existing fire alarm reporting system on Ft. Lewis consists of a King Fisher radio transmitter. The fire alarm system shall consist of a fire alarm control panel with battery backup, and a transmitter that is fully compatible with the King Fisher system. The transmitter system shall include a transmitter, associated interface, antenna, antenna discharge unit, antenna mast, and shall transmit both trouble and alarm signals.

CHAPTER 13

SUSTAINABLE DESIGN

13-1 SUSTAINABLE DESIGN GOALS.

13-1.1 The general 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.

13-1.2 Fort Lewis Sustainability Vision Statement: "Fort Lewis is committed to supporting a strong national defense, securing the integrity of our national and cultural heritage, conserving our natural resources for tomorrow's generations, while seeking choices that enhance our neighboring communities' ability to have a productive future".

13-1.3 Fort Lewis' 25 year sustainability goals were developed during a three day Installation Sustainability Workshop in February of 2002. These goals are critical shapers of all installation planning, development, management and operation activities. All design and construction projects at Fort Lewis must take up the challenge of meeting these goals. Progress towards the attainment of these goals will be incremental and not easily achieved. Some goals may not have a direct nexus with a project. However, all project teams need to carefully evaluate what can be done within their specific scope of work, budget, schedule and quality restrictions to facilitate the eventual attainment of these goals. The goal statements are:

a. Reduce traffic congestion and air emissions by 85% by 2025.
b. Reduce air pollutants from training without a reduction in training activity.
c. Reduce stationary source air emissions by 85% by 2025.
d. Sustain all activities on post using renewable energy sources and generate all electricity on post by 2025.
e. All facilities adhere to the LEED Platinum standard for sustainable facilities by 2025.
f. Cycle all material use to achieve ZERO net waste by 2025.
g. Attain healthy, resilient Fort Lewis and regional lands that support training, ecosystem, cultural and economic values by 2025.
h. Recover all listed and candidate federal species in South Puget Sound Region.
i. Zero discharge of wastewaters to Puget Sound by 2025.
j. Reduce Fort Lewis potable water consumption by 75% by 2025.
k. Fort Lewis contributes no pollutants to groundwater and has remediated all contaminated groundwater by 2025.
l. Develop an effective regional aquifer and watershed management program by 2012.

13-1.4 An additional goal of Fort Lewis is to provide an environmental "showcase" project that both demonstrates the installations commitment to sustainable design and provides a model of environmentally sensitive construction for the community.

13-2 **PROJECT REQUIREMENTS**. Sustainable design techniques and technology shall be considered and incorporated as they relate to site and building design, construction, and operation. While this project will be evaluated using a specific metric, the use of any type of environmentally sound, and life cycle cost responsible, technology may be proposed. Innovation in process and practice is encouraged. However, it is not the intention of the Government for this project to be a venue for experimentation. Technologies proposed for use must have demonstrated success in previous installations. Techniques, products and systems that conserve energy, improve livability, benefit the environment, conserve resources, promote the "whole building" philosophy and can be justified by life cycle cost analysis (including social costs) as cost effective are strongly 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 Leadership in Energy & Environmental Design (LEED) Green Building Rating System™ (GBRS), Version 2.1 (November 2002) available from the U.S. Green Building Council at the following website: http://www.usgbc.org/LEED/publications.asp.

13-2.2 Each offeror will complete and submit a separate LEED Project Checklist for each building type with the proposal. The total point score will determine the LEED Sustainable Project Certification Level:

- Certified 26-32 points
- Silver 33-38 points
- Gold 39-51 points
- Platinum 52-69 points

The certification level will be used as a proposal evaluation factor as defined in RFP Section 00100 – Instructions, Conditions and Notices to Firms.

13-2.3 Proposals that do not achieve at least a LEED Silver level for each building type will be considered non-conforming.

13-2.4 Proposals that do not comply with all Prerequisite/Required criteria listed in the LEED documentation will be considered non-conforming. For example: *LEED category Energy & Atmosphere – (Prereq 3) 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 The Government desires the design and construction of these facilities to occur using a structured, integrated design/build approach to the incorporation of sustainable features. This approach requires a multi-disciplinary process where all project design disciplines, contractors and other stakeholders are collaboratively involved from the start to finish of the design/build effort. Proposals should indicate how integrated design/construction will be managed to produce a salutary effect on sustainable design. Offeror's should support their capabilities with evidence of demonstrated success applying the concepts and principles of an integrated approach.

13-2.6 EPA Comprehensive Procurement Guidelines have been developed for a wide range of designated recycled content products. These products contain materials recovered from the solid waste stream. Federal agencies are required to give first preference to EPA designated products if they are competitively priced, available in a reasonable time frame, and meet performance standards. The intent is to conserve resources and reduce solid waste by developing markets for recycled products and encouraging manufacturers to produce quality recycled content products at competitive prices. Accordingly, the Contractor shall use products that meet or exceed the EPA guideline standards to the maximum practicable extent in the performance of the contract. See http://www.epa.gov/cpg/products.htm.

13-2.7 Some LEED categories award potential points (credits) for strategies or decisions that are not within the control of the Offeror. These areas may include installation master planning, site selection, or involving facility users in the programming process. The outline discussion of prerequisite and credit points below indicates those areas where the Offeror will receive points for criteria met by actions of the government. The offer shall include these delegated points in their submitted checklist and narrative discussion.

13-2.8 The Offeror shall not receive points for any LEED criteria that cannot be substantiated by supporting information contained in the proposal.

13-2.9 The proposal narrative shall clearly describe the sustainable design features employed to achieve LEED points. The specific design and/or construction features or activities that will be used by the offeror shall be itemized in a manner that will permit objective verification during the design and construction phases of the project. A lack of clarity or specificity in this narrative description will be considered non-conforming. Design and construction solutions must be fully consistent with the direction given in the LEED Reference Guide.

13-2.10 The selected offeror shall be required to fully execute and perform all design and construction features and activities indicated in the proposal.

13-2.11 The selected offeror shall be required to compile and submit all documentation required by the LEED GBRS and related to design activities as part of the Design Analysis. Documentation of construction related components shall be compiled during the course of construction. Progress status of LEED submittal related activities shall be formally reported by the contractor at 3 month intervals throughout the design and construction process. A composite document with all submittal components in the form of a LEED certification submittal, including letter templates, ready for submittal to USGBC, shall be included as part of the project close out submittals. Any submittal materials required to document actual building performance shall be submitted within 15 months of occupancy.

NOTE: this is a requirement for documentation only. The contractor is not required to submit any documentation to USGBC for certification, nor is there any requirement on the contractor to make payment of any certification application or processing fees to USGBC. Actual submittal for certification will be performed by the installation.

13-2.12 The selected offeror is required to obtain the services of a LEED Accredited Professional to serve as the project coordinator for sustainable design activities. This individual shall be responsible for the preparation/compilation of all documentary materials.

Furthermore, the LEED Accredited Professional must have previously submitted a project to USGBC for certification and successfully obtained at least the "Certified" level for that building.

13-3 **LEED GBRS PROJECT SPECIFIC GUIDANCE.** The following outline adheres to the sequence and nomenclature of the GBRS v2.1 Project Checklist. While the offeror is generally free to select and accumulate those LEED credit points appropriate and financially accessible to this project, there are some mandatory design directives and prohibitions. This outline provides background specific to the subject project sites and may constrain the range of the offeror's proposal. Proposals that do not comply with mandatory features or design prohibitions listed herein will be considered non-conforming.

13-3.1 **Sustainable Sites**

13-3.1.1 Prerequisite 1: Erosion & Sedimentation Control.

13-3.1.2 Credit 1: Site Selection.

Echo Block and Alpha Block supported a "temporary barracks" complex for approximately 50 years and are suitable for redevelopment to a barracks complex such as the FY04 Whole Barracks. The sites are not within 100 feet of any existing wetland.

13-3.1.3 Credit 2: Development Density.

The selected sites for the FY04 Whole Barracks was based on functional adjacencies/relationships and land use compatibility. Two other barracks developments located nearby on North Fort Lewis have similar functions and density as the eventual full development of Echo Block and Alpha Block. An existing commercial district is located within 2 blocks of the barracks, which includes shopette, food establishments, health and dental clinics, gymnasium, athletic fields and Officer's Club. The Echo Block site uses the existing roads and utilities infrastructure constructed in the FY02 and FY03 Whole Barracks Renewal projects. Infrastructure of utilities downstream or outside the construction limits is sized sufficiently to support this project and does not require upgrade.

Construction on this site continues a planned, high-density redevelopment of the North Fort area. This installation zone was previously developed with a much lower density barracks neighborhood. Planned construction and integrated follow on projects will meet all density goals. In addition, this site is proximate to existing road and utility infrastructure. Construction in these categories is limited to extensions within the site boundaries.

13-3.1.4 Credit 3: Brownfield Redevelopment.

(Not Applicable) The sites to be developed in this project are not environmentally contaminated and are not classified as "brownfields". No points are available.

13-3.1.5 Credit 4.1: Alternative Transportation, Public Transportation Access

Opportunities for alternative transportation are currently limited at this site. The installation transit system does not serve the North Fort area.

13-3.1.6 Credit 4.2: Alternative Transportation, Bicycle Storage & Changing Rooms

Provision of bicycle storage sufficient to at least meet the LEED requirements is mandatory. Changing and shower facilities in addition to those required by the Statement of Work for the COF and BTN HQ facilities are not required.

13-3.1.7 Credit 4.3: Alternative Transportation, Alternative Fuel Vehicles

Regulations prohibit the purchase of alternative vehicles as part of this project. Facilities are currently more than 3 kilometers from an alternative-fuel refueling station. Development of an alternative fuel refueling station, on either the Alpha or Echo block sites, is prohibited.

13-3.1.8 Credit 4.4: Alternative Transportation, Parking Capacity

13-3.1.9 Credit 5.1: Reduced Site Disturbance, Protect or Restore Open Space

Construction limits are clearly indicated on construction documents. Staging areas or laydown shall be identified on the construction documents. Use areas to be paved as staging areas.

13-3.1.10 Credit 5.2: Reduced Site Disturbance, Development Footprint

13-3.1.11 Credit 6.1: Stormwater Management, Rate and Quantity.

13-3.1.12 Credit 6.2: Stormwater Management, Treatment.

13-3.1.13 Credit 7.1: Landscape & Exterior Design to Reduce Heat Islands, Non-roof

13-3.1.14 Credit 7.2: Landscape & Exterior Design to Reduce Heat Islands, Roof

13-3.1.15 Credit 8: Light Pollution Reduction

13-3.2 **Water Efficiency**

13-3.2.1 Credit 1.1: Water Efficient landscaping, Reduce by 50%
Achieving the one-point credit for Credit 1.1 is required.

13-3.2.2 Credit 1.2: Water Efficient Landscaping, No Potable Use or No Irrigation.

13-3.2.3 Credit 2: Innovative Wastewater Technologies

13-3.2.4 Credit 3.1: Water Use Reduction, 20% Reduction

13-3.2.5 Credit 3.2: Water Use Reduction, 30% Reduction

13-3.3 **Energy & Atmosphere**

13-3.3.1 Prerequisite 1: Fundamental Building Systems Commissioning

13-3.3.2 Prerequisite 2: Minimum Energy Performance

13-3.3.3 Prerequisite 3: CFC Reduction in HVAC&R Equipment

13-3.3.4 Credit 1: Optimize Energy Performance

13-3.3.5 Credit 2.1: Renewable Energy, 5%

13-3.3.6 Credit 2.2: Renewable Energy, 10%

13-3.3.7 Credit 2.3: Renewable Energy, 20%

13-3.3.8 Credit 3: Additional Commissioning

13-3.3.9 Credit 4: Ozone Depletion

13-3.3.10 Credit 5: Measurement & Verification

13-3.3.11 Credit 6: Green Power

The purchase of a green power contract is not an option for this contract.

13-3.4 **Materials & Resources**

13-3.4.1 Prerequisite 1: Storage and Collection of Recyclables

Fort Lewis is implementing an installation recycling program. Recycling collection is required by the Statement of Work at the Lawnmower Storage Building.

13-3.4.2 Credit 1.1: Building Reuse, Maintain 75% of Existing Shell

(Not Applicable) There is no opportunity to attain this credit. Existing buildings are not present on either the Alpha Block or Echo Block sites.

13-3.4.3 Credit 1.2: Building Reuse, Maintain 100% of Shell

(Not Applicable) There is no opportunity to attain this credit. Existing buildings are not present on either the Alpha Block or Echo Block sites.

13-3.4.4 Credit 1.3: Building Reuse, Maintain 100% Shell & 50% Non-Shell

(Not Applicable) There is no opportunity for this credit. Existing buildings are not present on either the Alpha Block or Echo Block sites.

13-3.4.5 Credit 2.1: Construction Waste Management, Divert 50%

13-3.4.6 Credit 2.2: Construction Waste Management, Divert 75%

13-3.4.7 Credit 3.1: Resource Reuse, Specify 5%

13-3.4.8 Credit 3.2: Resource Reuse, Specify 10%

13-3.4.9 Credit 4.1: Recycled Content, Specify 5%

13-3.4.10 Credit 4.2: Recycled Content, Specify 10%

13-3.4.11 Credit 5.1: Local/Regional Materials, 20% Manufactured Locally

13-3.4.12 Credit 5.2: Local/Regional Materials, 50% Harvested Locally

13-3.4.13 Credit 6: Rapidly Renewable Materials

13-3.4.14 Credit 7: Certified Wood

13-3.5 **Indoor Environmental Quality**

13-3.5.1 Prerequisite 1: Minimum IAQ Performance

13-3.5.2 Prerequisite 2: Environmental Tobacco Smoke Control

Smoking is prohibited in all administrative buildings (COF's and BTN HQ's). Smoking is permitted in UEPH room modules because they are designated as "private" residential areas. However, because the operational practice is to pair smokers in designated smoking room modules, and to maintain smoking room modules only for occupancy by smokers, for this project the room modules may be considered as "designated smoking rooms". Note that all LEED requirements, including negative pressure operation, must still be met.

13-3.5.3 Credit 1: Carbon Dioxide (CO_2) Monitoring

13-3.5.4 Credit 2: Ventilation Effectiveness

13-3.5.5 Credit 3.1: Construction IAQ Management Plan, During Construction

13-3.5.6 Credit 3.2: Construction IAQ Management Plan, Before Occupancy

13-3.5.7 Credit 4.1: Low-Emitting Materials, Adhesives and Sealants

13-3.5.8 Credit 4.2: Low-Emitting Materials, Paints

13-3.5.9 Credit 4.3: Low-Emitting Materials, Carpet

13-3.5.10 Credit 4.4: Low-Emitting Materials, Composite Wood

13-3.5.11 Credit 5: Indoor Chemical & Pollutant Source Control

13-3.5.12 Credit 6.1: Controllability of Systems, Perimeter

13-3.5.13 Credit 6.2: Controllability of Systems, Non-Perimeter

13-3.5.14 Credit 7.1: Thermal Comfort, ASHRAE Compliance

13-3.5.15 Credit 7.2: Thermal Comfort, Permanent Monitoring System

13-3.5.16 Credit 8.1: Daylight & Views, Daylight 75% of Spaces

13-3.5.17 Credit 8.2: Daylight & Views, Views for 90% of Spaces

13-3.6 **Innovation & Design Process**

13-3.6.1 Credit 1.1: Innovation in Design

13-3.6.2 Credit 1.2: Innovation in Design

13-3.6.3 Credit 1.3: Innovation in Design

13-3.6.4 Credit 1.4: Innovation in Design

13-3.6.5 Credit 2: LEED Accredited Professional

This is a mandatory project requirement. In addition to being accredited, this individual shall have previously compiled documentation for, and submitted a project to, the USGBC for LEED certification.

LIST OF ATTACHMENTS

1 DRAWINGS – SITE PLANS AND VICINITY MAPS

2 DRAWINGS – UEPH AND SOLDIER COMMUNITY BUILDING

3 DRAWINGS – LARGE COMPANY OPERATIONS FACILITY

4 DRAWINGS – LARGE BATTALION HEADQUARTERS BUILDING

5 DRAWINGS – LAWNMOWER STORAGE BUILDING

6 PROPOSAL DRAWING FORMAT

7 SIGNAGE – FACILITY, CONSTRUCTION AND SAFETY SIGNS

8 GEOTECHNICAL REPORT

9 FORT LEWIS INSTALLATION DESIGN GUIDE

10 PROGRESSIVE COLLAPSE ANALYSIS GUIDANCE

11 LIST OF RFP DRAWINGS

12 FORCE PROTECTION CRITERIA

13 UNIFIED FACILITIES CRITERIA (UFC) DESIGN: GENERAL BUILDING REQUIREMENTS

14 LIST OF PROHIBITED AND ACCEPTABLE PLANTS

This page is intentionally left blank.

ATTACHMENT 1

DRAWINGS – SITE PLANS AND VICINITY MAPS
(Drawings included separately)

This page intentionally left blank.

ATTACHMENT 2

DRAWINGS – UEPH AND SOLDIER COMMUNITY BUILDING
(Drawings included separately)

This page intentionally left blank.

ATTACHMENT 2

DRAWINGS – UEPH (BARRACKS AND SOLDIER COMMUNITY BUILDING)

1. PURPOSE OF DRAWINGS.

The inclusion of these drawings with the RFP serves three purposes:

a. to provide offerors with a visual reference on two fundamentally different, yet equally acceptable, programmatic schemes for the UEPH (FY 02 and FY 03 solutions on Echo Block) – single composite building versus multiple buildings, and

b. to provide examples of the spatial organization, functional adjacencies and design solutions that were developed in previous projects, and

c. to provide depictions of the building form and fenestration references to the "Neo-Georgian" architectural style used in previous projects.

As described in the Statement of Work, there are a number of possible permutations in the general scheme of the FY 04 UEPH (Alpha Block) portion of the design. The barracks facility can be a single structure (FY02 Scheme), or multiple buildings (FY 03 Scheme) and the SCB portion can be a portion of a single structure or its components/functions can be fully integrated into the UEPH structure(s). Between these various alternatives there is no organizational preference by the Government.

The use of "Neo-Georgian" as the stylistic motif for residential and administrative facilities at North Fort found its inspiration in the original Garrison buildings constructed in the 1920's and 1930's on the Main Post. Designs for the COF and BN HQ and GA facilities to be constructed on Echo block shall reprise the stylistic references used on the FY 02 and FY 03 program buildings to promote a sense of "campus" continuity and unit cohesion. As the UEPH to be developed on Alpha block is the initial structure on that superblock, there is more latitude in the appearance of that facility. However, the basic references to "Neo-Georgian" shall remain. The UEPH design will establish a stylistic palette for Alpha block which will be referenced in succeeding construction projects.

NOTE: These previous UEPH facility drawings are provided as a visual reference tool and are not an extension of the scope of work. The facility requirements identified in the text of the Statement of Work govern the design. Any variations from the SOW contained in these drawings do not modify the scope of work. In particular, note that stand alone solder community buildings are prohibited. Also note that clothes washers and dryers are required in each room module.

2. DESIGN FREEDOM

The inclusion of these drawings in this RFP is not intended to direct or restrict the creativity of the offeror. Designs proffered by the offerors may present solutions that are radically at variance with previous facilities designed and constructed on North Fort. Solutions that incorporate a high degree of innovation and sustainability while adhering to RFP programmatic requirements and their associated codes, standards and regulations, are actively sought. However, as these facilities are additions to a community that has been developing over the last eight years, successful new designs will respect the context and fabric of the neighborhood.

3. AVAILABILITY OF CADD FILES

The CADD files developed for the construction of UEPH facilities (Barracks and Soldier Community Buildings) during previous projects at North Fort Lewis will not be made available to offerors at any time during the RFP process. Nor will any UEPH CADD files be made available to the successful offeror following award of the contract. All UEPH drawings for use as part of proposal development or

as required for design and construction shall be created by the offeror/contractor as required elsewhere in this RFP.

ATTACHMENT 3

DRAWINGS – LARGE COMPANY OPERATIONS FACILITY
(Drawings included separately)

This page intentionally left blank.

ATTACHMENT 3

DRAWINGS – LARGE COMPANY OPERATIONS FACILITY

1. PURPOSE OF DRAWINGS.

The inclusion of these drawings with the RFP serves three purposes:

a. to provide offerors with a visual reference of the Large COF design used in the FY 02 construction on Echo Block and incorporating changes introduced in the FY 03 Medium COF, and

b. to provide examples of the spatial organization, functional adjacencies and design solutions that were developed in previous projects, and

c. to provide depictions of the building form and fenestration references to the "Neo-Georgian" architectural style used in previous projects.

As described in the Statement of Work, it is the intention of this RFP that the FY 04 COF's blend visually and functionally with their FY 02 and FY 03 predecessors on Echo Block. However, this requirement is not intended to preclude the development of improvements by the offerors. Improvements that increase the level of sustainable design, functionality, aesthetics, operability and maintainability are actively sought.

The use of "Neo-Georgian" as the stylistic motif for residential and administrative facilities at North Fort found its inspiration in the original Garrison buildings constructed in the 1920's and 1930's on the Main Post. Designs for the COF and BTN HQ facilities to be constructed on Echo block shall reprise the stylistic references used on the FY 02/03 buildings to promote a sense of continuity and unit cohesion.

NOTE: These drawings are provided as a visual reference tool and are not an extension of the scope of work. The facility requirements identified in the text of the Statement of Work govern the design. For convenience a table listing net room areas in the referenced FY 02/03 design is included in this Attachment.

2. DESIGN FREEDOM

The inclusion of these drawings in this RFP is not intended to direct or restrict the creativity of the offeror. Designs proffered by the offerors may present solutions that are radically at variance with previous facilities designed and constructed on North Fort. Solutions that incorporate a high degree of innovation and sustainability while adhering to RFP programmatic requirements and their associated codes, standards and regulations, are actively sought. However, as the COF buildings are additions to a community that has been developing over the last eight years, successful new designs will respect the context and fabric of the neighborhood.

3. AVAILABILITY OF CADD FILES

The CADD files developed for the construction of Large and Medium COF's during FY 02 and FY 03 projects at North Fort Lewis will be made available to all offerors selected for Phase 2 of the proposal process. These CADD files were prepared using a mixture of AutoCAD v14, 2000 and Microstation v 8. The Government does not guarantee the format or functionality of any CADD files for the purposes of the offerors. The formatting and graphic structure of any or all files may be inconsistent with the requirements for CADD files described by this RFP for design and construction. Offerors should not assume that CADD files to be provided are suitable for reuse as part of proposal development or for design and construction documentation.

FLOOR/AREAS (1/2 of Duplex plan)	FY 02/03 Design Example	
	SM	SF
FIRST FLOOR		
Foyer/Corridor	20.45	220.12
Stair (Inside)	9.35	100.64
Toilet/Shower	5.21	56.08
Janitor's Closet	3.95	42.52
Equipment Maintenance	94.59	1,018.17
Unit Storage	98.81	1,063.59
Arms Vault	48.96	527.01
Exterior Storage	2.06	22.17
Comm. Storage	23.01	247.68
NBC Storage	22.42	241.33
Women's Vestibule	3.28	35.31
Women's Lockers	14.74	158.66
Women's Toilet/Shower	16.14	173.73
Men's Vestibule	3.4	36.6
Men's Lockers	25.51	274.59
Men's Toilet/Shower	33.47	360.27
First Floor Net Area	***425.35***	***4,578.47***
First Floor Gross Area	***519.68***	***5,594.36***

FLOOR/AREAS (1/2 of Duplex plan)	FY 02/03 Design Example	
	SM	SF
SECOND FLOOR		
Corridor (all)	32.28	347.46
Waiting	8.04	86.54
Stair (interior)	10.86	116.9
Administration	39.88	429.27
Administration Closet	1.72	18.51
Exec. Officer	8.93	96.12
Commander	13.61	146.5
1st SGT Office	10.29	110.76
Training Office	8.63	92.89
Electrical Closet	1.28	13.78
General Storage	36.97	397.95
Telecomm	0	0
Break (Coffee)	2.11	22.71
TA-50 Gear Lockers	72.17	776.84
Toilet/Shower	5.18	55.76
Conference	41.57	447.46
Conference Closet	1.66	17.87
Platoon Office 1	7.53	81.05
Platoon Office 2	9.91	106.67
Platoon Office 3	8.42	90.63
Platoon Office 4	8.98	96.66
Platoon Office 5	9.24	99.46
Hall	11.4	122.71
Janitor's Closet	0	0
AHU Platform (in attic)*	43.39	467.05
Second Floor Net Area	***394.05***	***4,241.55***
Second Floor Gross Area	***409.8***	***4,411.50***
Telecommunications	11.2	120.56
Mechanical	37.6	404.73
Electrical	9.1	97.95
Total Duplex Net Area	***1,696.70***	***18,264.98***
Total Duplex Gross Area	***1,858.96***	***20,011.70***
1391 Allocation (1 Duplex)	***1,860.00***	***20,022.90***

ATTACHMENT 4

DRAWINGS – LARGE BATTALION HEADQUARTERS BUILDING
(Drawings included separately)

This page intentionally left blank.

ATTACHMENT 4

DRAWINGS – LARGE BATTALION HEADQUARTERS

1. PURPOSE OF DRAWINGS.

The inclusion of these drawings with the RFP serves three purposes:

a. to provide offerors with a visual reference of the Large BN HQ design used in the FY 03 construction on Echo Block, and

b. to provide examples of the spatial organization, functional adjacencies and design solutions that were developed in the FY 03 project, and

c. to provide depictions of the building form and fenestration references to the "Neo-Georgian" architectural style used in previous projects.

As described in the Statement of Work, it is the intention of this RFP that the FY 04 BN HQ and GA buildings blend visually and functionally with their FY 02 and FY 03 predecessors on Echo Block. However, this requirement is not intended to preclude the development of improvements by the offerors. Improvements that increase the level of sustainable design, functionality, aesthetics, operability and maintainability are actively sought.

The use of "Neo-Georgian" as the stylistic motif for residential and administrative facilities at North Fort found its inspiration in the original Garrison buildings constructed in the 1920's and 1930's on the Main Post. Designs for the COF and BTN HQ facilities to be constructed on Echo block shall reprise the stylistic references used on the FY 02/03 buildings to promote a sense of continuity and unit cohesion.

NOTE: These drawings are provided as a visual reference tool and are not an extension of the scope of work. The facility requirements identified in the text of the Statement of Work govern the design. For convenience, a table listing net room areas of the FY 02/03 design is included in this Attachment.

2. DESIGN FREEDOM

The inclusion of these drawings in this RFP is not intended to direct or restrict the creativity of the offeror. Designs proffered by the offerors may present solutions that are radically at variance with previous facilities designed and constructed on North Fort. Solutions that incorporate a high degree of innovation and sustainability while adhering to RFP programmatic requirements and their associated codes, standards and regulations, are actively sought. However, as these facilities are additions to a community that has been developing over the last eight years, successful new designs will respect the context and fabric of the neighborhood.

3. AVAILABILITY OF CADD FILES

The CADD files developed for the construction of a Large BN HQ for the FY 03 project at North Fort Lewis will be made available to all offerors selected for Phase 2 of the proposal process. These CADD files were prepared using a mixture of AutoCAD v14, v2000 and Microstation v8. The Government does not guarantee the format or functionality of any CADD files for the purposes of the offerors. The formatting and graphic structure of any or all files may be inconsistent with the requirements for CADD files described by this RFP for design and construction. Offerors should not assume that CADD files to be provided will be suitable for reuse as part of proposal development or for design and construction documentation. CADD files are not available for the BN GA variant.

FLOOR/AREAS	FY 03 Design Example		FLOOR/AREAS	FY 03 Design Example	
	SM	SF		SM	SF
FIRST FLOOR			**SECOND FLOOR**		
Classrooms	227.04	2,444.09	Corridor/Lobby	57.33	617.10
Classroom Vestibule	19.25	207.23	Reception Area	0.00	0.00
Classroom Closet 1	0.98	10.55	Conference	40.80	439.17
Classroom Closet 2	1.55	16.69	Conference Closet	1.05	11.30
Electrical Closet	2.19	23.58	Commander's Office	22.75	244.88
Women	14.30	153.94	CDR Closet	0.97	10.44
Shower 1	3.80	40.91	CDR Toilet	3.70	39.83
Shower 2	3.10	33.37	Cmd Section (S-1)	49.50	532.82
Shower 3	3.10	33.37	S-1 Officer	0.00	0.00
Janitor's Closet	2.40	25.84	Cmd Section (coffee)	2.17	23.36
Men	16.40	176.55	Cmd Section (closet)	0.84	9.04
Resource Center	34.94	376.13	Executive Officer	16.75	180.30
Corridor/Lobby	96.19	1,035.49	Comm SGT MAJ	16.62	178.90
Vestibule A	3.90	41.98	S-2 Section (Open)	39.20	421.95
Vestibule B	5.47	58.88	S-2 Section (Closet)	1.27	13.67
Stair 1	12.20	131.33	S-2 Officer	17.70	190.52
Stair 2	15.80	170.09	S-2 Offices (2)	0.00	0.00
Telecommunications	11.20	120.57	Crypto Doc Vault	10.30	110.87
Mechanical	13.50	145.33	S-3 Section (Open)	30.86	332.18
Electrical	10.50	113.03	S-3 Officer	8.95	96.34
Storage	4.60	49.52	S-3 Offices (2)	0.00	0.00
Chaplain	13.00	139.95	S-3 Section (Closet)	0.97	10.44
Assistant Chaplain	9.45	101.73	Stair 1	12.20	131.32
S-4 Storage	11.40	122.72	Stair 2	15.83	170.39
S-4 Section (Open)	67.65	728.25	Men's Shower	12.08	130.03
S-4 Officer	9.05	97.42	Janitor's Closet	1.70	18.30

FLOOR/AREAS	FY 03 Design Example		FLOOR/AREAS	FY 03 Design Example	
	SM	SF		SM	SF
FIRST FLOOR			**SECOND FLOOR**		
S-4 Offices (2)	0.00	0.00	Electrical Closet	2.65	28.52
Duty Officer	6.50	69.97	Men	10.30	110.87
Elevator Equipment	4.90	52.75	Mechanical Attic	92.55	996.21
Mail Sort/MSG Center	24.00	258.36	Storage	7.50	80.73
PAC Section (Open)	74.60	803.07	Telecom Closet	8.65	93.11
PAC Section Closet	1.50	16.15			
PAC Officer	8.80	94.73	***Second Floor Net Area***	***485.19***	***5,223.07***
PAC Offices (2)*	11.20	120.56	***Second Floor Gross Area***	***583.40***	***6,279.72***
**** example plan shows 1 office***			***Building Net Area***	***1,229.65***	***13,237.18***
First Floor Net Area	***744.46***	***8,014.11***	***Building Gross Area***	***1,437.38***	***15,471.96***
First Floor Gross Area	***853.98***	***9,192.24***	***1391 Allocation (1 bldg)***	***na***	***na***

This page intentionally left blank.

ATTACHMENT 5

DRAWING – LAWNMOWER STORAGE BUILDING
(Drawings included separately)

This page intentionally left blank.

ATTACHMENT 6

PROPOSAL DRAWING FORMAT

This page intentionally left blank.

ATTACHMENT 6

PROPOSAL DRAWING FORMAT

1. POLICY.

Drawings shall be prepared in accordance with Section 00100, INSTRUCTION, CONDITIONS AND NOTICES TO FIRMS, SECTION 00810, DESIGN – BUILD CONTRACT PROCEDURES, and the following instructions on graphic format. Drawings shall be prepared using a metric basis with hard metric dimensioning. Drawings produced by converting foot/pound units to soft metric units will be evaluated as non-conforming.

2. DRAFTING.

a. The drawings shall show sufficient detail so that they clearly delineate the proposed construction. Original drawings shall be developed for full size printing on standard size A1 (approximately 594 mm x 841 mm sheets), and in CAD format as defined by the Seattle District Corps of Engineers. The proposal submittal of drawings shall also be in CAD format for A1 standard full size sheets. Drawing plate borders and title block shall be as provided by the Seattle District Corps of Engineers. Offerors are required to provide proposal drawings in half-size formats as required by Section 00110, Instructions, Conditions and Notices to Firms.

b. Provide separate drawing volumes for each building type, except Lawnmower Storage Building shall be combined with UEPH/SCB. All site drawings shall be consolidated in a separate drawing volume.

c. The first or cover sheet shall contain the title and location of the project and the specific facility type. The Drawing Index shall be on a separate plate.

d. The drawing layout will be evaluated with care before the beginning of the drafting. Ample space, without crowding, shall be provided, not only for the required plans and details with all necessary titles, dimensions and notes, but also for incidental information required, such as graphic scales, general and reference notes, schedules, North Arrow, etc.

e. Sheets shall be well ordered and drawn at the scales indicated in Section 00100. Any drawings not specifically listed shall be drawn at a reasonable scale and suitable for reduction. Cluttered and overcrowded layouts shall be avoided.

f. A graphic scale for each of the different scales used on a drawing shall be placed on the particular drawing to the left of the title block. Scale shall be indicated at each plan, elevation, section, and detail, unless all drawings on the same are at the same scale. No scale larger than 1:2 shall be used without prior approval.

g. Sheets devoted to details should have such details reasonably spaced and arranged left to right or top to bottom. Groups of details relating to one particular aspect should be adequately separated from other groups and identified with a title. Sections and details of the design should be numerous enough to show all important design features.

h. Unnecessary details or details of small standard products or items which are adequately covered by specifications and/or catalogs shall not be included on the drawings.

i. Use the discipline designation codes below (consistent with the AEC Drawing Standards) to properly arrange and sequence the plates in each drawing volume. Adequate cross-referencing must be shown to avoid confusion and misunderstanding between disciplines.

3. DRAWING PREPARATION.

a. Preparation for Size Reduction. Since drawings will be reduced, all drawing elements (line widths, spacing, lettering sizes, etc.) shall be created with adequate size and density to be easily legible after reduction.

b. Scales. Carefully plan drawing layout together with suitable scales in advance to properly delineate the project. Similar work for all design disciplines shall, whenever possible, be shown at the same scale on the various drawings involved. It is essential that drawings are legible at half-size, as most proposal reviewers will be performing their evaluations with half-size sets.

c. Lettering. Use single stroke lettering, all capitals. Minimum height of all text shall be 3 mm actual measurement on a full size sheet.

d. Plate Reference. The proposer will reference all drawings within a discipline of work. The divisions designated below will be utilized.

Discipline Designation	Design Discipline
G	Title, Location Map, & General Notes
L	Site Planning, Landscaping Planting and Children's Outdoor Play Areas
C	Civil Engineering
A	Architecture
S	Structural Engineering
M	Mechanical Engineering
F	Fire protection
P	Plumbing
T	Telecommunications
E	Electrical Engineering
B	Geotechnical Engineering

e. Drawing Designation. Each drawing in the particular division shall be designated by the discipline designation and plate number. Use the plate number system identified in the AEC CADD Standard. This system as listed will be used in establishing sequence of drawings.

f. Sheet Number. Consecutive sheet numbering shall begin with the cover sheet. Sheet number shall be placed directly below "Plate Number" in the Title Block. Sheets inserted after sheet numbers have been finalized shall be designated with the sheet number of the original sheet preceding it and an alpha from A to Z beginning with A (i.e., sheet 32A follows sheet 32).

g. Cross Reference. Cross-referencing for sections and details shall be based on the plate reference number.

h. Symbols and Conventions. Symbols and conventions serve two main purposes. One is to simplify the drawing and improve comprehension; the other is to follow or establish a standard which is easily recognized. Symbols shall be the standards used by the various disciplines.

i. Legends. Place legends of symbols and material indications on the drawings. Since many symbols are limited to certain design disciplines, use separate symbol legends on the initial sheet of each design discipline. Symbols in the legend shall be at the same scale or slightly larger than used on the drawings.

This page intentionally left blank.

ATTACHMENT 7

SIGNAGE – FACILITY SIGNS
(Drawings included separately)

This page intentionally left blank.

ATTACHMENT 8

GEOTECHNICAL REPORT

This page intentionally left blank.

WHOLE BARRACKS RENEWAL, FY04
NORTH FORT LEWIS, WASHINGTON

PROJECT NO. 44794

FINAL
GEOTECHNICAL REPORT

23 MAY 2003

PREPARED BY

CIVIL/SOILS SECTION, DESIGN BRANCH
SEATTLE DISTRICT, U.S. ARMY CORPS OF ENGINEERS

This page intentionally left blank.

CENWS-EC-DB-CS 23 May 2003

Whole Barracks Renewal, FY04
North Fort Lewis, Washington
PN 44794

1. General. This project will include a 300 person barracks (garden apartment style) located centerally on A "Alpha" block. Administrative facilities include three large Company buildings and two large Battalion buildings and are located on E "Echo" block. Other project features include utilities connections, paved parking areas and paved access roads, landscaping, and site improvements. Road improvements include portions of 12th Street and C Street on Alpha block.

2. Foundation Exploration. Subsurface exploration was conducted between 12 February and 18 February 2003. Exploration was conducted by the Seattle District, U.S. Army Corps of Engineers. One hundred twenty-eight exploration holes (03-BH-66 through 105 and 03-BH-108 through 195, holes numbered 106 and 107 were not dug) were dug to depths ranging from 0.9 meters to 3.0 meters using a John Deere backhoe, Model 410E. Exploration logs and locations of exploration are shown on plates B101 through B107 and B108 through B109, respectively. Soils were visually classified according to the "Unified Soil Classification System (ASTM D 2487)."

3. Site Conditions.

a. Regional Geology. The site lies on a broad upland drift plain in the southern part of the Puget Sound Basin. The upland separates the main body of Puget Sound on the west from a complex of old (Pleistocene) ice marginal stream channels on the east. The upland is underlain by deposits from the latest Pleistocene (Vashon) glaciation which ended about 12,000 years ago. The thickness of unlithified Pleistocene sediments beneath the Puget Sound Basin is generally in excess of 305 meters and reaches approximately 610 meters in the vicinity of the site. The low relief upland surface slopes gently westward with maximum elevations decreasing from 213 meters on the east to 92 meters on the west. The central and western portions of the upland are characterized by an extensive series of broad glacial meltwater channels cut about 30 meters into the general upland surface and mantled by a thin veneer of latest outwash gravel (Steilacoom gravel) deposited in braided channels as melting of ice from the upland permitted rapid discharge of glacial Lake Puyallup, on the east, across the upland surface toward the depression of Puget Sound. The gravels in these channels contain an extensive, shallow, unconfined aquifer, manifest in a number of large lakes and peat-filled former lakes. Kettles within these channels attest to the original incorporation of ice blocks within the gravel deposits.

b. Site Geology and Foundation Conditions. The project site is underlain by coarse, glacial outwash sandy gravels in an area characterized by glacial kettles and mounds of

glacial till and outwash. The outwash gravels generally are loose to compact in density, contain a high percentage of cobbles to 305 mm with and occasional boulder to 762 mm in diameter, and extend to depths of 6 meters or more. Black organic silty gravel (GM) and silt (OL) up to about 2.7 meters thick has developed on top of the outwash as observed from the subsurface exploration. Ground water was not encountered in any of the subsurface explorations at the dates and locations indicated on the drawings. In general, the unconfined water table is expected to be within 6 meters of the natural ground surface and may fluctuate as much as 1.5 meters during the year.

c. Earthquake History. Reference: Technical , TI 809-04, Seismic Design for Buildings, December 1998. From Table 3-1, Site Classification, based on soil types and shear wave velocies from similar soils on the base, a site classification of C is recommended for design.

d. Environmental History. No visual or olfactory evidence of hazardous materials was observed during the subsurface exploration. If any suspected hazardous material is found during the performance of this job, all work will stop and the Corps of Engineers inspector and the Base Environmental Office will be notified immediately.

4. Recommendations for Foundation Design.

a. Site Preparation. Black organic-rich gravels (GM) and silts (OL) overlie the project site. The capacity of these soils to adequately support the structures and pavements over a long-term period is of concern. The exploration logs indicate that these potentially unsatifactory soils (GM and OL) range in depth from 150 mm to 2.7 meters below the existing ground surface. The average depth of these unsatisfactory soils (GM and OL) is about 690 mm for the entire site, 545 mm for the buildings and structures, and about 860 mm for the proposed paved areas, see specific exploration logs for detailed information. To minimize the effects of possible long term problems with differential settlement due to organic decomposition, all of the unsatisfactory materials under buildings and structures with footings shall be excavated and replaced with satisfactory fill material. Under new pavement areas except sidewalks without vehicle traffic, the unsatisfactory materials shall be removed up to a maximum depth of 750 mm and replaced with satisfactory fill material. Approximate limits of unsatisfactory materials are shown on exploration logs. For each 300 mm of overexcavated depth below footings, increase footing trench width by 300 mm. Replace excavated material with clean gravels compacted to at least 95 percent of maximum modified Proctor density. Fills shall be placed in 225 mm lifts with maximum particle size of 150 mm; however, occasional cobbles having sizes up to but not exceeding the lift thickness will be permitted provided that there are no pockets, lenses, or concentrations of stone. Where such pockets, lenses, or concentrations of stone exist, they shall be removed and replaced at the contractor's expense.

b. Soil Properties. We recommend the following soil properties for use in design analysis: ϕ = 35 degrees, cohesion = 0, moist unit weight = 2170 kilograms per cubic meter.

c. Footing and Slab Design. Footings shall be placed a minimum of 450 mm below finished grade for frost protection. Computations based on Terzaghi bearing capacity factors, using the above soil properties, indicate an allowable bearing capacity of slightly more than 192 kilopascals (kPa) for footings at the design frost depth. We therefore recommend that footings be designed for a net allowable bearing capacity of 192 kPa dead load plus live load with one-third overstress allowed for temporary dynamic loads on the compacted gravel or the natural sandy gravel foundation. Except as otherwise specifically approved, slabs-on-grade shall not bear directly on footings or pedestals and shall not be tied to footings or pedestals. A capillary water barrier, consisting of a 150 mm-minimum thickness of free draining granular material, and a vapor barrier shall be provided beneath all interior slabs-on-grade. This will also serve as a cushion where the slabs pass over footings or grade beams.

d. Earth Pressure Coefficients. For gravelly backfill material with assigned angle of internal friction, , of 35 degrees, theoretical earth pressure coefficients for active (K_a), at rest (K_o), and passive (K_p) conditions are .27, .45, and 3.7, respectively. These coefficients are valid only for frictionless, vertical walls with horizontal backfill. For walls designed for other conditions, appropriate revisions of these coefficients must be made. Wall movements of at least .005H (H = wall height) are required to reduce wall pressures to active condition. Very stiff or internally braced walls for which movements less than .005H are anticipated should be designed for K_o condition or appropriate braced cut criteria. A relatively large wall movement is required to develop full passive earth pressure. For this reason, $K_p = 2.0$ is recommended for general design use. For static conditions, all walls should have a safety factor of at least 2.0.

e. Underground Utilities. All frost susceptible utility lines shall be placed with top of pipe at least 450 mm below ground surface in open areas for frost protection and 900 mm below ground surface under traffic areas for strength requirements. Alternatively, pipe placed at depths less than 900 mm under traffic areas shall be designed for the anticipated loads, except in no case shall the top of pipe be less than 450 mm below ground surface. In situ earth resistivity measurements taken in similar soils at other areas on the base indicate very high resistivity in excess of 500,000 ohm-cm, which is indicative of soils of unlikely corrosion activity. Materials in this area are generally relatively uniform clean gravels, with the water table below the level of utilities. Corrosion of utilities in this area has reportedly not been a significant problem.

f. Earth Resistivity Measurements and Electrical Grounding System. Due to known high resistivity soil conditions as previously mentioned in paragraph 4.e. above, obtaining lower ground resistance values has been a problem at Fort Lewis. In the past, designers have used electrolytic grounding systems, extensive use of copper conductors, and other such methods at Fort Lewis.

5. Recommended Construction and Drainage Considerations.

a. Grades of at least 1 percent and preferably 5 percent, to promote drainage of water away from the structure, shall be provided around the perimeter of the structure.

b. Runoff from roofs shall be directed away from the structure by downspouts and storm drains or surface channels.

c. Walks and pavements adjacent to the structure shall be positively sloped away from the structure.

d. The site shall be prepared to avoid ponding of water in low areas. Sumps and pumps shall be provided at the bottom of excavations, if necessary, to remove rainwater or surface drainage which has entered the excavation.

6. Recommendations for Pavement Design. Pavements for this facility will accommodate various wheeled vehicles with the largest being a multi-axle trucks. The majority of vehicles using this facility will consist of Privately-Owned Vehicles (POV). All floor slabs inside the buildings shall be Portland cement concrete (PCC). Sidewalks shall be PCC. PCC pavement shall be required for dumpster pads and may be needed for any miscellaneous pads as required.

Note: The pavement design technical manual (TM 5-822-5) is not in a metric format, therefore non-metric units will be used to determine the required pavement thicknesses. The recommended pavement thickness will be in metric units.

a. Asphaltic Concrete Pavement Hardstand and Access Roads for Organizational Vehicles and POV's. The design is based upon the following assumptions:

(1) Category IV Traffic.

(2) Class E road

(3) Subgrade - CBR 30

(4) Base - CBR 80

From TM 5-822-5 (Table 3-1, Pavement Design Index), a design index of 4 is obtained for a Category IV traffic and Class E road. From Figure 8-1, for a subgrade CBR of 30 and design index of 4, the total pavement section thickness required is 3 inches. The minimum recommended pavement section for a Design Index of 4 (Table 6-1) is 2 inches of AC and 4 inches of base course. The recommended pavement section shall consist of 50 mm of AC pavement and 100 mm inches of base course.

b. Asphaltic Concrete Pavement Parking Area for Privately Owned Vehicles. The design is based upon the following assumptions:

(1) Category I Traffic

(2) Class F road

(3) Subgrade - CBR 30

(4) Base - CBR 80

From TM 5-822-5 (Table 3-1, Pavement Design Index), a design index of 1 is obtained for a Category I traffic and Class F road. From Figure 8-1, for a subgrade CBR of 30 and design index of 1, the total pavement section thickness required is 2.1 inches. The minimum AC section shall be 50 mm thick for constructibility. The recommended pavement section shall consist of 50 mm of AC pavement and 100 mm of base course.

c. PCC for Dumpster Pads, Miscellaneous Parking Pads. The design assumptions are as follows:

(a) Category IVA traffic (> 25% multi-axle trucks).

(b) Class E pavement

(c) K, modulus of subgrade reaction of 350 pounds per square inch per inch (p.s.i./in.)

(d) Subbase - CBR 40

(e) Base - CBR 80

(f) fs, flexural strength of concrete, 600 p.s.i. at 28 days age

From TM 5-822-5 (Table 3-1, Pavement Design Index), a design index of 5 is obtained for a Category IVA traffic and Class E road. From Figure 9-1. for a base course thickness of 4 inches, the effective k at the top of the base coure is 370 p.s.i/inch. From Figure 12-2 (Design Curves for Plain Concrete Parking and Open Storage Areas), for a flexural strength of 600, an effective k of 370, and a design index of 5, the required PCC thickness is 5.5 inches. The minimum PCC section thickness is 6 inches. The recommended total pavement section shall consist of 150 mm inches of PCC placed on 100 mm of base course.

d. Compaction Requirements. The base course shall be compacted to at least 100 percent of the maximum modified Proctor density. The top 150 mm of the subgrade shall be compacted to at least 90 percent of the maximum modified Proctor density for cohesive materials and 95 percent of the maximum modified Proctor density for cohesionless materials.

e. Portland Cement Concrete Sidewalks. This pavement is designed in accordance with paragraph 12-6, TM 5-822-5. The pavement section shall be 100 mm of PCC on 100 mm of base course. The base course shall be compacted to at least 95 percent of the maximum modified Proctor density. The top 150 mm of the subgrade shall be compacted to 90 percent of the maximum modified Proctor density. Compressive strength shall be 24.1 megapascals (MPa) at 28 days age.

7. Recommendations for Floor Slab Design. The design of the floor slab shall be according to the requirements of TM 5-809-12, "Concrete Floor Slabs on Grade Subjected to Heavy Loads," where applicable.

8. Location of Borrow. Borrow sources are not available on the Fort. The Contractor shall obtain borrow materials from outside the limits of Government-controlled land. Commercial sources of borrow materials are available locally.

9. Disposal Areas. Disposal areas are not available on the Fort. The Contractor shall be responsible for removal and disposal of all materials outside the limits of Government-controlled land.

10. Preparation of Plans and Specifications. The technical manuals referenced below shall also be reviewed for information relative to preparation of plans and specifications.

a. References.

(1) TM 5-742, Concrete and Masonry.

(2) TM 5-805-1, Standard Practice for Concrete for Military Structures.

(3) TM 5-809-1/AFM 88-3, Chap. 1, Load Assumptions for Buildings.

(4) TM 5-809-2/AFM 88-3, Chapter 2, Concrete and Structural Design for Buildings.

(5) TM 5-809-3/AFM 88-3, Masonry Structural Design for Buildings.

(6) TI 809-04, Seismic Design for Buildings, December 1998.

(7) TM 5-809-12/AFM 88-3, Chapter 15, Concrete Floor Slabs on Grade Subjected to Heavy Loads.

(8) TM 5-813-1/AFM 88-10, Chapter 5, Water Distribution Systems.

(9) TM 5-814-1/AFM 88-11, Chapter 1, Sanitary and Industrial Waste Sewers.

(10) TM 5-818-1, Procedures for Foundation Design of Buildings and Other Structures (Except Hydraulic Structures).

(11) TM 5-822-2/AFM 88-7, Chapter 5, General Provisions and Geometric Design for Roads, Streets, Walks, and Open Storage Areas.

(12) TM 5-822-5/AFM 88-7, Chapter 1, Pavement Design for Roads, Streets, Walks, and Open Storage Areas.

(13) TM 5-822-7/AFM 88-6, Chapter 8, Standard Practice for Concrete Pavements.

(14) TM 5-822-8, Bituminous Pavements - Standard Practice.

ATTACHMENT 9

EXCERPTS FROM THE INSTALLATION DESIGN GUIDE

This page intentionally left blank.

PART THREE
ZONE DISCUSSION

CHAPTER 9
BUILDING DESIGN CRITERIA

The purpose of this chapter is to provide visual instructions regarding choices to be made concerning Building Design Criteria.

SECTION A
VISUAL DESIGN FACTORS

Characteristics of Form

Shape and Proportion

The primary characteristics of a form are its inherent shape and proportions. Proportion is most often considered to be the relationship of a building's height to width to length. The concept of consistent proportioning can have a dramatic effect on creating or continuing a coherent architectural character on Ft. Lewis. There are obviously a number of critical factors

that impact the dimensions of a building; the proposed functioning of the space, activities to be accommodated, structural limitations and the context of adjacent exterior spaces. All of these factors, as well as a great many more, pressure a building's form and proportion. An additional determinant present in successful building design is the aesthetic judgement of the "desirable" dimensional relationships between an individual building part, other parts and the entire structure. To this end, a number of theories of "desirable" proportion have been developed over thousands of years.

The intent of all theories of proportion is to create a sense of order among the elements of the visual environment. That is why a clear understanding of these principles is critical to the purpose of an installation design guide for Ft. Lewis. Proportioning systems establish a consistent set of visual relationships between the parts of a building, as well as between the parts and the whole. These relationships may not be immediately perceived by the casual observer; however, the visual order they create can be sensed and appreciated through a series of repetitive visual experiences.

One of the oldest and most prevalent theories evidenced at Ft. Lewis is the mathematical system developed by the Greeks known as the "Golden Section". This mathematical system was originally based on the human body and has had application to architecture from the Parthenon to the works of LeCorbusier (Fig F-9-A). A rectangle whose sides are proportioned according to the Golden Section is known as a Golden Rectangle and is based on the ratio of 1 to 1.618 (Fig F-9-B).

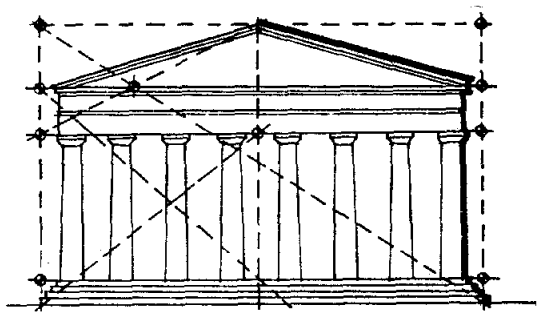


Fig F-9-A

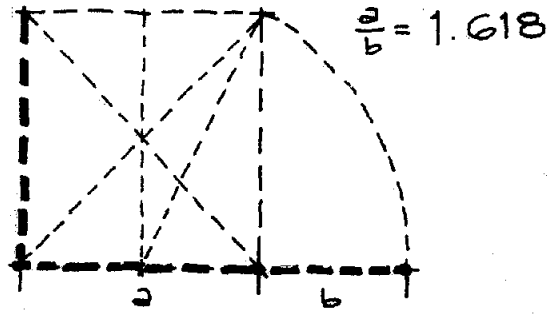


Fig F-9-B

The golden rectangle proportioning is most evident in the Garrison area of Ft. Lewis and a representative analysis is provided (Fig F-9-C).

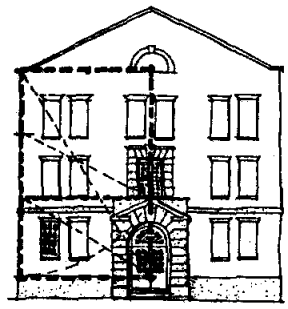


Fig F-9-C

Size, Massing and Scale

Massing, size and scale are three tightly interwoven design concepts. The mass of a building (or building part) is essentially its bulk; that is, the volume of space it encloses. The arrangement of enclosed spaces is the primary factor in determining a building's "massing"; ie, blocky, vertical, horizontal, etc. The height, length, width and depth of those masses are a building's (or other form's) size and determine its proportions. This size in relation to a form's surroundings (context) is referred to as scale.
The way a building is massed expresses many things about the building; however, these expressions, depending on the skill and expertise of the designer, may or may not be accurate. A very large, rectangular form, for example, would probably be identified as a warehouse or

repair shop. However, many other activities (commissaries, PX's, even barracks) might also be housed in very large, rectangular buildings, and fenestration and other architectural elements can not always succeed in communicating a building's function. Massing, therefore becomes critical in helping to identify building functions and in making buildings pleasant places to work, shop or live. Massing can also determine to a large extent how well a new structure fits into its visual context or how buildings in diverse locations, but serving similar functions, are identified as of the same type. In short, designers should manipulate building massing to relate compatibility with adjacent structures, to relate with other post buildings serving similar functions, to reduce a building's bulk so that it better relates to its human occupants and to define entries, various functions and so on.

In general, a designer has very little control over the actual size (overall dimensions) of a building since the volume enclosed by the building envelope is determined largely by the functions served by the building. What a designer can control to a much greater degree is the apparent size. By breaking down the building's mass into smaller parts and paying careful attention to the size of various exterior elements of the building as they relate to human beings and each other, the good designer can reduce a building's visual impact (Fig F-9-D). By the same token, a building's visual impact can be increased by applying the same principal in reverse.

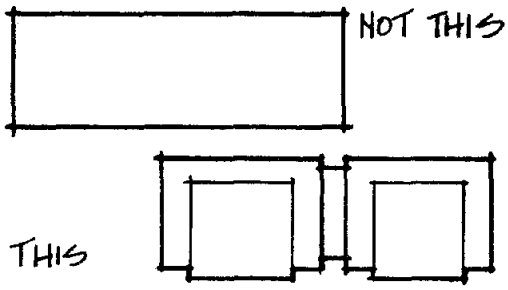


Fig F-9-D

As previously stated, the size of a form in relation to the size of surrounding forms is the concept of scale. Scale is an extremely important, but too often neglected, design concept because, more than most other form givers, scale is sensed by human beings.

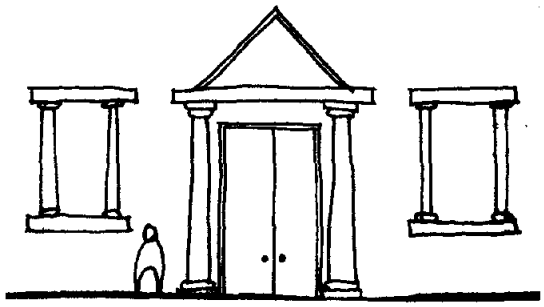


Fig F-9-E

Massing and fenestration (window and door openings and related details) are the primary determinants of a buildings scale: massing because it determines a building's bulk, and fenestration because it enables people to gauge the building's size in relationship to the human body.

Oversized fenestration on a large mass conveys monumental scale while smaller, more finely detailed fenestration on a small mass creates a more human scale (Fig's F-9-E and F-9-F).

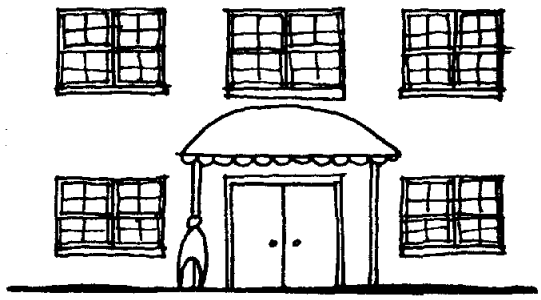


Fig F-9-F

Like massing, scale (or lack of it) can be used to help identify building function, to relate a building to others in a group and to increase or decrease the apparent size of a building.

Surface Articulation

Surface articulation can be defined as the manipulation of fenestration (doors, windows and their associated details), materials and other building elements (even color) to create patterns and give depth to architectural surfaces. This concept is closely related to scale and, in fact, is a prime determinant of scale. Blank, smooth walls, for example do not create a sense of scale while building surfaces which are enriched with detailed fenestration, textured or patterned materials and other forms of relief convey scale in a strong way (Fig F-9-G).

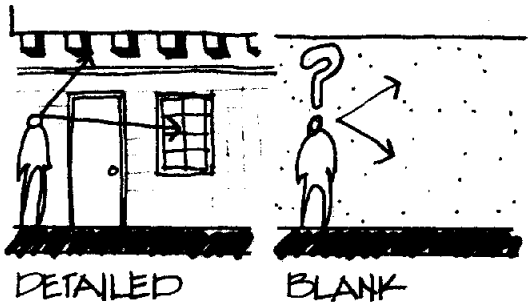


Fig F-9-G

Surfaces can be articulated in many different ways and many things can be expressed through that articulation. A buildings's structural bay size or a change in function or occupancy of the interior space are just two examples. Over-articulation, which results in a cluttered, cosmetic appearance should be avoided as diligently as blank facades and the resulting monotony and lack of scale.

Texture

Texture refers to the surface characteristics of a form and can be considered at both small and large scales. A brick wall, for example, has the small scale texture of an individual brick and the large scale texture of many bricks and mortar joints as part of a large surface. Humans perceive both tactile and light reflecting qualities of texture, and designers must respond to both (Fig F-9-H). Handrails, seating surfaces and flooring are just three examples of surfaces where the tactile qualities of the surface are critical. In buildings, though, the light reflective qualities of a surface are the primary determinants of its texture because humans generally see more of a building than they touch.

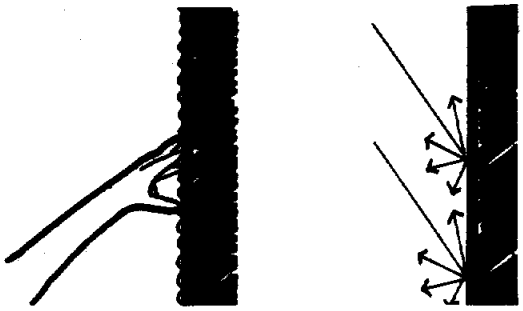


Fig F-9-H

The manipulation of textures is a valuable tool for the designer because it can communicate many things. Changes in texture can emphasize entries and other building elements, reduce the apparent mass of a building and distinguish one building in a complex from others. In general, rough textures are appropriate for residential and other "people", buildings and smooth textures for aircraft hangers, shops and other "machine" buildings. It should be remembered, however, that a change from smooth to rough textures on an industrial building can emphasize an entry, office or other area with a higher concentration of people (Fig F-9-I).

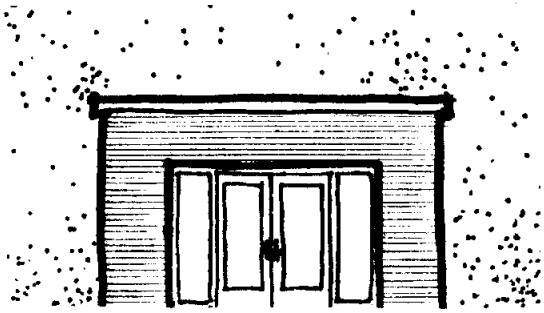


Fig F-9-I

Rhythm

Rhythm refers to the ways various building elements are grouped or placed on a facade.

These elements (windows, pilasters, even voids or masses) can be repeated in a regular, even manner resulting in a very formal and, if the designer is not careful, monotonous rhythm (Fig F-9-J).

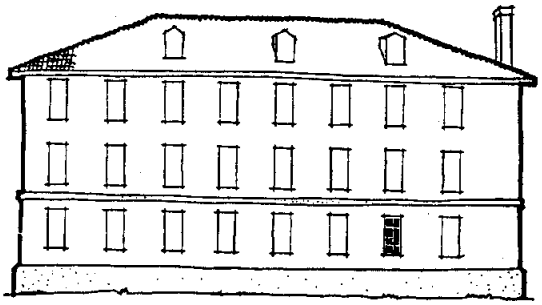


Fig F-9-J

Their placement can also assume what is known as a syncopated rhythm, one in which one repeating element is given more emphasis than the others (Fig F-9-K). A syncopated rhythm can be a successful way of creating variety in the facade of a large building while maintaining its architectural unity.

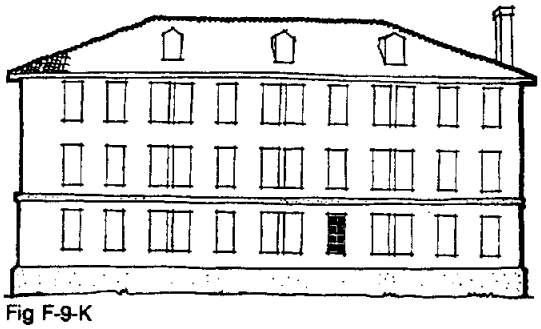


Fig F-9-K

Other fenestration patterns may have no discernable rhythm at all, resulting in an extremely informal appearance. This is generally not appropriate for the architecture of an installation like Ft. Lewis where military order is to be expressed in the buildings. The duplication of existing rhythms can be very valuable tools in relating a building to its context or giving a building in a remote location the same "feel" as another building of the same function.

Light & Shadow

The interplay of light and shadow on the various elements of a building cannot be ignored in this discussion of architectural design even though direct, bright sunlight is not as prevalent at Ft. Lewis as it is at other locations. In general, this interplay gives depth to a building and makes recessed areas such as entries, doors, windows, overhangs and setbacks more easily readable.

The fact that light and the resulting shadows are constantly changing emphasizes the importance of using light as a design element. Because direct sunlight is not prevalent at Ft. Lewis, and consequently shadows are not dark and crisp in relation to other localities, special consideration must be given to supplementing the light's effect.

This can be done in either of two ways:

- One method is to enlarge detailing elements and deepen recesses so that shadows, while still relatively light, will be "bigger". These larger shadows combined with more prominent elements will accomplish the goal of articulating the surface, but care must be taken to prevent the elements from becoming overscaled and out of proportion.

- Another appropriate method is to darken colors and deepen textures in areas commonly in shadow. This will give the desired result without adversely affecting the scale of the building and its parts (Fig F-9-L).

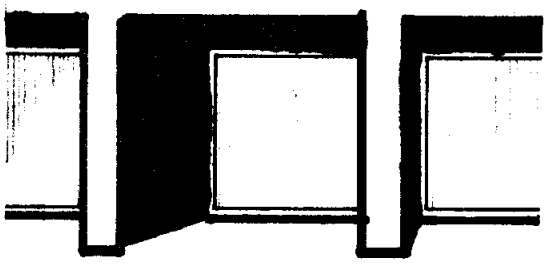


Fig F-9-L

Color

In the future, decisions must be made about the use of color (or lack of it) in all but the Old Garrison Area, for it is here that the most pleasing colors for building materials can be seen.

Warm orangy-red tones found in the brick and roof tiles add much warmth to the built environment (Fig F-9-M). These warm orangy-red tones complement the grey-green landscape. Sharply contrasting white painted trim provides counterpoint to the warm brick tones.
The predominant color of the natural topography of Ft. Lewis is the dark green of the forested hillsides. It varies from an occasional bright, deciduous green to a black-green caused by the masses of evergreens.

COOL	WARM
GREY	GREY
GREEN	BROWN
BLUE	YELLOW
VIOLET	ORANGE
	RED

Fig F-9-M

Therefore, the natural background color palette of Fort Lewis is as follows:

- The sky color usually ranges from pale blue to various shades of cool grey.
- Irrigated grass provides a bright kelly green in summer; it changes from a bright green to a dull yellow-green as the summer progresses.
- Non-irrigated natural grasses turn to shades of buff and light brown during the summer.
- Charcoal grey, the color of much of the paved area around the buildings, is also a strong influence.
- Fall is the most colorful time of the year when many leaves change to gold.

The colors chosen for building materials must:

- Relate well to each other.
- Relate well to the natural environment.

The natural color of building materials should be used whenever possible. Natural materials reflect a subtle gradation of color and texture that is impossible to achieve with paint. When making an effort to match existing colors, special attention must be paid to the exact materials used.

If color is added to the materials, such as a painted surface, a color scheme accentuating one color should be used.

Choose contrasting colors to provide accent and variety, remembering that bold colors tend to advance and pale colors tend to recede.

New building designs, remodelings and renovations must be studied for their color composition. Competent designers must create human built environments which are comfortable, interesting work and living spaces. An individual's response to color is impulsive and emotional, and generally people are far more affected by the color of an object than its form. More and better color in the built environment is needed at the Post.

When discussing color, reference should be made to the following:

- Color wheel
- Hue
- Value
- Chroma

A color wheel is a circular arrangement of hues (names for color) as they occur side by side with the three primary colors at opposite locations; it is useful in developing a color scheme in which hues relate well to each other (Fig F-9-N).

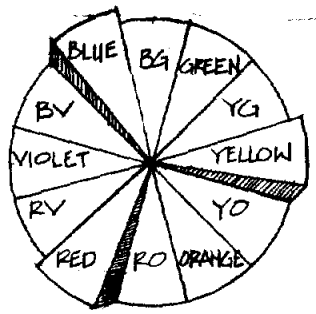


Fig F-9-N

For example, the reason the Garrison Area color scheme is so pleasing is that the roof/brick color and the foliage color are diametrically opposite each other on the color wheel, and, when placed next to each other, each appears its most intense.

At first glance this would indicate using warm, reddish tones as predominate wall colors. It must be noted, however, that the success of this color scheme in the Garrison Area depends largely on the fact that the colors are the natural colors of the materials used. Applied colors rarely, if ever, can achieve the same effect. In other words, warm colors, especially reds and oranges, should result only as a function of the materials selected; wall surfaces should never be painted to resemble brick or other such materials.

Value, the lightness or darkness of a color, should also be considered (Fig F-9-O). Generally, medium to strong values are preferred and value contrasts are desirable.

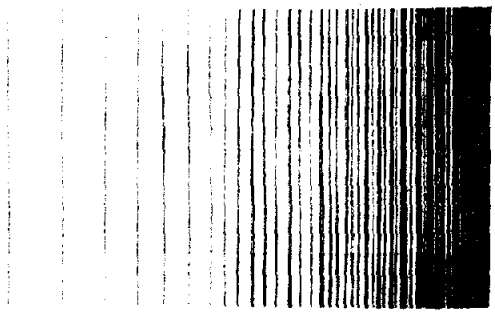


Fig F-9-O

Since the rainy, overcast weather casts a grayish tone over the whole region, there is a need to have colors appear clean and bright. Earth tones containing yellow, such as yellow-greens and yellow-browns, have a tendency to be unnatractive in appearance.

Use dark trim on a light/medium building; use light trim on a building with a dark walls.

The color selections listed below are intended to establish a uniformity for the entire Installation. Federal Standard Colors have been used as the source to identify these colors and neutral tones.

Preferable choices

- **Blue**
- Trim; Doors; Fascias:
  - » # 15080 - (Dark)
  - » # 15090 - (Dark)
  - » # 25102 - (Dark)
  - » # 25109 - (Dark)
  - » # 35109 - (Dark)

- **Green**
- Trim; Doors; Fascias:
  - » #14109 - (Dark)
  - » #34058 - (Dark)
  - » #34108 - (Dark)

- **Red**
- Trim; Doors; Fascias:
  - » #11136 - (Dark)
  - » #21136 - (Dark)
  - » #31302 - (Dark)

- **Brown**
- Trim; Doors; Fascias:
  - » #20059 - (Dark) (This is a black-brown - not yellow-brown).

- **White**
- Trim:
  - » #27875
  - » For the purpose of creating a contrast with dark surfaces such as red brick, white is the best choice; therefore, use it for painting door and window trim.

- Surfaces:
  - » #27875
  - » White is acceptable for individual walls to achieve a contrast in remodeling or new construction. White is also appropriate for walls of World War II wood buildings.

- **Parchment**
- Warm:
  - » #26586 - (Medium) (Concrete masonry units)
  - » #27722 - (Light) (Concrete masonry units)

- **Grey**
- Warm:
  - » #36099 - (Dark) (Roof; Fascia; Trim)
  - » #36373 - (Medium) (Metal Siding)
  - » #35630 - (Light) (Trim; Metal Siding)

- Cool:
  - » #36118 - (Dark) (Roof; Fascia; Trim)
  - » #36375 - (Medium) (Metal Siding)
  - » #37875 - (Light) (Trim; Metal Siding)

When using neutral colors (Parchment or Grey), select either warm or cool tones for an individual building or complex; do not intermix color palettes.

Design Principles

General

Care must be taken to constantly search for creative solutions and good design efforts must be put forth by the A/E contractors. In order to have an installation of noteworthy appearance, the buildings in all Zones must be treated with equal detailed design consideration (Fig F-9-P).

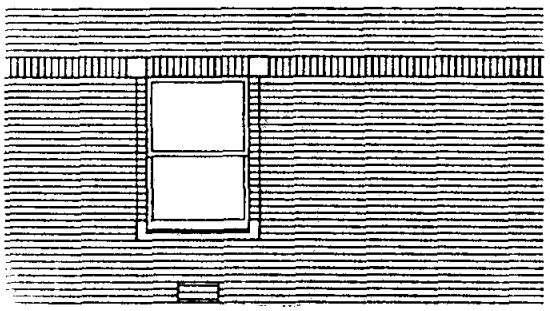


Fig F-9-P

The best examples of the Georgian Colonial Revival Style demonstrate that the same quality wall and roof materials were used for Maintenance Buildings as were used for Administration Buildings and Troop Housing (Fig F-9-Q).

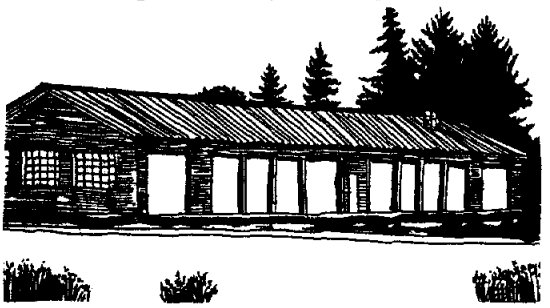


Fig F-9-Q

Community Buildings, such as the Main Post Chapel, also employed compatible materials (Fig F-9-R). Design continuity and visual interest was accomplished through the use of detailing and a visually discernible hierarchy. This practice should be continued today.

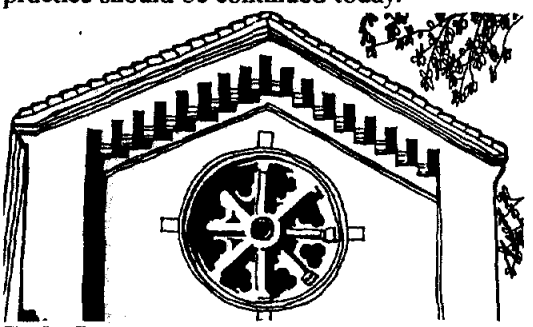


Fig F-9-R

Basics

The basic principles which explain how the elements of design are integrated to create a building design are:

- Unity
- Repetition
- Rhythm

- Variety
- Emphasis
- Balance
- Harmony

In order to have a common understanding of these terms, the following definitions are offered:

- Unity is the sense of wholeness in a design; every building should appear complete, either alone or as part of a complex.

- Repetition is the repeated use of design elements such as lines, spaces and textures which tie the design of the building together aesthetically and helps achieve unity.

- Light, shadow and color are used to achieve variety and relieve visual monotony.

- Emphasis is created by using a particular design feature to call attention to any given area of a building.

- Balance is the achievement of equilibrium in a design. Building elements are formally balanced if they are symmetrical. Building elements are informally balanced if there is a variety in the space relationship which allows a harmonious distribution of space, light and shade, form, line and color.

Expressions of Hierarchy

Buildings at Fort Lewis should reinforce the discipline and hierarchy of the Army by supporting those concepts with designs which follow the Military Park Theme. Since the most important buildings are not always the largest, factors other than size must draw attention to important buildings.

Developing a consistent building design hierarchy will assist in expressing each building's role in the overall Ft. Lewis complex. This Hierarchical ranking which communicates the importance of a building is expressed by a combination of factors such as:

- Size

- Massing

- Character

- Symmetry

- Formality

- Level of Detail

The most formal approach should be reserved for headquarters and administrative buildings located in the Old Garrison Area. This will consist of a combination of symmetrically organized, well balanced facades with a powerful sense of entry created by using carefully detailed, high quality materials (Fig F-9-S).

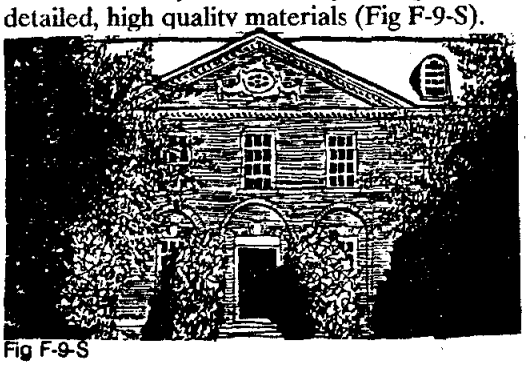


Fig F-9-S

Hierarchical Details

Attention should be paid to the following refinements:

- Blending new construction into this area of Georgian Colonial Revival style buildings

- Modifying geometric shapes and decorative elements to reflect the character of adjacent buildings.

- Choosing materials such as brick and tile which will reflect a solid permanent character.

- Selecting high quality construction methods and materials.

- Incorporating strongly expressed formal fenestration patterns.

By contrast, a more informal character is appropriate in areas such as the Community Center and Family Housing. Design factors which can be used to create a less formal character are:

- Simple, unpretentious facades

- Asymmetrical building massing

- Instead of a container approach to the massing, here it would be more appropriate for the function of the building to be expressed in the building elements.

- Grouping or irregularly placed fenestration according to the functional dictates of the building (Fig F-9-T).

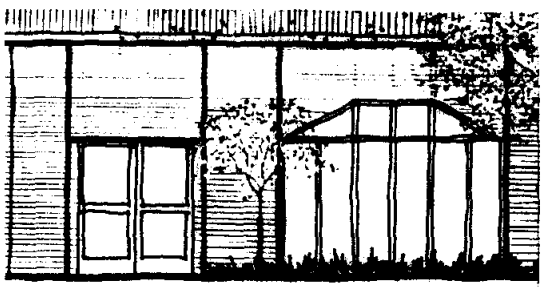


Fig F-9-T

- Selection of more than one material for walls

- Use of more contrasting colors and textures

Style

Architectural style, which can be defined as a distinctive, consistent and recognizable appearance, must be developed with a unified approach throughout the entire Installation. An accurate interpretation of the historic style, Georgian Colonial Revival, is most needed in the Old Garrison Area, so that new buildings, additions and remodelings will blend into the historic district and adhere to the principals of the Military Park Theme (Fig F-9-U).

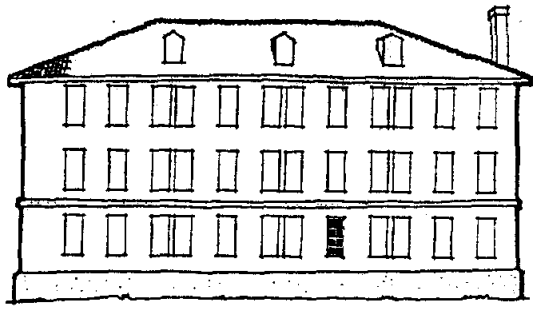


Fig F-9-U

As buildings are located further away from the historic district, more freedom of design interpretation is acceptable. For example, a more contemporary style utilizing certain Georgian Colonial characteristics would then be more appropriate for Zone 1 Headquarters and Administrative types of buildings. Some adaptation of Post Modernism, a decorative style characterized by a modern interpretation of classic forms and ornamentation, may be appropriate for buildings in Zones I, VI and VII (Fig F-9-V).

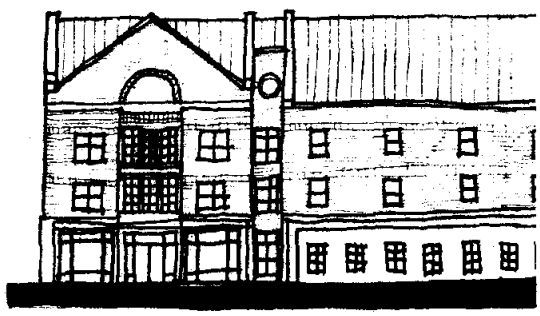


Fig F-9-V

The goal within each Zone is to create a harmonious blend of architecture, not one of monotony. It is appropriate to recognize that all building designs will be contemporary, i.e. of the time in which they are designed.

By way of contrast, certain areas should be strictly contemporary in design, such as the development of a "High-Tech" appearance in Zone II - Airfield. Zone V - Family Housing is another area in which contemporary forms of housing design are entirely appropriate (Fig F-9-W).

Fig F-9-W

Extreme styles are not recommended as they are faddish and do not adhere to the principals of the Military Park Theme. The Dispersed Industrial Style, seen in the Troop Housing Area, while recognizable, is to be discouraged, as this Military Functionalism Style has little visual appeal.

The Cobblestone Style, as demonstrated by the Main Gate and Gas Station, has a fine regional character which would be entirely appropriate for structures such as open air pavilions in Zone VIII - Open Space (Fig F-9-X).

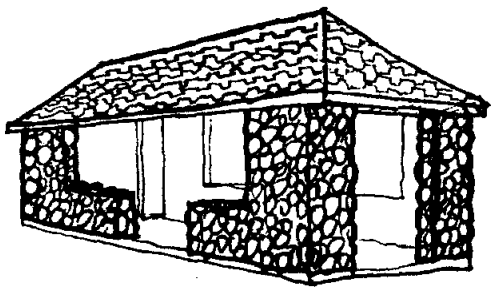


Fig F-9-X

Elevation Design

The basic architectural style of each building is more closely related to the design of elevations than any other factor. Much flexibility is possible in the design of elevations through the development of an ongoing design process which requires a continual studied relationship between the floor plan, the elevation and the resultant appearance. An attractive and functional elevation depends on factors of roof style, overhang, grade-line position and relationship of windows and doors to the building line.

A desirable elevation design results by development, by balancing the exterior appearance of the building with the interior functional elements required. As the vertical heights of doors, windows and the overall building are established, their appearance must be judged and alterations made to "massage" the visual effect into a unified whole. Nothing affects the silhouette of a building more than the roof line, so a three dimensional awareness is always required when a building is studied in two dimensions, as in an elevational drawing.

It should be remembered that although Louis Sullivan made the statement, "Form follows functions", no two designers will ever evolve the same form for the same function. Flexibility is mandatory. However, a good design will reflect the building's purpose, especially if design consistency is utilized throughout each zone.

Materials

As can be expected because of its large size and its development history, Fort Lewis has no cohesive, comprehensive architectural character. This is demonstrated not only by the different planning and architectural styles existing in various locations, but also by the unrelated exterior materials used on adjacent buildings.. Given this existing diversity of materials in use at Fort Lewis, the goal should be to use a limited, well defined palette of materials. This approach will allow individual neighborhoods to retain or develop their own identities without creating too much diversity.

Because of the temperate climate and accompanying lack of strong sunshine, thermal and reflective qualities of materials are not as critical as they would be in the desert Southwest, for example. Obviously, though, care must be taken to select materials which function well in a damp climate.

Furthermore, because Fort Lewis is adjacent to a major metropolitan area with numerous transportation systems, availability of exterior materials and labor to install them are not as limited as they are in more remote locations.

Exterior material selection, therefore, should be primarily based on aesthetic, contextual and economic criteria. To this end appropriate materials for each zone and building type have been selected and can be found in Section B of this chapter.

Context

Context, in terms of military architecture and planning, refers to the general character of an installation or part of an installation. This character is created by similarities in the various form generators within a defined area such as:

- Massing
- Proportion
- Materials
- Texture
- Colors

In the Garrison Area, for example, the Georgian Revival architecture with its quality materials, high level of detailing and formal symmetrical planning gives an impression of tradition, discipline and order. These are all important military values which, when expressed in the built environment, help uplift morale and generate pride (Fig F-9-Y).

Fig F-9-Y

A hierarchical order helps distinguish building functions from one another and reinforces that concept of military order.

The Division Area, on the other hand "feels" much less ordered and does not create the same sense of importance for the buildings (Fig F-9-Z). The buildings themselves are industrial in nature, not residential or administrative, and don't reinforce the military values listed above.

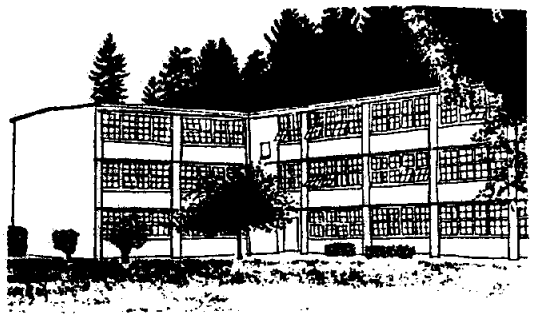


Fig F-9-Z

As one can readily understand, the context of the two areas of Ft. Lewis differ dramatically and contextual designs for each of the two areas would differ just as dramatically.

A contextual approach to design, however, should not result in a "cookie-cutter" duplication of nearby building forms. A talented designer could, by addressing the most pertinent design characteristics of the existing buildings, design an obviously contemporary building within the context of the Garrison Area. He or she could also design a building which adheres to the design principals of the Military Park Theme (axial relationships between buildings,

hierarchy, expressed entries, hierarchal use of detail, etc.) and yet still be in context with the rest of the Division Area (Fig F-9-a).

Fig F-9-a

The critical task is to isolate those characteristics which most give an area or building its identity and to integrate those characteristics into the new design.

Design Influence Within Historic District

As described in the Hightower Historic Properties Report on page 6-9, the period-revival design character should prevail for any existing or new buildings which are located in the historic district. These historic guidelines are to take precedence regardless of which Zone the building occupies. For clarity, check the historic district maps provided in the Hightower Report.

If modifications are made to these buildings, the design consideration should follow the Secretary of the Interior's standards for rehabilitation and guidelines for rehabilitating historic buildings. Maintain original historic fabric, appearance and stylistic integrity (Fig F-9-b).

Fig F-9-b

Building Components

General

The fundamental shape of a building should be consistent with the basic desired architectural style of the building. The word pitch is used to describe the slope of a roof. Pitch is expressed as a ratio of vertical rise to horizontal run, or in inches of rise per foot of run. The design of each exterior building (or complex) elevation is strongly affected by the following factors:

- Roof Pitch - high or low
- Roof Overhang - small or large
- Grade Line - high or low
- Foundation - exposed or below grade
- Window/Door Placement - random or related to building lines
- Vertical Elements - high and narrow, or low and wide
- Entry - at grade, above grade, below grade

The sum total of each of these design factors has considerable bearing on the consistency of the design.

The final appearance of each elevation depends upon the:

- Roof line (affects silhouette).
- Relationship among the various areas of the elevation such as surfaces, doors and windows.
- Balance of texture, light, color and shadow patterns.
- Each elevation should appear as one integral and functional composition.

Major Building Elements

Base

Base refers to that portion of a building below the ground floor but above the grade line. A base generally contrasts in color and material with the majority of the building elevation. It gives the building added prominence because of the extra height and the sense of procession and arrival associated with a raised entry (Fig F-9-c).

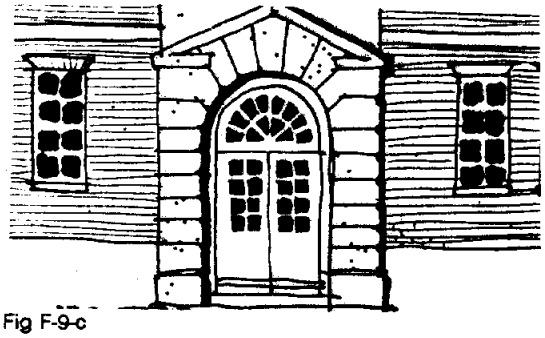


Fig F-9-c

Walls

Walls are part of the skin of the building and, in some cases, part of the structural system as well. As a viewer approaches a building the wall becomes more and more important in the viewer's perception of the building. Walls can appear heavy or light and can be transparent or opaque (Fig F-9-d).

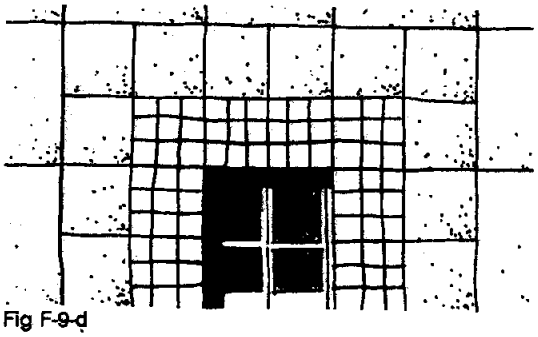


Fig F-9-d

Entrances

Entrance as used in this Guide refers to those exterior elements of a building which combine to shelter, draw attention to and otherwise emphasize the location at which one enters a building. Entries can be recessed into the building mass or protrude from the facade (Fig F-9-e).

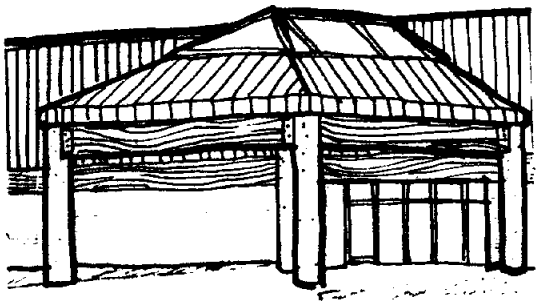


Fig F-9-e

Fenestration

Fenestration is generally defined as the door and window openings and related facade details of a building. Fenestration is a major generator of scale and plays a key role in contextual design (Fig F-9-f).

Doors are a point of contact which all users have with a building and require thoughtful design and selection. Windows serve three primary functions: daylight in, views out and views in. Their design should reflect those functions while maintaining architectural cohesiveness with neighboring buildings.

Fig F-9-f

Roof

A building's roofline is its prime form generator, especially from a distance. (See General, page 9-9). Roofs take many forms (Fig F-9-g).

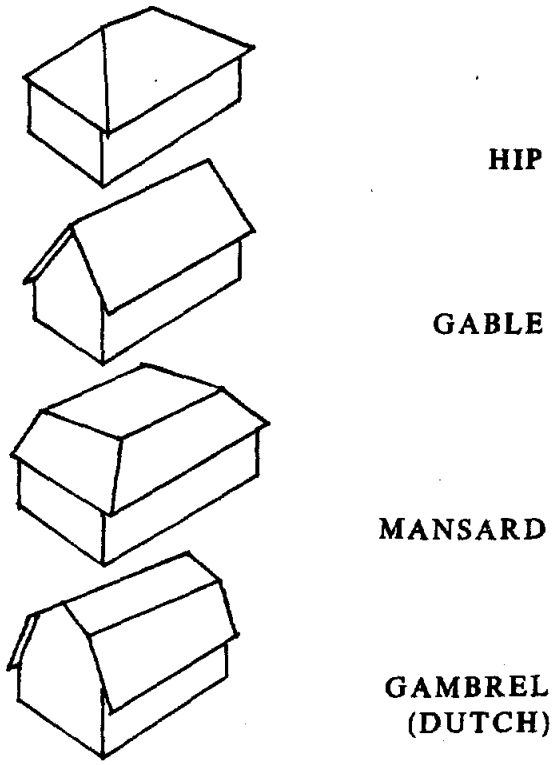


Fig F-9-g

At Ft. Lewis the most common roof forms are:

- Flat (usually not perceivable from the ground)
- Hip (slopes to all sides)
- Gable (slopes to two sides).

New building roofs should generally be composed of these roof types. Mansard and Dutch should not be used although shed roofs (sloping in one direction) are acceptable in some Zones.

Other elements which are part of a building's "roof" include:

- Cornices, (exterior trim of a structure at the meeting of the roof and wall), which may be used to emphasize a flat roof and separate it from the wall plane.
- Eaves and soffits (horizontal surfaces under overhangs), which shelter walls from sun and rain.
- Clerestories (bands of glazing between two roof planes which admit light to the center of a building) and skylights (glazed roof openings which admit daylight into the space below).
- Dormers (vertical windows which project from a sloping roof) should always be functional light sources or room windows, not decorative "dummies".

Secondary Building Elements

Covered Walkways

In Ft. Lewis' generally damp climate, covered walkways could provide welcome protection from the weather, however, care must be used in their design. Walkways should unify buildings in a group through the use of common materials and forms. Walkways should not look like long, thin aluminum carports.

Porte-Cocheres

A porte-cochere is a logical entry element on any building where large numbers of people load or unload from vehicles at specific times,

i.e. schools, clubs, chapel, etc. As with walkways, however, consideration must be given to the aesthetic qualities of the structure to avoid a flimsy, "attached" appearance. A porte-cochere should be roofed with the same materials as its adjacent building; wall or column materials should likewise match or compliment those of the main structure.

Plazas and Courtyards

In any temperate climate, outdoor living spaces must be considered as part of almost any building's overall composition. These spaces should be designed as outdoor extensions of rooms in adjacent buildings. Landscaping should be incorporated into courtyard designs, and paving materials or patterns should set courtyards and plazas apart from general circulation spaces (Fig F-9-h).

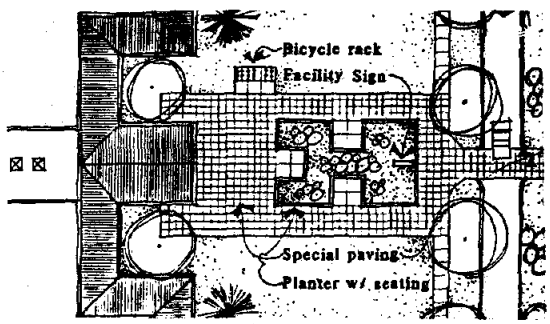


Fig F-9-h

Building Details

A building's detailing, its joints, juxtaposition of materials, hardware and so on, cannot be left to chance anymore than any other part of a building's design Fig F-9-i). Detailing should be consistent with the character of a building and should help tie all the elements of a building into one cohesive package. A consistent manner of detailing may also be used to unite similar buildings in diverse locations.

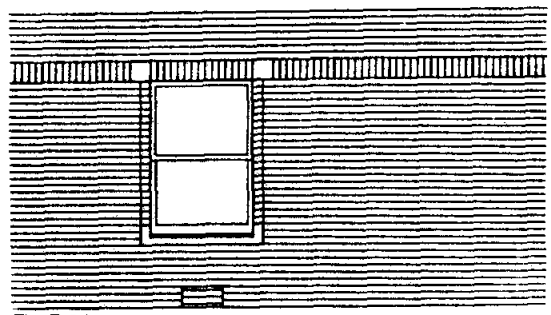


Fig F-9-i

Miscellaneous Elements

Mechanical Equipment

Few things can ruin a building's appearance and a user's experience of it as quickly as the insensitive locating of mechanical equipment and other "necessary evils." Unless the equipment can be integrated into a building's overall design (and this is very difficult and rare), it must be hidden from view. It should be located away from major entries, parking areas, main streets and any other areas where it can be seen by large numbers of people.

Two approaches are usually applied separately or together to provide a screen. A physical, visual barrier, preferably designed as part of the architectural fabric of a building, can surround the equipment, or landscaping, usually evergreens, can be strategically located to block views. The same principals should be applied to loading docks and any other elements usually considered unsightly.Experience at Fort Lewis has shown that roof-mounted equipment has not been successful because it usually causes roof-leaking problems.

SECTION B
ZONAL APPLICATION

Zonal Classification

In order to aid in understanding of Zones, a Zone Map has been provided at the beginning of this section (Fig F-9-j). It is important to remember that the Zones and Design Guidelines are based on functional zone classification, not geographical location on this map.

General

Section B has been developed to establish specific design guidelines in each Zone regarding the selection of exterior building materials. These choices were based on aesthetic, contextual and economic criteria.

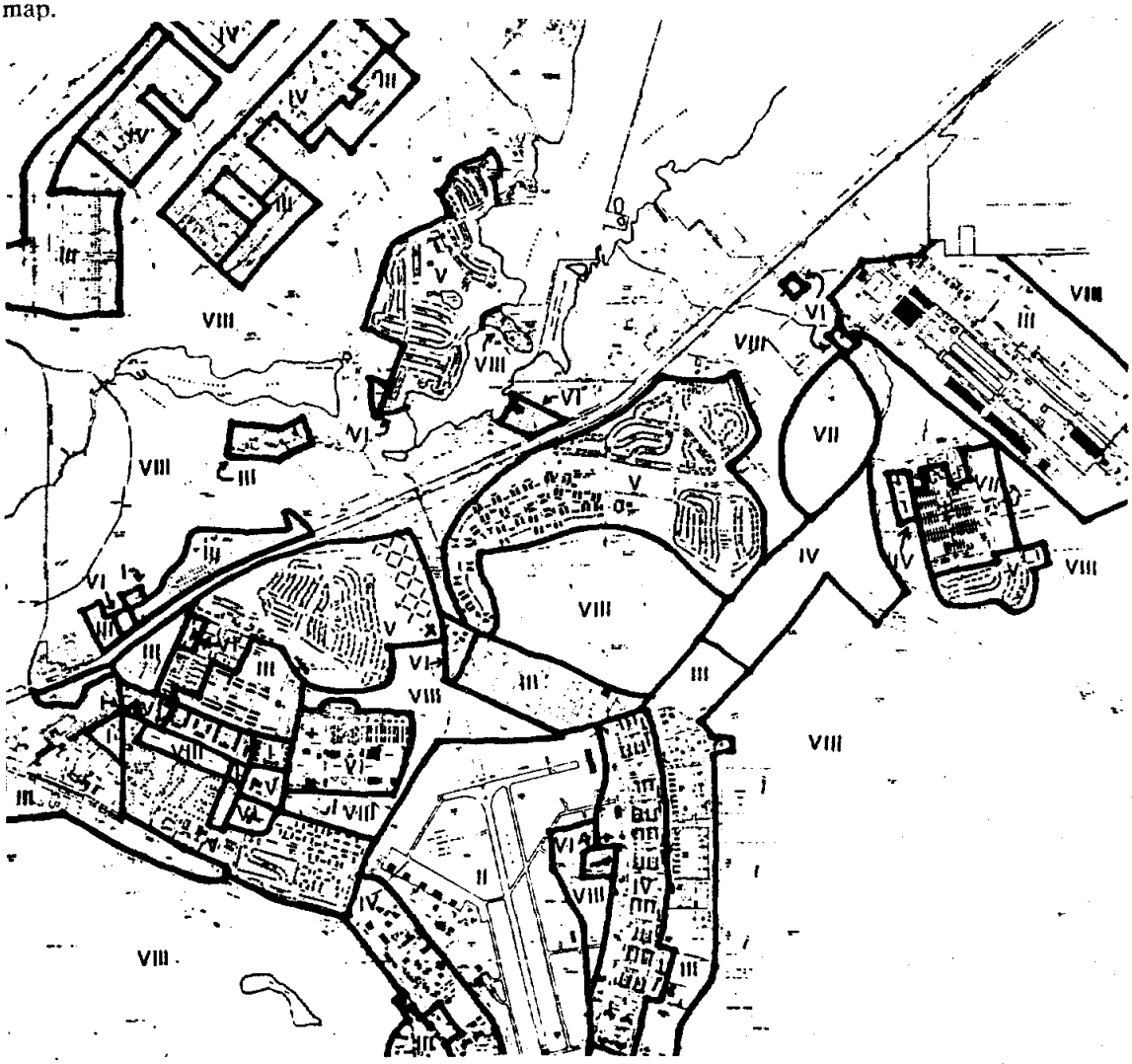


Fig F-9-j

Section B
Zonal Application

Zone I - Headquarters/Administration

Post Headquarters, I Corps Headquarters, 9th Infantry Division Headquarters, Main Installation Entrances, Installation Administrative Functions.

Visual Building Design Factors

Shape and Proportion

Close visual relationship to surrounding permanent buildings.
The Garrison Area massing should strongly influence the building massing in this zone. Massing tends to be relatively monolithic and unbroken which has obvious symbolic importance.
Use a single unbroken mass, an L - Shaped arrangement of building elements a U - Shaped arrangement of building elements.
Proportions of long facade: H = 1 1/2 to W = 4 to D = 1.
Proportions of long facade: place emphasis on golden section proportioning.

Size, Massing and Scale

Monumental: building forms, fenestration, entrances, floor to eave height.
Human: (also) fenestration (regular sized), stairs, railings, trim.
Height limit: 4 stories (I 45'). No building taller than I-Corp Headquarters in Garrison Area.
Expressed major entrances, stairs, porches
Consider continuity of existing expression lines at 1st story
Monumental scale building forms, fenestration, entrances, floor to eave height.
Human scale may also be applied to fenestration, stairs, railways and trim.
Height limit: to overhang on long facade = 40 feet.
Close visual relationship to surrounding permanent buildings.

Surface Articulation

Wall surfaces: 3 dimensional treatment, compatible with existing examples.

Rhythm

Regular sequence of repeated surface treatments.
Regular sequence of fenestration (Fig F-9-k).

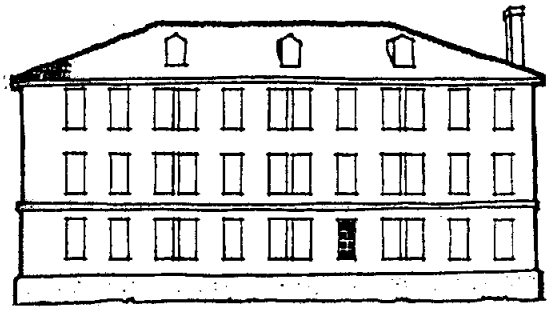


Fig F-9-k

Expressions of Hierarchy

The principles of visual hierarchy should be very carefully considered in this zone to emphasize the most important structures. A clear consensus with regard to the relative importance of the structure in question should be achieved prior to development of design.

Style

Close attention to traditional style choice is required in actual Garrison area. More adaptation or interpretation of classical forms is allowed in other physical areas.
Boldly designed attractive entrances Fig (F-9-l).

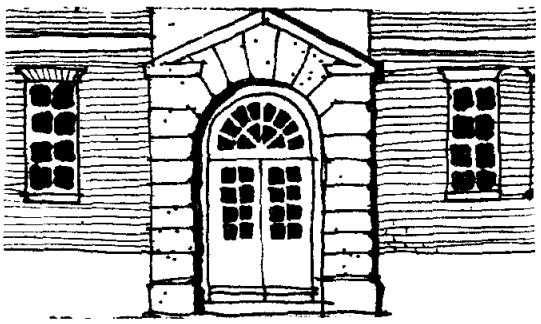


Fig F-9-l

Building Components

Major Building Elements

Entrances

Make distinction between major and minor and public and private entrances with detailing, location, etc.
Traditional Entrances. - wood door with glazing; possibly also sidelights.
Contemporary Entrances (not allowed in Garrison Area) - metal frames and doors; possibly also adjacent glazing

Walls

Brick - Red/orange (Color to match existing). (Also, pattern should relate to nearby existing)
Cobblestone/fieldstone - natural neutral tones (match existing) use at installation only.
Concrete Masonry Units w/split face texture - cool grey.

Fenestration

Windows and doors placement: individually.

Doors

Solid core, decorative panel wood door; similar to existing.
Contemporary Entrance doors (not allowed in Garrison Area).

Windows

Casement.
White vinyl clad wood.
Dark bronze anodized aluminum.

Double hung.
White vinyl clad wood divided lite (Fig . -9-m).

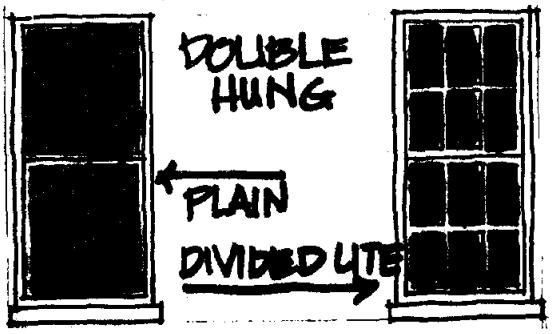


Fig F-9-m

Dark bronze anodized aluminum (not allowed in Garrison Area).

Fixed Glazing.
Glare - reducing, medium tints (not allowed).
Reflective glass not allowed.
Large expanses of glass should be multi-paned.

Roof

Pitch: 5/12; shape: hip with gables as accent (Fig F-9-n).

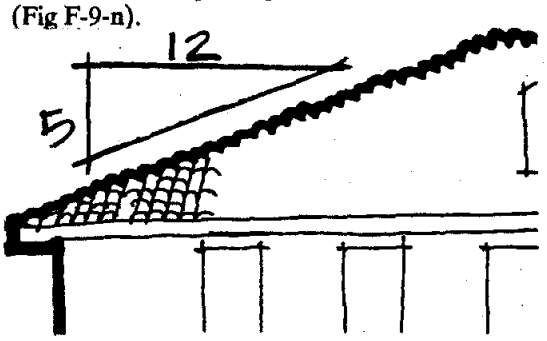


Fig F-9-n

Overhang - Min 2'0", Horizontal building lines accented at eave line.
Clay barrel tile - Red/orange (to match existing).
Concrete flat tile - Dark cool grey.

Metal standing seam - Dark cool grey.
Wood - Cool white.
Soffit: Flat.
Fascia: Vertical.
Cornices: Optional.
Dormers: Optional; relate to nearby existing.
Clerestories: Optional.
Skylights: Optional; provide curb model.

Miscellaneous Elements

Covered Walkways
Desirable.

Porte-Cocheres
Desirable (when a covered entrance for important personages is needed).

Plazas and Courtyards
Desirable

Other Features
Structural brick arches cut or cast stone.
Masonry columns, porches.

Gutters and Downspouts
Aged copper or dark anodized aluminum.

Mechanical Equipment
Ground mount at inconspicuous location and completely screen from view.

SECTION B
ZONAL APPLICATION

Zone II - Airfield

Support Facilities - Administrative Facilities, Training Facilities, Open Range

Visual Building Design Factors

Shape and Proportion

Smaller buildings should have strong silhouettes in order to "hold their own" among surrounding hangers, etc. (Flat roofs on large buildings and sloping roofs on small buildings).

Size, Massing and Scale

Large (as is typical of most airfield buildings) making reduction of scale with massing and detailing at "people" areas very important.
Smaller masses of entries, etc. as part of overall composition or larger (hanger) buildings and stepped masses from circulation side to airfield side (Fig F-9-o).

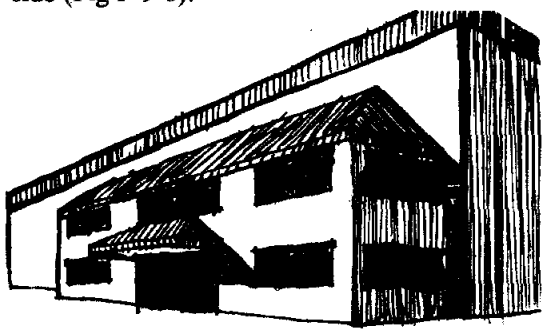


Fig F-9-o

Break large buildings into "units" whenever possible.

Rhythm

Avoid to much repetition on very large buildings to avoid monotony.
Break patterns into groups to reduce scale, i.e. IIIXIIIXIIIXIII, not IIIIIIIIIIIIIII.

Expression of Hierarchy

Differentiate with materials, level of detailing, color, etc. between utilitarian (equipment oriented) and administration (people oriented) buildings.

Style

Contemporary, moderately "high tech" but drawing on symmetry, etc. to relate to Military Park Theme and rest of Post. Design of Flight Simulator Building is an excellent example of this design approach.

Building Components

Major Building Elements

Base

Placing small but important building on raised base will assist in making it stand out as building of significance.

Entrances

Use smaller, clearly expressed entry elements.

Walls

Concrete (Precast or poured in place); predominately smooth-surfaced with some detailing - light, warm tones.
Concrete masonry units: various textures (avoid fluted and very large areas of smooth) generally light, warm tones.
Metal siding: light grey (except large building visible against backdrop of evergreen trees,

then dark grey(#36099) or green (#34092) (as seen looking east from 41st Division Drive).

Decorative Patterns

Use cautiously near ground level to lower scale, define entries, break up monotonous masses, etc (Fig F-9-p).

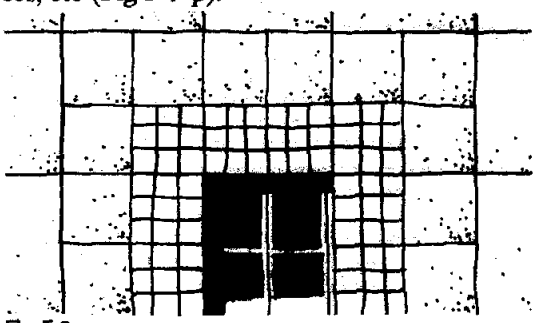


Fig F-9-p

Not too abstract.

Fenestration

Group fenestration elements together - avoid "lonely" windows punched into expansive wall surfaces.

Doors

Glazed aluminum or other metal with sidelights in main entries and other highly trafficked areas. Hollow metal typical most areas. Avoid door locations which appear random and have no definition, i.e. overhang, recessed door stoop, etc.

Windows

Casement, awning or other as situation dictates. Avoid natural anodized aluminum or painted metal. Tinted (but not reflective) glazing.

Window Sills and Openings

Use change in texture of material, direction of coursing, etc. to provide moderate contrast with surrounding wall material.

Fixed Glazing

Avoid too large expanse near ground level.
Divide into lites.

Roof

Low slope roofs are appropriate.
Flat concrete tile: medium or dark warm grey.
Metal standing seam: medium or dark warm grey.

Skylights

Use whenever possible - glazing or insulated, light transmitting material.

Cornices

Use change of material, color, texture, etc. and/or projection to provide a "top" for flat-roofed buildings (Fig F-9-q).

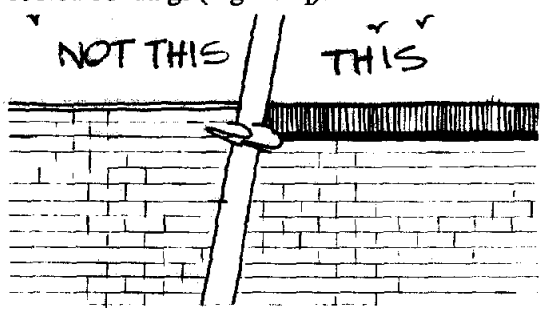


Fig F-9-q

Miscellaneous Elements

Covered Walkways

Provide walkways designed compatibly with adjacent building along very high-use pedestrian

paths, i.e. between two buildings serving same occupant (Fig F-9-r).

Fig F-9-r

Plazas and Courtyards

Provide "people spaces" for outdoor lunches, breaks and informal conferences, and plazas to contribute to a ceremonial sense of arrival/departure at VIP circulation points.

Gutters and Downspouts

Prefinished to match adjacent surface - place at corners, etc. and avoid "lonely" downspout whenever possible.

Railings

Match window/door material.

Mechanical Equipment

Locate away from circulation routes, especially pedestrian, and screen with landscaping, walls, etc.

SECTION B
ZONAL APPLICATION

Zone III - Maintenance/Storage/Supply

Motor Pools, Industrial Facilities, Logistics Support Center

Visual Building Design Factors

Size, Massing and Scale

Obviously quite large in general, but entries, office areas and other similar functions should be expressed separately in smaller, more varied masses. Reduction of scale in areas viewed close-up should be accomplished with differing masses, textures, materials, fenestration, etc.

Rhythm

Avoid too much repetition on very large buildings to avoid monotony. Break patterns into groups to reduce scale, i.e. IIIIXXIIIIXXIIII, not IIIIIIIIIIIIII.

Expressions of Hierarchy

Differentiate with materials, level or detail, color, etc. between utilitarian (equipment oriented) and administrative (people oriented) buildings.

Building Components

Major Building Elements

Walls

Concrete: with texture and relief provided by form impressions, expansion joints, etc. with light, warm tones.

Concrete Masonry Units: Various textures (avoid fluted and very large areas of smooth) Use light, warm tones with painted or textured accents or other colors as accents.

Fenestration
Use glazing elements to break up long, monotonous building facades..
Group fenestration elements together.

Doors
Use tubular metal frame with glazing at main entries, hollow metal for service doors and garage doors painted in bold identifying colors at drive-throughs and loading docks (for example, blue door with white, oversized number) (Fig F-9-s).

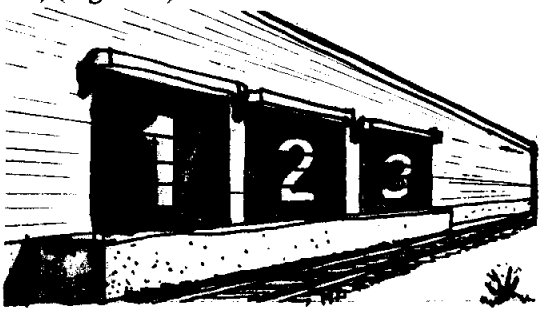


Fig F-9-s

Windows
Window style and size should reflect activities inside, i.e. large, high, fixed glazing with operable awning at bottom for shops and smaller operable units for offices.
Skylights and clerestories should be used extensively to provide natural light in central areas of large buildings.

Roof
Pitched roofs : 5/12.
Pitched roofs of asphalt shingles or, preferably, standing seam metal to indicate entrances and different functions (Fig F-9-t).

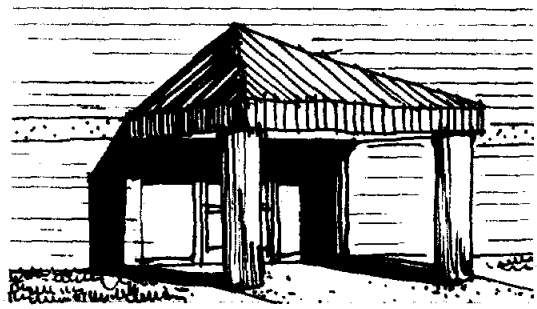


Fig F-9-t

Miscellaneous Elements

Covered Walkways
Might be provided between buildings which share an occupant and generate a large amount of cross-traffic.

Plazas and Courtyards
Should provide for employee breaks, lunches and informal meetings.

Mechanical Equipment
Should be screened and located away from entries and other traffic areas.

SECTION B
ZONAL APPLICATION

Zone IV - Troop Housing

Unaccompanied Enlisted Housing, Unit Administration/Storage, Battalion Headquarters

Visual Building Design Factors

Shape and Proportion

Use Golden Rectangle when possible. Arrange buildings in "L" or "U" configurations around courtyards to reinforce unit identity (Fig F-9-u).

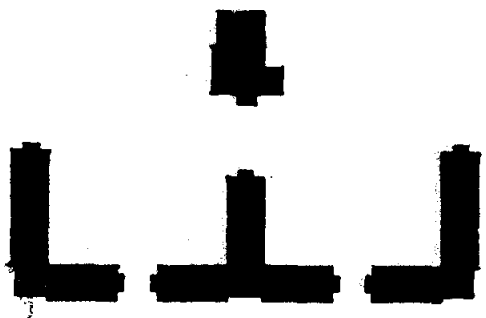


Fig F-9-u

Size, Massing and Scale

Articulate massing to emphasize entries. Scale elements should reinforce hierarchy.

Surface Articulation

Use surface articulation to emphasize hierarchy and to help identify individual quarters within barracks buildings.

Rhythm

Use similar rhythms of detailing, fenestration, etc. to tie together functionally dissimilar buildings in a group.

Expressions of Hierarchy

Overcome size vs. importance conflict of large barracks, medium unit administration/storage buildings, and small battalion headquarters by using roof pitches, materials, etc. to add prominence to battalion headquarters.

Style

New buildings or additions in Division Area should maintain "modern" style but with much more emphasis on Military Park Theme; ie, symmetry, hierarchy, detailing, etc. Buildings in new areas should be contemporary in character with elements of Georgian Colonial Revival when possible (proposed Jackson Avenue Troop Complex is a good example) (Fig F-9-v).

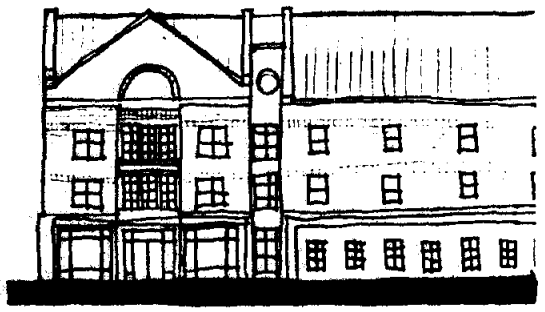


Fig F-9-v

Building Components

Major Building Elements

Base

Elevate brigade, group and battalion headquarters when possible.

Entrances

Identify entrances of all building types with recesses, pitched roofs, change in texture, material or color, etc.

Walls

Red brick, split-face concrete masonry units (grey), textured architectural concrete (not exposed aggregate) are all appropriate.

Fenestration

In general, use fenestration to articulate facades and provide scale. Use changes in fenestration patterns to identify changes in interior function. Avoid natural aluminum; use dark anodized (bronze or black) instead.

Doors

Storefronts are acceptable in all building types.

Windows

Do not use horizontal bands of glazing in barracks except at day rooms and other common areas; individual quarters should be reflected by window type and placement. Storefronts are acceptable in all building types.

Roof

Whenever possible, articulate entries (new and existing) with a sheltering roof form. Standard new roof to be hip (5/12 pitch) with gable accents. Appropriate materials are clay and concrete tile and standing-seam metal (Fig F-9-w).

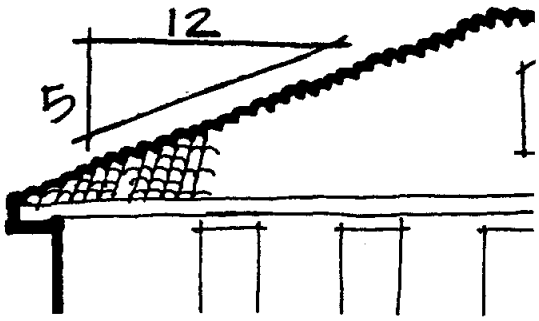


Fig F-9-w

Miscellaneous Elements

Plazas and Courtyards

Plazas should be provided as entry elements for battalion headquarters. Courtyards at barracks are extremely important as areas for recreation and relaxation, and to help reinforce unit identity.

Mechanical Equipment

Mechanical equipment, dumpsters, loading docks, etc. should be screened by landscaping and/or walls and should be located in unobtrusive locations whenever possible.

SECTION B
ZONAL APPLICATION

Zone V - Family Housing

Detached Housing, Attached Housing, Dependent Schools

Visual Building Design Factors

Shape and Proportion

Schools located in family housing areas should relate to that housing; ie, massing and form should reduce apparent size of school by breaking the overall building mass up into smaller units. Pitched roof elements, especially of entries should also be incorporated.
Materials should be the same as the predominant housing materials (except for wood siding).

Size, Massing and Scale

Small masses, whether individual homes or parts of a large whole should predominate. Use different floorplans and manipulate similar elements to create a feel for individual homes while retaining a consistency within each residential development.
Small, variable masses, articulated fenestration and other exterior detail should be combined to produce a residential scale (Fig F-9-x).

Rhythm

Use subtle, informal rhythms to tie together groups of houses or parts of large multi-family buildings.

Fig F-9-x

Expressions of Hierarchy

Use formality, size, level of detail and quality of materials to express the ranks of family housing dwellers.

Style

The style used should vary with the location; ie, new housing in the Garrison Area should be compatible with existing Greenwood and Broadmoor Housing (Georgian) with brick veneer and painted wood siding and trim (Fig F-9-y), while new housing in the natural areas

Fig F-9-y

near North Fort should have "Pacific Northwest" flavor (native stained wood and stone materials, heavy textures, etc) (Fig F-9-z).

Building Components

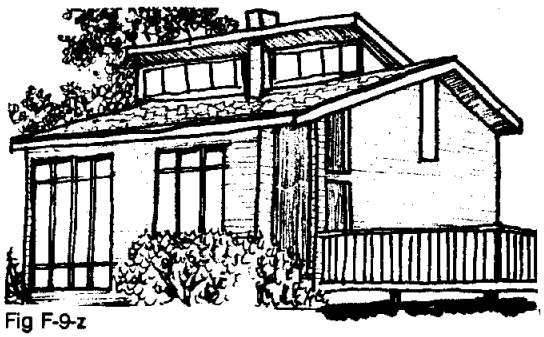


Fig F-9-z

Major Building Elements

Walls

Near Garrison Area: Red brick to match existing and painted wood trim.
Others: Native wood and stone (heavy texture).

Fenestration

Use traditional forms to relate to Garrison Area Housing where appropriate. More contemporary and informal forms should be used in other areas.

Doors

Painted solid core wood in "traditional" areas - stained wood in other areas.

Windows

Divided lite to match nearby existing.

Roof

Near Garrison Area: Clay tile or dark grey asphalt shingles.
Other: Asphalt shingles.
Roof pitch 3/12 min.

Dormers

Use as windows for second story bedrooms.

Miscellaneous Elements

Plazas and Courtyards

Private and semi-private spaces should be provided at multi-family buildings to provide outdoor living space and transitions from public to private space.

Gutters and Downspouts

Paint to match fascias and other adjacent materials.

Pediments

Can be used as door detailing in upper level officer housing near the Garrison Area (Fig F-9-aa).

Fig F-9-aa

Mechanical Equipment

Should be located away from entries and screened from view.

SECTION B
ZONAL APPLICATION

Zone VI - Community Facilities

Retail Outlets, Indoor Recreation Facilities, Moral and Welfare Facilities, Theatres, Child Care Centers, Auto Craft Shops, Chapels and Religious Education, etc.

Visual Building Design Factors

Shape and Proportion

Use Golden Rectangle when possible as proportional system to help relate buildings to Garrison Area.

Size, Massing and Scale

Manipulate massing of large building to indicate entryways, etc. Scale of community facilities should be very "human" (Fig F-9-bb).

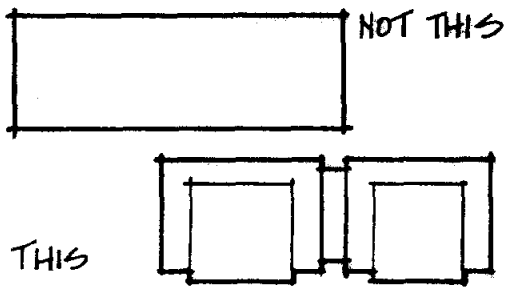


Fig F-9-bb

Surface Articulation

Very important in community facilities because of high concentration of people. Building facades need to add "life" to these areas with fenestration, overhangs, textures, etc.

Texture

Use "comfortable" textures at areas where people congregate to encourage lingering.

Rhythm

Rhythms should be lively and small-scaled.

Light & Shadow

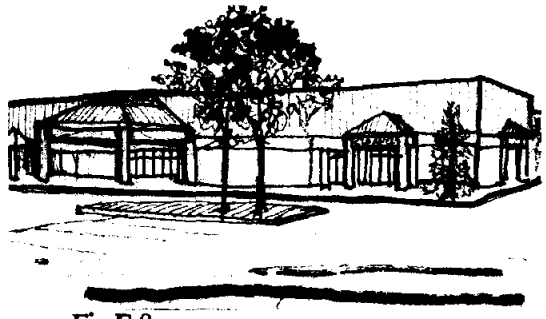
Use to attract attention to buildings, especially retail, from moderate distances.

Expressions of Hierarchy

Not a critical factor in Community Facilities.

Style

Community Facilities should relate to their immediate surroundings as well as have common elements. "Festival Marketplace" idiom is appropriate for retail, recreation and food service buildings (Fig F-9-cc)



•Fig F-9-cc

Building Components

Major Building Elements

Base

Since hierarchy is not a critical factor, raising a building on a base is not a priority.

Entrances

Very important element in facilities which serve large numbers of people, especially children and off-post users. Should include weather protection. Standing seam metal roofing and fascia are generally appropriate (Fig F-9-dd).

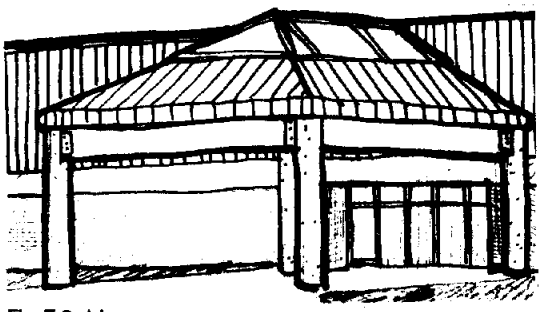


Fig F-9-dd

Walls

Avoid large expanses of un-articulated wall surface, especially at "people" areas. Use recesses, protrusions, structural expression, etc. to articulate walls. Masonry and concrete are most appropriate materials.

Fenestration

Allow views into and out of buildings whenever possible. Avoid reflective or darkly tinted glazing. Aluminum (preferable dark bronze or black) storefront construction is generally appropriate.

Roof

Introduce pitched elements whenever possible, especially in facilities for children and at entries, etc. Standing seam metal and concrete or clay tile are appropriate materials (Fig F-9-ee).

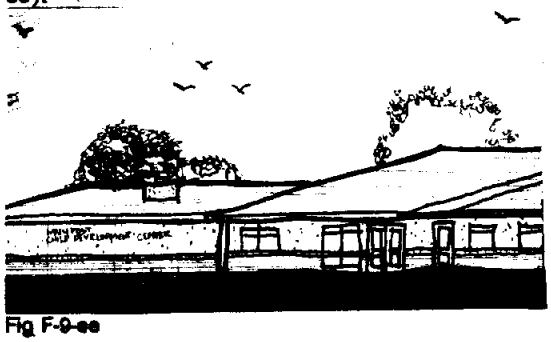


Fig F-9-ee

Miscellaneous Elements

Covered Walkways

Covered Walkways, when designed to be harmonious with or reflective of the surrounding architecture, are a good way to link community facilities visually and literally and to provide weather protection.

Porte-Cocheres

In Ft. Lewis' rainy climate, porte-cocheres should be considered for theatres, chapels and other buildings where large numbers of people arrive and leave at the same time.

Plazas and Courtyards

Pedestrian space such as plazas and courtyards are important to the success of Community Facilities and are critical in the Retail Core

Community Center. Outdoor or semi-enclosed spaces to rest, eat, socialize, play or exercise should be provided and must be linked by a defined pedestrian circulation system (Fig F-9-ff).

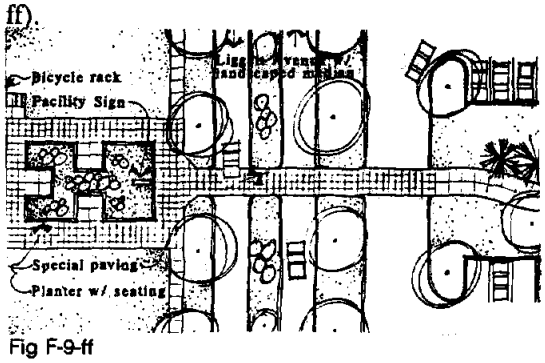


Fig F-9-ff

Mechanical Equipment

Mechanical equipment and other unsightly elements such as loading docks should be located away from pedestrian and parking areas and screened with landscaping or other means.

SECTION B
ZONAL APPLICATION

Zone VII - Medical Zone

Madigan Army Medical Center, Dental Clinics, Dispensaries

Visual Building Design Factors

Shape and Proportion

Proportion should be based on the Golden Rectangle.

Size, Massing and Scale

The scale of buildings in this zone (with the obvious exception of the new MAMC) should be human, but they should be massed to communicate their importance.

Surface Articulation

Since clinics and dispensaries tend to be relatively small buildings, articulation should primarily emphasize entries.

Texture

This element must be handled well because of the possible conflict that exists: smooth, clean looking textures are called for in a medical building but at the same time the building must not appear too machine or high-tech oriented. Textured material such as brick or split-face concrete masonry units should be used but detailing should be very precise and "clean" (Fig F-9-gg).

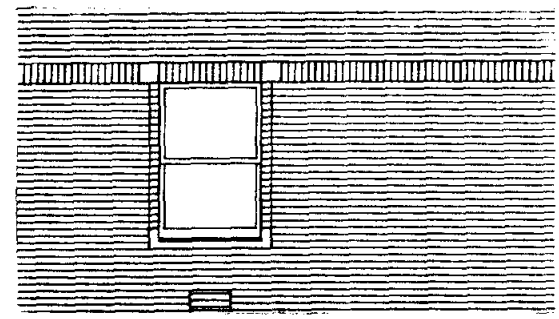


Fig F-9-gg

Rhythm

No unique requirements/guidance for this Zone.

Light & Shadow

No unique requirements/guidance for this Zone.

Expressions of Hierarchy

Clinics and dispensaries should generally reflect their status as an important support building, and should rank just below Battalion Headquarters on the hierarchal scale.

Style

Clinics and other small medical buildings should be styled to relate to their context but should emphasis the values of the Military Park Theme as demonstrated in the Garrison Area. Another possibility is to relate "satellite" building to the new Madigan Army Medical Center in detailing, color scheme, etc.

Building Components

Major Building Elements

Base

May be used to draw attention to the buildings and should contrast with rest of building.

Entrances

Should be "welcoming" and sheltering; pitched roofs (5/12) of metal or tile in color which contrasts with basic building are appropriate.

Walls

As stated in "Texture", walls should be of a medium texture material such as brick or split-face concrete masonry units with special attention to precise detailing.

Fenestration

Views out of waiting areas are desirable as is natural lighting through high wall windows in exam rooms, etc. to help prevent closed-in feelings in a possibly stressful situation.

Roof

Pitched roofs (5/12) of metal or clay or concrete tile in medium grey colors are generally appropriate on smaller buildings and at entries (Fig F-9-hh).

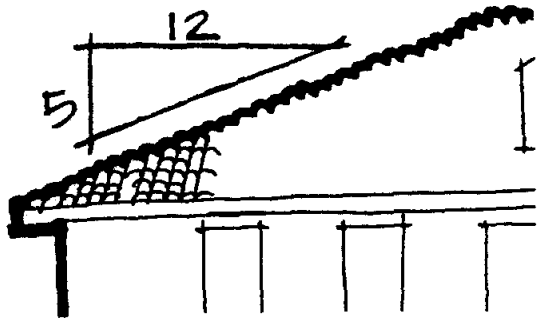


Fig F-9-hh

Miscellaneous Elements

Mechanical Equipment

Mechanical Equipment and dumpsters should be located away from entries and screened from view with landscaping or other means.

SECTION B
ZONAL APPLICATION

Zone VIII - Open Space

Natural Areas, Developed Areas of Inactive and Active Uses

Visual Building Design Factors

Shape and Proportion

Proportions should follow the Golden Rectangle or be similar to those at the Old Main Gate (Fig F-9-ii).

Fig F-9-ii

Size, Massing and Scale

Most buildings in this zone will be small and should maintain a human scale.

Texture

A rustic, frontier texture shall predominate.

Style

All buildings located in this zone should be constructed in the "cobblestone and timber" style of the original Main and Madigan Gates and the service station west of the Garrison Area (Fig F-9-jj). Exempted from this guideline are buildings located in parks or other open spaces which are integral parts of a cohesive, identifiable development. Such buildings should be designed to relate strongly to that development.

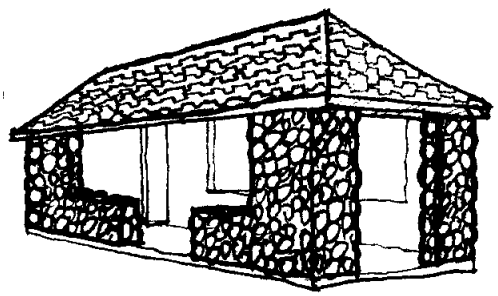


Fig F-9-jj

Building Components

Walls

Walls are to be of cobblestone or river rock similar to that found in the above mentioned buildings.

Roof

The roof will be the dominant element of most Zone VIII buildings. The standard should be a hip roof (5/12 pitch) with cedar shakes (preferably fire resistant).

Miscellaneous Elements

Plazas and Courtyards

Because of the outdoor, recreational use of most Zone VIII buildings, some outdoor paved space is probably called for at each building. These spaces should link the semi-enclosed buildings with the natural environment through paving materials and landscaping.

ATTACHMENT 10

PROGRESS COLLAPSE ANALYSIS GUIDELINES

This page intentionally left blank.

DEPARTMENT OF DEFENSE
MINIMUM ANTITERRORISM STANDARDS FOR BUILDINGS

GUIDANCE ON STRUCTURAL REQUIREMENTS

30 September 2003

1. Scope. The following provides guidance for designers to use in implementing the structural requirements contained in paragraph B-2 of the DoD Minimum Antiterrorism Standards For Buildings (UFC 4-010-01) (hereinafter referred to as the UFC). This guidance may be used until more formal guidance is established in the DoD Security Engineering Manual.

2. Introduction. The intent of the requirements in paragraph B-2 is to build robustness into the structural systems of buildings three stories or more. This robustness is to prevent but not necessarily eliminate an inordinate amount of collapse of a structure due to a bombing event. The landmark event, from an AT/FP (Antiterrorism/Force Protection) perspective, that caused consideration for the prevention of collapse was the bombing of the A. P. Murrah Federal Building in Oklahoma City. The overwhelming cause of fatalities in that event was due to the progressive collapse of the building's structural elements.

3. Definitions. For the purpose of this guidance, the following definitions are used:

3.1. Three stories or more. Three stories or more includes structures with three or more above ground floors, or two story buildings with an exposed basement wall, as in a walkout basement. These three story or more structures will be refer to as multistory structures in this guidance

3.2. Threat/risk analysis. The threat/risk analysis is performed in accordance with TM 5-853-1, Chapter 3 to define the design criteria to protect an asset. This analysis defines the design criteria and includes asset descriptions, aggressors, tactics, tools, weapons, explosives, and the levels of protection. The UFC defines the minimum measures the designer need to consider for every inhabited building within DoD regardless of threat. When the designer has been given a threat/risk analysis, they need to use that as design criteria in addition to these UFC requirements.

4. Progressive Collapse Avoidance, UFC Standard 7, Paragraph B-2.1. A progressive collapse is the chain reaction of structural failures following damage to a relatively small portion of the structure. Therefore, damage resulting from a progressive collapse is out of proportion to the damage that initiated the collapse. The consequences of progressive collapse are unnecessary loss of life, and the trapping of survivors in the collapsed structure. Progressive collapse is considered a significant risk for multistory

buildings. The superstructure for all new and existing inhabited buildings of multistory structures, are to be designed to sustain local damage while the structural system as a whole remains stable and not damaged to an extent disproportionate to the original local damage. This is achieved through an arrangement of structural elements that provides stability to the entire structural system by transferring loads from the locally damaged area to adjacent regions capable of resisting those loads without exceeding damage limits or collapsing. In order to prevent progressive collapse, the structure should have sufficient continuity, redundancy, or energy dissipating capacity (ductility, damping, hardness, etc.), or a combination thereof, in the members and connections of the structure. Further guidance is available in the American Society of Civil Engineers Standard (ASCE) 7-98, and will be provided in the future DoD Security Engineering Manual.

4.1. Design Approach. The sequences of events that occur during a potential progressive collapse event are diagrammed in Figure 1. However, there are two different approaches that can be used to obtain resistance to progressive collapse. These approaches are referred to as the "Direct design" and the "Indirect design" and are defined as follows:

4.1.1. Direct design is the explicit consideration of resistance to progressive collapse during the design process through either the "alternate load path method" or the "specific local resistance method". The alternate load path method allows local failure to occur, but seeks to provide alternate load paths so that the damage is absorbed and major collapse is averted. The specific local resistance method seeks to provide sufficient strength to resist failure by defining a load for which the structure must be designed.

4.1.2. Indirect design is the implicit consideration of resistance to progressive collapse during the design process through the provision of minimum levels of strength, continuity, and ductility.

4.1.3. The guidance presented in this document adopts the alternate load path methodology of the direct design approach. Other methods may be included in the DoD Security Engineering Manual as appropriate. The primary objective of the progressive collapse analysis is to check the structure for alternative load paths after some elements are potentially lost through some abnormal loading, such as an explosive event. These alternative load paths are to provide sufficient damage tolerance to minimize the loss of life that might otherwise occur, and to allow for the safe egress of occupants from the damaged structure before collapse occurs.

4.2. Alternate Load Path Analysis Procedure. The progressive collapse analysis must be performed for all inhabited structures regardless of any other required load analyses (i.e., blast, seismic, wind, etc.). This procedure is performed using a 2D or 3D analysis of the structure. The structure is evaluated to determine how the structural loads are carried throughout the horizontal and vertical structural systems when either: one primary vertical or one primary horizontal structural element is removed, as required by

Paragraph B-2.1.2, Exterior Member Removal. This should be performed at several representative locations throughout the structure. For inhabited structures where the threat/risk analysis indicates that there is no threat to the facility and therefore, only the DoD minimum standards apply, then removal of either the primary vertical or primary horizontal structural elements shall be limited to external building perimeter members as described below. Where the threat/risk analysis indicates only an external explosive threat, then removal of either the primary vertical or primary horizontal structural elements shall also be limited to external building perimeter members as described below. Where the threat/risk analysis indicates that there is an internal explosive threat, then removal of either the primary vertical or primary horizontal structural elements shall include the removal of primary internal structural elements as well as external structural elements. Dead and live loads associated with the removed elements shall be distributed to adjacent members or to the floor in the story below the removed elements. For the situation where the load will be distributed to the floor below, the load shall be increased to account for the impact of the falling load to the floor below. To determine the increase in load due to impact, the methodology provided in section C.5.3.3.5 of ASCE 7-98 may be used except the time interval used to decelerate the falling load shall be 0.1 seconds unless otherwise demonstrated to be different through test data. As an alternative, analytical techniques that use dynamic analysis may be used to account for impact. The progressive collapse analysis begins with the removal of the following structural elements:

4.2.1. Moment resisting frame systems. Remove only one column or one beam at any level within the structure for each analysis. Any in-fill walls that provide lateral support to the column or beam on either side of a removed column, or above a removed beam shall also be removed. For concrete construction, if a structural slab system (i.e., flat slab, waffle slab, etc.) is used (instead of beams), remove one full bay of the slab. In this case, a bay is defined as the area bounded by four columns.

4.2.2. Loadbearing wall systems. At any floor level, remove a width of wall horizontally equal to two times the wall height but no less than the distance between expansion or control joints. At any floor level at corners, remove a width of wall equal to the wall height in each direction horizontally, but no less than the distance between expansion or control joints. Wall height is defined as the vertical distance between horizontal supporting elements. The width of wall to be removed may be reduced to the actual distance between vertical intersecting elements that are loadbearing and are structurally connected to the wall being removed. For analyses that require the removal of internal members, the area of horizontal structural elements to be removed shall be equal in width to the width of wall removed and in depth, equal to the distance back to the first interior loadbearing element.

4.2.3. Braced frame systems. Initiate analysis by the removal of only one column, or one beam for each analysis as described for the moment resisting frame systems. Provide redundant bracing along a column line such that the loss of a column or beam along with one bay of bracing will not result in the collapse of the remaining

portions of the building. Bracing may consist of cross members, knee braces or "K" braces.

4.2.4. Hybrid frame systems. For these structures, initiate the analysis by the removal of appropriate walls, columns, beams, or slabs using criteria provided in the discussion above for the different frame systems.

4.3. Methods of Analysis. With the appropriate member removed from the structure, perform a two- or three-dimensional static or dynamic linear elastic or non-linear structural analysis as indicated below.

4.3.1. For linear elastic methods, when the analysis indicates that the ultimate moment capacity of a member is exceeded, release the rotational degree of freedom for the member, insert a fixed resistant moment equal to the ultimate moment of the yielding member, and reanalyze the revised structure. If the shear capacity of a member is exceeded, the member is considered a failed member. A failed member must be removed from the model before proceeding with the remainder of the analysis. When a failed member is removed, any dead or live loads associated with the member must be accounted for by distribution to other members. This can be done by distributing the load to other members in the same story as the failed member or by adding the load of the failed member – including impact - to the members in the story below the failed member. Perform this analysis in an iterative manner until the structure stabilizes. If the analysis indicates that the structure will not stabilize, then progressive collapse occurs. This will require revision of the design before repeating the analysis procedure from the beginning.

4.3.2. For non-linear methods, only a single iteration of the analysis is required unless member shear capacity is exceeded or member response limits are exceeded. If member shear capacity or response limits are exceeded, the member is no longer considered capable of carrying load and is considered a failed member. Failed members shall be removed from the model before the remainder of the analysis can be performed. When a failed member is removed, any dead or live loads associated with the member must be accounted for by distribution to other members. This can be done by distributing the load to other members in the same story as the failed member or by adding the load – including impact - of the failed member to the members in the story below the failed member. If the analysis indicates that progressive collapse will occur, then revise the design as required, and repeat the analysis procedure from the beginning.

4.4. Limits of Damage. For buildings 3-stories or greater an acceptable level of damage resulting from the removal of the primary load carrying elements may extend into the story above and below the area where the member is being removed. For beam and column framed systems, the damage shall not extend horizontally to an area greater than one bay in any direction from a column unless the facility owner requires more stringent limits. For other systems, damage shall not extend horizontally outside an area greater than 750 sq. ft (70 m^2) per floor or 15 percent of the floor area – whichever is

less.[1] If the damage exceeds the allowable amount, revise the design and repeat the progressive collapse analysis procedure from the beginning.

4.5. Loading. To avoid an overly conservative analysis, reduce the assumed loading on the structure to what is reasonably expected as indicated below. Note that the design live load is reduced to one-half of the total anticipated value.

$$P = D + 0.5*L + 0.2*W$$

Where: D = design dead load,
L = design live load, and
W = design lateral wind load.

4.6. Material and Member Properties.

4.6.1. For concrete and steel, increase the strength of these materials to 10% above the specified design strength. This provides a realistic value of actual strengths in the materials. For masonry and wood, use the actual design strength without increase.

4.6.2. For all members in flexure, compression, torsion, and tension, use the nominal capacity, i.e., do not apply strength reduction (ϕ) factors. For all members in shear, evaluate by applying the appropriate strength reduction (ϕ) factors.

4.6.3. Note that increases in strength and the removal of strength reduction factors will result in increased member capacities but the designer must still verify that the increased member capacities are achievable through adequate bracing otherwise capacity must be reduced based upon the provided unbraced length of a member.

4.6. Connections. Connections shall develop the capacity of the weaker member being connected to ensure structural integrity is maintained. The structural capacity of the connected parts may be reduced when supported by analysis verifies the response limits shown in table-1 can be met. . In order to ensure ductility and reserve capacity in the connections, all seismic guidance located in TI 809-04 and TI 809-05 may be used, or guidance located within the DAHSCWE Manual (UFC 3-340-01) on connection ductility shall be incorporated.

4.7. Member Response Limits. Table 1 below provides the maximum allowable ductility and/or rotation limits for most structural members to limit the possibility of collapse. The values listed are for typical elements in conventional construction (i.e., construction that has not been hardened to resist an abnormal load such as an explosive event).

[1] See reference Lyendecker and Ellingwood

Table 1. Structural Member Ductility and Rotation Limits

COMPONENT	DUCTILITY (m)[1]	ROTATION (q) [2]	Notes
Reinforced Concrete (R/C) Beam[3]		6-degrees	
R/C One-way Slabs w/o tension membrane[3]		6-degrees	
R/C One-way Slabs w/ tension membrane[3]		12-degrees	
R/C Two-way slabs w/o tension membrane[3]		6-degrees	
R/C Two-way Slabs w/ tension membrane[3]		12-degrees	
R/C Columns (tension controls)[3]		6-degrees	
R/C Columns (compression controls)	1		
R/C Frames		2-degrees	Max sidesway H/25
Prestressed Beams	2		
Steel Beams	20	12-degrees	
Metal Stud Walls	7		
Open Web Steel Joist (based on flexural tensile stress in bottom chord)	6		
Metal Deck	20	12-degrees	
Steel Columns (tension controls)	20	12-degrees	
Steel Columns (compression controls)	1		
Steel Frames		2-degrees	Max sidesway H/25
One-way Unreinforced Masonry (unarched)	1		
One-way Unreinforced Masonry (compression membrane)	1		
Two-way Unreinforced Masonry (compression membrane)	1		
One-way reinforced Masonry		2-degrees	
Two-way Reinforced Masonry		2-degrees	
Masonry Pilasters (tension controls)		2-degrees	
Masonry Pilasters (compression controls)	1		
Wood Stud Walls	2		
Wood Trusses or Joist	2		
Wood Beams	2		
Wood Exterior Columns (bending)	2		
Wood Interior Columns (buckling)	1		

Notes for Table 1.

1. Ductility is defined as the ratio of ultimate deflection to elastic deflection (Xu/Xe).
2. Rotation for members or frames can be determined using Figures 2 and 3 provided below.
3. Concrete having more than 2-degrees rotation must include shear stirrups per requirements of DAHSCWE Manual.

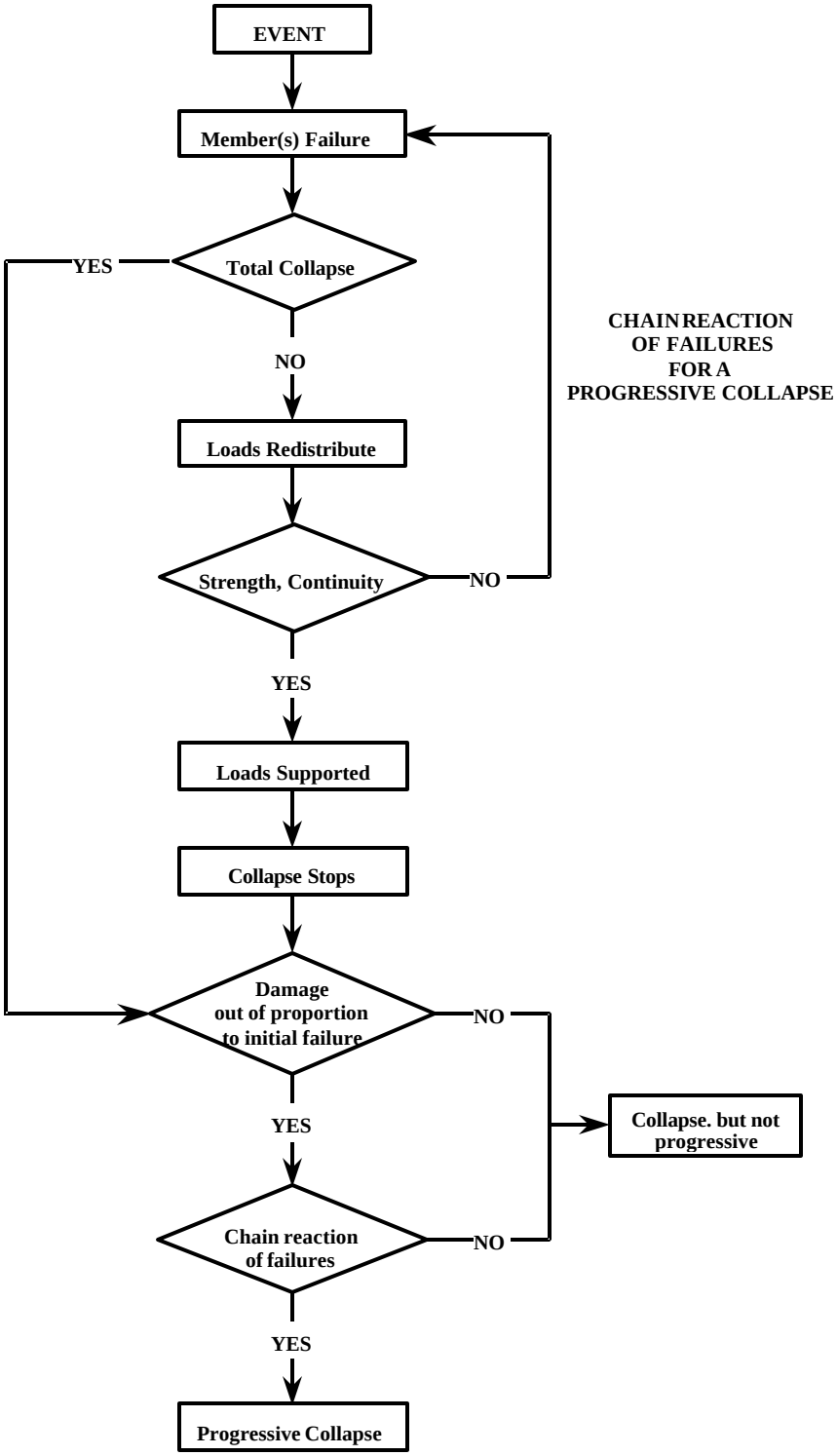


Figure 1. Progressive Collapse Flowchart

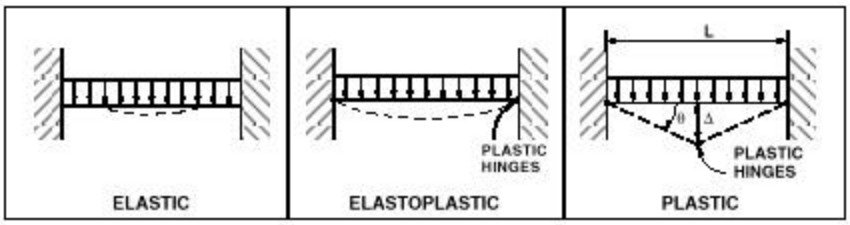


Figure 2. Measurement of q **After Formation of Plastic Hinges**

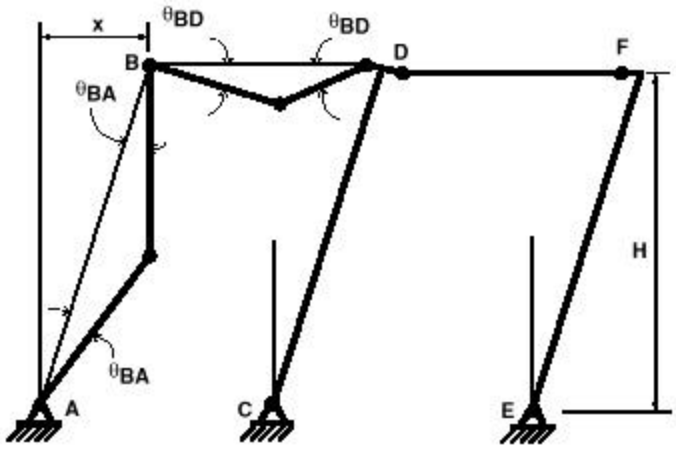


Figure 3. Sidesway and Member End Rotations (q**) for Frames**

4.8. Columns and Walls, UFC Standard 7, Paragraph B-2.1.1. This paragraph states "Design all exterior vertical load-carrying columns and walls to sustain a loss of lateral support at any of the floor levels by adding one story height to the nominal unsupported length. While this standard is based on the assumption of an external threat, where parking beneath buildings is unavoidable, this provision also applies to internal vertical load carrying columns and walls." The loads and material properties in paragraphs 4.5 and 4.6 above shall be used in this analysis. Loads can be assumed to be only applied from the roof and floor levels which remain.

4.9. Exterior Member Removal, UFC Standard 7, Paragraph B-2.1.2. This paragraph requires the alternate load path method described above.

4.10. Floors, UFC Standard 7, Paragraph B-2.1.3. All floors, including interior bays and upper level floors are to be designed for the uplift load indicated. Increased material strengths are to be used with no load factors.

5. Structural Isolation, UFC Standard 8, Paragraph B-2.2. The two paragraphs in this section give the designer the choice of isolating additions to buildings from existing inhabited structures, or analyzing the existing inhabited structure to ensure that collapse of the new structure does not endanger the existing structures inhabitants.

6. Building Overhangs, UFC Standard 9, Paragraph B-2.3. This section advises against using building overhangs and has three requirements that must be met if they are used. The goal is to provide an equivalent level of protection for inhabitants of a vulnerable overhang.

6.1. Paragraph B-2.3.1. Parking and roadways are not allowed beneath overhangs to reduce the likelihood of a vehicle bomb being located there

6.2. Paragraph B-2.3.2. Floors are to be designed for the specified vehicle bomb beneath them, even if parking and roads are not beneath the overhang.

6.3. Paragraph B-2.3.3. Superstructure. Because an overhang is more susceptable to collapse, an analysis for progressive collapse has to be done, even for two story structures.

7. Exterior Masonry Walls, UFC Standard 10, Paragraph B-2.4. This paragraph requires a minimum amount of reinforcing in new exterior walls of buildings meeting the standoff requirements. For existing facilities, and for buildings not meeting site standoff requirements, it is required to perform a blast analysis and design to obtain equivalent protection.

8. References:

8.1. ASCE 7-98. *Minimum Design Loads for Buildings and Other Structures, 2000.*

8.2. Conrath, Edward J., et al. *Structural Design for Physical Security, State of the Practice.* American Society of Civil Engineers, Reston, VA. 1999.

8.3. Ellingwood, Bruce and E.V. Leyendecker. "Approaches of Design Against Progressive Collapse." Journal *of the Structural Division*, Proceedings of the American Society of Civil Engineers, Vol. 104, No. ST3. March 1978.

8.4. Hinmann, Eve E. and David J. Hammond. *Lessons From the Oklahoma City Bombing, Defensive Design Techniques.* American Society of Civil Engineers, New York. 1997.

8.5. Leyendecker, Edgar V. and Bruce R. Ellingwood. *Design Methods for Reducing the Risks of Progressive Collapse in Buildings.* National Bureau of Standards, Washington, DC, Apr 1977.

8.6. Protective Design – Mandatory Center of Expertise Technical Report 92-2, *Facility And Component Explosive Damage Assessment Program (FACEDAP) – Theory Manual – Version 1.2,* SwRI Project No. 0605145-001, Modified May 1994.

8.7. TI 809-04, Seismic Design Buildings, 31 December 1998.

8.8. TI 809-05, Seismic Evaluation and Rehabilitation for Buildings, November 1999.

8.9. TM 5-853-1, Security Engineering Project Development, 12 May 1994.

8.10. UFC 3-340-01, *Design and Analysis of Hardened Structures to Conventional Weapons Effects* (June 2002).

8.11. UFC 4-010-01, DoD Minimum Antiterrorism Standards, 31 July 2002.

9. Point of Contact. This guidance is anticipated to be incorporated into the DoD series of Manuals on Security Engineering. Until that time, it is only guidance and not mandatory. Should you have comments or concerns about the guidance, please contact Ed Conrath by phone at (402)221-3152 or via e-mail at ed.j.conrath@usace.army.mil.

ATTACHMENT 11

LIST OF RFP DRAWINGS

This page intentionally left blank.

SHEET NO.	PLATE NO.	TITLE
GENERAL		
1	G1.1	TITLE & AREA MAPS
CIVIL (Attachment 1) Echo Block Development		
2	C101	NORTH FORT SITE PLAN
3	C102	GENERAL SITE PLAN
4	C103	SITE PLAN
5	C104	UTILITY PLAN
6	C105	PROPANE TANK FARM SITE PLAN
CIVIL (Attachment 1) Alpha Block Development		
7	C106	DEMOLITION PLAN
8	C107	SITE PLAN 1
9	C108	SITE PLAN 2
10	C109	UTILITY PLAN
11	C110	PROPANE TANK FARM SITE PLAN
12	C111	CIVIL DETAILS
LANDSCAPE ARCHITECTURE (Attachment 1)		
13	L101	GENERAL LANDSCAPE CONCEPTS
14	L102	SUMMARY IRRIGATION PLAN
15	L103	IRRIGATION DETAILS
16		
MECHANICAL (Attachment 1) Echo Block Development		
17	M101	PROPANE/AIR SYSTEM SITE PLAN
18	M102	PROPANE/AIR SYSTEM LAYOUT
19	M103	PIPING DIAGRAM
20	M104	VAPORIZER AND MIXER SCHEMATIC
MECHANICAL (Attachment 1) Alpha Block Development		
21	M105	PROPANE/AIR SYSTEM SITE PLAN
22	M106	PROPANE/AIR SYSTEM LAYOUT
ELECTRICAL (Attachment 1) Echo Block Development		
23	E101	ELECTRICAL SITE PLAN
24	E102	POWER ONE-LINE DIAGRAM
ELECTRICAL (Attachment 1) Alpha Block Development		
25	E103	ELECTRICAL SITE PLAN 1
26	E104	ELECTRICAL SITE PLAN 2
	E105	POWER ONE-LINE DIAGRAM
ARCHITECTURAL (Attachment 2)		
FY02 BARRACKS & SOLDIER COMMUNITY BUILDINGS (SCB) (Attachment 2)		
27	A101	COMPOSITE FIRST FLOOR PLAN
28	A102	NW PARTIAL FIRST FLOOR PLAN

SHEET NO.	PLATE NO.	TITLE
ARCHITECTURAL (Attachment 2) "CONTINUED"		
29	A103	SCB FLOOR PLAN
FY02 BARRACKS & SOLDIER COMMUNITY BUILDINGS (SCB) (Attachment 2)		
30	A104	NORTH AND SOUTH ELEVATIONS
31	A105	EAST AND WEST ELEVATIONS
32	A106	MODULE PLANS
FY03 BARRACKS & SOLDIER COMMUNITY BUILDINGS (SCB) (Attachment 2)		
33	A107	COMPOSITE FIRST FLOOR PLAN-NORTH
34	A108	BARRACK B (NORTH)-FIRST FLOOR PLAN
35	A109	SCB (NORTH)-FLOOR PLAN
36	A110	BARRACK B (NORTH)-NORTH & SOUTH ELEVATIONS
37	A111	BARRACK B (NORTH)-EAST & WEST ELEVATIONS
38	A112	ENLARGED PLANS - MODULE CLUSTERS
39	A113	EXTERIOR DETAILS
ECHO BLOCK - LARGE COMPANY OPS FACILITY (Attachment 3)		
40	A301	FIRST FLOOR PLAN
41	A302	SECOND FLOOR PLAN
42	A303	ELEVATIONS I - NORTH & SOUTH
43	A304	ELEVATIONS II
ECHO BLOCK - LARGE BATTALION HEADQUARTERS (Attachment 4)		
44	A401	FIRST FLOOR PLAN
45	A402	SECOND FLOOR PLAN
46	A403	ROOF PLAN
47	A404	EXTERIOR ELEVATIONS
48	A405	FIRST FLOOR PLAN
49	A406	SECOND FLOOR PLAN
FY03 LAWNMOWER STORAGE BUILDING (Attachment 5)		
50	A501	LAWNMOWER STORAGE
SIGNAGE (Attachment 7)		
51	A701	EXTERIOR SIGNS
52	A702	INTERIOR SIGNS
GEOTECH (Attachment 8)		
53	B101	EXPLORATION LOGS
54	B102	EXPLORATION LOGS
55	B103	EXPLORATION LOGS
56	B104	EXPLORATION LOGS
57	B105	EXPLORATION LOGS
58	B106	EXPLORATION LOGS
59	B107	EXPLORATION LOGS
60	B108	LOCATIONS OF EXPLORATION
61	B109	LOCATIONS OF EXPLORATION

REVISIONS TO DRAWINGS BY NOTATION

Plate A402: Refer to second floor area shown as "MENS SHOWER." Convert to "WOMENS TOILET." Also providing one men's shower and 1 women's shower on second floor is preferred. (No resubmittal of any associated RFP drawing is required for this change.)

Plate C107: Add Note 4 to read, "New work is indicated by dark lines; existing features are indicated by half-tone." Add Note 5 to read, "Provide entry to FY04 Barracks parking from intersections shown on 12th Street, north and south of FY04 Whole Barracks site.

Plate C109: Revise parking callout from 300 parking spaces to 240 parking spaces.

Plate M101: Revise Note 2 to read, "For natural gas, Contractors shall coordinate with PSE (Puget Sound Energy) for pipe layout for FY04 buildings. Natural gas lines are to be installed by PSE up to the gas meter. Contractor is responsible for gas piping from the meter to the equipment connections. Contractor shall coordinate installation with PSE."

Plate E102: Revise the NEW CABLE TABLE as follows: Cable Number X change "3 #2, Cu, EPR 15kV INSUL" to read "3 #2, Cu, EPR 15kV INSUL, 1 #1/0 B.C. gnd."

Plate E105: 1). Revise cable schedule by adding Cable Number 5, that reads 3 #4/0 Cu, 15kV EPR, 1 #4/0 B.C. gnd. 2). Mark Cable Number 1 as Existing. 3). Revise Diagram by changing the cable run from the Z6 switch at D Street down 12th Street between the manholes and junctions from Cable Number 4 to Cable Number 5.

ATTACHMENT 12

FORCE PROTECTION CRITERIA

Page intentionally blank.

UFC 4-010-01
8 October 2003

UNIFIED FACILITIES CRITERIA (UFC)

DoD MINIMUM ANTITERRORISM STANDARDS FOR BUILDINGS

DISTRIBUTION STATEMENT A: Approved for Public Release;
Distribution is unlimited.

ATTACHMENT 12 R0011

UNIFIED FACILITIES CRITERIA (UFC)

DoD MINIMUM ANTITERRORISM STANDARDS FOR BUILDINGS

Any copyrighted material included in this UFC is identified at its point of use.
Use of the copyrighted material apart from this UFC must have the permission of the copyright holder.

DEPUTY UNDER SECRETARY OF DEFENSE (INSTALLATIONS AND ENVIRONMENT) (Preparing Activity)

J3, DEPUTY DIRECTORATE FOR ANTITERRORISM AND FORCE PROTECTION, JOINT CHIEFS OF STAFF

U.S. ARMY CORPS OF ENGINEERS

NAVAL FACILITIES ENGINEERING COMMAND

AIR FORCE CIVIL ENGINEER SUPPORT AGENCY

Record of Changes (changes are indicated by **1**\ ... /**1**/)

Change No.	Date	Location

This UFC supersedes UFC 4-010-01 of 31 July 2002.

FOREWORD

The Unified Facilities Criteria (UFC) system is prescribed by MIL-STD 3007 and provides planning, design, construction, sustainment, restoration, and modernization criteria, and applies to the Military Departments, the Defense Agencies, and the DoD Field Activities in accordance with USD(AT&L) Memorandum dated 29 May 2002. UFC will be used for all DoD projects and work for other customers where appropriate.

UFC are living documents and will be periodically reviewed, updated, and made available to users as part of the Services' responsibility for providing technical criteria for military construction. Headquarters, U.S. Army Corps of Engineers (HQUSACE), Naval Facilities Engineering Command (NAVFAC), and Air Force Civil Engineer Support Agency (AFCESA) are responsible for administration of the UFC system. Defense agencies should contact the preparing service for document interpretation and improvements. Technical content of UFC is the responsibility of the cognizant DoD working group. Recommended changes with supporting rationale should be sent to the respective service proponent office by the following electronic form: Criteria Change Request (CCR). The form is also accessible from the Internet sites listed below.

UFC are effective upon issuance and are distributed only in electronic media from the following sources:

- Unified Facilities Criteria (UFC) Index http://65.204.17.188//report/doc_ufc.html.
- USACE TECHINFO Internet site http://www.hnd.usace.army.mil/techinfo .
- NAVFAC Engineering Innovation and Criteria Office Internet site http://criteria.navfac.navy.mil.
- Construction Criteria Base (CCB) system maintained by the National Institute of Building Sciences at Internet site http://www.ccb.org .

Hard copies of UFC printed from electronic media should be checked against the current electronic version prior to use to ensure that they are current.

AUTHORIZED BY:

DONALD L. BASHAM, P.E.
Chief, Engineering and Construction Division
U.S. Army Corps of Engineers

DR. JAMES W WRIGHT, P.E.
Chief Engineer
Naval Facilities Engineering Command

KATHLEEN I. FERGUSON, P.E.
The Deputy Civil Engineer
DCS/Installations & Logistics
Department of the Air Force

Dr. GET W. MOY, P.E.
Director, Installations Requirements and Management
Office of the Deputy Under Secretary of Defense (Installations and Environment)

FOREWORD (continued)

This specific document is also issued under the authority of DoD Instruction Number 2000.16, *DoD Antiterrorism Standards* which requires DoD Components to adopt and adhere to common criteria and minimum construction standards to mitigate antiterrorism vulnerabilities and terrorist threats.

This document applies to the Office of the Secretary of Defense (OSD); the Military Departments (including their National Guard and Reserve Components); the Chairman, Joint Chiefs of Staff and Joint Staff; the Combatant Commands; the Office of the Inspector General of the Department of Defense; the Defense Agencies; the Department of Defense Field Activities; and all other organizational entities within the Department of Defense hereafter referred to collectively as “the DoD Components.”

The standards established by this document are minimums set for DoD. Each DoD Component may set more stringent antiterrorism building standards to meet the specific threats in its area of responsibility.

Any changes, updates, or amendments to this particular UFC must have the approval of the DoD Engineering Senior Executive Panel (ESEP).

This document is effective immediately and is mandatory for use by all the DoD Components.

CONTENTS

Page

CHAPTER 1 INTRODUCTION

Paragraph 1-1 GENERAL 1-1
1-1.1 Dynamic Threat Environment 1-1
1-1.2 Responsibility 1-1
1-1.3 Planning and Integration 1-1
1-2 REFERENCES 1-2
1-3 STANDARDS AND RECOMMENDATIONS 1-3
1-4 INTENT 1-3
1-5 LEVELS OF PROTECTION 1-3
1-5.1 DoD Component Standards 1-3
1-5.2 Threat-Specific Requirements 1-3
1-5.3 Critical Facilities 1-3
1-5.4 Explosive Safety Standards 1-4
1-6 APPLICABILITY 1-4
1-6.1 New Construction 1-4
1-6.2 Existing Buildings 1-4
1-6.3 Building Additions 1-5
1-6.4 Leased Buildings 1-5
1-6.5 Expeditionary and Temporary Structures 1-5
1-6.6 National Guard Buildings 1-6
1-6.7 Exemptions 1-6
1-7 PROGRAMMING 1-7
1-7.1 Documentation 1-7
1-7.2 Funding Thresholds 1-7
1-8 INFORMATION SENSITIVITY 1-7
1-8.1 Distribution 1-7
1-8.2 Posting to the Internet 1-7
1-8.3 Plans and Specifications 1-7
1-8.4 Design-Build Contracts 1-8
1-9 HISTORIC PRESERVATION COMPLIANCE 1-8
1-9.1 Security and Stewardship 1-8
1-9.2 Compliance with Laws 1-8
1-9.3 Compliance with DoD Standards 1-8
1-9.4 Designation of National Emergency 1-8
1-10 INTERIM DESIGN GUIDANCE 1-9

CHAPTER 2 PHILOSOPHY, DESIGN STRATEGIES, AND ASSUMPTIONS

Paragraph 2-1 GENERAL 2-1
2-2 PHILOSOPHY 2-1
2-2.1 Time 2-1
2-2.2 Master Planning 2-1
2-2.3 Design Practices 2-1
2-3 DESIGN STRATEGIES 2-2

2-3.1 Maximize Standoff Distance 2-2
2-3.2 Prevent Building Collapse 2-2
2-3.3 Minimize Hazardous Flying Debris 2-2
2-3.4 Provide Effective Building Layout 2-2
2-3.5 Limit Airborne Contamination 2-2
2-3.6 Provide Mass Notification 2-3
2-3.7 Facilitate Future Upgrades 2-3
2-4 ASSUMPTIONS 2-3
2-4.1 Baseline Threat 2-3
2-4.2 Controlled Perimeter....2-4
2-4.3 Government Vehicle Parking....2-4
2-4.4 Levels of Protection....2-5
2-4.5 Minimum Standoff Distances....2-5
2-4.6 Exempted Building Types....2-8
2-4.7 Policies and Procedure....2-9
2-4.8 Design Criteria.... 2-9
2-4.9 Enhanced Fire Safety 2-9
2-4.10 Training 2-10
2-4.11 Expeditionary and Temporary Structures 2-10
2-4.12 Leased Buildings 2-10

APPENDIX A DEFINITIONS....A-1

APPENDIX B DoD ANTITERRORISM STANDARDS FOR NEW AND EXISTING BUILDINGS B-1

APPENDIX C RECOMMENDED ADDITIONAL ANTITERRORISM MEASURES FOR NEW AND EXISTING BUILDINGS....C-1

APPENDIX D DoD ANTITERRORISM STANDARDS FOR EXPEDITIONARY AND TEMPORARY STRUCTURES....D-1

FIGURES

Figure Title

B-1 Standoff Distances and Building Separation – Controlled Perimeter B-3
B-2 Standoff Distances and Building Separation – No Controlled Perimeter... B-3
D-1 Standoff Distances and Separation for Expeditionary and Temporary Structures..... D-5

TABLES

Table Title

2-1 Levels of Protection – New and Existing Buildings..... 2-6
2-2 Levels of Protection – Expeditionary and Temporary Structures..... 2-7
B-1 Minimum Standoff Distances and Separation for New and Existing Buildings..... B-2
D-1 Minimum Standoff Distances and Separation for Expeditionary and Temporary Structures D-4

CHAPTER 1

INTRODUCTION

1-1 **GENERAL.** This document represents a significant commitment by DoD to seek effective ways to minimize the likelihood of mass casualties from terrorist attacks against DoD personnel in the buildings in which they work and live.

1-1.1 **Dynamic Threat Environment.** Terrorism is real, evolving, and continues to increase in frequency and lethality throughout the world. The unyielding, tenacious, and patient nature of the terrorists targeting DoD interests forces us to closely examine existing policies and practices for deterring, disrupting, and mitigating potential attacks. Today, terrorist attacks can impact anyone, at any time, at any location, and can take many forms. Deterrence against terrorist attacks begins with properly trained and equipped DoD personnel employing effective procedures. While terrorists have many tactics available to them, they frequently use explosive devices when they target large numbers of DoD personnel. Most existing DoD buildings offer little protection from terrorist attacks. By applying the Minimum Antiterrorism Standards for Buildings described in this document, we become a lesser target of opportunity for terrorists.

1-1.2 **Responsibility.** Protecting people on a DoD installation or site must start with an understanding of the risk of a terrorist attack. Application of the standards herein should be consistent with the perceived or identified risk. Everyone in DoD is responsible for protecting our people and other resources.

1-1.2.1 **Individuals.** Each DoD employee, contractor, or vendor is responsible for minimizing opportunities for terrorists to threaten or target themselves, their co-workers, and their families on DoD installations or sites.

1-1.2.2 **Installation Commanders.** The installation commander must protect the people on his/her installation, or site, by managing and mitigating the risk to those people in the event of a terrorist attack. The installation commander is responsible for applying the standards herein, consistent with the identified or perceived risk of DoD people being hurt or killed.

1-1.2.3 **Service Secretaries and Agency Heads.** The heads of DoD Components shall ensure compliance and issue guidance to implement these standards. That guidance will include direction to require the installation commander to notify or seek approval from a major command or claimant or higher headquarters level if a new construction or renovation project, or a leased facility, will not meet any one or more of the standards. Heads of DoD Components will establish plans and procedures to mitigate risks in such situations.

1-1.3 **Planning and Integration.** When the best procedures, proper training, and appropriate equipment fail to deter terrorist attacks, adherence to these standards goes far in mitigating the possibility of mass casualties from terrorist attacks against DoD personnel in the buildings in which they work and live. Although predicting the specific threat to everyone is not possible, proper planning and integration of those plans provides a solid foundation for preventing, and if necessary reacting, when

terrorist incidents or other emergencies unfold. An effective planning process facilitates the necessary decision making, clarifies roles and responsibilities, and ensures support actions generally go as planned. A team consisting of the chain of command and key personnel from all appropriate functional areas who have an interest in the building and its operation executes this planning process. The team should include, as a minimum, antiterrorism/force protection, intelligence, security, and facility engineering personnel. This team is responsible for identifying requirements for the project, facilitating the development of supporting operational procedures, obtaining adequate resources, and properly supporting all other efforts needed to prudently enhance protection of the occupants of every inhabited DoD building. For further information on planning and integration, refer to the *DoD Security Engineering Planning Manual*.

1-2 REFERENCES.

- Interim Department of Defense Antiterrorism / Force Protection Construction Standards, December 16, 1999 (hereby cancelled)
- DoD Instruction 2000.16, DoD Antiterrorism Standards, June 14, 2001.
- DoD Handbook 2000.12-H, Protection of DoD Personnel and Activities Against Acts of Terrorism and Political Turbulence, February 1993
- American Society of Civil Engineers Standard (ANSI/ASCE) 7-98, Minimum Design Loads for Buildings and Other Structures, January 2000
- Unified Facilities Criteria (UFC) 4-010-02, *DoD Minimum Antiterrorism Standoff Distances for Buildings; (For Official Use Only (FOUO))*
- Unified Facilities Criteria (UFC) 4-011-01, *DoD Security Engineering Planning Manual*, (Draft)
- Unified Facilities Criteria (UFC) 4-011-02, *DoD Security Engineering Design Manual*, (Draft)
- Sections 2805(a)(1) and 2805(c)(1) of Title 10, US Code
- Security Engineering Working Group web site (http://sewg.nwo.usace.army.mil)
- DoD 6055.9-STD, DoD Ammunition and Explosive Safety Standards, July 1999
- SHAPE Document 6160/SHLOFA-059/82, NATO Approved Criteria and Standards for Tactical and Transport Airfields (6th Addition), 30 March 1982 (NATO Restricted)
- Unified Facilities Criteria (UFC) 4-021-01, *Design and O&M: Mass Notification Systems, December 2002*

1-3 **STANDARDS AND RECOMMENDATIONS.** Mandatory DoD minimum antiterrorism standards for new and existing inhabited buildings are contained in Appendix B. Additional recommended measures for new and existing inhabited buildings are included in Appendix C. Mandatory DoD minimum antiterrorism standards for expeditionary and temporary structures are contained in Appendix D.

1-4 **INTENT.** The intent of these standards is to minimize the possibility of mass casualties in buildings or portions of buildings owned, leased, privatized, or otherwise occupied, managed, or controlled by or for DoD. These standards provide appropriate, implementable, and enforceable measures to establish a level of protection against terrorist attacks for all inhabited DoD buildings where no known threat of terrorist activity currently exists. While complete protection against all potential threats for every inhabited building is cost prohibitive, the intent of these standards can be achieved through prudent master planning, real estate acquisition, and design and construction practices. Where the minimum standoff distances detailed in these standards are met, most conventional construction techniques can be used with only marginal impact on the total construction or renovation cost. The financial impact of these standards will be significantly less than the economic and intangible costs of a mass casualty event.

1-5 **LEVELS OF PROTECTION.** The levels of protection provided by these standards meet the intent described above and establish a foundation for the rapid application of additional protective measures in a higher threat environment. These standards may be supplemented where specific terrorist threats are identified, where more stringent local standards apply, or where local commanders dictate additional measures. Detailed descriptions of the levels of protection are provided in Chapter 2 and the *DoD Security Engineering Planning Manual*.

1-5.1 **DoD Component Standards.** Where DoD Component standards such as geographic Combatant Commander standards address unique requirements, those standards will be incorporated in accordance with their implementing directives, but not to the exclusion of these standards.

1-5.2 **Threat-Specific Requirements.** Where a design basis threat is identified whose mitigation requires protective measures beyond those required by these standards or DoD Component standards, those measures will be developed in accordance with the provisions of the *DoD Security Engineering Planning Manual*. The provisions of the *DoD Security Engineering Planning Manual* include the design criteria that will be the basis for the development of the protective measures, estimates of the costs of those measures, and detailed guidance for developing the measures required to mitigate the identified threat. The design criteria include the assets to be protected, the threat to those assets, and the desired level of protection. Use of the *DoD Security Engineering Planning Manual* will ensure uniform application, development, and cost estimation of protective measures throughout DoD.

1-5.3 **Critical Facilities.** Buildings that must remain mission operational during periods of national crisis and/or if subjected to terrorist attack should be designed to significantly higher levels of protection than those provided by these standards.

1-5.4 **Explosive Safety Standards.** These antiterrorism standards establish criteria to minimize the potential for mass casualties and progressive collapse from a terrorist attack. DoD 6055.9-STD, *DoD Ammunition and Explosive Safety Standards* as implemented by Service component explosive safety standards, establish acceptable levels of protection for accidental explosions of DoD-titled munitions. The explosive safety and antiterrorism standards address hazards associated with unique events; therefore, they specify different levels of protection. Compliance with both standards is required. Where conflicts arise, the more stringent criteria will govern.

1-6 **APPLICABILITY.** These standards apply to all DoD Components, to all DoD inhabited buildings, to billeting, and to all DoD expeditionary and temporary structures in accordance with the following:

1-6.1 **New Construction.** Implementation of these standards is mandatory for all new construction regardless of funding source in accordance with the following:

1-6.1.1 **Military Construction (MILCON).** These standards apply to MILCON projects starting with the Fiscal Year 2004 Program. Projects programmed or designed under the Interim DoD Antiterrorism / Force Protection Construction Standards do not have to be reprogrammed or redesigned to meet the requirements of these standards. The provisions of the Interim Standards will apply to those projects. Due to minor changes between these standards and the Interim Standards, projects prior to the Fiscal Year 2004 Program should comply with these standards where possible.

1-6.1.2 **Host-Nation And Other Foreign Government Funding.** These standards apply to new construction funded under host-nation agreements or from other funding sources starting in Fiscal Year 2004 or as soon as negotiations with the foreign governments can be completed.

1-6.1.3 **Other Funding Sources.** These standards apply to all new construction projects funded by sources other than MILCON (such as Non-Appropriated Funds, Operations and Maintenance, and Working Capital Funds) starting with Fiscal Year 2004. Projects funded prior to that fiscal year should comply with these standards where possible.

1-6.2 **Existing Buildings.** These standards will apply to existing facilities starting with the Fiscal Year 2004 program when triggered as specified below, regardless of funding source. Projects funded prior to that fiscal year should comply with these standards where possible. For existing leased buildings see paragraph 1-6.4.

1-6.2.1 **Major Investments.** Implementation of these standards to bring an entire building into compliance is mandatory for all DoD building renovations, modifications, repairs, and restorations where those costs exceed 50% of the replacement cost of the building except as otherwise stated in these standards. The 50% cost is exclusive of the costs identified to meet these standards. Where the 50% threshold is not met, compliance with these standards is recommended.

1-6.2.2 **Conversion of Use.** Implementation of these standards is mandatory when any portion of a building is modified from its current use to that of an inhabited building, billeting, or a primary gathering building for one year or more. Examples would include a warehouse (uninhabited) being converted to administrative (inhabited) use and an inhabited administrative building being converted to a primary gathering building or billeting.

1-6.2.3 **Glazing Replacement.** Because of the significance of glazing hazards in a blast environment, implementation of the glazing provisions of these standards is mandatory for existing inhabited buildings within any planned window or door glazing replacement project. Such replacements may require window frame modification or replacement.

1-6.3 **Building Additions.** Additions to existing inhabited buildings shall comply with the minimum standards for new buildings. If the addition is 50% or more of the gross area of the existing building, the existing building shall comply with the minimum standards for existing buildings.

1-6.4 **Leased Buildings.** DoD personnel occupying leased buildings deserve the same level of protection as those in DoD-owned buildings. Implementation of these standards is therefore mandatory for all facilities leased for DoD use and for those buildings in which DoD receives a space assignment from another government agency except as established below. This requirement is intended to cover all situations, including General Services Administration space, privatized buildings, and host-nation and other foreign government buildings. This requirement is applicable for all new leases executed on or after 1 October 2005 and to renewal or extension of any existing lease on or after 1 October 2009. Leases executed prior to the above fiscal years will comply with these standards where possible.

1-6.4.1 **Partial Occupancy.** These standards only apply where DoD personnel occupy leased or assigned space constituting at least 25% of the net interior useable area or the area as defined in the lease, and they only apply to that portion of the building that is occupied by DoD personnel.

1-6.4.2 **New Buildings.** Buildings that are built to lease to DoD as of the effective date established above shall comply with the standards for new construction.

1-6.4.3 **Existing Buildings.** New leases or renewals of leases of existing buildings will trigger the minimum standards for existing buildings in accordance with the effective dates established above.

1-6.5 **Expeditionary and Temporary Structures.** Implementation of these standards is mandatory for all expeditionary and temporary structures that meet the occupancy criteria for inhabited or primary gathering buildings or billeting. See Appendix D for structure types that meet the expeditionary and temporary structures criteria.

1-6.5.1 **New Structures.** These standards apply to all new expeditionary sites effective immediately.

1-6.5.2 **Existing Structures.** These standards will apply to all existing expeditionary activities beginning in Fiscal Year 2004. Prior to that fiscal year, existing expeditionary structures should comply with these standards where possible.

1-6.6 **National Guard Buildings.** Any National Guard building that uses Federal funding for new construction, renovations, modifications, repairs, restorations, or leasing and that meets the applicability provisions above, will comply with these standards.

1-6.7 **Exemptions.** Unless DoD Components dictate otherwise, the following buildings are exempt from requirements of these standards as specified below. However, compliance with these standards for those buildings is recommended where possible. In addition, there are some exemptions to elements of individual standards that are included in the text of those standards in appendix B. The rationale for all exemptions is detailed in chapter 2.

1-6.7.1 **Family Housing With 12 Units Or Fewer Per Building.** These buildings are exempt from all provisions of these standards.

1-6.7.2 **Stand-Alone Franchised Food Operations.** These buildings are exempt from standoff distances to parking and roadways. All other standards apply.

1-6.7.3 **Stand Alone Shoppettes, Mini Marts And Similarly Sized Commissaries.** These buildings are exempt from standoff distances to parking and roadways. All other standards apply.

1-6.7.4 **Small Stand-Alone Commercial Facilities.** Stand-alone commercial facilities similar in size to those in paragraph 1-6.7.3 and that have similar operational requirements are exempt from standoff distances to parking and roadways. All other standards apply. An example of such a commercial facility would be a bank with a drive-through window.

1-6.7.5 **Gas Stations And Car Care Centers.** These facilities are exempt from all provisions of these standards.

1-6.7.6 **Medical Transitional Structures And Spaces.** These structures are exempt from standoff distances to parking and roadways. All other standards apply.

1-6.7.7 **Other Transitional Structures And Spaces.** Transitional structures and spaces that will be occupied for less than one year and that are not billeting, primary gathering buildings, or medical transitional structures, are exempt from standoff distances to parking and roadways. All other standards apply.

1-6.7.8 **Recruiting Stations In Leased Spaces.** Recruiting stations located in leased spaces are exempt from all provisions of these standards.

1-6.7.9 **Military Protective Construction.** Facilities designed to the North Atlantic Treaty Organization (NATO) (or equivalent) standards for collaterally protected, semi-hardened, protected, and hardened facilities are exempt from all provisions of

these standards; however, the threats included in this standard should be incorporated into the design criteria for the military protective construction. (Refer to SHAPE document 6160/SHLOFA-059-82.)

1-7 **PROGRAMMING.**

1-7.1 **Documentation.** The inclusion of these standards into DoD construction or the inclusion of protective measures above the requirements of these standards will be incorporated into the appropriate construction programming documents (such as the DD Form 1391) in accordance with DoD Component guidance. Refer to the *DoD Security Engineering Planning Manual* for guidance on the costs for implementing these standards and for providing protective measures beyond these standards.

1-7.2 **Funding Thresholds.** For existing buildings, these standards are intended solely to correct design deficiencies to appropriately address emergent life-threatening terrorist risks. As a result, funding thresholds for Unspecified Minor Military Construction and Operations and Maintenance funding may be increased in accordance with 10 USC Sections 2805(a)(1) and 2805 (c)(1).

1-8 **INFORMATION SENSITIVITY.** Some information in these standards is exempt from mandatory disclosure under the Freedom of Information Act. The sensitive information that is exempt is the explosive weights upon which the minimum standoff distances are based, which is included in UFC 4-010-02. Allowing potential aggressors to know the minimum explosive weights that all DoD inhabited buildings are designed to resist could constitute a vulnerability. To minimize the possibility of that information being used against DoD personnel, the following provisions apply:

1-8.1 **Distribution.** Follow governing DoD and Component guidance for specific requirements for handling and distribution of For Official Use Only information. In general, distribution of this document is unlimited. Distribution of the tables (Tables 1 and 2) in UFC 4-010-02 is authorized only to U.S. Government agencies and their contractors. In addition, where it is within Status of Forces Agreements (SOFA) or other similar information exchange agreements, the information in these standards may be distributed to host-nation elements for the purposes of their administration and design of host-nation funded or designed construction.

1-8.2 **Posting To The Internet.** This document may be posted freely to the Internet; however, because the tables (Tables 1 and 2) in UFC 4-010-02 are For Official Use Only they cannot be posted to any web site that is accessible to the general public. In addition, other documents that include information from these standards that are identified as For Official Use Only cannot be posted to web sites accessible to the general public. For Official Use Only information may be posted to protected, non-publicly accessible web sites that comply with standards established by DoD for administration of web sites.

1-8.3 **Plans and Specifications.** The explosive weights from UFC 4-010-02 upon which these standards are based shall not be entered into the plans and specifications unless the plans and specifications are properly safeguarded. Plans and specifications may be posted to the Internet in accordance with existing DoD

Component guidance, but such documents will not include For Official Use Only information. All plans and specifications for inhabited buildings shall include an annotation that cites the version of these standards that was used for design.

1-8.4 **Design – Build Contracts.** Where design – build contracts are employed, prospective contractors will be responsible for developing a design proposal for that project that may be impacted by provisions of these standards. Where that is the case, consider alternate means to provide sufficient information to support their proposals. Consider for example, either specifying specific design loads or specifying the required standoff distance and providing candidate structural systems that would allow for mitigation of the applicable explosive if that standoff was less than the minimum. Once the design – build contract is awarded the contractor will be eligible to receive this complete document for use in the development of the final design package, but that contractor will be responsible for protecting the integrity of the information throughout the contract and through any subcontracts into which that contractor might enter.

1-9 HISTORIC PRESERVATION COMPLIANCE FOR IMPLEMENTATION OF ANTI-TERRORISM STANDARDS.

1-9.1 **Security and Stewardship.** The Department of Defense remains the lead federal agency in balancing security threats with the protection of historic properties. The Department of Defense abides by federal legislation on protecting cultural resources, and issues its own complementary policies for stewardship. Historic properties and archaeological sites on military land are protected with other facilities from terrorism where there is a perceived threat to people and critical resources.

1-9.2 **Compliance with Laws.** In the wake of terrorist attacks against the armed forces and civilian personnel, the Department of Defense believes firmly that this new anti-terrorism policy represents an undertaking that is directly associated with continuing and immediate threat of further terrorist attacks. Implementation of this policy, however, shall not supersede DoD's obligation to comply with federal laws regarding cultural resources to include the National Historic Preservation Act and the Archaeological Resources Protection Act. Installation personnel need to determine possible adverse effects upon an historic structure and/or archaeological resource prior to anti-terrorism standard undertakings and consult accordingly. Personnel at installations abroad should coordinate with the host nation regarding possible adverse effects to cultural resources.

1-9.3 **Compliance with DoD Standards.** Conversely, historic preservation compliance does not negate the requirement to implement Department of Defense policy. Federal agencies are always the decision-maker in the Section 106 process of the National Historic Preservation Act. An agency should not allow for prolonged consultations that conflict with the eminent need to implement anti-terrorism standards. Preservation issues need to be quickly and effectively resolved, so as not to obstruct force protection efforts.

1-9.4 **Declaration of National Emergency.** On September 14, 2001, President Bush proclaimed a Declaration of National Emergency by Reason of Certain Terrorist Attacks (*Federal Register,* Vol. 66, No. 181, p. 48199). As a result of this declaration, Federal agencies may use the emergency provisions of the Advisory Council on Historic Preservation's regulations as outlined in 36 CFR Part 800.12, for those undertakings that are an essential and immediate response to the President's declaration.

1-10 **INTERIM DESIGN GUIDANCE.** The *DoD Security Engineering Planning Manual* and the *DoD Security Engineering Design Manual are* currently unpublished. In lieu of referring to *those manuals*, please see the guidance provided on the Security Engineering Working Group website.

CHAPTER 2

PHILOSOPHY, DESIGN STRATEGIES, AND ASSUMPTIONS

2-1 **GENERAL.** The purpose of this chapter is to clarify the philosophy on which these standards are based, the design strategies that are their foundation, and the assumptions inherent in their provisions. Effective implementation of these standards depends on a reasonable understanding of the rationale for them. With this understanding, engineers and security and antiterrorism personnel can maximize the efficiency of their solutions for complying with these standards while considering site-specific issues and constraints that might dictate measures beyond these minimums.

2-2 **PHILOSOPHY.** The overarching philosophy upon which this document is based is that comprehensive protection against the range of possible threats may be cost prohibitive, but that an appropriate level of protection can be provided for all DoD personnel at a reasonable cost. That level of protection is intended to lessen the risk of mass casualties resulting from terrorist attacks. Full implementation of these standards will provide some protection against all threats and will significantly reduce injuries and fatalities for the threats upon which these standards are based. The costs associated with those levels of protection are assumed to be less than the physical and intangible costs associated with incurring mass casualties. Furthermore, given what we know about terrorism, all DoD decision makers must commit to making smarter investments with our scarce resources and stop investing money in inadequate buildings that DoD personnel will have to occupy for decades, regardless of the threat environment. There are three key elements of this philosophy that influence the implementation of these standards.

2-2.1 **Time.** Protective measures needed to provide the appropriate level of protection must be in place prior to the initiation of a terrorist attack. Incorporating those measures into DoD buildings is least expensive at the time those buildings are either being constructed or are undergoing major renovation, repair, restoration, or modification.

2-2.2 **Master Planning.** Many of these standards significantly impact master planning. The most significant such impact will be in standoff distances. If standoff distances are not “reserved” they will be encroached upon and will not be available should they become necessary in a higher threat environment. The master planning implications of these standards are not intended to be resolved overnight. They should be considered to be a blueprint for facilities and installations that will be implemented over decades as those facilities and installations evolve.

2-2.3 **Design Practices.** The philosophy of these standards is to build greater resistance to terrorist attack into all inhabited buildings. That philosophy affects the general practice of designing inhabited buildings. While these standards are not based on a known threat, they are intended to provide the easiest and most economical methods to minimize injuries and fatalities in the event of a terrorist attack. The primary methods to achieve this outcome are to maximize standoff distance, to construct superstructures to avoid progressive collapse, and to reduce flying debris hazards.

These and related design issues are intended to be incorporated into standard design practice in the future.

2-3 **DESIGN STRATEGIES.** There are several major design strategies that are applied throughout these standards. They do not account for all of the measures considered in these standards, but they are the most effective and economical in protecting DoD personnel from terrorist attacks. These strategies are summarized below.

2-3.1 **Maximize Standoff Distance.** The primary design strategy is to keep terrorists as far away from inhabited DoD buildings as possible. The easiest and least costly opportunity for achieving the appropriate levels of protection against terrorist threats is to incorporate sufficient standoff distance into project designs. While sufficient standoff distance is not always available to provide the minimum standoff distances required for conventional construction, maximizing the available standoff distance always results in the most cost-effective solution. Maximizing standoff distance also ensures that there is opportunity in the future to upgrade buildings to meet increased threats or to accommodate higher levels of protection.

2-3.2 **Prevent Building Collapse.** Provisions relating to preventing building collapse and building component failure are essential to effectively protecting building occupants, especially from fatalities. Designing those provisions into buildings during new construction or retrofitting during major renovations, repairs, restorations, or modifications of existing buildings is the most cost effective time to do that. In addition, structural systems that provide greater continuity and redundancy among structural components will help limit collapse in the event of severe structural damage from unpredictable terrorist acts.

2-3.3 **Minimize Hazardous Flying Debris.** In past explosive events where there was no building collapse, a high number of injuries resulted from flying glass fragments and debris from walls, ceilings, and fixtures (non-structural features). Flying debris can be minimized through building design and avoidance of certain building materials and construction techniques. The glass used in most windows breaks at very low blast pressures, resulting in hazardous, dagger-like shards. Minimizing those hazards through reduction in window numbers and sizes and through enhanced window construction has a major effect on limiting mass casualties. Window and door designs must treat glazing, frames, connections, and the structural components to which they are attached as an integrated system. Hazardous fragments may also include secondary debris such as those from barriers and site furnishings.

2-3.4 **Provide Effective Building Layout.** Effective design of building layout and orientation can significantly reduce opportunities for terrorists to target building occupants or injure large numbers of people.

2-3.5 **Limit Airborne Contamination.** Effective design of heating, ventilation, and air conditioning (HVAC) systems can significantly reduce the potential for chemical, biological, and radiological agents being distributed throughout buildings.

2-3.6 **Provide Mass Notification.** Providing a timely means to notify building occupants of threats and what should be done in response to those threats reduces the risk of mass casualties.

2-3.7 **Facilitate Future Upgrades.** Many of the provisions of these standards facilitate opportunities to upgrade building protective measures in the future if the threat environment changes.

2-4 **ASSUMPTIONS.** Several assumptions form the foundation for these standards.

2-4.1 **Baseline Threat.** The location, size, and nature of terrorist threats are unpredictable. These standards are based on a specific range of assumed threats that provides a reasonable baseline for the design of all inhabited DoD buildings. Designing to resist baseline threats will provide general protection today and will establish a foundation upon which to build additional measures where justified by higher threats or where the threat environment increases in the future. While those baseline threats are less than some of the terrorist attacks that have been directed against U.S. personnel in the past, they represent more severe threats than a significant majority of historical attacks. It would be cost prohibitive to provide protection against the worst-case scenario in every building. The terrorist threats addressed in these standards are further assumed to be directed against DoD personnel. Threats to other assets and critical infrastructure are beyond the scope of these standards, but they are addressed in the *DoD Security Engineering Planning Manual*. The following are the terrorist tactics upon which these standards are based:

2-4.1.1 **Explosives.** The baseline explosive weights are identified in Tables B-1 and D-1 as explosive weights I, II, and III. Their means of delivery are discussed below.

2-4.1.1.1 **Vehicle Bombs.** For the purposes of these standards, the vehicle bomb is assumed to be a stationary vehicle bomb. The sizes of the explosives in the vehicle bombs associated with explosive weight I (in equivalent weight of TNT) are likely to be detected in a vehicle during a search. Therefore, explosive weight I is the basis for the standoff distances associated with the controlled perimeter. The quantity of explosives associated with explosive weight II is assumed to be able to enter the controlled perimeter undetected; therefore, explosive weight II is the basis for the standoff distances for roadways and parking. Explosive weight II was selected because it represents a tradeoff between likelihood of detection and the risk of injury or damage.

2-4.1.1.2 **Waterborne Vessel Bombs.** For the purposes of these standards, waterborne vessels will also be assumed to contain quantities of explosives associated with explosive weight I. That weight was selected because areas beyond the shoreline are assumed not to be controlled perimeters.

2-4.1.1.3 **Placed Bombs.** Hand-carried explosives placed near buildings can cause significant localized damage, potentially resulting in injuries or fatalities. It is assumed that aggressors will not attempt to place explosive devices in areas near buildings where those devices could be visually detected by building occupants casually observing the area around the building. It is also assumed that there will be sufficient

controls to preclude bombs being brought into buildings. Explosive weight II is assumed to be placed by hand either in trash containers or in the immediate vicinity of buildings. That quantity of explosives is further assumed to be built into a bomb 150 millimeters (6 inches) or greater in height.

2-4.1.1.4 **Mail Bombs.** Explosives in packages delivered through the mail can cause significant localized damage, injuries, and fatalities if they detonate inside a building. No assumption as to the size of such explosives is made in these standards. Provisions for mail bombs are limited to locations of mailrooms so that they can be more readily hardened if a specific threat of a mail bomb is identified in the future.

2-4.1.2 **Indirect Fire Weapons.** For the purpose of these standards, indirect fire weapons are assumed to be military mortars with fragmentation rounds containing explosives equivalent to explosive weight III in Tables B-1 and D-1. Protection against the effects of such rounds on an individual building is not considered practical as a minimum standard; therefore, these standards are intended to limit collateral damage to adjacent buildings from these weapons.

2-4.1.3 **Direct Fire Weapons.** For the purpose of these standards, direct fire weapons include small arms weapons and shoulder fired rockets that require a direct line of sight. Some standards in this document are predicated on a direct fire weapon threat. Provisions of those standards are based on the assumption that those weapons will be fired from vantage points outside the control of an installation or facility. Obscuration or screening that minimizes targeting opportunities is assumed to be the primary means of protecting DoD personnel from these weapons in these standards.

2-4.1.4 **Fire.** Recent incidents indicate that causing fires can be considered a terrorist tactic. Fire may be used as a direct terrorist tactic or it may be a secondary effect of some other tactic. Examples of how fire might be used as a direct tactic would include arson and driving a fuel truck or other fuel-laden vehicle into a building.

2-4.1.5 **Chemical, Biological, and Radiological Weapons.** For the purposes of these standards, these weapons are assumed to be improvised weapons containing airborne agents employed by terrorists. These standards do not assume comprehensive protection against this threat. They provide means to reduce the potential for widespread dissemination of such agents throughout a building in the event of an attack.

2-4.2 **Controlled Perimeter.** These standards assume that procedures are implemented to search for and detect explosives to limit the likelihood that a vehicle carrying quantities of explosives equivalent to explosive weight I in Tables B-1 and D-1 could penetrate a controlled perimeter undetected. It is further assumed that access control will include provisions to reject vehicles without penetrating the controlled perimeter.

2-4.3 **Government Vehicle Parking.** Limitations on parking near buildings apply to all vehicles, including official and tactical vehicles, except for emergency vehicles and for operations support vehicles that are never driven out of restricted access areas, as established in these standards. Government vehicles other than

those support and emergency vehicles are included in the parking limitations in these standards because it is assumed that when they are out of restricted access areas they may be out of the immediate control of their operators, which could make them susceptible to having explosives placed on or inside of them.

2-4.4 **Levels of Protection.** The potential levels of protection are described in Tables 2-1 and 2-2. These standards provide a **Low** level of protection for billeting and primary gathering buildings and a **Very Low** level of protection for other inhabited buildings. Greater protection is provided for primary gathering buildings and billeting because of the higher concentration of personnel and the more attractive nature of the target. If the minimum standoff distances are provided, or if mitigating measures are provided to achieve an equivalent level of protection, and if the threats are no greater than those indicated in Tables B-1 and D-1, the risk of injuries and fatalities will be reduced. Threats higher than those envisioned in Tables B-1 and D-1 will increase the likelihood of injuries and fatalities regardless of the level of protection. Refer to the *DoD Security Engineering Design Manual* for detailed guidance on levels of protection and how to achieve them for a wide range of threats.

2-4.5 **Minimum Standoff Distances.** The minimum standoff distances identified in Tables B-1 and D-1 were developed to provide survivable structures for a wide range of conventionally constructed buildings and expeditionary/temporary structures. These buildings range from tents and wood framed buildings to reinforced concrete buildings. For a more detailed discussion of this issue, refer to the *DoD Security Engineering Design Manual*.

2-4.5.1 **Conventional Construction Standoff Distance.** The standoff distances in the “Conventional Construction Standoff Distance” column in Table B-1 are based on explosive safety considerations that have been developed based on years of experience and observation. Those standoff distances may be conservative for heavy construction such as reinforced concrete or reinforced masonry; however, they may be just adequate for lighter-weight construction.

2-4.5.2 **Effective Standoff Distance.** Because standoff distances from the “Conventional Construction Standoff Distance” column of Table B-1 may be overly conservative for some construction types, these standards allow for the adjustment of standoff distances based on the results of a structural analysis considering the applicable explosive weights in Table B-1. For new buildings, even if such an analysis suggests a standoff distance of less than those shown in the “Effective Standoff Distance” column of Table B-1, standoff distances of less than those in that column are not allowed to ensure there is a minimal standoff distance “reserved” to accommodate future upgrades that could be necessitated by emerging threats. In addition, the 10 meter (33 feet) minimum is established to ensure there is no encroachment on the unobstructed space. For existing buildings, the standoff distances in the “Effective Standoff Distance” column of Table B-1 will be provided except where doing so is not possible. In those cases, lesser standoff distances may be allowed where the required level of protection can be shown to be achieved through analysis or can be achieved through building hardening or other mitigating construction or retrofit.

Table 2-1 Levels of Protection – New and Existing Buildings

Level of Protection	Potential Structural Damage	Potential Door and Glazing Hazards	Potential Injury
Below AT standards	Severely damaged. Frame collapse/massive destruction. Little left standing.	Doors and windows fail and result in lethal hazards	Majority of personnel suffer fatalities.
Very Low	Heavily damaged - onset of structural collapse: Major deformation of primary and secondary structural members, but progressive collapse is unlikely. Collapse of non-structural elements.	Glazing will break and is likely to be propelled into the building, resulting in serious glazing fragment injuries, but fragments will be reduced. Doors may be propelled into rooms, presenting serious hazards.	Majority of personnel suffer serious injuries. There are likely to be a limited number (10% to 25%) of fatalities.
Low	Damaged – unrepairable. Major deformation of non-structural elements and secondary structural members and minor deformation of primary structural members, but progressive collapse is unlikely.	Glazing will break, but fall within 1 meter of the wall or otherwise not present a significant fragment hazard. Doors may fail, but they will rebound out of their frames, presenting minimal hazards.	Majority of personnel suffer significant injuries. There may be a few (<10%) fatalities.
Medium	Damaged – repairable. Minor deformations of non-structural elements and secondary structural members and no permanent deformation in primary structural members.	Glazing will break, but will remain in the window frame. Doors will stay in frames, but will not be reusable.	Some minor injuries, but fatalities are unlikely.
High	Superficially damaged. No permanent deformation of primary and secondary structural members or non-structural elements.	Glazing will not break. Doors will be reusable.	Only superficial injuries are likely.

Table 2-2 Levels of Protection – Expeditionary and Temporary Structures

Level of Protection	Potential Structural Damage	Potential Injury
Below AT Standards	Severely damaged. Frame collapse/massive destruction. Little left standing.	Majority of personnel suffer fatalities.
Very Low	Heavily damaged. Major portions of the structure will collapse (over 50%). A significant percentage of secondary structural members will collapse (over 50%).	Majority of personnel suffer serious injuries. There are likely to be a limited number (10% to 25%) of fatalities.
Low	Damaged – unrepairable. Some sections of the structure may collapse or lose structural capacity (10 to 20% of structure).	Majority of personnel suffer significant injuries. There may be a few (<10%) fatalities.
Medium	Damaged – repairable. Minor to major deformations of both structural members and non-structural elements. Some secondary debris will be likely, but the structure remains intact with collapse unlikely.	Some minor injuries, but no fatalities are likely.
High	Superficially damaged. No permanent deformation of primary and secondary structural members or non-structural elements.	Only superficial injuries are likely.

2-4.5.3 **Operational Option for Existing Buildings.** Because moving parking and roadways associated with existing buildings or applying structural retrofits to harden those buildings may be impractical, operational options are provided for complying with the standoff distance requirements for existing parking and roadways associated with existing buildings. Those operational options allow for establishing access control for parking at the applicable standoff distances in either Table B-1 or Table D-1, in which case parking can be allowed to be as close as 10 meters to buildings without hardening or analysis. The access control in those situations must be established at a location in accordance with Tables B-1 or D-1. The assumption is that by establishing access control into the parking lot, there will be a lesser opportunity to enter the parking area with an explosive in a vehicle. For roadways, the operational option is to prohibit parking along roadways within the standoff applicable distances in Tables B-1 and D-1. These operational options will result in increased risk for existing buildings, but acceptance of that risk is necessary to make application of these standards to existing buildings practical. The additional option for allowing parking even close than 10 meters (33 feet) as long as the applicable level of protection is met, is based on the recognition that there may be some buildings, especially in urban areas, where achieving even 10 meters (33 feet) is not possible.

2-4.5.4 **Temporary and Expeditionary Construction.** The standoff distances in Table D-1 are based on blast testing conducted against TEMPER Tents, SEA Huts, General Purpose Shelters, and Small Shelter Systems. With adequate analysis those distances may be able to be reduced without requiring mitigating measures.

2-4.6 **Exempted Building Types.** For the reasons below, some building types are exempted from some or all of these standards. The minimum standards should be applied to the exempted building types where possible.

2-4.6.1 **Family Housing.** The exemption of family housing with 12 units or fewer in a single building acknowledges that the density of such units is generally low, reducing the likelihood of mass casualties. It also acknowledges the fact that low-density housing has rarely been directly targeted by terrorists. A further assumption for existing family housing with 13 or more units per building is that by designating parking spaces for specific residents or residences, the risk of parking vehicle bombs in those parking areas is reduced due to increased awareness of the vehicles that are authorized to park there.

2-4.6.2 **Stand-Alone Franchised Food Operations, Shoppettes, Mini Marts, Similarly Sized Commissaries, and Other Small Stand Alone Commercial Facilities.** These facilities by the nature of their smaller size and their operation require parking in close proximity; therefore, they are exempted from the minimum standoff distances for parking and roadways. Applying other upgrades required by these standards is feasible, however, and will lessen the risk of mass casualties.

2-4.6.3 **Gas Stations and Car Care Centers.** These facilities are exempted from these standards because, by the nature of their operation, cars must be allowed to be in close proximity to them. Other measures included in these standards would be ineffective in the absence of any control on vehicles.

2-4.6.4 **Medical Transitional Structures and Spaces.** These structures and spaces may be required for limited durations to maintain mission-critical operations during construction that require close proximity or physical connection to the existing building undergoing construction. This may make compliance with some of the standoff distance provisions of these standards impractical during the limited construction duration.

2-4.6.5 **Other Transitional Structures and Spaces.** These structures and spaces are exempted from some of the standoff distance provisions of these standards because it would be impractical to apply them considering the limited less-than-1-year duration of occupancy.

2-4.6.6 **Recruiting Stations In Leased Spaces.** These facilities are exempted because their visibility and accessibility necessitate their being located in public spaces, which makes requiring them to comply with these standards impractical. In addition, the majority of these facilities do not have a sufficient population and population density to meet the inhabited building standard.

2-4.6.7 **Military Protective Construction.** These facilities are exempted because the military conventional and nuclear weapons threats to which they are designed are much more stringent than those included in these standards. Facilities designed to protective construction standards will provide higher levels of protection for facility occupants than those required by these standards.

2-4.7 **Policies and Procedures.** Policies and procedures are a critical adjunct to building standards. It is assumed that there are means to control access to controlled perimeters, underground parking, and other locations where vehicle access needs to be limited. It is further assumed that unusual packages or containers or improperly parked vehicles will be recognized as potential terrorist threats and appropriate reactive measures will be implemented to reduce the potential for casualties. Finally, it is assumed that policies and procedures will be developed to support these and other related issues and that those policies and procedures will be incorporated into antiterrorism plans, training, and exercises.

2-4.8 **Design Criteria.** It is assumed that the provisions of these standards will be coordinated with all other applicable DoD building and design criteria and policies. Nothing in these standards should be interpreted to supersede the provisions of any other applicable building or design criteria. Where other criteria mandate more stringent requirements, it is assumed that the provisions of those criteria will be followed.

2-4.9 **Enhanced Fire Safety.** Historic fire scenarios and fuel loadings for various common buildings types that are the basis for requirements in building and life safety codes are likely to be much less severe than those experienced in terrorist attacks. Therefore, in the event of a terrorist attack, fire safety may be critical to the survival of building occupants and limiting the extent of building damage. Fire safety may be enhanced by designing buildings to limit the extent or severity of a fire and providing more effective egress routes. Changes to fire safety requirements, while they may be justifiable from an antiterrorism standpoint, are beyond the scope of these standards.

2-4.10 **Training.** It is assumed that key security and facility personnel will receive training in security engineering, antiterrorism, and related areas. Refer to the Security Engineering Working Group web site for available training and to DoD 2000.12-H for additional information on training issues. It is further assumed that all DoD personnel have been trained in basic antiterrorism awareness in accordance with DoDI 2000.16, that they are able to recognize potential threats, and that they know the proper courses of action should they detect a potential threat.

2-4.11 **Expeditionary and Temporary Structures.** Expeditionary and temporary structures are commonly built of either combinations of metal frames and fabric or wood frames and rigid walls. It is assumed that most expeditionary and temporary structures cannot be retrofitted or hardened sufficiently for higher threats; therefore, unless adequate planning is done to obtain the needed space to achieve appropriate standoff, DoD personnel will be highly vulnerable to terrorist attack.

2-4.12 **Leased Buildings.** DoD personnel occupying leased buildings deserve the same level of protection as those in DoD-owned buildings; therefore, they should meet the requirements of these standards wherever possible. They must meet the requirements when the DoD occupancy meets the criteria in these standards. The thresholds in those criteria reflect the significance of higher populations of DoD personnel as targets versus the inherent risk reduction associated with dispersing DoD personnel.

APPENDIX A

DEFINITIONS

Access control. For the purposes of these standards, any combination of barriers, gates, electronic security equipment, and/or guards that can deny entry to unauthorized personnel or vehicles.

Access road. Any roadway such as a maintenance, delivery, service, emergency, or other special limited use road that is necessary for the operation of a building or structure.

Billeting. Any building or portion of a building, regardless of population density, in which 11 or more unaccompanied DoD personnel are routinely housed, including Temporary Lodging Facilities and military family housing permanently converted to unaccompanied housing. Billeting also applies to expeditionary and temporary structures with similar population densities and functions.

Building hardening. Enhanced conventional construction that mitigates threat hazards where standoff distance is limited. Building hardening may also be considered to include the prohibition of certain building materials and construction techniques.

Building separation. The distance between closest points on the exterior walls of adjacent buildings or structures.

Collateral damage. Injury to personnel or damage to buildings that are not the primary target of an attack.

Collaterally protected construction. Construction that provides protection against near-miss detonations of large general purpose military bombs.

Command vehicles. Vehicles operated by installation commanders and/or their designated staff.

Container structures. Structures built using shipping containers that are designed to withstand structural loadings associated with shipping, including Container Express (CONEX) and International Organization for Standardization (ISO) containers. Testing has shown that these structures behave similarly to buildings for the purposes of these standards.

Controlled perimeter. For the purposes of these standards, a physical boundary at which vehicle access is controlled at the perimeter of an installation, an area within an installation, or another area with restricted access. A physical boundary will be considered as a sufficient means to channel vehicles to the access control points. At a minimum, access control at a controlled perimeter requires the demonstrated capability to search for and detect explosives. Where the controlled perimeter includes a shoreline and there is no defined perimeter beyond the shoreline, the boundary will be at the mean high water mark.

Conventional construction. Building construction that is not specifically designed to resist weapons or explosives effects. Conventional construction is designed only to resist common loadings and environmental effects such as wind, seismic, and snow loads.

Conventional Construction Standoff Distance. The standoff distance at which conventional construction may be used for buildings without a specific analysis of blast effects, except as otherwise required in these standards.

Design Basis Threat. The threat (aggressors, tactics, and associated weapons, tools, or explosives) against which assets within a building must be protected and upon which the security engineering design of the building is based.

DoD building. Any building or portion of a building (permanent, temporary, or expeditionary) owned, leased, privatized, or otherwise occupied, managed, or controlled by or for DoD. DoD buildings are categorized within these standards as uninhabited, inhabited, primary gathering and billeting.

DoD Components. The Office of the Secretary of Defense (OSD); the Military Departments (including their National Guard and Reserve Components); the Chairman, Joint Chiefs of Staff and Joint Staff; the Combatant Commands; the Office of the Inspector General of the Department of Defense; the Defense Agencies; the DoD Field Activities; and all other organizational entities within DoD**.**

DoD personnel. Any U.S. military, DoD civilian, or family member thereof, host-nation employees working for DoD, or contractors occupying DoD buildings.

Effective Standoff Distance. A standoff distance less than the Conventional Construction Standoff Distance at which the required level of protection can be shown to be achieved through analysis or can be achieved through building hardening or other mitigating construction or retrofit.

Emergency Vehicles. Vehicles such as fire trucks and ambulances that are critical to emergency response, and for which close proximity to inhabited buildings or containment therein is essential.

Expeditionary structures. Those structures intended to be inhabited for no more than 1 year after they are erected. This group of structures typically include tents, Small and Medium Shelter Systems, Expandable Shelter Containers (ESC), ISO and CONEX containers, and General Purpose (GP) Medium tents and GP Large tents, etc.

Fabric covered structures. A construction type that can be identified by wood or metal (usually aluminum) posts or load-bearing frames with some type of fabric (such as canvas) stretched or pulled over the posts or frames. Examples of the types of structures that should be considered under this classification of structures include Frame-Supported Tensioned Fabric Structures (FSTFS); Tent, Extendable, Modular, Personnel (TEMPER Tents); and Small and Medium Shelter Systems (SSS and MSS); General Purpose (GP) Medium tents and GP Large tents; and air supported fabric

structures. Testing has shown that for these fabric structures, the posts and frames are what cause hazards.

Family housing. DoD buildings used as quarters for DoD personnel and their dependents. For the purposes of these standards, family housing will be considered to include Morale, Welfare, and Recreation housing (cottages) of similar occupancies.

Glazing. The part of a window, skylight, or door assembly that is transparent and transmits light, but not air.

Inhabited building. Buildings or portions of buildings routinely occupied by 11 or more DoD personnel and with a population density of greater than one person per 40 gross square meters (430 gross square feet). This density generally excludes industrial, maintenance, and storage facilities, except for more densely populated portions of those buildings such as administrative areas. The inhabited building designation also applies to expeditionary and temporary structures with similar population densities. In a building that meets the criterion of having 11 or more personnel, with portions that do not have sufficient population densities to qualify as inhabited buildings, those portions that have sufficient population densities will be considered inhabited buildings while the remainder of the building may be considered uninhabited, subject to provisions of these standards. An example would be a hangar with an administrative area within it. The administrative area would be treated as an inhabited building while the remainder of the hangar could be treated as uninhabited. (Note: This definition differs significantly from the definition for inhabited building used by DoD 6055.9-STD and is not construed to be authorization to deviate from criteria of DoD 6055.9-STD.)

Hardened construction. Below ground construction designed to resist nuclear weapons effects.

Laminated glass. Multiple sheets of glass bonded together by a bonding interlayer.

Level of protection. The degree to which an asset (person, equipment, object, etc.) is protected against injury or damage from an attack.

Mail room. A facility operated by or for the Department of Defense for the receipt and delivery of mail for military units or other authorized organizations and agencies.

Mass notification. Capability to provide real-time information to all building occupants or personnel in the immediate vicinity of a building during emergency situations.

Medical transitional structures and spaces. Structures that are erected or leased for temporary occupancy to maintain mission-critical medical care during construction, renovation, modification, repair or restoration of an existing medical structure. Examples include urgent, ambulatory, and acute care operations.

Military protective construction. Military facilities designed to resist military conventional and nuclear weapons to the NATO (or equivalent) standards of hardened, protected, semi-hardened, collaterally protected, or splinter protected.

Operations Support Vehicles. Vehicles such as airfield support equipment whose purpose is direct support to operations and which are operated only within a restricted access area.

Parking. Designated areas where vehicles may be left unattended.

Primary gathering building. Inhabited buildings routinely occupied by 50 or more DoD personnel. This designation applies to the entire portion of a building that meets the population density requirements for an inhabited building. For example, an inhabited portion of the building that has an area within it with 50 or more personnel is a primary gathering building for the entire inhabited portion of the building. The primary gathering building designation also applies to expeditionary and temporary structures with similar populations and population densities and to family housing with 13 or more family units per building, regardless of population or population density.

Progressive collapse. A chain reaction failure of building members to an extent disproportionate to the original localized damage. Such damage may result in upper floors of a building collapsing onto lower floors.

Protected construction. Buried or partially buried construction that provides protection against direct hits by large general purpose military bombs.

Roadways. Any surface intended for motorized vehicle traffic.

Routinely occupied. For the purposes of these standards, an established or predictable pattern of activity within a building that terrorists could recognize and exploit.

Security engineering. The process of identifying practical, risk managed short and long-term solutions to reduce and/or mitigate dynamic manmade hazards by integrating multiple factors, including construction, equipment, manpower, and procedures.

Semi-hardened construction. Construction that provides protection against near-miss detonations of large general purpose military bombs and direct hits from smaller munitions.

Splinter protected construction. Construction that provides protection against weapon fragments and small arms fire and also prevents magnification of blast pressure from reflection off vertical surfaces.

Specific threat. Known or postulated aggressor activity focused on targeting a particular asset.

Standoff distance. A distance maintained between a building or portion thereof and the potential location for an explosive detonation.

Structure group. A cluster of expeditionary or temporary structures consisting of multiple rows of individual structures with 200 or fewer DoD personnel.

Structural glazed window systems. Window systems in which glazing is bonded to both sides of the window frame using an adhesive such as a high-strength, high-performance silicone sealant.

Superstructure. The supporting elements of a building above the foundation.

Temporary structures. Those structures that are erected with an expected occupancy of 3 years or less. This group of structures typically includes wood frame and rigid wall construction, and such things as Southeast Asia (SEA) Huts, hardback tents, ISO and CONEX containers, pre-engineered buildings, trailers, stress tensioned shelters, Expandable Shelter Containers (ESC), and Aircraft Hangars (ACH).

TNT equivalent weight. The weight of TNT (trinitrotoluene) that has an equivalent energetic output to that of a different weight of another explosive compound.

Transitional structures and spaces. Structures or spaces within buildings that are used to temporarily (less than 1 year) relocate occupants of another building while that building undergoes renovations, modifications, repairs, or restorations.

Unobstructed space. Space within 10 meters (33 feet) of an inhabited building that does not allow for concealment from observation of explosive devices 150 mm (6 inches) or greater in height.

APPENDIX B

DoD MINIMUM ANTITERRORISM STANDARDS FOR NEW AND EXISTING BUILDINGS

B-1 **SITE PLANNING.** Operational, logistic, and security requirements must be integrated into the overall design of buildings, equipment, landscaping, parking, roads, and other features. The most cost-effective solution for mitigating explosive effects on buildings is to keep explosives as far as possible from them. Standoff distance must be coupled with appropriate building hardening to provide the necessary level of protection to DoD personnel. The following standards detail minimum standoff distances that when achieved will allow for buildings to be built with minimal additional construction costs. Where these standoff distances cannot be achieved because land is unavailable, these standards allow for building hardening to mitigate the blast effects. Costs and requirements for building hardening are addressed in the *DoD Security Engineering Planning Manual*.

B-1.1 **Standard 1. Minimum Standoff Distances.** The minimum standoff distances apply to all new and existing (when triggered) DoD buildings covered by these standards. The minimum standoff distances are presented in Table B-1 and illustrated in Figures B-1 and B-2. Where the standoff distances in the "Conventional Construction Standoff Distance" column of Table B-1 can be met, conventional construction may be used for the buildings without a specific analysis of blast effects, except as otherwise required in these standards. Where those distances are not available, an engineer experienced in blast-resistant design should analyze the building and apply building hardening as necessary to mitigate the effects of the explosives indicated in Table B-1 at the achievable standoff distance to the appropriate level of protection. The appropriate levels of protection for each building category are shown in Table B-1, and are described in Tables 2-1 and 2-2 and in the *DoD Security Engineering Planning Manual*. For new buildings, standoff distances of less than those shown in the "Effective Standoff Distance" column in Table B-1 are not allowed. For existing buildings, the standoff distances in the "Effective Standoff Distance" column of Table B-1 will be provided except where doing so is not possible. In those cases, lesser standoff distances may be allowed where the required level of protection can be shown to be achieved through analysis or can be achieved through building hardening or other mitigating construction or retrofit as described in these standards and in the *DoD Security Engineering Design Manual*.

B-1.1.1 **Controlled Perimeter.** Measure the standoff distance from the controlled perimeter to the closest point on the building exterior or inhabited portion of the building.

B-1.1.2 **Parking and Roadways.** Standoff distances for parking and roadways are based on the assumption that there is a controlled perimeter at which larger vehicle bombs will be detected and kept from entering the controlled perimeter. Where there is a controlled perimeter, the standoff distances and explosive weight associated with parking and roadways in Table B-1 apply. If there is no controlled perimeter, assume that the larger explosive weights upon which the controlled perimeter standoff distances are based (explosive weight I from Table B-1) can access parking and roadways near

Table B-1 Minimum Standoff Distances for New and Existing Buildings

Location	Building Category	Standoff Distance or Separation Requirements			
		Applicable Level of Protection	Conventional Construction Standoff Distance	Effective Standoff Distance[1]	Applicable Explosive Weight [2]
Controlled Perimeter or Parking and Roadways without a Controlled Perimeter	Billeting	Low	45 m [3] (148 ft.)	25 m [3] (82 ft.)	I
	Primary Gathering Building	Low	45 m [3] [4] (148 ft.)	25 m [3] [4] (82 ft.)	I
	Inhabited Building	Very Low	25 m [3] (82 ft.)	10 m [3] (33 ft.)	I
Parking and Roadways within a Controlled Perimeter	Billeting	Low	25 m [3] (82 ft.)	10 m [3] (33 ft.)	II
	Primary Gathering Building	Low	25 m [3] [4] (82 ft.)	10 m [3] [4] (33 ft.)	II
	Inhabited Building	Very Low	10 m [3] (33 ft.)	10 m [3] (33 ft.)	II
Trash Containers	Billeting	Low	25 m (82 ft.)	10 m (33 ft.)	II
	Primary Gathering Building	Low	25 m (82 ft.)	10 m (33 ft.)	II
	Inhabited Building	Very Low	10 m (33 ft.)	10 m (33 ft.)	II

(1) Even with analysis, standoff distances less than those in this column are not allowed for new buildings, but are allowed for existing buildings if constructed/retrofitted to provide the required level of protection at the reduced standoff distance.
(2) See UFC 4-010-02, for the specific explosive weights (kg/pounds of TNT) associated with designations – I and II. UFC 4-010-02 is For Official Use Only (FOUO)
(3) For existing buildings, see paragraph B-1.1.2.2 for additional options.
(4) For existing family housing, see paragraph B-1.1.2.2.3 for additional options.

Figure B-1 Standoff Distances and Building Separation – Controlled Perimeter

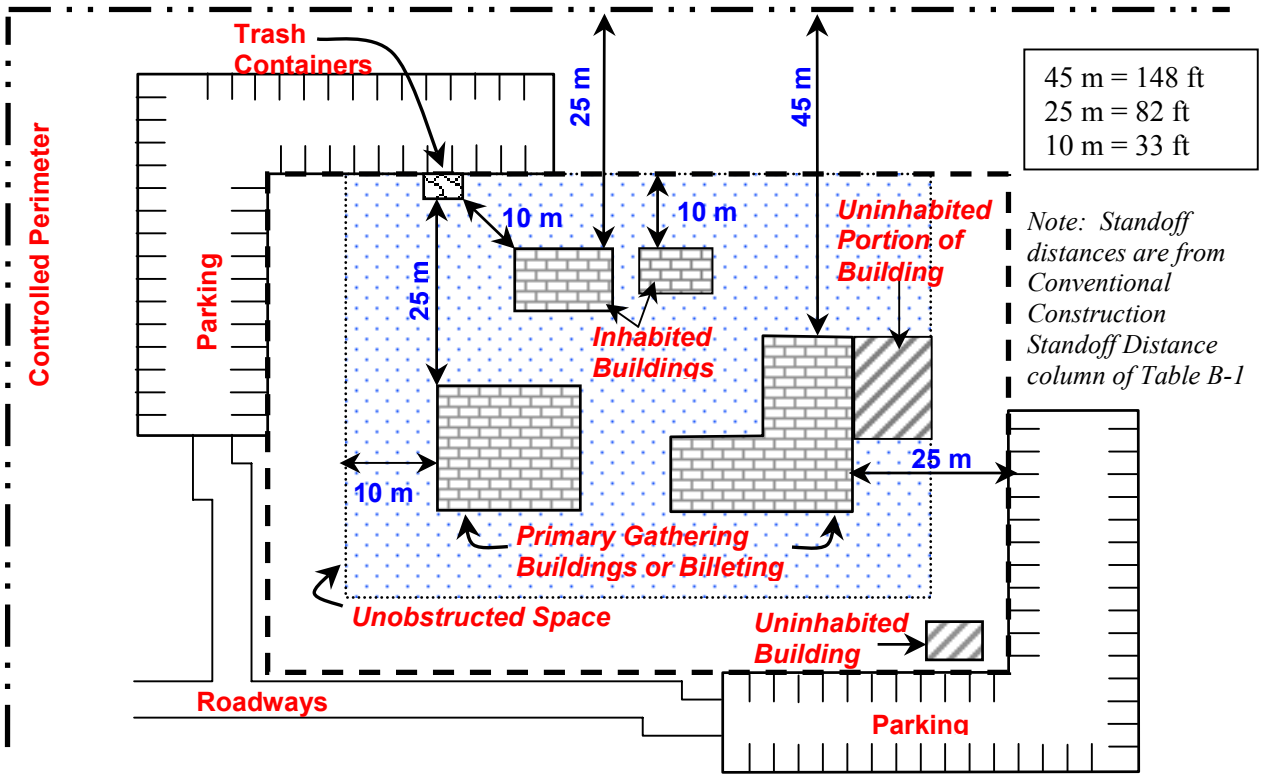
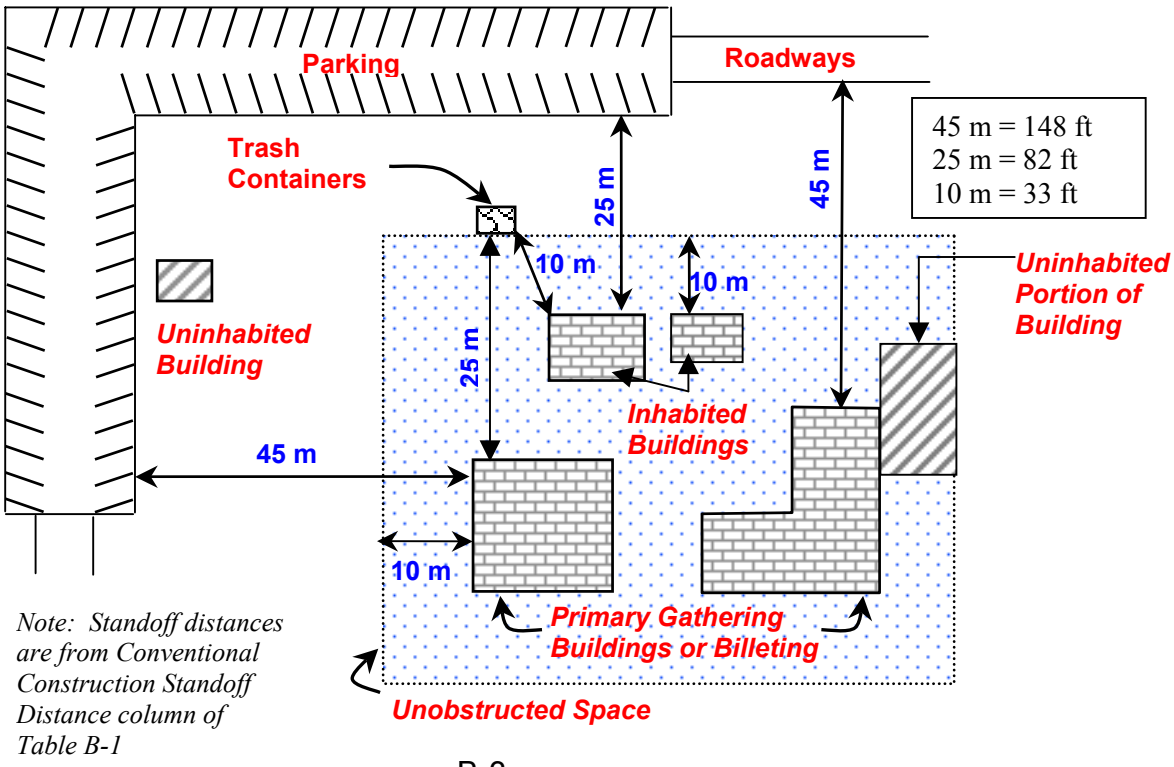


Figure B-2 Standoff Distances and Building Separation – No Controlled Perimeter



buildings. Therefore, where there is no controlled perimeter, use standoff distances from parking and roadways according to the distances and the explosive weight associated with controlled perimeters in Table B-1. Measure the standoff distance from the closest edge of parking areas and roadways to the closest point on the building exterior or inhabited portion of the building. In addition, the following apply:

B-1.1.2.1 **New Inhabited Buildings.** The minimum standoff for all new buildings regardless of hardening or analysis is 10 meters (33 feet) for both parking areas and roadways.

B-1.1.2.2 **Existing Inhabited Buildings.** Where possible, move parking and roadways away from existing inhabited buildings in accordance with the standoff distances and explosive weights in Table B-1. It is recognized, however, that moving existing parking areas and roadways or applying structural retrofits may be impractical; therefore, the following operational options are provided for existing inhabited buildings:

B-1.1.2.2.1 **Controlled Parking Areas.** Controlled parking associated with existing inhabited buildings may be allowed to be as close as 10 meters (33 feet) without hardening or analysis if access control to the parking area is established at the applicable conventional construction standoff distance for parking in Table B-1. In cases where the applicable level of protection can be provided (based on hardening or analysis) with a standoff distance between the conventional construction standoff distance and the effective standoff distance, parking may be allowed as close as 10 meters (33 feet) if parking is controlled at that lesser applicable standoff distance subject to the following:

B-1.1.2.2.1.1 **Parking Within a Controlled Perimeter.** The applicable conventional construction or effective standoff distance at which access will be controlled will be based on the standoff distances for parking and roadways within a controlled perimeter in Table B-1 for the applicable building category.

B-1.1.2.2.1.2 **Parking Without a Controlled Perimeter.** The applicable conventional construction or effective standoff distance at which access will be controlled will be based on the standoff distances for parking and roadways without a controlled perimeter in Table B-1 for the applicable building category.

B-1.1.2.2.1.3 **Alternate Situations.** Controlled parking may be allowed to be closer to existing inhabited buildings where conditions necessitate it and where it can be shown through analysis that the required level of protection can be provided at a lesser standoff distance or if it can be provided through building hardening or other mitigating measures or retrofits.

B-1.1.2.2.2 **Parking on Existing Roadways.** Parking along roadways is subject to the same standoff considerations as other parking. Ensure that there is no parking on roadways within the required (conventional construction or effective in accordance with Table B-1) standoff distances along existing roads adjacent to existing buildings covered by these standards.

B-1.1.2.2.3 **Parking for Family Housing.** For existing family housing with 13 or more units per building within a controlled perimeter or where there is access control to the parking area, parking within the required standoff distances may be allowed where designated parking spaces are assigned for specific residents or residences. Do not label assigned parking spaces with names or ranks of the residents. Do not encroach upon existing standoff distances where the existing standoff distances are less than the required (conventional construction or effective in accordance with Table B-1) standoff distances. For example, where existing designated parking is only 8 meters (27 feet) from existing family housing, that parking may be retained, but additional parking will not be allowed closer than 8 meters (27 feet.)

B-1.1.3 **Parking of Emergency, Command and Operations Support Vehicles.** Emergency and command vehicles, as well as operations support vehicles may be parked closer to inhabited buildings than allowed in Table B-1 if access to them is controlled or as long as they are never removed from a restricted access area, but they may not be parked closer than the distance associated with unobstructed spaces as established in Standard 3. In addition, where standard operation of buildings includes parking emergency vehicles inside them, such as fire stations, those emergency vehicles may be parked inside the buildings where necessary as long as access to the building is controlled.

B-1.1.4 **Parking of Vehicles Undergoing Maintenance.** Vehicles undergoing maintenance may be parked inside maintenance buildings closer to inhabited areas of those buildings than allowed in Table B-1 while they are undergoing repair where operationally necessary.

B-1.1.5 **Adjacent Existing Buildings.** Where projects for new and existing buildings designed in accordance with these standards include locating parking, roadways, or trash containers near existing inhabited buildings that are not required to meet these standards, the standoff distances from parking, roadways, and trash containers to the buildings that are not required to comply with these standards should comply with the applicable standoff distances in Table B-1. Where those standoff distances are not available, do not allow the parking, roadways, and trash containers to encroach on existing standoff distances to the parking, roadways, and trash containers associated with those existing buildings. For example, if existing parking associated with an existing inhabited building that does not have to comply with these standards is 10 meters from the building, do not allow new parking and roadways associated with a new building closer than 10 meters from the existing building.

B-1.1.6 **Parking and Roadway Projects.** Where practical, all roadway and parking area projects should comply with the standoff distances from inhabited buildings in Table B-1. Where parking or roadways that are within the standoff distances in Table B-1 from existing buildings are being constructed, expanded, or relocated, do not allow those parking areas and roadways to encroach on the existing standoff distances of any existing inhabited building. That applies even where such projects are not associated with a building renovation, modification, repair, or restoration requiring compliance with these standards.

B-1.1.7 **Trash Containers.** Measure the standoff distance from the nearest point of the trash container or trash container enclosure to the closest point on the building exterior or inhabited portion of the building. Where the standoff distance is not available, harden trash enclosures to mitigate the direct blast effects and secondary fragment effects of the explosive on the building if the applicable level of protection can be proven by analysis. If trash enclosures are secured to preclude introduction of objects into the enclosures by unauthorized personnel, they may be located closer to the building as long as they do not violate the unobstructed space provisions of Standard 3. Openings in screening materials and gaps between the ground and screens or walls making up an enclosure must not be greater than 150 mm (6 inches).

B-1.2 **Standard 2. Unobstructed Space.** It is assumed that aggressors will not attempt to place explosive devices in areas near buildings where these explosive devices could be visually detected by building occupants observing the area around the building. Therefore, ensure that obstructions within 10 meters (33 feet) of inhabited buildings or portions thereof do not allow for concealment from observation of explosive devices 150 mm (6 inches) or greater in height. This does not preclude the placement of site furnishings or plantings around buildings. It only requires conditions such that any explosive devices placed in that space would be observable by building occupants. For existing buildings where the standoff distances for parking and roadways have been established at less than 10 meters (33 feet) in accordance with paragraph B-1.1.2.2, the unobstructed space may be reduced to be equivalent to that distance.

B-1.2.1 **Electrical and Mechanical Equipment.** The preferred location of electrical and mechanical equipment such as transformers, air-cooled condensers, and packaged chillers is outside the unobstructed space or on the roof. However this standard does not preclude placement within the unobstructed space as long the equipment provides no opportunity for concealment of explosive devices.

B-1.2.2 **Equipment Enclosures.** If walls or other screening devices with more than two sides are placed around electrical or mechanical equipment within the unobstructed space, enclose the equipment on all four sides and the top. Openings in screening materials and gaps between the ground and screens or walls making up an enclosure will not be greater than 150 mm (6 inches). Secure any surfaces of the enclosures that can be opened so that unauthorized personnel cannot gain access through them.

B-1.3 **Standard 3. Drive-Up/Drop-Off Areas.** Some facilities require access to areas within the required standoff distance for dropping off or picking up people or loading or unloading packages and other objects. Examples that may require drive-up/drop-off include, but are not limited to, medical facilities, exchanges and commissaries, child care centers, and schools.

B-1.3.1 **Marking.** Where operational or safety considerations require drive-up or drop-off areas or drive-through lanes near buildings, ensure those areas or lanes are clearly defined and marked and that their intended use is clear to prevent parking of vehicles in those areas.

B-1.3.2 **Unattended Vehicles.** Do not allow unattended vehicles in drive-up or drop-off areas or drive-through lanes.

B-1.3.3 **Location.** Do not allow drive-through lanes or drive-up/drop-off to be located under any inhabited portion of a building.

B-1.4 **Standard 4. Access Roads.** Where access roads are necessary for the operation of a building (including those required for fire department access), ensure that access control measures are implemented to prohibit unauthorized vehicles from using access roads within the applicable standoff distances in Table B-1.

B-1.5 **Standard 5. Parking Beneath Buildings or on Rooftops.** Eliminate parking beneath inhabited buildings or on rooftops of inhabited buildings. Where very limited real estate makes such parking unavoidable, the following measures must be incorporated into the design for new buildings or mitigating measures must be incorporated into existing buildings to achieve an equivalent level of protection.

B-1.5.1 **Access Control.** Ensure that access control measures are implemented to prohibit unauthorized personnel and vehicles from entering parking areas.

B-1.5.2 **Structural Elements.** Ensure that the floors beneath or roofs above inhabited areas and all other adjacent supporting structural elements will not fail from the detonation in the parking area of an explosive equivalent to explosive weight II in Table B-1.

B-1.5.3 **Progressive Collapse.** All structural elements within and adjacent to the parking area will be subject to all progressive collapse provisions of Standard 6 except that the exterior member removal provision will also apply to interior vertical or horizontal load carrying elements. Apply those provisions based on an explosive equivalent to explosive weight II in Table B-1.

B-2 **STRUCTURAL DESIGN.** If the minimum standoff distances are achieved, conventional construction should minimize the risk of mass casualties from a terrorist attack. Even if those standoff distances can be achieved, however, incorporate the following additional structural issues that must be incorporated into building designs to ensure that buildings do not experience progressive collapse.

B-2.1 **Standard 6. Progressive Collapse Avoidance.** Progressive collapse is considered to be significant risk for buildings of three or more stories. Basements will be considered stories if they have one or more exposed walls. For all new and existing inhabited buildings of three stories or more, design the superstructure to sustain local damage with the structural system as a whole remaining stable and not being damaged to an extent disproportionate to the original local damage. Achieve this through an arrangement of the structural elements that provides stability to the entire structural system by transferring loads from any locally damaged region to adjacent regions capable of resisting those loads without collapse. Accomplish this by providing sufficient continuity, redundancy, or energy dissipating capacity (ductility, damping, hardness, etc.), or a combination thereof, in the members and connections of the structure. For further guidance, refer to American Society of Civil Engineers Standard

7-98 and to detailed guidance in the *DoD Security Engineering Design Manual*. In addition, the measures below apply to all buildings of three or more stories.

B-2.1.1 **Columns and Walls.** Design all exterior vertical load-carrying columns and walls to sustain a loss of lateral support at any of the floor levels by adding one story height to the nominal unsupported length. While this standard is based on the assumption of an external threat, where parking beneath buildings is unavoidable, this provision also applies to internal vertical load carrying columns and walls.

B-2.1.2 **Exterior Member Removal.** Analyze the structure to ensure it can withstand removal of one primary exterior vertical or horizontal load-carrying element (i.e., a column or a beam) without progressive collapse.

B-2.1.3 **Floors.** Design all floors with improved capacity to withstand load reversals due to explosive effects by designing them to withstand a net uplift equal to the dead load plus one-half the live load.

B-2.2 **Standard 7. Structural Isolation.**

B-2.2.1 **Building Additions.** Design all additions to existing buildings to be structurally independent from the adjacent existing building. This will minimize the possibility that collapse of one part of the building will affect the stability of the remainder of the building. Alternatively, verify through analysis that collapse of either the addition or the existing building will not result in collapse of the remainder of the building.

B-2.2.2 **Portions of Buildings.** Where there are areas of buildings that do not meet the criteria for inhabited buildings, design the superstructures of those areas to be structurally independent from the inhabited area. This will minimize the possibility that collapse of the uninhabited areas of the building will affect the stability of the superstructure of the inhabited portion of the building. Alternatively, verify through analysis that collapse of uninhabited portions of the building will not result in collapse of any portion of the building covered by this standard or design the uninhabited portion of the building to meet the requirements for an inhabited building in accordance with these standards. This standard is not mandatory for existing structures, but it should be implemented where possible

B-2.3 **Standard 8. Building Overhangs.** Avoid building overhangs with inhabited spaces above them where people could gain access to the area underneath the overhang. Where such overhangs must be used, incorporate the following measures into the design for new buildings. Incorporate mitigating measures into existing buildings to achieve an equivalent level of protection.

B-2.3.1 **Parking and Roadway Restrictions.** Ensure that there are no roadways or parking areas under overhangs.

B-2.3.2 **Floors.** Ensure that the floors beneath inhabited areas will not fail from the detonation underneath the overhang of an explosive equivalent to explosive weight

II where there is a controlled perimeter and explosive weight I for an uncontrolled perimeter. Explosive weights I and II are identified in Table B-1.

B-2.3.3 **Superstructure.** The progressive collapse provisions of Standard 6, including the provision for loss of lateral support for vertical load carrying elements, will include all structural elements within and adjacent to the overhang.

B-2.4 **Standard 9. Exterior Masonry Walls.** Unreinforced masonry walls are prohibited for the exterior walls of new buildings. A minimum of 0.05 percent vertical reinforcement with a maximum spacing of 1200 mm (48 in) will be provided. For existing buildings, implement mitigating measures to provide an equivalent level of protection.

B-3 **ARCHITECTURAL DESIGN.** Even where the minimum standoff distances are achieved, many aspects of building layout and other architectural design issues must be incorporated to improve overall protection of personnel inside buildings.

B-3.1 **Standard 10. Windows, Skylights, and Glazed Doors.** To minimize hazards from flying glass fragments, apply the provisions for glazing and window, skylight, and glazed door frames below for all new and existing inhabited buildings covered by these standards. Glazing and frames must work as a system to ensure that their hazard mitigation is effective. These provisions apply even if the minimum standoff distances are met. The specific requirements below, provided conventional standoff distances are met, will result in windows, skylights, and glazed doors that comply with this standard for windows provided their visual glazing openings do not exceed 3 square meters (32 square feet). For larger windows, refer to the *DoD Security Engineering Design Manual*.

B-3.1.1 **Glazing.** Use a minimum of 6-mm (1/4-in) nominal laminated glass for all exterior windows, skylights, and glazed doors. The 6-mm (1/4-in) laminated glass consists of two nominal 3-mm (1/8-in) glass panes bonded together with a minimum of a 0.75-mm (0.030-inch) polyvinyl-butyral (PVB) interlayer. For insulating glass units, use 6 mm (1/4 inch) laminated glass inner pane as a minimum. For glazing alternatives to the 6-mm (1/4-in) laminated glass that provide equivalent levels of protection, refer to the *DoD Security Engineering Design Manual*.

B-3.1.2 **Window, Skylight, and Glazed Door Frames.** Provide window and skylight frames, mullions, and sashes and door rails and stiles of aluminum or steel as detailed below. Alternatively, use frames that provide performance to the required level of protection (see Tables 2.1 and 2.2). For existing buildings, complying with this standard may require replacement or significant modification of window frames, anchorages, and supporting elements.

B-3.1.2.1 **Frame Member Design.** Steel members may be designed using ultimate yield stresses and aluminum members may be designed based on a 0.2% offset yield strength. Equivalent static design loads for the window, skylight, and door members shall be 7 kilopascals (1 lb per square in) applied to the surface of the glazing and frame Deformations shall not exceed 1/60 of the unsupported member lengths.

B-3.1.2.2 **Glazing Frame Bite.** The glazing shall have a minimum frame bite of 9.5-mm (3/8-in) for structurally glazed systems and 25-mm (1-in) for window systems that are not structurally glazed.

B-3.1.2.3 **Connection Design.** Equivalent static design loads for connections of the window, skylight, or doorframe to the surrounding walls or roof, hardware and associated connections, and glazing stop connections shall be 75 kilopascals (10.8 lbs per square inch) for glazing panels with a vision area less than or equal to 1.0 square meters (10.8 square feet) and 30 kilopascals (4.4 lbs per square inch) for glazing panels with a vision area greater than 1.0 square meters (10.8 square feet) but less than or equal to 3.0 square meters (32 square feet). Loads shall be applied to the surface of the glazing and frame. Connections and hardware may be designed based on ultimate strength for steel and 0.2% offset yield strength for aluminum.

B-3.1.2.4 **Supporting Structural Elements.** Design supporting wall and roof elements and their connections based on their ultimate capacities. In addition, because the resulting dynamic loads are likely to be dissipated through multiple mechanisms, it is not necessary to account for reactions from the supporting wall or roof elements in the design of the remainder of the structure.

B-3.1.3 **Mitigation.** Where the minimum standoff distances cannot be met, provide glazing and frames that will provide an equivalent level of protection to that provided by the glazing and frames as described above and in Tables 2-1 and 2-2 for the applicable explosive weight in Table B-1.

B-3.1.4 **Window, Skylight, and Glazed Door Replacement Projects.** Whenever window, skylight, or door glazing is being replaced in existing inhabited buildings as part of a planned window or glazing replacement project, whether or not the building meets the triggers in paragraph 1-6.2, install glazing and frames that meet all of the requirements above.

B-3.2 **Standard 11. Building Entrance Layout.** The areas outside of installations are commonly not under the direct control of the installations. Where the main entrances to buildings face installation perimeters, people entering and exiting the buildings are vulnerable to being fired upon from vantage points outside the installations. To mitigate those vulnerabilities apply the following measures:

B-3.2.1 **New Buildings.** For new inhabited buildings, ensure that the main entrance to the building does not face an installation perimeter or other uncontrolled vantage points with direct lines of sight to the entrance or provide means to block the lines of sight.

B-3.2.2 **Existing Buildings.** For existing inhabited buildings where the main entrance faces an installation perimeter, either use a different entrance as the main entrance or screen that entrance to limit the ability of potential aggressors to target people entering and leaving the building.

B-3.3 **Standard 12. Exterior Doors.** For all new and existing buildings covered by these standards, ensure that all exterior doors into inhabited areas open outwards.

By doing so, the doors will seat into the door frames in response to an explosive blast, increasing the likelihood that the doors will not enter the buildings as hazardous debris. Alternatively, position doors such that they will not be propelled into rooms if they fail in response to a blast or provide other means to ensure they do not become hazards to building occupants.

B-3.4 **Standard 13. Mailrooms.** The following measures address the location of rooms to which mail is delivered or in which mail is handled in new and existing inhabited buildings. The measures involve limiting collateral damage and injuries and facilitating future upgrades to enhance protection should they become necessary.

B-3.4.1 **Location.** Where a new or existing building covered by these standards must have a mailroom, locate that mailroom on the perimeter of the building. By locating the mailroom on the building perimeter there is an opportunity to modify it in the future if a mail bomb threat is identified. Where mailrooms are located in the interior of buildings, few retrofit options are available for mitigating the mail bomb threat.

B-3.4.2 **Proximity.** Locate mailrooms as far from heavily populated areas of the building and critical infrastructure as possible. This measure will minimize injuries and damage if a mail bomb detonates in the mailroom. Further, it will reduce the potential for wider dissemination of hazardous agents. These apply where the mailroom is not specifically designed to resist those threats.

B-3.4.3 **Sealing.** To limit migration into buildings of airborne chemical, biological, and radiological agents introduced into mailrooms, ensure that mailrooms are well sealed between their envelopes and other portions of the buildings in which they are located. Ensure the mailroom walls are of full height construction that fully extends and is sealed to the undersides of the roofs, to the undersides of any floors above them, or to hard ceilings (i.e. gypsum wallboard ceiling.) Sealing should include visible cracks, the interface joints between walls and ceilings/roofs, and all wall and ceiling/roof penetrations. Doors will have weather stripping on all four edges. Refer to the *DoD Security Engineering Design Manual* for additional guidance.

B-3.5 **Standard 14. Roof Access.** For all new and existing inhabited buildings covered by these standards, control access to roofs to minimize the possibility of aggressors placing explosives or chemical, biological, or radiological agents there or otherwise threatening building occupants or critical infrastructure.

B-3.5.1 **New Buildings.** For new buildings eliminate all external roof access by providing access from internal stairways or ladders, such as in mechanical rooms.

B-3.5.2 **Existing Buildings.** For existing buildings, eliminate external access where possible or secure external ladders or stairways with locked cages or similar mechanisms.

B-3.6 **Standard 15. Overhead Mounted Architectural Features.** For all new and existing buildings covered by these standards, ensure that overhead mounted features weighing 14 kilograms (31 pounds) or more are mounted to minimize the likelihood that they will fall and injure building occupants. Mount all such systems so

that they resist forces of 0.5 times the component weight in any direction and 1.5 times the component weight in the downward direction. This standard does not preclude the need to design architectural feature mountings for forces required by other criteria such as seismic standards.

B-4 **ELECTRICAL AND MECHANICAL DESIGN.** Electrical and mechanical design standards address limiting damage to critical infrastructure, protecting building occupants against chemical, biological, and radiological threats, and notifying building occupants of threats or hazards.

B-4.1 **Standard 16. Air Intakes.** Air intakes to heating, ventilation, and air conditioning (HVAC) systems that are designed to move air throughout a building that are at ground level provide an opportunity for aggressors to easily place contaminants that could be drawn into the building.

B-4.1.1 **New Buildings.** For all new inhabited buildings covered by this document locate all air intakes at least 3 meters (10 feet) above the ground.

B-4.1.2 **Existing Buildings**. The above requirement is recommended, but not mandatory, for existing inhabited buildings covered by these standards.

B-4.2 **Standard 17. Mailroom Ventilation.** To ensure airborne chemical, biological, and radiological agents introduced into mailrooms do not migrate into other areas of buildings in which the mailrooms are located, provide separate, dedicated air ventilation systems for mailrooms. Refer to the *DoD Security Engineering Design Manual* for additional guidance.

B-4.2.1 **Other Heating and Cooling Systems.** Building heating and cooling systems such as steam, hot water, chilled water, and refrigerant may serve mailrooms as long as the airflow systems for the mailrooms and other areas of the buildings in which they are located remain separate.

B-4.2.2 **Dedicated Exhaust Systems.** Provide dedicated exhaust systems within mailrooms to maintain slight negative air pressures with respect to the remainder of the buildings in which the mailrooms are located so that the flow of air is into and contained in the mailrooms. Though the airflow into the mailrooms will not eliminate the potential spread of contamination by personnel leaving the mailroom, it will limit the migration of airborne contaminants through openings and open doorways.

B-4.2.3 **Outside Intakes and Exhausts.** Provide mailroom ventilation system outside air intakes and exhausts with low leakage isolation dampers that can be closed to isolate the mailrooms.

B-4.2.4 **Isolation Controls.** Provide separate switches or methods of control to isolate mailrooms in the event of a suspected or actual chemical, biological, or radiological release.

B-4.3 **Standard 18. Emergency Air Distribution Shutoff.** For all new and existing inhabited buildings, provide an emergency shutoff switch in the HVAC control system that can immediately shut down air distribution throughout the building except where interior pressure and airflow control would more efficiently prevent the spread of airborne contaminants and/or ensure the safety of egress pathways. Locate the switch (or switches) to be easily accessible by building occupants. Providing such a capability will allow the facility manager or building security manager to limit the distribution of airborne contaminants that may be introduced into the building.

B-4.4 **Standard 19. Utility Distribution and Installation.** Utility systems can suffer significant damage when subjected to the shock of an explosion. Some of these utilities may be critical for safely evacuating personnel from the building or their destruction could cause damage that is disproportionate to other building damage resulting from an explosion. To minimize the possibility of the above hazards, apply the following measures:

B-4.4.1 **Utility Routing.** For all new inhabited buildings, route critical or fragile utilities so that they are not on exterior walls or on walls shared with mailrooms. This requirement is recommended, but not mandatory, for existing buildings.

B-4.4.2 **Redundant Utilities.** Where redundant utilities are required in accordance with other requirements or criteria, ensure that the redundant utilities are not collocated or do not run in the same chases. This minimizes the possibility that both sets of utilities will be adversely affected by a single event.

B-4.4.3 **Emergency Backup Systems.** Where emergency backup systems are required in accordance with requirements or criteria, ensure that they are located away from the system components for which they provide backup.

B-4.5 **Standard 20. Equipment Bracing.** Mount all overhead utilities and other fixtures weighing 14 kilograms (31 pounds) or more to minimize the likelihood that they will fall and injure building occupants. Design all equipment mountings to resist forces of 0.5 times the equipment weight in any direction and 1.5 times the equipment weight in the downward direction. This standard does not preclude the need to design equipment mountings for forces required by other criteria such as seismic standards.

B-4.6 **Standard 21. Under Building Access.** To limit opportunities for aggressors placing explosives underneath buildings, ensure that access to crawl spaces, utility tunnels, and other means of under building access is controlled.

B-4.7 **Standard 22. Mass Notification.** All inhabited buildings must have a timely means to notify occupants of threats and instruct them what to do in response to those threats.

B-4.7.1 **New Buildings.** All new inhabited buildings must have a capability to provide real-time information to building occupants or personnel in the immediate vicinity of the building during emergency situations. The information relayed must be specific enough to determine the appropriate response actions. Any system, procedure,

or combination thereof that provides this capability will be acceptable under this standard. Refer to UFC 4-021-01 for further guidance.

B-4.7.2 **Existing Buildings.** For existing buildings, the above requirement is mandatory for primary gathering buildings and billeting, but recommended for all inhabited buildings.

APPENDIX C

RECOMMENDED ADDITIONAL ANTITERRORISM MEASURES FOR NEW AND EXISTING BUILDINGS

C-1 **SITE PLANNING.** The following additional measures, if implemented, will significantly enhance site security with little increase in cost and should be considered for all new and existing inhabited buildings.

C-1.1 **Recommendation 1. Vehicle Access Points.** The first line of defense in limiting opportunities for aggressors to get vehicles close to DoD buildings is at vehicle access points at the controlled perimeter, in parking areas, and at drive-up/drop-offs points. Keep the number of access points to the minimum necessary for operational or life safety purposes. This will limit the number of points at which access may have to be controlled with barriers and/or personnel in increased threat environments or if the threat increases in the future.

C-1.2 **Recommendation 2. High-Speed Vehicle Approaches.** The energy of a moving vehicle increases with the square of its velocity; therefore, minimizing a vehicle's speed allows vehicle barriers to be lighter and less expensive should vehicle barriers ever become necessary. To facilitate reductions in vehicle speeds in the future, ensure there are no unobstructed vehicle approaches perpendicular to inhabited buildings at the required parking and roadway standoff distances.

C-1.3 **Recommendation 3. Vantage Points.** Vantage points are natural or man-made positions from which potential aggressors can observe and target people or other assets in and around a building. Identify vantage points outside the control of personnel in the targeted building and either eliminate them or provide means to avoid exposure to them. Means to avoid exposure may include actions such as reorienting the building or shielding people or assets in and around the building using such measures as reflective glazing, walls, privacy fencing, or vegetation.

C-1.4 **Recommendation 4. Drive-Up/Drop Off.** Locate these points away from large glazed areas of the building to minimize the potential for hazardous flying glass fragments in the event of an explosion. For example, locate the lane at an outside corner of the building or otherwise away from the main entrance. Coordinate the drive-up/drop-off point with the building geometry to minimize the possibility that explosive blast forces could be increased due to being trapped or otherwise concentrated. For further discussion of this issue, refer to the *DoD Security Engineering Design Manual*.

C-1.5 **Recommendation 5. Building Location.** Activities with large visitor populations provide opportunities for potential aggressors to get near buildings with minimal controls, and therefore, limit opportunities for early detection. Maximize separation distance between inhabited buildings and areas with large visitor populations.

C-1.6 **Recommendation 6. Railroad Location.** Avoid sites for inhabited buildings that are close to railroads. Where railroads are in the vicinity of existing buildings, provide standoff distances between the railroad and any inhabited buildings

based on the standoff distances and explosive weight associated with controlled perimeters in Table B-1. Where those standoff distances are not available, and since moving existing railroads may be difficult and prohibitively expensive, ensure that there are procedures in place to prohibit trains from stopping in the vicinity of inhabited structures.

C-1.7 **Recommendation 7. Access Control for Family Housing.** For new family housing areas, provide space for controlling access at the perimeter of the housing area so that a controlled perimeter can be established there if the need arises in the future.

C-1.8 **Recommendation 8. Standoff for Family Housing.** For new family housing construction, maintain a minimum standoff distance of 25 meters (82 feet) from installation perimeters and roads, streets, or highways external to housing areas.

C-1.9 **Recommendation 9. Minimize Secondary Debris.** To reduce the hazard of flying debris in the event of an explosion, eliminate unrevetted barriers and site furnishings in the vicinity of inhabited structures that are accessible to vehicle traffic. Revet exposed barriers and site furnishings near inhabited buildings with a minimum of 1 meter (3 feet) of soil or equivalent alternative techniques to prevent fragmentation hazards in the event of an explosion.

C-1.10 **Recommendation 10. Building Separation.** This recommendation applies to new buildings and is established to minimize the possibility that an attack on one building causes injuries or fatalities in adjacent buildings. The separation distance is predicated on the potential use of indirect fire weapons as identified in UFC 4-010-02.

C-1.10.1 **Billeting and Primary Gathering Buildings.** For all new billeting and primary gathering buildings, ensure that all adjacent inhabited buildings are separated from the billeting and primary gathering buildings by at least 10 meters. Where it is necessary to encroach on those building separations, analyze the billeting and primary gathering buildings and provide hardened building components as necessary to mitigate the effects of the indirect fire weapon identified in UFC 4-010-02 to the low level of protection. Levels of protection are described in Table 2-1 and in the *DoD Security Engineering Planning Manual*. The indirect fire weapon should be assumed to detonate at a distance from the target building of one-half of the separation distance.

C-1.10.2 **Other Inhabited Buildings.** There are no minimum separation distances required for antiterrorism purposes for inhabited buildings other than billeting and primary gathering buildings.

C-2 **STRUCTURAL AND ARCHITECTURAL DESIGN.** The following additional measures, if implemented, will significantly enhance building occupants' safety and security with little increase in cost. Consider these measures for all new and existing inhabited buildings.

C-2.1 **Recommendation 11. Structural Redundancy.** Unexpected terrorist acts can result in local collapse of building structural components. To limit the extent of collapse of adjacent components, utilize highly redundant structural systems such as

moment resisting frames, detail connections to provide continuity across joints equal to the full structural capacity of connected members, and detail members to accommodate large displacements without complete loss of strength. This recommendation is consistent with paragraph B-2.1 (Standard 7) for preventing progressive collapse, but recommends selection of certain structural systems and greater attention to structural details.

C-2.2 **Recommendation 12. Internal Circulation.** Design circulation within buildings to provide visual detection and monitoring of unauthorized personnel approaching controlled areas or occupied spaces.

C-2.3 **Recommendation 13. Visitor Control.** Controlling visitor access maximizes the possibility of detecting potential threatening activities. Keep locations in buildings where visitor access is controlled away from sensitive or critical areas, areas where high-risk or mission-critical personnel are located, or other areas with large population densities of DoD personnel.

C-2.4 **Recommendation 14. Asset Location.** To minimize exposure to direct blast effects and potential impacts from hazardous glass fragments and other potential debris, locate critical assets and mission-critical or high-risk personnel away from the building exterior.

C-2.5 **Recommendation 15. Room Layout.** In rooms adjacent to the exterior of the building, position personnel and critical equipment to minimize exposure to direct blast effects and potential impacts from hazardous glass fragments and other potential debris.

C-2.6 **Recommendation 16. External Hallways.** Since doors can become hazardous debris during explosive blast events, doors designed to resist blast effects are expensive, and external hallways have large numbers of doors leading into inhabited areas, avoid exterior hallway configurations for inhabited structures.

C-2.7 **Recommendation 17. Windows.** To minimize the potential for glazing hazards, minimize the size and number of windows for new construction.

APPENDIX D

DOD MINIMUM ANTITERRORISM STANDARDS FOR EXPEDITIONARY AND TEMPORARY STRUCTURES

D-1 **SITE PLANNING STANDARDS.** All the standards that are unique to expeditionary and temporary structures pertain to site planning. Integrate operational, logistic, and security requirements into the overall configuration of structures, equipment, landscaping, parking, roads, and other features. The most cost-effective solution for mitigating explosive effects on expeditionary and temporary structures is to keep explosives as far away as possible. This is especially critical for these types of structures because hardening may or may not be possible. Dispersed layouts reduce risks from a variety of threats by taking full advantage of terrain and site conditions; therefore, nothing in these standards is intended to discourage dispersal. Costs and requirements for expeditionary and temporary structure hardening are addressed in the *DoD Security Engineering Planning Manual*.

D-1.1 **Standard 1. Minimum Standoff Distances.** The minimum standoff distances apply to all new and existing DoD expeditionary and temporary structures covered by these standards except as otherwise stated below. The minimum standoff distances are presented in Table D-1and illustrated in Figure D-1. Except as otherwise required in these standards, where the standoff distances in Table D-1 can be provided, use conventional expeditionary and temporary structures without a specific analysis of blast effects. Where those distances are not available, analysis of the structure by an engineer experienced in blast-resistant design is required and hardening will be applied as necessary (in those cases which permit structure hardening) to mitigate the effects of the explosives indicated in Table D-1 at the achievable standoff distance to the appropriate level of protection. The appropriate levels of protection for each structure category are shown in Table D-1, and are described in Table 2-2 and in the *DoD Security Engineering Planning Manual*. The two structure types in Table D-1 respond in fundamentally different ways to explosive effects. Standoff distances in Table D-1 reflect those differences.

D-1.1.1 **Controlled Perimeter.** Measure the standoff distance from the closest point on the structure exterior to the controlled perimeter.

D-1.1.1.1 **Container Structures and Pre-engineered Buildings.** For these structures, apply the guidance in Appendix B.

D-1.1.1.2 **Fabric Covered and other Expeditionary or Temporary Structures.** Provide the standoff distance from Table D-1 for the applicable structure category.

D-1.1.2 **Parking and Roadways.** Standoff distances for parking and roadways are based on the assumption that there is a controlled perimeter at which larger vehicle bombs will be detected and kept from entering the controlled perimeter. Where there is a controlled perimeter, the standoff distances and explosive weight associated with parking and roadways in Table D-1 apply unless otherwise stated below. If there is no

controlled perimeter, assume that the larger explosive weights upon which the controlled perimeter standoff distances are based (explosive weight I from Table D-1) can access parking and roadways near buildings. Therefore, where there is no controlled perimeter, use standoff distances from parking and roadways according to the distances and the explosive weight associated with controlled perimeters in Table D-1.

D-1.1.2.1 **Container Structures and Pre-engineered Buildings.** For these structures, apply the guidance in Appendix B.

D-1.1.2.2 **Fabric Covered and other Expeditionary or Temporary Structures.** Measure the standoff distance from the closest point on the structure exterior to the closest edge of parking areas and roadways. The minimum standoff for all structures regardless of hardening or analysis is 10 meters (33 feet).

D-1.1.2.3 **Existing Fabric Covered and other Expeditionary or Temporary Structures.** Moving existing parking areas and roadways may be difficult to achieve and structural retrofits to existing structures may be prohibitively expensive or technically impossible; therefore, the following operational options are provided for existing inhabited structures where the standoff distances in Table D-1 are impractical to achieve.

D-1.1.2.3.1 **Parking Areas.** Establish access control to portions of parking areas to ensure unauthorized vehicles are not allowed closer than the required standoff distance. For primary gathering structures and billeting, if access control is provided to prevent unauthorized parking within the required standoff distance, permit controlled parking as close as 10 meters (33 feet) without hardening or analysis.

D-1.1.2.3.2 **Roadways.** Eliminate parking within the required standoff distances along roads adjacent to existing structures covered by these standards.

D-1.1.3 **Trash Containers.** Measure the standoff distance from the nearest point of the trash container or trash container enclosure to the closest point on the structure exterior. Where the standoff distance is not available, hardening of trash enclosures to mitigate the direct blast effects and secondary fragment effects of the explosive on the structure is acceptable, if the applicable level of protection can be proven by analysis. If trash enclosures are secured to preclude introduction of objects into the enclosures by unauthorized personnel, locate them closer to the structure as long as they do not violate the unobstructed space provisions of Standard 3 below. Openings in screening materials and gaps between the ground and screens or walls making up an enclosure will not be greater than 150 mm (6 inches).

D-1.1.3.1 **Container Structures and Pre-engineered Buildings.** For these structures, apply the guidance in Appendix B.

D-1.1.3.2 **Fabric Covered and other Expeditionary or Temporary Structures.** Provide the standoff distance from Table D-1 for the applicable structure category.

D-1.2 **Standard 2. Structure Separation.** Structure separation requirements are established to minimize the possibility that an attack on one structure causes

injuries or fatalities in adjacent structures. The separation distance is predicated on the potential use of indirect fire weapons.

D-1.2.1 **Billeting and Primary Gathering Structures.**

D-1.2.1.1 **Container Structures and Pre-engineered Buildings.** For these structures, apply the guidance in Appendix B.

D-1.2.1.2 **Fabric Covered and other Expeditionary or Temporary Structures.** For all new billeting and primary gathering structures, ensure that adjacent structures are separated by at least the distances in Table D-1. Where it is necessary to encroach on those structure separations, analyze the structure and provide hardened structure components as necessary to mitigate the effects of the explosive indicated in Table D-1 to the appropriate level of protection as shown in Table D-1. Levels of protection are described in Table 2-2 and in the *DoD Security Engineering Planning Manual*.

D-1.2.2 **Other Inhabited Structures.** There are no minimum separation distances required for antiterrorism for inhabited buildings other than billeting and primary gathering structures.

D-1.3 **Standard 3. Unobstructed Space.** Keep areas within 10 meters (33 feet) of all expeditionary and temporary structures free of items other than those that are part of the utilities and other supporting infrastructure.

D-2 **ADDITIONAL STANDARDS.** In addition to the specific standards detailed in this appendix, apply the standards from Appendix B to expeditionary and temporary structures as follows:

D-2.1 **Fabric Covered and other Expeditionary or Temporary Structures.** Apply the following standards from Appendix B to these structures:

D-2.1.1 **Standard 3. Drive-Up/Drop Off Areas.**

D-2.1.2 **Standard 4. Access Roads.**

D-2.1.3 **Standard 10. Windows and Glazed Doors.**

D-2.1.4 **Standard 11. Building Entrance Layout.**

D-2.1.5 **Standard 20. Equipment Bracing.**

D-2.1.6 **Standard 22. Mass Notification.**

D-2.2 **Container Structures and Pre-engineered Buildings.** For these structures, all standards in Appendix B apply.

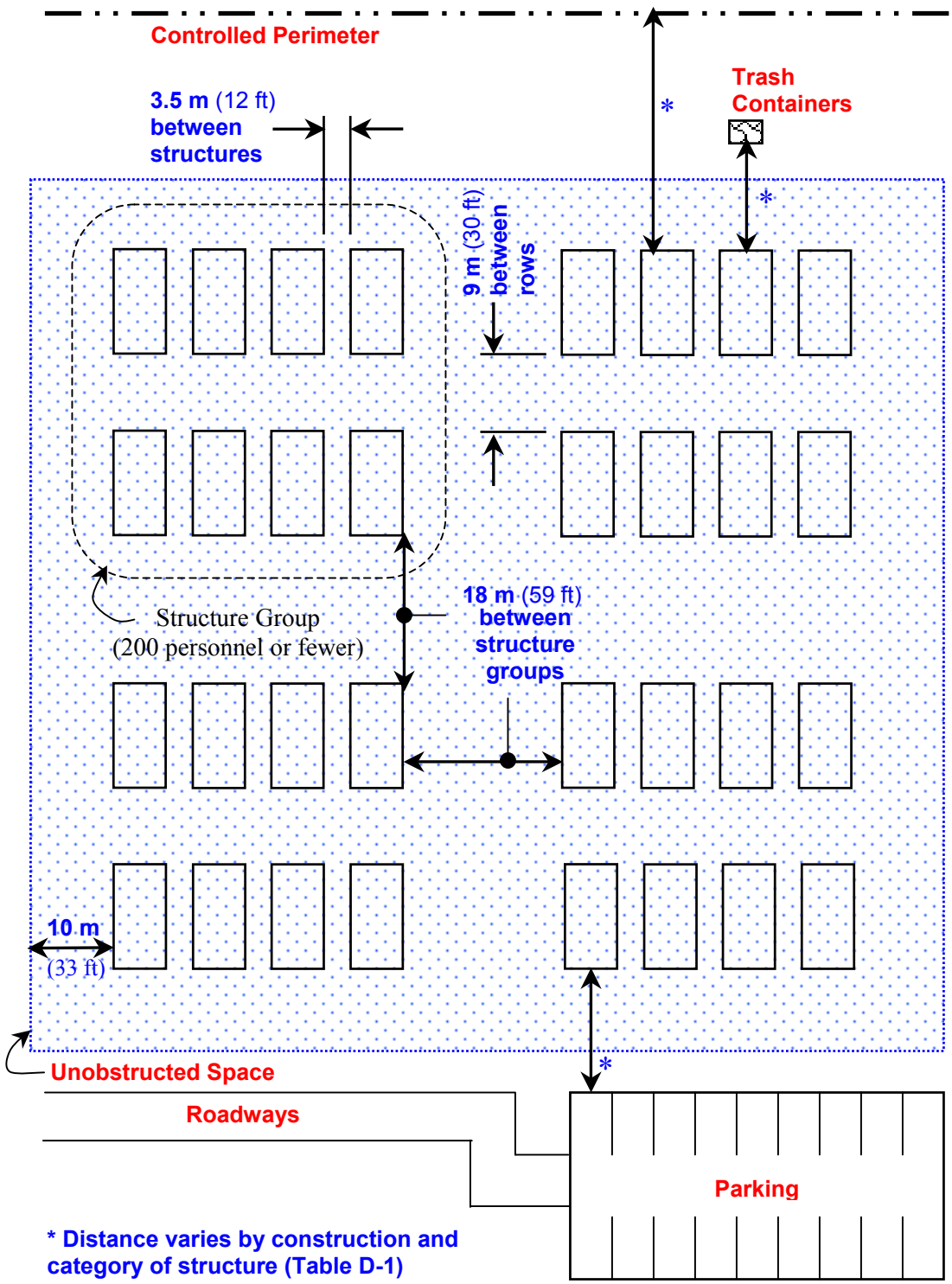
D-3 **ANTITERRORISM RECOMMENDATIONS.** Apply all recommendations except for Recommendation 7 (Access control for family housing) and Recommendation 8 (Standoff for family housing) from Appendix C to all expeditionary and temporary structures.

Table D-1 Minimum Standoff Distances and Separation for Expeditionary and Temporary Structures

Location	Structure Category	Standoff Distance or Separation Requirements			
		Applicable Level of Protection	Fabric Covered Structures(1)	Other Expeditionary and Temporary Structures(1)(2)	Applicable Explosive Weight (TNT) (3)
Controlled Perimeter or Parking and Roadways without a Controlled Perimeter	Billeting	Low	31 m (102 ft.)	71 m (233 ft.)	I
	Primary Gathering Structure	Low	31 m (102 ft.)	71 m (233 ft.)	I
	Inhabited Structure	Very Low	24 m (79 ft.)	47 m (154 ft.)	I
Parking and Roadways within a Controlled Perimeter	Billeting	Low	14 m (46 ft.)	32 m (105 ft.)	II
	Primary Gathering Structure	Low	14 m (46 ft.)	32 m (105 ft.)	II
	Inhabited Structure	Very Low	10 m (33 ft.)	23 m (75 ft.)	II
Trash Containers	Billeting	Low	14 m (46 ft.)	32 m (105 ft.)	II
	Primary Gathering Structure	Low	14 m (46 ft.)	32 m (105 ft.)	II
	Inhabited Structure	Very Low	10 m (33 ft.)	23 m (75 ft.)	II
Structure Separation(4)	Separation between Structure Groups	Low	18 m (59 ft.)	18 m (59 ft.)	III(5)
	Separation between Structure Rows	Low	9 m (30 ft.)	9 m (30 ft.)	III (5)
	Separation between Structures in a Row	Very Low	3.5 m (12 ft.)	3.5 m (12 ft.)	III(5)

(1) See Definitions for a complete description of these structure types.
(2) For container structures, Appendix B applies.
(3) See UFC 4-010-02, for the specific explosive weights (kg/pounds of TNT) associated with designations – I, II, III. UFC 4-010-02 is For Official Use Only (FOUO)
(4) Applies to Billeting and Primary Gathering Structures only. No minimum separation distances for other inhabited structures.
(5) Explosive for building separation is an indirect fire (mortar) round at a standoff distance of half the separation distance.

Figure D-1 Standoff Distances and Separation for Expeditionary and Temporary Structures



This page is intentionally left blank.

ATTACHMENT 13

UFC 1-200-01 DESIGN: GENERAL REQUIREMENTS

NOTE: where this document refers to “MIL-HDBK-1008/C” replace with “UFC3-600-01 Design: Fire Protection Engineering for Facilities”.

Page intentionally blank.

UFC 1-200-01
31 JULY 2002

ATTACHMENT 13

UNIFIED FACILITIES CRITERIA (UFC)

DESIGN: GENERAL BUILDING REQUIREMENTS

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

R0011

UNIFIED FACILITIES CRITERIA (UFC)

DESIGN: GENERAL BUILDING REQUIREMENTS

Any copyrighted material included in this UFC is identified at its point of use.
Use of the copyrighted material apart from this UFC must have the permission of the copyright holder.

U.S. ARMY CORPS OF ENGINEERS

NAVAL FACILITIES ENGINEERING COMMAND (Preparing Activity)

AIR FORCE CIVIL ENGINEER SUPPORT AGENCY

Record of Changes (changes are indicated by **1**\ ... /**1**/)

Change No.	Date	Location

FOREWORD

The Unified Facilities Criteria (UFC) system is prescribed by MIL-STD 3007, provides planning, design, construction, operations, and maintenance criteria, and applies to all DoD commands. UFC will be used for all service projects and work for other customers where appropriate.

UFC are living documents and will be periodically reviewed, updated, and made available to users as part of the Services' responsibility for providing technical criteria. Headquarters, U.S. Army Corps of Engineers (HQUSACE), Naval Facilities Engineering Command (NAVFAC), and Air Force Civil Engineer Support Agency (AFCESA) are responsible for administration of the UFC system. Technical content of UFC is the responsibility of the cognizant DoD working group. Recommended changes with supporting rationale should be sent to the respective service proponent office, as noted below. Defense agencies should contact the preparing service for document interpretation and improvements.

- HQUSACE, ATTN: CECW-E, 441 G Street, NW, Washington, DC 20314-1000, by electronic Criteria Change Request (CCR) form on the TECHINFO site listed below.
- Commander, Atlantic Division, Naval Facilities Engineering Command, 1510 Gilbert Street (ATTN: NAVFAC Engineering Innovation and Criteria Office), Norfolk, Virginia 23511-2699, or ufc@efdlant.navfac.navy.mil, by commercial telephone (757)322-4200 or DSN 262-4200, or by facsimile machine to (757)322-4416
- Air Force Civil Engineer Support Agency, 139 Barnes Drive, Tyndall Air Force Base, Florida 32403-5319, or larry.spangler@Tyndall.af.mil.

UFC are effective upon issuance. UFC are distributed only in electronic media from the following sources:

- USACE TECHINFO Internet site http://www.hnd.usace.armv.mil/techinfo.
- NAVFAC Engineering Innovation and Criteria Office Internet site **http://www.efdlant.navfac.navy.mil**
- Construction Criteria Base (CCB) system maintained by the National Institute of Building Sciences at Internet site http://www.ccb.org.

Hard copies of UFC printed from electronic media should be checked against the current electronic version prior to use to ensure that they are current.

AUTHORIZED BY:

Dwight A Beranek, P.E.
Chief, Engineering and Construction Division
U.S. Army Corps of Engineers

Dr. James W Wright, P.E.
Chief Engineer
Naval Facilities Engineering Command

Kathleen I. Ferguson, P.E.
Deputy Civil Engineer
Deputy Chief of Staff, Installations Logistics
Department of the Air Force

Frank Lane
Director of Analysis & Investment
Deputy Under Secretary of Defense
for Installations
Department of Defense

INTRODUCTION

1-1 **PURPOSE.** This UFC provides guidance for the use of model building codes for design and construction of Department of Defense (DOD) facilities.

1-2 **AUTHORITY.** Public Law 104-113, *National Technology Transfer and Advancement Act of 1995,* requires Federal use of private sector consensus standards wherever practicable. The goal of the law is to reduce reliance on Federal standards by using industry standards when there is potential to simplify contracting, increase timeliness and cost effectiveness, and promote the safety and welfare of users.

1-3 **POLICY.** Model building codes must be used as a basis of future development of criteria, standards and guide specifications by all DOD components. This UFC will be revised to address new and updated industry standards as they become available. It is DOD policy to select the best model code provisions and industry standards for military use.

1-4 **IMPLEMENTATION.** This UFC is effective immediately.

1-5 **STRUCTURE OF THE UFC.** This UFC references IBC 2000 and other government and nongovernment standards and criteria. Paragraph 1-6 provides modifications to IBC 2000 and is structured around its format. The IBC has 35 chapters and 10 appendices that contain both technical and administrative provisions. The administrative portions of the code are not applicable to the military construction process. Technical portions of the code are applicable as modified herein.

1-6 **MODIFICATIONS.** The *IBC 2000* provisions are directed toward public health, safety, and general welfare, and represent minimum standards that must be met by the private-sector construction industry. The use of industry standards for DOD projects is intended to promote communication in the marketplace, improve competition, and result in cost savings. However, the military often requires higher standards to achieve more stringent life-cycle performance, or to construct facilities that do not exist in the private sector. Modifications to the model code provisions contained herein are based upon those unique military requirements. In the case of conflicts between the model code and military criteria, use military requirements.

1-6.1 **Fire Protection and Life Safety.** For fire protection and life safety requirements, refer to *MIL-HDBK-1008C, *Fire Protection for Facilities Engineering, Design and Construction*.

1-6.2 **Chapter 1 - ADMINISTRATION.** Delete.

1-6.3 **Chapter 2 - DEFINITIONS.** Definitions apply to terms used in the model codes and are not intended to replace definitions and terms in military documents.

1-6.4 **Chapter 3 - USE AND OCCUPANCY CLASSIFICATION.** Use Chapter 3 and *MIL-HDBK-1008/C.

1-6.5 **Chapter 4 - SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY.** Delete Sections 412.1, 412.2, 414 and 415. Refer to applicable DOD and individual military service standards.

1-6.6 **Chapter 5 - GENERAL BUILDING HEIGHTS AND AREAS.** Refer to *MIL-HDBK-1008/C for limitations on the use of Table 503. In Section 506.3, the area limitations in Table 503 may be increased by 300 percent for Air Force facilities when an approved automatic sprinkler system is installed, regardless of building height.

1-6.7 **Chapter 6 – TYPES OF CONSTRUCTION.** Use this chapter.

1-6.8 **Chapter 7 – FIRE-RESISTANCE-RATED CONSTRUCTION.** Use this chapter.

1-6.9 **Chapter 8 - INTERIOR FINISHES.** Use Chapter 8 and *MIL-HDBK-1008/C.

1-6.10 **Chapter 9 – FIRE PROTECTION SYSTEMS.** Use *MIL-HDBK-1008/C.

1-6.11 **Chapter 10 - MEANS OF EGRESS.** Use *MIL-HDBK-1008/C.

1-6.12 **Chapter 11 - ACCESSIBILITY.** Delete Chapter 11 and use the *Uniform Federal Accessibility Standards (UFAS)* and the *Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG).*

1-6.13 **Chapter 12 - INTERIOR ENVIRONMENT.**

1-6.13.1 **Paragraph 1202.2.1.** Delete the last sentence and substitute "Combustion air shall be obtained from attic areas only in accordance with Unified Facility Criteria documents, Unified Facility Guide Specifications and military criteria and guidance documents."

1-6.13.2 **Paragraph 1202.3.2, Subparagraph 4.** Delete "in accordance with the International Energy Conservation Code."

1-6.13.3 **Paragraph 1202.4.2.** Delete "the International Mechanical Code and the International Fire Code" and substitute "Unified Facility Criteria documents, Unified Facility Guide Specifications and military criteria and guidance documents."

1-6.13.4 **Paragraph 1203.1.** Delete, including the exception, and substitute "Temperature control shall be in accordance with Unified Facility Criteria documents, Unified Facility Guide Specifications and military criteria and guidance documents."

1-6.13.5 **Paragraphs 1206.2 and 1206.3.** Delete and replace with the following:

Table 1-1 Sound Transmission Standards for Party Walls and Floor/Ceiling Construction

Area	FSTC [1]	FIIC [2]
Party Walls (unit Separation)	52	-
Primary Habitable Areas (Living, Dining, Family Room, Bedrooms, Circulation)	52	65
Habitable Wet Areas (Kitchen, Bath, Utility, Laundry, Equipment)	52	57
Habitable Areas Over Garages	52	-
Note [1] Field Sound Transmission Class. See ASTM E336-97, Standard Test Method for Measurement of Airborne Sound Insulation in Buildings. Note [2] Field Impact Isolation Class. See ASTM E1007-97, Standard Test Method for Field Measurement of Tapping Machine Impact sound Through Floor-Ceiling Assemblies and Associated Support Structure.		

IBC- Air-borne Sound = 50 STC; 45 FSTC ASTM E 90-99, Standard Test Method for Laboratory Measurement of Sound Transmission Loss of Building Partition Elements.

IBC- Structure-borne Sound = 50 IIC; 45 FIIC ASTM E 492-90, Standard Test Method for Laboratory Measurement of Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine.

1-6.13.6 **Paragraph 1207.3.** Delete and replace with following: "Use the latest DoD approved minimum sizes for barracks and dormitory rooms."

1-6.13.7 **Paragraph 1207.4.** Delete. The services define their own parameters for dwelling units.

1-6.14 **Chapter 13 - ENERGY EFFICIENCY.** Delete Chapter 13 and replace with "Federal facilities are required to comply with Public Laws, Executive Orders, Federal Regulations and other mandates regarding energy use, conservation and efficiency standards. In addition, the military has other unique requirements to ensure the planning, design and construction of energy efficient, cost effective facilities that meet mission requirements. These requirements are reflected in criteria and standards used by each military service. Compliance with Unified Facility Criteria documents, Unified Facility Guide Specifications and military criteria documents will ensure that facilities meet all applicable mandates."

1-6.15 **Chapter 14 - EXTERIOR WALLS.** Use Army Technical Instruction 800-01, *Design Criteria* for guidance for air infiltration, glazing area, and moisture migration pertaining to exterior wall systems.

1-6.16 **Chapter 15 - ROOF ASSEMBLIES AND ROOFTOP STRUCTURES.** Use Chapter 15 for basic guidance and NRCA, *Roofing and Waterproofing Manual* and UFGS Division 7 Thermal and Moisture Protection for technical criteria. The use of any

asbestos containing materials in roofing products such as mastics, felts, etc. is prohibited.

1-6.17 **Chapter 16 – STRUCTURAL DESIGN.** Use Chapter 16 in its entirety with the following revisions:

1-6.17.1 **Paragraph 1616.2.3**. Buildings classified as Seismic Use Group III; as defined in Table 1604.5; and within Seismic Design Category D, E, or F; as defined by paragraph 1616.3, require enhanced performance objectives for earthquake response. These facilities will require, in addition to the requirements of Chapter 16, a linear elastic analysis utilizing 'm' factors in accordance with the requirements contained in the Technical Instruction TI 809-04 *Seismic Design for Buildings*. For this analysis, use the applicable ground motion and design procedures as defined in TI 809-04. In addition, nonlinear design procedures may be required for these facilities according to Paragraph 5-4.b of TI 809-04. (The classification of a building as Seismic Use Group III should only be used for essential facilities that are required for post-earthquake recovery, and/or house mission-essential functions, with no redundant back-up facility on- or off-site. Mission-essential functions are those absolutely critical to mission continuation of the activity.)

1-6.17.2 **Paragraph 1622.3.7**. Replace the second sentence with the following: "The seismic design of Navy piers and wharves will be according to the Technical Report TR-2069-SHR, *Design Criteria for Earthquake Hazard Mitigation of Navy Piers and Wharves*."

1-6.17.3 Use Appendices B and C for design at locations outside of CONUS.

1-6.17.4 All inhabited buildings must meet the requirements of **UFC 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings*.

1-6.18 **Chapter 17 – STRUCTURAL TESTS AND INSPECTIONS.** Use Chapter 17 and the requirements in the Unified Facilities Guide Specifications.

1-6.19 **Chapter 18 – SOILS AND FOUNDATIONS.** Use Chapter 18 for basic guidance and ***DM 7.2, *Foundations and Earth Structures* for detailed requirements. For Section 1802.2, the foundation and soils investigation requirements are provided as a minimum. Additional requirements provided by the design agency will take precedence. Also use supplemental requirements in UFGS Division 2, Site Work.

1-6.20 **Chapter 19 – CONCRETE.** Use Chapter 19, and UFGS Division 3, Concrete. Chapter 19 supersedes MIL-HDBK 1002/4, *Concrete Structures*.

1-6.21 **Chapter 20 – ALUMINUM.** Use Chapter 20 and UFGS 05500 (Navy or Army as appropriate) *Miscellaneous Metals*. Chapter 20 supersedes MIL-HDBK-1002/6, *Aluminum Structures, Composite Structures, Structural Plastics, and Fiber-Reinforced Composites*.

1-6.22 **Chapter 21 – MASONRY.** Use Chapter 21 and UFGS Division 4, Masonry. Chapter 21 supercedes Army TM 5-809-3, NAVFAC DM-2.9, AFM 88-3,

Chapter 3, *Masonry Structural Design for Buildings*. Give special attention to control cracking in concrete masonry structures using the guidance contained in Tables 1-2 and Table 1-3. Because the Masonry Society has a waiver for use of metric products, brick and concrete masonry units (CMU) are normally not available in metric sizes.

Table 1-2 Recommended Joint Control Spacing[a]

Vertical Spacing Of Joint Reinforcement With 2-#9 Wires[b] (in)	Maximum Ratio Of Panel Length To Wall Height (L/H)[c]	Maximum Spacing Of Control Joints [d] (ft)
None [e]	2	18
16	3	24
8	4	30

[a] Based on moisture-controlled, type I, concrete masonry in intermediate humidity conditions (ASTM C 90). The designer should adjust the control joint spacing for local conditions. The recommended spacing may be increased 6 ft in humid climates and decreased 6 ft in arid climates.
[b] Joint reinforcement will be cold-drawn deformed wire with a minimum 9-gauge longitudinal wire size.
[c] L is the horizontal distance between control joints. H is generally the vertical distance between structural supports.
[d] The spacing will be reduced approximately 50% near masonry-bonded corners or other similar conditions where one end of the masonry panel is restrained.
[e] Not recommended for walls exposed to view where control of cracking is important.

Table 1-3 Maximum Spacing of Vertical Expansion Joints in Brick Walls, $\Delta T=100^0F$

EXP.JT Width (in)	W x in	Max. Spacing of BEJs [a]
3/8	3/16	22
1/2	1/4	30
3/4	3/8	44
1 (MAX)	1/2	60

[a] Provide expansion joints at 6 to 10 ft from corners.
Recommended vertical BEJ locations.

a. At regular intervals as noted in table above.
b. At changes in wall height or thickness
c. Near wall intersections in “L”, “T”, and “U”-shaped buildings at approximately 6 to 10 ft) from corners.
d. At other points of stress concentration.
e. At edges of openings.

1-6.23 **Chapter 22 – STEEL.** Use Chapter 22 and UFGS Division 5, Metals. Chapter 22 supersedes MIL-HDBK 1002/3, *Structural Engineering Steel Structures*.

1-6.24 **Chapter 23 – WOOD.** Use Chapter 23 and UFGS Division 6, Wood and Plastics. Chapter 23 supersedes MIL-HDBK 1002/5, *Timber Structures*.

1-6.25 **Chapter 24 - GLASS AND GLAZING.** Use Chapter 24 and MIL-HDBK-1013/12, *Evaluation and Selection Analysis of Security Glazing for Protection Against Ballistic, Bomb, and Forced Entry Tactics* for force protection.

1-6.26 **Chapter 25 – GYPSUM BOARD AND PLASTER.** Use this chapter and applicable UFGS.

1-6.27 **Chapter 26 – PLASTIC.** Use this chapter.

1-6.28 **Chapter 27 – ELECTRICAL.** Delete and use NFPA 70, *National Electrical Code.*

1-6.29 **Chapter 28 – MECHANICAL SYSTEMS.** Delete Section 2801 and substitute "Mechanical appliances, equipment and systems shall be planned, designed and constructed in accordance with Unified Facility Criteria documents, Unified Facility Guide Specifications and military criteria and guidance documents. This will ensure energy efficient, cost effective facilities are provided that meet mission requirements and are in compliance with Public Laws, Executive Orders, Federal Regulations and similar mandates. Also comply with NFPA 54, *National Fuel Gas Code.*"

1-6.30 **Chapter 29 – PLUMBING SYSTEMS.** Delete Paragraph 2901.1 and substitute "Plumbing appliances, equipment and systems shall be planned, designed and constructed in accordance with the Unified Facility Criteria documents, Unified Facility Guide Specifications and military criteria and guidance documents. This will ensure energy efficient, water conserving and cost effective facilities are provided that meet mission requirements and are in compliance with Public Laws, Executive Orders, Federal Regulations and similar mandates."

1-6.31 **Chapter 30 – ELEVATORS AND CONVEYING SYSTEMS.** ITG 01-01, *Interim Technical Guidance Elevator Design* supersedes Chapter 30 wherever applicable.

1-6.32 **Chapter 31 - SPECIAL CONSTRUCTION.** Use entire chapter except Sections 3107 and 3108.

1-6.33 **Chapter 32 - ENCROACHMENT INTO THE PUBLIC RIGHT-OF-WAY.** Delete.

1-6.34 **Chapter 33 - SAFEGUARDS DURING CONSTRUCTION.** Delete.

1-6.35 **Chapter 34 - EXISTING STRUCTURES.** Delete entire chapter and refer to *MIL-HDBK-1008/C and ASCE 11-99, *Guidelines for Structural Condition Assessment of Existing Buildings*. Use ASCE 11-99 to conduct structural condition assessment of existing buildings prior to major additions, alterations or repairs.

1-6.36 **Chapter 35 - REFERENCED STANDARDS.** Use the chapter.

1-6.37 **Appendixes A, B, D, E, G, and J.** Delete.

1-6.38 **Appendix H - SIGNS.** Delete Appendix H. Follow the requirements of ADAAG and individual signage publications for each military service.

APPENDIX A

REFERENCES

GOVERNMENT PUBLICATIONS:

1. Unified Facilities Criteria

http:/criteria.navfac.navy.mil/criteria

http:/www.hnd.usace.army.mil/techinfo/index.asp

**UFC 4-010-01, Minimum Antiterrorism Standards for Buildings. (This UFC is due to be published 1 Aug 2002. For questions, please contact the preparing activity.)

2. Naval Facilities Engineering Command (NAVFAC)
1510 Gilbert Street
Norfolk, VA 23511-2669

http://criteria.navfac.navy.mil/criteria
http://www.nfesc.navy.mil

ITG 01-01, Interim Technical Guidance Elevator Design

*MIL-HDBK-1008C, Fire Protection for Facilities Engineering, Design and Construction. (Will be replaced by UFC 3-600-01, Fire Protection for Facilities Engineering, Design and Construction, September 2002. For questions, please contact the preparing activity.)

MIL-HDBK-1013/12, Evaluation and Selection Analysis of Security Glazing for Protection Against Ballistic, Bomb, and Forced Entry Tactics. (Restricted access. Contact your government sponsor if required.)

***DM 7.2, Foundations and Earth Structures. (This Design Manual is due to be replaced by UFC 3-220-01, Geotechnical Engineering by the end of calendar year 2002. For questions, please contact the preparing activity.)

Technical Report, TR-2069-SHR, Design Criteria for Earthquake Hazard mitigation of Navy Piers and Wharves, February 1987.

3. U.S. Army Corps of Engineers (USACE)
4820 University Square,
Huntsville, Al, 35816

Technical Instruction 800-01, Design Criteria

Technical Instruction 809-04, Seismic

http://www.hnd.usace.army.mil/techinfo/index.asp	Design for Buildings Technical Instruction 809-29, Structural Considerations for Metal Roofing Technical Instruction 809-53, Commentary on Roofing Systems
4. National Archives and Records Administration (NARA) gpoaccess@gpo.gov Telephone (202) 512-1530 Toll Free (888) 293-6498 Fax (202) 512-1262	Public Law 104-113, National Technology Transfer and Advancement Act of 1995
5. http://www.access-board.gov/ufas/ufas-html/ufas.htm	Uniform Federal Accessibility Standards (UFAS)
6. http://www.access-board/adaag/html/adaag.htm	Americans with Disabilities Act Accessibility Guidelines for Building and Facilities (ADAAG)

NON-GOVERNMENT PUBLICATIONS:

1. International Code Council (ICC) 5203 Leesburg Pike, Suite 600 Falls Church, VA 22041 (703) 931-4533 (703) 379-1546 fax http://www.intlcode.org/	International Building Code (IBC) 2000
2. National Fire Protection Association (NFPA) 1 Batterymarch Park P.O. Box 9101 Quincy, MA 02269-9101 (617) 770-3000 www.nfpa.org	NFPA 70, National Electrical Code NFPA 54, National Fuel Gas Code
3. ASTM International 100 Barr Harbor Drive PO Box C700 West Conshohocken, PA 19428-2959	ASTM E336-97, Standard Test Method for Measurement of Airborne Sound Insulation in Buildings ASTM E1007-97, Standard Test Method

www.astm.org	for field Measurement of Tapping Machine Impact Sound Through Floor-Ceiling Assemblies and Associated Support Structure ASTM E90-99, Standard Test Method for Laboratory Measurement of Sound Transmission Loss of Building Partition Elements. ASTM E492-90, Standard Test Method for Laboratory Measurement of Sound Transmission Loss Through Floor-Ceiling Assemblies Using the Tapping Machine
4. American Society of Civil Engineers 1801 Alexander Bell Drive Reston, Virginia 20191-4400 1-800-548-2723 toll free (703) 295-6300 international (703) 295-6222 fax (703) 295-6444 faxback http://www.asce.org	ASCE 7, Minimum Design Loads for Buildings and Other Structures. ASCE 11-99, Guidelines for Structural Condition Assessment of Existing Buildings.
5. National Roofing Contractors Association (NRCA) 10255 W. Higgins Road, Suite 600, Rosemont, IL 60018 (847) 299-9070; fax (847) 299-1183; e-mail nrca@nrca.net http://www.nrca.net/	*Roofing and Waterproofing Manual*, 5th Edition, 2001

APPENDIX B

Wind Parameters (as published in ITG 01-2, *Minimum Design Loads for Buildings and Other Structures*)

ID	Name	Ground Snow Load (PSF)	Frost Penetration (in)	Basic Wind Speed (MPH)
1	Woomera, Australia	0	0	80
2	Chievres, Belgium	15	25	115
3	Manama, Bahrain	0	5	80
4	Guantanamo Bay, Cuba	0	5	90
5	Copenhagen, Denmark	25	35	90
6	Diego Garcia, Diego Garcia	0	5	105
7	Stuttgart, Germany	25	40	60
8	Heidelberg, Germany	25	30	60
9	Bad Kreuznach, Germany	25	30	60
10	Grefrath, Germany	25	20	60
11	Wuerzburg, Germany	25	35	60
12	Grafenwoehr, Germany	25	5	60
13	Hanau, Germany	25	25	60
14	Berchtesgaden, Germany	30	50	60
15	Landstuhl, Germany	25	40	60
16	Spangdahlem, Germany	25	35	60
17	Crete, Greece	5	5	85
18	Thule, Greenland	25	255	130
19	Agana Fleet Activities, Guam	0	5 (1)	155(2)
20	Agana Ship Repair, Guam	0	5(1)	155(2)
21	Agana Anderson AFB, Guam	0	5(1)	155(2)
22	Keflavik, Iceland	25	50	110
23	Vicenzia, Italy	35	25	80
24	Gaeta, Italy	20	5	80
25	La Maddalena, Italy	20	5	80
26	Naples, Italy	20	5	80
27	Sigonella, Italy	20	5	80
28	Pordenone, Italy	35	25	80
29	Atsugi, Japan	15	25(3)	120
30	Iwakuni, Japan	0	10(3)	120
31	Sagamihara, Japan	10	5(3)	110
32	Okinawa, Japan	0	5(3)	110
33	Naha, Japan	0	5(3)	110
34	Koza City, Japan	0	5(3)	110
35	Misawa, Japan	40	50(3)	110
36	Tokyo, Japan	10	5(3)	110
37	Sasebo, Japan	10	5(3)	100
38	Atsugi, Japan	20	25(3)	120

ID	Name	Ground Snow Load (PSF)	Frost Penetration (in)	Basic Wind Speed (MPH)
39	Yokosuka NCTC, Japan	20	5(3)	110
40	Yokosuka CFA, Japan	20	5(3)	110
41	Yokosuka Ship Repair, Japan	20	5(3)	110
42	Teague, Korea	20	40(4)	110
43	Pyongtaek, Korea	20	50(4)	100
44	Uijongbu, Korea	20	45(4)	105
45	Seoul, Korea	20	45(4)	105
46	Chinhae, Korea	20	15(4)	105
47	Kunsan, Korea	20	30(4)	100
48	Songtan, Korea	20	50(4)	95
49	Port Lyautey, Morocco	0	5	85
50	Schirmen, Netherlands	15	20	80
51	Antarctica	30	190	105
52	Balboa, Panama	0	5	110
53	Panama City, Panama	0	5	90
54	Colon, Panama	0	5	95
55	Galeta Island, Panama	0	5	90
56	Panama Canal, Panama	0	5	110
57	Terceira, Portugal-Azores	0	5	120
58	Guaynaba, Puerto Rico	0	5	120(5)
59	San Juan, Puerto Rico	0	5	120(5)
60	Sabana Seca, Puerto Rico	0	5	120(5)
61	Roosevelt Roads, Puerto Rico	0	5	140(5)
62	Rota, Spain	5	5	85
63	Adana, Turkey	0	5	70
64	Diyarbakir, Turkey	15	25	105
65	Southampton, England	15	10	85
66	London, England	15	15	100
67	Edzell, England	15	25	85
68	Croughton, England	15	15	100
69	Lakenheath, England	15	15	100
70	Mildenhall, England	15	15	100
71	Antigua, Virgin Islands	0	5	140(6)

Notes:
(1) No frost in Guam or Diego Garcia. Need to identify as minimum footing depth.
(2) ASCE 7 recommends 170 m.p.h. Use ASCE value.
(3) Need to confirm large variance in frost penetration for Japan.
(4) Need to confirm large variance in frost penetration for Korea.
(5) ASCE 7 recommends 145 m.p.h. Use ASCE value.
(6) ASCE 7 recommends 145 m.p.h. Use ASCE value.

APPENDIX C

Seismic Parameters

			S_s	S_1
AFRICA	ALGERIA	Alger	1.24	0.56
		Olan	1.24	0.56
	ANGOLA			
		Luanda	0.06	0.06
	BENIN			
		Cotonou	0.06	0.06
	BOTSWANA			
		Gaborone	0.06	0.06
	BURUNDI			
		Bujumbura	1.24	0.56
	CAMEROON			
		Douala	0.06	0.06
		Yaounde	0.06	0.06
	CAPE VERDE			
		Praia	0.06	0.06
	CENTRAL AFRICAN REPUBLIC			
		Bangui	0.06	0.06
	CHAD			
		Ndjamena	0.06	0.06
	CONGO			
		Brazzaville	0.06	0.06
	DJIBOUTI			
		Djibouti	1.24	0.56
	EGYPT			
		Alexandria	0.62	0.28
		Cairo	0.62	0.28
		Port Said	0.62	0.28
	EQUATORIAL GUINEA			
		Malabo	0.06	0.06
	ETHIOPIA			
		Addis Ababa	1.24	0.56
		Asmara	1.24	0.56
	GABON			
		Libreville	0.06	0.06
	GAMBIA			
		Banjul	0.06	0.06
	GHANA			
		Accra	1.24	0.56
	GUINEA			
		Bissau	0.31	0.14
		Conakry	0.06	0.06
	IVORY COAST			
		Abidijan	0.06	0.06
	KENYA			
		Nairobi	0.62	0.28

	LESOTHO			
		Maseru	0.62	0.28
	LIBERIA			
		Monrovia	0.31	0.14
	LIBYA			
		Tripoli	0.62	0.28
		Wheelus AFB	0.62	0.28
	MALAGASY REPUBLIC			
		Tananarive	0.06	0.06
	MALAWI			
		Blantyre	1.24	0.56
		Lilongwe	1.24	0.56
		Zomba	1.24	0.56
	MALI			
		Bamako	0.06	0.06
	MAURITANIA			
		Nouakchott	0.06	0.06
	MAURITIUS			
		Port Louis	0.06	0.06
	MOROCCO			
		Casablanca	0.62	0.28
		Port Lyautey	0.31	0.14
		Rabat	0.62	0.28
		Tangier	1.24	0.56
	MOZAMBIQUE			
		Maputo	0.62	0.28
	NIGER			
		Niamey	0.06	0.06
	NIGERIA			
		Ibadan	0.06	0.06
		Kaduna	0.06	0.06
		Lagos	0.06	0.06
	REPUBLIC OF RWANDA			
		Kigali	1.24	0.56
	SENEGAL			
		Dakar	0.06	0.06
	SEYCHELLES			
		Victoria	0.06	0.06
	SIERRA LEONE			
		Freetown	0.06	0.06
	SOMALIA			
		Mogadishu	0.06	0.06
	SOUTH AFRICA			
		Cape Town	1.24	0.56
		Durban	0.62	0.28
		Johannesburg	0.62	0.28
		Natal	0.31	0.14
		Pretoria	0.62	0.28
	SWAZILAND			
		Mbabane	0.62	0.28
	TANZANIA			
		Dar es Salaam	0.62	0.28

		Zanzibar	0.62	0.28
	TOGO			
		Lome	0.31	0.14
	TUNISIA			
		Tunis	1.24	0.56
	UGANDA			
		Kampala	0.62	0.28
	UPPER VOLTA			
		Ougadougou	0.06	0.06
	ZAIRE			
		Bukavu	1.24	0.56
		Kinshasa	0.06	0.06
		Lubumbashi	0.62	0.28
	ZAMBIA			
		Lusaka	0.62	0.28
	ZIMBABWE			
		Harare		
ASIA	AFGHANISTAN			
		Kabul	1.65	0.75
	BAHRAIN			
		Manama	0.25	0.10
	BANGLADESH			
		Dacca	1.24	0.56
	BRUNEI			
		Bandar Seri Begawan	0.31	0.14
	BURMA			
		Mandalay	1.24	0.56
		Rangoon	1.24	0.56
	CHINA			
		Canton	0.62	0.28
		Chengdu	1.24	0.56
		Nanking	0.62	0.28
		Peking	1.65	0.75
		Shanghai	0.62	0.28
		Shengyang	1.65	0.75
		Tibwa	1.65	0.75
		Tsingtao	1.24	0.56
		Wuhan	0.62	0.28
	CYPRUS			
		Nicosia	1.24	0.56
	HONG KONG			
		Hong Kong	0.62	0.28
	INDIA			
		Bombay	1.24	0.56
		Calcutta	0.62	0.28
		Madras	0.31	0.14
		New Delhi	1.24	0.56
	INDONESIA			
		Bandung	1.65	0.75
		Jakarta	1.65	0.75
		Medan	1.24	0.56

		Surabaya	1.65	0.75
	IRAN			
		Isfahan	1.24	0.56
		Shiraz	1.24	0.56
		Tabriz	1.65	0.75
		Tehran	1.65	0.75
	IRAQ			
		Baghdad	1.24	0.56
		Basra	0.31	0.14
	ISRAEL			
		Haifa	1.24	0.56
		Jerusalem	1.24	0.56
		Tel Aviv	1.24	0.56
	JAPAN			
		Fukuoka	1.24	0.56
		Itazuke AFB	1.24	0.56
		Misawa AFB	1.24	0.56
		Naha, Okinawa	1.65	0.75
		Osaka/Kobe	1.65	0.75
		Sapporo	1.24	0.56
		Tokyo	1.65	0.75
		Wakkanai	1.24	0.56
		Yokohama	1.65	0.75
		Yakota	1.65	0.75
	JORDAN			
		Amman	1.24	0.56
	KOREA			
		Kwangju	0.31	0.14
		Kimhae	0.31	0.14
		Pusan	0.31	0.14
		Seoul	0.06	0.06
	KUWAIT			
		Kuwait	0.31	0.14
	LAOS			
		Vientiane	0.31	0.14
	LEBANON			
		Beirut	1.24	0.56
	MALAYSIA			
		Kuala Lumpur	0.31	0.14
	NEPAL			
		Kathmandu	1.65	0.75
	OMAN			
		Muscat	0.62	0.28
	PAKISTAN			
		Islamabad	1.68	0.75
		Karachi	1.65	0.75
		Lahore	0.62	0.28
		Peshawar	1.65	0.75
	QUATAR			
		Doha	0.06	0.06
	SAUDI ARABIA			

		Al Batin	0.31	0.14
		Dhahran	0.31	0.14
		Jiddah	0.62	0.28
		Khamis Mushayf	0.310.14	
		Riyadh	0.06	0.06
	SINGAPORE			
		All	0.31	0.14
	SOUTH YEMEN			
		Aden City	1.24	0.56
	SRI LANKA			
		Colombo	0.06	0.06
	SYRIA			
		Allepo	1.24	0.56
		Damascus	1.24	0.56
	TAIWAN			
		All	1.65	0.75
	THAILAND			
		Bangkok	0.31	0.14
		Chinmg Mai	0.62	0.28
		Dongkhia	0.06	0.06
		Udorn	0.31	0.14
	TURKEY			
		Adana	0.62	0.28
		Ankara	0.62	0.28
		Istanbul	1.65	0.75
		Izmir	1.65	0.75
		Karamursel	1.24	0.56
	UNITED ARAB EMIRATES			
		Abu Dhabi	0.06	0.06
		Dubai	0l.06	0.06
	VIETNAM			
		Ho Chi Minh City		
		(Saigon)	0.06	0.06
	YEMEN ARAB REPUBLIC			
		Sanaa	1.24	0.56
ATLANTIC OCEAN AREA	AZOREA			
		All	0.62	0.28
	BURMUDA			
		All	0.31	0.14
CARIBBEAN SEA	BAHAMA ISLANDS			
		All	0.31	0.14
	CUBA			
		All	0.62	0.28
	DOMINICAN REPUBLIC			
		Santo Domingo	1.24	0.56
	FRENCH WEST INDIES			
		Martinique	1.24	0.56
	GRENADA			
		Saint Georges	1.24	0.56

	HAITI			
		Port au Prince	1.24	0.56
	JAMAICA			
		Kingston	1.24	0.56
	LEEWARD ISLANDS			
		All	1.24	0.56
	TRINADAD AND TOBAGO			
		All	1.24	0.56
CENTAL AMERICA	BELIZE			
		Beimopan	0.26	0.28
	CANAL ZONE			
		All	0.62	0.28
	COSTA RICA			
		San Jose	12.4	0.56
	EL SALVADORE			
		San Salvador	1.65	0.75
	GUATEMALA			
		Guatemala	1.65	0.75
	HONDURAS			
		Tegucigalpa	1.24	0.56
	NICARAGUA			
		Managua	1.65	0.75
	PANAMA			
		Colon	1.24	0.56
		Galeta	0.83	0.38
		Panama	1.24	0.56
	MEXICO			
		Ciudad Juarez	0.62	0.28
		Guadalajara	1.24	0.56
		Hermosillo	1.24	0.56
		Matamoros	0.06	0.06
		Mazatlan	0.60	0.28
		Merida	0.06	0.06
		Mexico City	1.24	0.56
		Monterrey	0.06	0.06
		Nuevo Laredo	0.06	0.06
		Tijuana	1.24	0.56
EUROPE	ALBANIA			
		Tirana	1.24	0.56
	AUSTRIA			
		Salzburg	0.62	0.28
		Vienna	0.62	0.28
	BELGIUM			
		Antwerp	0.31	0.14
		Brussels	0.62	0.28
	BULGARIA			
		Sofia	1.24	0.56
	CZECH REPUBLIC			
		Prague	0.31	0.14
	DENMARK			
		Copenhagen	0.31	0.14

	FINLAND			
		Helsinki	0.31	0.14
	FRANCE			
		Bordeaux	0.62	0.28
		Lyon	0.31	0.14
		Marseille	1.24	0.56
		Nice	1.24	0.56
		Strasbourg	0.62	0.28
	GERMANY, FEDERAL REPUBLIC			
		Berlin	0.06	0.06
		Bonn	0.62	0.28
		Bremen	0.06	0.06
		Dusseldorf	0.31	0.14
		Frankfurt	0.62	0.28
		Hamburg	0.06	0.06
		Munich	0.31	0.14
		Stuttgart	0.62	0.28
		Vaihigen	0.62	0.28
	GREECE			
		Athens	1.24	0.56
		Kavalla	1.65	0.75
		Makri	1.65	0.75
		Rhodes	1.24	0.56
		Souda Bay	1.65	0.75
		Thessaloniki	1.65	0.75
	HUNGARY			
		Budapest	0.62	0.28
	ICELAND			
		Keflavik	1.0	0.40
		Reykjavik	1.65	0.75
	IRELAND			
		Dublin	0.06	0.06
	ITALY			
		Aviano AFG	1.24	0.56
		Brindisi	0.06	0.06
		Florence	1.24	0.56
		Gaeta	0.50	0.21
		Genoa	1.24	0.56
		La Maddalena	0.22	0.09
		Milan	0.62	0.28
		Naples	0.67	0.27
		Palermo	1.24	0.56
		Rome	0.62	0.28
		Sicily	1.20	0.31
		Trieste	1.24	0.56
		Turin	0.62	0.28
	LUXEMBOURG			
		Luxembourg	0.31	0.14
	MALTA			
		Valletta	0.62	0.28
	NETHERLANDS			
		All	0.06	0.06

	NORWAY			
		Oslo	0.62	0.28
	POLAND			
		Krakow	0.62	0.28
		Poznan	0.31	0.14
		Waraszawa	0.31	0.14
	PORTUGAL			
		Lisbon	1.65	0.75
		Oporto	1.24	0.56
	ROMANIA			
		Bucharest	1.24	0.56
	SLOVAK REPUBLIC			
		Bratislava	0.62	0.28
	SPAIN			
		Barcelona	0.62	0.28
		Bilbao	0.62	0.28
		Madrid	0.06	0.06
		Rota	0.75	0.30
		Sevilla	0.62	0.28
	SWEDEN			
		Goteborg	0.62	0.28
		Stockholm	0.31	0.14
	SWITZERLAND			
		Bern	0.62	0.28
		Geneva	0.31	0.14
		Zurich	0.62	0.28
	UNITED KINGDOM			
		Belfast	0.06	0.06
		Edinburgh	0.31	0.14
		Edzell	0.31	0.14
		Glasgow/Renfrew	0.31	0.14
		Hamilton	0.31	0.14
		Liverpool	0.31	0.14
		London	0.125	0.025
		Londonderry	0.31	0.14
		St. Mawgan	0.20	0.04
		Thurso	0.31	0.14
	USSR			
		Kiev	0.06	0.06
		Leningrad	0.06	0.06
		Moscow	0.06	0.06
	YUGOSLAVIA			
		Belgrade	0.62	0.28
		Zagreb	1.24	0.56
NORTH AMERICA	GREENLAND			
		All	0.31	0.14
	CANADA			
		Argentina NAS	0.62	0.28
		Calgary, Alb	0.31	0.14
		Churchill, Man	0.06	0.06

		Cold Lake, Alb	0.31	0.14
		Edmonton, Alb	0.31	0.14
		E. Harmon, AFB	0.62	0.28
		Fort Williams, Ont	0.06	0.06
		Frobisher N.W. Ter	0.06	0.06
		Goose Airport	0.31	0.14
		Halifax	0.31	0.14
		Montreal, Quebec	1.24	0.56
		Ottawa, Ont	0.62	0.28
		St. Johns Nfld	1.24	0.56
		Toronto, Ont	0.31	0.14
		Vancouver	1.24	0.56
		Winnepeg, Man	0.31	0.14
SOUTH AMERICA	ARGENTINA			
		Buenos Aires	0.25	0.10
	BRAZIL			
		Belem	0.06	0.06
		Belo Horizonte	0.06	0.06
		Brasilia	0.06	0.06
		Manaus	0.06	0.06
		Porto Allegre	0.06	0.06
		Recife	0.06	0.06
		Rio de Janeiro	0.06	0.06
		Salvador	0.06	0.06
		San Paulo	0.31	0.14
	BOLIVIA			
		La Paz	1.24	0.56
		Santa Cruz	0.31	0.14
	CHILE			
		Santiago	1.65	0.75
		Valparaiso	1.65	0.75
	COLOMBIA			
		Bogotá	1.24	0.56
	ECUADOR			
		Quito	1.65	0.75
		Guayaquil	1.24	0.56
	PARAQUAY			
		Asuncion	0.06	0.06
	PERU			
		Lima	1.65	0.75
		Plura	1.65	0.75
	URUGUAY			
		Montevideo	0.06	0.06
	VENEZUELA			
		Maracaibo	0.62	0.28
		Caracas	1.65	0.75
PACIFIC OCEAN AREA	AUSTRALIA			
		Brisbane	0.31	0.14
		Canberra	0.31	0.14
		Melbourne	0.31	0.14

		Perth	0.31	0.14
		Sydney	0.31	0.14
	CAROLINE ISLANDS			
		Koror, Paulau Is	0.62	0.28
		Ponape	0.06	0.06
	FIJI			
		Suva	1.24	0.56
	JOHNSON ISLAND			
		All	0.31	0.14
	MARIANA ISLANDS			
		Saipan	1.24	0.56
		Tinian	1.24	0.56
	MARSHAL ISLANDS			
		All	0.31	0.14
	NEW ZEALAND			
		Auckland	1.24	0.56
		Wellington	1.65	0.75
	PAPAU NEW GUINEA			
		Port Moresby	1.24	0.56
	PHILLIPINE ISLANDS			
		Cebu	1.65	0.75
		Manila	1.65	0.75
		Baguio	1.24	0.56
	SAMOA			
		All	1.24	0.56
	WAKE ISLAND			
		All	0.06	0.06

ATTACHMENT 14

PROHIBITED AND ACCEPTABLE PLANTS LIST

This page intentionally left blank.

ATTACHEMENT 14: PROHIBITED AND ACCEPTABLE PLANTS LIST

PROHIBITED TREES

BOTANICAL NAME	COMMON NAME
ACER MACROPHYLLUM	BIGLEAF MAPLE
ACER NEGUNDO	BOX ELDER
ACER SACCHARINUM	SILVER MAPLE
ALNUS SP.	ALDER
ARAUCARIA ARAVCANA	MONKEY PUZZLE
ARBUTUS MENZIESSI	MADRONE
BETULA PENDULA	WHITE BIRCH
CATALPA SP.	CATALPA
CRATAEGUS SP.	HAWTHORN
ELAEAGNUS ANGUSTIFOLIA	RUSSIAN OLIVE
LABURNUM SP.	GOLDEN CHAIN TREE
PICEA PUNGENS	COLORADO SPRUCE
PLATANUS X ACERIFOLIA	LONDON PLANE TREE
PLATANUS OCCIDENTALIS	SYCAMORE
POPULUS TRICHOCARPA	BLACK COTTONWOOD
POPULUS SP.	POPLARS
ROBINIA PSEUDOACACIA	BLACK LOCUST
SALIX SP.	WILLOW
SOPHORA JAPONICA	PAGODA TREE
SORBUS AUCUPARIA	MOUNTAIN ASH
ULMUS AMERICANA	AMERICAN ELM
ULMUS PARVIFOLIA	CHINESE ELM
ULMUS PUMILA	SIBERIAN ELM

Annual flowers shall not be used. Perennials, except for hardy, drought tolerant ground covers shall not be used.

ACCEPTABLE PLANTS

* Shall not be used in turf areas or overhanging hardscapes (sidewalks, roads, parking etc.)

BOTANICAL NAME	COMMON NAME
TREES	
ACER CIRCINATUM	VINE MAPLE
ACER GINNALA 'FLAME'	AMUR MAPLE
ACER GRISEUM	PAPERBARK MAPLE
ACER PALMATUM	JAPANESE MAPLE
ACER RUBRUM 'SCARLET SENTINEL'	RED MAPLE SENTINEL
ACER SACCHRUM 'GREEN MOUNTAIN	GREEN MOUNTAIN SUGAR MAPLE
BETULA JACQUEMONTII	WHITEBARKED HIMALAYAN BIRCH
CALOCEDRUS DECURRENS	INCENSE CEDAR
CARPINUS BETULUS 'FASTIGIATA'	COLUMNAR HORNBEAM
CERCIDIPHYLLUM JAPONICUM	KATSURA
CHAMAECYPARIS NOOTKATENSIS	ALASKA YELLOW CEDAR
CHAMAECYPARIS OBTUSA 'GRACILIS'	SLENDER HINOKI CYPRESS
CORNUS KOUSA VAR. CHINENSIS	KOUSA DOGWOOD
COTINUS COGGYGRIA 'PURPUREUS'	SMOKE TREE
CRYPTOMERIA JAPONICA	JAPANESE CRYPTOMERIA
CUPRESSOCYPARIS LEYLANDII	LEYLAND CYPRESS
FRAXINUS PENNSYLVANICA 'PATMORE,' 'MARSHALL'S SEEDLESS'	PATMORE ASH, SEEDLESS GREEN ASH
GINKGO BILOBA (plant male trees only)	MAIDENHAIR TREE
GLEDITSIA TRICANTHOS 'SHADEMASTER'	SHADEMASTER HONEY LOCUST
JUNIPERUS CHINENSIS ‘ROBUSTA GREEN’	ROBUSTA GREEN CHINESE JUNIPER
JUNIPERUS SCOPULORUM 'BLUE HEAVEN'	ROCKY MOUNTAIN JUNIPER
*LIQUIDAMBAR STYRACIFLUA	SWEET GUM
*LIRODENDRON TULIPIFERA	TULIP TREE
MALUS 'CENTURION'	FLOWERING CRABAPPLE
MALUS 'PRAIRIEFIRE'	PRAIRIEFIRE CRABAPPLE
MALUS TRANSITORIA 'SCHMIDTCUTLEAF'	GOLDEN RAINDROPS CRABABPPLE
PINUS CONTORTA	SHORE PINE
*PINUS MUGO MUGO	MUGO PINE
PINUS NIGRA	AUSTRIAN PINE
PINUS PONDEROSA	PONDEROSA PINE
PINUS SYLVESTRUS	SCOTCH PINE
PRUNUS SUBHIRTELLA 'AUTUMNALIS'	AUTUMN FLOWERING CHERRY
PSEUDOTSUGA MENZIESII	DOUGLAS FIR
PYRUS CALLERYANA 'CHANTICLEER'	FLOWERING PEAR
QUERCUS GARRYANA	OREGON OAK
QUERCUS ROBUR ‘FASTIGIATA’	COLUMNAR ENGLISH OAK
QUERCUS RUBRA	RED OAK
SEQUOIA SEMPERVIRENS	COAST REDWOOD
STYRAX JAPONICA	JAPANESE SNOWDROP TREE

THUJA PLICATA	WESTERN RED CEDAR
THUJA PLICATA 'HOGAN'	HOGAN CEDAR
TILIA CORDATA 'GREENSPIRE'	LITTLE LEAF LINDEN
TSUGA HETEROPHYLLA	WESTERN HEMLOCK
TSUGA CANADENSIS	CANADA HEMLOCK
TSUGA HETEROPHYLLA	WESTERN HEMLOCK
TSUGA CANADENSIS	CANADA HEMLOCK
SHRUBS	
AMELANCHIER ALNIFOLIA	SASKATOON
AMELANCHIER LAEVIS	SERVICEBERRY
ARBUTUS UNEDO	STRAWBERRY TREE
ARBUTUS UNEDO 'COMPACTA'	COMPACT STRAWBERRY TREE
BUXUS SEMPERVIRENS ‘SUFFRUTICOSA’	TRUE DWARF BOXWOOD
CHAMAECYPARIS OBTUSA 'NANA GRACILIS'	DWARF HINOKI CYPRESS
CISTUS PRAECOX	ROCKROSE
CISTIS X PURPUREUS	PURPLE ROCKROSE
CORNUS STOLONIFERA	REDOSIER DOGWOOD
CORNUS STOLONIFERA 'KELSEYII'	DWARF REDOSIER DOGWOOD
COTONEASTER PARNEYI	PARNEYI COTONEASTER
DAPHNE CNEORUM 'RUBY GLOW'	RUBY GLOW GARLAND DAPHNE
ELEAGNUS PUNGENS ‘MACULATA’	GOLDEN ELEAGNUS
EUONYMUS ALATA 'COMPACTA'	COMPACT BURNING BUSH
FOTHERGILLA GARDENII	DWARF FOTHERGILLA
HEBE 'AUTUMN GLORY', 'PATTY'S PURPLE,' etc..	HEBE
HELICTOTRICHON SEMERVIRENS	BLUE OAT GRASS
HOLODISCUS DISCOLOR	OCEAN SPRAY
ILEX CRENATA ‘GREEN ISLAND’	JAPANESE HOLLY
JUNIPERUS CONFERTA 'BLUE PACIFIC'	SHORE JUNIPER
LONICERA PILEATA	PRIVET HONEYSUCKLE
MAHONIA AQUIFOLIUM	TALL OREGON GRAPE
MAHONIA AQUIFOLIUM 'COMPACTUM'	COMPACT OREGON GRAPE
MAHONIA REPENS CREEPING MAHONIA	CREEPING MAHONIA
MYRICA CALIFORNICA	WAXMYRTLE
NANDINA DOMESTICA many varieties	HEAVENLY BAMBOO
OEMLERIA CERASIFORMIS	INDIAN PLUM
OSMANTHUS DELAVAYI	OSMANTHUS
PICEA ABIES 'NIDIFORMIS'	BIRD'S NEST SPRUCE
POLYSTICHUM MUNITUM	SWORDFERN
POTENTILLA FRUTICOSA	SHRUBBY CINQUEFOIL
RHODODENDRON 'GOMER WATERER'	PJM', 'PURPLE SPLENDOUR', 'UNIQUE,' etc.
RIBES SANGUINEUM 'ELK RIVER RED'	RED FLOWERING CURRANT
ROSA RUGOSA (many varieties)	RAMANAS ROSE
SKIMMIA JAPONICA	JAPANESE SKIMMIA
SKIMMIA REEVESIANA	REEVES SKIMMIA
SYMPHORICARPUS ALBUS	SNOWBERRY

TAXUS BACCATA 'REPANDENS'	SPREADING ENGLISH YEW
VACCINIUM OVATUM	EVERGREEN HUCKLEBERRY
VIBURNUM DAVIDII	DAVID VIBURNUM
VIBURNUM PLICATUM TOMENTOSUM	DOUBLE FILE VIBURNUM
GROUND COVERS	
AJUGA REPTANS 'BURGANDY GLOW', GAIETY, etc.	CARPET BUGLE
ARCTOSTAPHYLOS UVA URSI	KINNIKINNIK
ARCTOSTAPHYLOS UVA URSI 'VANCOUVER JADE'	KINNIKINNIK VANCOUVER JADE
COTONEASTER DAMMERI 'LOWFAST'	BEARBERRY COTONEASTER
EPIMEDIUM 'ROSE QUEEN,' 'NIVIUM,' etc.	BISHOP'S HAT
EUONYMUS FORTUNEI ‘COLORATA’	PURPLE-LEAF WINTER CREEPER
FRAGARIA CHILOENSIS 'LIPSTICK,' 'PINK PANDA'	BEACH STRAWBERRY
GAULTHERIA SHALLON	SALAL
HYPERICUM CALYCINUM	ST. JOHNSWORT
JUNIPERUS HORIZONTALIS 'BLUE CHIP'	BLUE CHIP JUNIPER
JUNIPERUS HORIZONTALIS 'PRINCE OF WALES'	PRINCE OF WALES JUNIPER
JUNIPERUS HORIZONTALIS 'WILTONII'	WILTON JUNIPER
JUNIPERUS PROCUMBENS 'NANA'	COMPACT GARDEN JUNIPER
JUNIPERUS SABINA "BROADMOOR’	BROADMOOR JUNIPER
LIRIOPE SPICATA	CREEPING LILYTURF
LITHODORA DIFFUSA 'GRACE WARD,' 'HEAVENLY BLUE'	LITHODORA
MAHONIA NERVOSA	LONGLEAF MAHONIA
OPHIOPOGON JAPONICUS 'NANA'	DWARF MONDO GRASS
PACHYSANDRA TERMINALIS 'SILVER EDGE,' etc.	JAPANESE SPURGE
RUBUS CALYCINOIDES 'EMERALD CARPET'	CREEPING RUBUS
THYMUS PSEUODOLANUGINOSUS	WOOLY THYME
THYMUS SERPHYLLUM	WILD THYME
VINCA MINOR 'BOWLESII,' etc.	DWARF PERIWINKLE

The use of native plants, other than those listed above that are hardy, drought-tolerant, low maintenance and meet force protection criteria, is encouraged.

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 Defense	UFC 1-200-01 Design: General Building Requirements UFC 3-600-01 Fire Protection Engineering for Facilities UFC 4-010-01 DoD Minimum Antiterrorism Standards For Buildings
Department of the Navy Standardization Documents Order Desk 700 Robbins Avenue, Bldg. 4D Philadelphia, PA 19111-5094	UFC-3-6001-01 Design: Fire Protection Engineering for Facilities
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 (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 Z124.5 (1997) Plastic Toilet (Water Closets) Seats
International Code Council, Inc. 5203 Leesburg Pike, Suite 708 Falls Church, VA 22041-3401	ICC (2000) International Building Codes
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 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 Bureau 8575 Grovemont Circle Gaithersburg, MD 20877-4121	NEBB Procedural Stds (1991) Procedural 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 13 (1999) Installation of Sprinkler Systems
	NFPA 13R (1996) Residential Occupancies up to and Including Four Stories in Height Sprinkler Systems
	NFPA 20 (1999) Installation of Centrifugal Fire Pumps
	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 (2002) National Electrical Code
	NFPA 72 (1996) National Fire Alarm Code
	NFPA 80 (1999) Standard for Fire Doors and Fire Windows
	NFPA 90A (1999) Installation of Air Conditioning and Ventilating Systems
	NFPA 101 (2000) Life Safety Code
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

SECTION 00890

OUTLINE SPECIFICATIONS

1.00 GENERAL.

a. Purpose

These outline specifications cover the range of products/work to be included in the project. The purposes for this listing are:

- to indicate the areas of work in this project;
- to broadly indicate the work within each section, and
- to indicate minimum acceptable requirements and to further detail those minimum requirements.

These outline specifications do not attempt to address product approval, shop drawings, actual installation or other items covered in the referenced specifications.

b. Fundamental Requirements

(1) Specifications for this project shall be developed by editing the appropriate Unified Facilities Guide Specifications (UFGS) section, unless a section is provided in this RFP or a required section is not available within the UFGS.

(2) All editing of guide specifications shall be performed as directed in paragraph 3.00 EDITING PROCEDURES.

(3) This RFP also includes specification sections that are fully developed. The Contractor shall incorporate these complete specifications into the design without any further editing.

(4) This project shall be 100% asbestos free. No asbestos or asbestos containing materials, in any amounts shall be allowed in the construction of this project.

(5) There shall be zero lead content in any paints or coatings used in the construction of this project.

(6) No PCB's shall be used in light ballasts in any amounts in the construction of this project.

(7) The exterior wall sections, including the framing, waterproofing, and exterior and interior finishing, shall satisfy the design requirements for fire protection, heat loss, seismic and wind loads, environmental sustainability, security, force protection, and durability.

(8) Manufacturer and/or trade names provided in these outline specifications are used to indicate the properties and quality of the product. Indication of manufacturer or trade names does not restrict the Contractor's ability to select other manufacturers that provide an approved and equal product.

(9) In some instances, products, systems and/or components are listed for the purpose of conforming to or being compatible with existing products, systems and/or components at Fort

Lewis. These items shall be provided as indicated in paragraph 4.00 OUTLINE SPECIFICATIONS, or the contractor may demonstrate that a product, system or component is fully compatible with existing by meeting the following conditions:

(a) Submittals as required were submitted and approved in accordance with specification Section 01330 - SUBMITTAL PROCEDURES.
(b) The product, system or component has been successfully used before in a similar application.
(c) The Contractor provides an owner/user point of contact (POC) for previous installations to the Government to verify customer satisfaction.
(d) The system is tested operationally with the Installation System with which compatibility is required and all functions required are demonstrated to be operational

2.00 SPECIFICATIONS.

a. The Guide Specifications listed below are Unified Facilities Guide Specifications (UFGS) unless otherwise noted, and are to be used for all military construction. The design build contractor shall prepare all specifications by editing the appropriate UFGS. Edits shall be limited to additions and deletions required to match the products, systems or construction methodologies used. All bracketed ([ ]) information shall be edited. Language standard to the UFGS that is not design specific shall not be edited.

b. The Offeror/Contractor is to be aware that these specifications represent the latest versions available at the time of issue of this RFP and shall be used in preparing specifications for this project. Specifications are available in electronic format (SpecsIntact) from the Seattle District Corps of Engineers Internet homepage: (http://www.nws.usace.army.mil, under the tab "Construction Specifications).

c. COE Seattle District prepared guide specifications (designated NPS) are located at the Seattle District Corps of Engineers Internet web site (http://www.nws.usace.army.mil/ specs/specmain.htm). Use of these specifications shall be limited to obtaining specific information for editing the UFGS.

d. Fort Lewis Installation specifications have been included in the following outline specifications. Requirements described in these outline sections shall be incorporated into the UFGS edits for project specifications.

e. For work not covered by an available UFGS section, the Offeror/Contractor may use other recognized industry sources of specifications unless noted otherwise. However, all sections so derived shall be written to match the three part (CSI) structure, adhere to the format of the UFGS, and be provided using the SpecsIntact software.

3.00 EDITING PROCEDURES

a. Use of the UFGS establishes an acceptable level of quality in materials, and workmanship. In preparation of design submittal specifications the referenced sections shall be edited to reflect project specific requirements. The Contractor shall be required to use unedited Unified Facilities Guide Specifications (UFGS) and designated unedited Corps of Engineers Guide Specifications (CEGS) sections for developing project specifications. UFGS are listed with

an A, an N, or no letter designation after the specification number. UFGS that cover similar subjects and those that have been identified for later consolidation into a single specification section are identified with an alpha designation ("A" for USACE, "N" for NAVFAC, and "F" for AFCESA) following the section number. Users of UFGS should first consider a UFGS without an alpha designation if one is available and next a UFGS with an alpha designation of their agency, and lastly a UFGS with an alpha designation of another agency. Specification paragraphs and subparagraphs shall not be rewritten to lessen the quality of the original technical specification sections. The technical guide specifications describe the type and quality of material and installation normally acceptable for Corps of Engineers Construction, and often represent specific agreement between the Corps and the applicable industry. The provision of the technical guide specification should not be changed without justification. Justifications and identification for additional materials shall be identified in the design analysis under the appropriate design discipline. Designer notes shall not appear in any design submittals. Any proposed deletions shall be clearly marked in all design specification submittals except for the 100% submittal. Only bracketed choices and inapplicable items shall be marked for deletion. These items shall be removed in corrected 100 percent specifications submittal. The Contractor shall complete the editing of all options in these specifications. Where designer notes are provided, the Contractor shall edit the choice in accordance with the recommendations and guidance of the Notes, except where specific guidance has been provided with this RFP (i.e. submittal paragraph).

b. When editing the UFGS specifications, the Contractor shall follow these rules:

(1) QUALITY: Specification paragraphs and subparagraphs shall not be rewritten to lessen the quality of the original technical specification sections. The technical guide specifications describe the type and quality of material and installation normally acceptable for Corps of Engineers Construction, and often represent specific agreement between the Corps and the applicable industry. The provisions of the technical guide specification shall not be changed without justification and written acceptance by the COR. Justifications and identification for additional materials shall be identified in the design analysis under the appropriate design discipline.

(2) DESIGNER NOTES: Notes to designers contained in the UFGS shall not appear in any design submittals. Where designer notes are provided, the Contractor shall edit the choice in accordance with the recommendations and guidance of the notes, except where specific guidance has been provided with this RFP.

(3) BRACKETED INFORMATION: Contractor shall select from options or complete information inserts at bracketed text. Unselected bracketed choices and inapplicable items shall be marked for deletion (strike through) in preliminary (65% and 95%) submittals. These items shall be removed in corrected 100% specification submittal. The Contractor shall complete the editing of all options in the 100% submittal.

(4) ADDITIONS: If the UFGS specification does not cover a feature that is in the project, new sentences and/or paragraphs shall be inserted in the proper locations to adequately cover the feature of work. Additions shall not lessen the quality of materials indicated by the specifications. If a new material is added, it shall be properly referenced in "Applicable Publications," "MATERIALS," "SUBMITTAL," "TESTS," and "INSTALLATION" paragraphs, as applicable.

(5) DELETIONS: Text material not applicable to the project shall be deleted as necessary. After deletion has been made to all inapplicable paragraphs, subparagraphs, choices, and

schedules from the body of the specifications (including but not limited to the correction of lists in "Submittals," "Tests," and "Installation" paragraphs), delete all non-applicable references listed in the preceding "APPLICABLE PUBLICATIONS" and "MATERIALS" paragraphs. Deletions shall not lessen the quality of materials indicated by the specifications.

(6) REFERENCES TO SPECIFICATION SECTIONS: The Contractor shall be responsible for coordinating references, along with the technical requirements, to specific specification sections (number and title) within the project specifications. Section references (title and number) shall be revised to reflect the titles and numbers of specification sections used.

(7) DEVELOPING ADDITIONAL PROJECT SPECIFICATIONS. If the need should arise for developing project specification sections for materials/items not covered by the UFGS, the Contractor shall develop specifications utilizing commercial Construction Specifications Institute (CSI), 16 Division, 3 Part Section Format. These specifications shall conform to the applicable criteria requirements indicated in the RFP. Adjust section numbers which conflict with the specifications used in the Project Specifications. Each of these developed specification sections shall be in the same format as the UFGS (including the submittal paragraph). Commercially available guide specifications such as "SpecText" published by The Construction Specifications Institute and "MasterSpec" published by The American Institute of Architects may be used. References to the "Architect/Engineer" and the "Owner" shall be changed to refer to the "Government" or "Contracting Officer," as appropriate. The specifications shall clearly identify, where appropriate, the specific products chosen to meet the requirements of the specifications. The Contractor shall be responsible for coordinating references, along with the technical requirements, to specific specification sections (number and title) within the project specifications. Section references (title and number) shall be revised to reflect the titles and numbers of specification sections used.

4.00 SUBMITTALS

a. Product literature detailing assemblies and materials to be utilized in the project may be submitted with specifications during the design phase. This advanced coordination may reduce review/evaluation time associated with the submittal process during construction. However, shop drawings, product and equipment data included and accepted with the specification acceptance does not constitute government approval of equipment, material or layout. This responsibility to meet the requirements of the RFP remains with the Contractor.

b. Refer to Section 00810 of this RFP for information related to submittal requirements. Initial submittals (65% level) of specifications shall contain clear notation of text that has been added or deleted. Text proposed for deletion shall remain until the submittal is accepted. Subsequent interim (95%) submittals shall accept previous edits and highlight changes made since the 65% submittal. All deleted/accepted text shall be removed in the 100% specification submittal. The Contractor shall complete the editing of all options in the 100% submittal.

5.00 FULL TEXT SPECIFICATIONS

a. Seattle District Corps of Engineers standard Division 1 and select prescriptive specifications are included following this section in full text. These specifications shall be applied to this contract as written and as with regards to materials, equipment, systems, workmanship, and other technical matters. For general, administrative and procedural issues the contract provisions specified elsewhere in the RFP and contract shall govern.

b. DIVISION 1: General Requirements

01001 Supplementary Requirements
01005 Site Specific Supplementary Requirements
01025 Payment
01035 Modification Procedures
01312 Quality Control System
01320 Project Schedule
01330 Submittal Procedures
01410 Environmental Protection
01415 Metric Measurements
01451 Contractor Quality Control
01452 Special Inspection for Seismic-Resisting Systems
(Provide special inspection in accordance with UFGS 01452A and the IBC.)
01501 Construction Facilities and Temporary Controls
01572 Construction and Demolition Waste Management
01670 Recycled / Recovered Materials
01701 Operations and Maintenance Manuals
01702 As Built Records and Drawings
01703 Warranty of Construction
01704 FORM 1354 CHECKLIST
01705 Equipment-in-Place List

6.00 OUTLINE SPECIFICATIONS

a. Incorporate all specific guidance and requirements listed below into the relevant specification section or sections. The sections listed below are not intended as an all inclusive compilation of the sections that will be required for this project. It is the responsibility of the contractor to ensure that specification sections are edited or developed as necessary.

b. All sections identified below are UFGS unless otherwise noted. In some instances, the UFGS list carries two versions of a section with a letter suffix of “a” for army or “n” for navy. Where this duplication occurs, the army version of all such sections shall be used.

c. **Divisions 2-16: TECHNICAL**

DIVISION 2: SITEWORK

02220 Demolition

Provide equipment and systems in accordance with UFGS 02220a and as follows:

All demolition work shall conform to EM 385-1-1 (1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual. Work includes demolition, removal, and salvage of identified items and materials. Salvage shall be pursued to the maximum extent possible and shall be disposed of as directed. Burning and explosives will not be permitted. Provide equipment and labor necessary to safely demolish and remove identified utility services and flexible pavement.

Protection of Trees. Trees within the project site limits of work and which are indicated to be retained, shall be protected by a 1.8 M tall portable chain-link fence. The fence shall be securely erected at the dripline of individual trees or follow the outer perimeter of branches for clumps of trees. The dripline is defined as the circle drawn on the soil around a tree directly under its outermost branch tips. If the fence location is in conflict with demolition or construction operations, the Contractor shall bring the conflict to the attention of the CO for resolution. If it is not possible to protect the area within the dripline of trees, the Contractor shall hire a tree specialist (International Society of Arboriculture (ISA) Certified Arborist, urban forester or horticulturist) to evaluate the condition of the tree and the potential impact to it. The specialist, shall, in consultation with CO, make the final decision on whether the tree shall be removed or retained or if additional protective measures be implemented. Any tree designated to remain that is damaged during the work under this contract shall be replaced in kind in accordance with Section 01410 ENVIRONMENTAL PROTECTION.

02230 Clearing and Grubbing

Provide equipment and systems in accordance with UFGS 02230a and as follows:

Site Preparation recommendations shall be as provided in the furnished Geotechnical Report (see Section 00860 Attachment 8) and/or the Contractor furnished Geotechnical Report as applicable. The Contractor shall dispose of all organic material, resulting from clearing and grubbing operations, at a legal location outside Government-controlled land. The Contractor shall obtain approval of haul route and disposal site.

Trees, stumps, roots, brush, and other vegetation in areas to be cleared shall be cut off flush with or below the original ground surface, except such trees and vegetation as may be indicated or directed to be left standing. Material to be grubbed, together with logs and other organic or metallic debris not suitable for foundation purposes, shall be removed in areas indicated to be grubbed and in areas indicated as construction areas under this contract, such as areas for buildings, and areas to be paved. Existing trees to be preserved shall be crown-pruned to remove all dead, broken, or crossing branches within the crown of the tree. Pruning shall be accomplished by trained and experienced personnel in accordance with ANSI A300. Trees to remain shall also have all flagging, paint, hardware, or other man-made products removed prior to new exterior plant material installation. Limbs and branches to be pruned shall be neatly cut just outside the branch collar parallel with the trunk or adjacent larger branch; do not leave stubs. No tree wound dressing or paint shall be used. Trees and vegetation to be left standing shall be protected from damage incident to clearing, grubbing, and construction operations in accordance with Section 01410 ENVIRONMENTAL PROTECTION and 02220 DEMOLITION.

02300 Earthwork

Provide equipment and systems in accordance with UFGS 02300a and as follows:

Perform detailed site civil design required to establish elevations necessary for site preparation, excavation, borrow, filling, backfilling, compacting, and finished grading to construct the pavements and other site work. All fill material shall be free of contamination. The Contractor shall submit a proof of verification of the source of fill material or results of analytical testing. All work shall be in compliance with the furnished Geotechnical Report (see Section 00860 Attachment 8) and/or the Contractor furnished Geotechnical Report as applicable. Topsoil shall be obtained from sources outside the limits of Government-controlled land and shall be as specified in SECTION: 02921, SEEDING.

02315 Excavation, Filling, and Backfilling for Buildings

Provide equipment and systems in accordance with UFGS 02315a and as follows:

Provide excavation, filling, backfilling, compacting, and finished grading necessary to construct the finish grades indicated for structures. All work shall be in compliance with the furnished Geotechnical Report (see Section 00860 Attachment 8) and/or the Contractor furnished Geotechnical Report as applicable. Provisions for dewatering the building excavation, if required, shall be included.

02316 Excavation, Trenching and Backfilling for Utilities Systems

Provide equipment and systems in accordance with UFGS 02316a and as follows:

Perform excavating, preparation of pipe-laying surface, pipe bedding, backfilling and compaction. Requirements for underground mechanical and electrical work. Installation of marking tape for identification and detectability. All work shall be in compliance with the furnished Geotechnical Report (see Section 00860 Attachment 8) and/or the Contractor furnished Geotechnical Report as applicable. Open trench cuts crossing newly paved roads are permitted only to connect to an existing utility situated under the paved road. Any other crossings of newly paved roads shall be by jacking. Provisions for dewatering the utility excavation, if required, shall be included.

02510 Water Distribution System

Provide equipment and systems in accordance with UFGS 02510a and as follows:

Provide materials for and installation of water system to provide for domestic use and required fire protection to meet NFPA 24 and NFPA 13. NFPA 13 requires clearances around the main riser to prevent damage of piping subjected to earthquakes. Provide water service lines of ductile-iron pipe or polyvinyl chloride (PVC) plastic water main pipe. Provide water service appurtenances as required.

02531 Sanitary Sewers

Provide equipment and systems in accordance with UFGS 02531a and as follows:

Provide sanitary sewer system including pipelines, manholes, and clean outs connect to the existing sanitary sewer system. Provide mains or laterals of cast iron, or polyvinyl chloride (PVC) plastic pipe. Manhole inverts shall be channeled with a 2 percent cross slope. Provide surface clean outs surrounded by 600 mm square cement concrete pad in landscape areas and steel collars in vehicular pavement areas. All existing laterals and clay lines must be replaced.

Existing lines may be abandoned in place. All connections to the existing system must be made in manholes or have a manhole installed. Manholes shall be precast concrete.

02556 Gas Distribution System

Provide equipment and systems in accordance with UFGS 02556a and as follows:

Gas piping system shall be from the point of delivery, defined as the outlet of the meter set assembly as provided by Puget Sound Energy Services. The contractor shall contract Puget Sound Energy Services to install and own meter set assemblies and underground piping to the buildings.

The Contractor shall provide polyethylene propane/air gas piping (separate from the natural gas piping to be installed by PSE) from the point of connection to each building. Piping shall be sized for a supply pressure of 206 kPa (30 psig). This connection shall be tied into the building piping system, downstream of the gas utility meter and shall be provided with a lockable manual valve.

02630 Storm-Drainage System

Provide equipment and systems in accordance with UFGS 02630a, with Stormwater Management Manual for Western Washington, and as follows:

Provide materials for and the installation of required site storm drainage system and connection to existing storm drainage system. The system shall include storm drain lines, branches, catch basins and manholes. Storm drain lines and branches shall be polyvinyl chloride (PVC) plastic, ductile-iron, or concrete pipe, as required by Ft Lewis design standards. Subsurface drainage, foundation drainage and/or under drainage system shall be perforated polyvinyl chloride (PVC) plastic piping. All underground perforated drainage systems shall include one layer of filter fabric wrapped around the pipe with a 150 mm overlap. Filter fabric shall be a pervious material manufactured into a non-raveling fabric with uniform thickness and strength meeting the requirements of the UFGS specifications. Catch basins and manholes shall be constructed according to Washington State standards and UFGS specifications. Storm drainage lines shall not be corrugated and must be smooth on the inside surface. All joints shall be watertight.

02722 Aggregate and/or Graded-Crushed-Aggregate Base Course

Provide equipment and systems in accordance with UFGS 02722a and as follows:

Provide materials and labor necessary for construction of base course for flexible pavement. Perform placement, compaction, and finished grading required to obtain the finished grade elevations for top of base course. Crushed aggregate materials shall be in compliance with the furnished Geotechnical Report (see Section 00860 Attachment 8) and/or the Contractor furnished Geotechnical Report as applicable. All work shall conform to the furnished Geotechnical Report (see Section 00860 Attachment 8) and/or the Contractor furnished Geotechnical as applicable.

02741 Hot – Mix Asphalt (HMA) for Roads.

Provide equipment and systems in accordance with UFGS 02741a and as follows:

Provide a binder and wearing course of plant mixed asphalt concrete (AC) placed on a prepared base in accordance with the Geotechnical Report. AC shall conform to the requirements stated

in the Geotechnical Report. Provide tack coat for connection to existing flexible pavement and other applicable areas.

02763 Pavement Markings

Provide equipment and systems in accordance with UFGS 02763a and as follows:

Furnish and install pavement markings along the roadway surface as required for parking delineation. Parking delineation, arrows, stop bars, crosswalks and barrier strips shall be painted. Blue 100 mm x 100-mm thermoplastic street markers shall be provided for ease in finding fire hydrants, offset to side of hydrant.

02770 Concrete Sidewalks and Curbs and Gutters

Provide equipment and systems in accordance with UFGS 02770a and as follows:

Provide materials and labor necessary for construction of cement concrete sidewalks, and vertical curb and gutter. Provide aggregate base course for rigid pavement. Finish surface for concrete sidewalks shall be a broomed finish to achieve a non-slip surface. Sidewalks shall be a minimum of 100 mm thick. Vertical curb shall be according to design detail. Provide expansion joints between curbs and sidewalks and between buildings or walls and sidewalks. Provide expansion joints in all concrete sidewalks, curbs, and gutters at 9 meters maximum spacing and extended joints continuous through sidewalks, curbs, and gutters. Provide steel dowel reinforcing connecting sidewalk slabs at all expansion joints. Provide scored control joints at 2 meters maximum spacing.

Concrete Pattern, Color and Texture: Suggested sidewalk concrete patterning at Echo Block is for an imprinted random pattern of variegated-size, slate-textured stone block and natural mortar joints. The suggested color is integrally-colored ‘tan’ using an approved concrete dye**.** Pigmentation shall conform to ASTM C 979. If patterned concrete and pavers are used, it is suggested that the color of imprinted concrete sidewalks match the color of the concrete paving blocks.

Concrete Paving Blocks: Suggested concrete paving blocks at Echo Block are 450mmx450mm and/or 300mm x 300mm, colored “tan” with a shot-blasted finish and chamfer on all top edges. Pigmentation shall conform to ASTM C 979.

02811 Underground Sprinkler System

General: Final design shall include the size, flow, and static pressure of the new water service, and pressure loss calculations for the largest and furthest zones. Design shall be consistent with existing irrigation previously installed at Echo Block and Plate Number L103.

The system shall be a commercial-grade, underground, fully automatic and consistent with all local codes, including backflow prevention, and standard practices. All sprinkler heads shall be pop-up type, (bubblers, spray, and gear rotors). Heads installed above ground on risers will not be approved. Drip irrigation is not allowed.

Materials: New irrigation system components shall include, but are not necessarily limited to: irrigation meters, pressure regulators (if required), backflow prevention devices, strainers, gate valves, brass master valves, plastic remote control valves, manual drain valves, quick couplers,

concrete meter boxes, plastic valve boxes, irrigation piping (mainline and laterals), sleeves, miscellaneous fittings (see Plate Number L103 for use of sch 80 pvc and brass fittings, other fittings shall be sch 40 pvc), sprinkler heads, plastic nozzles, “triple swing” swing joints, , automatic controllers, rain sensors/ bypass switch, conduit, waterproof wire spice (wire nut type waterproof splice alone is not allowed), #14 U.F. wiring and any additional items needed to provide a 100% complete and operational system. Materials shall conform to applicable standards of the American Society for Testing Material and Underwriter’s Laboratory.

All irrigation piping (mainline and laterals) and sleeving shall be schedule 40 PVC. Cl 200 pvc pipe is not allowed. Sprinklers shall have plastic bodies and a pop-up stem of 100 mm in lawn areas, 150 mm in low groundcover areas, and 300 mm in shrub and groundcover areas. Remote control valves shall be commercial grade plastic and shall be located below grade in standard valve boxes. Backflow devices shall conform to local plumbing codes. Cold water meters shall be positive displacement type conforming to AWWA C708. Meter register may be round or straight reading type with register units as specified by the Contracting Officer. Meter shall have an electronic register capable of pulse output and all necessary wiring and accessories. The remote readout register wiring shall be routed to a location on the nearest building, as indicated by the Contracting Officer.

Installation: Irrigation work shall include excavation, trenching and backfilling, installation of all components, testing and inspection, clean up and maintenance of each system until final acceptance of the project. Sleeving under traffic loads shall have a minimum cover of 900 mm, sleeving under sidewalks, mainline, and control wires shall have a cover of 600 mm, and laterals shall have a cover of 300 mm. Each controller shall provide at least two unused stations with a minimum of 1 spare control wire per leg of mainline or a total minimum of 4 spare wires, which ever is greater. Install control wires in conduit when wires occur without irrigation piping. Control wires shall be looped as noted on Plate Number L103. Provide an adequate means for winter drainage of the systems. Bedding material for irrigation pipe shall be clean sand conforming to the following:

Sand:

Sieve Size	Percent Passing
13mm square	90-100
6mm square	65-100
U.S. No. 10	40-100
U.S. No. 50	3-30
U.S. No. 100	0-4
U.S. No. 200	0-3

All percentages by weight.

All irrigation pipe and sleeving shall receive 100 mm of import sand on all sides of each pipe. Maintain a minimum of 50 mm horizontal spacing between pipes in common trench. Vertical stacking of lateral pipes is not allowed. A trace wire shall be installed in all trenches containing pvc mainline and/or laterals. Remaining backfill in trenches shall be free of rock or cobbles over 25mm in diameter. Remaining rock and debris will be hauled off site to an approved location.

Trenching within the drip line of existing trees to be preserved shall be done by hand. All irrigation mainlines and laterals passing under roadways or paving shall be placed in sleeves at

least twice the diameter of the pipe(s) passing through it. Existing roadways shall not be cut to accommodate new irrigation piping. Paving which is damaged shall be restored to match existing when disturbed due to trenching or irrigation system installation.

Provide head-to-head coverage of all landscape areas and separate zones for shrub/groundcover and lawn areas. Include one quick coupler at each point of connection for winterization and one quick coupler at each end of mainline leg.

02870 Site Furniture

Echo Block:
Finish colors for site furniture shall be well coordinated with each other and with buildings to create a cohesive visual character. Suggested colors include black, bronze, and brown. Site furniture shall be permanently installed, low maintenance, with durable materials and finishes and shall be in compliance with force protection criteria.

COF Guidon Pedestal: Cast in place concrete pedestal shall be as shown on detail drawings. Concrete pad shall be formed and placed with reinforcement prepared for guidon as shown Plate C108. Finish of pedestal shall be smooth, light sandblast.

Battalion Headquarters Facility Sign: Battalion sign shall be 1.5 M high x 1.85 M long constructed of a concrete and brick base, mortared brick posts and tube steel mounting frame. Brick color shall match brick used for Battalion Headquarters Facility. Frame color shall be semi-gloss black. Construction and assembly shall be as shown on details in Attachment 7, Plate A0.1.

Company Operations Facility Sign: Individual Company sign structure shall be 1.06 M high x 1.6 M long consisting of two 200 mm round reinforced concrete posts, and two horizontal 38 mm x 75 mm x 11 Ga. Tube steel mounting frame. Frame color shall be semi-gloss black. Construction and assembly shall be as shown details in Attachment 7, Plate A0.1. Concrete finish shall be smooth, light sandblast. Sign mounts shall be 300mm x 1.1 M x 3.1 mm steel plate. Reinforcement shall be 4 – 10M (#3) rebar wound with #13 gauge spiral steel wire.

Echo and Alpha Block:
Trash Receptacles: Trash receptacles shall be a 121 L-size with a dome lid for all-weather protection. Concrete and pre-cast concrete materials shall not be used.

Benches: Benches shall be 1.8 M long and provided with and without backs as appropriate for different locations and functions. Concrete and pre-cast concrete materials shall not be used.

Bike Racks: Bike rack shall be constructed of heavy-duty quality steel.

Alpha Block:
Picnic Tables: Picnic tables shall be pedestal-style. Concrete and pre-cast concrete materials shall not be used.

Outdoor Barbecue Grills: Grill shall have an approximately 193,500 square millimeters grill area and be a heavy-duty rotating grill, sides and back of 10 gauge galvanized steel, bottom of 7 gauge steel with ash lip. Grill shall be pedestal style, universally accessible, and adjustable to three to four cooking heights. Grill package shall include a 10 gauge hot-rolled steel hot plate, approximately 150 mm x 350 mm, which attaches to standard grate and utility shelf. Finish shall

be non-toxic, rust-resistant, baked-on, black dry powder. Support post shall be galvanized or baked-on, black dry powder-coated.

Picnic Shelters/Bike Rack Shelters: Shelters shall be appropriately sized to provide overhead protection to picnic tables and bike racks from weather. No wood or fiberglass shingles shall be used for roofing material.

Parcourse (exercise) stations: Parcourse shall have a minimum of 15 fitness events for the following exercises: Achilles, Sit and Reach, Leg Stretch, Hamstring Stretch, Thigh Stretch, Trunk Stretch, Vault Bar, Sit-up, Push-Up, Chin-Up, Knee Lift, Body Curl, Log Hop, Bench Dips, Bench Curl. Optional events may include Half-Knee Bend, Bench Leg Raise, or Bench Dips.

Parcourse stations shall meet industry safety standards. Station surface material shall be a mix of random-sized, engineered wood fibers of 250mm compacted depth. Fibar system 310 or approved equal. Standard wood mulch is not acceptable. Supplier shall provide test results for impact attenuation in accordance with ASTM F 1292 Standard Specification for Impact Attenuation for Surface Systems Under and Around Playground Equipment. Results shall be provided for new material and for 12-year old material. Drain system, mats, and materials shall be installed in accordance with manufacturer's instructions and specifications. Avoid contamination of material with sand, gravel, mud, or native soil. Individual parcourse stations shall be contained by concrete curbing.

02921 Seeding (Turf/Grass Areas)

Materials:
Turf seed mix shall be Festuca rubra var rubra or var. commutata (Creeping Red or Chewings Fescue) 50%, and Lolium perenne (Turf-type Perennial Ryegrass) 50%. Hydroseeding is an acceptable method for seeding. The seed mix shall not contain annual ryegrass or bluegrass species. Weed seed shall not exceed 1 percent by weight of the total mixture and shall be free of restricted and prohibited noxious weed seed. The seed shall also be free of crop seed, and inert matter shall not exceed 3% by weight of the total mixture.

The Field Grass mix shall be Festuca trachyphylla (Hard Fescue) 33.3%, Festuca ovina L. (Sheep Fescue) 33.3%, and Festuca rubra L. (Red Fescue) 33.3%

The Contractor shall provide temporary winter grass cover in areas where permanent seeding is delayed because of the season or construction staging. Temporary seed shall consist of Perennial Ryegrass (100%).

Topsoil for improved turf areas shall be applied at a minimum compacted depth of 150 mm. Topsoil for low maintenance (field and/or erosion control) grasses shall be applied at a minimum compacted depth of 75 mm.

Delivered topsoil shall meet the following requirements: Topsoil shall be sandy loam as described by USDA textural class. Topsoil shall have a maximum particle size of 13 mm with a maximum of 3 percent retained on a 6 mm screen and a minimum of 5 percent passing through a 1.25 mm mesh screen. Topsoil shall contain a minimum of 5% for turf and a minimum of 10% for planting beds (by weight as determined by a "loss on ignition" test) of mixed, composted, fine-particle organic matter. Topsoil shall be obtained from well-drained areas and shall not contain more than 5 percent water by volume. Topsoil shall be free from slag, cinders, stones, lumps of soil,

sticks, roots, trash or other material over a minimum 13 mm diameter. Topsoil shall be free from viable plants or plant parts, and toxic substances or any other material that may be harmful to plant growth. The source of the organic matter shall have a carbon to nitrogen ratio below 25:1. If the plantings are composed entirely of plants native to the Puget Sound Lowlands region, the carbon to nitrogen ratio shall be below 35:1. The pH shall be between 5.5 and 7.5. Soluble salts shall not exceed 500 ppm. Each topsoil source shall be accompanied by a guaranteed statement of analysis listing the percent of organic matter and the pH.

Amendments shall be added as determined by soil test for types of plant materials specified. Peat shall not be used as a soil amendment/conditioner. Acceptable sources of organic matter shall be as described in the UFGS. Compost shall be supplied from a permitted compost facility in Washington State. PH adjuster shall be provided as recommended by soil testing results to register between 5.5 and 7.5.

Subsoils for improved turf areas shall be scarified a minimum depth of 100 mm to improve bonding with topsoil. If soils are compacted or impermeable, subsoils shall be scarified to a minimum depth of 150 mm.

Acceptance:
An acceptable stand of turf shall be defined as a thick, healthy and strong stand of turf and ground cover with uniform cover and deep root development throughout all designated areas. Bare spots shall be a maximum 150 mm square and the total bare spots shall not exceed two (2) percent of the total seeded area.

Field Grass Areas. A satisfactory stand of turf from the seeding operation for a field grass area shall be defined as a vigorous stand with uniform cover and deep root development throughout all designated areas with no bare spots greater than 200 mm square and the total bare spots shall not exceed five (5) percent of the total seeded area.

02922 Sodding

Materials:
Grass species for sod shall be Festuca rubra var rubra or var. commutata (Creeping Red or Chewings Fescue) 50%, and Lolium perenne (Turf-type Perennial Ryegrass) 50%.

See 02921 for topsoil requirements. Topsoil for sodded areas shall be applied at a minimum compacted depth of 150 mm. Subsoils sodded areas shall be scarified a minimum depth of 100 mm to improve bonding with topsoil. If soils are compacted or impermeable, subsoils shall be scarified to a minimum depth of 150 mm.

Acceptance:
Grass plants shall be evaluated for species and health. A satisfactory stand of grass plants from the sodding operation shall be living sod uniform in color and leaf texture. Bare spots shall be a maximum 50 mm square. Joints between sod pieces shall be tight and free from weeds and other undesirable growth.

02930 Exterior Planting (Trees, Shrubs, Ground Covers, and Vines)

Grading and Soil Prep: For all landscaped areas finish grades shall be free of undulations, irregularities or low spots that will collect standing water. Provide positive drainage, with not less than two- percent surface slope away from walls and structures and toward roadways and catch basins.

Materials:

Groundcover shall be installed at a size and a spacing on-center that will provide 80% coverage within two full growing seasons (March to October is one growing season) after planting. The minimum plant sizes shall be 100 mm pots for ground covers, #2 (2 gallons) for small and medium shrubs, #3 (3 gallons) for large shrubs, 75 mm for street trees, 63 mm caliper for deciduous trees (other than street trees), and 1.8 M height for conifers.

Staking and Guying: Staking and guying of trees shall not be required. Staking can impede normal tree growth and may lead to a weaker trunk, see paragraph UNHEALTHY PLANT MATERIAL. Tree staking and guying will be allowed upon approval by the Contracting Officer Representative if site conditions warrant their use (tree of substantial size, or extremely windy location). If tree staking and guying is approved, current industry standards shall be followed and materials used to tie the tree to the stake shall be flexible to allow movement all the way to the ground. Stakes and guying material shall be removed at the end of the 12-month plant establishment period.

Topsoil for planting areas other than turf shall be applied at a minimum compacted depth of 200 mm. See 02921 for topsoil quality requirements. Topsoil for planting areas (other than turf) shall contain a minimum of 10% by weight (as determined by a “loss on ignition” test) of mixed, composted, fine-particle organic matter.

Subsoils shall be scarified a minimum depth of 100 mm to improve bonding with topsoil. If subsoils are compacted or impermeable, they shall be scarified a minimum depth of 150 mm. Organic mulch shall be applied at a 75 mm depth for all trees, shrubs, and large ground covers,

and at a 38 mm depth for low-growing, fine-textured ground covers. Trees in lawn areas shall have a minimum 1.2 M diameter mulch bed.

Edging: A 150 mm-wide by 300 mm deep concrete mow edge shall be provided between all improved lawns and planting beds. A minimum 300 mm wide by 300 mm deep concrete mow edge shall be provided between building perimeters and lawns. All other edging including edging between low maintenance grasses and plant beds and to separate different types of ground covers shall be metal.

Geotextile: Geotextile (weed barrier fabric) shall be used only with rock mulch areas that do not contain plants. Geotextile shall be nonwoven; 100% polypropylene mat in accordance with ASTM D 5034 or ASTM D 5035. It shall be made specifically for use as a commercial-grade, landscape fabric around plant material. Nominal weight shall be a minimum 120 grams per square meter. Permeability rate shall be a minimum 1 mm per second.

Acceptance:
Unhealthy Plant Material: See also Statement of Work 3-11.3.10. Unhealthy Plant Material. Trees unable to remain upright (without staking) shall be removed immediately and replaced as soon as seasonal conditions permit.

DIVISION 3: CONCRETE

03100 Structural Concrete Formwork

Provide equipment and systems in accordance with UFGS 03100a and as follows:

See Section 03300. Provide form materials including forms, ties, releasing agents, and void materials.

03150 Expansion Joints, Contraction Joints, and Waterstops

Provide equipment and systems in accordance with UFGS 03150a and as follows:

See Section 03300. Provide expansion joint filler, accessories and waterstops.
Proposed joint fillers to be submitted for approval.

03200 Concrete Reinforcement

Provide equipment and systems in accordance with UFGS 03200a and as follows:

See Section 03300. Provide reinforcing bars, dowels, welded wire fabric; wire ties, and supports.

03300 Cast-In-Place Structural Concrete

Provide equipment and systems in accordance with UFGS 03300 and as follows:

No polymer resins with styrene shall be used for any concrete floor coating. No cone ends shall occur on faces of concrete in exposed-to-view surfaces. Chamfer all external corners. Furnish formwork in largest practicable sizes to minimize number of joints. Support reinforcement with approved chairs, spacers or ties. Provide joint and waterstop location layouts for approval.

Concrete shall have a minimum 28-day compressive strength of 27.5 MPa (4,000 psi), except interior slabs shall have a minimum 28-day compressive strength of 34.5 MPa (5,000 psi). Exterior slab on grades shall have a 28-day minimum flexural strength of 4.1 MPa (600 psi).

In addition to concrete, provide curing materials, non-shrink grout, bonding agent, floor hardener, dry-shake floor topping, perimeter insulation, capillary moisture barrier, and vapor barrier.

03330 Cast-In-Place Architectural Concrete

Provide materials, equipment and systems in accordance with UFGS 03330a and as follows:

Cast-in-place concrete walls exposed to view shall have an architectural finish with close tolerances and defined requirements for minimization of surface defects. Utilize form liners to provide a shallow texture for visual interest. Protect concrete from staining and discoloration. Provide surface sealer on all areas to remain exposed in finished construction as early in construction as possible to avoid staining by weather and other trades.

DIVISION 4: MASONRY

04200 Masonry

Provide materials, equipment and systems in accordance with UFGS 04200 and as follows:

A full scale sample panel with all assembly conditions defined by this section shall be included.

Concrete masonry units and brick used on Echo Block buildings shall be unit size, color and texture matching like components used on the FY 02 and FY 03 COF and BN HQ buildings. Mortar shall also be colored to match existing. . Units exposed to the exterior shall be integrally colored. CMU shall be manufactured using carefully selected aggregates to provide coloration that meets North Fort and requirements. Lintel and bond beam units shall be used. Use steel lintels at openings in veneer walls.

Air cavity in veneer wall construction shall be not less than 25 mm wide. All through wall flashings shall be copper (16 ounce minimum) or stainless steel (0.015 inch minimum thickness) sheet metal.

Conduct continuous inspection. Testing of mortar, grout, masonry cores and units is required. Testing of units for efflorescence is required. Include descriptions of construction requirements and limitations for cold and hot weather construction.

Provide reinforcement, flashing materials, control and expansion joints, weep holes, veneer ties, and insulation. Tool finish exposed joints to a dense concave surface or other acceptable weather joint. Clean masonry with approved cleaners by unit masonry manufacturer and complying with masonry manufacturer's directions and technical bulletins. Remove all cleaner residues from masonry. Seal all exterior CMU surfaces with silane or siloxane based high solids, clear sealers.

04810 Nonbearing Masonry Veneer/Steel Stud Walls

Provide materials, equipment and systems in accordance with UFGS 04810 and as follows:

A full scale sample panel with all assembly conditions defined by this section shall be included.

Brick used on Echo Block buildings shall be unit size, color and texture matching like components used on the FY 02 and FY 03 COF and BN HQ buildings. Mortar shall also be colored to match existing.
Conduct continuous inspection. Testing of mortar, grout, masonry cores and units is required. Testing of units per ASTM C 67 for efflorescence is required. Rating shall be “not effloresced”. Include descriptions of construction requirements and limitations for cold and hot weather construction.

Calculations demonstrating the insulation provides the specified U-value for heat transmission of the completed exterior wall construction shall be submitted for approval. This specification section includes: brick, mortar, joint reinforcement, cold-formed steel framing, insulation, exterior sheathing, moisture protection, veneer anchors, and connections.

DIVISION 5: METALS

05090 Welding, Structural

Provide materials, equipment and systems in accordance with UFGS 05090a and as follows:

All welds exposed in finish work shall be ground smooth. Defective or rejected welds shall be cut out and replaced.

05091 Ultrasonic Inspection of Weldments

Provide equipment and systems in accordance with UFGS 05091a and as follows:

Inspection and testing of shop and field welding shall be by an approved, qualified welding inspector. The welding inspector shall certify all reports and make a record of all welds. The welding inspector may use ultrasonic testing or any other approved aid to assure the adequacy of the weld. Welding inspector shall be certified to inspect in accordance with AWS D1.1.

05120 Structural Steel

Provide materials, equipment and systems in accordance with UFGS 05120 and as follows:

Provide mill analyses and test reports. A testing laboratory shall be used for all required tests and inspections. Provide and install all structural steel, tubing, and pipe, high strength bolts, carbon bolts, nuts, washers, and paint.

05210 Steel Joists

Provide materials, equipment and systems in accordance with UFGS 05210a and as follows:

Manufacturer's certification required. Provide all accessories, extended and special ends and ceiling extensions as required. Do not apply construction loads until bridging and anchorages are completed.

05300 Steel Decking

Provide materials, equipment and systems in accordance with UFGS 05300a and as follows:

Steel Roof Deck: Provide fire resistance label and acoustical insulation strips as required. Provide adjustment plates, closure plates, accessories, and lateral and uplift attachment. Touch-up shop paint after installation. Clean field welds and abraded areas.

05400 Cold Formed Steel Framing

Provide materials, equipment and systems in accordance with UFGS 05400a and as follows:

Include all material requirements for studs, tracks, bridging and other miscellaneous light gauge framing. Identify component size and material properties for each type and variety. All stud walls to be non-loadbearing. Provide bracing for all stud walls that do not extend to structure.

05500 Miscellaneous Metal

Provide materials, equipment and systems in accordance with UFGS 05500a and as follows:

Welds to be continuous, ground smooth and flush. Exposed joints to be "hairline" quality. Miscellaneous metals can include the following: screens, gratings, shelf angles, ladders, ladder cage, steel stairs, safety nosings, handrails, guardrails, pipe sleeves, pipe bench stanchions, pipe post bollards, water heater supports, sill angles, corner guards, access doors and panels, wire and expanded metal partitions, ornamental grilles, expansion joint covers, seismic joint covers, trench covers, jambs, and backing for overhead rolling doors. Separate miscellaneous metal from dissimilar metals and from products containing lime or other substances, which will cause damage (galvanic corrosion) to occur. Include material and method of attachment to each substrate encountered for all miscellaneous metal components. Include finish requirements or reference finishes located in other specification sections.

05810 Seismic Control Joints

A UFGS section does not exist for this material. Provide materials, equipment and systems as follows:

Where structures require significant use of seismic control joints develop a stand alone section to permit complete description of joint and joint cover requirements. Coordinate the use of preformed metal, and elastomeric seals with location and exposure. Identify joint cover assemblies for use on walls, ceilings and floors of each material type encountered. Provide specific material and construction requirements for fire barrier construction.

DIVISION 6: WOODS & PLASTICS

06100 Rough Carpentry

Provide equipment and systems in accordance with UFGS 06100 and as follows:

Wood frame construction is prohibited in all building types in this project. Rough carpentry shall be limited to miscellaneous blocking, nailer and trim uses as allowed by the IBC. Material shall bear the grade mark, stamp or other identifying marks indicating grades of material and rules of standards under which produced. Flush mounted accessories, builders hardware, casework, projection screens and marker boards shall be secured to wood blocking. Minimum size acceptable is 50 mm X 100 mm for dimensional lumber or 12 mm thickness for plywood. Blocking shall be rigidly attached to minimum of two studs. Use of gauge metal banding, hollow wall, or gypsum wallboard anchors is expressly forbidden.

06200 Finish Carpentry

Provide materials, equipment and systems in accordance with UFGS 06200a and as follows:

Wood exposed to the exterior is prohibited in the construction of any building. Use of vinyl siding is prohibited. Materials shall bear the grade mark, stamp or other identifying marks indicating grades of material and rules or standards under which produced. Finish carpentry includes trim, chair rails, windowsills, built-in cabinets, counter tops, plastic laminate, and utility shelving. Coordinate finish requirements between this section, painting section and color schedules.

06410 Laminate Clad Architectural Casework

Provide materials, equipment and systems in accordance with UFGS 06410a and as follows:

Laminate clad casework shall be the standard in barracks, COF and utility areas of BN HQ facilities. Design and specify to maximize durability and easily maintained appearance for all cabinetry and associated hardware. Use AWI standards (custom is minimum grade) to control quality.

06415 Custom Casework

A UFGS section does not exist for this construction. Provide materials, equipment and systems as follows:

Custom casework, using wood exposed to view, shall be the standard in Command and Public Access areas of the BN HQ. Casework items would include features such as bulletin boards, break room cabinetry, display cases, benches and similar built-in items. Use AWI standards (custom is minimum grade) to control quality.

06610 Fiber Reinforced Plastic (FRP) Fabrications

A UFGS section does not exist for this construction. Provide materials, equipment and systems as follows:

FRP fabrications were used in previous Whole Barracks Renewal projects to provide Neo-Georgian period detailing elements such as porticos, pilasters, fascias and soffits on barracks and SCB buildings. Fabrications shall be glass fiber reinforced type with a molded surface coat

over polyester resin laminate interior. Coordinate requirements for structural framing and similar backup structures.

06650 Solid Polymer Fabrications

Provide materials, equipment and systems in accordance with UFGS 06650 and as follows:

Provide backsplashes and end/side splashes at all countertop locations where water is present. Review and select finished surface matte/gloss range consistent with high traffic low maintenance environments. Composite countertop and sink constructions are prohibited.

DIVISION 7: THERMAL & MOISTURE PROTECTION

07110 Bituminous Dampproofing

Provide materials, equipment and systems in accordance with UFGS 07110a and as follows:

Bituminous dampproofing shall be provided on the exterior face of structural CMU walls used in veneer wall systems. Dampproofing shall be fibrated type.

07131 Elastomeric Membrane Waterproofing

Provide materials, equipment and systems in accordance with UFGS 07131 and as follows:

Elastomeric membrane waterproofing shall be provided on the exterior face of any foundation walls (such as the bottom of elevator shafts) or site features such as utility vaults extending below the water table.

07132 Bituminous Waterproofing

Provide materials, equipment and systems in accordance with UFGS 07132a and as follows:

Submit manufacturer's data including technical information, which indicates full compliance with this section and manufacturer's installation instruction. Bituminous waterproofing shall be provided on the below grade exterior face of perimeter foundation walls located above the water table.

07210 Building Insulation

A UFGS section does not exist for this construction. Provide materials, equipment and systems consistent with language used in UFGS sections 07212 and 07214 and as follows:

Section purpose is to consolidate requirements for insulation. Develop section to include all insulation types and locations except for insulation in masonry veneer walls, roof assemblies and Exterior Insulation and Finish System (EIFS) that may be performed by separate trades. Polyisocyanurate rigid insulation ASTM C1289, Type I or II, and Class 1 (having a minimum recovered material content of 9 percent by weight of core material in the polyisocyanurate portion). For polyisocyanurate the maximum design R-value per 25 mm of insulation used shall be 7.2. Facings shall be non-asphaltic, glass fiber reinforced.

Provide thermal resistance values as indicated on drawings. Mechanical attachment as recommended by insulation manufacturer. Vapor retarder per ASTM D4397 and UFGS, 6-mil thick polyethylene sheeting. Vapor retarder coverage shall be 100% with seams lapped to the next framing member, sealed with an approved sealant.

Foundation perimeter and under slab on grade insulation shall be extruded polystyrene.

Clearly distinguish between insulation types used for thermal, acoustic, fire separation or combination purposes and their locations in the work.

Building insulation shall comply with building code limitations on flame spread and smoke generation as appropriate to type, location and fire rating of assembly.

07220 Roof Insulation

Provide materials, equipment and systems in accordance with UFGS 07220 and as follows:

Attachment of insulation shall meet U.L. Class 1-90 uplift requirements as demonstrated by testing. Provide polyisocyanurate rigid board insulation for use above a roof deck. Polyisocyanurate insulation shall conform to ASTM C 1289, Type II, and Class 1 (having a minimum recovered material content of 9 percent by weight of core material in the polyisocyanurate portion). For polyisocyanurate the maximum design R-value per 25 mm of insulation used shall be 7.2. Facings shall be non-asphaltic, glass fiber reinforced. Insulation attachment method coordinated with standing seam metal roof system requirements for uplift resistance.

Roof insulation shall comply with building code limitations on flame spread and smoke generation as appropriate to type, location and fire rating of assembly. Provide non-combustible sheathing between flammable insulation and occupied areas where required to meet code requirements for material or performance.

07240 Exterior Insulation and Finish System

Provide materials, equipment and systems in accordance with UFGS 07240 and as follows:

Require third party inspection by certificated inspector. Require certification of installer by the system manufacturer. Require full scale sample wall mock up with all surface/flashing conditions in the work.

EIFS shall be Class PB with provision for internal water drainage. All EIFS installed within 3 000 mm of grade shall be Class PM with provision for internal water drainage. Color and finish shall match existing surfaces on Echo Block buildings.

07322 Concrete Tile Roofing

Provide materials, equipment and systems in accordance with UFGS 07320N and as follows:

Edit all references to clay tile systems to restrict the roof system to concrete tiles. Tiles shall match type, size and color used in existing construction on Echo Block.

Eave and valley flashing shall be 20 ounce minimum copper sheet. All other roof flashing shall be 16 ounce minimum copper sheet. At eaves, rakes, valleys ridges and roof to vertical surface intersections install self-adhering, cold applied membrane consisting of polyethylene film and rubberized asphalt with minimum thickness of 1 mm. Width of strip at eaves, rakes, ridges and valleys shall be 900 mm minimum.

Require a double layer of roofing felt underlayment, except for single layer above self-adhering membrane.

Minimize use of wood materials in roof system. Utilize metal hat channels or similar material for batten strips and nailers. Battens shall use roof manufacturer's standard shimmed application for full drainage.

07413 Metal Siding

Provide materials, equipment and systems in accordance with UFGS 07413a and as follows:

Metal siding shall be steel in minimum 26 gauge with a polyvinylidene fluoride (PVF2) factory finish. Siding shall be overlapping sheet design with concealed fasteners. Include requirements for all flashing, trim, closure strips and miscellaneous components accessory to siding system. Siding shall include a ribbed profile to minimize the visual effects of "oil canning" and similar surface distortion.

Metal siding may be prefabricated insulated "sandwich" panels with exterior and interior metal siding bonded to a rigid foam filler. Foam shall use a blowing agent that minimizes outgassing and resultant blistering of panel face skin.

07416 Structural Standing Seam Metal Roof (SSSMRS) System

Provide materials, equipment and systems in accordance with UFGS 07416a and as follows:

Metal roof system shall be a fully integrated design, with all components provided by a single manufacturer and installed in the same configuration as originally tested for conformance with uplift criteria. Require submittal of manufacturer's certification of conformance with specification. Roof panels shall be minimum 24 gauge, with 38 mm (1-1/2 inch) minimum height standing seam and concealed fastener clips. Finish shall be polyvinylidene fluoride (PVF2) coating in color scheduled. Include requirements for all flashing, trim, closure strips and miscellaneous components accessory to the roof system.

07530 Elastomeric Roofing (EPDM)

Provide materials, equipment and systems in accordance with UFGS 07530a and as follows:

Elastomeric roofing is used in limited areas on the COF and BN HQ designs utilized in FY 02 and FY 03 projects. General use of elastomeric/low slope roofs as the primary roofing system is prohibited on Echo Block.

Membrane installation method shall be fully adhered. Where membrane is used below walkway pavers, use paver system approved pedestals and protection fabric to reduce risk of membrane damage.

07600 Sheet Metal Work, General

Provide materials, equipment and systems in accordance with UFGS 07600a and as follows:

This section includes, but is not limited to: flashing not related to roof or wall systems, sheet metal expansion joints, gutters and downspouts, and miscellaneous trim. Separate flashing and sheet metal from dissimilar metals and other construction materials, which will cause galvanic corrosion to occur. Fabricate architectural sheet metal to comply with the recommendations of SMACNA's Architectural Sheet Metal Manual. Coordinate requirements for paint finished versus mill finished materials.

Provide clear cross reference to flashing requirements for masonry construction and roofing that appear in other specification sections.

Specify requirements for splice joints, end dams and similar fabrication procedures for all through wall and exposed to the weather flashing types.

07730 Fall Protection Anchors

A UFGS section does not exist for this construction. Provide materials, equipment and systems as follows:

Coordinate with detailing of properties of anchors and connection of anchors to structural frame of roofs. Anchors shall be specified to be consistent with the requirements of OSHA regulation (29 CFR 1926.502). Other design requirements: Anchors and attachment to roof substructure shall have a minimum tensile strength of 22.2 kN (5,000 pounds) and shall not deflect more than 1 mm under a 10kN (2,250 pound) load. Anchor shall resist a 1.8 meter free fall of a 100 kg attached load. Anchorage shall incorporate an attachment point for a locking snap hook lanyard. Attachment point shall be at least 200 mm above adjacent roof surface. Spacing of anchors along ridge lines shall be no greater than 4 000 mm. Specify anchors to be stainless steel type 304 or 304L with series 300 stainless fasteners.

07840 Firestopping

Provide materials, equipment and systems in accordance with UFGS 07840a and as follows:

Provide clear correlation between types of firestopping and locations (penetrations, gaps, joints, etc.) where they are to be used. List alternative systems if more than one type is acceptable. Reference indications of fire rating on drawings for all walls, floors and miscellaneous assemblies as appropriate. Indicate locations where firestopping shall be finished to match adjacent construction for aesthetic reasons.

07900 Joint Sealing

Provide materials, equipment and systems in accordance with UFGS 07900a and as follows:

Sealant and related accessories shall be compatible with substrate and appropriate for each application. Caulking shall be polyurethane type. No silicone caulking to be used. Provide a

table listing sealant locations and/or the materials adjacent to the sealant joint generically, the acceptable products for use at that type of location and color matching requirements, if any.

DIVISION 8: DOORS & WINDOWS

08110 Steel Doors and Frames

Provide materials, equipment and systems in accordance with UFGS 08110 and as follows:

Doors and frames shall be factory fabricated in accordance with SDI-100 and the additional requirements of this specification section. Door grade shall be interior doors: heavy duty (Grade II), exterior doors: extra heavy duty and galvanized (Grade III, insulated). Interior and exterior doors shall have no visible seams on any face, edge, top or bottom. Both top and bottom of the door shall be closed flush. Doors and frames located on the exterior, and at laundry, toilet, locker, and shower rooms shall be galvanized steel ASTM A 653/A 653M, coating designation G90.

Frames shall be at least one standard gauge heavier than associated door. All frames shall be grouted. Frames in masonry or masonry veneer walls shall be coated with bituminous mastic on interior face and fully grouted. Frames for interior doors shall be grouted with gypsum type grout. Fort Lewis preference is to use removable mullions for door pairs rather than meeting stiles. Welded frames are required at all doors on the exterior, at corridors, transoms, sidelights, cased openings and interior glazed panels.
Where labeled openings occur, coordination is required for labeled assembly (door, frame, and hardware), not merely labeled items within the assembly. Doors and frames shall bear the specific labels as required for the rated openings. Require labels to be protected so as to be clearly legible after all painting is concluded. Coordinate requirements with Section 11025.

If used, include specification for interior windows fabricated with steel frames with removable stops.

08120 Aluminum Doors and Frames

Provide materials, equipment and systems in accordance with UFGS 08120 and as follows:

Project design wind load shall be specified. Design shall incorporate durability consistent with the occupants of the facilities, do not use narrow styles, clearly specify reinforcing requirements at hinges, pivots, closers and pulls. Exposed aluminum shall have an anodized finish.

08210 Wood Doors

Provide materials, equipment and systems in accordance with UFGS 08210 and as follows:

Wood doors shall be 45 mm thick, 2130 mm high, 5-ply, flush, solid core units. Doors to receive paint finish shall be economy grade, doors receiving natural finish shall be custom grade, birch veneer. Door finish shall be a submittal item for acceptance by the government. Doors shall be rated as and where required by Fire Codes. Specify STC rating for all doors in walls where sound control is required.

Use of wood doors on building exteriors is prohibited. Hollow core doors are prohibited.

Coordinate specification with door schedule information showing door number (keyed to Room number), size and thickness, door type, material, finish fire label requirement, hardware set number, and door frame callouts.

08331 Metal Rolling Counter Doors

Provide materials, equipment and systems in accordance with UFGS 08331a and as follows:

Rolling counter doors shall be galvanized steel construction with baked enamel finish. Operation shall be manual push up. As a safety feature provide internal backcheck mechanism to avoid gravity free fall closing of door. At rated wall construction coordinate specification of rated door panel, hardware and means of activation. Interlock door function with fire alarm system as required by code. Door shall have key operated cylinder locks accessed only from the secured room side of the door.

08520 Aluminum and Environmental Control Aluminum Windows

Provide materials, equipment and systems in accordance with UFGS 08520a and as follows:

Provide aluminum fixed and operable windows that conform at minimum to AAMA 101 HS-HC40 performance class or to performance class consistent with design pressure, whichever is greater. Minimum condensation index rating of 75. All venting windows shall be equipped with insect screens. Minimum 10 year warranty by manufacturer. All exterior windows shall have at minimum nominal 1” insulated, low e glazing. Interior pane shall be 1 /4” minimum thickness laminated glass. Window frames shall be anodized or have polyvinylidene fluoride resin color finish. Finish/color shall be submitted for government acceptance. Coordinate security requirements with Section 11025.

08550 Wood Windows

Wood windows are prohibited by the DOD Minimum Antiterrorism Standards for Buildings (UFC 4-010-01).

08560 Plastic (Vinyl) Windows

Plastic and vinyl windows are prohibited by the DOD Minimum Antiterrorism Standards for Buildings (UFC 4-010-01).

08600 Skylights

Provide materials, equipment and systems in accordance with UFGS 08600.

08710 Door Hardware

Provide materials, equipment and systems in accordance with UFGS 08710 and as follows:

Specified hardware shall be coordinated to conform to the requirements listed in section 00860 – Chapter 5 of this RFP.

Comply with all ANSI/BHMA and DHI requirements for commercial grade, heavy-duty hardware and with NFPA requirements for fire and life safety. A master keyed locking system shall be provided for all doors, and shall be compatible with Best locking system to match the current Fort Lewis locking system. Cylinders and cores shall be six-pin. Cylinders shall be the product of one manufacturer. Cores shall be the product of one manufacturer. Cores and keys/keyways shall be fully integrated with and provide seamless extension of the existing master keying system. Construction interchangeable cores shall be provided. Construction cores shall be returned to the contractor after final acceptance and keying. Disassembly of knob or lockset shall not be required to remove core from lockset. All locksets, exit devices, and padlocks shall accept same interchangeable cores. Provide permanent cores, keys, and accessories prior to final inspection.

Each core KD – four keys
Each set KA – four keys
Construction keys – four total
Blank keys – four per core

Mounting height of hardware to be industry standard. All doors shall be operable from the room side without the use of a key, special effort, or knowledge. Hardware shall meet ADAAG requirements.

Incorporate the following Fort Lewis design standards into the hardware specification:

1.5 QUALITY ASSURANCE
Specify and schedule all hardware for aluminum doors in Section 08710. Require all hardware for aluminum doors to be coordinated and supplied by the aluminum door manufacturer.

1.7 CONTROL OF LOCK CORES AND KEYING
The contractor shall provide all hardware and construction (temporary) cores required to secure buildings, utility access and related work throughout the construction period. Construction cores shall have a bright color on their exposed face for ease of identification. During construction the contractor shall meet with representatives of the contracting officer, Public Works Lock Shop and the user to develop a keying schedule. This schedule shall be submitted for approval in accordance with Article: Submittals. The contractor shall provide final lock cores, complete, pinned and combinated, with cut keys as specified. All final keying and combinating shall be performed by a licensed, bonded locksmith approved by the contracting officer. Upon acceptance of the facility for occupancy, the contractor shall replace construction cores with final cores in the presence of the government inspector and a Public Works locksmith, test each lock for proper operation and deliver any permanent or control keys to the inspector. Prior to core change out the contractor shall provide the government, by security shipment, with keys tagged with identifying labels in the quantities indicated.

2.3 HARDWARE ITEMS
Include items 1-5 listed “For projects at Camp Lejeune”

Add to item 3. All cylinders shall be keyed to A-2 system specifications. (A-2 system specifications are available at http://www.lab-lockpins.com/pinsicore.htm).

2.3.4 Locks and latches
To the maximum extent possible, locksets, latchsets and deadbolts shall be the product of a single manufacturer. Bored lock and latchsets are preferred. All cylinders shall be keyed to A-2 system specifications available at http://www.lab-lockpins.com/pinsicore.htm.

Add the following article for room module entrance locks:

2.3.4.x Programmable Pushbutton Locks
Electronic (stand alone battery power) cylindrical lockset with clutch mechanism shall comply with ANSI/BHMA 156.2, Grade 1 (extra heavy duty). Latchbolt shall be 18 mm throw with 70 mm backset. Latchbolt shall engage manufacturer's standard strike plate and matching strike box. Lock shall be powered by internal batteries providing 4 years of operation. All lock operation code entry and programming shall be performed using a 12 button keypad. Front housing shall also provide red and green indicator lights and an acoustic device to signal lock status to the user. Lever handles shall comply with Americans with Disabilities Act (ADA). Design of lever shall be of single piece construction without any return at the end. Outside lever shall be connected to a heavy duty clutch mechanism that will permit turning the lever without retracting the latch in the locked position. Inside and outside levers shall operate independent of each other. Inside lever provides free egress at all times. Unlocking angle of rotation should not exceed 45 degrees. Outside lever shall accommodate an A-2 SFIC. Core shall allow mechanical override key operation of the lockset. Programmable pushbutton feature shall provide ability to easily change code combinations. Multiple entry codes (4 minimum) and authorization levels shall be provided. User entry code shall be adjustable from 3 to 6 digits. Memory of lock shall be non-volatile and shall retain codes for at least 1 year without battery power and while batteries are being changed. Lock shall include a tamper resistance shut down feature to limit guessing of access codes. Shut down will be maintained for up to 15 minutes.

Example product: Unican 4000 Series, by ILCO Unican Corp.

2.3.4.xx At living/sleeping room doors in room modules provide Unican 1000 Series (1021B).

Add the following:
For all projects with 100 or more new locks of one type, the contractor will deliver five (5) additional locks to the Fort Lewis Public Works Lock Shop.

2.3.5 Exit Devices – provide touch bar type. Rim devices are the preferred type.

2.3.7 Cylinders and Cores – In the third sentence of the second paragraph, delete reference to A4 system and F keyway and replace with:

The cores shall have six~~seven~~ pin tumblers and shall be factory set using the A-2 system (specifications available at http://www.lab-lockpins.com/pinsicore.htm). Keyway may be A, D, E, F, G, H, J, or K.

2.3.23 Special Tools – Add
Special tools, such as those supplied by the manufacturer for installation and/or service will be supplied to the Fort Lewis Lock Shop for field service, minimum five sets along with all sets of installation instructions and other literature provided with the locks.

Hardware Sets
At end of section include separate hardware sets for each building type with a unique numbering scheme for each building.

08810 Glass and Glazing

Provide materials, equipment and systems in accordance with UFGS 08810a and as follows:

The use of insulated laminated glass with low emissivity metallic coating is mandatory. Provide the required certification label and test reports for the units. Glazing shall meet all applicable energy conservation goals. The designer shall propose applicable STC rating.

Laminated safety glass shall be used at glazed openings that are subject to accidental human impact, and at all hazardous locations, such as sidelights adjacent to doors, glazed panels closer than 459 mm (18 inches) to the floor, and glazing in doors. .

DIVISION 9: FINISHES

09215 Veneer Plaster

Provide materials, equipment and systems in accordance with UFGS 09215a and as follows:

Use a two component system. Provide veneer plaster at main corridors and lobbies in barracks, and battalion buildings.

09250 Gypsum Wallboard

Provide materials, equipment and systems in accordance with UFGS 09250a and as follows:

Gypsum wallboard to be a minimum of 16mm (5/8-inch) in thickness. This section includes type ”X” fire rated gypsum board, cement backer board, water-resistant gypsum board, abuse resistant gypsum board, impact resistant gypsum board, stud wall framing for wallboard systems, and suspended ceiling framing. Coordinate wall construction requirements with ratings and UL/FM assembly numbers indicated on drawings.

Specify STC ratings required in all wall interior types used. Minimum STC at walls providing acoustic separation shall be 45.

Acoustical sealant: where sound retardant construction is indicated, use acoustical sealant at all wall edges and penetrations and acoustical insulation as recommended by manufacturer. Provide expansion joints per manufacture and ASTM recommendations.

Finish on interior gypsum wallboard in all COF and BN HQ office, corridor, classroom and conference areas; barracks room modules, corridors and stairs, and all occupied areas in SCB to be “Level 5” per Gypsum Association Standard GA 214. Other exposed wallboard shall be “Level 4”.

Abuse resistant gypsum board shall be specified at all barracks corridor walls, laundry room walls and locker room walls.

Impact resistant gypsum board shall be specified at all barracks stair walls and COF Equipment Maintenance room.

09310 Ceramic Tile

Provide materials, equipment and systems in accordance with UFGS 09310a and as follows:

Ceramic mosaic floor tile shall be slip resistant, abrasive or textured surface, chemical and corrosion resistant, and non-porous with low-absorption characteristics. Ceramic floor tile in slabs on grade to be mortar bed set, thin set shall not be acceptable. Grout to be chemical-resistant epoxy. Slope all tile floors 10 mm per meter (1/8-inch per foot) to floor drains where applicable.

Ceramic wall tile to be glazed tile installed over solid waterproof backing cementitious backer board preferred, water resistant gypsum board where necessary due to fire resistance of wall construction. Wall tile shall be installed to building code required wainscot height throughout toilet rooms (minimum surface area), except at showers where tile shall be full height of wall. Provide expansion, control, contraction, and isolation joints.

Provide 0.5% extra stock for each size and color of tile.

09440 Resinous Flooring

A UFGS section does not exist for this material. Resinous flooring is the preferred floor system for use in the Barrack room module bathrooms. Resinous flooring is not a true terrazzo product. Include requirement for integral coved wall base.

09510 Acoustical Ceilings

Provide materials, equipment and systems in accordance with UFGS 09510a and as follows:

Acoustical units shall be 600 mm by 600 mm or 600 mm by 1200 mm nominal size. Acoustical tile units shall have exposed tegular edges and a factory applied flat finish, including all exposed edges and bevels. Provide required seismic bracing of suspension system. Provide minimum NRC of .60, STC range 35-39.

Pattern, finish, color and edge treatment are at offeror's option, however options which would appreciably increase cost (over industry standard tiles) for replacement shall be submitted to COR for acceptance. Suspension system shall be standard, white, exposed grid in standard width. Use of acoustical ceilings in barracks (except for SCB public spaces) is prohibited to limit access by occupants to concealed space.

Provide separate listing for each ceiling tile type used in the project and reference the building(s) were it occurs. Provide 0.5% extra stock for each type of ceiling tile.

09650 Resilient Flooring

Provide materials, equipment and systems in accordance with UFGS 09650a and as follows:

Vinyl composition tile (VCT) flooring shall meet heavy-duty requirements for layer gauge, indentation, flexibility, solvent and stain resistance. VCT shall have color and pattern extending through the entire thickness of the tile. Provide 100 mm high wall base of rubber or vinyl in continuous rolls at all areas with VCT or carpeting. Where resilient flooring is used on stairs use a slip resistant, raised pattern rubber tile. Rubber tile shall be a product system complete with cover components for treads, risers and stringers.

Provide 0.5% extra stock for each size and color of tile used.

09685 Carpet Tile

Provide materials, equipment and systems in accordance with Section 09685 attached to this RFP and as follows:

Provide a separate specification listing for each type of carpet used.

Provide 3.0% extra stock for each type and color of carpet used.

09720 Wallcoverings

Provide materials, equipment and systems in accordance with UFGS 09720 and as follows:

Submit an actual material sample of each wallcovering type and color for acceptance, minimum size of sample shall be 0.1 square meter. Wallcoverings are prohibited in the barracks.

Provide 1.0% extra stock for each type and color of wallcovering used.

09900 Painting, General

Provide materials, equipment and systems in accordance with UFGS 09900 and as follows:

All exposed surfaces without a permanent factory applied coating shall be painted unless specified otherwise. Fire alarm base plates, electrical panel covers, fire alarm bells, and other items on walls, (with the exception of fire alarm pull stations) shall be painted to match adjacent wall color. HVAC equipment and similar utility features on or near the facilities shall be made “invisible” by painting them to match the adjacent facility color. Avoid exterior painted surfaces on any material. Where exterior coating systems are required, finishes shall be either an approved powder coat finish or two-part modified polyurethane finish.

All coating systems and alternatives for primer and top coat selected shall meet UFGS requirements and be coordinated consistent with the Master Painter’s Institute (MPI) numbering system.

All interior and exterior color schemes for buildings shall be accepted by the Contracting Officer’s Representative (COR) prior to painting.

09915 Color Schedule

Provide color and finish references in accordance with UFGS 09915 and as follows:

Either incorporate comprehensive color information into surface and component schedules on drawings, or provide in this section. List all Exterior and Interior finishes and colors whether an applied coating or an integrally colored material.

It is important that appropriate colors be selected for these facilities; neutral or light colors shall be utilized for large background areas and walls used for display. Color-texture graphics should be used sparingly on walls. Painted CMU is not acceptable as an interior finish for any normally occupied room. All interior appurtenances, except fire alarm pull boxes, shall match the wall color.

In general, all exterior materials used on Echo Block buildings shall match the color, texture and finish of like materials used on facilities designed and constructed under the FY 02 and FY 03 program years.

DIVISION 10: SPECIALTIES

10100 Visual Communications Specialties

Provide materials, equipment and systems in accordance with UFGS 10100a and as follows:

This section includes marker boards (white boards), tackboards and Projection Screens. Attach to wood blocking (treated in rated walls) for backing. Provide markerboards and tackboards in all Administrative offices. Provide markerboards, tackboards and wall or ceiling mounted projection screens in Conference Rooms and Classrooms. Coordinate specification with depiction of items in interior elevation drawings.

10153 Toilet Partitions

Provide materials, equipment and systems in accordance with UFGS 10153 and as follows:

Provide to meet all ADAAG requirements for accessibility. Style C, overhead braced. Urinal screens shall be wall-supported. Partitions will be solid HDPE core (finish 5). Attachment brackets and fasteners shall be stainless steel and vandal-proof. . Door hardware shall be stainless steel. Hinges shall be gravity type. Provide coat hook-door bumper, and door stop/keeper with rubber bumper.

10201 Exterior Louvers and Vents

Provide materials, equipment and systems in accordance with UFGS 10201N and as follows:

Do not include door louvers in this section. Louvers shall be fabricated with minimum material thicknesses of2 mm for aluminum or 16 Ga. for steel. Finish system shall match that used for other sheet metal exterior components. Louver surface areas not utilized for mechanical purposes (backed by ductwork) shall have an insulated closure panel to provide a weather and thermal seal with a minimum u-value of .10. The edges of louver blades shall be folded or beaded for rigidity, and baffled to reduce leakage due to driving rain. Provide concealed interior mullions for all louvers wider than 1 500 mm. Louvers shall be provided with bird screens on interior face. Louvers shall bear the AMCA Certified Ratings Seal for air performance and water penetration ratings as described in AMCA 500. Coordinate installation with requirements of Section 11025.

10260 Wall and Corner Protection

Provide materials, equipment and systems in accordance with UFGS 10260.

10430 Exterior Signage

Provide materials, equipment and systems in accordance with UFGS 10430 and as follows:

Signage shall conform to Fort Lewis Installation signage regulations andthe requirements of this RFP. Location and message of signage shall be coordinated with the installation.

10440 Interior Signage

Provide materials, equipment and systems in accordance with UFGS 10440 and as follows:

Signage shall be simple in design and pleasing in appearance. The system shall provide a permanent room number with two changeable messages strips (for occupant names) on room signs. Directory signage shall provide space for a schematic floor plan (with fire exit path information) and fully changeable message content. Interior signage shall be acrylic. All signage characteristics and mounting location shall be consistent with ADAAG requirements for accessibility. Signage shall be required at all rooms, areas, and spaces. Provide directory signage at all main building entrances. Surface mounted signs shall be provided with 1.6mm thick vinyl foam tape. Signage shall conform to Fort Lewis Installation signage regulations and the requirements of this RFP.

10505 Metal Lockers and Locker Benches

Provide materials, equipment and systems in accordance with UFGS 10505N and as follows:

Lockers and benches shall be provided at locations shown on drawings.
Athletic Lockers shall be 22-gauge steel on top, sides and back with 18 gauge steel door and bottom and 12 gauge locker and door frames. Nominal locker size shall be 300 mm W x 300 mm D x 1830 mm H on a 150 mm concrete base. Provide louvers at top and bottom of door panel. Accessories shall include standard hat shelf, coat hooks and number plates. Tamper guard handle shall accommodate standard padlock (NIC). Lockers shall be wall anchored, have leg closure panel, sloped top and baked enamel finish.

TA-50 Gear Lockers shall be 14-gauge expanded or punched steel on top, sides and back and door with 14 gauge solid steel bottom and 12 gauge locker and door frames. Nominal locker size shall be 1220 mm W x 610 mm D x 1830 mm H on a 150 mm concrete base. Include number plates. Tamper guard handle shall accommodate standard padlock (NIC). Lockers shall be wall anchored (or anchored to each other at “island” locations), have leg closure panel, sloped top and baked enamel finish.

Locker benches shall be provided at locations shown on drawings. Bench shall be laminated hardwood, minimum 200 mm wide by 30 mm thick, finished with clear acrylic. Pedestals shall be cast iron, 450 mm high, finished with baked enamel and secured to the floor with expansion anchors.

10520 Fire Extinguisher Cabinets and Accessories

A UFGS section does not exist for this material. Provide materials, equipment and systems in accordance as follows:

Fire extinguisher cabinets shall be semi or fully recessed with flat trim. Fire extinguisher cabinets, all appurtenances, and accessories shall be factory painted, red color. Cabinets in rated walls shall be rated to match, or recess notch designed to maintain the wall rating. Fire extinguishers will be provided by others.

10550 Postal Specialties

A UFGS section does not exist for this material. Provide materials, equipment and systems as follows:

Postal Specialities shall include Horizontal Mailboxes for all barracks occupants and Letter Boxes for outgoing mail. All postal specialties shall conform to United States Postal Service regulations for size, configuration and mounting locations.

10650 Operable Partitions

Provide materials, equipment and systems in accordance with UFGS 10650a and as follows:

Operable Partitions (used to divide classrooms in the BN HQ buildings) shall be manual operation type, extend to fill the entire room length and be continuous from floor to ceiling. Panels shall incorporate full acoustic seals on all edges, top and bottom. Seal extension and jamb closure shall be activated using a removable crank handle. Panels shall provide acoustic separation of STC 50 per ASTM E 413. Panel surface shall be vinyl fabric. Provide porcelain markerboard on both faces of partitions for at least one half of the partition length. Support track sections shall be fabricated from architectural grade, extruded aluminum alloy 6063-T6.

10800 Toilet Accessories

Provide materials, equipment and systems in accordance with UFGS 10800 and as follows:

Provide in toilet rooms and bath rooms as required by this RFP and otherwise applicable: medicine cabinets, soap dispensers, mirrors, toilet paper dispensers, folded paper towel dispensers, grab bars, paper towel waste receptacles, garment hooks, and metal shelves. Provide sanitary napkin disposals in each women's water closet stall. At each shower provide recessed soap dish, towel hook and shower curtain and rod. Provide semi-recessed accessories, where possible. Mirrors shall be a single panel with width to match the adjacent lavatory countertop.

Electric hand dryers may be used in lieu of paper towel dispensers at multiple fixture toilet rooms in COF and BN facilities.

Provide a mop rack and shelf in janitor closets.

Provide a toilet hardware matrix schedule in this section for each building type identifying the accessory item, the number of that accessory type and the number of the room mounted in.

10990 Miscellaneous Building Specialties

A UFGS section does not exist for this material. Provide descriptions of all materials/components requiring additional definition and not adequately covered by other sections. Typical components include: telephone enclosures, TV/VCR wall mounting brackets and recessed entrance gratings and mats.

DIVISION 11: EQUIPMENT

11020 Security Vault Door

Provide materials, equipment and systems in accordance with UFGS 11020 and as follows:

Steel security – vault type door with frame shall be of standard product from manufacturer specializing in this type of fabrication. Design of door and frame to conform to Federal Specifications FS AA-D-00600. Single leaf door shall have clear opening of 1015 mm (40 inches) wide by 1980 mm (78 inches) high. The door shall be Class 5, Type “IR” - right opening swing with optical device or “IL” - left opening swing with optical device, as indicated on drawings, Style K - key change combination lock. The optical device shall permit observation from the inside to the outside of the vault.

Day gates shall be provided at Arms Room entrances. Day gates shall be manufactured and installed as designed and detailed in the drawings. Size and mounting position of day gate shall be coordinated with the vault door furnished, and shall provide access control and visual security. The gate shall be hinged on the same jamb as the vault door, shall swing into the vault, and shall have a locking device operable from outside by key and from inside by knob or handle. Day gate shall be of steel construction throughout. Provide high security hasp (NSN 5340-00-178-7872) accessible from vault interior. Gate shall be constructed with a pass through opening complete with shelf.

11452 Residential Appliances

A UFGS section does not exist for this equipment.

Provide continuous protection of all appliances stored on site or installed in the work until final acceptance. Appliances furnished by the government may be stored on site. Appliances listed in this outline are consistent with previous projects, however, the contractor shall coordinate during design and construction with the COR and Fort Lewis installation furnishings coordinator to verify actual appliance purchases.

Include the following testing requirements:

3.x TESTING

Equipment shall be inspected and tested under operating conditions after installation. If inspection or test shows defects, such defects shall be corrected, and inspection and test shall be repeated. Equipment tests shall include the following:

3.x.1 Operating Tests

An operating test shall be performed on all items (except GFGI) after complete installation and adjustment. The failed test item shall be corrected and the test shall be rerun.

3.x.2 Equipment Start-Up/Demonstration

As necessary, the Contractor shall obtain the services of the manufacturer's representative experienced in the installation, adjustment and operation of the equipment specified. The representative shall supervise the start-up, adjustment, and testing of the equipment, prior to the demonstration. Equipment shall be carefully tested, adjusted, and regulated in accordance with the manufacturer's instructions and shall be so certified in writing. A thorough operational demonstration shall be provided of all equipment and instructions furnished for general and specific care and maintenance. Selected items of equipment and attendees shall be scheduled, with the Contracting Officer, at least 2 weeks in advance of demonstration periods.

3.x Clean and Adjust

Debris resulting from this work, as the installation progresses, shall be removed from the jobsite on the same day. All appliances, (except GFGI) prior to demonstration, shall be cleaned and polished, both interior/exterior. Drawer slides and casters shall be lubricated and adjusted. Pressure regulating valves, timed-delay relays, thermostatic controls, and temperature sensors, shall be adjusted, as required, for proper operation. Faucet aerators and line strainers shall be cleaned or replaced. Damage to painted finishes shall be touched up.

Appliances will have one of three contract characters:

Government Furnished and Government Installed (GFGI):

Combination Microwave Refrigerator/Freezer (at Barracks Room Modules)

Microfridge model MF-10 TP incorporates both appliances in a stacked unit. Overall size of unit is 600 x 1810 x 711 mm (w x h x d). Coordinate cabinet size and location to permit appliance location as indicated on drawings. Appliance may be purchased in single or dual plug configuration. Confirm type acquired and style of plug. Coordinate electrical outlet requirements.

Dispensing Ice Machine (at common area)

Ice dispenser model shall be Manitowac QFA-291. Unit is water cooled and will provide up to 180 pounds of ice storage. Overall size of unit is 760 x 1540 x 810 mm (w x h x d). Coordinate power, water supply and drainage (storage hopper and condenser) requirements, assuming an ice maker fitting the model indicated with the highest electrical requirement and a water cooled unit, including backflow prevention per code.

Government Furnished and Contractor Installed (GFCI):

Stacked Washing Machines/ Clothes dryers (at Barracks room modules)

Maytag high-efficiency model MLG2000. Overall size 686 x 1840 x 730 mm (w x h x d). Confirm and coordinate facility built in requirements for water, waste, gas and electrical connections.

Provide service connections to accommodate gas or electric dryers. Verify actual appliance selected during design.

Contractor Furnished and Installed (CFI):

Range (at Barracks Room Modules)

Range shall be an electric drop-in type complete with oven and smooth ceramic type cooktop. Oven shall be 4 cubic foot capacity, self-cleaning, with 2 racks and glass window door. Cooktop shall be four element, radiant type with "Ceran" or similar surface and 'hot surface' indicator lights. Nominal size of range shall be 780 x 710 x 670 mm (w x h x d). Coordinate size and configuration of cabinetry cutout with actual unit selected. Coordinate power outlet requirements with actual unit selected. Color of unit shall be white on white.

Representative products:
General Electric model JDP46WDWW.
Maytag model MEP5770A.
Whirlpool model RS696PXGQ

Exhaust Hood (at Barracks Room Modules)

Exhaust hood shall be built-in, exhaust to exterior type. Features shall include multi-speed fan, removable/washable grease filters and internal hood light to illuminate range cooking surface. Nominal size of exhaust hood shall be 760 x 150 x 445 mm (w x h x d). Design of hood shall not create any exposed sharp metal edges. Coordinate size and configuration of cabinetry cutout with actual unit selected. Coordinate power outlet, and vent ducting requirements with actual unit selected. Color of unit shall be white.

Representative products:
Broan Model 463011
GE Appliances Model JV535CWW
Whirlpool Model RH2330XJQ

DIVISION 12: FURNISHINGS

12490 Window Treatment

Provide materials, equipment and systems in accordance with UFGS 12490A and as follows:

Horizontal window blinds shall be Type II 25 mm (1-inch) aluminum slats. Coordinate color with interior finish. Provide blinds at all exterior windows with the exception of: 1) corridor windows in Barracks and SCB, and 2) glazing at exterior doors.

12675 Floor Grating and Frame

A UFGS section does not exist for this equipment. Specification may be incorporated into Miscellaneous Specialties. Provide materials, equipment and systems in accordance as follows:

Exterior Grating: Frame shall be fabricated of stainless steel and furnished complete with concrete anchors, corner splices, etc., as required for recessed installation. The frame shall accept the grating thickness on one side and be flush with the finished surface on the other side, and shall provide a controlled recess depth for a flush, continuous walking surface. Grating shall be fabricated of stainless steel grille. Recessed concrete pan shall slope 21 mm per meter (¼" per foot) minimum to a drain in the concrete pan.

Interior Grating/Mat: Frame shall be fabricated of aluminum extrusion conforming to ASTM B 221, alloy 6063, temper T5. The frame shall be furnished complete with concrete anchors, corner splices, etc., as required for recessed installation. The frame shall be of the universal type to accept the grating on one side and to accept a variety of floor finishes on the other side, and to provide a controlled recess depth for a flush, continuous walking surface. Grating surface shall be carpet inserts having fusion bonded cut pile. Inserts shall be locked into treadrails shall be fabricated from 6063-T5 aluminum alloy and joined in a continuous hinge system to allow easy roll-up and removal for cleaning. Treadrail will be standard bronze anodized.

DIVISION 13: SPECIAL CONSTRUCTION

13080 Seismic Protection For Miscellaneous Equipment

Provide equipment and systems in accordance with UFGS 13080 and as follows:

Provide seismic bracing for suspended ceilings, electrical equipment and conduit and mechanical equipment, ductwork and piping.

13100 Lightning Protection System

Provide equipment and systems in accordance with UFGS 13100Aand as follows:

Provide Lightning Protection System in accordance with NFPA 780, ETL 90-6 and UL 96A.

13110A Cathodic Protection System (Sacrifical Anode)

Provide equipment and systems in accordance with UFGS 13110A.

13112A Cathodic Protection System (Impressed Current)

Provide equipment and systems in accordance with UFGS 13112A.

13201 LPG (Propane) Fuel Storage Systems

A UFGS section does not exist for this material. Provide specifications for all materials at the tank farms required including the propane storage tanks, transfer pumps, water bath vaporizers, gas-air mixers, air compressors, truck offloading stations, piping, meters, instrumentation, gauges and controls.

13721 Intrusion Detection System

See Technical Specification 13721 provided.

13851 Fire Detection And Alarm System, Addressable

Provide a complete Fire Alarm System in accordance with UFGS-13851a and the following:

The Fire Alarm System panel and all devices shall be of the addressable type and be completely compatible with the existing base system that uses King-Fishercentral receiving equipment. The Fire Alarm System shall monitor all devices and transmit any alarms to the Base 911 center.

Wiring on fire alarm system components shall be Style A for alarm initiating devices and Style Z for indicating devices.

Smoke detectors shall the photo-electric type. Smoke detectors in sleeping rooms shall be single action alarm device type operated from the fire alarm control panel's power and having reverse polarity sounding capability. Upon an alarm condition shall be non-latching, not require reset at the fire alarm panel after a local alarm, and not cause the transmitter to send an alarm or trouble. Any smoke, heat or duct detectors that are above ceilings or in concealed spaces shall have a remote LED indicator. Duct detectors shall be installed in air handling unit (AHU) systems which have more than 2000cfm airflow, per NFPA 90A, and shall be resettable from the control panel.

Notification appliances in individual sleeping rooms of dormitories that sound with the general alarm shall silence with the general alarm silence function from the fire alarm panel. Manual fire alarm pull stations shall be double action type. When device is mounted externally on brick or exterior surface, a rubber gasket shall be used (to reduce electrolysis and grounds).

Spare parts, manuals for fire alarm system, documentation showing mapping/tree of devices (showing the polling sequence), and all software/hardware required for programming/editing shall be turned over to Public Works personnel at the time of acceptance testing. Spare parts will include 2% or a minimum of 2 of each type of device used in the system (bases, sounder bases, modules, detectors, pullstations, hornstrobes, magnetic door holders, etc.).

All specialized equipment and/or training to program, edit existing program, add or delete devices, etc. shall be provided as apart of the fire alarm system. Systems that require factory certification to process or use their software shall include this training. Include transportation, lodging, etc. when training is not available locally.

13930 Wet Pipe Sprinkler System, Fire Protection

The entire area of each building shall be provided with wet pipe sprinklers. Install systems in accordance with UFC 3-600-1, NFPA 13 and NFPA 24. All pipe, valves and fittings shall be UL labeled and FM approved. Use semi-recessed, chrome plated, glass bead type sprinklers in the administrative areas. Use concealed type sprinklers in the barracks room modules. Do not use gripper fittings in the piping system. Grooved joints and fittings shall not be installed in concealed locations. Provide tamper switches for main sprinkler/standpipe valves and for sprinkler zone valves on each floor, as well as the Post Indicator Valve. Underground piping shall be in accordance with NFPA 24. Double check back flow preventers shall only be installed in the position certified by the manufacturer. Sprinkler systems shall be hydraulically designed.

Inspector's test connection shall be located at riser with UL listed site glass flow device. The test connection discharge shall be located outside the building wall directed so as not to cause damage to adjacent construction or landscaping during full flow discharge or to an adequate drain that will handle the discharge. Drain valves shall have plugs. All sprinkler systems shall always be disinfected. All pipe flushing, tests and inspections shall be witnessed by Fort Lewis Fire Department. Copies of all as-builts, test certificates, and related system documentation shall be provided to the Fort Lewis Fire Department.

DIVISION 14: CONVEYING SYSTEMS

14240 Elevators, Hydraulic

Provide materials, equipment and systems in accordance with UFGS 14240 and as follows: Nominal Elevator Schedule (Passenger), confirm with manufacturer/model selected.

Number Required:	2 (1 at each Large Battalion HQ)
Service:	Passenger
Capacity:	1,135 kg (2500 pound)
Speed:	0.50 m/s full load up
	0.75 m/s down speed
Platform Size:	2 134 mm wide by 1 500 mm deep
Clear Car Inside:	2 032 mm wide by 1 295 mm deep
Net Travel:	4 300 mm
Landings:	2
Openings: Front	914 mm x 2 134 mm
Openings: Rear	n/a
Entrance Type:	Horizontal-sliding/side opening

Provide emergency phone system meeting ADAAG requirements:

A telephone system in stainless steel cabinets shall be provided for passenger elevators. A vandal-resistant speaker type intercom with push-buttons to activate shall be installed in car station behind a stainless steel perforated grille and connected to a programmable auto-dialer located in machine room. Auto-dialer shall be provided with a solid-state charger unit, which will automatically provide emergency power and an immediate transfer in the event of failure of normal power supply. The push-button located in car station or in separate cabinet shall be at the prescribed height for access by the disabled and shall be identified as "EMERGENCY PHONE PUSH TO ACTIVATE". The entire communication assembly shall be approved for an elevator installation. The push button telephone shall comply with FED-STD 795 and 36 CFR 1191. The telephone communication shall not be terminated until one of the communicating parties hangs up the receiver or manually disconnects the communication link. Auto-dialer shall connect to on post 24-hour emergency number, verify number with Ft. Lewis Emergency Services.

Provide elevator pit sump system:

Pit sump shall be equipped with float switch activated automatic sump pump. Sump pump shall not discharge directly to sanitary or storm sewers. Activation of sump pump shall signal through HVAC DDC control system and illuminate a wall mounted signal light, location as indicated. Pump shall discharge to 20 gallon holding/inspection container located in elevator machine room. Holding/inspection container shall have a valve controlled drain to sanitary sewer.

DIVISION 15: MECHANICAL

15070 Seismic Protection For Mechanical Equipment

Provide equipment and systems in accordance with UFGS 15070A.

15080 Thermal Insulation for Mechanical Systems

Provide equipment and systems in accordance with UFGS 15080A.

15190 Gas Piping Systems

Provide equipment and systems in accordance with UFGS 15190A and as follows:

See 02556 Gas Distribution System.

15400 Plumbing, General Purpose

Provide equipment and systems in accordance with UFGS 15400A. Plumbing vents through the roof shall be minimized as much as possible by consolidating all vents at one point. All aboveground pressurized potable water piping shall be copper. All water heaters with over 1500 liter (400 gallon) capacity shall be provided with a minimum 10 year limited warranty for tank replacement. Backflow preventers shall be tested by a Washington State certified tester and standard form available from Public Works for testing shall be used.

15569 Water Heating; Gas; up to 20 MBTUH

Provide equipment and systems in accordance with UFGS 15569A and as follows:

Hot water generators (HWG) shall be designed, constructed and equipped in accordance with the ASME Boiler Pressure Vessel Code, Section IV, Heating Boilers. Each HWG shall be self contained, steel, horizontal, 3 pass or greater, wet backed scotch marine packaged firetube type complete with all accessories, mounted on a structural steel base . The HWG capacity shall be based on the ratings shown in HYI-01 or as certified by the American Boiler Manufacturers Association, or American Gas Association. HWG shall be designed to burn natural gas. A propane/air mixture with heating value roughly equivalent to natural gas will be used as an alternate fuel source using equipment designed for natural gas. Each HWG shall comply with Federal, State, and local emission regulations. Burners shall be UL approved, fully modulating, mechanical draft burners with all air necessary for combustion supplied by a blower where the operation is coordinated with the burner. Burners shall be provided complete with gas supply system in conformance with UL 795, ANSI Z21.13 or NFPA 8501. Combustion safety controls and equipment shall be UL or IRI listed and conform to ASME CSD-1. As a minimum, the burner controller shall provide all functions of a Honeywell 7800 Series controller with troubleshooting module. Temperature gauges shall be provided in lieu of thermometers. Temperature and pressure gauges shall be round dial type.

15895 Air Supply, Distribution, Ventilation and Exhaust System

Provide equipment and systems in accordance with UFGS 15895A and as follows:

Isolation valves 64mm (2 ½") and smaller shall be full port ball valves. Isolation valves 75mm (3") and larger shall be gate valves. Propylene glycol shall be used in lieu of ethylene glycol for freeze protection of the hydronic hot water heating system.

15910 Direct Digital Control Systems

A revised specification section 15910 is provided in Attachment. This revised section 15910 reflects the most recent requirements which complies with Ft Lewis DDC standards. The contractor is required to further refine the specification to meet the Ft Lewis DDC standards.

15990 Testing, Adjusting and Balancing of HVAC Systems

Testing, adjusting and balancing shall be accomplished in accordance with UFGS 15990A.

15995 Commissioning of HV Systems

All HV systems and equipment including controls shall be commissioned in accordance with ASHRAE Guideline 1 The commissioning specification, UFGS 15995A, which the contractor tailors based on the ASHRAE Guideline 1, is a detailed description of the scope and objective of the construction, acceptance, and post-acceptance phases of the HVAC commissioning process. The commissioning specification is required to contractually implement the post-design phases of the process. It must be project specific. Commissioning of systems and equipment shall take place only after TAB work is complete. An independent qualified firm or agency specializing in such work shall complete commissioning work. The independent firm or agency shall furnish a written report on the commissioning work. Commissioning work shall be coordinated with DDC system commissioning and training for the DDC system's operating personnel. All commissioning shall be performed in accordance with UFGS 15995A except for the following:

a) In paragraph 3.1 "Commissioning Team and Checklists" the second sentence shall be changed to read: "In addition, the Government will be represented by a representative of the Contracting Officer, and the Using Agency."

b) In paragraph 3.1 "Commissioning Team and Checklists" the Designation "D" shall be changed to "Contractor's Mechanical Designer."

All functions of the details sequences of operations shall be tested.

Division 16: ELECTRICAL

16070 Seismic Protection For Electrical Equipment

Provide all necessary requirements in accordance with the UFGS-16070A.

16370 Electrical Distribution System, Aerial

Provide overhead to underground transition in accordance with UFGS-16370A.

16375 Electrical Distribution System, Underground

Provide equipment and a complete system in accordance with UFGS-16375A and the following:

Medium voltage cables shall be soft drawn copper, rated for 15 kV circuit voltage.

Medium voltage cable terminations shall be 15 kV between phases for 133 percent insulation level.

Power transformers shall be pad-mounted, oil-filled, loop-feed, outdoor type in accordance with the requirements of ANSI C57.12.26. Power transformers shall be placed on vaults with conductors fire-taped, looped and racked.

Pull-through vaults shall have hinged, diamond plate lids and conductors shall be fire-taped, looped and racked.

16415 Electrical Work, Interior

Provide complete electrical system including power, lighting, control and distribution in accordance with UFGS 16415A.

16475 Coordinated Power System Protection

Coordinated power system protection shall be in accordance with UFGS 16475A.

16528 Exterior Lighting Including Security and CCTV Applications

Provide electrical equipment and systems for parking and walkway lighting in accordance with UFGS-16528A and the following:

All exterior electrical shall be routed underground.

Within ECHO Block, the parking area poles and luminaires, bollards, and walkway poles and luminaires shall match existing fixtures installed in the previous projects. In ALPHA Block, luminaires for the parking areas and walkways shall be selected to meet the Sustainable Design goal to reduce overall light pollution. Exterior finish of poles, fixtures, and bollards shall be compatible with Architectural style and materials of other site features.

16710 Premises Distribution

Interior distribution system for telecommunications system shall be in accordance with UFGS 16710A and the details in this RFP.

16711 Telephone System, Outside Plant

Exterior distribution system for telecommunications system shall be in accordance with UFGS 16711A and the details in this RFP.

16770 Radio and Public Address Systems

Provide a public address system in accordance with UFGS 16770A.

END OF SECTION

This page is intentionally left blank.