AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE	OF	PAGES
	1		4

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
0009	30 Sep 2004		

6. ISSUED BY	CODE	7. ADMINISTERED BY *(If other than Item 6)*	CODE
US ARMY ENGINEER DISTRICT, FORT WORTH ATTN: CESWF-CT (RM 2A19) PO BOX 17300 FORT WORTH, TX 76102-0300			

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*	(X)	9A. AMENDMENT OF SOLICIATION NO.
	☒	W9126G-04-R-0046
		9B. DATED *(SEE ITEM 11)* 24 August 2004
	☐	10A. MODIFICATION OF CONTRACT/ORDER NO.
		10B. DATED *(SEE ITEM 11)*
CODE / FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

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

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

(a)By completing items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment your 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 ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
	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.)*

The Solicitation for DESIGN-BUILD MISCELLANEOUS CONSTRUCTION, RENOVATION, AND ALTERATION PROJECTS, FORT HOOD, TEXAS, is amended as follows:

See Continuation Sheet (or Sheets)

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

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
15B. CONTRACTOR/OFFEROR *(Signature of person authorized to sign)*	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA *(Signature of Contracting Officer)*	16C. DATE SIGNED

Item 14. Continued.

CHANGES TO DOCUMENTS 00 - INTRODUCTORY, BIDDING, AND CONTRACT REQUIREMENTS

1. Replace the following documents, with the accompanying new documents of the same title and number:

SF1442 SOLICITATION, OFFER AND AWARD
00110 PROPOSAL SUBMISSION INSTRUCTIONS, EVALUATION AND BASIS OF AWARD

2. Bidding Schedule: Replace the Bidding Schedule, pages 00010-1 through 00010-20, with the accompanying new Bidding Schedule bearing the notation "ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046."

CHANGES TO THE SPECIFICATIONS

3. Replacement Sections: Replace the following Sections with the accompanying new sections of the same section number and title, each bearing the notation "ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046:"

01010 GENERAL PROJECT DESCRIPTION AND DESIGN REQUIREMENTS
01012 DESIGN AFTER AWARD
01016 DESIGN DOCUMENT REQUIREMENTS
01320 PROJECT SCHEDULE

CHANGES TO APPENDICES

4. Appendix E - ELECTRICAL REQUIREMENTS

a. Delete the following attachments in their entirety:

28E COMMUNICATIONS - SITES 8 (16000 BLK) & 9 (17000 BLK)
11E SITE 6 (MOTOR POOL ROAD)

b. Replace the following attachments with the accompanying new attachments of the same number and title, each bearing the notation “ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046”:

27E COMMUNICATIONS - SITES 25, 26, & 27 (9500 BLK)
30E COMMUNICATIONS - SITE 10 (1900 BLK)

c. Replace attachment 29E with new attachment 29E and rename ATTACHMENT 29E - COMMUNICATIONS SITE 28 (HAAF-700 BLK) bearing the notation “ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046”.

5. Appendix K - FACILITIES FUNCTIONAL REQUIREMENTS:

Replace the following Appendix K subsections with the accompanying new subsections, with the same numbers and titles, each bearing the notation “ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046."

K3 BARRACKS MODULE
K4 BATTALION HEADQUARTERS
K7 COMPANY OPERATIONS
K8 COMPANY OPERATIONS SUPPLY BUILDING
K10 DAYROOM
K12 STORAGE BUILDING
K14 UNIT STORAGE BUILDING
K15 VEHICLE MAINTENANCE
K16 VAN DOCK
K21 MASTER FURNITURE LIST

CHANGES TO THE DRAWINGS

6. **Volume I (New Construction)**

a. Survey CADD Files: For bidders’ information, topographic survey files (AutoCad and Microstation) for Site 1 (DOL Area), Site 2 (LZ Phantom) and Sites 25, 26, & 27 (9500 Block) accompany this amendment in the folder “Survey CADD files.”

b. Replacement Drawings: Replace the drawings listed below with the attached new drawings(s) of the same number, bearing the notation "AM #0009":

G201.CAL G201 VOLUME ONE INDEX SHEET
C01.CAL C-1 PROJECT LOCATION MAP 1 WEST
C02.CAL C-2 PROJECT LOCATION MAP 2 EAST
C04.CAL C-4 SITE 2 - LZ PHANTON SITE LOCATION
C05.CAL C-5 SITE 3 - 49000 BLOCK SITE LOCATION
C06.CAL C-6 SITE 4 - 4920 BLOCK SITE LOCATION
C07.CAL C-7 SITE 5 - 4926 BLOCK SITE LOCATION
C11.CAL C-11 SITE 10 - 1900 BLOCK SITE LOCATION
C21.CAL C-21 SITE 20 - TANK DESTROYER ROAD AT 78TH ST. SITE
C22.CAL C-22 SITE 21 - 3500 BLOCK SITE LOCATION (WEST)
C23.CAL C-23 SITE 22 - 3500 BLOCK SITE LOCATION (EAST)
C24A.CAL C-24A SITE 23 - 800 BLOCK SITE LOCATION
C25.CAL C-25 SITE 24 - 200/300 BLOCK SITE LOCATION
C27.CAL C-27 SITE 26 - 9500 BLOCK SITE LOCATION (CENTRAL)
C28.CAL C-28 SITE 27 - 9500 BLOCK SITE LOCATION (EAST)
C29.CAL C-29 SITE 28 - MURPHY ROAD @ BLDG 728 SITE LOCATION
C30.CAL C-30 SITE 29 - MURPHY ROAD @ BLDG 6978 SITE LOCATION
C31.CAL C-31 SITE 30 - HAAF APRON EXPANSION
C31A.CAL C-31A SITE 30 - HAAF APRON EXPANSION, TRENCH CAP & REPAIR
C32.CAL C-32 SITE 31 – 4600 BLOCK
A103.CAL A103 TYPICAL UNIT STORAGE RELOCATABLE MODULE FLOOR PLAN
A104.CAL A104 VEHICLE MAINTANCE FACILITY (RELOCATABLE) FLOOR PLAN
A105.CAL A105 TYPICAL ADMIN RELOCATABLE MODULE FLOOR PLAN
A106.CAL A106 PERMANENT CLASSROOM FACILITY
A107.CAL A107 PERMANENT STORAGE FLOOR PLAN

A108.CAL A108 RELOCATABLE MODULAR BARRACKS FLOOR PLAN
A108A.CAL A108A RELOCATABLE MODULAR BARRACKS FLOOR PLAN AND ELEVATIONS ADA
A108B.CAL A108B RELOCATABLE MODULAR BARRACKS FLOOR PLAN AND ELEVATIONS
A109.CAL A109 RELOCATABLE LAUNDRY MODULES FLOOR PLAN
A110A.CAL A110A RELOCATABLE BATTALION HQ MODULE FLOOR PLAN A
A110B.CAL A110B RELOCATABLE BATTALION HQ MODULE FLOOR PLAN B
A110C.CAL A110C RELOCATABLE BATTALION HQ MODULE FLOOR PLAN C
A110D.CAL A110D RELOCATABLE BATTALION HQ MODULE FLOOR PLAN D
A110E.CAL A110E TYPICAL ADMIN TYPE ELEVATIONS
A111.CAL A111 MODULAR BATTALION HQ COMPLEX
A112.CAL A112 MODULAR COMPANY OPS FLOOR PLAN
A113.CAL A113 MODULAR COMPANY OPS FLOOR PLAN
A118.CAL A118 BARRACKS LAYOUT PLANS

7. **Volume II (Renovation Work)**

a. Replacement Drawings: Replace the drawings listed below with the attached new drawings of the same number, bearing the notation "AM #0009":

025A2.CAL Seq 25 A-102 BUILDING 4616 - PROPOSED ARCHITECTURAL PLAN
030E2.CAL Seq 30 E-102 BUILDING 4616 - PROPOSED ELECTRICAL PLAN
032A1.CAL Seq 32 A-101 BUILDING 4617 - ARCHITECTURAL DEMOLITION PLAN
033A2.CAL Seq 33 A-102 BUILDING 4617 - PROPOSED ARCHITECTURAL PLAN
035M1.CAL Seq 35 M-101 BUILDING 4617 - MECHANICAL DEMOLITION PLAN
036M2.CAL Seq 36 M-102 BUILDING 4617 - PROPOSED MECHANICAL PLAN
037E1.CAL Seq 37 E-101 BUILDING 4617 - ELECTRICAL DEMOLITION PLAN
038E2.CAL Seq 38 E-102 BUILDING 4617 - PROPOSED ELECTRICAL PLAN
047A1.CAL Seq 47 A-101 BUILDING 9413 - ARCHITECTURAL DEMOLITION PLAN
048A2.CAL Seq 48 A-102 BUILDING 9413 - PROPOSED ARCHITECTURAL PLAN

END OF AMENDMENT

SOLICITATION, OFFER, AND AWARD *(Construction, Alteration, or Repair)*	1. SOLICITATION NUMBER	2. TYPE OF SOLICITATION	3. DATE ISSUED	PAGE OF PAGES
	W9126G-04-R-0046	☐ SEALED BID *(IFB)* ☒ NEGOTIATED *(RFP)*	24 August2004	

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

4. CONTRACT NUMBER	5. REQUISITION/PURCHASE REQUEST NUMBER	6. PROJECT NUMBER
	W45XMA-4216-0031	

7. ISSUED BY CODE	8. ADDRESS OFFER TO
U.S. ARMY ENGINEER DISTRICT, FORT WORTH POST OFFICE BOX 17300 819 TAYLOR STREET FORT WORTH, TEXAS 76102-0300	(SEE BLOCK 7)

9. FOR INFORMATION CALL ▶	A. NAME	B. TELEPHONE NUMBER *(Include area code) (NO COLLECT CALLS)*
	Barbara J. Zimmer	(817) 886-1052

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):*

Design-Build Miscellaneous Construction, Renovation, & Alteration Projects at Fort Hood, Texas

This is an Unrestricted Solicitation.

11. The Contractor shall begin performance within See * calendar days and complete it within See 01000 calendar days after receiving

☐ award, ☒ notice to proceed. This performance period is ☒ mandatory, ☐ negotiable. *(See* See Secion 01000 *.)*

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

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 10 copies to perform the work required are due at the place specified in Item 8 by 4:00P.M. *(hour)* local time 23 September 2004 *(date).* If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee ☒ is, ☐ is not required.

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

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

OFFER *(Must be fully completed by offeror)*

14. NAME AND ADDRESS OF OFFEROR *(Include ZIP Code)*	15. TELEPHONE NUMBER *(Include area code)*
E-MAIL ADDRESS: DUNS: CAGE CODE: CODE FACILITY CODE	( ) - ; FAX ( ) - 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 is 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 ▶ AS SET FORTH IN THE BID SCHEDULE

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

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

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

(To be attached to SF 1442)

Item No.	Description	Quantity	Unit	Unit Price	Amount
BASE BID: All work required by the plans and specifications exclusive of work required by Option Bid Items.					
0001	Bldg 4614	1	LS	***	$_____
0002	Bldg 4615	1	LS	***	$_____
0003	Bldg 4616	1	LS	***	$_____
0004	Bldg 4617	1	LS	***	$_____
0005	Bldg 9410	1	LS	***	$_____
0006	**(AM#9)** ~~Bldg 9413~~	~~1~~	~~LS~~	~~***~~	~~$_____~~
0007	Bldg 9418	1	LS	***	$_____
0008	Bldg 9419	1	LS	***	$_____
0009	Bldg 9420	1	LS	***	$_____
0010	Bldg 9421	1	LS	***	$_____
0011	Bldg 9422	1	LS	***	$_____
0012	Bldg 9423	1	LS	***	$_____
0013	Bldg 9424	1	LS	***	$_____
0014	Bldg 9425	1	LS	***	$_____
0015	Bldg 9426	1	LS	***	$_____
0016	Bldg 9427	1	LS	***	$_____
0017	Bldg 10001	1	LS	***	$_____
0018	Bldg 10002	1	LS	***	$_____
0019	Bldg 10003	1	LS	***	$_____
0020	Bldg 10004	1	LS	***	$_____
0021	Bldg 10005	1	LS	***	$_____

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount
0022	Bldg 10006	1	LS	***	$_____
0023	Bldg 10007	1	LS	***	$_____
0024	Bldg 10008	1	LS	***	$_____
0025	Bldg 10009	1	LS	***	$_____
0026	Bldg 10010	1	LS	***	$_____
0027	Bldg 10011	1	LS	***	$_____
0028	Bldg 10016	1	LS	***	$_____
0029	Bldg 10018	1	LS	***	$_____
0030	Bldg 10020	1	LS	***	$_____
0031	Bldg 10021	1	LS	***	$_____
0032	Bldg 10022	1	LS	***	$_____
0033	Bldg 10033	1	LS	***	$_____
0034	**(AM#9)** ~~Bldg 10040~~	~~1~~	~~LS~~	~~***~~	~~$_____~~
0035	Bldg 10045	1	LS	***	$_____
0036	Bldg 12002	1	LS	***	$_____
0037	Bldg 12003	1	LS	***	$_____
0038	Bldg 12004	1	LS	***	$_____
0039	Bldg 12008	1	LS	***	$_____
0040	**(AM#9)** ~~Bldg 12010~~	~~1~~	~~LS~~	~~***~~	~~$_____~~
0041	**(AM#9)** ~~Bldg 12019~~	~~1~~	~~LS~~	~~***~~	~~$_____~~
0042	**(AM#9)** ~~Bldg 12020~~	~~1~~	~~LS~~	~~***~~	~~$_____~~
0043	Bldg 16010	1	LS	***	$_____

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount
0044	Bldg 87009	1	LS	***	$_____
0045	**(AM#9)** ~~Bldg 90038~~	~~1~~	~~LS~~	~~***~~	~~$_____~~
0046	**(AM#6) Design Costs for Renovation Work**	**1**	**LS**	*******	**$_____**
0047	Operation and Maintenance Manuals	1	LS	***	$ 75,000
0048	Final Record Drawings	1	LS	***	$ 100,000
0049	Warranty Work (All Contract Work) The monetary value of this bid item shall equal at least 1 per cent of the total of all bid items preceding it. A value less than 1 per cent will result in a determination of non-responsive bid. See Contract Specification Section 01770 CONTRACT CLOSEOUT, paragraph "Contractor's Response to Construction Warranty Service Requirements."	1	LS	***	$_____

TOTAL BASE BID $_____

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount

OPTIONS:

0050 Site 1 DOL New Hardstand (170′ x 200′) see sheet C-3 — Option No. 1 $_____
[See additional items under (AM#9) Options 142-160 ~~SAF Options~~]

0050A Site 1 Open storage cover (155′ x 200′) see sheet A-102 — Option No. 2 $_____

0050B Site 1 Utilities and base preparation for relocatables to provide Admin Facility (2 modules for total 5000 SF) — Option No. 3 $_____

0050C Relocatable Module "Admin" (2500 SF ea. Sheet A105) $_____(ea)
Total 2 required: Option No. 4 $_____

0050D (AM#9) Furniture for relocatable modules at Site 1 — Option No. 5 $_____

0051 Site 2 LZ Phantom Repair, base and overlay access Road with 2" HMAC see sheet C-4 — Option No. 6 $_____
[See additional items under (AM#9) Options 142-160 ~~SAF Options~~]

0051A Site 2 Utilities and base preparation for relocatables to provide Admin Facility (2 modules for total 5000 SF) — Option No. 7 $_____

0051B Relocatable Module "Admin" (2500 SF ea. Sheet A105) $_____(ea)
Total 2 required: Option No. 8 $_____

0051C Site 2 Utilities and site slab for relocatables to provide Unit Storage Facility (2 modules for 6600 SF) — Option No. 9 $_____

0051D Relocatable Module "Unit Storage" (3300 SF ea. Sheet A103) $_____(ea)
Total 2 required: Option No. 10 $_____

0051E Site 2 Lighting area 500′ x 1600′ — Option No. 11 $_____

0051F Site 2 Fencing area 500′ x 1600′ — Option No. 12 $_____

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount

OPTIONS:

0051G **(AM#9) Furniture for relocatable modules at Site 2** **Option No. 13 $_____**

0052 Site 3 49000 Block, Provide new access drive. See sheet C-5 Option No. **14** $_____
[See additional items under (AM#9) Options 142-160 ~~SAF Options~~]

0052A Site 3 Utilities and site slab for relocatables to provide Unit Storage Facility (2 modules for 6600 SF) Option No. **15** $_____

0052B Relocatable Module "Unit Storage" (3300 SF ea. Sheet A103) $_____(ea)
Total 2 required: Option No. **16** $_____

0052C Site 3 Utilities and base preparation for relocatables to provide Admin Facility (2 modules for total 5000 SF) Option No. **17** $_____

0052D Relocatable Module "Admin" (2500 SF ea. Sheet A105) $_____(ea)
Total 2 required: Option No. **18** $_____

0052E Site 3 Utilities and site slab for relocatables to provide Vehicle Maint Facility (2 modules for total 10000 SF) Option No. **19** $_____

0052F Relocatable Module "Vehicle Maintenance" (5000 SF Sheet A104) $_____(ea)
Total 2 required: Option No. **20** $_____

0052G Site 3 Lighting, Highmast Option No. **21** $_____

0052H Site 3 Fencing Option No. **22** $_____

0052I **(AM#9) Furniture for relocatable modules at Site 3** **Option No. 23 $_____**

0053 Site 4 4920 Block, Repair and Overlay existing hardstand. See Sheet C-6 Option No. **24** $_____
[See additional items under (AM#9) Options 142-160 ~~SAF Options~~]

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount

OPTIONS:

0053A Site 4 Utilities, site prep, site slabs, fencing for 2 relocatable Vehicle Maint Facilities (4 modules for 20000 SF) Option No. **25** $_____

0053B Relocatable Module "Vehicle Maintenance" (5000 SF Sheet A104) $_____(ea)
Total 4 required: Option No. **26** $_____

0053C (AM#9) Furniture for relocatable modules at Site 4 Option No. 27 $_____

0054 Site 5 4926 Block, Overlay existing hardstand and construct loading dock See sheet C-7 Option No. **28** $_____
[See additional items under (AM#9) Options 142-160) ~~SAF Options~~]

0054A Site 5 Utilities, site prep, site slab, for 1 relocatable Vehicle Maint Facility (2 modules for total 10000 SF) Option No. **29** $_____

0054B Relocatable Module "Vehicle Maintenance" (5000 SF Sheet A104) $_____(ea)
Total 2 required: Option No. **30** $_____

0054C Site 5 Utilities and base preparation for re-locatables to provide Admin Facility (2 modules for total 5000 SF) Option No. **31** $_____

0054D Relocatable Module "Admin" (2500 SF ea. Sheet A105) $_____(ea)
Total 2 required: Option No. **32** _____

0054E Site 5 Provide additional security fencing. Option No. **33** $_____

0054F (AM#9) Furniture for relocatable modules at Site 5 Option No. 34 $_____

0055 **(AM#9)** ~~Site 6 Motor Pool Road, Construct 300'x400' hardstand. See sheet C-8~~ Option No. 30 $_____

0055A **(AM#9)** ~~Site 6 Provide Highmast Lighting~~ Option No. 31 $_____

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount
OPTIONS:					
0055B	**(AM#9)** ~~Site 6 Provide Security Fencing~~		~~Option No. 32~~		$_____
0056	Site 8 16000 Block, New 4500SF Perm Classroom See Sheets C-9 and A106		Option No. **35**		$_____
0056A	**(AM#9) Furniture for classroom at Site 8**		**Option No. 36**		**$**_____
0057	Site 9 17000 Block, 16000 SF Perm Unit Storage Bldg. See Sheets C-10 And A107		Option No. **37**		$_____
0058	Site 10 1900 Block, Hardstand See Sheet C-11		Option No. **38**		$_____
0058A	Site 10 Fencing and site Work		Option No. **39**		$_____
0058B	Site 10 Utilities and site slab for relocatables to provide Vehicle Maint Facility (2 modules for total 10000 SF)		Option No. **40**		$_____
0058C	Relocatable Module "Vehicle Maintenance" (5000 SF Sheet A104) Total 2 required:	$_____(ea)	Option No. **41**		$_____
0058D	**(AM#9) Furniture for relocatables at Site 10**		**Option No. 42**		**$**_____
0059	Site 11 TVM See sheets C12, TV1 & TV2		Option No. **43**		$_____
0060	Site 12 TVM See sheets C13, TV1 & TV2		Option No. **44**		$_____
0061	Site 13 TVM See sheets C14, TV1 & TV2		Option No. **45**		$_____
0062	Site 14 TVM See sheets C15, TV1 & TV2		Option No. **46**		$_____
0063	Site 15 TVM See sheets C16, TV1 & TV2		Option No. **47**		$_____
0064	Site 16 Murphy Loop, New Parking South. See Sheet C17		Option No. **48**		$_____
0065	Site 17 Murphy Loop, New Parking North. See Sheet C18		Option No. **49**		$_____

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount

OPTIONS:

0066 Site 18 7000 Block, Overlay-South — Option No. **50** $_____
See Sheet C-19

0067 Site 19 7000 Block, Overlay-North — Option No. **51** $_____
See Sheet C-20

0068 Site 20 Tank Destroyer at 78th, Utilities and Site Preparation for Battalion HQ Complex #1 (4 modules) See Sheets C21, A110A-D and A111. — Option No. **52** $_____

0068A Relocatable Module "BN HQ – A" $ _____(ea)
(3000 SF ea. Sheet A110A)
Total 1 required: Option No. **53** $_____

0068B Re-locatable Module "BN HQ – B" $ _____(ea)
(3000 SF ea. Sheet A110B)
Total 1 required: Option No. **54** $_____

0068C Re-locatable Module "BN HQ – C" $ _____(ea)
(3000 SF ea. Sheet A110C)
Total 1 required: Option No. **55** $_____

0068D Re-locatable Module "BN HQ – D" $ _____(ea)
(3000 SF ea. Sheet A110D)
Total 1 required: Option No. **56** $_____

0068E Site 20 Utilities and Site Prep for Battalion HQ Complex #2 (4 modules) See Sheets A110A-D and A111. — Option No. **57** $_____

0068F Relocatable Module "BN HQ – A" $ _____(ea)
(3000 SF ea. Sheet A110A)
Total 1 required: Option No. **58** $_____

0068G Re-locatable Module "BN HQ – B" $ _____(ea)
(3000 SF ea. Sheet A110B)
Total 1 required: Option No. **59** $_____

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount

OPTIONS:

0068H Re-locatable Module "BN HQ – C" $ _____(ea)
(3000 SF ea. Sheet A110C)
Total 1 required: Option No. **60** $_____

0068I Re-locatable Module "BN HQ – D" $ _____(ea)
(3000 SF ea. Sheet A110D)
Total 1 required: Option No. **61** $_____

0068J Site 20 Utilities and Site Prep for 5 Company Ops Facilities (5 modules for total 15500 SF) See Sheet A112 Option No. **62** $_____

0068K Relocatable Module "Company Ops" $ _____(ea)
(3100 SF ea. Sheet A112)
Total 5 required: Option No. **63** $_____

0068L Site 20 Utilities and Site Prep for 5 Company Ops Supply (5 modules for total 10000 SF) See Sheet A113 Option No. **64** $_____

0068M Relocatable Module "Co Ops Supply" $ _____(ea)
(2000 SF ea. Sheet A113)
Total 5 required: Option No. **65** $_____

0068N Site 20 Utilities and Site Prep for 6 Arms Rooms (200 SF each) Option No. **66** $_____

0068O Relocatable Arms Room $_____(ea)
(200 SF ea. Sheet A113)
Total 6 required: Option No. **67** $_____

0068P Site 20 POV parking, fencing Sidewalks, etc. see sheet C-21 Option No. **68** $_____

0068Q (AM#9) Furniture for relocatable modules at Site 20 Option No. 69 $_____

0069 Site 21, 3500 Block-**West**~~East~~**(AM#9)**, Repair existing base and overlay. See Sheet C-22 Option No. **70** $_____

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount

OPTIONS:

0069A Site 21 Utilities and Site Prep for **(AM#9) 32 ADA Medical Hold Barracks (32 modules for total 49,600 SF)** ~~16 Barracks (16 modules for total 24,800 SF); 1 Mail Kiosk (for 96 personnel); and one Commo. Node Bldg~~. See Sheet C-22 — Option No. **71** $_____

0069B Relocatable Module **(AM#9) ADA "Barracks" (1550 SF ea. Sheet A108A)** ~~"Barracks" $_____(ea) (1550 SF ea. Sheet A108)~~ **$_____(ea)** Total 16 required: Option No. **72** $_____

0069C **(AM#9)** ~~Relocatable Mail Kiosk (One 96 Box Size required)~~ Option No. 68 $_____

0069D **(AM#9)** ~~Communications Node Building See Sheet A117~~ Option No. 69 $_____

0069E (AM#9) Furniture for relocatable modules at Site 21 **Option No. 73 $**_____

0069F (AM#9) Site 21 Demolition bldg 3533, renovate pedestrian bridge, pavement overlay, fencing, drainage, sidewalks, etc. **Option No. 74 $**_____

0070 Site 22, 3500 Block-**East** ~~West~~, Repair existing and overlay **(AM#9) pavement, fencing, drainage, etc.** See Sheet C-23 — Option No. **75** $_____

0070A Site 22, Utilities and site **(AM#9) prep for relocatable modules 35 ADA Medical Hold Barracks (35 Modules total 54,240 SF)** ~~slab for relocatables to provide Vehicle Maint Facility (2 modules for total 10000 SF)~~ — Option No. **76** $_____

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount

OPTIONS:

0070B Relocatable Module $_____(ea)
(AM#9) ADA Barracks (1550 SF Sheet A108A)
~~"Vehicle Maintenance" (5000 SF Sheet A104)~~
Total **35** ~~2~~ required: Option No. **77** $_____

0070C **(AM#9)** ~~Site 22, Utilities and site slab for relocatables to provide Unit Storage Facility (2 modules for 6600 SF)~~ Option No. 73 $_____

0070D **(AM#9)** ~~Relocatable Module "Unit Storage" $_____(ea) (3300 SF ea. Sheet A103) Total 2 required:~~ Option No. 74 $_____

0070E **(AM#9)** ~~Site 22, Utilities and base prep. for relocatables to provide Admin Facility (2 modules for total 5000 SF)~~ Option No. 75 $_____

0070F **(AM#9)** ~~Relocatable Module "Admin" $_____(ea) (2500 SF ea. Sheet A105) Total 2 required:~~ Option No. 76 $_____

0070G (AM#9) Furniture for relocatable modules at Site 22 **Option No. 78 $**_____

0070H (AM#9) Construct one Communications Node Building. (Sheet A117) **Option No. 79 $**_____

0071 Site 23, 800 Block, POV parking, sidewalks, fire lanes, drainage, etc. see sheet C-24A and C-24B Option No. **80** $_____

0071A Site 23, Utilities and Site Prep for 60 Barracks (60 modules for total 93,000 SF); 1 Dayroom Facility (2 modules total 3100 SF); 1 Laundry-Large (1 module 1550 SF); Mail Kiosk(s)(for 360 personnel); and one Commo. Node Bldg. See Sheet C-24A Option No. **81** $_____

0071B Relocatable Module "Barracks" $_____(ea)
(1550 SF ea. Sheet A108)
Total 60 required: Option No. **82** $_____

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount

OPTIONS:

0071C Relocatable Module "Dayroom" $_____(ea)
(1550 SF ea. Sheet A101)
Total 1 required: Option No. **83** $_____

0071D Relocatable Module "Laundry" $ _____(ea)
(1550 SF ea. Sheet A109)
Total 1 required: Option No. **84** $_____

0071E **(AM#9)** ~~Relocatable~~ Mail Kiosk
(one 360 Box Size Required) Option No. **85** $_____

0071F Communications Node Building Option No. **86** $_____
See Sheet A117

0071G (AM#9) Furniture for relocatable modules at Site 23 Option No. 87 $_____

0072 Site 24, 200/300 Block, POV parking sidewalks, fire lanes, drainage, etc. see sheet C-25. Option No. **88** $_____

0072A Site 24, Utilities and Site Prep for 12 Barracks (12 modules for total 18,600 SF); 1 Laundry-Small (1 module 1200 SF); Mail Kiosk (for 72 personnel)**(AM#9)**~~; and one Commo. Node Bldg~~. See Sheet C-25 Option No. **89** $_____

0072B Relocatable Module "Barracks" $_____(ea)
(1550 SF ea. Sheet A108)
Total 12 required: Option No. **90** $_____

0072C Re-locatable Module "Laundry-Small" $_____(ea)
(1200 SF ea. Sheet A109)
Total 1 required: Option No. **91** $_____

0072D **(AM#9)** ~~Relocatable~~ Mail Kiosk
(One, 72 Box Size required) Option No. **92** $_____

0072E Communications Node Building Option No. **93** $_____
See Sheet A117

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount

OPTIONS:

0072F Site 24, Utilities and Site Prep for 4 Battalion HQ Complexes (16 modules) See Sheets A110A-D and A111. Option No. **94** $_____

0072G Relocatable Module "BN HQ – A" (3000 SF ea. Sheet A110A) Total 4 required: $ _____(ea) Option No. **95** $_____

0072H Re-locatable Module "BN HQ – B" (3000 SF ea. Sheet A110B) Total 4 required: $ _____(ea) Option No. **96** $_____

0072I Re-locatable Module "BN HQ – C" (3000 SF ea. Sheet A110C) Total 4 required: $ _____(ea) Option No. **97** $_____

0072J Re-locatable Module "BN HQ – D" (3000 SF ea. Sheet A110D) Total 4 required: $ _____(ea) Option No. **98** $_____

0072K Site 24, Utilities and Site Prep for 16 Company Ops Buildings (16 modules); 16 Company Ops Supply Buildings (16 modules), and **(AM#9) 19** ~~16~~ Arms Room Modules (200 SF each) See Sheets A-112 and 113. Option No. **99** $_____

0072L Relocatable Module "Company Ops" (3100 SF ea. Sheet A112) Total 16 required: $_____(ea) Option No. **100** $_____

0072M Re-locatable Module "Co Ops Supply" (2000 SF ea. Sheet A113) Total 16 required: $_____(ea) Option No. **101** $_____

0072N Relocatable Arms Room (200 SF ea. Sheet A113) Total **(AM#9) 19** ~~16~~ required: $_____(ea) Option No. **102** $_____

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount

OPTIONS:

0072P **(AM#9) Furniture for relocatable modules at Site 24** **Option No.103 $_____**

(AM#9) Site 25 DELETED, REQUIREMENTS COMBINED IN SITES 26 AND 27

0073 **(AM#9)** ~~Site 25, 9500 Block (West) Replace existing gravel with 10" Bituminous Aggregate Base, see sheet C-26 Option No. 99 $_____~~

~~0073A~~ **(AM#9)** ~~Site 25, 2" HMAC overlay on item 0049 Option No.100 $_____ and construct 40,000SF new Hardstand (2"HMAC over 10" Bituminous Aggregate Base), Sidewalks, drainage, fencing, etc. see sheet C-26~~

~~0073B~~ **(AM#9)** ~~Site 25, Utilities and base prep. for relocatables to provide Admin Facility (2 modules for total 5000 SF) Option No.101 $_____~~

~~0073C~~ **(AM#9)** ~~Relocatable Module "Admin" $_____(ea) (2500 SF ea. Sheet A105) Total 2 required: Option No.102 $_____~~

~~0073D~~ **(AM#9)** ~~Site 25, Utilities and site slab for relocatables to provide Vehicle Maint Facility (2 modules for total 10000 SF) Option No.103 $_____~~

~~0073E~~ **(AM#9)** ~~Relocatable Module "Vehicle Maintenance" (5000 SF Sheet A104) Total 2 required: Option No.104 $_____(ea)~~

0073F **(AM#9)** ~~Site 25, Utilities and site slab for relocatables to provide Unit Storage Facility (2 modules for 6600 SF) Option No.105 $_____~~

~~0073G~~ **(AM#9)** ~~Relocatable Module "Unit Storage" $_____(ea) (3300 SF ea. Sheet A103) Total 2 required: Option No.106 $_____~~

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount

OPTIONS:

0074 Site 26, 9500 Block (Center) Construct **(AM#9) 108,000** ~~40,000~~ SF Hardstand (2"HMAC over 10" Bituminous Aggregate Base), Sidewalks, Drainage, fencing, etc. see sheet C-27 Option No.**104** $_____

0074A Site 26, Utilities and base prep. for relocatables to provide Admin **(AM#9) Facilities** ~~Facility~~ (**4** ~~2~~ modules for total **10,000** ~~5000~~ SF) Option No.**105** $_____

0074B Relocatable Module "Admin" (2500 SF ea. Sheet A105) $_____(ea)
Total **(AM#9) 4** ~~2~~ required: Option No.**106** $_____

0074C Site 26, Utilities and site slab for **(AM#9) relocatables to provide two Vehicle Maint Facilities (4 modules for total 20,000 SF)** ~~relocatables to provide Vehicle Maint Facility (2 modules for total 10000 SF)~~
Option No.**107** $_____

0074D Relocatable Module "Vehicle Maintenance" (5000 SF Sheet A104) $_____(ea)
Total 2 required: Option No.**108** $_____

0074E Site 26, Utilities and site slab for relocatables to provide Unit Storage **(AM#9) Facilities (4 modules for 13200 SF)** ~~Facility (2 modules for 6600 SF)~~ Option No. **109** $_____

0074F Relocatable Module "Unit Storage" (3300 SF ea. Sheet A103) $_____(ea)
Total **(AM#4) 4** ~~2~~ required: Option No.**110** $_____

0074G (AM#9) Furniture for relocatable modules at Site 26 **Option No.111 $**_____

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount
OPTIONS:					
0075	Site 27, 9500 Block (East). Construct access drives, fencing, sidewalks, drainage, etc. See Sheet C-28 **[See additional items under (AM#9) Options 142-160 ~~SAF Options~~]**		Option No.**112**		$_____
0075A	Site 27, Utilities and base prep. for relocatables to provide Admin Facility (2 modules for total 5000 SF)		Option No.**113**		$_____
0075B	Relocatable Module "Admin" (2500 SF ea. Sheet A105) Total 2 required:		$_____(ea) Option No.**114**		$_____
0075C	Site 27, Utilities and site slab for relocatables to provide Vehicle Maint Facility (2 modules for total 10000 SF)		Option No.**115**		$_____
0075D	Relocatable Module "Vehicle Maintenance" (5000 SF Sheet A104) Total 2 required:		$_____(ea) Option No.**116**		$_____
0075E	Site 27, Utilities and site slab for relocatables to provide Unit Storage Facility (2 modules = 6600 SF)		Option No.**117**		$_____
0075F	**(AM#9) Furniture for relocatable modules at Site 27**		**Option No.118**		**$_____**
0076	Site 28, Murphy Road at Bldg 728 POV parking, fencing, drainage, sidewalks, fire lanes, etc. see sheet C-29		Option No.**119**		$_____
0076A	Site 28, Utilities and Site Prep for 1 Company Ops Buildings (1 module); 1 Company Ops Supply Buildings (1 module), and 1 Arms Room Module (200 SF) See Sheets A-112 and 113.		Option No.**120**		$_____
0076B	Re-locatable Module "Company Ops" (3100 SF ea. Sheet A112) Total 1 required:		$_____(ea) Option No.**121**		$_____

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount

OPTIONS:

0076C Re-locatable Module "Co Ops Supply" (2000 SF ea. Sheet A113) Total 1 required: $_____(ea) Option No.**122** $_____

0076D Relocatable Arms Room (200 SF ea. Sheet A113) Total 1 required: $_____(ea) Option No.**123** $_____

0076E (AM#9) Furniture for relocatable modules at Site 28 **Option No.124 $_____**

0077 Site 29, Murphy Road at Bldg 6976 POV parking, **(AM#9) drainage. see sheet C-30** ~~fencing, drainage, sidewalks, fire lanes, etc. see sheet C-30~~ Option No.125 $_____

~~0077A **(AM#9)** Site 29, Utilities and Site Prep for 1 Company Ops Buildings (1 module); 1 Company Ops Supply Buildings (1 module), and 1 Arms Room Module (200 SF) See Sheets A-112 and 113.~~ ~~Option No.126 $_____~~

~~0077B **(AM#9)** Re-locatable Module "Company Ops" (3100 SF ea. Sheet A112) Total 1 required: $ _____(ea) Option No.127 $_____~~

~~0077C **(AM#9)** Re-locatable Module "Co Ops Supply" (2000 SF ea. Sheet A113) Total 1 required: $ _____(ea) Option No.128 $_____~~

~~0077D **(AM#9)** Relocatable Arms Room (200 SF ea. Sheet A113) Total 1 required: $_____(ea) Option No.129 $_____~~

0078 Site 30 Airfield Repair **(AM#6) of existing ECHO apron to repair or pave over trench drains** (See Sheet C-31) Option No.**126** $_____

0079 (AM#6) Site 31 (4600 Block) Site work. **Option No.127 $_____**

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount
OPTIONS:					
0080	**(AM#9)** ~~**(AM#6) Site 31 Security Guard House (2 required)**~~		~~**Option No.132**~~	~~$_____~~	
0081	Waste Material Storage Unit Safety Storage Model 10N, Ref GSA Contract GS-28F-1099C	(6 req.)	$_____(ea) Option No.**128**	$_____	
0082	Waste Material Storage Unit GSA Safety Storage Model 40N, Ref Ref GSA Contract GS-28F-1099C	(2 req.)	$_____(ea) Option No.**129**	$_____	
0083	8" Pipe Guard – Complete installed at unspecified locations. Where RFP documents show pipe guards, include price in general site prep line item. Ref AEIM detail plate C22	(100 req.)	$_____(ea) Option No.**130**	$_____	
0084	Furniture (**(AM#9) Building Renovations Options (136-141)** ~~Classroom~~)		Option No.**131**	$_____	
0085	Furniture (**(AM#9) Base Bid Building Renovations** ~~Barracks Renovation~~)		Option No.**132**	$_____	
0086	Furniture (**(AM#9) 33000 Block** ~~Relocatable Modules~~)		Option No.**133**	$_____	
0087	Relocation of 3000 Soldiers (1500 lbs Property per soldier)		Option No.**134**	$_____(ea)	
0088	**(AM#9)** ~~Additional cost for stucco finish and 3:12 pitched gable roof on "Dayroom" module: Total 1 Module~~		~~$_____(ea) Option No.140~~	~~$_____~~	
0089	**(AM#9)** ~~Additional cost for stucco finish and 3:12 pitched gable roof on "Barracks" module: Total 88 Modules~~		~~$_____(ea) Option No.141~~	~~$_____~~	

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount

OPTIONS:

0090 **(AM#9)** ~~Additional cost for stucco finish and 3:12 pitched gable roof on "Laundry" module: $_____(ea) Total 1 Module Option No.142 $_____~~

0091 **(AM#9)** ~~Additional cost for stucco finish and 3:12 pitched gable roof on "Laundry-Small" module: $_____(ea) Total 1 Modules Option No.143 $_____~~

0092 **(AM#9)** ~~Additional cost for stucco finish and 3:12 pitched gable roof on "Company Ops" module: $_____(ea) Total 23 Modules Option No.144 $_____~~

0093 **(AM#9)** ~~Additional cost for stucco finish and 3:12 pitched gable roof on "Company Ops Supply" module: $_____(ea) Total 23 Modules Option No.145 $_____~~

0094 **(AM#9)** ~~Additional cost for stucco finish and 3:12 pitched gable roof on "BN HQ A/B/C/D" module: $_____(ea) Total 24 Modules Option No.146 $_____~~

0095 **(AM#9)** ~~Additional cost for stucco siding on "Arms Room" module: $_____(ea) Total 24 Modules Option No.147 $_____~~

0096 (AM#6) Design costs for site work, utilities, permanent and relocatable structures, (AM#9) and building renovations Options 136-141 Option No.135 $_____

0097 (AM#9) Bldg 9413 Option No.136 $_____

0098 (AM#9) Bldg 10040 Option No.137 $_____

0099 (AM#9) Bldg 12010 Option No.138 $_____

0100 (AM#9) Bldg 12019 Option No.139 $_____

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount
OPTIONS:					
0101	**(AM#9) Bldg 12020**		**Option No.140**		**$_____**
0102	**(AM#9) Bldg 90038v**		**Option No.141**		**$_____**
	TOTAL OPTIONS NOS. 1 THRU 141				**$_____**
	TOTAL BASE BID PLUS OPTION NOS. 1 THRU 141				**$_____**

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

~~**Following items Subject to Availability of Funds**~~
(AM#9) The Government intends to award Line Items 103 through 0121 (Options 142-160) with Military Construction funds. These options are NOT subject to any statutory limit.

Item No.	Description	Quantity	Unit	Unit Price	Amount

OPTIONS:

0103	Site 1 Construct new 120′ x 500′ POV parking with access Drive (See Sheet C3).	Option No.**142**	$_____
0104	Site 1 Overlay existing Base with 2″ HMAC inside fenced area.	Option No.**143**	$_____
0105	Site 2 Construct new 500′ x 1600′ Hardstand (2″ HMAC over 10″ Bituminous Aggregate Base), Area, Lighting, Gates Fencing, Drainage, etc.(See Sheet C-4).	Option No.**144**	$_____
0106	Site 3 Construct new 530′ x 940′ Hardstand (2″ HMAC over 10″ Bituminous Aggregate Base), Site Preparation Area Lighting, Fencing, Gate, Drainage, etc. See Sheet C-5)	Option No.**145**	$_____
0107	Site 6 Construct new 300′ x 400′ Hardstand (2″ HMAC over 10″ Bituminous Aggregate Base), Site Preparation, Area Lighting, Fencing, Gate, Drainage, etc. (See Sheet C-8)	Option No.**146**	$_____
0108	Construct New Van Dock (1 required) See Sheet A114	Option No.**147**	$_____
0109	Site 30 Construct new **(AM#6) expansion of ECHO apron, demo and relocate taxiway, new concrete apron and helipad, shoulders, lights re-striping, reflectors, etc.** ~~Airfield expansion.~~ (See Sheet C-31)	Option No.**148**	$_____
0110	Site 32 Demolish Building 4452	Option No.**149**	$_____
0111	Site 32 Demolish Building 4465	Option No.**150**	$_____

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

Item No.	Description	Quantity	Unit	Unit Price	Amount
OPTIONS:					
0112	Site 32 Demolish Building 4466		Option No.**151**		$_____
0113	Site 32 Demolish Building 4467		Option No.**152**		$_____
0114	Site 32 Demolish Building 4468		Option No.**153**		$_____
0115	Site 32 Demolish Building 4473		Option No.**154**		$_____
0116	Site 32 Demolish Building 4475		Option No.**155**		$_____
0117	Site 32 Demolish Building 4476		Option No.**156**		$_____
0118	Site 32 Exterior communications work to replace communications infra-structure demolished by items (**0110-0117** ~~78-85~~)		Option No.**157**		$_____
0119	**(AM#9) Site 27 Construct New Hardstand approx. 245,000 SF** ~~**(AM#6) Design costs for SAF items 97-112.**~~		**Option No.158**		**$**_____
0120	**(AM#9) Site 4 Construct New Hardstand See Sheet C-6**		**Option No.159**		**$**_____
0121	**(AM#9) Site 27 Construct New Hardstand See Sheet C-7**		**Option No.160**		**$**_____

TOTAL OPTIONS NOS. 142 THRU 160 **$**_____

(AM#9) TOTAL, BASE BID AND ALL OPTIONS 1 THRU 160 **$**_____

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

Design-Build Miscellaneous Construction, Renovation & Alteration Projects
Fort Hood, Texas

Solicitation No. W9126G-04-R-0046

BIDDING SCHEDULE

NOTES:

1. (AM#9) STATUTORY LIMITS

(a) Each relocatable module is subject to a statutory limit. The maximum awardable amount (Operations and Maintenance Army-OMA funds) for a relocatable module is $225,000.00.

(b) Each line item for utilities and site preparation to support a relocatable module or identified group of relocatable modules is subject to a statutory limit. The maximum awardable amount (Operations and Maintenance Army-OMA funds) for the utilities and site preparation to support relocatables module(s) line item is $670,000.00.

2. ARITHMETIC DISCREPANCIES (EFARS 14.407-2)

(a) For the purpose of initial evaluation of bids, the following will be utilized in resolving arithmetic discrepancies found on the face of the bidding schedule as submitted by bidders:

(1) Obviously misplaced decimal points will be corrected;

(2) In case of discrepancy between unit price and extended price, the unit price will govern;

(3) Apparent errors in extension of unit prices will be corrected; and

(4) Apparent errors in addition of lump-sum and extended prices will be corrected.

(b) For the purpose of bid evaluation, the Government will proceed on the assumption that the bidder intends his bid to be evaluated on the basis of the unit prices, the totals arrived at by resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids.

(c) These correction procedures shall not be used to resolve any ambiguity concerning which bid is low.

3. If a modification to a bid based on unit prices is submitted, which provides for a lump sum adjustment to the total estimated cost, the application of the lump sum adjustment to each unit price in the bid schedule must be stated. If it is not stated, the bidder agrees that the lump sum adjustment shall be applied on a pro rata basis to every unit price in the bid schedule.

4. Bidders must bid on all items.

NOTES: (cont)

5. Costs attributable to Division 01 - General Requirements are assumed to be prorated among bid items listed.

6. Responders are advised that this requirement may be delayed, cancelled or revised at any time during the solicitation, selection, evaluation, negotiation and/or final award process based on decisions related to DOD changes in force structure and disposition of the Armed Forces.

7. EXERCISE OF OPTIONS (SWDR 715-1-1 (16 January 1996))

The Government reserves the right to exercise the option(s) by written notice to the Contractor either singularly or in any combination for up to 180 calendar days after award of the Base Bid without an increase in the Offeror's Bid Price. Completion of added items shall continue at the same schedule as the Base Bid unless otherwise noted in Section 01000 (**AM#9) DESIGN AND** CONSTRUCTION SCHEDULE, paragraph 1 entitled SCHEDULE.

8. ABBREVIATIONS

For the purpose of this solicitation, the units of measure are represented as follows:

LS (lump sum)
EA (each)
Req. (Required)

END OF BIDDING SCHEDULE

SECTION 00110

PROPOSAL SUBMISSION INSTRUCTIONS, EVALUATION
AND BASIS OF AWARD

1. PROPOSAL OVERVIEW. This Request for Proposal (RFP) solicits **Design-Build Miscellaneous Construction, Renovation, & Alteration Projects for the** 4th ID Deployment Facilities. In as much as the proposal shall describe the capability of the Offeror to perform any resulting contract, the proposal should be specific and complete in every detail. The proposal should be prepared simply and economically, providing a straightforward and concise description of capabilities to satisfactorily perform the contract. The proposal should be practical, legible, clear, and coherent. Local Instructions, including Federal Acquisition Regulation (FAR) Provisions are annotated at the end of this section.

1.1 Proposal Submissions and the Trade-Off Process. This process permits tradeoffs among cost or price and non-cost factors and allows the Government to accept other than the lowest priced proposal. Offerors submit their performance and capability information for review and consideration by the Government. Relative weights among technical factors are provided in paragraph 5 Evaluation Factors and Weights.

2. PROPOSAL SUBMISSION INSTRUCTIONS

2.1 Who May Submit. Any legally organized Offeror may submit a proposal.

2.2 Where to Submit. Offerors shall submit their proposals to the Fort Worth District at the address shown in Block 7 of the Standard Form 1442.

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

2.4 General Requirements.

2.4.1 In order to effectively and equitably evaluate all proposals, the Contracting Officer must receive information containing sufficient detail to allow review and evaluation by the Government. Proposal clarity, organization, and cross-referencing are mandatory. Failures to submit and organize proposals as requested may adversely affect an Offeror's evaluation. Offerors should provide sufficient detail and clearly define all items required in this section. The Contracting Officer may remove any Offeror from further consideration during any phase of the procurement if the Offeror fails to meet the submittal requirements of the RFP or to reduce the competitive range for purposes of efficiency pursuant to FAR 15.306(c)(2).

2.4.2 Tabs. Proposal shall be organized and tabbed as shown in paragraph 2.5 Submission Format.

2.4.3 Size of Printed Matter Submissions.

Am 0002
2.4.3.1 Written proposal materials shall be submitted in standard three ring loose-leaf binders. Proposals shall be tabbed and labeled in a manner to afford easy identification from a Table of Contents. Font size shall not be less than 10 point. Each page shall be identified with the appropriate page number centered at the bottom of the page. Sheet size of the proposal contents shall be 8-1/2 inches x 11 inches where sheets are prepared specifically for this proposal; however, if drawings, charts, or other graphics are submitted, sheets no larger than 11 inches x 17 inches and folded to 8-1/2 inches x 11 inches shall be used. 11 x 17 inch sheets will be counted as 4 single-sided or 2 double-sized pages. Volume II, Technical Proposal, shall not exceed**(Am 0002 70 pages (70 single sided or 35 double sided sheets)** ~~50 pages (50 single-sided or 25 double-sided sheets)~~, excluding the Table of Contents. The Offeror shall not submit verbatim sections of this solicitation as part of their proposal. Offers that do not meet these requirements may be subject to rejection.

2.4.3.2 The proposals shall contain a detailed table of contents. If more than one binder is used, the complete table of contents shall be included in each. A cover sheet identifying the Offeror (name, address, point of contact) project description, and solicitation number shall be provided. The second sheet shall be a Table of Contents. Offers that do not comply with this RFP requirement unnecessarily delay the evaluation process and may be rejected by the Government after the initial evaluation without receiving any further consideration. The Government shall not be obligated to evaluate any information beyond the page limitation noted above.

2.4.3.3 Proposal revisions shall be submitted as page replacements with revised text readily identifiable, e.g., bold face print or underlining. The source of the revision, e.g., Error, Omission, or Clarification, or amendment shall also be annotated for each revision. Proposal replacement pages shall be numbered, shall be clearly marked "REVISED", shall show the date of revision, shall be submitted in appropriate number of copies (e.g., if two (2) copies of the original page was required, then two (2) copies of the revised page will also be required, and shall be a different color than the original pages they are to replace.

2.4.4 Number of Copies. Offerors shall submit an original and one (1) hard copy of Volume I and an original and ten (10) hard copies of Volume II of their Proposal. Within three (3) days of contract award, the awardee shall submit both volumes in electronic format on a CD-ROM.

2.5 Submission Format.

2.5.1 The Proposal will be tabbed and submitted in a three ring binders in the following format:

VOLUME I PRO FORMA

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

TAB B – Section 00010 – Supplies or Services and Price/Costs Schedule

TAB C – Section 00600 – Representations and Certifications

TAB D – PROPOSAL DATA SHEET – See the format provided in this Section. Ensure to include Offeror's telephone number, FAX number, e-mail address and DUNS and CAGE code numbers. Duns number will be used to access CCASS data.

TAB E – Bid Bond (Standard Form 24)

TAB F – Pre Award Information (e.g. Bank and Supplier References)

In accordance with FAR 9.103(a) "… contracts shall be awarded to responsible prospective contractors only." To be determined responsible, a prospective contractor must meet the standards at FAR 9.104 that requires a prospective contractor to have adequate financial resources to perform the contract or the ability to obtain them. As an aid in assessing responsibility, the offeror shall notify their bank/suppliers that the Corps of Engineers may contact them, and shall authorize the bank/suppliers to release the following information regarding the Offeror's account. If a written authorization is required by their bank, Offerors shall provide that authorization with their proposal.

Name and telephone number of bank's point of contact
Number of year's business has been conducted with each bank
Types of open accounts (checking, loans, etc.)
Balance of current accounts (the banks will provide a "range of figures" for this information, such as, medium five-figures range)
Means by which loans are secured and if paid as agreed
Point of contact and telephone number of three (3) different suppliers

For the purpose of evaluating the preaward survey information submitted hereunder:

Preaward survey data will be evaluated and rated as it relates to the probability of the offeror successfully accomplishing the proposed effort.

The Government will use pre-award survey data provided by the offeror and data obtained from other sources to perform this assessment.

TAB G– Subcontracting Plan – FOR LARGE BUSINESS OFFERORS ONLY

All large businesses shall submit a subcontracting plan with their price/cost proposal (Volume I). The plan shall be prepared in accordance with FAR 52.219-9. Failure to submit an acceptable subcontracting plan may make the offeror ineligible for award of the contract. The submission of the subcontracting plan is in no way advantageous to large businesses over any small business in the evaluation process. A sample AFARS Appendix DD scoring checklist is included at the end of Section 00100. See the this Section 00100, subsection Local Instructions, paragraph SMALL BUSINESS SUBCONTRACTING PLAN for additional information and Fort Worth District subcontracting floors.

VOLUME II – Technical Proposal

Am 0002

THE TECHNICAL PROPOSAL SHALL NOT INCLUDE ANY COST INFORMATION AND SHALL NOT EXCEED (Am 0002) 70 ~~50~~ PAGES (AS ANNOTATED ABOVE).

TAB 1 – FACTOR 1: DESIGN & CONSTRUCTION PAST PERFORMANCE (Worksheet Provided)

TAB 2 – FACTOR 2: CORPORATE RELEVANT SPECIALIZED EXPERIENCE (Worksheet Provided)

TAB 3 – FACTOR 3: MANAGEMENT EFFECTIVENESS (No Worksheet Provided)

TAB 4 – FACTOR 4: PROJECT DURATION (No Worksheet Provided)

3. TECHNICAL PROPOSAL SUBMISSION REQUIREMENTS.

3.1 FACTOR 1: DESIGN & CONSTRUCTION PAST PERFORMANCE (VOLUME II, TAB 1).

PAST PERFORMANCE (DESIGN & CONSTRUCTION) consists of two subfactors: Past Performance and Health and Safety Record. Past performance of the offeror, subcontractors, consultants, and key individuals will be considered in evaluating past performance, utilizing information provided in the proposal and other information available to the Contracting Officer, including but not limited to the following: The following will be considered in descending order of importance:

a) PAST PERFORMANCE

Offerors shall be evaluated on construction projects completed in the last five years. The Offeror's past performance will be evaluated to determine technical capability to perform the proposed contract and how well it satisfied its customers. The information presented in the Offeror's proposal that from other sources available to the Government will comprise the input for evaluation of this factor. The following elements will be evaluated:

- Quality of Construction
- Timeliness of Performance
- Customer Satisfaction
- Subcontractor Management
- Documentation

- Safety Record

1) For each design and/or construction firm on the project team, provide the firm's name, address, and DUNS number.

2) ACASS (A-E Contract Administration Support System) and CCASS (Construction Contract Administration Support System) Evaluations. ACASS evaluations will be utilized in evaluating the past and current performance on Corps of Engineers contracts for Architect-Engineering firms on the offeror's Design-Build team. CCASS evaluations will be utilized to evaluate past and current performance on Corps of Engineers contracts for construction firms on the offeror's Design-Build team.

3) Federal Agency Performance Evaluations

4) Contractor Performance Report From State and local governments and private sector clients. Submitted Contractor Performance Reports may be verified telephonically. References not supported by a Contractor Performance Report may be contacted in writing or telephonically to assess customer satisfaction.

5) Awards, letters, and other forms of recognition

All other information available to the Government Provide the Architect-Engineer Contract Administration Support System (ACASS) or Construction Contractor Appraisal Support System (CCASS) Performance Evaluations you received on DOD Government design projects. Copies of records contained in the Corps of Engineers ACASS and CCASS Database may be requested by fax on company letterhead at the following telefax number: (503) 808-4596.

New Companies: For new companies entering the marketplace (without relevant company experience) the quality of the past performance of their key management personnel of the Primary Design Construction Team and consultants will indicate the risk of good performance and become the basis of the past performance evaluation. Identifying how long key personnel stayed on their contracts and how well they managed their portion of the referenced contracts will be of great importance in the evaluation process.

b) HEALTH AND SAFETY RECORD

The Offeror shall submit OSHA Form 300 **containing the Offeror's health and safety records for the previous five years**. This form, in Microsoft Excel format, can be downloaded from the Internet at the address:

http://www.ehso.com/OSHA_Forms.htm.

Using the data and the following formula, calculate the Incident Rate for each of the five years:

Number of Lost Time Accidents for the year x 200,000
---------- = Incident Rate for the Year
Man-hours Worked that Year

Submit these incident rates with the OSHA Form 300 data.
NOTE: If the Offeror already has copies of the old OSHA Form 200, the data may be submitted on this form in lieu of on OSHA Form 300.

3.1.1 Offeror's Submission Requirements.

3.1.1.1 **Past Performance Information Sheets.** Offerors shall complete and provide Past Performance Information on no more than 5 projects that reflect prior experience in the design & construction elements referenced in paragraph 3.1 above. The examples should be similar to this solicitation in project type and scope.

Am 0002
As a minimum, the contractor shall provide the data specified in the attached Design & Construction Past Performance Information" Sheet. For each project submitted, offerors are encouraged to attach the following supporting documentation to the design & construction past performance information sheet, ensuring that you do not exceed the proposal **(Am 0002) 70** ~~50~~ -page limitation:

- For Corps of Engineer contracts, provide a copy of the signed CCASS (Construction Contract Administration Support System) and ACASS (A-E Contract Administration Support System) evaluation issued at the completion of the project.
- For non-Corps of Engineer contracts, provide a copy of the performance rating issued by the contracting agent.
- Awards, letters or other forms of recognition relevant to the submitted project that demonstrate the offeror's performance capabilities and customer satisfaction.

3.1.1.2 Safety Record. The offeror shall submit OSHA Form 300A (summary), OSHA 200 or OSHA 300 showing the incident rates for their firm for all projects within the past five years. This form, in Microsoft Excel format, can be downloaded from the Internet at:

http://www.ehso.com/osha200form-all-in-1.pdf

http://www.cbs.state.or.us/external/osha/standards/docs/osha300a.doc

http://www.osha.gov/recordkeeping/new-osha300form1-1-04.xls
http://www.nccrimecontrol.org/HR/OSHA_Form_300.doc

http://www.dir.ca.gov/dosh/dosh_publications/oshalog300.pdf

This data is to be converted using the following formula for each of the five years:

Number of Lost Time Accidents for the year x 200,000
_____ = Incident Rate for the Year
Man-Hours Worked that Year

The contractor, for each of the past 5 years using the OSHA Form 200 or 300 data, shall calculate these incident rates. These calculations shall be presented on a separate sheet of paper for each year with the mathematical average of all 5 years.

If the Offeror has a safety incentives program, information shall be submitted describing this program. The description of the safety incentives program shall include as a minimum a description of what benefits the firm has seen by implementing the program, benefits to the customer and a description of how the program is administered.

3.1.1.3 Other Sources. The Government may contact sources other than those provided by the Offeror for information with respect to past performance. These other sources may include, but are not limited to, CCASS, ACASS, telephone interviews with organizations familiar with the Offeror's performance, and Government personnel with personal knowledge of the Offeror's performance capability.

3.1.1.4 New Companies and Joint Ventures. For new companies and joint ventures entering the marketplace (without relevant company experience), the quality of the past performance of their key management personnel will indicate the risk of good performance and become the basis of the past performance evaluation. Identifying how long key personnel stayed on their assigned projects and how well they managed their portion of the referenced projects will be of great importance in the evaluation process.

3.1.2 Evaluation. The Government will evaluate the Offeror's responsiveness to the solicitation regarding past performance using the sources identified above. New Companies and Joint Ventures shall be evaluated on their own past performance to determine the company's ability to perform satisfactorily under the elements of evaluation.

Offerors may be provided an opportunity to address any negative past performance information about which the Offeror has not previously had an opportunity to respond. The Government treats an Offeror's lack of past performance as having no positive or negative evaluation significance. The Government will evaluate past performance based on the elements listed below:

- **Quality of Design & Construction.** Based on all information available, the Government will assess the quality of the actual design & onstruction undertaken and the standards of workmanship exhibited by the Offeror.

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

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

- **Subcontractor Management.** The Government will evaluate all information available with respect to the Offeror's management of subcontractors, including mitigation of conflicts and resolution of disputes at the lowest level. For large businesses, the Government will also evaluate compliance with subcontracting plans.

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

- **Safety Record.** Offerors who have minimal health and safety incident rates and a documented safety incentive program will receive a more favorable evaluation. Offerors who have incident rates averaging below 0.84 for the past 5 years will be rated Average or better. Offerors who have incident rates averaging between 0.84 and 1.95 for the past 5 years will be rated as Poor. Offerors who have incident rates averaging over 1.95 for the past 5 years will be rated Unacceptable.

3.2 FACTOR 2: CORPORATE RELEVANT SPECIALIZED EXPERIENCE (VOLUME II, TAB 2). Offerors shall be evaluated on design & construction projects successfully completed or in progress in the last five years that demonstrate the Offeror's specialized experience in the design & construction of similar design & construction projects. For this proposal, similar projects are projects that meet the following criteria:

Furnish detailed examples of Offeror's experience in the performance of similar type work to that required by the contract, both for Government agencies and private industry. Examples shall show relationship of experience to the design & construction services required by the Technical Specifications, and length of experience for each similar service. Offeror's examples shall all be within the last 5 years. **Offeror's proposed subcontracting plan shall be discussed, detailing types of construction to be subcontracted.**

3.2.1 Offeror's Submission Requirements. Offerors shall submit project information for no more than five completed or in progress design & construction projects that reflect specialized experience in the design & construction elements referenced in paragraph 3.2 above. The examples should be similar to this solicitation in project type and scope. As a minimum, the contractor shall provide the data specified in the **attached "Corporate Relevant Specialized Experience" Sheet.** If the Offeror represents the combining of two or more companies for

the purpose of this RFP, each company shall list project examples. Example projects must be in progress, or have been completed not more than five (5) years prior to the date of the solicitation. The experience of individuals will not be credited under this factor.

EXPERIENCE (DESIGN & CONSTRUCTION) consists of two sub-factors: Design Experience and Construction Experience. List no more than 5 projects total for both subfactors. Each project example shall include:

a. Project name and location
b. Type of facility
c. Identify type of contract (design, design/build, or construction)
d. Description of the project and the area of experience the project demonstrates
e. Construction contract award amount (estimated or actual);
f. Final construction cost (or most current cost if NOT complete);
g. Date when the project was started;
h. Original scheduled contract finish date
i. Actual finish date (or estimated finish date if not complete)
j. Overall size of facility (in square feet)
k. Construction cost (excluding design costs)
l. Duration of construction (excluding design time)
m. Problems encountered and corrective actions taken
n. Identify which proposed team members and/or firms were involved in the project; their specific roles and responsibilities on the project; and the extent of time they were involved with the project
o. Relevance of experience to the solicitation project
p. Was sustainable design used? If yes, indicate the certification level.
q. If a government contract, include the contracting agency and contracting officer's name, telephone number, fax number, and email address (if known)
r. All examples shall also contain the name, address, telephone and fax number of a representative of the customer (as well as one alternate individual affiliated with your firm) familiar with the Offeror's experience on the project that can verify the experience cited.

a) DESIGN EXPERIENCE

Provide a list of projects currently underway or completed preferably within the last 5 years that best demonstrates the design experience of the design team (firms and/or individual team members) to successfully complete this facility using a design/build process. Experience beyond 5 years ago for design firms will be given less consideration than more recent experience. Projects shall indicate experience in one or more of the following categories:

1) Experience on Similar Projects

   Similar Projects include Phased Construction and Demolition and where the projects have a dollar value greater than $25 million.

2) Design-Build Experience

3) Military Construction Design Experience

   Military Construction design experience is considered to be experience on those projects constructed on and for military installations but may include projects for other Federal, State, or Local Government agencies.

The Offeror must clearly identify for which experience area(s) each project example pertains (e.g., Project A may qualify and be listed for similar projects, design-build, and military construction while Project B may qualify and be listed only for similar projects; etc.).

b) CONSTRUCTION EXPERIENCE

Provide a list of projects currently underway or completed preferably within the last 5 years that best demonstrates the construction experience of the construction team (firms and/or individual team members) to successfully complete this facility using a design/build process. An offeror must make clear the extent of involvement in those projects by current key personnel and clearly describe how the older project is similar to this project, considering changes in technology, materials, equipment, codes, etc. Projects shall indicate experience in one or more of the following categories:

1) Experience on Similar Projects

   Similar Projects include phased construction and demolition and where the projects have a dollar value greater than $25 million.

2) Design-Build Experience

3) Military Construction Experience

   Military Construction experience is considered to be experience on those projects constructed on and for military installations but may include projects for other Federal, State, or Local Government agencies.

4) Experience at Fort Hood , Texas

The Offeror must clearly identify for which experience area(s) each project example pertains (e.g., Project A may qualify and be listed for similar projects, design-build, military construction, and experience at Fort Hood, Texas while Project B may qualify and be listed only for similar projects; etc.).

3.2.2 New Companies and Joint Ventures. If offeror represents the combining of two or more companies for the purpose of this RFP, the proposal shall clearly identify the contractual responsibilities of each firm and the work to be performed by each; describe the nature of the association; indicate whether the firms have experience working together in design & construction ventures, including how long and how many projects. In addition, each company including joint ventures shall list their Government contract experience. Provide a copy of the commitment letter of the firms or the joint venture agreement. Prior to award of any contract, a copy of the Joint Venture Agreement will be required. If approval of the Joint Venture Agreement is required by the Small Business Administration, failure to timely provide an approved SBA Joint Venture Agreement may prevent award of a contract.

3.2.3 Evaluation. The Government will review the example design & construction projects provided by the Offeror to evaluate and rate the recent relevant specialized experience of the Offeror with similar projects. The example design & construction projects should closely resemble the scope, size, and complexity of the project identified in this solicitation. **The Government will place a higher value on experience with similar projects executed with the Corps of Engineers or other DoD Components and for experience at Fort Hood, Texas**. If the Offeror cannot provide suitable relevant experience and the evaluators consider that the information provided indicates that the Offeror has no relevant experience, a determination will be made as to the risk this lack of corporate experience presents to the Government and the proposal will be evaluated accordingly.

EXPERIENCE (DESIGN & CONSTRUCTION) contains two subfactors that approximately equal: Design Experience and Construction Experience. Experience of primary teaming partners will be recognized and evaluated in the same manner as Experience of the Offeror. EXPERIENCE (DESIGN & CONSTRUCTION) will be evaluated as follows:

a) DESIGN EXPERIENCE

The offeror will be evaluated based on the recent experiences of the design team (firms and/or individual team members). The amount of consideration will depend upon the extent of the offeror's experience, similarity between previous project scopes of work and this project, and the relevance of the offeror's experience to this

project. Experience in the following areas will be considered, in descending order of importance: Offerors may be evaluated more favorably where there is experience in more than one of the areas.

(1) Similar Projects: A proposal offering Similar Project experience through project examples under the prescribed parameters of this solicitation may be evaluated more favorably than those, which demonstrate the experience in the other areas. Offerors may be evaluated more favorably based on: (i) a larger number of similar projects; (ii) more recent projects; or (iii) projects with a dollar value over $25 million.

(2) Design-Build: No previous design-build team experience is necessary to qualify for award of this project; however, consideration will be given for recent, successful D-B team experience between the construction firm and design firms(s).

(3) Military Construction Design: Familiarity with federal regulations and administration of Corps of Engineers or other federal contracts are considered relevant. Corps of Engineer projects are considered more relevant than those of other Federal agencies, state, or local experience. Corps of Engineers projects at Fort Hood, Texas than Corps of Engineer Projects at other Military Installations.

(4) Previous Experience As A Team. Extent to which members of the proposed team have worked together on previous projects as a team will be considered. Design team experience, construction team experience, and design-construction team are all considered relevant. experience

(5) Sustainable design. Consideration will be given to ther use of sustainable design.

b) CONSTRUCTION EXPERIENCE

The offeror will be evaluated based on the recent experiences of the construction team (firms and/or individual team members). The amount of consideration will depend upon the extent of the offeror's experience, similarity between previous project scopes of work and this project, and the relevance of the offeror's experience to this project. Experience in the following areas will be considered, in descending order of importance. Offerors may be evaluated more favorably where there is experience in more than one of the areas.

1) Similar Projects: A proposal offering Similar Project experience through project examples under the prescribed parameters of this solicitation may be evaluated more favorably than those, which demonstrate the experience in the other areas. Offerors may be evaluated more favorably based on: (i) a larger number of similar projects; (ii) more recent projects; or (iii) projects with a dollar value over $25 million.

2) Design-Build: No previous design-build team experience is necessary to qualify for award of this project; however, consideration will be given for recent, successful D-B team experience between the construction firm and design firms(s).

3) Military Construction: Familiarity with federal regulations and administration of Corps of Engineers or other federal contracts are considered relevant. Corps of Engineer projects are considered more relevant than those of other Federal agencies, state, or local experience. Corps of Engineers projects at Fort Hood, Texas than Corps of Engineer Projects at other Military Installations.

4) Previous experience as a team. Extent to which members of the proposed team have worked together on previous projects as a team will be considered. Design team experience, construction team experience, and design-construction team experience are all considered relevant.

5) Experience at Dyess AFB or in Abilene, Texas: Familiarity with Dyess AFB installation requirements and the local vicinity is considered relevant.

3.3 FACTOR 3: MANAGEMENT EFFECTIVENESS (VOLUME II, TAB 3). The Government will evaluate the Offeror's management effectiveness by considering the Offeror's understanding and capability of successfully managing the project to completion. The following elements will be evaluated:

- Organizational Chart or Structure
- Key Personnel Resumes.
- Project Management Plan
- Small and Small Disadvantaged Business Utilization.

3.3.1 Offeror's Submission Requirements.

3.3.1.2Organizational Chart or Structure. Provide an organizational chart that clearly shows lines of authority and communication chain of the organization, including key personnel. Offerors are encouraged to provide descriptive analysis of why they feel their key personnel meet the criteria for key personnel experience.

3.3.1.3. Key Personnel Resume Information Personnel Information consist of two subfactors: Design-Build Personnel and Letters of Commitment. Résumés shall be submitted in the following format:

Name/Title	
Proposed Duties & Functions Proposed Designer-of-Record: [Y] [N] for design discipline [_____] (Insert design discipline in blank space)	
Firm Affiliation/Years Affiliated	
Education: Degree Year Specialization	
Active Registrations (including dates) and/or Professional/Technical Certifications/Licenses	
Experience relevant to proposed project, including the years of experience performing proposed duties & functions. For each project listed below, identify the length of time key personnel stayed on their contracts and how well they managed their portion of the referenced contracts.	
Specific Qualifications relevant to proposed project	
List of Relevant Projects: For each project listed, provide: -- Project Title -- Project Description -- Type (D-B, Construction, etc.) -- Dollar Value -- Year Completed -- Individual's project assignment to include specific roles and responsibilities, dates worked on project, and project's relevance to this solicitation. -- Identify the length of time key personnel stayed on their contracts and how well they managed their portion of the referenced contracts.	

a) DESIGN-BUILD PERSONNEL

Am 0005

The Offeror shall submit the résumés on lead and support design, construction, and management personnel who will work on this project. Provide summaries of the duties and responsibilities of these individuals, which clearly indicate the duties, and responsibilities for each of the individuals. Key personnel identified in this tab shall be Contractor's senior working-level people who will be involved in design and construction on a day-to-day basis as opposed to departmental level supervisors or executives. Key personnel shall have experience in design and construction of projects similar to that of this Contract. Resumes shall list projects, identified in the subfactor DESIGN EXPERIENCE (Tab 3A), that show previous working relationships among key personnel. Minimum personnel qualifications are specified in Sections 01012 SUBMITTALS DURING DESIGN, Part 1 paragraph DESIGN AND CONSTRUCTION PERSONNEL QUALIFICATIONS; 01320 PROJECT SCHEDULE; 01430 DESIGN QUALITY CONTROL; and 01451 CONTRACTOR QUALITY CONTROL. The proposal shall clearly present the credentials of each person, and shall show that each meets the requirements listed in the Contract. Resumes shall include examples of project experience and educational qualifications. If reassignment of personnel is considered possible, provide the names and resumes of the alternate professionals in each assignment. The design-build team shall consist of the following, as a minimum:

Project Manager
Lead Architect
Landscape Architect
Lead Civil Engineer
Lead Structural Engineer
Lead Mechanical Engineer
Lead Electrical Engineer
Design Quality Control Manager
Construction Quality Control Manager
Project Superintendent
Project Scheduler
Geologist/Geotechnical Engineer
Environmental Engineer or Specialist (Am 0005)

b) LETTERS OF COMMITMENT

In an appendix, provide letters of commitment for all key personnel on the Design-Build team and any proposed alternate personnel. By identifying these personnel, the offeror is making a commitment that, barring unforeseen circumstances, they are the personnel who will be assigned to the project. A letter of commitment from each firm committing specific individuals from the firm may be provided in lieu of separate letters for each individual. After contract award, substitutions for any of the key personnel or alternates shall require the Contracting Officer's approval.

3.3.1.4 PERSONNEL– EVALUATION

PERSONNEL contain two subfactors: Design-Build Personnel and Letters of Commitment. Design-Build Personnel is significantly more important than Letters of Commitment will be evaluated as Acceptable or Unacceptable. Personnel of primary teaming partners will be recognized and evaluated in the same manner as Personnel of the Offeror. PERSONNEL will be evaluated as follows:

a) DESIGN-BUILD PERSONNEL

Experience on similar projects, education, responsibilities/duties, and years of experience will be evaluated for the key construction personnel identified. Offerors with key design or construction personnel with prior experience on military construction projects and/or completion of design-build projects may receive a more favorable evaluation. Consideration will be given to sustainable design experience.

b) LETTERS OF COMMITMENT

Are letters of commitment for the duration of the Contract provided for each of the design-build team members provided?

3.3.2 Project Management Plan (PMP)

a) PROJECT MANAGEMENT PLAN (PMP)

The Offeror shall provide a comprehensive Project Management Plan (PMP) developed specifically for implementation of this Contract. The PMP shall discuss the management approach used for design, site clearing and demolition, construction, turn-over of all units of this contract within the proposed schedule. The PMP shall discuss turnover of the finished units, as required by the contract, and how it will be achieved within the proposed schedule. The information in the PMP shall make it clear that the Offeror has the ability to deliver a quality product and effectively manage the designers, consultants, and subcontractors on the team, as well as the ability to coordinate all work throughout the design and construction phases. The PMP shall include an explanation of the total project team management approach for both the design team and the construction team. It shall include: management of firms included within the design team and construction team, specific quality control procedures used (including Quality Control procedures to be used to limit re-submittals, design errors, and poor coordination between the design firm and design consultant), schedule development, and methods to be utilized to adhere to the schedule. Address the acquisition of environmental permits in a timely fashion; safety; preparation and submission of record (i.e. as-built) documents, and contract closeout. Discuss how the design team will support the Offeror during construction and an organizational chart showing the inter-relationship of management and various team components, including the Corps of Engineers and the Army. Address the relationship between designer and construction contractor and clearly indicate an understanding of the design-build process. In addition:

(1) Identify the items of work to be self-performed by offeror and the percentage of the overall contract value that this work represents.

(2) Describe the team's computer-aided drafting and design (CADD) capabilities. Identify the CADD software to be used in the design of this project; if all disciplines are not using the same CADD software, identify the software that each discipline is using. Discuss compatibility with the Government's target CADD and compliance with the Tri-Service A/E/C/ CADD standards. Explain how compatibility will be achieved if the design, or portion of the design, is prepared using a CADD system other than the Government's target CADD system. (Refer to Section 01012 SUBMITTALS DURING DESIGN for information on the Government's target CADD system and compatibility requirements).

PROJECT MANAGEMENT – EVALUATION

PROJECT MANAGEMENT will be evaluated as follows:

a) PROJECT MANAGEMENT PLAN (PMP)

Project Management Plans will be evaluated for inclusion of all tasks identified in the Project Management Plan submittal paragraph above. The ability of the Offeror's plan to deliver a quality product and effectively manage the construction team and coordinate all work throughout the design and construction phase of this project will be evaluated. Higher evaluation ratings can be achieved with a thoroughly explained Project Management Plan suitable for the scope and complexity of this project, and which addresses each of the following:

- Management Approach
- Sub-Contractor Management
- Quality Control Procedures
- Schedule development and adherence (Phased Turn-Over)
- Organization Chart
- Acquisition of Environmental Permits
- Safety
- Preparation and submission of record (i.e. as-built) documents
- Contract closeout
- What is the work that will be self-performed by the offeror and what is the percentage of the overall contract value that this work represents? This percentage will be compared to the minimum specified in Contract Clause 52.236-1 PERFORMANCE OF WORK BY THE CONTRACTOR.
- The team's computer-aided drafting and design (CADD) capabilities:
    - Is the CADD software to be used in the design of this project identified?
    - If all disciplines are not using the same CADD software, is the software that each discipline is using identified and which discipline will be responsible for the final set?
    - Is this software compatible with the Government's target CADD and in compliance with the Tri-Service A/E/C/ CADD standards?
    - How will compatibility be achieved if the design, or portion of the design, is prepared using a CADD system other than the Government's target CADD system?

3.3.3 Small and Small Disadvantaged Business Utilization. ALL OFFERORS are required to provide a narrative discussion of their plan for utilization of small and small disadvantaged businesses. At a minimum, the narrative shall discuss:

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

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

3.3.3..3 The Offeror's past and present commitment to providing subcontracting opportunities and encouragement to small and small disadvantaged businesses.

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

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

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

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

3.4 FACTOR 4: PROJECT DURATION (VOLUME II, TAB 4). The Government's requirement is that all work on this project be completed within (***See Section 01000, Construction Schedule)*** days of Notice to Proceed, inclusive of all review periods and Government phasing requirements specified. Offeror may propose a completion period of lesser duration. Completion periods of significantly lesser duration may be rated as more advantageous to the Government**. If a completion period of lesser duration is proposed and accepted by the Government, the accepted completion period will replace the original construction schedule listed under Section 01000. If an alternate completion period is proposed, the Bid Schedule must reflect pricing information for the alternate proposed completion period.** Offers who propose completion of the work beyond the maximum completion period specified above, will be rated unsatisfactory for this factor.

3.4.1 PROJECT SCHEDULE Offeror's Submission Requirements.

Am 0009
The Offeror shall provide a project schedule for design, site clearing and demolition, and construction work. Prepare in the form of a time-scaled (Gantt Chart) summary network diagram and graphically indicate sequences proposed to accomplish each general work operation including design and design reviews, demolition, construction, phased turn-over of accepted units, final clean-up of premises, demolition in preparation for renovation and appropriate interdependencies among various activities. The schedule shall illustrate when finished units will be turned over. **(Am 0009)** ~~The proposed project schedule shall clearly indicate the total number of calendar days from the 20th day after Contract Award~~. The proposed completion time will be a contract requirement. If the Offeror fails to complete the work within the time specified, the Offeror will be subject to liquidated damages (if applicable).

The Offeror shall provide a verification statement that the Contractor has read the contract requirements and that the number of days includes all design time, Government review time of all design submittals, construction time, and demolition time necessary to complete the project. The duration shall reflect the design and design review requirements addressed in the Section 01012 SUBMITTALS DURING DESIGN.

3.4.2 Evaluation. This factor will be evaluated by reviewing the submitted scheduling documents. Completion periods of significantly lesser duration may be rated as more advantageous to the Government. Offers who propose completion of the work beyond the maximum completion period specified above, will be rated unsatisfactory for this factor.

4. EVALUATION STANDARDS. Evaluation criteria (factors) will be rated using the following adjectival descriptions. Evaluators will apply the appropriate adjective to each criterion rated. The evaluator's narrative explanation must clearly establish that the Offeror's submittal meets the definitions established below. As each criteria is evaluated an assessment of Performance Risk will be made. Performance Risk relates to the assessment of an Offeror's present and past work and accomplishments to determine the Offeror's ability to successfully perform as required.

4.1 OUTSTANDING - Information submitted demonstrates Offeror's potential to significantly exceed performance or capability standards. The Offeror has clearly demonstrated an understanding of all aspects of the requirements to the extent that timely and highest quality performance is anticipated. The Offeror possesses exceptional strengths that will significantly benefit the Government. The Offeror's qualifications meet the fullest expectations of the Government. The Offeror has convincingly demonstrated that the RFP requirements have been analyzed, evaluated, and synthesized into approaches, plans, and techniques that, when implemented, should result in highly effective and efficient performance under the contract which represents very low risk to the Government. An assigned rating of "outstanding" indicates that, in terms of the specific factor, the submittal contains no significant weaknesses, deficiencies or disadvantages. Offeror very significantly exceeds most or all solicitation requirements. Very high probability of success. Very low risk to the Government.

4.2 ABOVE AVERAGE - Information submitted demonstrates Offeror's potential to exceed performance or capability standards. Offeror possesses one or more strengths that will benefit the Government. The areas in which the Offeror exceeds the requirements are anticipated to result in a high level of efficiency, productivity, or quality. The Offeror's qualifications are responsive with minor weaknesses, but no major weaknesses noted. An assigned rating of "Above Average" indicates that, in terms of the specific factor, any weaknesses noted are minor and should not seriously affect the offeror's performance. The submittal demonstrates that the requirements of the RFP are well understood and the approach will likely result in a high quality of performance which represents low risk to the Government. A rating of "Above Average" is used when there are no indications of exceptional features or innovations that could prove to be beneficial, or conversely, weaknesses that could diminish the quality of the effort or increase the risks of failure. Disadvantages are minimal. The submittal contains excellent features that will likely produce results very beneficial to the Government. Offeror fully meets all RFP requirements and significantly exceeds many of the RFP requirements. Response exceeds a "Satisfactory" rating. High probability of success. Low risk to the Government.

4.3 SATISFACTORY (Neutral) - Information submitted demonstrates Offeror's potential to meet performance or capability standards. Offeror presents an acceptable solution and meets minimum standard requirements. Offeror possesses few or no advantages or strengths. The Offeror's proposal contains weaknesses in several areas that are offset by strengths in other areas. A rating of "Satisfactory" indicates that, in terms of the specific factor, the Offeror may satisfactorily complete the proposed tasks, but there is at least a moderate risk that it will not be successful. There is a good probability of success and that a fully acceptable level of performance will be achieved. Offeror meets all RFP requirements, presents a complete and comprehensive proposal, exemplifies an understanding of the scope and depth of the task requirements, and displays understanding of the Government's requirements. Offeror's response exceeds a "Marginal" rating. No significant advantages or disadvantages. Moderate risk to the Government. In the case of no past performance on the part of the Offeror, a SATISFACTORY rating will be assigned for Past Performance.

4.4 MARGINAL - Information submitted demonstrates Offeror's potential to marginally meet performance or capability standards necessary for minimal but acceptable contract performance. The submittal is not adequately responsive or does not address the specific factors. The assignment of a rating of "Marginal" indicates that mandatory corrective action would be required to prevent significant deficiencies from affecting the overall project. The Offeror's qualifications demonstrate an acceptable understanding of the requirements of the RFP and the approach will likely result in an adequate quality of performance, which represents a moderate level of risk to the Government. Offeror displays low probability of success, although the submittal has a reasonable chance of becoming at least acceptable. Offeror's response exceeds an "Unsatisfactory" rating. Significant disadvantages. High risk to the Government.

4.5 UNSATISFACTORY – Information submitted fails to meet performance or capability standards necessary for acceptable contractor performance. The Offeror's interpretation of the Government's requirements is so superficial, incomplete, vague, incompatible, incomprehensible, or incorrect as to be Unsatisfactory. The submittal does not meet the minimum requirements of the RFP; requirements could only be met with major changes to the submittal. There is no reasonable expectation that acceptable performance would be achieved which represents unacceptably high risk to the Government. The Offeror's qualifications have many deficiencies and/or gross omissions; fail to provide a reasonable, logical approach to fulfilling much of the Government's requirements; and, fail to meet many of the minimum requirements. The Offeror's qualifications are so unacceptable that it would have to be completely revised in order to attempt to make them acceptable. Very significant disadvantages. Unacceptably high risk to the Government.

5. TECHNICAL EVALUATION WEIGHTS

5.1 Relative Importance Definition. For the purpose of this evaluation, the following terms will be used to establish the relative importance of the technical factors and subfactors.

- **Significantly More Important***:* The criterion is at least two times greater in value than another criterion.
- **More Important:** The criterion is greater in value than another criterion but less than two times greater.
- **Equal:** The criterion is of the same value or nearly the same as another criterion.

5.2 PRICE is approximately Equal in importance to ALL TECHNICAL FACTORS when combined.

5.3 Weight among technical factors :

FACTOR 1: DESIGN &CONSTRUCTION PAST PERFORMANCE: This factor is equal to Factor 2 and Factor 3 and less important than Factor 4.

FACTOR 2: CORPORATE RELEVANT SPECIALIZED EXPERIENCE: This Factor is equal in importance to Factor 1 and Factor 3 and is less important than Factor 4.

FACTOR 3: MANAGEMENT EFFECTIVENESS: This Factor is equal in importance to Factor 2 and Factor 3 and is less important than Factor 4.

FACTOR 4: PROJECT DURATION. This factor is more important than the above factors combined.

6. PRICE.

6.1 The Government will perform a price analysis on all proposals received. Price analysis will be performed in accordance with FAR 15.404-1, to determine completeness, reasonableness, and understanding of the work. The evaluation will determine the adequacy of the offer in fulfilling the requirements of the proposal. Completeness addresses the extent to which the elements of the price proposal are consistent with the requirements of the RFP. Reasonableness will be established using historical price information, price competition information, the IGE, and any other pricing tools necessary.

6.2 Price will not be scored, but will be a factor in establishing the competitive range prior to discussions (if held) and in making the final best value determination for award.

Am 0009

6.3 "6.3 The Government intends to evaluate and award all awardable options for which it has available funding. The Government will use the statutory limits stated in the Bidding Notes #1 a. and b, and determine whether it can award any particular option. The Government will consider the awardability of options in its source selection/best value award decision. The Government will determine which proposal provides the best value to the Government based on all evaluation factors and the determination of the maximum amount of work that can be awarded, base bid and options considered, for renovation work and relocatables with site work. If an offeror's line item price is above the applicable statutory limit, the Government cannot award that line item. If a line item for utilities and site preparation is above the statutory limit, neither that line item nor the associated line item(s) for relocatable(s) for that site is awardable.

Therefore, an offeror's price proposal will be deemed to be less favorable to the Government in the evaluation process when the statutory limit is exceeded for line items. The remainder of the proposal will be evaluated to determine its maximum value to the Government in terms of the amount of renovation and relocatable/site work that can be obtained at fair and reasonable pricing and within the funds available. The more work that can be awarded within the funds available and within the established statutory limits will deem a proposal more favorable to the Government. If the Fort Worth District receives or is allowed to use Military Construction funds during proposal evaluation, the OMA statutory limit for utilities and site preparation line items will not be applicable in determining the awardability of those line items. After award, if/when Military Construction funds become available, the Government reserves the right to award any remaining site work option line items deemed to be fair and reasonable.

7. EXCEPTIONS. Exceptions to the contractual terms and conditions of the solicitation (e.g., standard company terms and conditions) may result in a determination to reject a proposal.

8. RESTRICTIONS. Failure to submit all the data in the format indicated in this solicitation may be cause for determining a proposal incomplete and, therefore, not considered for evaluation, and for subsequent award.

9. PROPOSAL EVALUATION.

9.1 Each member of the Government evaluation team (Source Selection Evaluation Board) will independently consider all information provided in the proposal. Worksheets are provided on the following pages, which the evaluators will use to review and rate the individual proposals.

9.2 Once these individual analyses are completed, the team will meet and determine a rating for each of the evaluation factors by consensus decision.

9.3 The evaluation team will document strengths (e.g., advantages), weaknesses (e.g., disadvantages), and other comments (e.g., deficiency and/or clarification) to support the rating for each factor, as well as the overall rating. Documentation and comments are required for all ratings.

9.4 Based on the preceding evaluation of each rated area, including consideration of the price proposal, the evaluator will make a preliminary determination of acceptability for each proposal. This determination will be based on the following criteria:

a. "Acceptable" – The proposal contains no deficiencies and it conforms completely to the solicitation requirements (this does not necessarily eliminate the need for discussion of its weaknesses).

b. "Marginally Acceptable" – The proposal can reasonably be expected to be made acceptable by moderate revision, amplification, or modification. If a proposal falls within this category, the documentation must specify in detail the areas(s) in which the proposal is deficient.

c. "Unacceptable" – The proposal could not reasonably be expected to become "acceptable" without major, extensive changes and revisions. Unless the rationale clearly supports the determination of unacceptability, the determination shall be "marginally acceptable."

The above determinations will be made and documented under the initial and Consensus Summary Sheets. SSEB team members will document their ratings for all factors and sub factors on the applicable worksheets. Questions for the offeror will be noted for future reference.

10. BASIS FOR AWARD

10.1 Proposals must meet the criteria stated in the RFP in order to be eligible for award, to include responsiveness, technical acceptability and responsibility.

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

10.3 As technical ratings and relative advantages and disadvantages become less distinct, differences in price between proposals are of increased importance in determining the most advantageous proposal. Conversely, as differences in price become less distinct, differences in rating and relative advantages and disadvantages between proposals are of increased importance to the determination. In the event that the technical and cost/price proposals become more equivalent for two or more large businesses, the subcontracting plan will become more significant and may become the determining factor for award.

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

10.5 Offerors are reminded to include their best technical and price terms in their initial offer and not to automatically assume that they will have an opportunity to participate in discussions or be asked to submit a revised offer. The Government may make award of a conforming proposal without discussions, if deemed to be within the best interests of the Government.

10.6 The Government intends to award a contract without discussions based on initial proposals received; therefore, the proposals shall contain the offeror's best terms from a cost and technical standpoint. However, the Government reserves the right to conduct discussions in accordance with FAR 52.215-1. Should discussions be necessary after evaluations, the Government will establish a competitive range of the offerors that are the most highly rated. The Government reserves the right to address any pertinent issues in the proposals.

End of Proposal Submission Instructions, Conditions

Proposal Data Sheets are on the following pages

VOLUME I – TAB D

PROPOSAL DATA SHEET

PROJECT TITLE: **Design-Build Miscellaneous Construction, Renovation, & Alteration Projects**
PROJECT LOCATION: **Fort Hood, Texas**

1. Name of Firm:
Address:

Phone:
Fax:
E-mail:
Duns # (used for accessing ACASS/CCASS)

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

Firm 1:

Firm 2:

Firm 3:

Nature of Association:

2. AUTHORIZED NEGOTIATORS. FAR 52.215-11

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

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

Name of Person Authorized to Negotiate:

Negotiator's Address:

Negotiator's Telephone:

Negotiator's E-mail:

PROJECT TITLE: Design-Build Miscellaneous Construction, Renovation, & Alteration Projects
PROJECT LOCATION: Fort Hood, Texas
VOLUME II – TAB 1

FACTOR 1: Design & Construction Past Performance (At leas three projects but no more than five).

1. On an attached sheet, provide information for no more than five completed projects, preferably of similar design or features, that have been constructed by the offeror to be used for reference and evaluation purposes. All projects listed in Factor 2, "Corporate Specialized Relevant Experience" shall have a completed Past Performance Information Sheet.

2. For each project provide the following information:

Project Title:

Location:

Contract number:

Procuring activity:

Procurement Point of Contact and Telephone Number:

Address and telephone number of owner/customer:

Type of Project (private sector, Government, planned unit development, etc.):

General Nature of the Contract:

Award Date:

Original Contract Amount:

Final Contract Amount:

Original Completion Date:

Final Completion Date:

Explanation for any differences between original and final contract costs and completion dates:

SAMPLE
(Offerors should submit for at least three projects but no more than five)

PROJECT TITLE: Design-Build Miscellaneous Construction, Renovation, & Alteration Projects
PROJECT LOCATION: Fort Hood, Texas

VOLUME II – TAB 2

FACTOR 2: CORPORATE SPECIALIZED RELEVANT EXPERIENCE.

On an attached sheet, provide information for no more than five completed projects that are similar in terms of cost, complexity, design or features, (See elements identified in paragraph 3 of Section 00100) that have been constructed by the Offeror to be used for reference and evaluation purposes. For each project provide the following information:

Project Title:

Location:

Contract number:

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

Procuring activity:

Procurement point of contact and telephone number:

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

Address of building(s):

Name, address and telephone number of owner:

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

Total cost:

Technical relevancy to this project:

Offeror: _____

Evaluator: _____

PROJECT TITLE: Design-Build Miscellaneous Construction, Renovation, & Alteration Projects
PROJECT LOCATION: Fort Hood, Texas

PROPOSAL RATING WORKSHEET

FACTOR 1 – Design & Construction PAST PERFORMANCE

1. GENERAL. The Government will evaluate each Offeror's past performance to determine how well it satisfied its customers. Evaluators will use this factor to evaluate the success of the Offeror based on the satisfaction of previous customers and clients as illustrated on the completed questionnaires, CCASS Ratings and personal knowledge. These completed questionnaires shall be used as a basis to begin the evaluation of this factor.

Do All the submitted Projects Reflect Projects completed within the Last Five Years? _____ YES ____ NO

2. ACASS RATINGS.

Firm Name: _____

Number of Ratings:	Outstanding	_____
	Above Average	_____
	Satisfactory	_____
	Marginal	_____
	Unsatisfactory	_____

3. NON-CORPS OF ENGINEERS CONTRACT RATINGS.

Firm Name: _____

Number of Ratings:	Outstanding	_____
	Above Average	_____
	Satisfactory	_____
	Marginal	_____
	Unsatisfactory	_____

4. OTHER INFORMATION CONSIDERED. List all other sources of information considered (telephone interviews, personnel interviews, personal experience, etc.)

Offeror: _____

Evaluator: _____

PROJECT TITLE: Design-Build Miscellaneous Construction, Renovation, & Alteration Projects
PROJECT LOCATION: Fort Hood, Texas

PROPOSAL RATING WORKSHEET

FACTOR 1 – Design & Construction PAST PERFORMANCE

1. GENERAL. The Government will evaluate each Offeror's past performance to determine how well it satisfied its customers. Evaluators will use this factor to evaluate the success of the Offeror based on the satisfaction of previous customers and clients as illustrated on the completed questionnaires, CCASS Ratings and personal knowledge. These completed questionnaires shall be used as a basis to begin the evaluation of this factor.

Do All the submitted Projects Reflect Projects completed within the Last Five Years? _____ YES ____ NO

2. CCASS RATINGS.

Firm Name: _____

Number of Ratings:	Outstanding	_____
	Above Average	_____
	Satisfactory	_____
	Marginal	_____
	Unsatisfactory	_____

3. NON-CORPS OF ENGINEERS CONTRACT RATINGS.

Firm Name: _____

Number of Ratings:	Outstanding	_____
	Above Average	_____
	Satisfactory	_____
	Marginal	_____
	Unsatisfactory	_____

4. OTHER INFORMATION CONSIDERED. List all other sources of information considered (telephone interviews, personnel interviews, personal experience, etc.)

Offeror: _____

Evaluator: _____

PROJECT TITLE: Design-Build Miscellaneous Construction, Renovation, & Alteration Projects
PROJECT LOCATION: Fort Hood, Texas

PROPOSAL RATING WORKSHEET

FACTOR 1 – Design & Construction PERFORMANCE (Continued)

OVERALL RATING.

/__/ Outstanding

/__/ Above Average

/__ / Satisfactory

/__ / Marginal

/__ / Unsatisfactory

Comments to support the OVERALL RATING

STRENGTHS.

WEAKNESSES.

OTHER COMMENTS (Clarifications, omissions/errors/deficiencies)

Offeror: _____

Evaluator: _____

PROJECT TITLE: Design-Build Miscellaneous Construction, Renovation, & Alteration Projects
PROJECT LOCATION: Fort Hood, Texas

PROPOSAL RATING WORKSHEET
FACTOR 2 – CORPORATE RELEVANT SPECIALIZED EXPERIENCE

1. General: Completed DATA SHEETS shall be used as a basis to begin the evaluation of this factor.

Has Government Received Completed DATA SHEETS for Corporate Relevant Specialized Experience for this Offeror?

____ YES ___ NO

Do All the DATA SHEETS Received Reflect Projects Completed Within the Last Five Years?

____YES ____NO

OVERALL RATING.

/__/ Outstanding

/__/ Above Average

/__ / Satisfactory

/__ / Marginal

/__ / Unsatisfactory

Comments to support the OVERALL RATING

STRENGTHS.

WEAKNESSES.

OTHER COMMENTS (Clarifications, omissions/errors/deficiencies)

Offeror: _____

Evaluator: _____

PROJECT TITLE: Design-Build Miscellaneous Construction, Renovation, & Alteration Projects
PROJECT LOCATION: Fort Hood, Texas

PROPOSAL RATING WORKSHEET
FACTOR 3 – MANAGEMENT EFFECTIVENESS

OVERALL RATING.

/__/ Outstanding

/__/ Above Average

/__ / Satisfactory

/__ / Marginal

/__ / Unsatisfactory

Comments to support the OVERALL RATING

STRENGTHS.

WEAKNESSES.

OTHER COMMENTS (Clarifications, omissions/errors/deficiencies)

Offeror: _____

Evaluator:_____

PROJECT TITLE: Design-Build Miscellaneous Construction, Renovation, & Alteration Projects
PROJECT LOCATION: Fort Hood, Texas

PROPOSAL RATING WORKSHEET
FACTOR 4 – CONSTRUCTION DURATION

OVERALL RATING.

/__/ Outstanding

/__/ Above Average

/__ / Satisfactory

/__ / Marginal

/__ / Unsatisfactory

Comments to support the OVERALL RATING

STRENGTHS.

WEAKNESSES.

OTHER COMMENTS (Clarifications, omissions/errors/deficiencies)

Offeror: _____

PROJECT TITLE: Design-Build Miscellaneous Construction, Renovation, & Alteration Projects
PROJECT LOCATION: Fort Hood, Texas

Summary and Overall Rating

SUMMARY RATING CHART			
FACTOR No.	**Description**	**Rating***	**Comments**
1	**Design & Construction Past Performance**		
2	**Corporate Relevant Specialized Experience**		
3	**Management Effectiveness**		
4	**Project Duration**		
OVERALL TECHNICAL RATING**			
PROPOSAL ACCEPTABILITY			

* Ratings may be either:

Outstanding – Above Average – Satisfactory – Marginal – Unsatisfactory

** Evaluators shall consider the ratings and weights of the various criteria shown to determine a suitable overall rating. The overall rating cannot be an average, mode, or median of the ratings of the four factors.

Attach additional sheets to this rating summary to provide supporting rationale for assignment of ratings.

_____
Board Member Signature

Offeror _____ Board Chairperson_____

PROJECT TITLE: Design-Build Miscellaneous Construction, Renovation, & Alteration Projects
PROJECT LOCATION: Fort Hood, Texas

FACTOR No.	Description	Board Member 1	Board Member 2	Board Member 3	Board Member 4	Board Member 5	CONSENSUS
1	Offeror Past Performance*						
2	Corporate Relevant Specialized Experience*						
3	Management Effectiveness*						
4	Project Duration*						
OVERALL RATING**							

_____ _____
Board Member 1 Board Member 2

_____ _____
Board Member 3 Board Member 4

Offeror: _____

PROJECT TITLE: Design-Build Miscellaneous Construction, Renovation, & Alteration Projects
PROJECT LOCATION: Fort Hood, Texas

CONSENSUS RATINGS

FACTOR 1 – OFFEROR PAST PERFORMANCE

STRENGTHS:

WEAKNESSES:

OTHER COMMENTS

FACTOR 2 – CORPORATE RELEVANT SPECIALIZED EXPERIENCE

STRENGTHS:

WEAKNESSES:

OTHER COMMENTS (Clarifications, omissions/errors/deficiencies)

Offeror: _____

PROJECT TITLE: Design-Build Miscellaneous Construction, Renovation, & Alteration Projects
PROJECT LOCATION: Fort Hood, Texas

CONSENSUS RATINGS
(Continued)

FACTOR 3 – OFFEROR MANAGEMENT EFFECTIVENESS

STRENGTHS:

WEAKNESSES:

OTHER COMMENTS

Offeror: _____

PROJECT TITLE: Design-Build Miscellaneous Construction, Renovation, & Alteration Projects
PROJECT LOCATION: Fort Hood, Texas

CONSENSUS RATINGS

(Continued)

FACTOR 4 – PROJECT DURATION

STRENGTHS:

WEAKNESSES:

OTHER COMMENTS (Clarifications, omissions/errors/deficiencies)

AFARS -- Appendix DD
Subcontracting Plan Evaluation Guide

June 1, 1996

Part 1 -- Introduction

DD-100 Purpose.

The guide provides a methodology for uniform and consistent evaluation of subcontracting plans within the Army. It is designed to facilitate compliance with the mandates of Public Law to increase opportunities for small and small disadvantaged businesses.

DD-101 Applicability.

Except for subcontracting plans for commercial items, use this guide to review all subcontracting plans, including those submitted in response to the conditions described in FAR 19.705-2(d) and DFARS 219.705-2(d). See 19.708(b)(1) for special notices to be inserted in the solicitation regarding submission of subcontracting plans. A copy of the completed evaluation shall be included in the contract file.

DD-102 Goals.

Contracting officers must place special emphasis on negotiating reasonable goals in subcontracting plans. The goals must be realistic, challenging and attainable. The plan must demonstrate a real commitment to, and an active involvement in, providing subcontracting opportunities for small and small disadvantaged businesses.

DD-103 Scoring.

Score subcontracting plans in the context of the particular procurement. For instance, in smaller dollar value contracts, it may be impracticable or not cost effective for offerors to take the type of actions that may be appropriate in contracts for larger dollar values. However, in such cases, offerors must still address each element of the guide and discuss what they intend to do regarding each element. Contracting officers shall then assign appropriate point scores.

DD-104 Modification of Guide. The evaluation guide and scoring system shall not be modified without the approval of the PARC. This approval authority may not be delegated.

DD-105 Use of Preaward Surveys. For contracts administered by the Defense Contract Management Agnecy (DCMA), information needed to assess contractor compliance with subcontracting plans in current and previous contracts may be obtained by requesting a preaward survey in accordance with FAR 9.106.

Part 2 -- Scoring System

Point Points
Range Assigned : _____
1. Policy statement or evidence of internal guidance to company buyers recognizing commitment to Pub.L. 99-661, Section 1207, and Pub.L. 100-180, Section 806. 0-5

0 No written policy statement in plan.

1-2 Plan includes a general policy, but no evidence of recognition of special emphasis being placed on subcontracting with SDBs, HBCUs and MIs as a result of Pub.L.s.

3-5 Definitive corporate and management commitment evidenced in individual plan and master plan by **specifically referencing the Pub.L.s.**

Point Points
Range Assigned: _____
2. Efforts to broaden SB and SDB active vendor base. (FAR 19.704(a), 52.219-9(d), DFARS Subpart 219.5, 219.704(a)(1), 219.705 and 252.219-7003) 0-10

0 Description of efforts merely parrots requirements of FAR to maintain listing of vendors.

1-2 Contains evidence that effort is directed at increasing subcontracts to SBs and SDBs for non-complex and general housekeeping supplies or services normally awarded to firms already in existing vendor base.

3-10 Addresses efforts to increase the number of SB and SDB sources awarded subcontracts, **establishes plans to use competition restricted to SDBs and gives details** about how plans to use competition restricted to SDBs will be accomplished. (DFARS 219.705-4 and Subpart 219.5)

Note: After scoring the plan to this point, if zero points have been assigned for Element 2, proceed to Item 3, Outreach. If one or more points have been assigned for this Element 2, proceed to evaluation of the subelements labeled "minus 2" and "minus 3" to determine if points assigned so far must be reduced. Do not reduce points already assigned to less than zero. (No negative points are to be entered under "Points Assigned" for any Element.) These negative scores are additive; if both of the subelements apply, then minus five points are assessed to reduce points already assigned under this element 2.

minus 2 Includes efforts described above which rate 1-2 or 3-10 points but, when it would be appropriate, does not address effort to involve HBCUs and MIs in performing the contract for which the subcontracting plan is submitted. (DFARS 219.704(a)(1) and 219.705-4(d))

minus 3 Includes efforts described above which rate 1-2 or 3-10 points but does not address effort to identify and overcome obstacles which may prohibit award to HBCU and MI sources currently in vendor base.

Point Points
Range Assigned : _____
3. Outreach (ongoing and planned actions) 0-10
(FAR 19.704(a),19.705-4, 52.219-9(d) and
52.219-9(e), DFARS 219.705).
0 No mention of outreach.

1-4 Describes efforts to work with organizations in FAR 52.219-9(d)(11)(iv) to identify potential sources for items not traditionally awarded to SB or SDB firms. (FAR 52.219-9(d)(11)(iv) and 52.219-9(e))

5-10 Indicates intent to **conduct reviews** to determine the competence, ability, experience and capacity available in SB or SDB firms and to **provide technical assistance** to SBs and SDBs **or** explains why such reviews or technical assistance are not appropriate. (FAR 19.705-4(c) and 52.219-9(e))

Note: After scoring the plan to this point, if zero points have been assigned for Element 3, proceed to Item 4, Description of supplies and services. If one or more points have been assigned for this Element 3, proceed to evaluation of the subelement labeled "minus 3" to determine if points assigned so far must be reduced. Do not reduce points already assigned to less than zero. (No negative points are to be entered under "Points Assigned" for any Element.)

minus 3 Fails to indicate the extent to which HBCU and MI participation will be considered and facilitated in performing the contract for which the subcontracting plan is submitted, or fails to indicate other efforts to increase HBCU and MI participation in future DoD acquisitions. (DFARS 219.705-4(d))

Point Points
Range Assigned: _____

4. Describes supplies and services to be subcontracted 0-10 and planned for subcontracting to SBs, SDBs, HBCUs and MIs. (FAR 19.705-4(d), 52.219-9(d)(3), 52.219-9(e) and DFARS 219.705).

0 No mention.

1-4 Generic list of routine supplies and services included in materials listing for the specific contract.

5-7 Indicates intent to review major product/system components and key project elements of R&D, construction, service and spare parts contracts for subcontracting to SBs, SDBs, HBCUs and Mis. (FAR 19.705-4(d)(3) and (4), 52.219-9(e)(1) and (2) and DFARS 219.705)

8-10 Substantive plan **actually targets specific** SBs, SDBs, HCBUs and MIs for review to determine their competence, ability, experience and capacity and identifies specific components or major portions of the acquisition for consideration of SB, SDB, HBCU or MI competition. Also, indicates intent to work with large business subcontractors for major subsystems or key project elements to ensure "flowdown" of this philosophy. (FAR 19.705-4(d) and DFARS 219.705)

Point Points
Range Assigned: _____

5. Describes specific efforts, based on results of efforts 0-15 described in Elements No. 3 and No. 4 to ensure that SB, SDB, HBCU and MI concerns have equitable opportunity to participate in acquisitions. (FAR 19.704(a), 19.705-4, 52.219-9(d) and DFARS 219.705).

0 No mention.

1-4 Description of efforts merely parrots FAR 19.704(a)(3)

and (6) and 52.219-9(d)(8).

5-8 Describes how the company intends to evaluate its own SB and SDB award performance and program effectiveness against the established goals, both company-wide and for the individual plan being negotiated. (FAR 19.704(a)(1) and (6) and 52.219-9(d)(11)(v))

9-12 Includes SBs, SDBs, HBCUs and MIs **by name as members of original team for producing specific** major components or subassemblies, providing a major service or performing a significant **portion of the effort.** (DFARS 219.705-2(d))

13-15 Describes **special efforts to establish long-range relationships with SBs, SDBs, HBCUs and Mis, including leader-follower techniques, when appropriate.** (FAR 19.705-4(d)(4) and DFARS 219.705-2(d))

Point Points
Range Assigned: _____
6. Development of percentage goal is based on planned 0-40 subcontracting which is challenging, yet realistic. (FAR 19.705-4(d), DFARS 219.704(a)(1) and 219.705-4).
0 Fails to include a specific goal for subcontracting with SBs, SDBs, HBCUs and MIs or proposes zero percent goal without substantive justification.

1-5 Sets small business goal of less than 10 percent and/or SDB/HBCU/MI goal of two percent or less with no significant justification.

6-10 Sets goals of less than 10 percent (SB) and 2 percent (SDB), but contractor shows evidence of reasonable effort, including use of set-asides, to involve Sbs, SDBs, HBCUs or MIs in non-traditional areas.

11-20 Sets goals of over 10 percent (SB) and 2 percent (SDB) and also identifies specific SB, SDB, HBCU or MI concerns planned to be subcontractors, **including the item or service or effort to be subcontracted**. Indicates

extent to which firms have **participated in proposal preparation or otherwise indicates extent to which subcontracting to these firms may reasonably be assured**. Goals are realistic in view of actions stated in other portions of the plan and make-or-buy plan, if applicable.

21-30 Same as for 11-20 points, but proposed percent of goal is reasonable in comparison with prior experience, yet **indicates reasonable effort to improve on past experience in terms of dollars, number** of SDBs, HBCUs, and MIs involved, and movement into area without previous SDB, HBCU or MI involvement.

31-40 Same as 21-30 points, but includes evidence that if SBs, universities or institutions other than HBCUs or MIs are performing on a major component or subassembly, providing a major service or performing on a key project element, SDBs, HBCUs and MIs will also be given an opportunity to perform. Also, the percentage of the SDB, HBCU, MI goal compares favorably with the percentage of SB goal, consistent with the Government-wide goals of 20 percent to SB with five percent to SDB, or is otherwise explained, **and the plan includes a forecast for improvement**. (The SB and SDB goals in the subcontracting plan should approximate the ratio between the SB and SDB Government-wide goals.)

Point Points
Range Assigned: _____

7. Past performance. 0-10
Extent to which the company has historically been successful in establishing realistic, yet challenging, goals and achieving them. Consider DCMC comments on prime contractor's justifications for prior failure to achieve goals. To avoid penalizing the contractor when there has been no previous defense contract, assign 10 points. (FAR 19.705-4(d)(1) and (d)(2)(iii), 19.706 and DFARS 219.706).

8. ***Other regulatory and statutory requirements.***
If any of the following are answered "NO," the plan is not acceptable and must be revised to comply prior to award: Does the plan have --

A. A separate goal for SB and SDB? (FAR 19.704(a)(1) and FAR 52.219-9(d)(1) and (2))

YES NO

B. A separate goal for the basic contract and, if applicable, each option? (FAR 19.704(c))

YES NO

C. The name of the company employee responsible for administration of plan and employee's duties? (FAR 19.704(a)(2) and 52.219-9(d)(7))

YES NO

D. A statement affirming intent to comply with subcontracting "flowdown" provisions? (FAR 19.704(a)(4) and 52.219-9(d)(10))

YES NO

E. A statement affirming willingness to cooperate in studies and to provide reports? (FAR 19.704(a)(5) and 52.219-9(d)(10))

YES NO

F. A statement that indirect costs are either included or excluded from the proposed goals and, if included, how they will be prorated? (FAR 52.219-9(d)(6))

YES NO

G. A description of efforts to ensure that SBs and SDBs have an equitable opportunity to participate in the acquisition? (FAR 52.219-9(d)(8))

YES NO

H. A recitation of the types of records maintained to demonstrate procedures adopted to comply with the requirements and goal in the plan? (FAR 52.219-9(d)(11))

YES NO

ACCOMPANYING AMENDMENT NO. 0009 TO SOLICITATION NO. W9126G-04-R-0046

SECTION 01010

GENERAL PROJECT DESCRIPTION AND DESIGN REQUIREMENTS
AMENDMENTS NO. 0002, 0004, 0005 and 0009

1. GENERAL

1.1 The Contractor shall design and construct the Design-Build Miscellaneous Construction, Renovation, & Alteration Projects at Fort Hood, Texas resulting in complete and useable facilities.

1.2 Scope of Work

1.2.1 Renovations

The design and construction for the renovation of 45 existing buildings as outlined in following documents. Scope of renovations varies from minor refurbishing to complete building restoration in accordance with current safety, fire, and anti-terrorism force protection standards, as further described in the following documents.

1.2.2 Site Improvements

Site improvements include the design and construction of roadways, parking, and hardstand areas both as repair of existing and new construction. Design and construction covers clearing and grubbing, aggregate base course, bituminous base course, asphalt surface overlays, concrete hardstand, pavement markings, traffic control signage, sidewalks, storm drainage, area lighting, security fencing, and erosion control.

1.2.3 New Facility Construction

(AM#2) **New Construction includes** ~~The~~ design and construction of both re-locatable and permanent structures **(AM#2)** **for** ~~to provide~~ administration, classroom, storage, and maintenance **(AM#2)** **use** ~~facilities~~. The buildings shall be complete with water, sewer, electrical, gas service, fire alarm systems, **(AM#2)** **fire suppressions systems, and** communication and information systems **(AM#2)** **as required and** as further detailed in the following documents. The scope also includes utility design for sewer, water, gas, and electric from the point of connection to the identified facilities. Supporting facilities will include site related hardstand and pavement repair and construction, security fencing and lighting, sidewalks, storm drainage, and erosion control measures.

1.2.4 Furnishings

The interior design, procurement, and installation of furnishings for renovated and newly constructed buildings as further detailed in this RFP.

1.2.5 Personal Property Relocation

The scope of this Contract includes the packing, transporting, and unpacking of various personal property items involved in the relocation of approximately 3000 personnel with approximately 1500 pounds of property per person. Transport distances of up to twenty miles are to be anticipated. Contractor will be responsible for video taped documentation of property condition at pick-up and delivery points, preparation of property inventory, and liability insurance to cover loss and damage.

1.3 Site locations

Specific project locations are shown on the site location drawings C-01 and C-02 or identified by Fort Hood building number.

1.4 Site Development and Utilities

Site development will include all clearing and grubbing and grading, pavement repairs, storm drainage, and utilities to support the facilities. Rudimentary drawings included in this RFP include site locations with the approximate site layout indicated and the proposed scope of work indicated. These drawings are included for design and coordination purposes **(AM#2) only. It is the Contractor's responsibility to develop complete site designs as needed to construct the project.** Further development of this design will require coordination with the using agency and base personnel. Revisions and refinements to these rudimentary drawings, or any other drawings and plans developed as a result of this proposal, should be expected during the course of design development until final design is achieved.

1.5 Demolition

Demolition will be as specified for each individual project site. Demolition for some building renovations involves hazardous material abatement as detailed further in the documents specific to those facilities. **(AM #0002) For submittal of a non-hazardous solid waste disposal plan, reference Section 01355 ENVIRONMENTAL PROTECTION, paragraph 1.7.2 Content, and a Waste Diversion Report reference SECTION 01572 CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT and the Fort Hood Environmental Standard Operating Procedures (IMMU-SOP) in Section 01368 SPECIAL PROJECT PROCEDURES FOR FORT HOOD.**

1.6 Army Standard Designs

There are no Army Standard Designs for this project.

2. DESIGN CRITERIA

2.1 Codes, reference documents and criteria referenced within this RFP, although not attached, are an integral part of this RFP. Each offeror is responsible for securing any necessary reference at the Offeror's own expense and resources. Requirements of this RFP may delete, revise, add to, or substitute for criteria contained in the referenced documents and this RFP shall be deemed the controlling authority of any changes to referenced documents and criteria.

2.2 Information provided in the appendices is intended to provide additional design requirements and information.

2.3 Concept Layout Drawings

Concept layout (one-line) drawings are included for design and coordination purposes. Further development of this design will require coordination with the using agency and base personnel. Revisions and refinements to these concept drawings, or any other drawings and plans developed as a result of this proposal, should be expected during the course of design development until final design is achieved.

3. SPECIFICATION INTENT

The intent of these RFP specification sections is to describe the requirements for quality, function, and materials, and types of construction in sufficient detail to enable engineering and design to be completed by the Contractor. In this specification section, each engineering and design discipline describes design intent and outlines the parameters to which the Contractor shall design.

4. COORDINATION

4.1 The Contractor is responsible for the coordination between design, engineering, and construction disciplines in order to fulfill the requirements of this contract and to provide for a complete, integrated and functional design.

4.2 On-Site Design

The Contractor shall provide on-site design staff and perform design preparation on-site to the maximum extent possible to facilitate communications between the using agencies, the Contracting Officer’s Representatives, and the Contractor’s construction forces.

5. SUBMITTALS AND DESIGN REVIEW

Design review and approval under this Contract shall be managed on a fast-track basis. Each design submission must be complete and legible to facilitate review and approval. Design points of contact and locations for document delivery will be established at the pre-construction meeting. See Section 01012 DESIGN AFTER AWARD.

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Shop Drawings

Shop drawings shall be provided with design submissions for simultaneous review with the proposed design.

SD-03 Product Data

Product Data

Product data to help describe facilities, systems, and equipment shall be provided with design submissions.

SD-04 Samples

SID and CID; G

SID and CID submittals, as described in this Section and in Section 01016 DESIGN DOCUMENT REQUIREMENTS, and including but not limited to color/finish sample boards, shall be part of the design submissions.

SD-05 Design Data

Design Data

Submit all design calculations, mix designs, analyses, surveys, and geotechnical reports as developed during design to the Central Texas Area Office. Provide design calculations signed and stamped by a registered structural or geotechnical engineer as appropriate demonstrating that foundations provided for each building will meet the requirements of the Contract. **(AM#9) See Sections 01012 DESIGN AFTER AWARD and 01016 DESIGN DOCUMENT REQUIREMENTS for additional requirements.**

SD-06 Test Reports

Test Reports

Submit all test reports applicable to the project to the Central Texas Area Office.

SD-07 Certificates

Certificates
(AM #0002) Buy American Act Certification
Asbestos-Free Construction Material **(AM #0002) (listed in paragraph Asbestos Construction Materials)**
Builders Hardware and Keying Schedules
(AM #0002) Low-Emitting and Non-hazardous Construction Materials (see paragraph Low-Emitting and Non-hazardous Construction Materials)

Submit all certifications applicable to the project. Provide a letter of certification signed and stamped by a registered structural engineer indicating that each individual building meets the structural provisions of the criteria specified in this Contract.

SD-09 Manufacturer's Field Reports

Field Reports

Submit all field reports applicable to the project to the Central Texas Area Office.

SD-10 Operation and Maintenance Data

Operation and Maintenance Data

Submit operation and maintenance data for all appliances and equipment. Assemble in separate binders by building number (i.e. one binder for all barracks is acceptable if appliances and equipment are the same for all barracks).

6. CONSTRUCTION ELEMENTS AND PRODUCTS

Furnish elements, assemblies, materials, and products that comply with the Contract requirements so that the finished facilities perform as specified. The actual construction shall comply with the specified requirements and may, at the Government's discretion, be examined, inspected, or tested to determine compliance. Furnish submittals during the design phases and during construction as specified below. See Division 1 Sections 01012 DESIGN REQUIREMENTS AFTER AWARD and 01330 CONSTRUCTION SUBMITTAL PROCEDURES for submittal requirements and definitions of "approved" and "accepted" submittals.

Materials, products, and assemblies shall conform to the Contract Specifications. Select in accordance with the following:

a. Where a product is specified only by a manufacturer name and model number/brand name, select in accordance with the Contract Clause 52.236-5 MATERIAL AND WORKMANSHIP. If the Buy American Act is specifically exempted for this product, use only that model/brand product.

b. Where the properties of a product are specified by description and/or with performance criteria, use products that comply with the description and/or performance criteria.

c. Where multiple manufacturers are listed for a particular product, use a product made by one of those manufacturers or any other manufacturer in accordance with the Contract Clause 52.236-5 MATERIAL AND WORKMANSHIP.

d. Where assemblies, products, types of products, or performance criteria are not specified, use products and assemblies that will perform well within the specified life span of the building. Furnish manufacturers' product literature, shop drawings, test reports, and/or certifications as required to verify the products meet Contract requirements.

e. Buy American Act: Furnish a separate certificate of compliance attesting that builders' hardware items and other products conform to the Section 00700 Contract clauses pertaining to the Buy American Act.

f. Gypsum Board Products: Submit certification that gypsum board products, such as gypsum wallboard, gypsum backing board, cementitious backer units, and joint treating materials do not contain asbestos.

g. Submit Certificates of Proof on construction products, such as sealants and joint compounds, are free of asbestos-containing materials.

h. Builders' Hardware:

(1) All hardware, including hinges, closers, locksets, exit devices, door hold open devices, and door stops, shall be grade 1 in accordance with the Builders Hardware Manufacturers Association ANSI/BHMA Standards. Pins on the closer arms shall not be removable except with a tool.

(2) Lock Trim: Lock trim shall be cast, forged, or heavy wrought construction of commercial plain design. In addition to meeting the test requirement of BHMA A156.13, knobs, lever handles, roses, and escutcheons shall be 0.050 inch (1.27mm) thick, if unreinforced. If reinforced, the outer shell shall be 0.035 inch (0.89 mm) thick and the combined thickness shall be 0.070 inch (1.78 mm) except that knob shanks shall be 0.060 inch (1.52 mm) thick. Knob diameter shall be 2-1/8 to 2-1/4 inches (54 to 57 mm). Lever handles shall be of plain design with ends returned to no more than 1/2 inch (10 mm) from the door face.

(3) Lock Cylinders and Cores (Mortise, Rim and Bored)

(a) Lock cylinders shall comply with BHMA A156.5. Lock cylinder shall have not less than seven pins.

(b) Locks and cylinders shall have key removable type cores matching the keying system of the existing building.

(c) Disassembly of knob or lockset shall not be required to remove core from lockset.

(d) All locksets, lockable exit devices, and padlocks shall accept the same interchangeable cores.

(e) Provide a master keying system.

(f) Provide a construction master keying system.

(1) Furnish with construction interchangeable cores.

(2) Use the manufacturer's standard construction key system.

(g) Keying: Locks shall be keyed in sets or subsets. Change keys for locks shall be stamped with change number and the inscription "U.S. Property - Do Not Duplicate." The keys shall be furnished to the Contracting Officer arranged in a container in sets or subsets as scheduled.

(1) Keys shall be supplied as follows:

(2) Locks: 5 change keys each lock.

(3) Master keyed sets: 3 keys each set, where required.

(4) Control keys: [6][_] total.

(5) Construction keys: 6 total.

(6) Blank keys: 50 per key blank.

(4) During construction, furnish:

(a) Hardware and Accessories: Manufacturer's descriptive data, technical literature, catalog cuts, and installation instructions. Spare parts data for locksets, exit devices, closers, electric locks, electric strikes, electro-magnetic closer holder release devices, and electric exit devices, after approval of the detail drawings, and not later than 3 months prior to the date of beneficial occupancy. The data shall include a complete list of parts and supplies, with current unit prices and source of supply.

(b) Hardware Schedule: Hardware schedule listing all items to be furnished. The schedule shall include for each item: the quantities; manufacturer's name and catalog numbers; the ANSI number specified, sizes; detail information or catalog cuts; finishes; door and frame size and materials; location and hardware set identification cross-references to drawings; lock trim material thicknesses; lock trim material evaluation test results; corresponding reference standard type number or function number from manufacturer's catalog if not covered by ANSI or BHMA; and list of abbreviations and template numbers.

(c) Keying Schedule: Keying schedule developed in accordance with DHI Keying Systems, after the keying meeting with the user.

(d) Certificates of Compliance: The hardware manufacturer's certificates of compliance stating that the supplied material or hardware item meets specified requirements. Each certificate shall be signed by an official authorized to certify in behalf of the product manufacturer and shall identify quantity and date or dates of shipment or delivery to which the certificates apply. A statement that the proposed hardware items appear in BHMA L & R Directory, BHMA Closer Directory and BHMA Exit Devices Directory directories of certified products may be submitted in lieu of certificates.

7. DESIGN REQUIREMENTS

7.1 General

7.1.1 All work under this Contract shall be designed and constructed in accordance with the criteria contained herein using industry standard materials and efficient practices. The Contractor shall use materials and equipment allowed under the criteria sited in this Contract or acceptable under commercial standard practice where no specific criteria is provided. The building design and the materials selected shall be of high quality, durable, and easily maintained.

7.1.2 The Contractor shall prepare complete construction documents for all work designed as required by the Contract. The Contractor's Designers of Record shall develop construction document technical specifications for all areas of work. See Sections 01012 DESIGN AFTER AWARD and 01016 DESIGN DOCUMENT REQUIREMENTS.

7.1.3 The Contractor shall be responsible for the professional quality, code compliance, technical accuracy, and coordination of all designs, drawings, specifications and other documents or publications upon which the design and construction are based. See Section 01012 DESIGN AFTER AWARD for additional requirements.

8. DESIGN AND TECHNICAL CRITERIA

All designs and construction document drawings and specifications shall be prepared to comply with the Contract Documents. Deviations from the criteria will not be allowed unless prior approval is obtained from the Contracting Officer. All questions or problems encountered by the Contractor in the criteria shall be promptly submitted with recommendations to the Contracting Officer for approval.

8.1 ENGLISH OR METRIC DESIGN

The design shall be developed using English units of measure.

9. BUILDING CODES AND STANDARDS

Make all portions of the project comply with all applicable local, State, and Federal codes and regulations, including those listed below. This list is not intended to be a complete list. The "authority having jurisdiction," as cited in codes, standards, or references will be the Contracting Officer.

9.1 Conflict and Inconsistencies

In the event of conflict and inconsistency between any of the provisions of the various codes, standards, or references, precedence shall be given in the following order:

a) Contract requirements

1) The code, standard, or reference that is listed in the Contract design or performance requirement;

2) When conflict exists between references, the more stringent requirement shall govern;

3) Where a particular design aspect is not covered by any of the codes, standards, or references listed, nor by the requirements specified in the Contract, the Contractor shall be guided by other nationally recognized and accepted codes or standards which do apply;

b) Fort Hood Installation Design Guide and Technical Supplement to the Design Guide for Fort Hood.

c) Southwestern Division's Architectural and Engineering Instructions Manual (AEIM)

d) Technical and Engineering Manuals, Instructions, Letters, Design Guides, Engineer Regulations, Pamphlets, and Bulletins.

e) Industry Standards and Regulations

9.2 Federal Regulatory Requirements

a) Public Law (P.L.) 91-190, National Environmental Policy Act, as amended 1969 (See additional Federal Regulation references in Chapter XII ENVIRONMENTAL DESIGN of COE SWD-AEIM (item H), Volume IV ATTACHMENTS.

b) 29 CFR 1910 Occupational Safety and Health Standards **(AM #0002), 29 CFR 1926 Safety and Health Regulations for Construction, and other references as stated in SECTIONS 13280 ASBESTOS ABATEMENT, 13282 METALS ENCOUNTERED IN PAINT DUST DURING CONSTRUCTION, and 13284 REMOVAL, RECYCLING AND DISPOSAL OF REGULATED MATERIALS.**

c) P.L. 93-205, Endangered Species Act, as amended 1973

d) UFC 3-600-01 Design: Fire Protection Engineering For Facilities

e) U.S. Environmental Protection Agency (EPA), National Pollution Discharge Elimination System (NPDES) Storm Water Construction Permit in accordance with Federal register, Volume 63, Number 128, July 6, 1998.

f) Not Used.

f) P.L. 95-515, National Historic Preservation Act, as amended 1980.

g) P.L. 96-95, Archaeological Resources Protection Act of 1979.

h) Executive Order (E.O.) 11593, Protection and Enhancement of the Cultural Environment.

i) E.O. 11990, Protection of Wetlands.

j) Clean Air Act, as amended 1990.

k) Clean Water Act, as amended 1990.

l) Oil Pollution Act, 1990 and 40 CFR Part 112, Oil Pollution Prevention and Response.

m) 40 CFR Part 82, Protection of Stratospheric Ozone.

n) 42 CFR Part 116, Emergency Planning and Community Right-To-Know

o) Pollution Prevention Act of 1990.

p) Resource Conservation Recovery Act, as amended 1986.

q) DoD Anti-Terrorism/Force Protection Minimum Standards

r) (AM #0002) TI 809-29, Structural Considerations for Metal Roofing (Aug. 98)

s) (AM #0002) TI 809-07, Design of Cold-Formed Load Bearing Steel Systems and Masonry Veneer/Steel Stud Walls (Nov. 98)

t) (AM #0002) TI 809-04, Seismic Design for Buildings (Dec. 98)

u) (AM#2) TI 809-02, Structural Design Criteria for Buildings (Sept. 99)

v) (AM#2) UFC 1-200-01, General Building Requirements (July 02)

w) (AM #0002) UFC 3-310-01, Load Assumptions for Buildings (Aug. 98)

9.3 State of Texas regulatory requirements, **(AM #0002) Texas Commission on Environmental Quality (TCEQ)** ~~Texas Natural Resource Conservation Commission (TNRCC)~~

a) Air emission in accordance with 30 Texas Administrative Code (TAC) 116.111 and 30 TAC 106

b) Underground and Aboveground Storage Tanks per 30 TAC 334

c) Erosion and sedimentation control regulations, see Texas Pollutant Discharge Elimination System (TPDES) **(AM #0002)** ~~Construction~~ Storm Water **(AM #0002) Construction** General Permit TXR 150000 and Section 01421 OUTLINE OF A BASIC STORM WATER POLLUTION PREVENTION PLAN, Volume III SPECIFICATIONS.

d) (AM #0002) Water distribution systems in accordance with 30 TAC 290.44; disinfection of new and repaired water distribution facilities in accordance with 30 TAC 290.44 and 290.46; and customer service inspections in accordance with 30 TAC 290.46 and 290.47.

e) (AM #0002) Design criteria for sewerage systems in accordance with 30 TAC 317, especially 317.2 on sewerage collection systems and 317.3 on lift stations.

9.4 Non-Regulatory Criteria Documents

In addition to specific regulatory requirements, the following documents are also incorporated into the definition of "the code" for the purposes of this project, except for administrative provisions contained therein; where referenced, the role of the code official described in the document will be performed by Government.

a) NFPA 10, Portable Extinguishers

b) NFPA 70, National Electrical Code.

c) NFPA 80, Fire, Doors and Windows

d) NFPA 101, Safety to Life From Fire in Buildings and Structures.

e) ICC 867 ICC International Fire Code.

f) ICC 861 ICC International Building Code.

g) ICC 863 ICC International Plumbing Code.

h) ICC 865 ICC International Mechanical Code.

i) ICC 871 ICC International Fuel Gas Code.

j) Army Regulation (AR) 200-1, Environmental Protection and Enhancement, February 1997.

k) Army Regulation (AR) 200-2.l) Department of Defense, Directive 4120-14, Environmental Pollution Prevention Control and Abatement, August 1977.

l) (AM#2) NFPA 72 National Fire Alarm Code.

m) (AM#2) NFPA 13 Sprinkler Systems.

9.5 (AM#9) Building Envelope and Insulation.

- **Install liner panels on the side walls of maintenance shops to protect the building insulation and to facilitate cleaning.**
- **Provide hidden fastener sidewall panels if possible.**
- **Provide a vapor barrier and insulation barrier around the insulated envelope of the building, including underpinning skirting, if any is required, walls and roof/ceiling. Provide insulation in accordance with manufactured modular building standards, unless required to do otherwise. Without a well constructed vapor barrier there is a tendency to create an environment for growing mold.**
- **Per Texas Administrative Code, Chapter 70, effective 17 May 04: "70.102.(a) Industrialized housing or buildings shall be constructed to meet or exceed the mandatory building code standards and requirements in effect at the time of construction. Industrialized housing and buildings shall be installed in accordance with the mandatory building code standards referenced in paragraph 70.100 and paragraph 70.101. Alterations of industrialized housing and buildings shall be in accordance with the mandatory building code standards referenced in paragraph 70.100 and paragraph 70.101 and paragraph 70.74.**
- **The codes may be found at Texas Department of Licensing and Regulation, P.O. Box 12157, Austin, Texas 78711, (512) 463-6599 or (800) 803-9202 (in Texas). Email address is industrialized.buildings@license.state.tx.us. Internet address is: www.license.tx.us.**

9.6 (AM#9) Building Height and Roof slope.

Building heights and roof slopes shall conform to requirements of Texas Department of Transportation and Texas Department of Licensing and Regulation.

10. GENERAL CONSTRUCTION REQUIREMENTS

10.1 Government-Furnished Government-Installed Equipment (GFGI)

There is no GFGI in this Contract.

10.2 Government-Furnished Contractor Installed Equipment (GFCI)

There is no GFCI in this contract.

11. SITE CONDITIONS AND REQUIREMENTS

Prior to the commencement of construction, the Contractor and Contracting Officer shall inspect and record the existing conditions of the haul routes. The Contractor shall repair damaged haul routes to pre-construction conditions at the completion of construction and at no additional costs to the Government.

11.1 Project Limits

The Contractor shall confine all work to within the project limits identified on the drawings, unless directed otherwise or approved by the Contracting Officer. Locations of project sites and scope of work for each site are shown on the drawings.

11.2 National Environmental Policy Act (NEPA)

In compliance with the NEPA of 1969, as amended, the Environmental Assessment (EA) and Finding of No Significant Impact (FNSI) for the Transformation to Modular Brigades and Constructing Support Facilities at Fort Hood, Texas is available at the following link:

http://www.dpw.hood.army.mil/HTML/PPD/Pnotice.htm

(AM #0002) The Contractor shall verify the requirement of Clean Water Act Section 404 permit for expansion of existing sites and construction of new sites. If a Section 404 permit is required, it shall be obtained from the Regulatory Branch (PER-R), U.S. Army Corps of Engineers. Reference Fort Hood Environmental Compliance Actions Checklist attached to SECTION 01368 SPECIAL PROJECT PROCEDURES FOR FORT HOOD.

11.2.1 Environmental Protection Plan (EPP)

The Contractor shall prepare an EPP to discuss environmental concerns for both construction and operation of the finished facilities. The Contractor shall submit the EPP at the initial design submittals after contract award. The EPP shall be prepared in accordance with requirements stated in SECTION 01355 **(AM #0002) ENVIRONMENTAL PROTECTION and the Fort Hood Environmental Compliance Action Checklist and Environmental Standard Operating Procedures (IMMU SOP) attached to SECTION 01368 SPECIAL PROJECT PROCEDURES FOR FORT HOOD.**

11.2.1.1 Pre-Treatment and Spill Prevention, Control, and Countermeasures (SPCC)

The Contractor shall determine if operation of the finished facilities require pre-treatment system or containment structures. The finished facilities may

require pre-treatment of the industrial (**AM #0002) wastewater discharge (i.e. oil water separator at a vehicle maintenance shop), or provide a design that has zero industrial wastewater discharges as a design preference. Secondary** ~~waste discharge (i.e. oil water separator at a vehicle maintenance shop) and a secondary~~ containment with 110 percent capacity for regulated material storage (**Am #0002) may be required for** ~~in~~ compliance with the SPCC per 40 CFR Part 112.

11.2.1.2 Asbestos-Free Construction Material

The Contractor shall provide certification from manufacture to verify construction materials (i.e. drywall, ceiling tile, floor tile, mastic, insulation materials, sealant, gasket, etc.) do not contain asbestos fibers.

11.2.1.3 Low-Emitting and Non-hazardous Construction Materials

Sealants, glues, mastics, PVC glues shall have a certificate stating that the materials meets the Item 5.C4 Low-Emitting Materials of the Sustainable Project Rating Tool (SPiRiT) requirements, U.S. Army Corp of Engineers. The paint system shall meet requirements stated in guide specification UFGS 09900 PAINTS AND COATINGS for limits on lead. The paint system shall not contain mercury, cadmium, mildewcide and insecticide. Preferential consideration shall be provided for products that meet the SCS-EPP-SP01-01 per guide specification UFGS 09900, paragraph 1.2 SUBMITTAL. Submittal of SSPC QP 1 Certification and MSDS is required. In accordance with the Consumer Product Safety Commission's safety standards, lead content is not to exceed 0.06 percent (600 ppm) by (dry) weight of the material's non-volatile content. Submit MSDS to verify light ballast or transformer do not contain PCB, TCB or DEHP (See SECTION 13284 for definition). Submit MSDS to verify no ozone depleting chemicals in the refrigerants. **(AM #0002) Provide copies of MSDS to Ms. Timi Dutchuk, DPW, Environmental Division's Hazardous Materials Program Manager, telephone 254/287-9718 to ensure that materials brought on post contain only authorized constituents.**

11.3 Regulated Material Management

The Contractor shall manage regulated materials in accordance with SECTION 13280 ASBESTOS ABATEMENT, SECTION 13284 REMOVAL, RECYCLING, AND DISPOSAL OF REGULATED MATERIALS (**AM # 0002), SECTION 13282 METALS ENCOUNTERED IN PAINT DUST DURING CONSTRUCTION, SECTION 01368 SPECIAL PROJECT PROCEDURES FOR FORT HOOD, SECTION 01355 ENVIRONMENTAL PROTECTION**. Reference Regulated Materials Schedule appended herein for estimated quantities based on previous survey data and survey conducted in August. **(AM #0002)** ~~The Contractor shall verify quantities prior to renovation.~~ The Contractor shall submit a 10-day advance notification to Texas Department of Health (TDH) of each renovation structure prior to start work. The Contractor shall coordinate with Fort Hood Environmental and initiate this activity to avoid delay of project schedule. ~~If site demolition is required and asbestos cement (transite) pipes are encountered, the Contractor shall stop work and notify the COR immediately.~~ **(AM #0002) The Contractor shall verify all ACM quantities in each renovated structure, demolition structure and at each demolition site with the COR.** See the (**AM #0002) revised** Appendix REGULATED MATERIALS SCHEDULE.

11.3.1 Safety and Health

The Contractor shall implement safety and health requirements during project execution per SECTION 01525 SAFETY AND OCCUPATIONAL HEALTH REQUIREMENTS and

all submittals in SECTION 01525 SAFETY AND OCCUPATIONAL HEALTH REQUIREMENTS shall be submitted in the initial design submittals after contract award. Worker exposure assessment shall be performed to protect workers, occupants, and environment during renovation of building structures per SECTION(s) 13280 and 13282 for asbestos abatement and paint disturbance.

11.3.1.1 Air Pollution Control System

The Contractor shall determine if brake maintenance service is needed for the vehicle maintenance shop, i.e. a HEPA vacuum filtration system shall be required. If touch-up paint and welding areas are required for the mission of the facility, those areas shall be forced ventilated.

11.3.1.2 Radiation Safety

The Contractor and the sub-contractor are responsible for obtaining clearance from the Radiation Safety Office on any equipment that contains radioactive materials or produces non-ionizing or ionizing radiation. Such equipment typically includes equipment for Soil Density Testing, Lead-Based Paint Analysis (x-ray fluorescent analyzer), etc.

11.4 Management of Excess Materials and Waste

The Contractor shall manage waste as specified in Section(s) 01355 ENVIRONMENTAL PROTECTION, 01368 SPECIAL PROJECT PROCEDURES FOR FORT HOOD, 01572 CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT, 13280 ASBESTOS ABATEMENT, ~~13282 LEAD IN CONSTRUCTION, and 13284 REMOVAL, RECYCLING AND DISPOSAL OF REGULATED MATERIALS~~ **(AM #0002) 13282 METALS ENCOUNTERED IN PAINT DUST DURING CONSTRUCTION, and 13284 REMOVAL, RECYCLING AND DISPOSAL OF REGULATED MATERIALS, and the Fort Hood Environmental Compliance Actions Checklist and Fort Hood Environmental Standard Operating Procedures (IMMU SOP) attached with SECTION 01368 SPECIAL PROJECT PROCEDURES FOR FORT HOOD.**

11.5 Disposal of Waste Materials

See **(AM #0002) paragraph 11.4 “Management of Excess Materials and Waste” above** ~~Section 01355 ENVIRONMENTAL PROTECTION~~.

11.6 Demolition and Removals

The Contractor shall be responsible for furnishing an independent topographic survey of the project sites, all line and grade surveys, and as-built surveys of the construction areas. The Contractor shall survey and stake out the project boundaries before starting work. The drawings provided in the RFP indicate existing conditions and locations of existing utilities. The information shown on the base utility maps is the most recent data. The Contractor shall field verify exact locations of all utility lines prior to performing any excavation operations. The Contractor may utilize the utilities during construction operations and may incorporate the utilities as part of the final project. If existing utilities are determined to be inadequate for construction operations or for incorporation into the final facility, they will be upgraded as part of the construction project. However, if the Contractor elects not to use the existing utilities, they will remain in place. The Contractor shall protect existing lines to remain from damage during excavation and compaction operations. Existing utilities that interfere with this project will be relocated. Underground utilities will be disconnected as specified in paragraph INSTALLATION REQUIREMENTS FOR EXISTING UTILITY DISCONNECTIONS. Ten working days notification to the State of Texas Department of Health for demolition or specific asbestos removal operations may be required.

11.7 Survey

Demolition will include clearing and grubbing, where required, scarifying of existing pavements, where indicated and site utilities, where needed. See specifications 02220 DEMOLITION and 01368 SPECIAL PROJECT PROCEDURES FOR FORT HOOD ~~for additional demolition requirements. Cleared and grubbed material will be disposed of at the Fort Hood landfill~~. **(AM #0002) For management of cleared and grubbed material, also reference Fort Hood Environmental Standard Operating Procedures (IMMU SOP).** All demolition debris shall be removed to the Fort Hood Municipal Solid Waste Landfill located at the intersection of Turkey Run and Clark Roads. Quantity shall be determined by Contractor at pre-bid site visit. All debris resulting from clearing and grubbing operations shall be taken to the on-post landfill unless prior approval has been granted by the DPW to waste material in a soil eroded area near the construction site(s). All waste delivered to the landfill will be inspected by the landfill operating Contractor for materials that are not authorized in the landfill. Trucks that contain unauthorized waste will be diverted for removal of the unauthorized material before being allowed to proceed to the working facility to deposit their load. The Contractor shall obtain permission from Fort Hood's Directorate of Public Works (DPW) to use the Post's landfill. Submit documentation granting permission and a completed landfill permit to the Contracting Officer prior to start of construction. Any concrete or asphalt rubble removed as a result of demolition or site improvements shall be transported and stockpiled ~~at the DPW yard located near the intersection of West Range Road and South Range Road or as directed within a 20 mile radius of the project sites. Refer to Section 01368 SPECIAL PROJECT PROCEDURES FOR FORT HOOD for additional guidance and information.~~ **(AM #0002) per SECTION 01368 SPECIAL PROJECT PROCEDURES FOR FORT HOOD, Fort Hood Environmental Standard Operating Procedures (IMMU SOP) and Environmental Compliance Actions Checklist. The stockpile location is within a 20-mile radius of the project sites.**

11.8 (AM #0002) Remediation of pipe insulation with mold contamination

The insulation on the chilled water pipes in basements where there is signs of mold contamination shall be removed and replaced. The Contractor shall use a glove bag method to remove the insulation. Removal shall be at least 2 inches beyond any visible contamination. Once removed the gloved bagged material can be disposed of with regular construction debris.

12. **(AM #0002) STORM WATER POLLUTION PREVENTION PLAN** ~~- SITE DESIGN AND CONSTRUCTION~~

(AM #0002) The Contractor shall prepare and submit Storm water Pollution Prevention Plan in accordance with all requirements of TPDES General Permit No. TXR 150000. The Contractor shall be responsible for preparing, signing, and submitting the Notice of Intent and Notice of Termination documents to the State of Texas, and to the DPW Environmental Division. ~~The Contractor shall prepare and submit an erosion control plan and obtain the erosion control permit. The Contractor shall be responsible for preparing, signing, and submitting the Notice of Intent and Notice of Termination documents to the State of Texas.~~

12.1 Storm Water Pollution Prevention

12.1.1 General

A Storm Water Pollution Prevention Plan (SWPPP) shall be submitted in the initial design submittals after contract award. The SWPPP shall be in compliance with the Texas Pollutant Discharge Elimination System (TPDES) **(AM 0002) General Permit** TXR No. 150000. Prepare SWPPP as specified in SECTION 01421 BASIC STORM WATER POLLUTION PREVENTION PLAN. One SWPPP shall cover all sites that require SWPPP (reference TXR 150000 for requirement) and provide separate description for each site that needs a SWPPP. To minimize the review and Contractor resubmittal process, the Contractor shall comply with all requirements stated in PART(s) 11 and 12 of SECTION 01421 **(AM #0002) and SWPPP should also clearly state who is the operator with operational control over plans and specifications and who is the operator with day-to-day operational control. The SWPPP should also identify the parties responsible for implementation of the best management practices or the erosion and sediment controls described in the plan**. The approved plan and items discussed in PART(s)11 & 12 shall be on-site at all times for inspection by the Texas Commission on Environmental Quality (TCEQ) and installation Environmental office. All activities in SECTION 01421 BASIC STORM WATER POLLUTION PREVENTION PLAN and the approved Contractor SWPPP shall be implemented. The Contractor shall control erosion and sedimentation during construction at all sites, **(AM #0002)** ~~irregardless of the whether the site will require a SWPPP (~~reference SECTION 01355 ENVIRONMENTAL PROTECTION. Sedimentation of adjacent sites or downstream ditches will not be permitted.

12.1.2 Notice Of Intent (NOI) and Notice Of Termination (NOT) Documents

The Contractor shall have knowledge of the large and small construction activity prior to submittal of NOI and NOT (reference TXR 150000 for definition and requirement for each site). The Contractor and Government shall separately submit a NOI to the Texas Commission on Environmental Quality (TCEQ). There is a 48-hour waiting period prior to site disturbance. The Contractor shall have an approved SWPPP prior to submit the NOI. The

Contractor shall comply with PART 11 of SECTION 01421 prior to disturb any site. **(AM #0002) TCEQ may require a separate NOI and NOT for each site.**

12.1.3 Erosion and Sediment Control

(AM #0002) The Contractor shall be responsible to design erosion and sediment control features, such as control structures described in SECTION 01421 and if attainable, a detention pond to retain sediment on site and to minimize erosion downstream of the site. Erosion controls are preferred to sediment controls because they minimize or prevent the movement of sediment, reducing maintenance requirements and the likelihood that excessive pollutants in the construction site runoff. If it is necessary to use a temporary containment structure, it can become a permanent storm water management feature, depending on site-specific storm runoff issues at the finished site. Per TXR 15000, temporary sediment basin are required when feasible for common drainage locations that serve an area with 10 or more acres disturbed at one time. The basin shall provide storage for a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained. The storm runoff calculation shall be in accordance with paragraph SITE DESIGN AND CONSTRUCTION.

~~The Contractor shall be responsible to design erosion and sediment control features, i.e. detention pond to retain the increase runoff and sediment from the site and to minimize erosion downstream of the site. The temporary containment structure shall receive the final grade and become the permanent storm water management feature for the storm runoff at the finished site. Per TPDES TXR No.15000, the temporary (or permanent) sediment basin are required when feasible for common drainage locations that serve an area with 10 or more acres disturbed at one time, the basin provides storage for a calculated volume of runoff from a 2-year, 24-hour storm from each disturbed acre drained. The storm runoff calculation shall be in accordance with the applicable Storm drainage USACE Technical Manual.~~

13. SITE DESIGN AND CONSTRUCTION

13.1 References

The site design for the support facilities shall comply with the requirements of the applicable parts of the following references:

CESWD Architectural and Engineering Instruction Manual (CESWD-AEIM)

Uniform Federal Accessibility Standards, Federal Register (UFAS)

Americans with Disabilities Act Guidelines (ADA)

TM 5-803-5, Installation Design

TM 5-803-14, Site Planning and Design

TM 5-813-5, Water Supply, Water Distribution Systems

TM 5-814-1, Sanitary and Industrial Wastewater Collection- Gravity Sewers and Appurtenances

TM 5-814-2, Sanitary and Industrial Wastewater Collection- Pumping Stations and Force Mains

TM 5-820-4, Drainage for Areas Other Than Airfields

TM 5-822-2, General Provisions and Geometric Design for Roads, Streets, Walks, and Open Storage Areas

TM 5-822-5, Pavement Design for Roads, Streets, Walks, and Open Storage Areas

TM 5-848-1, Gas Distribution

DG 1110-3-204, Design Guide for Army and Air Force Airfields, Pavements, Railroads, Storm Drainage, and Earthwork

(AM#2) ~~MIL-HDBK-1008A, Fire Protection for Facilities~~

(AM#2) UFC 3-600-1, Fire Protection Engineering for Facilities

(AM#2) UFC 3-420-01FA, Plumbing

MIL-HDBK-1190, Facility Planning and Design Guide

HQUSACE Architectural and Engineering Instructions- Design Criteria (USACE AEI)

UFC 4-010-01, October 2003, DOD Minimum Antiterrorism Standards for Buildings

(AM #0002) UFC 3-260-01, Airfield and Heliport Planning and Design

Fort Hood Installation Design Guide and the Technical Supplement

Site design shall be in accordance with the Fort Hood Installation Design Guide and Technical Supplement, as well as the references listed above. The construction limits shown on the drawings are approximate. The Contractor shall coordinate exact limits with the Contracting Officer.

13.2 Site Specifications

Army Corps of Engineers guide specifications shall be used by the designer for design and construction. The following site related guide specifications shall be edited, as required for the design and construction of the support facilities required for this project:

02220	DEMOLITION
02230	CLEARING AND GRUBBING
02300	EARTHWORK
02315	EXCAVATION, FILLING AND BACKIFLLING FOR BUILDINGS
02316	EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS
02510	WATER DISTRIBUTION SYSTEM
02531	SANITARY SEWERS
02556	GAS DISTRIBUTION SYSTEM
02570	VALVE PITS AND PIPING AND EQUIPMENT IN VALVE PITS
02630	STORM-DRAINAGE SYSTEM
02713A	BITUMINOUS BASE COURSE
02722	AGGREGATE AND/OR GRADED-CRUSHED AGGREGATE BASE COURSE
02741A	HOT-MIX ASPHALT (HMA) FOR ROADS
02748	BITUMINIOUS TACK AND PRIME COATS
02770	CONCRETE SIDEWALKS AND CURBS AND GUTTERS

13.3 Erosion Control Plan

(AM #0002) A Storm Water Pollution Prevention Plan is required. See paragraphs "Storm Water Pollution Prevention" and "Erosion and Sediment Control."

~~A Storm water Pollution Prevention Plan is required. Silt fences, hay bale barriers and other storm water controls are required to prevent the movement of silt and other construction debris from the construction sites. The Contractor shall be responsible for preparing and submitting an erosion control plan. The Contractor shall be responsible for preparing, signing and submitting Notice of Intent and Notice of Termination documents to the State of Texas.~~

13.4 Site Constraints

13.4.1 The new project storm water system shall not impact the surrounding sites. Construction shall not impact the existing drainage system adjacent to the site.

13.4.2 Force Protection Setback Requirements

Buildings and parking areas shall be located on the site in accordance with the Unified Facilities Criteria, DOD Minimum Antiterrorism Standards for Buildings, UFC-4-010-01 (Oct 2003) **(AM #0002) per Appendices B GEOTECHNICAL REPORT and C FORT HOOD INSTALLATION DESIGN GUIDE** ~~for Expeditionary and Temporary Structures~~ and Security of Unclassified Army Property (Sensitive and Nonsensitive) AR 190-51. All mechanical and electrical equipment shall be located outside the unobstructed space.

13.5 Traffic Control

If new construction affects the flow of traffic, a Traffic Safety Plan using recommendations of Section VI of the Uniform Traffic Control Devices Manual (UTCDM) shall be followed. In addition to the UTCDM the Contractor must maintain 50% of traffic capacity at all times.

13.6 Contractor's Storage and Staging Area

The Contractor's Storage and Staging Area will be located **(AM #0002) at each site. The specific location of staging and storage areas will be coordinated with the Contracting Officer** ~~east of the parking area of Building 4622 (Army Corps of Engineers Central Texas Area Office) located on Engineer Drive, unless directed otherwise by the Contracting Officer~~. The Contractor shall construct a temporary 6-foot high chain link fence around trailers and materials. Visibility through the fence shall be obstructed by cloth fabric attached to the fence fabric or by a method approved by the Contracting Officer. Trailers, materials, or equipment shall not be placed or stored outside the fenced area unless such trailers, materials, or equipment are assigned a separate and distinct storage area by the Contracting Officer away from the vicinity of the construction site but within the military boundaries. Trailers, equipment, or materials shall not be open to public view with the exception of those items which are in support of ongoing work on any given day. Materials shall not be stockpiled outside the fence in preparation for the next day's work. Mobile equipment, such as tractors,

wheeled lifting equipment, cranes, trucks, and like equipment, shall be parked within the fenced area at the end of each work day.

13.7 Construction Haul Route

The construction entrance will be off of Clarke Road north to Tank Destroyer Road. The specific haul routes for each of the site locations will be determined by the Contracting Officer at the Pre-construction conference.

14. DESIGN REQUIREMENTS FOR SITE CONSTRUCTION, UPGRADES AND REPAIRS

14.1 Pavement Upgrades and Repairs

Flexible pavement design and construction details shall be in accordance with TM 5-822-5 and CESWD-AEIM. Refer to the Appendix Government Geotechnical Report (Preliminary), for pavement sections and pavement material requirements.

14.2 Curb and Gutters

Provide curb and gutters at hardstands, where needed to control erosion from drainage. Curb and gutter shall be a 6-inch concrete curb and gutter 2 feet wide. All gradients shall provide positive drainage (no ponding). Curb cuts and concrete flumes shall be provided as necessary for pavement drainage. Riprap shall be provided from the edge of the concrete to drainage ditch bottom as required for erosion control purposes.

14.3 Fencing

As soon as practicable, but not later than 15 days after the date established for commencement of work, the Contractor shall furnish and erect temporary project safety fencing at the work sites. The Contractor must completely enclose construction areas and buildings to be demolished with chain link security fencing. The fence shall be 6 feet with three strands of barbed wire for a total of 7 feet. The safety fencing shall be 9 gage chain link fencing, supported and tightly secured to steel posts located on maximum 10 foot centers, constructed at the approved locations. Do not include a top pipe rail. Chain link fence fabric shall be tied on the secure side of the fence using wire ties not clips. The safety fencing shall be maintained by the Contractor during the life of the contract and, upon completion and acceptance of the work, shall become the property of the Contractor and shall be removed from the work sites. **(AM#2)** ~~See paragraph 5.5 for additional fencing requirements.~~

TEMPORARY HAZARD SAFETY FENCING: The Contractor shall furnish and erect safety fencing at temporary hazards and work site areas considered to be hazardous to the public. The safety fencing shall be a high visibility orange colored, high density polyethylene grid or approved equal, a minimum of 42 inches high, supported and tightly secured to steel posts located on maximum 10 foot centers, constructed at the approved locations. The safety fencing shall be maintained by the Contractor during the life of the hazard and, upon completion and acceptance of the work, shall become the property of the Contractor and shall be removed from the work site.

14.4 Handicap Access

Ramps and sidewalks shall be provided for handicapped (HC) access to the to the applicable facilities. The number of designated parking spaces for the

physically disabled shall be two spaces per facility and shall be designed in accordance with the Uniform Federal Accessibility Standards for ADA facilities. ~~Concrete sidewalks shall consist of 4" reinforced concrete on top of a 4" sand cushion. The sand cushion shall be compacted by two passes of a vibratory plate compactor. Minimum walk width shall be 6 feet. Sidewalks shall be reinforced with 6" X 6"- W3 X W3 welded wire mesh.~~

(AM#2) 14.5 Side Walks

Concrete sidewalks shall consist of 4" reinforced concrete on top of a 4" sand cushion. The sand cushion shall be compacted by two passes of a vibratory plate compactor. Minimum walk width shall be 6 feet. Sidewalks shall be reinforced with 6" X 6"- W3 X W3 welded wire mesh.

Contraction joints shall be spaced at the width of the sidewalk on centers and expansion joints shall be placed at 40 feet on center and at the intersection of walks and curbs. Provide centerline contraction joints in walks wider than 8 feet, spaced at 6 feet maximum.

(AM #0002) 14.6 Bollards

Modular facilities shall be protected by bollards where collision hazards may exist. Provide steel bollards at maintenance bay doors, at fire hydrants, at POL storage tanks, and at any other locations where frequent vehicle access/egress increases the risk of damage by vehicle impact.

(AM #0002) 14.7 Building Orientation

Laundry and day room facilities should be centrally located to the barracks facilities. Arms rooms shall be sited in the vicinity of the Company Operations Facilities. Dumpsters shall be located behind facilities where possible. One dumpster pad shall be provided per 100 soldiers in the barracks complexes. Provide one dumpster at each of the maintenance shops, classroom, administration and unit storage facilities.

15. BORROW

Borrow material shall be selected to meet the requirements and conditions of the particular fill or embankment for which it is to be used. Borrow material shall be obtained from borrow areas **(AM #0002) designated by the Installation. Borrow material shall initially be obtained from the IMMU per SECTION 01368 SPECIAL PROJECT PROCEDURES FOR FORT HOOD. If sufficient material is not available from IMMU, or other on-post locations, obtain material from** ~~located~~ off Government Controlled property and within 10 miles of the project site(s) and at the responsibility of the Contractor. Necessary clearing, grubbing, and satisfactory drainage of borrow pits and the disposal of debris thereon shall be considered related operations to the borrow excavation. Borrow pits shall be neatly trimmed and drained after the excavation is completed. Borrow materials shall be free of any contaminants.

16. UTILITY LAYOUT AND DESIGN

Coordination of all site work on the project, including utility work, is the responsibility of the Contractor. It is the Contractor's responsibility to confirm the specific locations of the existing utilities and to design and construct new utility services for the new buildings. All utilities necessary

to service the new facilities are readily available within or along the perimeter of the project sites. Flow data for gas and water utilities in the area can be obtained from the Installation's DPW office and Fire Department. Electronic copies of the base utility maps for the project area will be furnished with the advertisement package. The Contractor shall provide a minimum of 1 week notice to the Installation's DPW office of any planned utility outages. The new facilities will be all electric except at the unit storage facility, where gas will be provided. See paragraph SITE ELECTRICAL DESIGN for site electrical requirements.

All utilities, including electrical service, telephone and cable TV, shall be installed underground. New underground utility lines, including appurtenant structures such as valve boxes, manholes, vaults, etc. shall not be located under pavements, road shoulders or drainage ditches to the maximum extent practicable. Unless otherwise approved by the Contracting Officer, placing utilities and culverts under existing roads shall be by jack and bore construction. Excavation of trenches, installation of lines and backfilling for utilities shall be in accordance with earthwork and grading requirements and conform to standard military construction practices. The bedding surface of the new pipe shall provide a firm foundation of uniform density throughout the entire length of the pipe. All gravity flow lines of more than one manhole shall be profiled. Sections shall be provided for all culverts.

The Contractor shall obtain digging permits directly from the Fort Hood Post DPW before any drilling, digging or excavation is undertaken. Provide a completed form FHT 420-X10, Coordination for Land Excavation, to the DPW, Building 4612, Fort Hood, Texas for each permit required. The Contractor shall allow 24 hours for Government review of digging permit request. The Contractor shall apply immediately after contract award for the digging permit. Digging and/or excavation shall not start until approval of digging permit has been received. Permits will identify all underground utilities within 5 feet of the designated area. The Contractor is responsible for all repairs, costs and damages due to excavation without a permit or for damaging an identified utility. Unidentified utilities shall be repaired by the Contractor at Government expense.

16.1 Backflow prevention valves, post indicator valves, transformers, electric switches, telephone/cable boxes, manholes, irrigation pumps and controllers, etc. shall be located in locations not immediately apparent to the facility users or personnel passing by the site.

16.2 Marking Of Utility Lines

Utility lines shall be marked with plastic marking tape in accordance with the applicable paragraphs of specification sections 02510, 02531 and 02556.

16.2.1 Tracer Wire

In addition to the plastic marking tape, tracer wire shall also be provided for all new underground utilities, except sanitary sewer, in accordance with the applicable specification sections. Tracer wire shall be subject to approval by the Contracting Officer and shall be tested and proved continuous prior to final inspection.

16.3 Installation Requirements for Existing Utility Disconnections

16.3.1 References:

a. The National Standard Plumbing Code

b. NSPC Standard

c. **(AM #0002) TCEQ, 30 TAC 290 (Water); 30 TAC 317 (Sewer)** ~~TNRCC, 30 TAC 290 (Water)~~

d. TXDOT Standards for Natural Gas

16.3.2 Water Line Disconnections

Existing water service lines, associated with older buildings to demolished and other construction where required, shall be physically separated from, and capped or plugged at the water supply main at the first threaded connection closest to the main. Where the supply from the main feeds more than one building, and those remaining buildings will have continued water service, the Contractor shall physically separate, and cap or plug the water supply for the demolished building at the tee branch. Where demolished buildings have separate fire lines (typically 4"-8" diameters) for fire protection, the Contractor shall physically separate the fire line from the source main, between the operating valve and the main, and cap or plug the service lead as close as possible to the main. In all cases, if the materials of previous construction included leaded joint tees as the point of connection from the water main to the lines to be abandoned, the Contractor shall physically remove the main line tee and replace the portion of the main which was affected. **AM #0002 The water line "stub" shall be no longer than three feet from the active water main wherever possible and practicable. Exceptions to this requirement shall obtain approval from the Installation DPW Maintenance Division.** All valves and valve boxes associated with the utility lines to be abandoned shall be removed from the site and shall not be buried in place, unless there are other buildings that are affected by the same service line tap.

16.3.2.1 Replacement of Spoil Materials At Utility Excavations

Existing lines that are to remain in service and which are exposed during excavation shall have sand tamped in place around and under those utilities, and be brought to a height of at least 1 foot above the affected line. Changes to remaining utilities will be identified accurately by the Contractor and provided to the Contracting Officer for updates to base utility maps. **(AM #0002)** ~~Contractor shall sanitize/disinfect new materials that have to be installed to meet the above requirements. The Contractor shall provide Customer Service Inspection and include the required forms.~~

(AM #0002) 16.3.2.2 Potable Water System Disinfection and Inspection Procedures

The Contractor shall sanitize/disinfect in accordance with TCEQ standards for the new or repaired water distribution piping installed to meet the above requirements, or existing water distribution piping where the integrity of the system was compromised. Records of all disinfection procedures and bacteriological sampling results shall be maintained by the Contractor and copies of these documents shall be provided to the COR, and the Installation DPW Environmental Division no later than one week after the work is performed or sample results are obtained. New water mains shall be thoroughly disinfected in accordance with AWWA Standard C651 and then flushed and sampled before being placed in service. The Contractor shall provide a Customer Service Inspection where needed and submit the original Customer Service Inspection form to the DPW Environmental Division.

16.3.3 Sanitary Sewer Line Disconnections

Existing lateral sewer lines from the demolished buildings (typically 3″-8″ diameters) shall be physically separated from the sewer collection system at the closest point to the receiving manhole, or branch wye if the lateral receives effluent from additional buildings that are to remain in service. The Contractor shall permanently cap or install a concrete plug or other Contracting Officer approved device permanently affixed to the remaining portion of the active sewer line that will prevent groundwater influence. All cleanouts and similar above ground fittings associated with sewer lines to be abandoned shall be physically separated from the lateral line at the fitting (wye) below grade and removed from the site.

16.3.4 Natural Gas Line Disconnections

Natural gas service lines shall be capped as near as possible to the source of supply and are typically either Polyethylene (PE) or steel. The Contractor shall heat fuse a PE cap in accordance with pipe manufacturer’s recommendations or install a threaded plug or cap of approved material for steel lines as close to the tee as possible. The building riser shall be physically separated below grade at the depth of the service line and removed from the site(s). The abandoned service line shall be filled with water and each end shall be permanently capped or plugged, if the abandoned service line is not physically removed in its entirety from the original service line ditch. All associated service valves and valve boxes shall be physically removed from the site.

17. PERMITS

The Contractor shall determine permit requirements as part of the design process and shall secure all permits necessary for this construction. Also see paragraphs DEMOLITION AND REMOVALS and UTILITY LAYOUT AND DESIGN and Section 01368 SPECIAL PROJECT PROCEDURES FOR FORT HOOD, for additional permitting information.

18. STORM DRAINAGE

18.1 Site Storm Drainage System

The site storm drainage system, if required shall be designed for a 10-year return storm frequency. No ponding shall occur for the 10-year event. Storm

drainage system design shall be checked for a 100-year return event to insure no flooding or adverse impacts occur downstream. Storm drainage design shall be in accordance with TM-5-820-4. The storm drain collection system may consist of grassed ditches, gravel ditches, retention/detention ponds, grassed swales, concrete inlet drop or curb inlets, concrete headwall and pipe systems. Minimum capacity of the storm water system shall be for pre-development storm water runoff equal to post-development storm water runoff. The proposed system shall tie to the existing grassed ditches or pipe systems. The minimum pipe size for an open pipe system shall be 18 inches and 15 inches for a closed system.

18.2 Storm Drainage Pipe

18.2.1 Culverts shall be reinforced concrete pipe, Type III or IV and a minimum of 24 inches in diameter. Pipe joints shall be water tight with gaskets.

18.2.2 Fully coated, fully paved corrugated metal pipe is allowed within the site boundaries of the temporary facilities, except in the vehicle maintenance complex site.

18.2.3 Reinforced concrete pipe, type III shall be used in the vehicle maintenance complex site.

19. WATER DISTRIBUTION

19.1 The Contractor is required to design and construct the new water distribution utility service to the new facilities, where applicable. Water service shall be designed and constructed in accordance with TM 5-813-5 **(AM #0002) and the 30 TAC 290, whichever is the more stringent**. Minimum earth cover for the new utility lines will not be less than 27 inches, except for fire water supply lines where the minimum cover shall be 30 inches.

19.2 The Government anticipates that the Contractor will connect the new water laterals to the existing water distribution system and that sufficient pressure and quantity will be available for domestic and fire protection use. The design of the water distribution mains and service lines shall provide adequate quantity at sufficient pressure for domestic use and fire protection use. The Contractor shall determine minimum pressures in accordance with applicable plumbing and fire protection criteria.

19.3 The mains shall be designed and installed in accordance with NFPA 24 and applicable AWWA standards. Use C-900 pipe for water lines to avoid requirement for cathodic protection. Water mains shall follow existing streets or utility corridors. The design shall limit installation beneath pavements, where feasible.

19.4 Design of the service lines shall be in accordance with the National Plumbing Code and applicable AWWA standards. A curb stop or valve shall be installed near the point of connection to the main. Water service lines shall be equipped with suitable meters. Metering of fire service lines is not required. Provide isolation valves at underground tees of crosses. Valve boxes shall be at least 6 inches or larger.

19.5 Water Supply for Fire Protection

New buildings will be sprinklered, where applicable, in accordance with the applicable codes, standards and regulations. Refer to paragraph FIRE PROTECTION for additional fire protection requirements.

19.5.1 Interior and outside fire protection shall be designed in accordance with UFC 3-600-01, Fire Protection Engineering for Facilities.

19.5.2 The Contractor shall provide the required water flow and pressure for the interior and outside (hose stream) demand.

19.5.3 The fire sprinkler supply line shall include a post indicator valve (PIV) with a tamper switch wired to the building fire alarm panel and a double check valve assembly backflow prevention device equipped with a flow detection meter. The backflow prevention device is located in the building. If the PIV is located in a concrete paved area, show an electrical conduit routed under the pavement.

19.5.4 Fire hydrants shall be located in accordance with UFC 3-600-01 and shall have a 6″ shutoff valve for each hydrant. Fire hydrants shall have a 6″ bell connection, two 2 ½″ hose connections and one 4 ½″ pumper connection. All hydrants shall be installed with a 6" gate valve for isolation. Provide at least two bollards around each hydrant subject to damage from vehicular traffic. Bollards will be located on the traffic side of the hydrant and spaced 2′-3′ apart.

20. SANITARY SEWER

The Contractor is required to design and construct the new sewer service lines to support the new facilities, where applicable. The Contractor shall construct the new utilities in accordance with the requirements of **AM #0002 30 TAC 317 and** TM 5-814-1. The wastewater design should attempt to service the areas by gravity only, where feasible. The use of lift stations should be kept to a minimum. If lift stations are required, provide a packaged unit assembled of coated metals that do not easily corrode **AM #0002, they shall be in compliance with all applicable provisions of 30 TAC 317.2**. Provide an audible and visible alarm in case of a malfunction. Ensure that the location of the lift station is accessible for servicing. Minimum sewer main shall be 8 inches in diameter with a minimum of 6 inches for building sewer connections. Use SDR-26 PVC pipe for sewer piping to avoid the cathodic protection requirement. All sewer lines beneath buildings shall be SDR-26 PVC in lieu of cast iron. A tracer wire is not required for sewer pipe systems. Provide two way cleanouts at the building connection. See paragraph PLUMBING DESIGN REQUIREMENTS for additional information.

21. GAS DISTRIBUTION

The Contractor is required to design and construct the new gas distribution and service lines to support the new facilities, where applicable. The Contractor shall construct these utilities in accordance with the requirements of TM 5-848-1. DPW will determine whether or not the distribution pressure gas service is sufficient to serve the proposed construction. DPW will also indicate the location for the service tap. Gas distribution lines will be metered and regulated in accordance with applicable codes and regulations. Provide anodeless risers to regulators. Lines to regulators shall not be less than 1 inch. Use PE piping in lieu of ferrous metal underground piping. Provide poly valves in lieu of metal for underground valves. Limit gas valves to 8 inches. Ensure valve boxes are at least 6 inches or larger. All buildings shall be metered. The meter shall have a valved bypass. Provide ¾″

plugged taps on each side of the pressure regulator. See paragraph HEATING, VENTILATING, AND AIR CONDITIONING REQUIREMENTS for additional information.

22. SITE GRADING

22.1 **AM #0002 The finish floor elevations of the new facilities shall be a minimum of 1 foot above finished grade. Arms vault finished floor shall be a minimum of 6 inches above finished grades. Finished floors for the vehicle maintenance buildings shall be 8" above finished grade and 1" above vehicle bay door entrance pavement.** ~~The finish floor elevations of the Unit Storage Facility and the Battalion Classroom (Option 1) shall be a minimum of 1 foot above finished grade.~~ Finished grades shall provide positive drainage of 5% away from the building for a minimum distance of 10 feet. Minimum finish grades do not apply to drainage swales and ditches. Swales and ditches shall have a desired minimum of 0.5% at the flow line, with an absolute minimum slope of 0.3%.

23. FOUNDATION AND GEOTECHNICAL DESIGN

Refer to the Government Geotechnical Report (Preliminary), included as Appendix A, for the minimum geotechnical requirements for design and construction of project foundation and pavement features.

24. LANDSCAPE DESIGN

AM #0002 Landscaping is not required. Turfing or seeding shall be required for disturbed sites where paving is not provided. See Section 01421 BASIC STORM WATER POLLUTION PREVENTION PLAN. ~~Turfing and landscaping is not required.~~

25. IRRIGATION SYSTEM

Irrigation system is not required.

26. ARCHITECTURAL DESIGN REQUIREMENTS

26.1 GENERAL

(AM #0002)

a. All facilities shall include stairs or ramps and entry landings at all entrances to meet applicable codes.

b. All facilities with crawl space shall have skirting. All janitor closets shall have mop sink, mop rack, 6 lineral feet of storage shelving and floor space for storage of janitorial equipment.

c. See electrical requirements for communications room/SIPRNET communication room requirements.

26.2 Functional Layout

Functional requirements are described in the Facility Functional Requirements documents. Arrange spaces in an efficient manner with simple circulation.

26.3 Room Sizes

Room sizes shown in Facility Functional Requirements documents, **(AM #0002) including Appendix K (AM #0005)** ~~**RELOCATABLE**~~ **FACILITIES FUNCTIONAL REQUIREMENTS and the drawings,** are minimum clear space. Minor adjustments to room sizes may be acceptable if furnishing and functioning of the rooms are unaffected, **(AM #0002) except barracks bedroom and closet shall not be less than the minimum stated area**. Ceilings at occupied areas shall be minimum 8 feet-0 inches.

26.4 Handicapped Accessibility

Facilities shall be handicapped accessible **(AM #0002) when required in Appendix K (AM #0005)** ~~**RELOCATABLE**~~ **FACILITIES FUNCTIONAL REQUIREMENTS** ~~unless otherwise exempted~~ **(AM #0005) or the drawings**.

26.5 Finishes

Exterior and interior finishes shall be the manufacturer's standard commercial-grade products and standard colors except where noted otherwise or specified in the UFGS guide specifications. Facilities of the same type grouped on the same site shall have the same exterior finishes and colors. Preferred exterior wall color is beige. Floor finish in bathrooms, restrooms, janitor closets, shower/locker rooms, and all other wet areas shall be seamless resilient flooring **(AM #0002)** ~~or ceramic tile~~. Suspended acoustic tile ceiling is not permitted for **(AM #0002) wet areas,** barracks bedrooms, and closets.

26.6 Doors And Windows

All exterior glazing shall be 1/4-inch laminated glass consisting of two 1/8-inch thick glass panes bonded together with a minimum 0.030-inch thick PVB interlayer. For insulating glass units, the inner pane shall be laminated glass as described above. Glazed door and window frames shall resist an equivalent static design load of 1 lb per square inch applied to surface of glazing and frame with frame deformation not exceeding 1/60 of the unsupported member lengths. Steel members may be designed using ultimate yield stresses and aluminum members may be designed based on a 0.2 percent offset yield strength. Glazing shall have a minimum frame bite of 1 inch. Door/window frame connections to building, hardware and associated connections and glazing stop connections shall resist equivalent static design load of 10.8 psi for glazing panels with vision area less than or equal to 10.8 square feet and 4.4 psi for glazing panels with vision area greater than 10.8 square feet and less than 32 square feet. Loads shall be applied to the surface of the glazing and the frame. Connections and hardware may be designed based on ultimate strength for steel and 0.2 percent offset yield strength for aluminum. All exterior doors must swing out. Exterior doors shall be insulated hollow metal. Exterior entry doors shall be SDI Level 3. Except at vaults, interior doors shall be solid core. Windows shall be energy efficient with double pane insulating glass units. Each sleeping room shall have an operable window. Operable windows at administrative offices are preferred. All windows shall have mini-blinds. All operable windows shall have insect screens and locks.

26.7 Door Hardware

Doors shall have minimum three Grade 1 hinges per leaf. Locksets at exterior doors, living unit entry doors, and individual sleeping room doors shall be grade 1, with deadlock feature. All exterior outswinging doors shall have non-removable hinge pins. See paragraph CONSTRUCTION ELEMENTS AND PRODUCTS.

26.8 Arms Vault

Arms vault shall be five-sided UL Class 3 modular vault. Door shall be GSA Class 5 vault door with **(AM #0002) day gate** ~~daygate~~ and built-in three-position, dial-type changeable combination lock. Slab on grade at arms vault shall be 6 inches thick reinforced with W4 by W4 mesh 6 inches by 6 inches or equivalent bars. See mechanical and electrical for additional requirements.

26.9 Document Vault

Document vault shall be six-sided UL Class M modular vault. Door shall be GSA Class 5 vault door with **(AM #0002) day gate** ~~daygate~~ and built-in three-position, dial-type changeable combination lock. See mechanical and electrical for additional requirements.

26.10 TA-50 Locker

TA-50 locker shall be heavy-duty ventilated locker with 14 ga steel doors and 16 ga steel sides, tops, bottoms and shelves. Frame shall be welded. Doors and sides shall be perforated in a diamond-shaped pattern for ventilation. Doors shall have padlock hasp. Finish shall be manufacturer's standard baked enamel in manufacturer's standard color. Size of each locker shall be 24 inches by 24 inches by 72 inches high.

26.11 Sound Isolation

Partitions at barracks bedrooms, private offices, conference rooms, and classrooms shall have STC 49 for sound isolation from all adjacent rooms. At barracks, perimeter of sound isolation area at each bedroom **(AM #0002) shall** ~~may~~ include the occupant's closet.

26.12 Building Numbers

Each new facility shall have a building number sign located on two faces, permanently affixed to building. Location, design, size and colors shall be in accordance with Fort Hood Installation Design Guide. Coordinate with Fort Hood for assigned building numbers for each facility.

26.13 Fire Extinguishers

Provide fire extinguishers as required by Installation requirements or code. Fort Hood's DPW Fire Dept. no longer provides fire extinguishers.

26.14 Rainwater Management

Each new facility shall have gutters, downspouts, and concrete splash blocks. If gutters are not feasible for the type of structure provided, provide some means of diverting rainwater from the roof around all personnel doors is required; provide justification.

27. STRUCTURAL INTERIOR DESIGN (SID)

See Section 01016 DESIGN DOCUMENTS REQUIREMENTS for additional requirements.

27.1 Definition

The Structural Interior Design (SID) shall involve the selection and sampling of all applied building related finishes necessary to complete the building's interior and exterior architecture. The SID submittal shall be submitted concurrent with the architectural design submittals.

27.2 Exterior and Interior Finish Design Review

The Contractor shall attend and present all exterior and interior finishes at the design reviews. The purpose of the design reviews is to present and discuss the SID color scheme for the project. Actual exterior and interior materials, finishes, and colors are to be provided for review and comment. At the end of the design review the Government will decide the final SID finishes that will be accepted for incorporation into the facilities.

27.3 In general, the SID shall reflect a transitional, professional image. Wall colors throughout the facility shall be a neutral color that will enhance accent colors in the existing furniture related items. Accent walls will not be approved for private offices. Accent walls will not be approved except for the lobby areas. The cove base and door trim shall be a neutral color and shall be consistent throughout the facility. Interior stain colors and finishes shall be consistent throughout the facility. All finishes shall be Class A. Specific locations where the various materials are required will be indicated during the design after award submittals.

27.4 Signage Requirements

Interior signage is an important item that is to be fully integrated with the architecture and building related finishes. All signage shall be in accordance with the Department of the Army Technical manual, Signage, TM 5-807-10 and installation sign standards (see Fort Hood Installation Design Guide). All signs are to be from one manufacturer and shall match in color and style. All room sign copy shall be Helvetica medium with a ratio of height and width to meet Americans with Disabilities Act (ADA) requirements. Signs shall be provided for all interior doors. Installation shall be wall mounted, on the latch side of the door with the center of the sign installed 5 feet-0 inch above the finish floor and 3 inches from the outside edge of the metal door frame. Where conditions do not allow signs to be mounted directly adjacent to the door, install signs on the wall at the nearest point to the latch side. Signage for general office areas (BB2) shall be a modular plaque format with a minimum of two insert slides. All signs are to have a permanent room number sign. All signs shall be a minimum overall dimension of 9 inches wide and 6 inches high. Under the visual printed room number an integral, tactile, corresponding, Grade 2 Braille indicating the room number. The second two slides are to be window insert slides to accommodate personnel changes or room name changes. Living Unit signs (BB5) shall be modular plaque format with a min. of three insert slides. Insert shall allow the user to insert computer generated copy behind acrylic face insert. BB5 sign types shall be 6 inches wide by 8 inches high. Mechanical rooms and other building system room and service support rooms (BB4) including restrooms (BB7) shall have permanent room signs with copy that has raised room numbers and permanent room names. Copy shall be raised, tactile, letters and Grade 2 Braille indicating the room number and room name. Signs shall be permanently and mechanically attached to the building. Double-sided tape is not acceptable. Signage message shall be coordinated with the Government/user before ordering or installation. Provide Emergency Egress sign plaques (BB8) that indicate "YOU ARE HERE" and the path of egress. These signs shall be fully coordinated

with the Installation Fire Marshal at the review submittal design phase and before fabrication and installation. The Fire Marshal shall review the correct placement and quantity of the signs within the building and also review the proposed path of egress that will be graphically illustrated on the sign. Suggested placements for the signs shall be determined prior to installation.

28. COMPREHENSIVE INTERIOR DESIGN (CID)

28.1 **(AM #0002)**~~The preparation of the Comprehensive Interior Design is part of the Base Bid.~~ The Contractor shall install furniture and other items listed in the Contractor-prepared CID. The furniture shall be coordinated with the prepared and approved Furniture Placement drawings developed in the SID. Installation shall include scheduling shipments from vendors, accepting delivery at the site, unloading, inventorying, securing and installing the items. See Section 01016 DESIGN DOCUMENTS REQUIREMENTS **(AM #0005) and Section 12400 DEPARTMENT OF THE ARMY - UPH FURNISHINGS PROGRAM** for additional requirements.

28.2 Definition

The CID involves all the furniture-related components necessary to complete the interior environment. The necessary components includes all loose furniture and furnishings.

28.3 CID Philosophy

The CID for each facility shall be coordinated in color, texture, pattern, size, form and function with building footprint and the SID. Furnishings submitted for approval shall reflect the image and style presented in the architecture to further support the corporate image, and with the function and mission of the facility occupants considered. All furniture/furnishings shall be selected under the guidance of the National Defense Authorization Act – FY 2002, S1438, Title VIII, Subtitle B, Sec 811, Para 2410 which states UNICOR is no longer a mandatory source for furniture and a waiver is not required from UNICOR on items before selecting from GSA Schedules. However, UNICOR shall be considered as a vendor to determine if UNICOR offers the “Best available” product in terms of quality, price, and timeliness. If a UNICOR product is not the “best value,” then GSA schedules shall be used for selection of furniture/furnishings. All furniture/furnishings shall be selected form GSA Schedules or UNICOR. The GSA web site is: www.gsa.gov. The UNICOR web site is: www.unicor.gov.

28.4 Format

The CID presentation shall be 2-foot by 3-foot matte boards which show pictures of the furniture and shall include actual samples of the finishes, not photographs of the finishes. Presentation boards shall be grouped by areas, i.e. but not to exclude other areas, systems furniture, closed offices, executive offices, barracks rooms.

28.5 CID Coordination and Installation

The Contractor shall develop and fully coordinate the CID package with the SID package. The CID submittals shall run concurrent with the SID submittals. The Contractor is required to purchase the CID package items and is required to schedule with all the CID vendors the delivery and installation of the CID.

Phasing the delivery and installation of the CID package items shall be determined by the Contractor. The Contractor will procure the CID items.

28.6 Requirement Analysis

The Contractor shall determined the CID requirements. CID items and quantities shall be determined by but are not limited to: (1) the number of personnel to occupy the building, (2) job functions and related furniture/office equipment to support the job function (3) room functions (4) rank and grade. See Facility Functional Requirements documents for personnel and equipment requirements.

28.7 CID Furnishing List

Typical CID items to specify are, but not limited to:

(AM #0002) ~~Executive Wood Furniture~~
Support desks
Bookcases
Bulletin Board, Porcelain Marker Boards
(AM #0002) Seating, including chairs and stools ~~Chairs-all kinds, including stools~~
Desks-freestanding technical support and Executive Level Quality
Panel supported, systems furniture workstations- prewired (see Elect.)
(AM #0002) File cabinets ~~Files-all kinds~~
Lamps-all kinds
(AM #0002) ~~Podium/lecture stands~~
(AM #0002) Storage cabinets ~~Storage-all kinds~~
(AM #0002) Tables ~~Tables-all kinds~~
(AM #0002) Waste containers – various sizes ~~Waste cans-various sizes~~
(AM #0002) ~~Classroom chairs and tables~~
(AM #0002) ~~Conference room furniture~~

(AM #0002) ~~Appliances~~
(AM #0002) Include for submittal and review all specific/special items as required by the Government/user. ~~Including all specific/special items as required by the Government/user~~

29. STRUCTURAL DESIGN REQUIREMENTS

29.1 General

The following criteria shall be used for loading, design and installation of all structural systems, including manufacturing, erection, supervision, testing and quality assurance. The completed structural design shall include all elements for foundations, walls, roof framing and diaphragms. It shall also include lateral load stability analyses as well as support for architectural features, mechanical and electrical equipment. Floor loads considered in the design shall include those necessary for the support of safes, vaults, special storage requirements, etc. as required by the user for specific functions in specific buildings. All calculations shall be performed by a registered engineer and checked by an engineer other than the design engineer. The primary code used for structural design shall be the 2000 International Building Code (IBC) and those codes referenced therein.

29.2 Design Loads

Dead loads shall be the actual weights of materials, including all mechanical and electrical items. Live loads and load combinations shall be in accordance with the requirements of the IBC 2000.

29.2.1 Wind load shall be in accordance with the IBC 2000.

Wind Velocity:	90 mph
Exposure:	C
Category:	I
Importance Factor:	1.0

29.2.2 Seismic load shall be in accordance with IBC 2000.

Spectral Response

Ss:	**AM 0002**	**0.09**
S1:	**AM 0002**	**0.05**

29.3 Drawings

29.3.1 Walls mostly below grade that are supported laterally by diaphragms at or near the top and bottom, shall be designed using loadings based on at rest soil pressures.

29.3.2 Diaphragms shall have continuous chord members on all edges and shall have a direct positive connection for transferring load to all members of the main lateral force resisting system.

29.3.3 References and Design Criteria

a. Minimum Design Loads for Buildings and Other Structures – ANSI/ASCE 7-2002.

b. Fort Hood Installation Design Guide

c. CESWD Architectural and Engineering Design Guide (CESWF-AEIM), including all references

d. (UFGS) Unified Facilities Guide Specifications. The DESIGNER will be required to provide a fully edited Guide Specification for all applicable structural components. **AM 0002 Specification 13120, Standard Metal Building Systems, included as part of the TVM is not to be used. All specifications are to be the most current available.** All requirements contained in the RFP document must be incorporated into the edited specifications and/or drawings. Generally, the following structural specifications are required for building construction (other Guide Specs may be required depending upon the structural system used):

02466A DRILLED FOUNDATION CAISSONS (PIERS)
03100a STRUCTURAL CONCRETE FORMWORK
03150a EXPANSION JOINTS, CONTRACTION JOINTS, AND WATERSTOPS
03200a CONCRETE REINFORCEMENT
03300 CAST-IN-PLACE STRUCTURAL CONCRETE (FOR BUILDING CONSTRUCTION)
03370 CONCRETE FLOOR HARDENER
04200 MASONRY

04210 NONBEARING MASONRY VENEER/STEEL STUD WALLS AM 0002
05120 STRUCTURAL STEEL
05210 STEEL JOISTS
05310 STEEL DECKING AM 0002
05400 COLD FORMED METAL FRAMING
13120 PREENGINEERED METAL BUILDINGS

e. AM 0002 MBMA-01 Low Rise Building Systems Manual (latest edition).

f. AM 0002 National Concrete Masonry Association (NCMA), Specifications for the Design and Construction of Load Bearing Concrete Masonry.

AM 0002 ~~g. Design and Construction of Load Bearing Concrete Masonry.~~

g. ACI-ASCE 530, Building Code Requirements for Concrete Masonry (2002)

h. American Institute Of Steel Construction (AISC), Manual of Steel Construction, 9th edition

i. Manual of Steel Construction, LRFD 3rd edition

j. Steel Deck Institute (SDI) Diaphragm Design Manual (latest edition)

k. American Welding Society, Welding Handbook

l. Steel Joist Institute (SJI) Standard Specifications, Load Tables and Weight Tables for Steel Joists and Joist Girders

m. ACI 315-02, Details and Detailing of Concrete Reinforcement

n. ACI 318-02, Building Code Requirements for Structural Concrete

o. SDI Design Manual for Composite Decks, Form Decks, Roof Decks, and Cellular Decks

p. (AM #0002) American Plywood Association, "APA Design/Construction Guide"

q. (AM #0002) "SDI Diaphragm Design Manual latest Edition."

r. (AM #0002) National Forest Products Association, "National Design Specification for Stress Grade Lumber and its Fastening."

s. (AM #0002) American Plywood Association, "APA Design/Construction Guide."

t. (AM #0002) Truss Plate Institute, "Design Specification for Metal Plate Connected Wood Trusses."

u. (AM #0002) American Institute of Timber Construction (AITC)

v. (AM #0002) TI 809-07, Design of Cold-Formed Load Bearing Steel Systems and Masonry Veneer/Steel Stud Walls (Nov. 98).

Design Guidance

Design Criteria - International Building Code 2000. To prevent cracking of brick veneer, limit building drift for a brick veneer building to h/400. Limit building drift for a metal skinned building to h/180 to prevent damage to interior partitions. Design for a 50-year recurrence interval with the design parameters stated above, where "h" is the eave height. **(AM 0002) For the relocatable structures provide a minimum factor of safety of 1.5 against sliding or overturning considering wind and dead load only.**

29.4 Foundations **(AM 0002) (Optional for Relocatable Buildings Except Vehicle Maintenance)**

Foundations for permanent structures shall be reinforced concrete continuous spread footings, isolated spread footings, carton formed slabs, grade beams, drilled piers, ribbed mat slab, **(AM 0002) prestressed ribbed mat slab**, or other as required by geotechnical investigation. **(AM 0002) See AEIM page VI-15, paragraph 8.6, Prestressed Designs for additional prestressed design requirements.** Ground floor slab systems shall be slab-on-grade or supported by piers as recommended by geotechnical investigation. Voids under grade beams, where required for expansive soils conditions, shall be formed with wood and not with fiber voids. Refer to Geotechnical insert for additional requirements. **(AM 0002) See Architectural Engineering Instruction Manual (AEIM) Plate C-22 for typical pipe bollard (guard) detail.**

29.5 Concrete Design **(AM 0002) (Optional for Relocatable Buildings Except Vehicle Maintenance)**

29.5.1 Concrete Materials:

a. Cement: ASTM C 150, Type I-II Portland cement
b. Fly Ash: ASTM C 618, Class "F" ; fly ash shall not exceed 20% of cement content or 100 Lbs of fly ash per cubic yard of concrete, whichever is less.
c. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 120
d. Fine Aggregate: ASTM C 33
e. Coarse Aggregate: ASTM C 33
f. Air-Entraining Admixture: ASTM C 260
g. Accelerating, retarding and water-reducing admixtures: ASTM C 494
h. Flowing Concrete Admixture: ASTM C 1017, Type 1 or 2
i. Calcium Chloride shall not be permitted

29.6 Slabs **AM 0002 (Optional for Relocatable Buildings Except Vehicle Maintenance)**

29.6.1 Slabs-on-grade shall be a minimum thickness of 4 inches and reinforced with deformed reinforcing steel bars or welded wire fabric. All floor slab thicknesses shall be designed for the loads associated with the function of the specific area considered. The storage building **(AM 0002) and relocatable vehicle maintenance shall have a minimum 6" concrete slab reinforced with #4 at 12" on center each way. The covered concrete loading dock at site 4900B shall have a minimum 5" concrete slab reinforced with #4 at 12" on center each way.**

29.6.2 Vapor Barrier/Capillary Water Barrier

Provide vapor barrier under all interior floor slabs. Polyethylene sheet shall not be less than 6 mils thick. Provide a 6″ capillary water barrier under the vapor barrier.

29.6.3 Vertical and horizontal runs of conduits and pipes in slabs shall conform to ACI 318. Elevated slabs shall additionally meet the ratings of UL floor assemblies where required. Aluminum conduit and pipes will not be embedded in any concrete.

29.7 Masonry Design

29.7.1 Concrete masonry units shall have a minimum compressive strength of 2000 psi on gross area at 28 days.

29.7.2 Concrete Masonry Materials

a. Hollow Concrete Masonry Units: ASTM C 90, Grade N, Type I or II
b. Mortar for Masonry: ASTM C 270, Type S
c. Grout for Masonry: ASTM C 476
d. Horizontal Joint Reinforcement: minimum 9-gage deformed wire, ladder-type

29.7.3 Joints shall be 3/8 inch, tooled concave.

29.8 Structural Steel Design

29.8.1 If braced frames are used for all or part of the main lateral force resisting system, the stability of structural system shall not depend on any single member or connection. Redundancy shall be provided either by using multiple bays of tension only x-bracing or by using bracing members that are capable of both tension and compression if bracing is placed in a single bay.

29.9 Steel Decking Design

29.9.1 Form deck shall be galvanized. Metal form material shall be galvanized and a minimum 22 gage.

29.9.2 Steel roof deck material shall be shop painted and be 22 gage minimum. A structural steel roof deck shall be provided under all nonstructural metal roofs.

29.10 Cold Formed Steel Design

29.10.1 Cold Formed Steel Materials:

a. Galvanized Structural Framing Members 16 gage and heavier: ASTM A 653, Grade D, 50 ksi.

b. Galvanized Structural Framing Members 18 gage and lighter: ASTM A 653, Grade B, 36 ksi.

29.10.2 Trusses fabricated from cold-formed steel members shall be designed and the drawings stamped by a registered engineer. Minimum gage for members shall be 20 gage.

29.10.3 Cold-formed steel members, their components, and connection material shall have G90 galvanized coating.

29.11 Wood

29.11.1 Retardant Treatment, when required. Recommendations regarding the use of fire retardant treatment are provided in USDA Wood Handbook and National Protection Handbook. Pressure impregnation is the preferred treatment method.

29.11.2 Termite control measures will be used in areas prone to termite infestation. Soil will be treated with commonly accepted termite control products prior to construction.

29.12 Other Materials

29.12.1 There are no restrictions on proposing other materials to be used in the structural systems of this project if their strengths and durability can be substantiated by ASTM or other approved laboratory tests, and they satisfy the requirements of the design codes and criteria specified in this document.

29.12.2 All design, manufacture, fabrication, and assembly of other construction materials to be used in structural framing systems shall conform to the applicable design standards and meet specific industry standards as required for each subject material.

29.13 (AM #0002) Preengineered Metal Building Systems

Hairpins and adjacent hardstands shall not be used to resist the horizontal loads acting at the base of metal building system columns. Other methods such as foundation tie beams, anchorage to drilled piers, asphalt coated tie rods, or at-rest soil pressures acting on the foundation elements shall be used. Passive soil pressures will not be used to resist column thrusts unless sufficient supporting justification (including consideration of soil disturbance, moisture conditions, and deflection) is provided. Not more than one-half the full passive soil pressure will be used to resist horizontal thrust from columns.

30. (AM #0002) GENERAL PLUMBING DESIGN REQUIREMENTS

30.1 Plumbing system shall be designed and installed in accordance with the latest edition of the International Plumbing Code and the Fort Hood Installation Guide and Technical Supplement. The Contractor shall be responsible for finish installation of fixtures and piping systems. Each assembled facility shall have a one valve potable water connection and one sewer connection. The water line from the ground to the building shall be provided freeze protection. Gas lines and fixtures shall be installed in accordance with the latest edition of the NFPA 54 National Fuel Gas Code. Use the Unified Facilities Guide Specification.

30.2 Domestic Hot Water

Furnish and install water heaters with sufficient capacity and temperature regulation to handle peak requirements. Hot water delivered to plumbing fixtures in all facilities shall not exceed 120 degrees F.

30.3 Plumbing Fixtures

Plumbing fixtures shall be provided as indicated on architectural drawings. Fixtures shall be low-flow water conserving types, in accordance with the International Plumbing Code and current federal, state and DOD requirements. All handicap fixtures shall be ADA compliant.

30.4 Drainage

30.4.1 Floor Drains

Floor drains shall be provided in all rooms with gang toilets, mechanical rooms, janitor rooms and for equipment requiring drainage. All floor drain traps shall be automatically primed by single trap primers or where appropriate distribution unit type trap primers.

30.5 Wall Hydrants (Exterior)

Wall hydrants shall be provided at a maximum spacing interval of 200 feet around the exterior wall of the building, with a minimum of two hydrants for each building, one on each opposing wall. Each hydrant shall be box type, freeze proof, with an integral vacuum breaker/backflow preventer. Hydrants shall have 3/4 inch hose connections.

31. FIRE PROTECTION

31.1 Design Standards and Codes

The fire protection design for all facilities shall be in accordance with the following:

INTERNATIONAL CODE COUNCIL, INC
5203 Leesburg Pike, Suite 708
Falls Church, VA 22041-3401

IBC, 2003, International Building Code

NATIONAL FIRE PROTECTION ASSOCIATION
One Batterymarch Park
Quincy, MA 02269-9101

National Fire Codes (NFC) Current as of 2004

UNIFED FACILITIES CRITERIA

UFC 3-600-01, 2003, Design: Fire Protection Engineering for Facilities
UFGS Guide Specifications

31.1.1 Qualifications of Fire Protection Engineer. The design of the fire protection features shall be by a qualified fire protection engineer meeting one of the following conditions: a.) An engineer with a Bachelor of Science or Masters of Science Degree in fire protection engineering from an accredited university engineering program, plus a minimum of 5 years' work experience in fire protection engineering. b.) A registered professional engineer who has passed the National Council of Examiners for Engineering and Surveys (NCEE)

fire protection engineering written examination. c.) A registered P.E. in a related engineering discipline with a minimum of 5 years' experience dedicated to fire protection engineering. The name and credentials (education, registration, experience) of the fire protection engineer shall be submitted.

31.1.2 Fire Protection and Life Safety Analysis. A fire protection and life safety design analysis shall be provided for all buildings in the project. The analysis shall include classification of occupancy (both per the IBC and NFPA 101); type of construction; height and area limitations (include calculations for allowable area increases); life safety provisions (exit travel distances, common path distances, dead end distances, exit unit width required and provided); building separation or exposure protection; specific compliance with NFPA codes and the IBC; requirements for fire-rated walls, doors, fire dampers, etc.; analysis of automatic suppression systems and protected areas; water supplies; smoke control systems; fire alarm system, including connection to the base-wide system; fire detection system; standpipe systems; fire extinguishers; interior finish ratings; and other pertinent fire protection data. The analysis shall include a life safety floor plan for all buildings in the project 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.

31.2 Fire Flow Data. Refer to Civil Design for design requirements.

31.3 Sprinkler System

31.3.1 Automatic sprinkler protection shall be provided for buildings as follows:

Classroom Facility. Provide sprinkler protection per the requirements of UFC 3-600-01 and NFPA 101 for Assembly type occupancies.

31.3.2 Design Requirements

Where sprinkler protection is required the facilities shall be fully protected with automatic wet pipe sprinkler systems. Dry pipe systems shall be provided if freeze protection is required. All floors and all areas of the facilities shall be protected. The sprinkler system design shall be in accordance with UFC 3-600-01, NFPA 13, and NFPA 13R where applicable. The sprinkler hazard classifications shall be in accordance with UFC 3-600-01 appendix B and NFPA 13. Design densities, design areas and exterior hose streams shall be in accordance with UFC 3-600-01 table 4-1. The sprinkler systems shall be designed and all piping sized with computer generated hydraulic calculations. The exterior hose stream demand shall be included in the hydraulic calculations. A complete sprinkler system design, including sprinklers, branch lines, floor mains and risers, shall be shown on the drawings. The sprinkler system plans shall include node and pipe identification used in the hydraulic calculations. All sprinkler system drains, including main drains, test drains, and auxiliary drains, shall be routed to a 2' x 2' splash block at exterior grade.

31.3.3 Sprinkler System

The sprinkler service main shall be a dedicated line. Sprinkler service and domestic service shall not be combined. The sprinkler service main shall be provided with an exterior post indicator valve with tamper switch reporting to the fire alarm control panel (FACP). The service main shall extend from the

water distribution system to the building and shall be dedicated for fire protection. The sprinkler entry riser shall include a double check backflow preventer, a fire department connection, and a wall hydrant for testing of backflow preventer. The sprinkler system shall include an indicating control valve, an alarm check valve or dry pipe valve, a water motor alarm and a flow switch reporting to the FACP. All control valves shall be OS&Y gate type and shall be provided with tamper switches connected to the FACP. Facilities with multiple floors shall be provided with floor control valves for each floor. The floor control valve assembly shall be in accordance with NFPA 13, Figure A-5-15.4.2 (b). Clearances for piping passing through floor slabs shall be provided by pipe sleeves with dimensions per NFPA 13, 9.3.4.3. Clearance for all other penetrations shall be per NFPA 13, 9.3.4.

31.3.4 Sprinklers

Sprinklers located in finished areas shall be recessed pendant type.

31.3.5 Exterior Hose Stream

Exterior hose stream demand shall be in accordance with UFC 3-600-01. This shall be 250 gpm for light hazard and 500 gpm for ordinary hazard. Exterior hose stream demand shall be included in the sprinkler system hydraulic calculations.

31.3.6 Backflow Preventer

A double check backflow preventer shall be provided on the fire water main serving each building. This shall be located within the building. An exterior wall hydrant with OS&Y valve shall be provided to allow testing of backflow preventer at design flow as required by NFPA 13.

31.3.7 Fire Department Connection

A fire department connection shall be provided for each building with sprinkler protection. These shall be located to be directly accessible to the fire department.

31.4 Fire Pump

If required a complete fire pump installation shall be provided. Fire pump installation shall be in accordance with UFC 3-600-01, NFPA 13, NFPA 20, and UFGS 13920.

31.5 System Components and Hardware

Materials for the sprinkler system and fire pump system (if required) shall be in accordance with NFPA 13, NFPA 20, and NFPA 24. Sprinkler and standpipe system piping shall be black steel and shall be minimum Schedule 40 for sizes 2 inches and less and minimum Schedule 10 for sizes greater than 2 inches.

31.6 Fire Hydrants

Refer to Site Design for design requirements.

31.6.1 Fire Extinguishers and Cabinets

Refer to Architectural Design for design requirements.

31.7 Fire Alarm and Detection System

Refer to Electrical Design for design requirements.

32. (AM #0002) GENERAL HEATING, VENTILATING, AND AIR CONDITIONING REQUIREMENTS

32.1 Mechanical Requirements

The mechanical systems will be designed in accordance with the Request for Proposal issued by the Fort Worth Corps of Engineers, ASHRAE standards, International Mechanical code, NFPA Standards and the International Standard Plumbing Code. The Unified Facilities Guide Specifications will be used.

The mechanical system shall comply with the following design criteria and standards:

- **ASHRAE Standard 90.1-2001, Energy Standard for Buildings, Except Low-Rise Residential Buildings**
- **International Mechanical Code.**
- **ASHRAE Manuals, latest edition.**
- **NFPA 90A, Installation of Air Conditioning and Ventilating Systems.**
- **NFPA 90B, Installation of Warm Air Heating and Air Conditioning Systems.**
- **ASHRAE Standard 62-2001, Ventilation for Acceptable Indoor Air Quality.**
- **SMACNA HVAC Duct Construction Standards, latest editions.**
- **Fort Hood Installation Design Guide And the Technical Supplement.**

32.2 Heating, Ventilation, and Air Conditioning (HVAC)

All HVAC units shall be electric. Gas may be used for heating. Unitary equipment shall be applicable with their corresponding ARI and UL standards. Air-cooled split and packaged systems shall have a minimum EER per the following table:

Cooling capacity range (Btu/hr)	Minimum EER
less than 65,000	9.5
greater than or equal to 65,000, less than 135,000	10.3
greater than or equal to 135,000, less than 240,000	9.7
greater than or equal to 135,000	9.5

All air-cooled split and packaged systems shall have a minimum COP of 2.0. Chillers shall have a minimum EER of 9.5 and a minimum COP of 2.8. Thru-the-

wall units shall have a minimum EER of 8.5. Where possible use air to air heat pumps with supplemental electric heating

32.3 Ventilation Systems Design

Ventilation for building occupants shall be provided in accordance with ASHRAE Standard 62-2001. The outside air intake shall be located away from fumes including vehicle exhaust, printing process exhaust, generator exhaust, toilet exhaust, etc. Exhaust systems shall exhaust all toilet rooms, bathrooms, janitor's closets, lockers, battery storage room, warehouse room, arms vaults, mailrooms, and other spaces as required.

32.4 Design Parameters

32.4.1 Outdoor Design Temperatures shall be 97 degrees F dry bulb/73 degrees F wet bulb summer design and 25 degrees F dry bulb winter design for Fort Hood.

32.4.2 For air conditioned areas the indoor summer design temperature/conditions shall be 78 degrees F/50 percent relative humidity, and indoor winter design temperature shall be 70 degrees F. Include capacity allowance for fresh air quantities in accordance with ASHRAE 62-2001 Ventilation Standards.

32.4.3 Electrical Rooms, Mechanical Rooms and Communications Equipment. Mechanical Rooms and Electrical rooms shall be heated and ventilated. Unit heaters shall be provided in these rooms to maintain a minimum temperature of 40 degrees F for freeze protection. Ventilation rates of 10 and 20 air changes per hour minimum shall be used. A two-speed, thermostatically-controlled fan shall be provided to accomplish the 10 ac/hr and 20 ac/hr rates. The space shall be maintained at a maximum of 10 degrees F above outside design ambient in summer. Ventilation shall be positively introduced within the mechanical room if equipment with atmospheric burners is used in the room. Electrical rooms shall be ventilated and shall maintain a winter design temperature of 55 degrees F. Communications and SIPRNET equipment shall be in an environment that is air-conditioned to maintain 72 degrees F year-round, 24 hours per day.

32.5 Metering: Electricity and Potable Water

Potable water, gas, and electricity shall be metered. Meters shall all have pulse outputs, data collection/communication capability and shall be compatible with Fort Hood Standards. Electric metering is specified in Electrical Design.

32.6 Acoustical Criteria

Systems shall be designed to meet the following noise criteria:

Area	NC Level
General open offices	40
Enclosed offices	30

Lobbies and common areas	**40**
Conference rooms	**30**
Sleeping areas	**30**

Acoustical treatments such as duct lining and sound attenuators shall be used to achieve these levels. Any spaces not specifically listed above shall be coordinated with the user.

32.7 Personnel Loads

See Architectural portion of RFP for people loads in the facilities.

32.8 Internal Loads

Each office and/or work station receives one personal computer.

Break room equipment includes soda vending machine, full size refrigerator, and coffee maker.

See architectural for additional equipment.

32.9 HVAC Equipment

The equipment described below is a minimum. All materials and equipment provided shall be standard catalogued products of manufacturers regularly engaged in the production of such materials and equipment and shall be of the manufacturers' latest standard design. Equipment shall comply with the requirements of Underwriter's Laboratories, Inc. (UL), Air Conditioning Refrigeration Institute (ARI), American Society for Testing and Materials (ASTM), National Electric Manufacturer's Association (NEMA), American National Standards Institute (ANSI), National Fire Protection Association (NFPA), or other national trade associations as applicable.

Ensure that any new boiler is less than 10MMBtuh and has a low NOx burner installed. This keeps the installation out of requirements under New Source Performance Standards and Title V operating permit revisions. Boilers must still comply with requirements of 30 Texas Administrative Code 106.183

Condensate drains from the evaporator coils will be piped to the sewer line through a trap after the drain pan then through an air gap to a floor drain or raised pipe followed by a trap.

Provide copies of invoices that indicate the amount of refrigerant added to HVAC equipment which contains 50-lbs or more to the DPW Environmental Division's Ozone Depleting Substance Program Manager, Robert Kennedy, 287-8714 in accordance with Fort Hood's Title V air operating permit # O-01659 and 40 CFR 82.

All pieces of floor mounted mechanical equipment shall be installed on a 4-inch thick housekeeping pad. Provide pad 6 inches larger than equipment footprint on all sides. Anchor the pad to the floor.

All suspended equipment shall be properly supported according to the manufacturer's instructions. Provide trapeze hangers for larger pieces of equipment. Provide adequate clearance around all pieces of equipment for periodic maintenance, inspection and cleaning. Service of one piece shall not require disturbance of adjacent equipment.

Each piece of motorized equipment shall be provided with vibration isolators per latest edition ASHRAE Fundamentals Handbook. Nominal deflection and natural frequency of isolation equipment shall be selected based upon equipment size and structural attachment details.

All strainers and air separators are to be equipped with blow down valves and piped to a floor drain.

Roof mounted equipment is not acceptable. All equipment shall be accessible from the first floor.

Mechanical components shall be installed and mounted in accordance with seismic guidelines per latest edition of ASHRAE Applications Handbook.

32.9.1 Fans

Provide an exhaust fan in each toilet room which has a ventilation rate that meets ASHRAE Standard 62-2001; and in toilet rooms with a single toilet, position the exhaust fan directly above the toilet. Exhaust volume flow rate for toilet area shall be minimum of 2 cfm per square foot of floor area. Toilet fans shall operate with a switch. Exhaust air shall be discharged to the outside.

32.10 System Maintainability

Ensure that filters, controls, control valves, and coils are easily accessible for servicing and cleaning. Isolation valves shall be provided for each terminal unit, zone, branch, long runs, etc. as necessary for proper isolation and maintenance. Coils shall be fully removable without requiring demolition of any building components. Piping configuration at all coils shall include unions to facilitate easy coil removal.

32.11 Air Distribution

Ductwork shall be constructed of sheet metal to SMACNA HVAC Duct Construction Standards, 1995 edition. Ceiling return air plenums shall not be used. All ductwork designated to be constructed at a duct pressure class of 3-inch water gauge or greater shall be pressure tested. Any device (filter, fan, coil or other component) in the air supply, return or exhaust system that will normally operate at these pressures shall be included in the test. The maximum allowable leakage rate shall be in accordance with the SMACNA Leakage Test Manual for the Leakage Class (C) associated with the duct Seal Class. Test procedure, apparatus, and report shall conform to SMACNA. The leakage test shall be satisfactorily completed prior to applying the external duct insulation. Access must be provided to all devices or areas that may require periodic inspection, including but not limited to balancing devices, motor operated dampers, flow measuring stations, smoke/fire dampers, etc. 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 air flow in the space. Plastic diffusers are prohibited. Ceiling mounted units shall have factory finish to match ceiling color, and be installed with rims tight against ceiling. Sponge-rubber gaskets shall be provided between ceiling or wall and surface-mounted diffusers for air leakage control. Diffuser boots shall be sealed tight to the wall or ceiling they penetrate using duct mastic or caulking. Suitable trim shall be provided for flush-mounted diffusers. Duct collar connecting the duct to diffuser shall be airtight and shall not interfere with volume controller. Wall supply registers shall be installed at least 6 inches below the ceiling.

32.11.1 Duct Insulation

All supply, return, and outside air ductwork shall be insulated. Ductwork in areas exposed and subject to abuse shall use rigid insulation. Exposed heating only or exposed return air ductwork shall not be insulated. Exhaust ductwork does not require insulation. Internally lined ductwork shall not be allowed. Insulation shall be faced with a vapor barrier material having a performance rating not to exceed 1.0 perm. Insulation, vapor barrier, and closure systems shall be non-combustible as defined in NFPA 255, with a flame-spread rating of not more than 25, and a smoke development rating of not more than 50, as defined in ASTM E 84. Where insulated ducts pass through fire walls, fire partitions, above grade floors, and fire rated chase walls, the penetration shall be sealed with fire stopping materials.

32.12 Piping and Accessories

Refrigerant piping, valves, fittings, and accessories shall be in accordance with ASHRAE 15 and ASME B13.5. Refrigerant piping, valves, fittings, and accessories shall be compatible with the fluids used and capable of withstanding the pressures and temperatures of the service. Insulation shall be flexible elastomeric cellular insulation.

32.13 Controls

For HVAC systems or equipment that does not come with integral packaged controls, Direct Digital Controls (DDC) shall be used. The thermostats shall be digital with an off-on, and heat and cool switches. The heating and/or cooling setpoints will be fixed, non adjustable. Controls shall comply with the Lonworks Standard.

All buildings will be provided with Digital Control Units for their HVAC units. The Digital Control Units shall be as specified in Specification 13805 One-Way Frequency Modulation(FM) Utility Management and Control System (UMCS) Digital Control Unit.

33. **(AM#2) INTERIOR ELECTRICAL DESIGN**

33.1 Power Distribution System

In addition to the codes and standards listed in paragraph 28.1, the power distribution system shall be in accordance with UFC 3-520-01, Interior Electrical Systems (http://www.hnd.usace.army.mil/techinfo/ufc/ufc_3-520-01.pdf).

33.1.1 The power distribution system including the conductor and conduit, switchboards, panelboards, service entrance equipment and transformers shall be sized for no less than 25 percent spare capacity. Voltage drop shall not exceed 5 percent from the service transformer to any branch circuit electrical load. In addition, voltage drop shall not exceed 2 percent on feeders from the service transformer to the farthest distribution panel and shall not exceed 3 percent on branch circuits.

33.1.2 Switchboards and panelboards shall be located in electrical rooms only. Dry-type transformers shall be located in electrical rooms only.

33.1.3 Switchboards and panelboards shall be equipped with bolt-on circuit breakers sized for the load and available fault current. Series rated breakers shall not be used.

33.1.4 Electrical equipment shall be UL listed for the environment in which it is located.

33.1.5 All mechanical equipment shall have a properly sized disconnect switch, with respect to the National Electrical Code, provided within sight. Should a switch be installed in an exterior environment, then the switch shall be rated for that environment by NEMA.

33.1.6 Wiring shall consist of copper conductors with 600-volt insulation. The minimum conductor size shall be No. 12 AWG. Conductor sizes and ampacities are based on copper. Conductors No. 8 AWG and larger shall be stranded, and conductors No. 10 AWG and smaller diameter shall be solid. Conductors for branch circuits of 120 volts or more than 100 feet long and of 277 volts more than 230 feet long, from panel to load center shall be no smaller than No. 10 AWG.

33.1.7 The electrical distribution systems serving non-linear loads such as large administrative spaces shall be specifically designed for nonlinearity. Feeder neutrals shall be oversized and panelboards shall be equipped with 200% neutral busses. Dry-type transformers shall include a K-4 rating if non-linear loads make up more than 50% of the total load.

33.1.8 Transient Voltage Surge Suppression (TVSS) units may be included as an integral part of the panelboard or shall be hard-wired into the electrical distribution system in accordance with the manufacturer's recommendations utilizing a circuit breaker connection. Units shall be tested in accordance with IEEE C62.45 using an IEEE C62.41 Category B waveform and shall be UL 1449 listed and labeled. Modes of protection shall be normal mode (L-N, L-L) and common mode (L-G, N-G). The unit shall include self-diagnostic and self-testing capabilities, a re-settable transient event counter, and a local audible alarm with mute capability. Service panel surge current rating shall be 300kA minimum per phase and shall be 150kA minimum per phase at all other panels; and shall be rated and marked with a maximum UL suppressed voltage

rating of 400V for 120/208 volt applications, and 800V for 277/480 volt applications.

33.1.9 Service grounding shall be in accordance with NEC Article 250. The maximum resistance of a driven ground shall not exceed 25 ohms under normally dry conditions. A separate grounding conductor sized in accordance with the NEC shall be provided in all circuits. The conduit system shall not serve as the equipment ground, and a green grounding conductor shall be provided and sized in accordance with NFPA 70. A copper ground bar shall be provided in each electrical room and communication room. Ground rods shall be of copper-clad steel not less than ¾ inch in diameter by 10 feet in length of sectional type driven full length into the earth.

33.1.10 Wiring shall conform to NFPA 70. Unless noted otherwise, wiring shall consist of insulated conductors installed in rigid aluminum conduit, rigid zinc-coated steel conduit, or rigid plastic conduit, or electrical metallic tubing, or electrical nonmetallic tubing, or intermediate metal conduit. Where cables and wires are installed in cable trays, they shall be of the type permitted by NFPA 70 for use in such applications. Wire fill in conduits shall be based on NFPA 70 for the type of conduit and wire insulation specified (based on copper conductors with insulation). Penetrations above grade floor slabs, time-rated partitions and fire walls shall be firestopped. Conduits and tubing, and the support system to which they are attached, shall be securely and rigidly fastened in place to prevent vertical and horizontal movement. Raceways shall not be supported using wire or nylon ties.

33.1.10.1 Metal conduits will be permitted when conduits are required for shielding or other special purposes indicated, or when required by conformance to NFPA 70.

33.1.10.2 Nonmetallic conduit and tubing may be used in damp, wet or corrosive locations when permitted by NFPA 70 and the conduit or tubing system is provided with appropriate boxes, covers, clamps, screws or other appropriate type of fittings.

33.1.10.3 Electrical metallic tubing (EMT) may be installed only within buildings. EMT may be installed in concrete or grout in dry locations, provided with concrete tight fittings. EMT shall not be installed in damp or wet locations, or the air space of exterior masonry cavity walls.

33.1.10.4 Aluminum conduit may be used only where installed exposed in dry locations.

33.1.10.5 Rigid steel conduit or IMC shall be installed in slabs-on-grade, and installed close to the middle of the concrete slabs as practical without disturbing the reinforcement.

33.1.11 Heat tracing shall be provided to protect utilities exposed to freezing temperatures.

33.1.12 All empty conduit shall be sealed, capped, and tagged; and shall include a pull wire.

33.1.13 Full-capacity standard NEMA taps shall be provided in the primary windings of transformers unless noted otherwise. Three-phase transformers shall be configured with delta-wye windings. Transformers, where primary is 600 Volt and less, shall be general purpose, dry-type, self-cooled, provided in a NEMA enclosure rated for the installation location, and be quiet type with maximum sound level at least 3 decibels less than NEMA standard level for transformer ratings.

33.1.14 Each motor shall conform to the hp and voltage ratings, and shall have a service factor and other characteristics that are essential to the proper application and performance of the motors under conditions shown or specified. Motors of 1.0 hp or more with open, drip-proof or totally enclosed fan cooled enclosures shall be high efficiency type, unless otherwise noted. 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 provisions of another section.

33.2 Receptacle Outlet

33.2.1 Duplex receptacle: 20-ampere, 120 volt, non-locking NEMA type 5-20R, two-pole, three-wire, grounding type with polarized parallel slots.

33.2.1 Weatherproof duplex receptacles shall be provided outside each building entrance and at site mechanical equipment. Receptacles shall be suitable for damp locations and the housings shall be labeled to identify the allowable use. Additional weatherproof receptacles shall be provided such that the long side of each building will have at least one receptacle.

33.2.2 Ground Fault Circuit Interrupter (GFCI) receptacle outlets shall be provided in restrooms, wet locations, outdoors and other locations as required by the NEC or OSHA. GFCI receptacles shall be wired such that the loss of power on one receptacle shall not affect downstream receptacles. GFCI receptacles shall be provided adjacent to lavatories. In multi-lavatory toilets a minimum of one receptacle for every two lavatories shall be provided.

33.2.3 All equipment as identified herein or elsewhere in the RFP that require a receptacle shall be provided a receptacle of the appropriate rating and NEMA configuration to match the plug of said equipment. In addition, other receptacles shall be provided for or as otherwise required for a fully functional facility.

33.2.4 A minimum of one general-purpose 120 volt, 20-ampere duplex receptacle outlet shall be provided on each wall in each room unless otherwise indicated. In rooms where walls exceed 10 feet horizontally, an additional duplex outlet shall be provided for each additional 10 feet of wall or fraction thereof. Receptacle spacing shall not exceed 10 feet. General-purpose receptacles are in addition to special purpose and dedicated outlets for special equipment.

33.2.5 All corridors shall be provided with a minimum of one general-purpose 120 volt, 20-ampere duplex receptacle for floor cleaning equipment. The receptacle(s) shall be spaced in such a manner as to permit full coverage by

the equipment with a 35-foot extension cord. Floor receptacles shall not be used.

33.2.6 Each LAN rack shall be provided a dedicated quadraplex receptacle mounted on the side of the rack 6 inches above finished floor (AFF). Each telephone backboard shall be provided two dedicated 120 volt, 20-ampere duplex receptacles in addition to the required general-purpose receptacles.

33.2.7 In each of the mechanical spaces and electrical spaces, a dedicated electrical circuit shall be provided for duplex receptacles to perform general tasks. The number of receptacles to be installed will be dependent on the size of the space, but if a wall space is greater than 10 feet, then a receptacle shall be placed on the wall. A minimum of one receptacle shall be placed in each of the spaces.

33.2.8 All equipment as identified herein or elsewhere in the RFP that require a receptacle shall be provided a receptacle of the appropriate rating and NEMA configuration to match the plug of said equipment. In addition, other receptacles shall be provided for or as otherwise required for a fully functional facility. Receptacles provided for copiers, facsimile machines, LAN racks, and common use network printers shall be served by dedicated branch circuits. The contractor shall engage the user for the installation of these dedicated receptacles and circuits.

33.2.9 A dedicated circuit shall be provided to each individual receptacle that provides electricity to an appliance. An appliance is, but not limited to: refrigerator, microwave, washing machine, clothes dryer, and so forth.

33.2.10 Receptacle outlets in finished areas shall be mounted 18 inches AFF unless otherwise indicated or required by code or criteria. Receptacles mounted above counter tops or at built-in desks shall be mounted to assure access from desktop equipment. Receptacles mounted at vanities shall be mounted above the backsplash.

33.2.11 Electrical outlet devices and faceplates shall be white, except faceplates in the vehicle maintenance shops, unit storage, and unfinished areas shall be stainless steel.

33.3 Interior Lighting

33.3.1 Design of the interior lighting system and selection of target illumination levels and uniformity ratios not indicated herein shall comply with the recommendations of the Illuminating Engineering Society of North America (IESNA) Lighting Handbook, 9th Edition. All interior spaces shall be illuminated with compact fluorescent luminaires or linear T8 fluorescent luminaries with the exceptions stated hereafter. Incandescent lighting shall not be allowed in any type of application other than 'reel lights' used for task lighting in the maintenance shops. Exterior usable spaces shall be illuminated with high-intensity discharge fixtures, unless noted otherwise.

33.3.2 Ambient illumination shall provide a generally glare-free, high quality lighting environment. All rooms including closets shall be illuminated. Recessed luminaires shall be provided in all areas with

suspended ceilings. Recessed parabolic luminaires with 3-inch minimum blades shall be provided in all open admin areas and private offices. Lensed luminaires shall be equipped with 0.125 inch prismatic virgin acrylic. Surface mounted fixtures in occupied spaces shall be the low profile type (4-inch maximum depth).

33.3.3 Commercial grade luminaires with a residential appearance shall be provided in the barracks modules. Luminaires shall be provided in all barracks module rooms including walk-in closets. Low brightness wall-mounted luminaires with white lens shall be provided over vanity mirrors.

33.3.4 Fluorescent lamps shall be low mercury content certified to pass the U.S. Environmental Protection Agency (EPA) Toxic Characteristics Leaching Procedures (TCLP) test for non-hazardous waste. Fluorescent lamps shall have a color corrected temperature (CCT) of 3000 degrees Kelvin except fluorescent lamps in vehicle service and maintenance areas shall have a color corrected temperature (CCT) of 4100 degrees Kelvin. Linear fluorescent lamps shall have a minimum color rendering index (CRI) of 75, and compact fluorescent lamps shall have a minimum color rendering index (CRI) of 80.

33.3.5 Fluorescent and compact fluorescent ballasts shall be electronic programmed rapid start capable of starting lamps at the anticipated ambient temperatures. Compact fluorescent ballasts shall include end-of-life protection. A three year full warranty including a $10 labor allowance shall be provided.

33.3.6 Minimum efficiency standard for fluorescent tubes 4 feet and longer shall be 90 lumens/watt, for fluorescent tubes less than 4 feet shall be 80 lumens/watt, and for compact fluorescent lamps shall be 50 lumens/watt.

33.3.7 Lighting in all toilets (except in barracks), storage rooms, private offices, lounges and laundromats shall be controlled with occupancy sensors. Occupancy sensors may also be used in other areas for energy savings. Areas with lighting controlled by sensors shall have full (100 percent) coverage for walking motion.

33.3.8 Lighting in areas with multiple entrances shall be controlled with three-way and four-way switches or low voltage switches at each entrance. Alternatively, lighting in these areas may be controlled with occupancy sensors.

33.3.9 Facility entrances shall be illuminated with wall mounted luminaires or recessed lensed downlights mounted in the soffit where applicable.

33.3.10 Wall mounted exterior luminaires shall have full cutoff optics and shall be shrouded to obstruct lamp visibility. All wall mounted exterior luminaires shall be cast aluminum with a dark bronze polyester powder coat paint finish and shall be equipped with high pressure sodium lamps.

33.3.11 Photocell controlled wall mounted lighting shall be provided at the entrances to all secure unit storage buildings.

33.3.12 Emergency and exit lighting shall be provided in accordance with NFPA 101, Life Safety Code. Emergency lighting in rooms with fluorescent or

compact fluorescent lighting shall consist of self-diagnostic emergency battery packs. Upon loss of power, the emergency lamp(s) within the fluorescent fixture shall light regardless of the light switch position. Emergency lighting in rooms with metal halide lighting shall consist of self-diagnostic wall mounted emergency lighting units. Exit lighting shall have red LED lettering and aluminum housing and face. Exit lights shall have integral battery backup and self-diagnostic capabilities.

33.3.13 Average maintained illumination levels shall be:

Arms Vaults	15 foot-candles
Auditoriums	20 foot-candles
Barrack Sleeping Rooms	15 foot-candles
Cafeterias	25 foot-candles
Classrooms	50 foot-candles
Communication Distribution Nodes	50 foot-candles
Communication Rooms/Closets	50 foot-candles
Computer Rooms	50 foot-candles
Conference Rooms	30 foot-candles
Corridors	10 foot-candles
Electrical Rooms	15 foot-candles
Emergency Generator Rooms	15 foot-candles
General Office Space	50 foot-candles
Hangars	50 foot-candles
Janitor's Closets	5 foot-candles
Kitchens	70 foot-candles
Laundry	25 foot-candles
Lobbies	15 foot-candles
Lounges	15 foot-candles
Mechanical Rooms	15 foot-candles
Supply Rooms	20 foot-candles
Outdoor Shelters	5 foot-candles
Toilet Facilities	20 foot-candles
Vehicle Maintenance Shops	50 foot-candles
Warehouse – Active Bulk	10 foot-candles
Warehouse – Inactive	5 foot-candles
Warehouse – Rack	20 foot-candles

33.4 Interior Communication Systems

33.4.1 A completely operational communication system including, but not limited to, all necessary raceway, cabling, backboards, outlet boxes, terminations, jacks, and faceplates shall be provided. When a LAN is required, provide LAN racks, patch cords and patch panels. Duplex communication outlets shall consist of two RJ45 jacks in a 4-11/16" square box. Simplex communication outlets shall consist of one RJ45 jack in a 4-11/16" square box. Modular jacks shall be category 6 and shall meet the requirements of EIA ANSI/TIA/EIA-568-B and shall meet the Link Test parameters as listed in EIA TIA/EIA-TSB-67 and supplemented by EIA ANSI/TIA/EIA-568-B.2-1. Modular jack pin/pair configuration shall be T568B per EIA ANSI/TIA/EIA-568-B. Modular jacks shall be unkeyed. The homerun cabling from each duplex outlet back to the communications room/closet shall consist of two 4-pair, Category 6, #24 AWG solid unshielded twisted pair copper. The homerun cabling from each simplex jack outlet back to the communications room/closet shall

consist of one 4-pair, Category 6, #24 AWG solid unshielded twisted pair copper. At every outlet, each 4-pair cable shall terminate on a Category 6, 8-pin modular jack. All 4-pair cables from RJ45 jacks shall terminate on Category 6 modular patch panels with RJ-45 connectors, where a LAN is required and if no LAN is required they shall punch down on type 66 terminal blocks that are wall mounted to a plywood backboard. Patch panels shall be mounted on 19" LAN racks. The cable length between instrument and backboard terminations shall not exceed 295 feet. Horizontal cable shall meet the requirements of EIA ANSI/TIA/EIA-568-B.2-1 for Category 6. Cable shall be label-verified. Cable jacket shall be factory marked at regular intervals indicating verifying organization and performance level. Cable shall be rated CMG or CMP, as appropriate, per NFPA 70. All cabling shall be installed in raceways.

33.4.2 Where a LAN is required, patch cords are required for a complete and functional system and shall be provided. Patch cords shall be cable assemblies consisting of flexible, twisted pair stranded wire with eight-position plugs at each end. Cable shall be label-verified. Cable jacket shall be factory marked at regular intervals indicating verifying organization and performance level. Patch cords shall be wired straight through; pin numbers shall be identical at each end and shall be paired to match T568B patch panel jack wiring per EIA ANSI/TIA/EIA-568-B. Patch cords shall be unkeyed. Patch cords shall be factory assembled. Patch cords shall conform to the requirements of EIA ANSI/TIA/EIA-568-B.2-1 for Category 6.

33.4.3 Connecting and cross-connecting hardware for copper cables shall be the same category as the cable it serves. Hardware shall be in accordance with EIA ANSI/TIA/EIA-568-B. Connectors for fiber optic strands shall be ST type with ceramic ferrule material with a maximum insertion loss of.5 dB. Connectors shall meet performance requirements of EIA ANSI/TIA/EIA-568-B. Connectors shall be field installable. Connectors shall utilize adhesive for fiber attachment to ferrule. Connectors shall terminate fiber sizes as required for the service.

33.4.4 Raceways for homerun cabling shall consist of cable tray and 1-inch minimum electrical metallic tubing (EMT) conduit. Raceways for all other facilities shall consist of 1-inch minimum electrical metallic tubing (EMT) conduit only. Raceways shall originate at the outlet and terminate inside the communications room/closet. Each conduit shall constitute a continuous run with NO pull boxes and NO more than two 90-degree bends in the entire run. Raceways consisting of cable trays and conduit shall be used to provide a centralized cable distribution system by providing a continuous cable tray from the communications room through the entire length of the building and centered as much as practical. Cable trays shall be located above ceilings (except in the communications room) and shall be mounted no higher than 6 inches above ceiling. Cable trays shall terminate behind LAN racks. Cable trays shall be sized to provide no less than one half square inch of cross-sectional area per jack served including CATV type "F" connectors. The cable tray fill ratio shall be 40 percent where practical. Conduit shall be provided between the outlet and the cable tray, and shall be physically strapped to the cable tray and attached with an anti-chaffing grommet.

33.4.5 A communication duplex outlet shall be provided alongside each computer receptacle, facsimile receptacle and common use printer receptacle.

A communication simplex outlet shall be provided 52 inches AFF in each electrical room, mechanical room and communications room/closet.

33.4.6 Communication outlets in finished areas shall be mounted 18 inches AFF unless otherwise indicated or required by code or criteria. Communication outlets mounted above counter tops or at built-in desks shall be mounted to assure access from desktop equipment.

33.4.7 Communication outlets faceplates shall be white in finished areas and stainless steel in unfinished areas.

33.4.8 Placement of communication outlets shall be coordinated with the furniture plans.

33.4.9 All empty conduit shall be sealed, capped and tagged and shall include a pull wire.

33.4.10 The communication backboard and LAN racks shall be mounted in an environmentally conditioned space dedicated exclusively to communications equipment.

33.4.11 Patch panels for copper cable shall consist of eight-position modular jacks, with rear mounted type 110 insulation displacement connectors, arranged in rows or columns on 19 inch rack mounted panels. Jack pin/pair configuration shall be T568B per EIA ANSI/TIA/EIA-568-B. Jacks shall be unkeyed. Panels shall be labeled with alphanumeric x-y coordinates. The modular jacks shall conform to the requirements of EIA ANSI/TIA/EIA-568-B, and shall be rated for use with Category 6 cable in accordance with EIA ANSI/TIA/EIA-568-B.2-1 and shall meet the Link Test parameters as listed in EIA TIA/EIA-TSB-67 and supplemented by EIA ANSI/TIA/EIA-568-B.2-1. A single unshielded twisted pair shall be punched down on each jack within the service patch panel as shown on attachment 1E. Terminations shall be blue/white and blue. The number of jacks required within patch panels will be equal to the number of outside pairs of cable entering the building plus 20% spare.

33.4.12 Patch panels for fiber optic strands shall be a complete system of components by a single manufacturer, and shall provide termination, splice storage, routing, radius limiting, cable fastening, storage, and cross-connection. Patch panels shall be modular with ST connectors. Patch panels shall be 19 inch rack mounted panels. Patch panels shall provide strain relief for cables. Panels shall be labeled with alphanumeric x-y coordinates. Patch panel connectors and couplers shall be the same type and configuration as used elsewhere in the system. Fiber optic strands serving each building shall be terminated on LAN rack mounted patch panels.

33.4.13 Terminal blocks shall be wall mounted (on plywood backboard) wire termination units consisting of insulation displacement connectors mounted in plastic blocks, frames or housings. Blocks shall be type 66 which meet the requirements of EIA ANSI/TIA/EIA-568-B, and shall be rated for use with Category 6 cable in accordance with EIA ANSI/TIA/EIA-568-B.2-1 and shall meet the Link Test parameters as listed in EIA TIA/EIA-TSB-67 and supplemented by EIA ANSI/TIA/EIA-568-B.2-1. Blocks shall be mounted on standoffs and shall include cable management hardware. Insulation displacement connectors shall terminate 22 or 24 gauge solid copper wire as a minimum, and shall be

connected in pairs so that horizontal cable and connected jumper wires are on separate connected terminals. Terminal blocks are only required in those communication rooms/closets that do not have LAN racks. Size and number of terminal blocks shall be sufficient to accommodate all horizontal copper cabling within the facility.

33.4.14 LAN racks shall be floor mounted, welded steel relay racks with uprights to mount equipment 19 inches wide. Uprights shall be 3 inch deep channel, 1-1/4 inches wide, drilled and tapped 12-24 in a 1/2 inch pattern. Racks shall be provided with a standard top cross member, and predrilled base plate to allow floor fastening. Open frame LAN racks shall be 7 feet in height and painted. Back of racks shall be placed a minimum of 3 feet from wall to allow sufficient working clearances for termination of cables. AC outlets shall be provided in each rack. Racks shall be grounded to the building's primary grounding system utilizing a #6 AWG bare solid copper conductor in 3/4 inch conduit.

33.4.15 Cable guides shall be provided and shall be specifically manufactured for the purpose of routing cables, wires and patch cords horizontally and vertically on 19 inch LAN racks. Cable guides shall consist of ring or bracket-like devices mounted on rack panels for horizontal use or individually mounted for vertical use. Cable guides shall mount to racks by screws and/or nuts and lockwashers.

33.4.16 Plywood backboards shall be provided in each communications room/closet on a minimum of three walls. Backboards shall be 5/8" inch by 4 feet wide by the entire length of the wall. The backboard shall be mounted such that the bottom is 2.5 feet above finished floor and the 4 feet width is in the vertical direction. Backboards shall be securely fastened to the walls and shall be painted with white or light colored paint. A #6 AWG bare solid copper conductor in 3/4 inch conduit shall be provided between the backboard and the building's primary grounding system. Conductor shall be centered on backboard in the horizontal direction and 10 feet of slack shall be provided and coiled up on backboard. Although backboard is not continuous it shall be considered as one backboard for dedicated receptacle requirements.

33.4.17 Electrical boxes for communication outlets shall be 4-11/16 inch square by 2-1/8 inches deep with minimum 3/8 inch deep single or two gang plaster ring as required.

33.4.18 Outside plant (OSP) copper cabling shall terminate on protected 66 blocks as shown in attachment E1. The number and size of protector blocks shall be sufficient to terminate all incoming cabling. The protector modules shall be of the two-element gas tube type. Protection modules shall be heavy duty, A>10 kA, B>400, C>65A where A is the maximum single impulse discharge current, B is the impulse life and C is the AC discharge current per ANSI C62.61. The gas modules shall shunt high voltage to ground, fail short, be equipped with an external spark gap and heat coils, and shall comply with UL 497.

33.4.19 Cable trays shall be in accordance with NEMA VE 1 and shall be the trough-type except in the distribution node building trays shall be ladder type and sized as stated in the following paragraph. Cable trays shall be constructed of aluminum or copper-free aluminum or zinc-coated steel. Trays

shall include splice and end plates, dropouts, and miscellaneous hardware. Edges, fittings, and hardware shall be finished free from burrs and sharp edges. Fittings shall have not less than the load-carrying ability of straight tray sections and shall have manufacturer's minimum standard radius. Radius of bends shall be 12 inches.

33.4.20 Each communication room/closet shall have 2-4" conduits (one with 4-1" inner ducts) stubbed up into the room/closet. Rooms/closets shall also have 2-1" conduits stubbed up inside room for cabling from electric and water meters to interface with the meter interface unit (MIU) that shall also be located in room/closet. An automated meter reading system specification is provided as part of this RFP describing the MIU. Conduits shall run to the 5 foot line outside the building. Outside location shall be coordinated with the exterior communications site plan and the civil site plan.

33.4.21 In addition to the requirements of paragraph 28.5 and all subparagraphs, the requirements stated in attachment 2E shall be followed. The attachment is the Ft. Hood Directorate of Information Management Building Communications wiring standard.

33.5 Cable Television (CATV)

33.5.1 A completely operational CATV system including, but not limited to, all necessary raceway, outlet boxes, cabling, terminations, splitters, jacks, and faceplates shall be provided where required. The homerun from each outlet to the backboard shall consist of one RG-6 cable in 1 inch conduit. In buildings with cable trays, the cable tray shall be utilized for the CATV cabling in the same manner as for communication cabling. Each cable shall terminate at a type 'F' connector. At the backboard, the cable shall terminate on splitters. All CATV head-end equipment, incoming service, etc. shall be furnished and installed by the local CATV company. A dedicated area on the communications room/closet backboard shall be utilized for the CATV system. Enough space shall be clear to accommodate equipment to be provided by the local CATV company. Within this dedicated area a #6 AWG bare solid copper conductor in 3/4 inch conduit shall be provided between the backboard and the building's primary grounding system. 10 feet of slack shall be provided coiled up on backboard.

33.5.2 CATV outlets shall be mounted 18-inches AFF unless otherwise indicated. CATV outlets and faceplates shall be white.

33.5.3 All empty conduit shall be sealed, capped and tagged and shall include a pull wire.

33.6 Fire Alarm and Detection System

33.6.1 The fire alarm reporting, evacuation and detection systems for all facilities shall be provided where required by and designed in accordance with the UFC 3-600-01, 2003 (http://www.ccb.org/docs/UFC/3_600_01.pdf), the International Building Code, 2003, and the National Fire Protection Association (NFPA), NFC Codes and Standards, current as of 2004.

33.6.2 The design of the fire detection features shall be by a qualified fire protection engineer meeting one of the following conditions: a.) An engineer

with a Bachelor of Science or Masters of Science Degree in fire protection engineering from an accredited university engineering program, plus a minimum of 5 years' work experience in fire protection engineering. b.) A registered professional engineer who has passed the National Council of Examiners for Engineering and Surveys (NCEE) fire protection engineering written examination. c.) A registered P.E. in a related engineering discipline with a minimum of 5 years' experience dedicated to fire protection engineering. d.) An individual who has obtained National Institute for Certification in Engineering Technologies, Fire Alarm Systems, Level III certification (minimum) in accordance with NFPA 72.

33.6.3 A fire protection and life safety design analysis addressing fire alarm reporting, evacuation and detection systems shall be provided for all buildings in the project as described in "Fire Protection" paragraph herein.

33.6.4 Where fire alarm reporting, evacuation and detection systems are determined to be required, they shall comply with the following:

33.6.4.1 The fire alarm systems shall consist of control panels, RF receiver/transmitters and antenna, manual pull stations, horns and visual indicators, sprinkler water flow switches, valve tamper switches, air pressure supervisory switches, control and monitor modules for non-addressable devices and smoke (including duct detectors) and heat detectors. Fire alarm system for all buildings shall comply with the Americans with Disabilities Act (ADA).

33.6.4.1.1 All Fire Alarm Panels locks and Pull Stations reset keys shall be keyed to be Cat-15. Fire Alarm transmitters shall remain factory keyed.

33.6.4.2 Provide horns throughout the facilities to attain alarm sound levels of no less than 15 dB above normal ambient sound levels at any location within the facilities. Normal ambient sound levels shall include the sound of shower water running. Provide visual indicators in compliance with the ADA (except not required in barracks) and NFPA 72: National Fire Alarm Code.

33.6.4.3 The fire alarm and detection system shall be a complete, supervised fire alarm reporting system. The system shall be activated into the alarm mode by actuation of any alarm initiating device. The system shall remain in the alarm mode until the initiating device is reset and the fire alarm control panel is reset and restored to normal. Alarm initiating devices shall be connected, Style D, to signal line circuits (SLC), Style 6, in accordance with NFPA 72. Alarm notification appliances shall be connected to notification appliance circuits (NAC), Style Z in accordance with NFPA 72. A looped conduit system shall be provided so that if the conduit and all conductors within are severed at any point, all IDC, NAC and SLC will remain functional. The conduit loop requirement is not applicable to the signal transmission link from the local panels (at the protected premises) to the Supervising Station (fire station, fire alarm central communication center). Textual, audible, and visual appliances and systems shall comply with NFPA 72. Fire alarm system components requiring power, except for the control panel power supply, shall operate on 24 Volts dc. Addressable system shall be microcomputer (microprocessor or microcontroller) based with a minimum word size of eight bits. Detection, monitor and control device shall be individually

addressable. Devices not inherently addressable (e.g., tamper and flow switches) shall be equipped with addressable monitor and control modules.

33.6.4.4 Vertical and horizontal separation of conduits shall be in accordance with NFPA 72. Conduits shall be red or marked with a red stripe every 10 feet. All junction boxes and pull boxes shall be painted red.

33.6.4.5 A dedicated power supply shall be provided for the fire alarm panel. The power supply shall be equipped with a locking mechanism and marked in red with the words "FIRE ALARM CIRCUIT CONTROL".

33.6.4.6 Tamper switches shall be provided on all fire alarm system control valves and the Post Indicator Valves (PIV). Coordinate with the other disciplines to determine locations.

33.6.4.7 RF receiver/transmitters shall be Monaco BT-X @139.675MHZ and shall be compatible with proprietary supervising station receiving equipment. Each radio alarm transmitter shall be the manufacturer's recognized commercial product, completely assembled, wired, factory tested, and delivered ready for installation and operation. Transmitters shall be provided in accordance with applicable portions of NFPA 72, NFPA 1221, and 47 CFR 15. Transmitter electronics module shall be contained within the physical housing as an integral, removable assembly. The proprietary supervising station receiving equipment is MONACO D-700 and the transceiver shall be fully compatible with this equipment. At the contractors option, and if UL listed, the transmitter may be housed in the same panel as the fire alarm control panel. Fire alarm control panels and transmitters shall be equipped with 72 hour battery back-up power.

33.6.4.8 Horns shall be surface mounted, with the matching mounting back box recessed vibrating type suitable for use in an electrically supervised circuit. Horns shall produce a sound rating of at least 85 dBA at 10 feet. Horns used in exterior locations shall be specifically listed or approved for outdoor use and be provided with metal housing and protective grilles. Horns shall be capable of being turned off by the mass notification system. When that occurs a supervisory signal shall be transmitted to the fire department.

33.6.4.9 Visual indicators shall conform to the applicable requirements of UL 1971. Appliances shall have clear high intensity optic lens, xenon flash tubes, and output white light. Strobe flash rate shall be between 1 to 3 flashes per second and a minimum of 75 candela. Strobe shall be semi-flush mounted.

33.6.4.10 An omnidirectional, coaxial, halfwave dipole antennas for radio alarm receiver/transmitters with a driving point impedance to match receiver/transmitter output shall be provided. The antenna and antenna mounts shall be corrosion resistant and designed to withstand wind velocities of 100 mph. Antennas shall not be mounted to any portion of the building roofing system.

33.6.4.11 Smoke detectors shall be designed for detection of abnormal smoke densities. Smoke detectors shall be photoelectric type. Detectors shall contain a visible indicator LED/LCD that shows when the unit is in alarm condition. Detectors shall not be adversely affected by vibration or

pressure. Detectors shall be the plug-in type in which the detector base contains terminals for making wiring connections. Detectors that are to be installed in concealed (above false ceilings, etc.) locations shall be provided with a remote indicator LED/LCD suitable for mounting in a finished, visible location.

33.6.4.11.1 Photoelectric detectors shall operate on a light scattering concept using an LED light source. Failure of the LED shall not cause an alarm condition. Detectors shall be factory set for sensitivity and shall require no field adjustments of any kind. Detectors shall have an obscuration rating in accordance with UL 268. Addressable smoke detectors shall be capable of having the sensitivity being remotely adjusted by the control panel.

33.6.4.11.2 Duct-mounted photoelectric smoke detectors shall be furnished and installed where indicated and in accordance with NFPA 90A. Units shall consist of a smoke detector as specified in paragraph Photoelectric Detectors, mounted in a special housing fitted with duct sampling tubes. Detector circuitry shall be mounted in a metallic enclosure exterior to the duct. Detectors shall have a manual reset. Detectors shall be rated for air velocities that include air flows between 500 and 4000 fpm. Detectors shall be powered from the fire alarm panel. Sampling tubes shall run the full width of the duct. The duct detector package shall conform to the requirements of NFPA 90A, UL 268A, and shall be UL listed for use in air-handling systems. The control functions, operation, reset, and bypass shall be controlled from the fire alarm control panel. Lights to indicate the operation and alarm condition; and the test and reset buttons shall be visible and accessible with the unit installed and the cover in place. Detectors mounted above 6 feet and those mounted below 6 feet that cannot be easily accessed while standing on the floor, shall be provided with a remote detector indicator panel containing test and reset switches. Remote lamps and switches as well as the affected fan units shall be properly identified in etched plastic placards. Detectors shall have auxiliary contacts to provide control, interlock, and shutdown functions. The detectors shall be supplied by the fire alarm system manufacturer to ensure complete system compatibility.

33.6.4.11.3 Combination smoke and heat detectors shall have an audible device (self-contained) and be designed for detection of abnormal smoke densities by the photoelectric principle and abnormal heat by a fixed temperature sensor. Smoke detectors shall be provided with an LED light source. Failure of the LED shall not cause an alarm condition and the sensitivity shall be factory set at a nominal 3 percent and require no field adjustments of any kind. Heat detector portion shall be fixed temperature sensor rated at 135 degrees F. The audible appliances shall have a minimum sound output of at least 85 dBA at 10 feet. Detectors shall contain a visible indicator LED that shows when the unit is in alarm condition. Detectors shall not be adversely affected by vibration or pressure. Heat detectors shall connect to a control panel SLC and shall be self restorable.

33.6.4.12 Manual Pull Fire Alarm Stations shall not use glass rods.

33.7 Mass Notification System (MNS)

A MNS shall be provided in each inhabited building in accordance with UFC 4-021-01, Design and O&M: Mass Notification Systems (http://www.hnd.usace.army.mil/techinfo/UFC/UFC4-021-01.pdf), to provide real-time information to all building occupants and personnel in the immediate vicinity of the building during emergency situations. For purposes of determining the need for an MNS, an inhabited building is defined as a building or portions of a building routinely occupied by 11 or more DoD personnel and with a population density of greater than one person per 430 gross square feet.

33.7.1 The MNS shall be designed and installed by personnel factory-trained by the MNS manufacturer. MNS products shall be from a manufacturer with no less than 5 years of experience in producing products similar to those required for mass notification. Upon completion of installation, MNS performance tests shall be completed demonstrating compliance with the requirements herein using test procedures and forms approved by the Contracting Officer's Representative. The Contracting Officer's Representative shall witness performance test and final acceptance test. Upon successful completion of acceptance tests, six (6) complete sets of record drawings and operations and maintenance manuals shall be provided.

33.7.2 The MNS shall consist of a notification appliance network and an autonomous control unit. The autonomous control unit shall be placed in the communications room/closet a wall without the backboard. The MNS shall be independent of the fire alarm system. All MNS components shall be suitable for the environment in which they are installed.

33.7.2.1 The notification appliance network consists of a set of audio speakers located to provide intelligible instructions at all locations in and around the building. The speakers shall be mounted both interior and exterior to the building. Visual strobes separate from fire alarm visual indicators shall also be provided to alert hearing-impaired occupants in buildings designated handicap accessible. Strobes shall be un-marked, with amber colored lenses. Audio speakers shall comply with the requirements for speaker intelligibility in accordance with NFPA 72, Appendix A; and visual strobes shall comply with the requirements for fire alarm visual indicators contained therein.

33.7.2.2 The autonomous control unit shall monitor and control the notification appliance network. A local operator console shall be provided in each facility and connected to the autonomous control unit for local operation. Using the local operator console, building personnel shall initiate delivery of pre-recorded voice messages, provide live voice messages and instructions, and initiate visual strobes (where applicable). Location of local operator console shall be as directed by Ft. Hood DPW during design. The local operator control shall be a separate unit from the autonomous control unit.

33.7.2.2.1 The autonomous control unit shall temporarily deactivate audible fire alarm notification appliances while delivering voice messages. Activation of fire alarm visual indicators and transmission of signals to the base fire department shall not be affected by activation of the MNS. NFPA 72 prohibition against deactivation of fire alarm audible notification appliances is waived to allow MNS override capability.

33.7.2.2.2 Upon deactivation of the audible fire alarm notification appliances, a supervisory signal separate from other fire alarm supervisory signals shall be displayed at the building fire alarm control panel and the supervisory signal shall be transmitted to the base fire department. A readily accessible means shall be provided for emergency response forces to manually override the deactivation function, permitting the fire alarm audible notification appliances to operate independently of the MNS. Use of the manual override feature shall cause a supervisory signal in the fire alarm system.

33.7.2.2.3 Autonomous control unit monitoring capabilities shall include conductor integrity for strobe, display, fire alarm interface and speaker wiring. The autonomous control unit shall display and log local diagnostic information and shall be capable or repeating pre-recorded messages until terminated.

33.7.2.3 A central control unit shall be provided at the barracks site to allow broadcasting of instructions to all barracks buildings within the site from a single location. The central control unit shall communicate with the autonomous control units transmit commands and messages and receive status information. The central control unit capabilities shall include the following:

33.7.2.3.1 Remotely activate all functions of the individual building systems, including delivery of pre-recorded voice messages.

33.7.2.3.2 Remotely activate concurrent pre-recorded voice messages to multiple individual building systems, including one message for the affected building and a separate message for nearby unaffected buildings.

33.7.2.3.3 Deliver live and recorded voice messages to individual building systems.

33.7.2.4 The communications network shall provide two-way communications between the central control unit and autonomous control units, and shall include redundant (primary and backup) communication links.

33.7.2.5 The MNS shall include 8-hour battery back-up.

33.8 Intrusion Detection System (IDS)

33.8.1 The IDS system shall consist of an empty conduit and box system for Government-furnished and Government-installed (GFGI) IDS equipment. Two 4-inch square (2-1/8 inches deep) junction boxes shall be provided in the protected area at the ceiling level on the wall adjacent to the door. Extend one 1-inch conduit from one of the boxes to the nearest telephone board. Provide a branch circuit in the other box and connect to a panelboard. Provide a red pad-lockable circuit breaker for the IDS power. Power and communication conduits for the IDS shall be galvanized rigid steel run exposed with all the joints welded.

33.8.2 All empty conduit shall be sealed, capped and tagged and shall include a pull wire.

33.8.3 An empty conduit and box IDS system shall be provided in each Modular Documents Vault (if provided).

34. SITE ELECTRICAL DESIGN

34.1 Codes and Standards

The design and construction of the electrical systems shall be in compliance with the most recent editions of the applicable National Fire Protection Association Standards, the rules and recommendations of IEEE C2: National Electric Safety Code, UFC 3-550-03N, Design: Power Distribution Systems (http://www.ccb.org/docs/UFC/3_550_03.pdf), and as required herein. Where there is a conflict between the RFP and the codes and standards the most stringent shall apply.

34.2 Site Electrical

Primary power shall be extended to all sites. Specific facility locations shall be as shown on civil sheets. Existing aerial feeders shall be utilized as primary connection points for each site. These feeders are shown **(AM #0002) by attachments provided in Appendix E ELECTRICAL REQUIREMENTS** ~~for on attachment 3E for storage facility and attachment 4E(Bid Option #1) for classroom facility~~. Available fault current data is also shown for each feeder. Primary extension off-site shall be aerial. Primary extension on-site shall be underground. Aerial primary extensions shall be 3-phase, 4-wire unless noted otherwise. Underground primary extensions to 3-phase electrical equipment shall be 3-phase, 3-wire with cable shield sized to accommodate fault current without damage to the conductor (except at the location of the fault) in accordance with IEEE C2. A separate 600 volt ground wire shall be installed in the duct with the primary extension. In lieu of a ground wire, concentric neutral cable may be utilized.

34.2.1 The existing primary power distribution system at Fort Hood is 7200/12470 volts, three-phase, four-wire, grounded wye. **(AM #0002) The TVM shops shall have installed a pole-mounted transformer bank consisting of 3-15 kVA, 277-480V secondary transformer with #2 THW ACSR quadraplex service drop to shop's service entrance panel "PP".** New class 3 riser poles with fused cutouts, lightning arrestors, and cable terminators shall be provided for both **(Amn#0002) pole-mounted transformers and** transition from aerial to underground service. Power lines for extension of primary aerial service to the sites (if required) shall consist of wood poles and crossarms. Contractor shall match the type of aerial construction utilized at Ft. Hood. The underground primary duct system shall consist of no less than two 4-inch ducts. One duct shall house the phase conductors and the other duct shall act as a spare. The duct system shall be placed a minimum of 36 inches below grade and shall be concrete encased. A pull wire shall be provided in all empty ducts. Cable junctions shall only be in sectionalizing cabinets and primary switches. No splices in manholes shall be allowed.

34.2.2 Scheduled primary outages are not allowed on Ft. Hood. Therefore, all connections to existing lines shall be accomplished while the lines energized.

34.2.3 All pad-mounted transformers shall be rated for three-phase service, connected delta-wye. Medium-voltage ratings of cable terminations shall be 15 kV between phases for 133 percent insulation level. Pad-mounted transformers

shall comply with ANSI C57.12.26 and shall be of the radial or loop feed type. Pad-mounted transformer stations shall be assembled and coordinated by one manufacturer and each transformer station shall be shipped as a complete unit so that field installation requirements are limited to mounting each unit on a concrete pad and connecting it to primary and secondary lines. Stainless steel pins and hinges shall be provided. Barriers shall be provided between high- and low-voltage compartments. High-voltage compartment doors shall be interlocked with low-voltage compartment doors to prevent access to any high-voltage section unless its associated low-voltage section door has first been opened. Compartments shall be sized to meet the specific dimensional requirements of ANSI C57.12.26. Pentahead locking bolts shall be provided with provisions for a padlock.

34.2.3.1 The high-voltage compartment shall be dead-front construction. Primary switching and protective devices shall include load break switching, oil-immersed, bayonet-type, overload fuse in series with a partial range current-limiting fuse, medium-voltage separable load break connectors, universal bushing wells and inserts or integral one piece bushings and surge arresters. The switch shall be mounted inside transformer tank with switch operating handle located in high-voltage compartment and equipped with metal loop for hook stick operation. Fuses shall be interlocked with switches so that fuses can be removed only when the associated switch is in the "OPEN" position. Adjacent to medium-voltage cable connections, a nameplate or equivalent stenciled inscription shall be provided inscribed "DO NOT OPEN CABLE CONNECTORS UNLESS SWITCH IS OPEN." Surge arresters shall be fully insulated and configured to terminate on a second set of high voltage bushings.

34.2.3.2 Radial-feed load break switches shall be oil-immersed type rated at 15 kV, 95 kV BIL, with a continuous current rating and load-break rating of 200 ampere, and a make-and-latch rating of 10,000 rms amperes symmetrical. Locate the switch handle in the high-voltage compartment. Provide three, two-position, oil-immersed type loop feed sectionalizer switches to permit closed transition loop feed and sectionalizing. Each switch shall be rated at 15 kV, 95 kV BIL, with a continuous current rating and load-break rating of 200 amperes, and a make-and-latch rating of 10,000 rms amperes symmetrical. Locate the switch handle in the high-voltage compartment. Operation of switches shall be as follows:

ARRANGEMENT #	DESCRIPTION OF SWITCH ARRANGEMENT	SWITCH POSITION LINE A SW OPEN	LINE A SW CLOSE	LINE B SW OPEN	LINE B SW CLOSE	XFMR SW OPEN	XFMR SW CLOSE
1	Line A connected to Line B and both lines connected to transformer		X		X		X
2	Transformer connected to Line A only		X	X			X
3	Transformer connected to Line B only	X			X		X

ARRANGEMENT DESCRIPTION OF SWITCH POSITION

ARRANGEMENT #	DESCRIPTION OF SWITCH ARRANGEMENT	SWITCH POSITION LINE A SW OPEN	LINE A SW CLOSE	LINE B SW OPEN	LINE B SW CLOSE	XFMR SW OPEN	XFMR SW CLOSE
4	Transformer open and loop closed		X		X		X
5	Transformer open and loop open	X		X		X	

34.2.3.3 Transformers shall comply with IEEE ANSI/IEEE C57.12.00, ANSI C57.12.21, and ANSI C57.12.26 and shall be of the mineral oil-insulated type . Transformers shall be suitable for outdoor use and shall have 2 separate windings per phase. Standard NEMA primary taps shall be provided. Where primary taps are not specified, 4, 2-1/2 percent rated kVA high-voltage taps shall be provided 2 above and 2 below rated, primary voltage. Operating handles for primary tap changers for de-energized operation shall be located within high-voltage compartments, externally to transformer tanks. Adjacent to the tap changer operating handle, a nameplate or equivalent stenciled inscription shall be provided and inscribed "DO NOT OPERATE UNDER LOAD." Transformer temperature rise at 60 Hz shall be 60 degrees C.

34.2.4 In transformer low-voltage cable compartments, neutrals shall be provided with fully-insulated bushings. Clamp type cable terminations, suitable for copper or aluminum conductors entering from below, shall be provided as necessary.

34.2.5 Electrical equipment such as pad-mounted transformers, sectionalizing cabinets and primary switches shall be inconspicuously located. No such equipment shall be located within 33 feet of buildings to meet force protection requirements. All pad mounted medium voltage equipment shall be dead-front.

34.2.6 Electrical manholes shall be 6 feet long by 4 feet wide by 6 feet deep (interior dimensions). Strength of manholes and their frames and covers shall conform to the requirements of IEEE C2. Precast-concrete manholes shall have the required strength established by ASTM C 478, ASTM C 478M. Frames and covers shall be made of gray cast iron and a machine-finished seat shall be provided to ensure a matching joint between frame and cover. Cast iron shall comply with ASTM A 48, Class 30B, minimum.

34.2.7 Cathodic protection shall be provided for all metal piping, conduit and equipment installed below grade. Design shall be in accordance with TM 5-811-7, Electrical Design, Cathodic Protection (http://www.usace.army.mil/inet/usace-docs/armytm/TM5-811-7/). Protection system shall be sacrificial type utilizing magnesium anodes, and shall have a design current of 2 ma per square foot of bare metal.

34.2.8 Secondary and service conductors shall be installed in conduit and shall be placed a minimum of 24 inches below grade.

34.2.9 Medium voltage cable construction shall be Type MV, conforming to NFPA 70 and UL 1072. Cables shall be manufactured for use in duct applications. Cables shall be soft drawn copper complying with ASTM B 3 and ASTM B 8 for

regular concentric and compressed stranding or aluminum alloy 1350, 3/4 hard minimum complying with ASTM B 609, ASTM B 609M and ASTM B 231 for regular concentric and compressed stranding. Cable insulation shall be cross-linked thermosetting polyethylene (XLP) insulation conforming to the requirements of NEMA WC 7 and AEIC CS5 orethylene-propylene-rubber (EPR) insulation conforming to the requirements of NEMA WC 8 and AEIC CS6. A 133 percent insulation level shall be used on 15 kV rated cables. Cables shall have a semiconducting conductor shield, a semiconducting insulation shield, and an overall copper wire shield for each phase. Cables shall be provided with a polyethylene jacket.

34.3 Not Used

34.4 Utility Routing

34.4.1 Underground power ducts crossing existing roads shall be jacked and bored.

34.4.2 The installation of underground power lines shall be coordinated with all other utilities including but not be limited to: communications, storm drains, sanitary sewers, water lines, high temp water lines, chilled water lines and gas lines. The minimum separation between electric or communication lines and other utility lines shall be 36 inches vertically and 36 inches horizontally when running adjacent. If utilities are crossing, minimum separation shall be 12 inches vertically. In the case of concrete encasement, the clearances shall be measured from the outermost dimension of the utility line and shall have suitable supports on each side of the upper line to prevent transferring any direct load onto the lower line.

34.4.3 Prior to commencing work on any new underground power line, the Contractor shall stake the route of each line and indicate the exact location of all new ducts, primary sectionalizing cabinets, primary switches, manholes and transformers for approval by the Fort Hood DPW, Ft. Hood DOIM, and by the Contracting Officer's Representative.

34.4.4 New underground utilities including manholes and handholes shall be located outside the tree drip lines of existing trees scheduled to remain. Ducts that cannot be routed around tree drip lines shall be tunneled through the drip line area as approved by the Contracting Officer’s Representative.

34.4.5 See paragraph 16 herein for additional utility layout requirements.

34.5 Grounding

The secondary electrical distribution system shall be the solidly grounded neutral type with no intentionally introduced grounding impedance. Grounding shall be in accordance with Article 250, National Electrical Code.

34.5.1 A grounding counterpoise shall be provided around each transformer pad. Ground rods shall be provided at each corner of the pad and connected to the counterpoise. Connections shall be by exothermic weld.

34.5.2 Resistance of driven grounding electrodes shall be tested by the fall-of-potential method. Resistance of the grounding systems shall be a maximum of 25 ohms. The Contracting Officer's Representative shall be immediately notified of resistance readings exceeding 25 ohms.

34.5.3 Grounding conductors shall be copper. Driven grounding electrodes shall be 3/4 inch diameter x 10 feet long solid rods of the following materials: copper or copper-clad steel.

34.5.4 Grounding and bonding shall conform to UL 467.

34.5.5 All pole line hardware shall be grounded in accordance with IEEE C2.

34.6 Metering

34.6.1 Watt-hour meters shall comply with ANSI C12.1 and ANSI C12 and shall be pulse initiator type or electronic type with a pulse output. The meter shall be capable of operating at speeds up to 500 pulses per minute with no false pulses, provide a pulse output of one pulse per kilowatt-hour, and is field programmable. If software or programming device is required, it should be supplied with meter. Registers of meters that have an additional non-digital display for kilowatt demand shall be pointer-type.

34.6.2 An automatic meter reading system (AMRS) to monitor electricity, gas, and water usage from building 4219 shall be provided for all facilities. Guide specification 13815, Automated Meter Reading System is included in this RFP and shall be utilized for this system.

34.6.3 Fort Hood utilizes an Automatic Meter Reading System (AMRS), manufacturer by Teldata Solutions, to monitor electricity, gas, and water usage. The system consists of a central computer (located in Bldg. 4219) and numerous field devices called Meter Interface Units (MIU). The MIU is capable of connecting to and recording information from up to four different utility meters of various types. The recorded information can be either an encoded signal or a pulse signal. The MIU has a built-in modem that is used to transmit the recorded information to the central computer (via the telephone system) base on a preprogrammed schedule. The recommended model is the DC-4 which is battery powered with an approximately life of 15 years. The DC-4 must be requested with dual (two) PB-01 boards that are required to record pulse-type signals. When data logging is required, the IX-4D is recommended.

34.6.4 The MIU shall be installed (with associated wiring) in accordance with manufacturer's recommendation. The MIU shall be located inside the facility as close as possible to the servicing telephone block. However, the total distance from the MIU to any utility meter shall not be more than 500 feet. Communication cable shall be installed between the meter(s) and the MIU. Cable shall be #22 AWG, solid, shielded, three wire (color-coded: red, green, and black), with 600VAC insulation and PVC outer jacket installed in conduit. Allow a 1-2 feet pigtail at the MIU and the connected meter(s) for subsequent connection. A telephone outlet shall be installed adjacent to the MIU and telephone cable shall be installed to the backboard or patch panel. Due to the special setup requirements, the Fort Hood staff will make final cable connection(s) to the MIU and the meter(s), to include programming the MIU and connection to the telephone system (254-287-7283).

34.6.5 The Teldata Solutions utilizes proprietary type protocol that has been developed for particular encoder-type meters that are typically utilized for gas and water meters (Note: all water meters shall be encoded-type. Also, some electrical meters are capable of providing an encoded signal. The encoded signal is the preferred choice because of the addition data it supplies (i.e. serial number, tampering information, etc). On the other hand a pulse signal is limited to only providing a digital signal (on/off). However, when an

encoded-type meter is not available, the minimum pulse requirement is as stated in paragraph 29.7.1.

34.6.6 Current Transformer (CT) rating for metering shall be based on the service rating, mission of the facility, and minimum (base) load to provide the best overall accuracy of the load being measured. Per CT performance curves, meters should be accurate down to 5% of the CT rating. For loads exceeding 1000A, submetering or check metering system shall be considered. The following table is provided to indicate suggested CT ratings.

SUGGESTED CT RATINGS

Service Capacity	CT Rating	Accuracy Class	RF	Max Load	Min Load
225A	200/5	.3 thru B-0.1	4.0	800A	10A
300A	300/5	.3 thru B-0.2	3.0	900A	15A
400A	200/5	.3 thru B-0.1	4.0	800A	10A
600A	400/5	.3 thru B-0.2	4.0	1600A	20A
800A	400/5	.3 thru B-0.2	4.0	1600A	20A
1000A	600/5	.3 thru B-0.5	3.0	1800A	30A
1200A	600/5	.3 thru B-0.5	3.0	1800A	30A
1500A	800/5	.3 thru B-0.5	2.0	1600A	40A
1800A	1500/5	.3 thru B-0.9	1.5	2250A	75A
2000A	1500/5	.3 thru B-0.9	1.5	2250A	75A
2500A	2000/5	.3 thru B-1.8	1.5	3000A	100A
3000A	3000/5	.3 thru B-1.8	1.33	3990A	150A

34.6.7 The MIUs can be obtained from Teldata Solutions, First Point, 1001 SW Fifth Ave, Suite 500, Portland OR 97204, (503) 425-5100 ext. 5127. Utility meter(s) can be supplied from various metering vendors. A list of tested compatible meters may be obtained from the Ft. Hood DPW Energy Management Team, (254) 287-7283.

34.7 (AM #0002) Exterior Lighting

34.7.1 Design of the exterior lighting system and selection of target illumination levels and uniformity ratios not indicated herein shall comply with the recommendations of the Illuminating Engineering Society (IES) Lighting Handbook, 9th Edition. Exterior luminaires shall have full cutoff light distribution patterns as defined in Chapter 22 of the IES Lighting Handbook and shall be individually fused. Exterior lighting shall be provided for Site 2 (LZ Phantom), Site 3 (49000 block), Site 6 (Motor Pool), Building 4615, & Building 4617 hardstands. All exterior lighting shall utilize pulse-start high pressure sodium or metal halide lamps and ballasts. Hardstand lighting shall be served by photocell controlled, zoned lighting contactors. Each contactor/zone shall be equipped with Hand-Off-Auto switches. Controls shall be inconspicuously located in NEMA 3R enclosures. Locations, enclosures and mounting methods shall be approved by the Contracting Officer's Representative prior to installation.

34.7.2 Hardstand areas shall be illuminated to 0.5 foot-candle using full cutoff photocell-controlled floodlight luminaires mounted on metal poles. Highmast lighting is to be used for Site 3 (49000 block) & Site 6 (Motor Pool). It is preferable to locate fixtures along the perimeter, but if uniformity cannot be achieved then poles may be placed within the hardstand, but must be properly protected from vehicle damage. Highmast light locations shall be approved by Directorate of Aviation Operations. Lamps shall not exceed 400 watts.

34.7.3 Poles shall be aluminum or steel, and shall be the pole manufacturer's standard design for supporting the number of fixtures provided. Poles shall be round in shape. Rectangular poles are unacceptable. Poles shall be designed for a wind velocity of 70 mph at the base of the pole, for a wind gust factor of 1.3, and for the height and drag factors recommended by AASHTO LTS-4. The effective projected area of luminaires and other pole-mounted devices shall be taken into account in pole design. Poles shall have grounding provisions. The type of pole shaft material provided shall not be mixed for the same type of fixture types. Grounding connection shall be provided near the bottom of each metal pole and at each concrete pole anchor base. Scratched, stained, chipped, or dented poles shall not be installed.

34,7.4 Poles shall be mounted on concrete foundations with anchor bolts provided by the pole manufacturer. Foundations shall be sized for the loading. Poles located in turf or landscaped areas shall be mounted on concrete foundations extending 2 inches above finished grade (AFG). Poles located in hardstand areas shall be mounted on 30-inch round concrete pedestals extending no less than 36 inches AFG.

34.7.5 Exterior lighting shall utilize 480 volts as much as possible.

34.8 Site Communications

34.8.1 Specific facility locations shall be as shown on civil sheets. Location of other facilities indicated herein are indicated by attachments provided in Appendix E ELECTRICAL REQUIREMENTS.

34.8.1 New ducts installed underneath vehicular streets shall be jack and bored. Handholes shall be 3 x 4 x 4 feet minimum and may be utilized on any site to facilitate the distribution of cabling. Handholes shall not be installed in areas subject to vehicular traffic and shall not be used as part of off-site duct systems. Ducts shall be sealed, capped and tagged in handholes.

34.8.2 New concrete manholes shall be 6’ wide x 8’ long x 7’ deep. Manholes shall be equipped with pulling-in irons, cable racks, and ground rod, and conform to the requirements of REA Bulletin 345-151. Manholes shall be designed so that the main trunk conduits enter and exit near the center of the ends, and lateral conduits exit on the sides near the corners. Manholes may be pre-cast or cast in place. Maximum distance between manholes shall be 500 feet. When new ducts are required to penetrate existing manholes, the manholes shall be core drilled and ducts shall be extended into manholes and sealant applied between the manhole and the duct. If fiber optic splicing is required in manholes, then 50 feet of slack per splice shall be provided as required by RUS REA Bulletin 1735F.

34.8.3 The following are the outside cable plant requirements per building type. Barracks shall be provided with 12 PR copper. Dayrooms shall be provided with 6 PR copper. Bn HQ's shall be provided with 200 PR copper and 24 strand FO. Company ops shall be provided with 50 PR copper and 12 strand FO. Company ops supply facilities shall be provided with 4 PR copper. Stand alone classrooms shall be provided with 25 PR copper and 12 strand FO. Maintenance shops shall be provided with 12 PR copper. Administration buildings shall be provided with 50 PR copper and 12 strand FO. Arms rooms shall be provided with 6 PR copper. Unit storage (17,000 block only) shall be provided with 12 PR copper. (Am #0004) Van dock commo bldg shall be provided with 25 PR copper and 12 strand FO. All copper and fiber optic cabling from the service point of origin to the individual sites shall be based on the total requirements of the site. For example, if there are sixteen company ops buildings on a site then contractor shall provide as a minimum 800 pairs (50 PR x 16) of cable to the site, and 192 strands (12 strand x 16) of FO cable to the site. Arms rooms do not figure into these calculations because they will be fed from company ops buildings.

34.8.4 The following work shall be accomplished to provide service to and on the 4900 and 49000 block site. Service shall be obtained from Bldg. 4304. See Attachment 21E for location of Bldg. 4304 and the 4900 and 49000 Blk. There is an existing manhole on the NW corner of 77th St. and Warehouse Ave. A 4-way 4-inch concrete encased duct system (one duct with 4-1" inner ducts) shall be provided from this manhole. Duct system shall traverse westward along Warehouse Ave. to the west side of 80th St. where a manhole shall be provided at the NW corner of 80th St. and Warehouse. A minimum of two other manholes shall be provided to ensure the maximum distance between manholes does not exceed 500 feet. Duct system shall be jack and bored under 78th, 79th, and 80th streets. From the new manhole on the NW corner of 80th St. and Warehouse a 4-way 4-inch concrete encased duct system (one duct with 4-1" inner ducts) shall be provided along 80th St to the NW corner of 80th and Sante Fe where another manhole shall be placed. An additional manhole shall be placed and centered between these two manholes. This manhole shall be used to feed the new maintenance shop and administration building located on the east side of the site. From the manhole located on the NW corner of 80th St. and Sante Fe four more manholes shall be placed to the west along Sante Fe Ave. 500 feet apart from each other on center. These manholes shall be interconnected with a 4-way 4-inch concrete encased duct system (one duct with 4-1" inner ducts). The two maintenance shops on the west side of the site shall be fed from the farthest western placed manhole. Service from the manholes shall be direct buried. There are existing spare ducts that can be used between Bldg. 4304 and the manhole on the corner of 77th St. and Warehouse. Provide 300PR copper cable to the new manhole providing service to the admin building. Provide 60 strand FO cable to same manhole. From that manhole to the westernmost manhole being provided along Sante Fe Ave. provide 200 PR copper and 48 strand FO cable. These cables shall be spliced into the 300 PR cable and 60 strand cable respectively. Work inside Bldg. 4304 shall include providing Avaya fiber high density distribution panels C.C. 700-007-214 LST1U-144/9 to terminate 60 strand FO cable. In addition, provide and mount new Reltec C-388 protector blocks on existing main distribution frame and terminate 300 PR copper cable on these blocks.

34.8.5 Service to site 2 (LZ Phantom) shall be obtained by extending a new duct system to the existing manhole shown on attachment 22E. Fiber and copper shall be spliced in the existing manhole.

34.8.6 Service to Site 1 (DOL Area) shall be obtained by extending fiber and copper to communications room in building 89010 located adjacent to site.

34.8.7 The following work shall be accomplished to provide service to site 20 (Tank Destroyer & 78th). Service shall be obtained from Bldg. 4304. See Attachment 23E. There is an existing manhole on the NW corner of 77th St. and Warehouse Ave. A 4-way 4-inch concrete encased duct system (one duct with 4-1" inner ducts) shall be provided from this manhole. There are existing spare ducts that can be used between Bldg. 4304 and the manhole on the corner of 77th St. and Warehouse. Work inside Bldg. 4304 shall be as indicated for the 4900 and 49000 block site.

34.8.8 The following work shall be accomplished to provide service to and on the 3500 block site. Service shall be obtained from Bldg. 36000 (Darnall hospital). See Attachment 24E for location of Bldg. 36000 and the 3500 Blk. There is an existing manhole located on the southwest corner of 58th St. and Darnall loop. From this manhole a new 4-way 4-inch concrete encased duct system shall be placed under 58th St. by jacking and boring. From the first new manhole on the east side of 58th St., a new 2-way 4-inch concrete encased duct system (one duct with 4-1" inner ducts) shall be provided to a new handhole located adjacent to the communication distribution node building. The ducts shall continue from the handhole into the building and stub up adjacent to a wall. In addition, four spare 4" conduits shall be provided between the handhole and the building. They shall be stubbed up adjacent to the other two ducts inside the building. From the manhole on the corner of 58th St. and Darnall loop provide a 4-way 4-inch concrete encased duct system (one duct with 4-1" inner ducts) parallel to the existing duct system heading back west along Darnall loop and then heading south terminating inside Bldg. 36000. Ducts shall be core drilled into two more manholes along this path and into Bldg. 36000. Ducts shall be jack and bored underneath Darnall loop. From the distribution node building the contractor has the option of providing service to the new buildings on site either underground of aerially. If underground, then contractor shall follow the same requirements provided for the 800 block. If aerial, then a single copper and a single fiber optic cable, sized to provide unique homerun service to all buildings, shall leave the distribution node building underground and traverse to a riser pole. From the riser pole cabling shall be distributed throughout the site aerially including service drops. Each service drop shall be individually spliced off of the main cable. As buildings are fed, main cable will reduce in size by the number of pairs or strands provided in the drop. It is preferred that aerial distribution be utilized. Work inside Bldg. 36000 shall include providing Avaya fiber high density distribution panels C.C. 700-007-214 LST1U-144/9 to terminate outgoing fiber optic cabling. Number and size of panels shall be sufficient to terminate all outgoing strands.

34.8.9 The following work shall be accomplished to provide service to and on the 800 block site. Service shall be obtained from Bldg. 11002 (RSC-3). See Attachment 25E for location of Bldg. 11002 and the 800 Blk. There is an existing manhole across the street from Bldg. 9211 on the west side of 21st St. that shall be the connection point for a 2-way 4-inch concrete encased

duct system (one with 4-1" inner ducts) that shall be provided to a new handhole. The handhole shall be located adjacent to the communication distribution node building located on the site. The ducts shall continue from the handhole into the building and stub up adjacent to a wall. In addition, four spare 4" conduits shall be provided between the handhole and the building. They shall be stubbed up adjacent to the other two ducts inside the building. If the length of the new duct system exceeds 500 feet, a minimum of one new manhole shall be provided per requirement stated elsewhere in RFP. North of the existing manhole on 21st St. is another manhole. These two manholes have spare ducts between them that can be utilized for new cabling. Between the northernmost of the above mentioned manholes and Bldg. 11002 there are no empty ducts, but there is enough spare capacity within these ducts to run new copper and fiber optic cabling from Bldg. 11002. All new buildings on the site shall be provided service from the node distribution building. Individual cables shall be provided directly to each building without going into any other building. Cabling between the distribution node building and all other buildings shall be direct buried outside the 5 foot building line. Work inside Bldg. 11002 shall include providing Avaya fiber high density distribution panels C.C. 700-007-214 LST1U-144/9 to terminate outgoing fiber optic cabling. Number and size of panels shall be sufficient to terminate all outgoing strands. In addition, mount new Reltec C-388 protector blocks on existing main distribution frame and terminate all outgoing copper cabling on these blocks.

34.8.10 The following work shall be accomplished to provide service to and on the 200/300 block site. Service shall be obtained from Bldg. 13. See Attachment 26E for location of Bldg. 13 and the 200/300 Blk. Existing duct shall be used for cabling between Bldg. 13 and MH100 located to the east of Bldg. 14. From MH100 provide a 4-way 4-inch concrete encased duct system (one duct with 4-1" inner ducts) parallel to the existing duct system heading north along 52nd St. and then heading east along 761st Tank Battalion Ave. to MH170 on the corner of 761st Tank Battalion and 37th St. New ducts shall be core drilled into existing manholes along the entire path. From MH170, a minimum (actual design may require more to accommodate cabling) of 2-4" concrete encased duct (one with 4-1" inner ducts) system shall be provided to a new handhole that shall be located adjacent to the communication distribution node building. The ducts shall continue from the handhole into the building and stub up adjacent to a wall. In addition, four spare 4" conduits shall be provided between the handhole and the building. They shall be stubbed up adjacent to the other two ducts inside the building. All new buildings on the site shall be provided service from this building. Individual cables shall be provided directly to each building without going into any other building. Cabling between the distribution node building and all other buildings shall be direct buried outside the 5 foot building line. Work inside Bldg. 13 shall include providing Avaya fiber high density distribution panels C.C. 700-007-214 LST1U-144/9 to terminate outgoing fiber optic cabling. Number and size of panels shall be sufficient to terminate all outgoing strands.

34.8.11 The following work shall be accomplished to provide service to sites 25, 26 , & 27 (9500 BLK). Service shall be obtained from Bldg.11002. See Attachment 27E. A new duct & manhole system shall be provided between sites and Bldg. 11002. Duct system shall be 4-way 4-inch concrete encased duct system (one duct with 4-1" inner ducts). Work in Bldg. 11002 shall be as described by service to the 800 block site as previously described.

34.8.12 The following work shall be accomplished to provide service to sites 8 (16000 BLK) & 9 (17000 BLK). Service shall be obtained from Bldg.11002. See Attachment 28E. A new duct & manhole system shall be provided between sites and Bldg. 11002. Duct system shall be 4-way 4-inch concrete encased duct system (one duct with 4-1" inner ducts). Work in Bldg. 11002 shall be as described by service to the 800 block site as previously described.

34.8.13 The following work shall be accomplished to provide service to site 30 (HAAF Area). Service shall be obtained from Bldg.7008. See Attachment 29E. A new duct & manhole system shall be provided between sites and Bldg. 7008. Duct system shall be 4-way 4-inch concrete encased duct system (one duct with 4-1" inner ducts). Work inside Bldg. 7008 shall include providing fiber high density distribution panel to terminate outgoing fiber optic cabling. Number and size of panels shall be sufficient to terminate all outgoing strands. In addition, mount new protector blocks on existing main distribution frame and terminate all outgoing copper cabling on these blocks.

34.8.14 Service to site 10 (1900 BLK) shall be obtained by extending a new duct system to the existing manhole shown on attachment 30E. Cable shall be spliced in the existing manhole.

34.8.15 As a result of the demolition of buildings 4476 and 4452 new fiber optic (FO) cabling work shall be accomplished. These two buildings serve as distribution nodes for other buildings on the site. All work shall be accomplished before the buildings are demolished. All work required in the following three subparagraphs shall be accomplished in a continuous time frame to minimize downtime.

34.8.15.1 Building 4476 is currently fed aerially with a 96 strand FO cable as is shown on attachment 3E. As can be seen from the attachment, the 96 strand cable is feeding (via splicing) a 60 strand aerial cable, a 36 strand aerial cable, and 2-12 strand aerial cables from inside the building. One of the 12 strand cables is feeding building 4475 which is scheduled to be demolished so this cable shall be removed with no new connectivity required. Connectivity, however, for the other three cables shall be reestablished (via splicing in a new splice case) at the nearest pole to Bldg. 4476 from which the 96 strand cable is attached to. The portion of the 96 strand cable between this pole and building 4476 shall be removed. If necessary, new cabling shall be provided to accomplish this work to avoid splices between the new splice case and the termination point inside the existing buildings. In addition, if new cabling is provided contractor shall clear all existing cabling that has been replaced from poles and shall remove it from the splice cases inside the buildings.

34.8.15.2 Building 4452 is currently fed aerially with a 168 strand FO cable as is also shown on attachment 3E. As can be seen from the attachment, the 96 strand cable is feeding (via splicing) a 72 strand aerial cable, a 24 strand aerial cable, and 2-12 strand aerial cables from inside the building. Connectivity shall be reestablished (via splicing in a new splice case) at the nearest pole to Bldg. 4452 from which the 168 strand cable is attached to. The portion of the 168 strand cable between this pole and building 4452 shall be removed. If necessary, new cabling shall be provided to accomplish this work to avoid splices between the new splice case and the termination point

inside the existing buildings. In addition, if new cabling is provided contractor shall clear all existing cabling that has been replaced from poles and shall remove it from the splice cases inside the buildings.

34.8.15.3 Buildings 4465, 4466, and 4467 shown on attachment 3E are going to be demolished. These buildings are each fed with a 12 strand FO aerial cable originating in Bldg. 4449. Each cable shall be removed including removal from the splice case inside Bldg. 4449. Building 4468 is also going to be demolished. This building is fed with a 12 strand FO aerial cable originating in Bldg. 4470. Cable shall be removed including removal from the splice case inside Bldg. 4470.

34.9 A grounding grid shall be installed in parking area east of building 4616. Grid shall consist of bare buried cable and ground rods using a 30 foot square spacing.

34.10 (AM #0004) Airfield lighting shall be in accordance with UFC 3-535-01 DESIGN STANDARDS FOR VISUAL AIR NAVIGATION FACILITIES. Existing taxiway lights shall be relocated to edge of new apron. Landing pad shall be provided with perimeter lighting using semiflush omnidirectional yellow lights. (AM #0005) Landing pad perimeter lighting shall utilize existing lights relocated from existing landing pad. New lights are to be added as necessary for conformance with standard. Existing circuiting shall be extended to serve the new and relocated lighting.

35. **(AM #0002) NOT USED** ~~STORAGE BUILDING (17000 BLOCK)~~

~~35.1 Facilities~~

~~The project will include functional space for a Storage Facility. The facility shall be permanent construction.~~

~~35.2 Design Criteria~~

~~35.2.1 Army Standard Design~~

~~There are no Army Standard Designs for this facility.~~

~~35.2.2 Rudimentary drawings~~

~~Rudimentary Drawings included in this RFP include a functional floor plan of the Storage Facility. This drawing is included for design and coordination purposes. Further development of this design will require coordination with the using agency and base personnel. Revisions and refinements to this rudimentary drawing, or any other drawings and plans developed as a result of this proposal, should be expected during the course of design development until final design is achieved.~~

~~35.2.3 Handicapped Access~~

~~The Storage Facility will not be handicapped accessible.~~

~~35.2.4 Signage~~

~~Provide exterior signage in accordance with paragraph Exterior Signage and interior signage in accordance with paragraph INTERIOR DESIGN/Signage Requirements. Provide a building number sign.~~

~~35.2.5 Fire Extinguishers~~

~~Provide fire extinguishers as required by Installation requirements or code. Fort Hood's DPW Fire Dept. no longer provides fire extinguishers.~~

~~35.3 Site Design Requirements~~

~~See site development paragraphs such as SITE DESIGN AND CONSTRUCTION, UTILITY LAYOUT AND DESIGN, STORM DRAINAGE, GAS DISTRIBUTION, and SITE GRADING.~~

~~35.4 Architectural Design Requirements~~

~~35.4.1 General~~

~~The storage facility shall be one story permanent structure on pre-engineered structural frame that meets the functional requirements specified below. Creative solutions that minimize delivery time are encouraged.~~

~~35.4.2 Functional Layout~~

~~Provide one 16,000 SF Storage Facility. Functional requirements for the facility type are described below. See diagrammatic floor plan attached to the end of this Section.~~

~~a. **Large Storage Bays** 7 @ 2,000 SF ea. Provide a pair of 4' x 8' doors (8' opening) at the ends of each storage bay. Provide a hook mounted fire extinguisher inside each set of doors. Bays are separated with padlockable wire mesh partitions. The bottom of the roof trusses/structures are also secured with wire mesh to provide a barrier (12' minimum height). Subdivide the bays with wire mesh as per user requirements.~~

~~b. **Small Storage Bays** 2 @ 1,000 SF ea. Provide a pair of 4' x 8' doors (8' opening) for each storage bay. Provide a hook mounted fire extinguisher inside each set of doors. Bays are separated with padlockable wire mesh partitions. The bottom of the roof trusses/structures are also secured with wire mesh to provide a barrier (12' minimum height). Subdivide the bays with wire mesh as per user requirements.~~

~~Provide paved access at all entrances meeting applicable codes. See electrical requirements for communications requirements.~~

~~35.4.3 Room Sizes~~

~~Room sizes shown shown on the attached sketch are minimum clear space. A diagrammatic floor plan is provided at the end of this Section. Minor adjustments to room sizes may be acceptable if furnishings and functionality of the rooms are unaffected. A minimum clear space of 12 feet-0 inches is required between the floor and the bottom of the roof trusses/structure.~~

~~35.4.4 Finishes~~

~~Exterior and interior finishes shall be the manufacturer's standard commercial grade products and standard colors except where noted otherwise. Exterior and interior finishes shall conform to Fort Hood design standards.~~

~~The floor finish in the Storage Facility shall be sealed concrete. Provide color/finish sample boards.~~

~~35.4.4.1 Exterior Finishes~~

~~The following exterior finishes are approved for the Storage Facility:~~

- ~~Metal Panel Roof with fluoropolymer finish.~~
- ~~Roof drainage system (gutters, downspouts, flashing) with same type finish.~~
- ~~Metal Panel siding with fluoropolymer finish.~~
- ~~Aluminum Windows & Doors with anodized finish.~~
- ~~Steel Doors and frames with factory primed, site painted finish.~~

~~35.4.4.2 Metal Siding~~

- ~~Use channel iron side girts for a structural steel bldg that have added sag rods. Connect one and one-half zee to the channel iron by either welding or screws. Connect the siding to the zee.~~
- ~~Install liner panels on the side walls of maintenance shops to protect the building insulation and to facilitate cleaning.~~
- ~~The side girt spacing is critical for a metal building because the spacing determines the profile of the sidewall panel. A deeper profile will allow a wider spacing of the side girt. Consideration should be given to availability of the profile specified.~~
- ~~Provide hidden fastener sidewall panels if possible.~~
- ~~Provide a vapor barrier and insulation barrier around the insulated envelope of the building. Without a well constructed vapor barrier there is a tendency to create an environment for growing mold.~~

~~35.4.4.3 Doors~~

~~Exterior doors shall swing out. Exterior doors shall be insulated hollow metal. Exterior entry doors shall be SDI Level 3.~~

~~35.4.4.4 Door Hardware~~

~~All doors shall have minimum three heavy-duty (grade 1) hinges per leaf. Locksets at exterior doors shall have 1-inch dead bolts. Exterior-outswinging doors shall have non-removable hinge pins. Provide three Master keys that cannot be reproduced. Provide five sets of keys for each lock.~~

~~35.4.4.5 Rainwater Management~~

~~Provide gutters, downspouts and concrete splash blocks. If gutters are not feasible for this type of structure, provide a means of diverting rainwater from the roof around all personnel doors is required; provide justification.~~

~~35.4.5 Interior Design~~

~~35.4.5.1 Structural Interior Design~~

~~See paragraph STRUCTURAL INTERIOR DESIGN (SID).~~

~~35.4.5.2 Interior Chain-Link Fencing~~

- Make sure security fence fabric is 12 feet high. Fabric is normally 9 gauge, verify with user.
- Do not detail a top pipe rail for the security fence.
- Chain link fence fabric shall be secured with wire ties not clips.

35.4.5.3 Comprehensive Interior Design

See paragraph COMPREHENSIVE INTERIOR DESIGN (CID).

35.4.5.3.1 CID Furnishing List

Typical CID items to specify are, but not limited to:

- Support desks
- Bulletin Boards, Porcelain Marker Boards
- Chairs-all kinds, including stools
- Files-all kinds
- Storage-all kinds
- Tables-all kinds
- Waste cans-various sizes
- Include all specific/special items as required by the Government/user.

35.5 Structural Design Requirements

See paragraph STRUCTURAL DESIGN REQUIREMENTS.

35.6 Plumbing Design Requirements

35.6.1 General

Plumbing system shall be designed and installed in accordance with the latest edition of the International Plumbing Code and the Fort Hood Installation Design Guide. The Contractor shall be responsible for finish installation of fixtures and piping systems. Gas lines and fixtures shall be installed in accordance with the latest edition of the NFPA 54 National Fuel Gas Code. Use Unified Facilities Guide Specifications.

35.6.2 Wall Hydrants (Exterior)

Wall hydrants shall be provided at a maximum spacing interval of 200 feet around the exterior wall of the building, with a minimum of two hydrants for each building, one on each opposing wall. Each hydrant shall be box type, freeze proof, with an integral vacuum breaker/backflow preventer. Hydrants shall have 3/4 inch hose connections. The piping supplying the wall hydrants shall be drainable.

35.7 Heating And Ventilating Requirements

35.7.1 Mechanical Requirements

The mechanical systems will be designed in accordance with the Request for Proposal issued by the Fort Worth Corps of Engineers, ASHRAE standards, International Mechanical code, NFPA Standards and the International Standard Plumbing Code. The Unified Facilities Guide Specifications will be used.

~~The mechanical system shall comply with the following design criteria and standards:~~

- ~~ASHRAE Standard 90.1-2001, Energy Standard for Buildings, Except Low-Rise Residential Buildings~~
- ~~International Mechanical Code.~~
- ~~ASHRAE Manuals, latest edition.~~
- ~~NFPA 90A, Installation of Air Conditioning and Ventilating Systems.~~
- ~~NFPA 90B, Installation of Warm Air Heating and Air Conditioning Systems.~~
- ~~ASHRAE Standard 62-2001, Ventilation for Acceptable Indoor Air Quality.~~
- ~~SMACNA HVAC Duct Construction Standards, latest editions.~~
- ~~NFPA 54, National Fuel Gas Code.~~
- ~~Fort Hood Installation Design Guide.~~

~~35.7.2 Heating and Ventilation~~

~~The HVAC system shall be energy efficient and provide heating and forced ventilation only. The heating of the building will be accomplished by means of gas fired vented infrared heaters.~~

~~35.7.3 Ventilation Systems Design~~

~~Ventilation for building occupants shall be provided in accordance with ASHRAE Standard 62-2001.~~

~~35.7.4 Design Parameters~~

~~35.7.4.1 Outdoor Design Temperatures shall be 25 degrees F dry bulb winter design for Fort Hood.~~

~~35.7.4.2 Storage area will be heated to 40 degrees F for freeze protection. Indoor summer design temperature shall be 10 degrees F above the outdoor design temperature. Include capacity allowance for fresh air quantities in accordance with ASHRAE 62-2001 Ventilation Standards.~~

~~35.7.5 Heating And Ventilating Equipment~~

~~The equipment described below is a minimum. All materials and equipment provided shall be standard catalogued products of manufacturers regularly engaged in the production of such materials and equipment and shall be of the manufacturers' latest standard design. Equipment shall comply with the requirements of Underwriter's Laboratories, Inc. (UL), Air Conditioning Refrigeration Institute (ARI), American Society for Testing and Materials (ASTM), National Electric Manufacturer's Association (NEMA), American National Standards Institute (ANSI), National Fire Protection Association (NFPA), or other national trade associations as applicable.~~

~~All suspended equipment shall be properly supported according to the manufacturer's instructions. Provide trapeze hangers for larger pieces of equipment. Provide adequate clearance around all pieces of equipment for periodic maintenance, inspection and cleaning. Service of one piece shall not require disturbance of adjacent equipment.~~

~~Each piece of motorized equipment shall be provided with vibration isolators per latest edition ASHRAE Fundamentals Handbook. Nominal deflection and~~

~~natural frequency of isolation equipment shall be selected based upon equipment size and structural attachment details.~~

~~Mechanical components shall be installed and mounted in accordance with seismic guidelines per latest edition of ASHRAE Applications Handbook.~~

~~35.7.6 Fans~~

~~Provide exhaust fans and motorized louvers sufficient to meet ASHRAE Standard 62-2001.~~

~~35.7.7 System Maintainability~~

~~Ensure that all equipment is easily accessible for servicing and cleaning.~~

~~35.7.8 Piping and Accessories~~

~~Piping, valves, fittings, and accessories shall be in accordance with NFPA 54.~~

~~35.7.9 Controls~~

~~For HVAC systems or equipment that does not come with integral packaged controls, Direct Digital Controls (DDC) shall be used. The thermostats shall be digital with an off-on switch. The heating temperatures will be fixed non adjustable.~~

~~35.8 Fire Protection~~

~~35.8.1 Design Standards and Codes~~

~~The fire protection design for all facilities shall be in accordance with the following:~~

~~INTERNATIONAL CODE COUNCIL, INC~~
~~5203 Leesburg Pike, Suite 708~~
~~Falls Church, VA 22041-3401~~

~~IBC, 2003, International Building Code~~

~~NATIONAL FIRE PROTECTION ASSOCIATION~~
~~One Batterymarch Park~~
~~Quincy, MA 02269-9101~~

~~National Fire Codes (NFC) Current as of 2004~~

~~UNIFED FACILITIES CRITERIA~~

~~UFC 3-600-01, 2003, Design: Fire Protection Engineering for Facilities~~
~~UFGS Guide Specifications~~

~~35.8.2 Qualifications of Fire Protection Engineer~~

~~The design of the fire protection features shall be by a qualified fire protection engineer meeting one of the following conditions: a.) An engineer with a Bachelor of Science or Masters of Science Degree in fire protection engineering from an accredited university engineering program, plus a minimum of 5 years' work experience in fire protection engineering. B.) A registered~~

~~professional engineer who has passed the National Council of Examiners for Engineering and Surveys (NCEE) fire protection engineering written examination. C.) A registered P.E. in a related engineering discipline with a minimum of 5 years' experience dedicated to fire protection engineering. The name and credentials (education, registration, experience) of the fire protection engineer shall be submitted.~~

~~35.8.3 Fire Protection and Life Safety Analysis~~

~~A fire protection and life safety design analysis shall be provided for all buildings in the project. The analysis shall include classification of occupancy (both per the IBC and NFPA 101); type of construction; height and area limitations (include calculations for allowable area increases); life safety provisions (exit travel distances, common path distances, dead end distances, exit unit width required and provided); building separation or exposure protection; specific compliance with NFPA codes and the IBC; requirements for fire-rated walls, doors, fire dampers, etc.; analysis of automatic suppression systems and protected areas; water supplies; smoke control systems; fire alarm system, including connection to the base wide system; fire detection system; standpipe systems; fire extinguishers; interior finish ratings; and other pertinent fire protection data. The analysis shall include a life safety floor plan for all buildings in the project 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.~~

~~35.8.4 Fire Flow Data. Refer to Civil Design for design requirements.~~

~~35.8.5 Sprinkler System~~

~~35.8.5.1 General~~

~~Automatic sprinkler protection shall be provided for buildings as follows:~~

~~Supply/Storage Facility. Provide sprinkler protection per the requirements of UFC 3-600-01. Per UFC 3-600-01, 4-2.2, sprinkler protection is required for facilities that contain equipment or materials that are considered to be mission essential (for example TA-50 equipment). Per UFC 3-600-01, 6-10.1 storage facilities must have complete automatic sprinkler protection. Sprinkler protection must be based on Class IV commodities as defined by NFPA 13.~~

~~35.8.5.2 Design Requirements~~

~~Where sprinkler protection is required the facilities shall be fully protected with automatic wet pipe sprinkler systems. Dry pipe systems shall be provided if freeze protection is required. All floors and all areas of the facilities shall be protected. The sprinkler system design shall be in accordance with UFC 3-600-01, NFPA 13, and NFPA 13R where applicable. The sprinkler hazard classifications shall be in accordance with UFC 3-600-01 appendix B and NFPA 13. Design densities, design areas and exterior hose streams shall be in accordance with UFC 3-600-01 table 4-1. The sprinkler systems shall be designed and all piping sized with computer generated hydraulic calculations. The exterior hose stream demand shall be included in the hydraulic calculations. A complete sprinkler system design, including sprinklers, branch lines, floor mains and risers, shall be shown on the drawings. The sprinkler system plans shall include node and pipe identification used in the hydraulic~~

~~calculations. All sprinkler system drains, including main drains, test drains, and auxiliary drains, shall be routed to a 2′ x 2′ splash block at exterior grade.~~

~~35.8.5.3 Sprinkler System~~

~~The sprinkler service main shall be a dedicated line. Sprinkler service and domestic service shall not be combined. The sprinkler service main shall be provided with an exterior post indicator valve with tamper switch reporting to the fire alarm control panel (FACP). The service main shall extend from the water distribution system to the building and shall be dedicated for fire protection. The sprinkler entry riser shall include a double check backflow preventer, a fire department connection, and a wall hydrant for testing of backflow preventer. The sprinkler system shall include an indicating control valve, an alarm check valve or dry pipe valve, a water motor alarm and a flow switch reporting to the FACP. All control valves shall be OS&Y gate type and shall be provided with tamper switches connected to the FACP. Facilities with multiple floors shall be provided with floor control valves for each floor. The floor control valve assembly shall be in accordance with NFPA 13, Figure A-5-15.4.2 (b). Clearances for piping passing through floor slabs shall be provided by pipe sleeves with dimensions per NFPA 13, 9.3.4.3. Clearance for all other penetrations shall be per NFPA 13, 9.3.4.~~

~~35.8.5.4 Sprinklers. Sprinklers located in finished areas shall be recessed pendant type.~~

~~35.8.5.5 Exterior Hose Stream. Exterior hose stream demand shall be in accordance with UFC 3-600-01. This shall be 250 gpm for light hazard and 500 gpm for ordinary hazard. Exterior hose stream demand shall be included in the sprinkler system hydraulic calculations.~~

~~35.8.5.6 Backflow Preventer. A double check backflow preventer shall be provided on the fire water main serving each building. This shall be located within the building. An exterior wall hydrant with OS&Y valve shall be provided to allow testing of backflow preventer at design flow as required by NFPA 13.~~

~~35.8.5.7 Fire Department Connection. A fire department connection shall be provided for each building with sprinkler protection. These shall be located to be directly accessible to the fire department.~~

~~35.8.6 Fire Pump. If required a complete fire pump installation shall be provided. Fire pump installation shall be in accordance with UFC 3-600-01, NFPA 13, NFPA 20, and UFGS 13920.~~

~~35.8.7 System Components and Hardware. Materials for the sprinkler system and fire pump system (if required) shall be in accordance with NFPA 13, NFPA 20, and NFPA 24. Sprinkler and standpipe system piping shall be black steel and shall be minimum Schedule 40 for sizes 2 inches and less and minimum Schedule 10 for sizes greater than 2 inches.~~

~~35.8.8 Fire Hydrants. Refer to Civil Design for design requirements.~~

~~35.8.8.1 Fire Extinguishers and Cabinets. Refer to Architectural Design for design requirements.~~

~~35.8.9 Fire Alarm and Detection System. Refer to Electrical Design for design requirements.~~

~~35.8.10 Electrical Design Requirements~~

~~See paragraphs INTERIOR ELECTRICAL DESIGN and SITE ELECTRICAL SYSTEMS.~~

36. **(AM #0002) NOT USED** ~~CLASSROOM BUILDING (16000 BLOCK)~~

~~36.1 FacilitiesThe project will include functional space for a Classroom Facility. The facility shall be permanent construction.~~

~~36.2 Army Standard Design~~

~~There are no Army Standard Designs for this facility.~~

~~36.3 Design Criteria~~

~~36.3.1 Rudimentary drawings~~

~~Rudimentary drawings included in this RFP include a functional floor plan of the Classroom Facility; it is attached to the end of this Section. This drawing is included for design and coordination purposes. Further development of this design will require coordination with the using agency and base personnel. Revisions and refinements to this rudimentary drawing, or any other drawings and plans developed as a result of this proposal, should be expected during the course of design development until final design is achieved.~~

~~36.3.2 Handicapped Access~~

~~The Classroom Facility shall be handicapped accessible. Ramps and sidewalks shall be provided for handicapped access to the Classroom Facility. The number of parking spaces and site access for the physically disabled shall be two spaces per facility. One parking space shall be van accessible.~~

~~36.3.3 Signage~~

~~Provide exterior signage in accordance with paragraph Exterior Signage and interior signage in accordance with paragraph INTERIOR DESIGN/Signage Requirements. Provide a building number sign.~~

~~36.3.4 Fire Extinguishers~~

~~Provide fire extinguishers as required by Installation requirements or code. Fort Hood's DPW Fire Dept. no longer provides fire extinguishers.~~

~~36.3.5 Slabs on Grade~~

~~All interior slabs on grade, including storage rooms, shall be underlain by a moisture vapor barrier consisting of lapped polyethylene sheeting having a minimum thickness of 6 mils and a minimum~~ **AM 0002** ~~4 6 inches thick capillary water barrier of open graded, washed pea gravel, or crushed stone. Concrete slabs shall be jointed around columns and along supported walls to minimize cracking due to possible differential movement.~~

~~36.4 Site Design Requirements~~

~~See site development paragraphs such as SITE DESIGN AND CONSTRUCTION, UTILITY LAYOUT AND DESIGN, STORM DRAINAGE, WATER DISTRIBUTION (OPTION 1), SANITARY SEWER (OPTION 1), GAS DISTRIBUTION, and SITE GRADING.~~

~~36.5 Architectural Design Requirements~~

~~36.5.1 General~~

~~The facility shall be a one-story permanent building on pre-engineered structural frame that meet the functional requirements specified below. Creative solutions that minimize delivery time are encouraged.~~

~~36.5.2 Functional Layout~~

~~Provide one 4,500 SF Classroom Facility. Functional requirements for this facility type are:~~

- ~~**Vestibule** 50 SF. Provide resilient flooring.~~
- ~~**Lobby** 125 SF. Provide one fire extinguisher in a flush mounted wall cabinet. Provide resilient flooring.~~
- ~~**Training Storage Area** 300 SF. Provide resilient flooring. Storage for 140 extra folding chairs.~~
- ~~**Classrooms** 2 @ 1500 SF ea. 100 students ea. Provide student chairs with cushions and folding writing surfaces. Provide Dry-Erase whiteboards and a manual projector screen. Provide a folding partition between the classrooms so they may be converted into one large classroom. Provide two fire extinguishers in flush mounted wall cabinets (one by each exit door). Provide carpet tile flooring.~~
- ~~**Restrooms** 2 @ 200 SF ea. Provide ADA compliant restrooms for males and females. Male restrooms shall include 2 lavatories, 2 urinals, and 2 toilets. Female restrooms shall include 3 lavatories, and three toilets. Provide ceramic tile flooring with drains in each restroom.~~
- ~~**Janitor's Closet** 15 SF. Constructed from noncombustible materials, and positive latching on door. Provide ceramic tile flooring with floor drain.~~
- ~~**Communications Closet** 80 SF. Secure communications closet for equipment and panelboard. Conditioned space with cipher lock at door. See electrical requirements. Provide sealed concrete slab.~~
- ~~**Electrical** Room 100 SF. Constructed from noncombustible materials, one hour fire rating in walls, and door to exterior. Provide sealed concrete slab.~~
- ~~**Mechanical Room** 200 SF. Constructed from noncombustible materials, one hour fire rating in walls, and door to exterior. Provide sealed concrete slab with floor drain.~~

~~These requirements are the minimum. Areas indicated are net square feet, and may be exceeded.~~

~~Arrange spaces in an efficient manner with simple circulation.~~

~~All facilities shall include stairs or ramps and entry landings at all entrances to meet applicable codes. All janitor closets shall have mop sink, mop rack, 6 lf of storage shelving and floor space for storage of janitorial equipment. Except where noted otherwise, all facilities shall have mechanical and electrical spaces to accommodate required equipment with space for maintenance/repair access without having to remove other equipment. See electrical requirements for communications room/SIPRNET communication room requirements.~~

~~36.5.3 Room Sizes~~

~~Room sizes shown above are minimum clear space. A diagrammatic floor plan is provided at the end of this Section. Minor adjustments to room sizes and arrangements may be acceptable if furnishings and functionality of the rooms are unaffected. Ceilings at occupied areas shall be a minimum 8 feet-0 inches. Ceilings in classrooms shall be a minimum of 10 feet-0 inches.~~

~~36.5.4 Finishes~~

~~Exterior and interior finishes shall be the manufacturer's standard commercial-grade products and standard colors except where noted otherwise. Exterior and interior finishes shall conform to Fort Hood design standards. The floor finish in all restrooms, janitor closets, and all other wet areas shall be ceramic tile. Suspended acoustic tile ceiling is not permitted for restrooms, janitor closets, communications rooms, and mechanical and electrical rooms. Provide color/finish sample boards.~~

~~36.5.4.1 Exterior Finishes~~

~~The following exterior finishes are approved for the Classroom Facility:~~

- ~~Standing Seam Metal roof with fluoropolymer finish.~~
- ~~Roof Drainage System (gutters, downspouts, flashing) with same type finish.~~
- ~~Masonry Veneer designed in the context of nearby facilities/structures.~~
- ~~Aluminum Windows & Doors with anodized finish.~~
- ~~Steel Doors and frames with factory primed, site painted finish.~~

~~36.5.4.2 Masonry~~

- ~~Where cavity wall CMU/brick construction is used, provide for damp proofing outside of the CMU.~~
- ~~Provide masonry walls around mechanical rooms for sound insulation and fire protection.~~
- ~~Provide masonry screen walls around mechanical yards for appearance and security. The screen wall shall be provided with a lockable gate.~~
- ~~Provide a vapor barrier and insulation barrier around the insulated envelope of the building. Without a well constructed vapor barrier there is a tendency to create an environment for growing mold.~~

~~36.5.4.3 Standing Seam Metal Roof System~~

- ~~Provide metal deck over roof structure with 3-1/2 inch or 4-1/2 inch zee purlins screw attached through the metal deck to the roof structure. The standing seam roof will be attached to the zee purlins. Rigid building insulation will be inserted below the zee purlins and is sandwiched between the metal deck and the standing seam metal roof (on large OMA or MCA projects). This system provides a firm surface for the DPW maintenance workers to walk on periodically. If frequent visits to the roof are anticipated, grated walkways may be attached directly to the standing seams with no roof penetrations. This system protects the building insulation from damage and from the effects of gravity/creep that has the tendency to pull exposed insulation down over a period of years.~~

- Provide minimum roof slopes of 2 on 12 rather than the historical 1 on 12. Experience shows that most roofs with a 1 on 12 roof slope ultimately have one or more flat spots created by construction tolerances, steel fabrication errors, and some installation problems. Low sloped roofs depend upon caulk to prevent leakage. For a 1 on 12 sloped roof, water will back uphill 12 inches for every 1 inch depth of water. Therefore, any overlap, roof penetration and exposed fastener is immersed in water.

- Provide full length standing seam roof sheets. We have had contractors ship panels up to 55 feet in length by truck to Fort Hood. We have had at least one contractor roll 150 feet long standing seam roof sheets on site. The one piece roof sheets eliminate all end laps, thus reducing the potential roof leaks.

36.5.5 Doors And Windows

Windows will utilize 1-inch insulated units with 1/4-inch exterior laminated glass and 1/4-inch laminated interior glass. All exterior glazing shall be ¼ inch laminated glass consisting of two 1/8" thick glass panes bonded together with a minimum 0.030-inch thick PVB interlayer. For insulating glass units, the inner pane shall be laminated glass as described above. Glazed door and window frames shall resist an equivalent static design load of 1 lb per square inch applied to surface of glazing and frame with frame deformation not exceeding 1/60 of the unsupported member lengths. Steel members may be designed using ultimate yield stresses and aluminum members may be designed based on a 0.2 percent offset yield strength. Glazing shall have a minimum frame bite of 1 inch. Door/window frame connections to building, hardware and associated connections and glazing stop connections shall resist equivalent static design load of 10.8 psi for glazing panels with vision area less than or equal to 10.8 square feet and 4.4 psi for glazing panels with vision area greater than 10.8 square feet and less than 32 square feet. Loads shall be applied to the surface of the glazing and the frame. Connections and hardware may be designed based on ultimate strength for steel and 0.2 percent offset yield strength for aluminum. All exterior doors must swing out. Exterior doors shall be insulated hollow metal. Exterior entry doors shall be SDI Level 3. Windows shall be energy efficient with double pane insulating glass units. Operable windows at administrative offices are preferred. All windows shall have mini-blinds. All operable windows shall have insect screens and locks.

36.5.6 Door Hardware

All doors shall have minimum three heavy-duty hinges per leaf. Locksets at exterior doors shall have deadlock feature. Exterior outswinging doors shall have non-removable hinge pins. Provide three Master keys that cannot be reproduced. Provide five sets of keys for each lock.

36.5.7 Sound Isolation

Partitions at classrooms shall have STC 49 for sound isolation from all adjacent rooms.

36.5.8 Building Numbers

Facility shall have a building number sign located on two faces, permanently affixed to building. Location, design, size and colors shall be in accordance

~~with Fort Hood Installation Design Guide. Coordinate with Fort Hood, through the Contracting Officer, for assigned building numbers for each facility.~~

~~36.5.9 Rainwater Management~~

~~Provide gutters, downspouts and concrete splash blocks. If gutters are not feasible for the type of structure provided, provide a means of diverting rainwater from the roof around all personnel doors is required; provide justification.~~

~~36.5.10 Interior Design~~

~~Furnish SID and CID submittals in accordance with paragraph STRUCTURAL INTERIOR DESIGN (SID) and COMPREHENSIVE INTERIOR DESIGN (CID). The preparation of the Comprehensive Interior Design is part of the bid item.~~

~~36.5.10.1. Signage Requirements~~

~~Interior signage is an important item that is to be fully integrated with the architecture and building related finishes. All signage shall be in accordance with the Department of the Army Technical manual, Signage, TM 5-807-10 and installation sign standards (See the Fort Hood Installation Design Guide). All signs are to be from one manufacturer and shall match in color and style. All room sign copy is to be Helvetica medium with a ratio of height and width to meet Americans with Disabilities Act (ADA) requirements. Signs are to be provided for all interior doors. Installation shall be wall mounted, on the latch side of the door with the center of the sign installed 5 feet-0 inch above the finish floor and 3 inches from the outside edge of the metal door frame. Where conditions do not allow signs to be mounted directly adjacent to the door, install signs on the wall at the nearest point to the latch side. All signs are to have a permanent room number sign. All signs are to be a minimum overall dimension of 9 inches wide and 6 inches high. Under the visual printed room number an integral, tactile, corresponding, Grade 2 Braille indicating the room number. The second two slides are to be window insert slides to accommodate personnel changes or room name changes. Inserts shall allow the user to insert computer generated copy behind acrylic face insert. BB5 sign types shall be 6 inches wide by 8 inches high. Mechanical rooms and other building system room and service support rooms (BB4) including restrooms (BB7) are to have permanent room signs with copy that has raised room numbers and permanent room names. Copy is to be raised, tactile, letters and Grade 2 Braille indicating the room number and room name. All signs are to be permanently and mechanically attached to the building. Double-sided tape will not be accepted. Signage message shall be coordinated with the Contracting Officer before ordering or installation. Provide Emergency Egress sign plaques (BB8) that indicate “YOU ARE HERE” and the path of egress. These signs are to be fully coordinated with the installation Fire Marshall at the review submittal design phase and before fabrication and installation. The Fire Marshall is to review the correct placement and quantity of these signs within the building and also review the proposed path of egress that will be graphically illustrated on the sign. Suggested placements for these signs are to be determined before installation.~~

~~36.5.10.2 Acoustical Ceilings~~

~~Provide ceiling tiles that are rated for use in high humidity conditions, referred to as an RH90 ceiling tile. Ceiling tile is to be attractive and look as normal as any cellulose backed ceiling tile but shall have a mineral fiber~~

~~backing. This is to provide non-hygroscopic materials in the facility to minimize the possibility of moisture retention and mildew.~~

~~36.5.10.3 Toilet Accessories~~

~~Toilet accessories for Fort Hood Projects shall use the following items for consistency to their Cleaning Service Contract:~~

- ~~Toilet Tissue Dispenser: Georgia-Pacific model # 56T, Eclipse Quickview, 9" twin Jumbo, bath Tissue Dispenser, Color; Smoke.~~
- ~~Paper Towel Dispenser: Georgia-Pacific Model # 84T, Eclipse Quickview, Lever control, Roll Towel Dispenser, Color: Smoke.~~

~~36.5.10.4 Comprehensive Interior Design~~

~~36.5.10.4.1 CID Furnishing List~~

~~Typical CID items to specify are, but not limited to:~~

~~- Bookcases & Display Cases~~
~~- Bulletin Board, Porcelain Marker Boards~~
~~- Chairs-all kinds, including stools~~
~~- Desks-freestanding technical~~
~~- Files-all kinds~~
~~- Podium/lecture stands~~
~~- Storage-all kinds~~
~~- Tables-all kinds~~
~~- Waste cans-various sizes~~
~~- Classroom chairs and tables~~
~~- Include all specific/special items as required by the Government/user.~~

~~36.6 Structural Design Requirements~~

~~See paragraph STRUCTURAL DESIGN REQUIREMENTS.~~

~~36.7 Plumbing Design Requirements~~

~~See paragraph PLUMBING DESIGN REQUIREMENTS.~~

~~36.8 Heating, Ventilating, And Air Conditioning Requirements~~

~~See paragraph HEATING, VENTILATING, AND AIR CONDITIONING REQUIREMENTS.~~

~~36.9 Fire Protection~~

~~See paragraph FIRE PROTECTION.~~

~~36.10 Electrical Design Requirements~~

~~See paragraph INTERIOR ELECTRICAL DESIGN and SITE ELECTRICAL SYSTEMS.~~

37. READY FOR OCCUPANCY

The Contractor shall develop a checklist similar to Appendix SAMPLE OF A READY FOR OCCUPANCY CHECKLIST to check each building and ensure it is ready for occupancy. Each building shall be checked with a Contracting Officer's Representative.

---End of Section---

SECTION 01012

DESIGN AFTER AWARD
AM #0009

PART 1 GENERAL

1.1 SUMMARY

1.1.1 Section Includes

This section includes requirements for developing and submitting a design including preparation of drawings, specifications and design analyses conforming to the requirements contained in this section.

1.1.2 Section Excludes

This section does not include requirements for construction submittals which are specified in Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES.

1.2 DESIGN COMPLETION SCHEDULE

See paragraph COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK in Section 01000 DESIGN AND CONSTRUCTION SCHEDULE for the Completion Schedule of the entire work.

1.3 REFERENCES

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

CONSTRUCTION SPECIFICATIONS INSTITUTE (CSI)

CSI MasterFormat (1995) MasterFormat

CODE OF FEDERAL REGULATIONS (CFR)

40 CFR 763 Asbestos

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-05 Design Data

Design Development Submittals

SD-11 Closeout Submittals

Construction Documents; G

1.5 ENGLISH REQUIREMENTS

This is an English project. All dimensions in the specifications and drawings and construction measurements shall be English. See Section 01016 DESIGN DOCUMENT REQUIREMENTS for additional requirements.

1.6 DEFINITIONS

1.6.1 Acceptance

This is the Government's review of the design submittals, construction submittals, and record drawings for conformance to the Contract requirements. Acceptance shall not be construed to be an endorsement of the accuracy or completeness of the design. The Contractor is ultimately responsible for the contract design and construction. Design deficiencies or omissions in the accepted design shall be the responsibility of the Contractor and the Designer of Record.

1.6.2 Approve, Approved, and Approval

As these words are used throughout the documents, they shall mean "as approved by the Designer of Record unless otherwise expressly stated." See Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES.

1.6.3 Complete Specification Section

A Complete Specification Section is one that follows the Construction Specifications Institute's (CSI) 16-Division, 3-Part Section format, including the required submittal register and testing requirements.

1.6.4 Contractor

Firm or company to whom award is made to design and construct the project.

1.6.5 Contract Documents

Contract Documents, in addition to the signed Contract Form and the Contract Clauses, include the Request for Proposal, all amendments, the Contractor's proposal as accepted at the time of contract award, and the Contractor approved, Government accepted 100% final construction documents.

1.6.6 Construction Documents

Documents provided by the Contractor and accepted by the Government for use in constructing the project, including but not limited to final design drawings and specifications, schedules, submittal registers, and color

boards.

1.6.7 Corps of Engineers Guide Specifications

Includes the Corps of Engineers Unified Facilities Guide Specifications (UFGS) for Military Construction, the narrow-scope sections developed by the Fort Worth District (UFSWF), and the Fort Worth District Supplements to the UFGS.

1.6.8 Design Documents

Documents which include, but not limited to, design drawings, project specifications, design analyses (basis of design and calculations), submittal register, structural interior design (SID), comprehensive interior design (CID), and drafts of DD Form 1354 prepared by or under the direct supervision of registered professional architects and engineers and proposed by the Contractor to meet the requirements of this Contract .

1.6.9 Design Drawings

Documentation showing in graphic and quantitative form the extent, design, location, relationships, and dimensions of the construction to be provided by the Contractor. (Note: Shop Drawings, as defined in Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES, are not to be provided until after design drawings are accepted for construction.)

1.6.10 Designer

Architects and Engineers (A/E) associated with the Contractor who are responsible for the design and have the qualifications and experience specified.

1.6.11 Designer of Record

The Contractor's Architect/Engineer (A/E) is the "Designer of Record" and officially approves the design submittals, construction submittals, and record drawings. There shall be a designer of record for each design discipline. The designer of record is solely liable for design errors and/or omissions and shall have professional liability insurance to insure the designer against design errors and omissions. The Contractor's Quality Control Staff will check and certify all submittals. See paragraph DESIGNER(S) OF RECORD for additional requirements.

1.6.12 Mandatory Guides

Mandatory Guides are those guides included in Divisions 2 through 16 of the Contract as unedited or partially edited guides and which shall be included in the Contractor's construction specifications. Some of the guides may be partially edited while others may not be edited at all. The Contractor shall edit or finish editing these guides.

1.6.13 Mandatory Sections

Mandatory Sections are those sections included in Divisions 2 through 16 of

the RFP which may have been partially or completely edited and shall be included in the Contractor's construction specifications. Contractor shall review the sections and edit as required to fit the project requirements..

1.6.14 Solicitation or Request for Proposal (RFP)

Documents furnished to prospective offerors containing proposal information and specifying criteria and project requirements for design and construction of the project. The documents include this specification, attachments, and the information drawings.

1.6.15 Construction Specifications

Construction specifications are the Contractor's developed construction specifications consisting of the Government-furnished Division 1 (General Requirements) sections (including those furnished with the RFP), mandatory guides and sections, and the Contractor-written sections in Divisions 2 through 16 which will be used to construct the project.

1.7 SUBMISSION OF CONSTRUCTION DRAWINGS, SPECIFICATIONS, AND DESIGN ANALYSES

1.7.1 Certification

With each submittal the Contractor shall certify that all items submitted in the design documents (after contract award) comply with the Contract requirements. The criteria specified in this Contract are binding contract criteria and in case of any conflict, after award, between the Contract criteria and Contractor's submittals, the criteria stated in the Document Order of Precedence in Section 00800 SPECIAL CONTRACT REQUIREMENTS will govern. The Contractor shall present with the letter of transmittal for each design submittal (including Design Development and Construction documents) a certification that the submittal (drawings, specifications, design analysis, etc.) complies with the requirements stated above. Prepare the design certification and transmittal letter in the format shown on Attachment A attached at the end of this Section.

1.7.1.1 Signatures

The certification shall be signed by an officer of the Contractor's company and the licensed architect/engineer designer of record attesting that the drawings, specifications and design analyses prepared for the construction of the facility meet the requirements of the Contract.

1.7.2 Deviations

Deviations from the Contract requirements shall be identified in each design submittal's letter of transmittal. Deviations from the Contract requirements will be considered for approval by the Contracting Officer. The Contracting Officer may reject any deviation proposed by the Contractor without explanation.

1.7.3 Field Verification

The Contractor shall verify field conditions which are significant to

design by field inspection, researching and reviewing the existing documents pertaining to the site and existing building(s), and evaluating observable existing conditions. The information shall be reflected in the design documents. It is the responsibility of the Contractor to evaluate existing conditions in the immediate proximity of the project to determine if such conditions may affect, or be affected by the proposed construction. If there are site conditions which appear to affect the proposed construction the Contractor shall inform the Contracting Officer, in writing, before proceeding with the work.

1.7.4 Number of Copies

The number of copies for distribution is specified in paragraph "Review Document Distribution." For each design submittal, submit for review and acceptance the specified number of copies of the construction drawings, specifications, design analyses, equipment schedules, submittal register, and all other submittal data, which shall be in accordance with the requirements of the Contract Documents. Upon final acceptance, make distribution of the accepted design and construction documents within 7 calendar days. With each distribution, provide one CD-ROM disk (or more if required) containing all documents. Proposed modifications shall be submitted in 8 copies. Final modifications, after negotiations, shall be submitted in 8 copies (including one reproducible).

1.7.5 Document Quality

Provide documents complete, accurate, and explicit enough to show compliance with the Contract requirements and to permit construction. Drawings and specifications illustrating systems proposed to meet the requirements of the Contract shall reflect proper detailing for each such system to assure appropriate use, proper fit, compatibility of components and coordination with the specifications and design analysis required by this section. Coordinate drawings to ensure there are no conflicts between design disciplines and between drawings and specifications. See Contract Section 01010 GENERAL PROJECT DESCRIPTION AND DESIGN REQUIREMENTS and Section 01016 DESIGN DOCUMENTS REQUIREMENTS for additional requirements.

1.7.5.1 Drawings

Drawings shall be in the CADD format required by the Contract. See Contract Section 01016 DESIGN DOCUMENT REQUIREMENTS for additional requirements.

1.7.5.2 Computer Aided Design and Drafting (CADD) Systems

Within 10 days of Contract Notice to Proceed, furnish for approval samples of CADD electronic files created on the equipment and software to be used for this work. CADD work will not proceed until the Contractor's proposed CADD system and resulting CADD files have been acceptably demonstrated to work on the Corps of Engineers' Fort Worth District Office and the User's CADD systems.

1.7.6 Specifications and Design Analysis

Specifications and design analysis shall be provided in hard copy and on the same CD-ROM disk as the drawings, Microsoft Word for Windows format (Version Word 2000 minimum, but shall be compatible with the version used at Fort Worth District, which is Word 2000). The Division 1 sections included in the Contract shall be reprinted in the final 100 percent construction specifications. Hard copies of the specifications and design analyses shall be bound separately in 3-ring binders. Each set of documents shall have its own Table of Contents. See Contract Section 01010 GENERAL PROJECT DESCRIPTION AND DESIGN REQUIREMENTS and Section 01016 DESIGN DOCUMENTS REQUIREMENTS for editing and format requirements.

1.8 DESIGN DOCUMENTS

Design documents shall include construction drawings, specifications, submittal register, design analysis, and drafts of DD Form 1354. Detailing and installation of all equipment and materials shall comply with the manufacturers' recommendations. Construction drawings and specifications shall not make reference to RFP requirements. The Contractor, including designers, shall visit the site and make other trips as necessary during the design to accomplish the work. See Contract Section 01010 GENERAL PROJECT DESCRIPTION AND DESIGN REQUIREMENTS and Section 01016 DESIGN DOCUMENT REQUIREMENTS for additional descriptions.

1.8.1 Drawings

See paragraph SUBMISSION OF CONSTRUCTION DRAWINGS, SPECIFICATIONS AND DESIGN ANALYSES, subparagraph "Document Quality."

1.8.2 Specifications

Specifications shall be in sufficient detail to fully describe and demonstrate the quality of materials, the installation and performance of equipment, and the quality of workmanship. Specifications shall conform to the Construction Specifications Institute (CSI) 16-Division 3-Part format and follow the CSI's section numbering system defined in CSI MasterFormat. No two sections shall have the same section number. The specifications shall clearly identify the specific products chosen to meet the requirements of the Contract (manufacturers' brand names and model numbers or similar product information). Turfing sections shall indicate planting dates.

1.8.3 Design Analysis

Describe the design of each discipline of work, including all features and the necessary calculations, tables, methods, and sources used in determining equipment and material sizes and capacities. Provide sufficient information to support the design of the various categories such as, but not limited to, architectural, interior design, structural, mechanical, electrical, civil including grading, drainage, paving, environmental, and outside utility services, and Contract included items.

1.8.4 DD Form 1354

The 1354 process consists of preliminary and final drafts of DD Form 1354, TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY, and a Final DD Form 1354. DD Form 1354 is required so that Fort Hood can update their real property maintenance records. Submit the preliminary drafts with each of the design submittals and a final draft within 30 days of the Government's acceptance of the 100% construction documents. These drafts shall contain as many of the resource code items with cost and quantity data as can be developed from the Contractor's submittal documents. The Government will use the final DD Form 1354 draft to develop the DD Form 1354 to be submitted to Contracting Officer. The form, a sample of a completed form, and a general list of resource codes with cost and quantity data are included in the ATTACHMENTS. An electronic file of the form, DD1354.frl, for use with Delrina Perform Pro Form Filler, version 16 Jul 1992, or its successor software Form Flow Filler, Version 2.22 (March 5, 1999)is located on the Solicitation and Contract CD-ROM disks.

1.9 DESIGN AND CONSTRUCTION PERSONNEL QUALIFICATIONS

1.9.1 Project Manager - Design

~~The design project manager shall have a recognized four year or higher college degree in architecture or engineering, be professionally licensed, and have at least 3 years experience in managing design projects and have at least 5 years of design experience. The Design Project Manager may be the lead designer, but shall not be the same individual as the Construction Project Manager.~~**[AM #0009] The design project manager shall be professionally licensed as an Engineer or Architect, and have at least 3 years experience in managing design projects and have at least 5 years of design experience. The Design Project Manager may be the lead designer, but shall not be the same individual as the Construction Project Manager.**

1.9.2 Project Manager - Construction

The project manager shall have a recognized four-year or higher college degree in architecture, engineering (or related technical fields), or construction management and have at least 5 years experience in managing design and construction projects or 10 years experience in managing construction projects only. The Construction Project Manager shall not be the same individual as the Design Project Manager.

1.9.3 Project Architect or Engineer

The project architect or engineer shall have a recognized four-year or higher college degree in architecture or engineering, be professionally licensed, 3 years experience as a lead architect or engineer, and have at least 5 years design experience.

1.9.4 Designers

In addition to the Project Architect or Engineer, provide at least one

professional licensed architect or engineer for each of the other design disciplines (architectural, landscape architectural, interior designer, civil, electrical, mechanical, and structural design) with at least 5 years experience in their discipline. Each lead designer shall have a recognized four-year (or higher) college degree in architecture or engineering. In addition to the design disciplines above, the following specialists shall be included on the design team:

a. Fire Protection Engineer: The fire protection system shall be designed by a registered engineer with a minimum of five years experience in designing fire protection systems.

b. Lightning Protection Specialist: Analysis, design and installation of the lightning protection system shall be accomplished by a lightning protection specialist. Lightning Protection Specialist shall be a master certified by the lightning protection institute (LPI) in design and installation. This specialist shall have a minimum of five years experience in Design and Installation of lightning protection systems.

c. Corrosion Specialist: The field work, analysis, and design of the cathodic protection system shall be accomplished by or under direct supervision of an engineer licensed in corrosion engineering or a corrosion specialist certified by the National Association of Corrosion Engineers (NACE). The corrosion engineer or corrosion specialist shall have a minimum of five years experience in designing and installing cathodic protection systems.

d. Registered Communications Distribution Designer

e. Environmental Protection Specialist or Environmental Engineer: The Environmental Protection Specialist or Environmental Engineer shall have a recognized four-year (or higher) college degree in environmental engineering with at least 5 years experience in environmental protection.

1.9.5 Interior Designer

Interior Designer shall be National Council For Interior Design Qualification (NCIDQ) certified or be professionally licensed.

1.9.6 Lightning Protection Specialist

Lightning Protection Specialist shall be a master certified by the lightning protection institute (LPI) in design and installation. This specialist shall have a minimum of five years experience in Design and Installation of lightning protection systems.

1.9.7 Registered Communications Distribution Designer

This project requires the utilization of a Communications Consultant who is a Registered Communications Distribution Designer (RCDD). This person shall design the telecommunications systems for the project, be involved in all phases of design, and shall coordinate with other disciplines for the systems listed in the Design Criteria References and these Design Instructions. This communication consultant shall have a minimum of five

years of Telecommunications Design experience. The use of any on-staff electrical engineers for design of the telecommunication systems and who are not RCDD is not acceptable.

1.9.8 Design Quality Control Manager

Design quality control manager and the alternate manager qualifications are specified in Section 01430 DESIGN QUALITY CONTROL. Design quality control manager shall not be the same person as the construction quality control manager.

1.9.9 Construction Quality Control Manager

Construction quality control manager and assistants qualifications are specified in Section 01451 CONTRACTOR QUALITY CONTROL. Construction quality control manager shall not be the same person as the design quality control manager.

1.9.10 Industrial Hygienist

Industrial Hygienist (IH), or Designated Industrial Hygienist, shall be a professional qualified by education, training, and experience to anticipate, recognize, evaluate, and develop controls for occupational health hazards.

The Designated IH shall be board certified in the practice of industrial hygiene as determined and documented by the American Board of Industrial Hygiene (ABIH), have EPA Model Accreditation Plan (MAP) "Contractor/Supervisor" training accreditation required by 40 CFR 763, Subpart E, Appendix C, and have a minimum of **5** years of comprehensive experience in planning and overseeing abatement activities for asbestos, lead, regulated materials, and mold. Provide copies of the Designated IH's current valid ABIH certification, "Contractor/Supervisor" course completion certificate(s), the most recent certificate(s) for required refresher training, and the employee "Certificate of Worker Acknowledgment" as required in Section 13280 ASBESTOS ABATEMENT. The Designated IH shall be completely independent from the Contractor according to federal, state, or local regulations; that is, shall not be a Contractor's employee or be an employee or principal of a firm in a business relationship with the Contractor negating such independent status.

]1.9.11 CADD Personnel

CADD personnel shall be proficient in the preparation of architectural and engineering drawings and the CADD equipment that will be used to create the required drawings and record drawings. The lead CADD person shall have at least 5 years experience on the proposed equipment.

1.9.12 Project Schedule Scheduler

Qualifications for the Scheduler are specified in Section 01320 PROJECT SCHEDULE.

1.10 DESIGNER(S)OF RECORD

The Contractor shall identify, for approval, the Designer of Record for each area of work. One Designer of Record may be responsible for more than one area. All areas of design disciplines shall be accounted for by a listed, registered Designer of Record. The Designer(s) of Record shall stamp, sign, and date all design and construction drawings under their responsible discipline at each design submittal stage, including modification drawings after start of construction (See Section 00800, SPECIAL CONTRACT REQUIREMENTS, Clause 52.236-25 entitled "Requirements for Registration of Designers").

1.11 CONSTRUCTION MANAGEMENT KEY PERSONNEL

The Contractor's construction management key personnel shall be actively involved during the design process to effectively integrate the design and construction requirements of this Contract. In addition to the typical required construction activities, the Contractor's involvement shall include, but is not limited to, actions such as integrating the design schedule into the Master Schedule to maximize the effectiveness of fast-tracking design and construction (within the limits allowed in the Contract), ensuring constructability and economy of the design, integrating the material and equipment acquisition programs to meet critical schedules, effectively interfacing the construction QC program with the design QC program, and maintaining and providing the design team with accurate, up-to-date redline and as-built documentation. The Contractor shall require and manage the active involvement of key trade subcontractors in the above activities. The Contractor's Quality Control Staff will check and certify all submittals.

1.12 DESIGN SUBMITTALS

1.12.1 General

The Contractor shall schedule the number and date of the design submittal phases and conferences in accordance with phasing requirements. The number, date, and contents of the design submittal phases shall be reflected in the project schedules. An authorization letter to start work will be provided separately by the Contracting Officer for each phase of the design. See paragraph "Government Design Review and Acceptance" and Section 01016 DESIGN DOCUMENTS REQUIREMENTS for additional requirements.

1.12.2 Design Development Submittals

1.12.2.1 Design Development Submittal

Design and construction will be done in phases; see Section 01000 DESIGN AND CONSTRUCTION SCHEDULE, paragraph SEQUENCE OF DESIGN/CONSTRUCTION (FAST TRACK). The designer will design and submit a segment of the work, upon review and acceptance, begin construction. Reviews will occur periodically during each design phase. These documents shall be packaged and stamped "For Review Only - Design Development (Design Phase [__])". Each sheet of the drawings shall also be stamped. See Section 01016 DESIGN DOCUMENTS REQUIREMENTS for additional requirements. Contractor shall make final

proposal of all materials and finishes applicable to this stage at this submittal.

1.12.2.2 Design Development Documents (Compliance Check Design Submittal)

The compliance check design submittal(s), which incorporates the Government's review comments of each Design submittal, shall be stamped "100% CORRECTED DESIGN". Each sheet of the drawings shall also be stamped and signed by the Designer of Record.

1.12.3 Construction Documents

After notification of acceptance of the Compliance Check Design Submittal, the 100% Corrected Design documents shall be stamped "CONSTRUCTION DOCUMENTS, APPROVED FOR CONSTRUCTION."

1.12.4 Insufficient Design Submittals and Delays

No additional time for completion of the Contract will be granted to the Contractor due to insufficient design submittals. Delays caused by the Contractor in completion of the Design Development and Construction Document stages will not be considered as valid reason to delay the entire project within the specified project duration.

1.12.5 Deviations or Betterments

The Contractor shall bring to the Government's attention any deviations or betterments made to the RFP and Contractor's proposal documents. These shall be summarized in letter form with reasons and highlighted or clouded details on the applicable drawings and documents submitted. See Section 00800 SPECIAL CONTRACT REQUIREMENTS for additional requirements concerning betterments.

1.12.6 Review Design Documents

The Contractor shall submit all design documents (i.e drawings (on black-line media), specifications, design analyses, SID, CID) with "FOR REVIEW ONLY - DESIGN DEVELOPMENT (Design Phase [__])", "100% CORRECTED DESIGN", and "CONSTRUCTION DOCUMENTS, APPROVED FOR CONSTRUCTION," as applicable, stamped in 1/2-inch high letters in the lower right corner in red ink.

1.13 DESIGN REVIEWS

Design reviews will be held at the Central Texas Area OfficeFort Worth District office for each design submittal phase in accordance with the Contractor's Project Schedule. The Government may require 30 calendar days review period each of the Design Development submittals and 14 calendar days review period for Compliance Check Design Submittal, or some reviews may be "over-the-shoulder" reviews; determinations will be made at the post award conference.. All review comments shall be maintained with the Dr Checks/ProjNet review comments management software. Design review conference(s) between the Contractor and the Government may be held after any submittal the Government determines them necessary. The time for

Government review will be calculated from the date of receipt of the design submittals at the Government address to the date theannotated conformance review comments are mailed to the Contractor.

1.13.1 Review Intent

Reviews will be for conformance with the technical requirements of the Contract. If the Contractor disagrees technically with any comment and does not intend to comply with the comment, the Contractor shall clearly outline, with ample justification, the reasons for noncompliance within 5 days after receipt of these comments in order that the comment(s) can be resolved. The Contractor shall furnish disposition of all comments, in writing, with the next scheduled submittal. If the Contractor believes the action required by any comment exceeds the requirements of the Contract, the Contractor shall immediately notify the Contracting Officer in writing and take no action regarding this matter until the matter is resolved.

1.13.2 Late Submittals

If a design submittal is over one (1) day late in accordance with the latest design schedule, the Govemment review period will be extended 7 days. The review conference will be held the week after the review period. Submittal date revisions shall be in writing at least one week prior to the affected submittal.

1.13.3 Review Document Distribution

Review documents shall be sent to the addresses and in the quantity indicated below for each review. All document submission packagesmust contain a transmittal letter and an index of contents. Copies of all the transmittal letters plus the original Fort Worth District transmittal letter shall be included with the package sent to the Fort Worth District Office.

(5 DD)	Area Engineer, M. Leon Carroll
(5-Compliance Ck)	Central Texas Area Office
(5-Const Documents)	ATTN: CESWF-AO-C
	PO Box 757
	Killeen, TX 76540-0757

1.13.4 Additional Review Time

If for any reason the Government requires more time than that stated for review, then the Contractor will be granted an extension of time equal to the number of calendar days of delay.

1.13.5 Government Design Review and Acceptance

Government personnel will present review comments to the Contractor. Copies of comments, annotated by the Designer of Record, will be submitted to the Government's Project Manager as stated in paragraph DESIGN REVIEWS above. If the annotated comments are not acceptable to the Government a review conference will be requested by the Government and scheduled for a time mutually agreeable to the Contractor and the Government. The final

annotated review comments will be prepared at the end of the review conference and given to the Contractor for preparation of the Construction Documents. The Government reserves the right to not accept design document submittals if outstanding unincorporated comments are, in the Government's determination, of too great a significance. If "Construction Documents" are incomplete or deficient, requiring correction by the Contractor and resubmittal for review, the cost of rehandling and reviewing will be deducted from payment due the Contractor at the rate of $500.00 per submittal.

1.14 Final Construction Documents

Upon receipt of the Contracting Officer's written notification of design acceptance for each phase the Contractor shall mark the accepted design documents as "Construction Documents" and distribute the construction documents in accordance with the paragraph "Review Document Distribution." Each "Construction Set" shall consist of full size paper drawings, specifications, SID, CID, design analysis, and permit applications and documents applicable to each phase. In addition, each "Construction Set" shall also include CD-ROM disk(s) containing the Contract Award CD files (contract, proposal, contract viewer, etc.) and all construction drawings, specifications, SID, CID, submittal register, and design analysis files). The drawing files on the CD-ROM disk(s) shall include the electronic .dgn or .dwg CADD drawing files, these files converted to *.CAL format for viewing on the MaxView Reader, and an Excel spreadsheet listing for each drawing the drawing number, sequence number, level/layer assignments, line colors, line weights, and line types. On the CD-ROM disk(s), arrange the construction document files in a Construction Documents folder with subfolders for drawings, specifications, design analysis, submittal register, etc. Modify the "aYYr00NN.con" file so that the drawings' "*.cal" files can be viewed through the Contract Viewer. During and upon completion of the project, the accepted construction documents, including the CD-ROM disks, shall be corrected to reflect as-built conditions in accordance with Section 01770 CONTRACT CLOSEOUT. After acceptance and during construction, changes to the final phased construction documents shall not be made without the Contracting Officer's knowledge and acceptance. After completion of project and prior to final payment, compile and submit all construction documents, including all all phased construction drawings and specifications, record drawings, shop drawings, etc. on CD-ROM disk(s) in formats specified above.

1.15 COORDINATION

1.15.1 Written Records

The Contractor shall prepare a written record of each design site visit, meeting, or conference, either telephonic or personal, and furnish copies to the Contracting Officer and all parties involved within 5 working days. Include subject, names of participants, outline of discussion, and recommendation or conclusions. Number each written record for the particular project under design in consecutive order.

1.15.2 Design Needs List

Throughout the life of the Contract the Contractor shall furnish the Contracting Officer a biweekly "needs" list for design related items. This list shall itemize in an orderly fashion design data required by the Contractor to advance the design in a timely manner. Each list shall include a sequence number, description of action item, and the name of the individual or agency responsible for satisfying the action item and remarks. Maintain the list on a continuous basis with satisfied action items checked off and new action items added as required. Once a request for information is initiated, that item shall remain on the list until the requested information has been furnished or otherwise resolved. Mail copies of the lists to both the Contracting Officer and the agencies tasked with supplying the information.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 ATTACHMENTS

ATTACHMENT A

(Prime Contractor's Letterhead)

Date: _____

Contract No.: _____

[Reviewing Component Address]

Subject: DESIGN CERTIFICATION AND TRANSMITTAL FOR

Project Title: _____
Project Location: _____
Contract No.: _____

Gentlemen,

Enclosed are the following documents which I hereby certify are in compliance with the Contract requirements of the subject construction contract and can be used to commence construction subject to Government acceptance:

1. Project Drawings
2. Project Specifications
3. Design Analysis
   a. Civil
   b. Water Supply and Wastewater Collection
   c. Architectural
   d. Interior Design
   e. Structural
   f. Mechanical
   g. Fire Protection
   h. Electrical
   i. Environmental
   j. Landscape Architectural
4. Submittal Register

_____
[Typed Name and Signature of the
Officer of the Prime Contractor's company]

5. Deviations

Copy to: [As standard with the Contractor]

_____

[Typed Name and Signature of the
Licensed Architect/Engineer of Record]

-- End of Section --

SECTION 01016

DESIGN DOCUMENT REQUIREMENTS
05/2004
AMENDMENTS NO. 0002, 0005, AND 0009

PART 1 GENERAL

1.1 REFERENCES

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

ACI INTERNATIONAL (ACI)

ACI SP-66	(1994) ACI Detailing Manual

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1	(2000) Structural Welding Code - Steel

INTERNATIONAL CODE COUNCIL (ICC)

ICC Bldg Code	(2000) ICC International Building Code

INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS (ICBO)

ICBO Bldg Code	(1997) Uniform Building Code (3 Vol.)

MILITARY HANDBOOKS (MIL HDBK)

MIL-HDBK-1191	(July 2002) DOD Medical Military Facilities Design and Construction Criteria

UNIFIED FACILITIES CRITERIA (UFC)

UFC 3-600-01	(17 April 2003) Design: Fire Protection Engineering For Facilities

US ARMY CORPS OF ENGINEERS, SOUTHWESTERN DIVISION (SWD)

SWD-AEIM	(October, 2000) Architectural and Engineering Instructions Manual (SWD-AEIM)

1.2 RELATED SECTIONS

01010 GENERAL PROJECT DESCRIPTION AND DESIGN REQUIREMENTS
01012 DESIGN AFTER AWARD

1.3 SUBMITTALS

SD-05 Design Data

Design Data Checklists; .

Include the Fire Protection, Code Analysis, and Handicapped Checklists (Attachments A, B, and C) at the end of this Section with the Design Analysis and submit with the design submittals.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 DRAWINGS

Prepare, organize, and present drawings in the format specified. Provide drawings complete, accurate, and explicit enough to show compliance with the Contract requirements and to permit construction. The layout of individual sheets and the organization of the assembled set shall follow and communicate a logical sequence. General information shall be presented first, progressing to more detailed information. When assembling details, begin in the upper left-hand corner of the sheet with letters progressing to the right and down. Drawings illustrating systems proposed to meet the requirements of the Contract performance specifications shall reflect proper detailing for each such system to assure appropriate use, proper fit, compatibility of components, and coordination with the design analysis and specifications required by this section. Coordinate drawings to ensure there are no conflicts between design disciplines and between drawings and specifications. For specific drawing requirements, see paragraphs: DESIGN DEVELOPMENT REQUIREMENTS, CONSTRUCTION DOCUMENT (COMPLIANCE CHECK (FINAL 100 PERCENT DESIGN)) DESIGN REQUIREMENTS, and DESIGN DETAILS.

The following subparagraphs cover general drawing requirements and supplement those specified in SWD-AEIM, Chapter VIII DRAWINGS.

3.1.1 CADD Drawings

The Contractor shall ensure that all delivered CADD digital files and data (e.g., base files, reference files, cell/block libraries) are compatible with the Government's target CADD system and operating system, which is Bentley Systems MicroStation, version 7J, running on Microsoft Windows 95/NT/2000, and adhere to the standards and requirements specified. The term "compatible" means that data is in native digital format i.e. .dgn, and can be accessed directly by the target CADD system without translation, preprocessing, or postprocessing of the digital data files. It is the responsibility of the Contractor to ensure this level of compatibility.

3.1.2 CADD Standards

CADD drawings shall be prepared in accordance with the applicable general and discipline-specific provisions for drawing formats, level/layer assignments, line colors, line weights, and line types of the "Tri-Service A/E/C Standards" and the "SWD Architectural and Engineering Instruction

Manual (AEIM), Chapter VIII, "Drafting Standards."

The CADD standards for design of this project, including seed/prototype files containing the Government's preset standard settings and electronic reference files containing the Government's standard border/title block sheets, are located at the following Web site:

http://tsc.wes.army.mil/products/standards/aec/aecstdweb.asp.

The Contractor shall submit a written request for approval of any deviations from the Government's established CADD standards. No deviations will be permitted unless prior written approval of such deviation has been received from the Government.

3.1.3 Size of CADD Drawings

Overall Size of CADD drawings shall be 23.4 by 33.1 inches)), at the trim line. Full size drawings shall be submitted for all design submittals. English working units and the District's standard file-naming convention shall be used. **(AM#2) The Fort Worth District CADD File Naming convention can be found at the following web page:**
http://www.swf.usace.army.mil/pubdata/ed/mech/CADD_File_Name.asp

3.1.4 .CAL Files

In addition to copying the electronic CADD drawing files to the Submittals' CD-ROM disk, include the drawings in .cal format so that the drawings may be viewed on screen using MaxView Reader that is located on the Solicitation and Contract CD-ROM disks. Include a "sendable" compiled Project.svd index file, created with MaxView Author, so that the drawings may be viewed by double-clicking on this file. MaxView's web site is http://www.maxview.com. Keep the CADD files and the .cal files in separate folders.

3.1.5 Drawing Format

Title block shall include, as a minimum, project title and location, sheet title, and sequence number. For each design submittal, each Contractor-prepared drawing shall bear the printed name and signature of the registered architect or appropriate registered engineer responsible for the work portrayed on that drawing and proposed to meet the Contract requirements. For the final submittal, each Contractor-prepared drawing shall bear the stamp or seal and signature of the registered architect or appropriate registered engineer responsible for the work portrayed on that drawing and proposed to meet the Contract requirements.

3.1.6 Drawings Sequence

Arrange drawings by design discipline in accordance with the SWD-AEIM, Chapter VIII, Appendix A, Plate D1, Standard Arrangement Of Drawings.

3.1.7 Drawings Required

As a minimum, the construction drawings shall consist of the following:

a. Cover or Title Sheet

b. Index of Drawings (each technical discipline shall have a separate drawing legend sheet located in front of each respective section), Legend, and Abbreviations

c. Civil/Site Drawings, including Utility Drawings (Water Supply, Wastewater, Gas, Electrical, Fiber and Communication)

d. Soil Boring Locations and Logs of Borings

e. Turfing and Landscaping Drawings, including Irrigation Layout Drawings

f. Architectural Drawings

e. Interior Design Drawings

f. Not Used

g. Structural Drawings

h. Mechanical Drawings

i. Fire Protection Drawings

j. Electrical Drawings (including communications, security and fire alarm)

k. Lightning Protection

l. Environmental Drawings shall include Storm Water Pollution Prevention (SWPP) or Erosion and Sediment Control (ESC) Plans. These drawings shall be prepared with the final grading plans and shall be in accordance with requirements stated in Section 01421 BASIC STORM WATER POLLUTION PREVENTION PLAN. The set of SWP or ESC drawings shall include detail sheets that depict DETAILS of applicable construction erosion and sediment control structures for the proposed site.

m. Regulated Material Survey and Abatement Design drawings for the building demolition structures

n. Schedules - e.g. Doors, Windows, Interior Finishes, Equipment

3.1.8 Drawing Scales

Work shall be drawn at the scales listed below. All disciplines should use the same scale for plan sheets. Scale for all drawings and delineation will permit complete legibility. A graphic bar or checkerboard scale will be provided on each sheet near the lower left hand corner of th sheet. Unless specified elsewhere, conventional scale standards are as follows:

ENGLISH)

Site Plans (Buildings)	No smaller than 1-inch = 30 feet
Floor Plans (Note 1)	1/8-inch to 1/4-inch = 1 foot
Roof Plans	1/8-inch = 1 foot
Exterior Elevations	1/8-inch = 1 foot
Interior Elevations	1/4-inch
Cross Sections	1/4-inch to 1/8-inch
Wall Sections (Note 3)	3/4-inch = 1 foot
Stair Details	3/4-inch = 1 foot
Details (Note 2)	1 1/2 inches or 3 inches = 1 foot
Reflected Ceiling Plans	1/8-inch = 1 foot
Interior Toilet Elevations	3/4-inch to 1/2-inch
Wall Types	1 1/2 inches or 3 inches = 1 foot

Notes:

1. Scale of composite plans shall be as required so that the entire facility is drawn on one sheet without break lines.

2. The details shall be large enough to show all fixtures, accessories, equipment, materials, manner of construction, clearances required for proper maintenance, and complete dimensions. Toilet rooms and Equipment rooms are examples of the kind of spaces which shall be drawn as a Detail Plan. All details containing sheet metal flashing shall be 3 inches = 1 foot.

3. May be 3/4-inch = 1 foot if pertinent details are shown at larger scale.

3.1.9 North Arrows

North arrows shall be oriented the same direction on all plan sheets and by all disciplines, including site and civil drawings. Plan north shall be "up" or to the left on the drawings. Indicate true north on composite plan drawings.

3.1.10 Legends and Symbols

Standard material symbols used on the drawings shall be provided as a separate legend drawing located just in front of the drawings in the set. Add additional material symbols to the Legend Sheet as needed for the project.

The standard symbols used for amendments (a triangular box) or contract modifications (a type of circular box, see the chapter on Drafting Criteria) shall not be used for any other purpose, and care must be taken to avoid using similar appearing but technically different symbols.

3.1.11 Key Plans

Provide key plans whenever the site or floor plan occupies more than one sheet of drawings. Locate the Key Plans at a uniform location on all site and floor and roof plan sheets to show the interrelationship between the

building portions. Orient key plans in the same direction as the floor plan on all plan type drawings of all disciplines. All key plans shall be the same size and same location on the drawings.

3.1.12 Building Composite Plans

When required because of size of the building footprint, provide composite floor plans for the architectural, structural, mechanical, fire protection, life safety, and electrical disciplines. Include match lines for combining individual portions of floor plans. For mechanical plans, provide composite plumbing and heating, air conditioning, and ventilation (HVAC) plans showing plumbing and HVAC systems for each level. For plumbing composite sheets, building outline and pertinent HVAC equipment shall be half-toned with plumbing system at standard lineweight. For HVAC composite sheets, building outline and pertinent plumbing equipment shall be half-toned with HVAC equipment at standard lineweight. Do not provide construction notes on these plans. Include a key plan and room schedule legend on the composite plan sheets.

3.1.13 Schedules

Schedules shall be clear and complete. Furnish as many columns as necessary to present the essential information. Do not use the "Remarks" column as a substitute for an information column. Normally a single item shall be presented on each schedule line. Other scheduling methods as standard with the Architect-Engineer may be used if approved by written authorization from the Contracting Officer.

3.1.14 Notes

Notes may be placed on drawings to reduce the amount of repetitive drafting, provided that clarity is not lost. General notes should be placed at the right-hand edge of the sheet and, if possible, should be located on the first sheet in the set. Notes that pertain to each drawing should be placed on each drawing. Keyed notes are permitted. General notes may be provided on a separate sheet if space does not exist on the Abbreviation and Legend sheets.

3.1.15 Dimensions

Dimensions shall be complete, accurate, and fully coordinated. Use slashes, not arrowheads or dots. Dimensions should be to points easily measurable in the construction, and shall be laid so as not to eliminate refiguring in the field. Dimensions should be tied-in to column lines, etc., to facilitate checking. Plan dimensions for frame construction should be to face of stud (or sheathing) for exterior walls, to one face of stud for interior partitions, and to centerline of openings. For masonry construction, dimensions shall be to one or both nominal faces of masonry and to jambs of openings.

a. Horizontal dimensions shall occur on the plans and vertical dimensions on sections and elevations.

3.1.16 Standard Drawings

Standard Drawings, when furnished for site adaptation, will generally be utilized without basic architectural change. Portions of the drawings not pertinent to the project will be deleted. Specific instructions will be given when design changes are required.

3.1.17 Sketches

All sketches presented during the design phase shall be reduced to 8-1/2" by 11" and included in the design analysis to document the design options and decisions evaluated during the design process.

3.2 CONSTRUCTION SPECIFICATIONS

3.2.1 Editing Construction Specifications

The Contractor shall use Corps of Engineers' UFGS Guide Specifications for developing construction specifications. Specification paragraphs and subparagraphs shall not be rewritten to lessen the quality of the original guide specification sections. **The specifications shall clearly identify, where appropriate, the specific products chosen to meet the requirements of the Contract (manufacturers' brand names and model numbers or similar product information). The Contractor shall be responsible for coordinating references, along with the Contract performance requirements, to specific specification sections (number and title) within the construction specifications.** See additional requirements in paragraphs DESIGN DEVELOPMENT REQUIREMENTS of this Section and in Section 01012 DESIGN AFTER AWARD, paragraph DESIGN DOCUMENTS.

3.2.1.1 Construction Submittals

The Contractor is responsible for all submittals. See Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES for the definition of Government Approved and For Information Only (FIO) submittals. **Except for appearance-related submittals and those submittals required by Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES to be Government approved ("G"), all other submittals shall be "FIO", that is for information only (Contractor Approved) items. Submittals noted as "G" in the UFGS/UFSWF guides and any RFP technical specifications and which are neither appearance-related nor contracturally required to be G shall be changed to "for information only" (Contractor Approved).**

3.2.2 Division 1 Sections

Include Division 1 specifications sections contained in this Contract as part of the project specifications without change. See Section 01012 DESIGN AFTER AWARD.

3.2.3 Format For Construction Specifications

Submit the construction specifications, including cover page and project table of contents. Edit Corps of Engineers UFGS guides using the Corps of Engineers Specsintact software, Version 4.0 or higher. If any commercially

available guide specifications are used and are from a relational database system such as BSD SpecLink, then export the sections to Rich Text Format (RTF) word processing files to convert the sections to MS Word documents for those users who are specified to receive MS Word copies of the specifications.

The Corps of Engineers Specsintact software can be downloaded from the Internet at the following address:

http://kscdl2.ksc.nasa.gov/specsintact/.

The Corps of Engineers UFGS Guide Specifications can be downloaded from the Internet at the following address:

http://64.239.96.52/docs/ufgshome/UFGSToc.htm

The Lighting Fixture Standard Drawing 40-06-04 Details and Design Criteria (e.g. Unified Facilities Criteria, Army Technical Manuals (TM's), Engineering Manuals, Engineering Technical Letters, Engineer Circulars, Engineer Pamphlets, Design Guides, and Military Handbooks) can be downloaded from the Internet at the following address:

http://www.hnd.usace.army.mil/techinfo/index.asp

The guides can only be downloaded in Winzip *.zip files. These are downloadable executable files.

Specsintact software, the UFGS guide specifications, and design criteria manuals can also be obtained from the current version of the Construction Criteria Base CD, issued by the National Institute of Building Sciences, telephone number 202/289-7800, fax number 202-289-1092, internet address is:

http://www.nibs.org.

Fort Worth District local guide specifications (UFSWF) and the District supplements to the UFGS guide specifications are located on the Internet at the following address:

http://www.swf.usace.army.mil/eandc/ec-a/default.htm

Print hard copies using laser or ink-jet printer and good quality white paper. For design submittals, editing of the Construction Specifications shall be shown by using redlining (underlined text) for text insertions and strikeouts for text deletions. The corrected 100 percent specifications with review comments incorporated shall be cleaned up (markings for insertion and deletions removed) and submitted in both hard copy and on CD-ROM disk. Carbon copies are not acceptable.

3.2.3.1 Format

Format shall be as specified in Section 01012 DESIGN AFTER AWARD . Sections which are not in the UFGS and Fort Worth District local guide specification series shall be numbered in accordance with CSI MasterFormat. No two sections shall have the same section number.

3.2.5.2 Cover Page

The Cover page shall be similar to the Contract Cover page and shall include:

a. Project title, activity and location

b. Construction contract number

c. Construction Contractor's name and address

d. Design firm's name and address

e. Names of design team members responsible for each Contractor prepared technical discipline of the project specification

f. Name and signature of a Principal of the design firm

g. The Table of Contents shall list the 16 Divisions contained in CSI format and the specification section numbers and titles contained in the project specification. Do not list in the Table of Contents CSI Divisions that are not required for the project.

3.2.4 Construction Submittals

All construction submittals shall be in accordance with Section 01330, "CONSTRUCTION SUBMITTAL PROCEDURES."

3.2.5 Submittal Register

An electronic version of the ENG Form 4288 is located on the Solicitation and Contract Award CD-ROM disks in folder "Subreg." This version is the Specsintact DOS Submittal Register program and includes a Readme.txt file. Copy these files to the computer's C:\ drive, remove the read-only attributes, and then double-click on either file "subreg.exe" or on "submit.bat." This is **not** a Windows-based program so the mouse **does not** work. Editing instructions are on-screen, such as press the "F5 (add)" and then the "E" keys to create new empty submittals, the "PgDn" key to complete editing, and the "A" key to accept. For each submittal, fill in the Section Number, Activity Number if applicable, Paragraph Number, Description, Type of Submittal (e.g. SD-01 through SD-11(See Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES)), Classification (e.g. G or FIO), and the Contractor's proposed submittal date. Fill in columns "a" through "o" on the ENG Form 4288 and submit a copy of the "Subreg" folder with the updated files and a hard copy of the register as required for the various construction submittals. A blank MS Excel version of the Form 4288

Submittal Register is also included in the "Subreg" folder and may be used if allowed by the Contracting Officer. This MS Excel file is not compatible with RMS.

3.3 DESIGN ANALYSES

Prepare design analyses (basis of design and calculations) for each design discipline. Specific requirements relative to the technical content to be provided are specified in the paragraphs DESIGN DEVELOPMENT REQUIREMENTS. The design analyses shall be a presentation of facts to demonstrate that the concept of the project is fully understood and that the design is based on sound engineering. The design analysis for each discipline shall be in accordance with Chapter IX of the SWD-AEIM. **[AM#0009] See Paragraph "3.6.4.1 AEIM CHAPTER IV DESIGN ANALYSIS" for additional information. (AM #9) The environmental design analysis shall discuss Environmental Protection and Compliance in accordance with work specified in Section 01010 GENERAL PROJECT DESCRIPTION AND DESIGN REQUIREMENTS and all applicable Federal, State, and local regulations. It shall address environmental design required after contract award. These include at least the following: work plans, drawings, regulated material abatement quantity verification reports, pre-construction permits, notifications, certifications and licenses, closure documents, and analytical data per Sections 01355 ENVIRONMENTAL PROTECTION, 01356 STORM WATER POLLUTION PREVENTION MEASURES, 01421 BASIC STORM WATER POLLUTION PREVENTION PLAN, 01421R SWPP PLAN INSPECTION AND MAINTENANCE REPORT FORM, 01561 DUST CONTROL, 01670 RECYCLED/RECOVERED MATERIALS, 13280 ASBESTOS ABATEMENT, 13282 METALS ENCOUNTERED IN PAINT DUST DURING CONSTRUCTION, and 13284 REMOVAL, RECYCLING AND DISPOSAL OF REGULATED MATERIALS**.

3.4 COMMON DESIGN DEFICIENCIES

The work involved in making corrections due to common deficiencies becomes lost effort and time for both the designer and the reviewer. Carefully compare the design and contract documents with all requirements at several points in the design process to avoid unnecessary changes at a later date. Some of the requirements which are most often overlooked include:

a. Requirements of the COE 2, Southwestern Division's ARCHITECTURAL AND ENGINEERING INSTRUCTIONS MANUAL (SWD-AEIM) have been repeatedly overlooked in the past.

b. Failure to incorporate the Fort Worth District's supplemental local requirements to the UFGS guide specifications when the UFGS are used.

c. Not using correct abbreviations or terminology on the drawings. Abbreviations must match what is used on the standard abbreviation sheet and terminology must match what is used in the standard technical guide specifications.

d. Not using the correct scales, north arrow designation, section cut system, or incomplete dimensioning on the drawings.

e. Not providing sufficient space for door operation hardware at doors which swing into a wall running perpendicular to the opening. 4 inches

minimum is required between edge of door frame and perpendicular walls.

f. Not providing correct and complete Design Analysis information written in the present tense. The Design Analysis will be written following the format indicated herein. A separate Fire Protection section in the Design Analysis with input from all disciplines is one area which is often overlooked and shall be included.

g. Not correctly presenting or coordinating (to avoid interference) features of Fire Protection, Noise Control, and Physical Security.

h. Not correctly referencing and cross referencing building sections, wall sections, details, etc.

i. Failure to read and use technical notes in editing the Guide Specifications.

j. Failure to coordinate all disciplines prior to submittal of projects for review.

k. Improper use of fire-retardant wood. Fire-retardant wood is combustible; its use in buildings that are of noncombustible construction is extremely limited (see ICC Bldg Code for the minor allowable uses). Because of the potential for severe degradation, fire retardant plywood shall not be used in a roof or roofing system, or in structural applications.

l. Not listing the ANSI/BHMA numbers in addition to trade names in door hardware specifications and failure to correctly specify hardware finishes.

m. Control joints in CMU walls and brick expansion joints in face brick are not shown on both architectural plans, elevations and structural plans, or are inconsistent. Note also control joint locating and coordination for floor tile per Tile Council of America recommendations.

n. Failure to delete all publications which do not apply to the particular project.

o. North is not oriented the same direction on all sheets (civil, site, arch).

3.5 DESIGN CERTIFICATION

The Contractor shall provide certification for each design submittal in accordance with paragraph SUBMISSION OF CONSTRUCTION DRAWINGS, SPECIFICATIONS AND DESIGN ANALYSES, subparagraph "Certifications," of Section 01012 DESIGN AFTER AWARD.

3.6 DESIGN DEVELOPMENT REQUIREMENTS

All documents shall be 100 percent complete, ready for start of construction. Materials, products, and assemblies to be used shall be identified. Furnish manufacturer's certification that the products and

assemblies meet the Buy American Act.

Design documents for each phase shall include all applicable plans, details, and specifications specified in the paragraph DESIGN DETAILS . Identify and resolve conflicts in the design requirements, between the design requirements and the Contractor's design proposal, or those due to lack of thorough understanding of the nature and scope of work prior to submittal. Drawings, design analysis (including ENVIRONMENTAL DESIGN ANALYSIS that addresses issues pertaining to the proposed facility, proposed site, user requirements, and current applicable Federal, state, and local regulations), and specifications will be reviewed for compliance with the Contract design requirements at this design submittal. Submit the following:

3.6.1 Drawings

Furnish all drawings that are required for the 100 percent submittal and shall be 100 percent complete. The drawings shall be fully coordinated with the design analysis and specifications.

3.6.2 Specifications

Provide all specification sections required for 100 percent submittal. Identify the materials, products, and assemblies to be used. Specifications shall be 100 percent complete. All other specifications required for the completion of the building(s), site work, utilities, turfing, and landscaping shall be at least mark-ups of the required technical and trade sections. The identification of the "author" of the industry guide specifications used, any mandatory guide specifications required in this Contract, and a project table of contents listing all sections in the project shall be submitted with the specifications.

Environmental **(AM #9)** ~~basic~~ specification sections shall include at least sections such as ENVIRONMENTAL PROTECTION, STORM WATER POLLUTION PREVENTION MEASURES, DUST CONTROL, BASIC STORM WATER POLLUTION PREVENTION PLAN, SWPPP INSPECTION & MAINTENANCE REPORT,RECYCLED/RECOVERED MATERIALS, CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT, **(AM #9)** ~~and~~ temporary and permanent soil stabilization (i.e. mulching for erosion control, establishment of turf, seeding, topsoil, earthwork, and landscaping)**(AM #9), and other section as cited above in paragraph DESIGN ANALYSES**. The soil stabilization specifications and method shall be determined with the landscaping project requirement and site applicability.

~~For a project that requires demolition of existing building structures, inspection, sampling suspicious regulated materials, and quantifying abatement items shall be performed. Sample locations, material descriptions and conditions, analytical results, abatement quantities shall be presented on drawings, and the ENVIRONMENTAL SURVEY PLANs FOR REGULATED MATERIALS. Additional applicable specifcations shall include at least ASBESTOS DISTURBANCE (for non-friable ACM) and ASBESTOS ABATEMENT (for friable and non-friable ACM), REMOVAL/CONTROL AND DISPOSAL OF PAINT WITH LEAD, REMOVAL/RECYCLE AND DISPOSAL OF REGULATED MATERIALS. The inspection and sampling protocol, the original analytical lab results shall provide as~~

~~an attachment as .pdf file to the appropriate sections for reference~~**(AM #9)** .

3.6.3 Submittal Register

Prepare a Submittal Register as specified in Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES and paragraph CONSTRUCTION SPECIFICATIONS, subparagraph "Submittal Register," of this Section. Submittals shall be developed to the extent required to support the level of design included in this submittal.

3.6.4 Design Analysis (including Engineering Calculations)

The design analysis shall give the basis for design for all disciplines and shall establish specific goals, objectives, and priorities for the design of this project. Identify, explain, and document use of design criteria and how the design meets goals, objectives, and priorities. The design analysis shall comply with SWD-AEIM, Chapter IX, and include narrative description and analysis of all building systems, appropriate checklists, calculations, and catalog cut sheets of equipment used in the design. Design analyses shall be performed by licensed design professionals.

3.6.4.1 **(AM#9) AEIM Chapter IX DESIGN ANALYSIS**

Within this Chapter's Part 2 DESIGN REQUIREMENTS AND PROVISIONS, several paragraphs in subchapter 5 MECHANICAL and all of subchapter 6 ELECTRICAL are excluded from the design analysis requirements for this project. MECHANICAL's paragraph 1.4.1 is applicable except for the "life cycle cost analysis" requirement. The other excluded paragraphs within subchapter 5 MECHANICAL are:

1.1.3, 1.1.6, 1.1.9, 1.1.12, 1.1.13
1.2.5 thru 1.2.10
1.2.14, 1.2.17, 1.2.19
1.3.1, 1.3.2,
1.3.5 thru 1.3.9
1.3.11, 1.3.16
1.3.20 thru 1.3.24
1.4.1.4 thru 1.4.1.14
1.4.1.16, 1.4.1.18, 1.4.1.19
3 (all of this paragraph)
5.2 thru 5.7

3.6.5 Demolition

Provide the site demolition drawings, 100 percent complete, ready to start abatement and demolition work.

a. Site Demolition Drawings (Removal Plan)

Show new work and removal work on separate drawings. The type and the scope of removal work intended shall be clear from an inspection of the documents. Keyed notes for removal are allowed.

The removal plan shall show the existing physical features and condition of the site before construction. Include the field survey to show all above and below ground utilities; buildings, drives, roads and parking areas, walks, and vegetation; and such facilities as retaining walls, underground storage tanks, foundations, existing contours, etc. Each physical feature to be removed shall be as indicated on the standard legend sheet, a legend on the removal plan, and properly noted: to be removed, to remain, or to be relocated.

3.6.6 Civil Design

The drawings shall be 100 percent complete. Drawings shall fully describe the type and the scope of work required. Include all necessary and required details, be thoroughly checked, and be fully coordinated with the Construction Specifications and all other Construction Documents.

3.6.7 Landscaping Design

Provide Landscaping Plan when applicable, including sprinkler system layout, and any details required for this level of design.

3.6.8 Architectural Design

The architectural drawing submittal shall be a complete set of architectural drawings without large scale details. All other drawings shall be complete except referencing of the large scale details. Room finish schedule, and door, window, and louver schedules, shall all be complete except for references to details.

3.6.9 Interior Design

Provide SID Notebook(s) and design analysis.

3.6.10 Structural Design

Provide foundation plans and details which shall be 100 percent complete. Provide details and notes for required structural work.Building structural members shall be at least outlined. Provide elevation views, sections, and details necessary to illustrate the design at a 60 percent level of completion. Roof framing plan(s) shall show sufficient details to clearly indicate the type of framing system used, size, and spacing of members and their elevations.

3.6.11 Mechanical Design

Provide plans, piping diagrams, sections, flow diagrams, details, schedules, and control diagrams/sequences as necessary to define the required design intent at this level of design. Floor plans shall use the architectural floor plans as a basis, with the building outline half-toned. Unless otherwise indicated, all floor plans shall be drawn at a minimum 1/8-inch = 1'-0" scale and shall show room names and numbers. Provide preliminary mechanical room sections to ensure that major equipment items, piping, and ductwork will fit as designed. For the 60 percent submittal, all supply and return mains shall be shown as double-lined although branch

ducts, takeoffs, and ductwork to diffusers may be single-lined. Piping 6 inches and larger shall be shown as double-lined for the 60 percent submittals.

Complete Attachment C for mechanical room sizing.

3.6.12 Electrical Design

Fully coordinate the design drawings with the design analysis. Provide sufficient plans, single-line diagrams, riser diagrams, details, and schedules as necessary to define the required design intent for this level of design. Indicate all circuits, circuit breakers or fuse locations, panelboards, and PDUs known at this level of design.

3.6.13 Fire Protection Design

Provide the Life Safety Plan and the Fire Protection site and floor plans, complete. Fire protection details shall be sufficient for this level of design.

3.6.14 Environmental Design

Provide 100 percent completed document of the following items:

a. **(AM #9) Abatement Quantity Verification Report for each renovated or demolished building and site demolition work**~~Not Used~~.

b. ~~Basic~~ **(AM #9)** Storm Water Pollution Prevention Plan (~~edit~~**(AM #9) requirements in Section 01421R SWPP PLAN INSPECTION AND MAINTENANCE REPORT FORM and** Section 01421 **BASIC STORM WATER POLLUTION PREVENTION PLAN**).

c. **(AM #9) Submittals, detail sheets, and drawings as required in sections 01355 ENVIRONMENTAL PROTECTION, 01356 STORM WATER POLLUTION PREVENTION MEASURES, 01561 DUST CONTROL, 01572 CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT, 01670 RECYCLED/RECOVERED MATERIALS, 13280 ASBESTOS ABATEMENT, 13282 METALS ENCOUNTERED IN PAINT DUST DURING CONSTRUCTION, 13284 REMOVAL, RECYCLING AND DISPOSAL OF REGULATED MATERIALS, and certificates or proofs of environmental friendly materials per Section(s) 01010 GENERAL PROJECT DESCRIPTION AND DESIGN REQUIREMENTS, 01355 ENVIRONMENTAL PROTECTION, and 01670 RECYCLED/RECOVERED MATERIALS**~~Erosion and Sediment Control Plan and Details: Provide layout of existing site features, grading, locations and types of control devices, and construction details sheet~~.

d. Design Analysis: **(AM #9) See paragraph 3.3 DESIGN ANALYSES for details.** Prepare design analysis ~~that~~**(AM #9) to discuss** ~~discusses~~ installation National Environmental Policy Act (NEPA) document that verifies compliance with Endangered & Threatened Species Act, Cultural & Historical Resource Act, site enroachment of wetlands & floodplains, implications on Section 404 CLEAN WATER ACT, Waters of U.S. (that requires wetland delineation and mitigation design)~~; installation Environmental Baseline Study (EBS) that addresses site contamination from adjacent landfill, fire training pit, vehicle maintenance~~

~~activities, storage tank of regulated material, soil and ground water; air pollution issues of the proposed facility (i.e. provide emission inventory on proposed equipment for installation TITLE V Federal Air Permit) and during construction, i.e. dust control and TCEQ permit on air emission from construction equipment; water and waste water pollution issues on industrial, potable water quality, storm water management during constrcution and at finished site (i.e. evaulate if oil water separator is required, construction storm water discharge per Texas Pollutant Discharge Elimination System (TPDES) Construction Storm Water General Permit TXR 150000 and Section 01421); required pre-construction permits and notifications; regulated materials survey and abatement design on building demolition structures (NOTE: this not required for this project); construction and waste management; Spill Containment Control and Countermeasures requirement for storage tanks with regulated materials (i.e. aboveground or underground storage tanks or transformers), and CALCULATIONS for the specified units of the on-site sewage treatment system or other applicable environmental treatment units (if required for the proposed project)~~. **(AM #9) See Section 01010 GENERAL PROJECT DESCRIPTION AND DESIGN REQUIREMENTS.**

3.7 CONSTRUCTION DOCUMENT (COMPLIANCE CHECK (FINAL 100 PERCENT DESIGN)) DESIGN REQUIREMENTS

See Section 01012 DESIGN AFTER AWARD for requirements.

3.8 DESIGN DETAILS

Drawings shall include the applicable plans, details, and requirements specified in the SWD-AEIM and those specified below.

3.8.1 Demolition

Show new work and demolition work on separate drawings. The type and the scope of removal work intended shall be clear from an inspection of the documents. Keyed notes for removal will be allowed.

a. Site Demolition Drawings (Removal Plan)

The removal plan shall show the existing physical features and condition of the site before construction. Include the field survey to show all above and below ground utilities; buildings, drives, roads and parking areas, walks, vegetation, and building demolition floor plans; and such facilities as retaining walls, underground storage tanks, foundations, and existing contours. Physical features shall be as indicated and noted: to be removed, to remain, or to be relocated.

b. Building Demolition Drawings (Removal Plan(s))

The type and the scope of removal work intended shall be clear from an inspection of the documents. Show the existing physical features and condition of the site before construction. Show all walls, fixtures, and utilities to be removed. Physical features shall be indicated and noted: to be removed, to remain, or to be relocated.

3.8.2 Civil Design

The drawings shall be complete, fully describing the type and the scope of work required. Include all necessary and required details, thoroughly checked, and fully coordinated with the Construction Specifications and all other Construction Documents. Include the following as applicable:

Cover Sheet and index of drawings
Location and vicinity map including haul routes
Site plan and details
Grading and drainage plan
Utility plan with profiles and details
Pavement plan and details
Soils boring logs
Landscaping plans and details

a. Location Plan and Vicinity Map

A Vicinity Map consists of a small scale drawing of the project location, similar to a road map. A Location Plan consists of a small scale drawing showing the Government property or reservation limit with the construction project site shown. Show the Contracting Officer-approved Contractor access and haul routes, load limits on bridges along haul routes, and the designated waste and/or borrow areas. Upon request, a reproducible base sheet will be provided by the Fort Worth District for the Contractor's use in preparing the Location Plan.

b. Site Plan

Show all the site layout information necessary to field locate the building, walks, parking lots, and all other appurtenances to be constructed for the project. All site related work to be constructed will be located by dimensions. Identify all site related items such as curbs, pavements, walks, courtyards, bollards, trash enclosures, and retaining walls. Unless otherwise specified, site plans shall be at a scale of 1" = 20' or 1" = 30'. Existing or proposed contours shall not be shown on this Plan. The Site Plan, prior to adding the dimensions, shall serve as the base sheet to the other Plans, such as the Utilities Plan, Grading and Drainage Plans and the Landscape Plan. The Site Plan will show all existing physical features and utilities within and adjacent to the work site that will remain after the proposed construction has been completed. Include free zones, construction limits, storage areas, etc.

Show the building orientation and horizontal dimensional relationships to streets, walks, property lines, easements, fences, and other structures. Space between structures will provide open areas in accordance with good land-use planning and due consideration of future development plans. Maintain fire clearance separations for access for equipment acceptable to the installation (i.e. Fire Chief). Show geometric features of all roads, streets, sidewalks and parking areas. Provide details of all site features.

c. Grading and Drainage Plan

Provide a preliminary grading and drainage plan at a scale of 1" = 20' or

1" = 30' unless otherwise specified. Indicate new and existing grading contours at 1-foot contour intervals. Provide spot elevations in sufficient numbers so that interpolation between contours is not required. Some examples are: corners of paved areas and parking lots, low points, high points, flow lines of ditches and swales, changes in degree of slope and grading at building corners to insure positive drainage from the facility.

Indicate finished floor elevation of new building(s). Finished floor elevations shall be a minimum of 12 inches above the highest point of the outside finished grade and slope away from the building. Grade contours shall be at 1 foot intervals and spot elevations shall be provided at all site development features.

Show layout of the new and existing storm drainage systems, if applicable, including existing and new storm drainage flows, ditches, swales and piped systems.

Provide the appropriate top of structure elevations and pipe invert elevations of both the new and existing drainage system.

d. Erosion Control Plans

Erosion control plans shall show locations of all sediment (temporary or permanent) basins (or other storm water treatment devices), grassy swale, vegetative filter strips/buffer strips, diversion ditches, areas to receive rock blanket, and other erosion control structures, indicating the approximate drainage areas each will serve. Indicate the materials, construction, and capacity of each structure.

The erosion control plan shall be prepared in accordance with Sustainable Project Rating Tool (SPiRiT. Erosion Control Plans shall be a separate set of plans from the Storm Water Pollution Prevention (SWPP) or Erosion and Sediment Control (ESC) Plans to be implemented during various phases of construction for compliance with Texas Pollutant Discharge Elimination System (TPDES) Construction Storm Water General Permit TXR 150000 as stated in paragraphs 3.6.14 and 3.8.10 Environmental Design, stated herein

e. Composite Utilities Plan With Profiles And Details

If required, provide a Composite Utilities Plan at a scale of 1" = 20' or 1" = 30'. Indicate locations of new and existing utilities. Plans shall show layout of the new and existing storm drainage, gas, sanitary sewer, fire protection, electrical, communication, water, steam, and any other utility systems which need to be provided for. Include new and existing contours. Show mains and distribution lines as well as all appurtenances such as meters, manholes, and valves. If applicable to project, show drinking water well design, wetwells and pump station

f. Grading Sections

Grading sections through the new building showing finished and existing grades may be provided to supplement the required grading plan.

g. Pavement Plan and Details

Provide pavement plans for all parking lots, roads, equipment pads and sidewalks. Include cross sections of all paving designs and include details of curbs, gutters, pads, sidewalks, stairs, inlets and other features.

h. Soils Boring Logs

Provide logs of soil borings provided by the geotechnical engineer.

3.8.3 Landscaping

(AM#5) See Section 01010 GENERAL PROJECT DESCRIPTION AND DESIGN REQUIREMENTS. ~~Provide a Landscape Plan showing trees, shrubs, ground covers, seeded and sodded areas. The Landscape Plan shall be prepared by a Licensed Landscape Architect. The landscape plan shall be in accordance with the AETC/CE Base Architectural Standards of Excellence and the Installation Design Guide. Select and specify types of plant materials that are locally grown, commercially available, and acclimated to the project environment. Include a plant materials schedule or listing which lists the botanical names, common names, key, size, and the method of transplanting for each landscape element. The landscape plan shall also show all unsurfaced ground areas disturbed by construction within the project limits with these areas shown to be seeded, sodded, or mulched as required. Include designs and details for required site furnishings and accessories.~~

~~The Contractor shall provide designs and details as necessary for required site furnishings and accessories.~~

~~a. Sprinkler Irrigation Systems~~

~~Provide a sprinkler irrigation plan, designating the trees, shrubs, bushes, ground cover, and lawn area to be irrigated. Provide flow and pressure requirements. Include appropriate details.~~

3.8.4 Architectural Design

a. Floor Plans

Provide double line floor plan(s) of the entire building(s), drawn at the largest scale practicable to include the entire building or floor level on a single sheet. The building footprint may be of a size that will require the floor plans to be divided into multiple areas. Floor plans shall be scaled double-line drawings showing the functional arrangement, structural column or bay indicators, material patterns, location of all openings and plumbing fixtures. Section cuts, wall types, notes and leaders, general notes, and dimensions shall be complete. The plans shall indicate room numbers and titles, door swings, door and window numbers and types. Provide door, window, louver, and other schedules as required. Show a north arrow on each floor plan. Include enlarged toilet room and stair plans. The first floor plan sheet shall include a gross area tabulation comparing the actual square footage with the authorized square footage of

the facility. Fully justify architect-engineer suggestions for plan improvement. Include:

Overall, Control, Opening, and complete dimensioning
Room Names and Numbers
Wall and Building section cuts
Door Swings and Numbers
Window Types
Square Footage
General Notes

Where major structural elements are included as parts of architectural detailing, do not indicate sizes. Define these elements as part of the structural design documents. Major elements of mechanical and electrical equipment affecting space allocation shall be shown on the architectural plan to the extent practicable and coordinated with other respective disciplines. When applicable, Government-furnished, and Contractor-installed, or Government-furnished and installed, items shall be shown as dashed lines.

b. Reflected Ceiling Plans

Reflected ceiling plans shall include all notes, complete legends and pocheing patterns of materials to be used. Provide reflected Ceiling Plans for all spaces in the building(s). Reflected ceiling plans shall show the ceiling tile layout and location of gypsum wallboard and other ceiling types where applicable. Show all light fixtures, air diffusers, grilles, registers, exit lights, public address speakers, fire alarm strobe lights, sprinkler head layout, ceiling mounted equipment access panels or removable ceiling tile and grid elements, smoke and heat detectors, wall fire ratings, ceiling mounted equipment removal pathways, ceiling mounted television mounts, and other ceiling mounted items. The fixtures and other equipment shall be laid out in a regular pattern symmetrical with the ceiling tile grid, or symmetrical with the room centerlines, columns, windows, or other feature that dominates. All ceiling mounted items shown shall be fully coordinated with all other disciplines.

c. Roof Plan

Roof plan shall be complete showing slopes, locations for roof and overflow drains, equipment, and walkways. Coordinate elements located on the roof with all disciplines.

d. Building Elevations

Provide all building elevations complete showing the appearance and architectural treatment. Elevations shall be dimensioned to show story height, total height, and relation to grade. Indicate critical elevations such as top of finish floor and top of steel

e. Building Sections

Include building cross section and longitudinal sections to show general interior volumes, framing method, relationship to adjacent structures, and

height of ceilings and partitions. Identify materials used and necessary dimensions.

f. Wall Sections

Drawings shall include all wall section and stair section conditions, including enclosed corridor(s), showing vertical control elevations and dimensions. Label all materials. Cut sections should through doors, windows, and other critical wall section locations. Wall sections shall not be broken. Include additional details when necessary to illustrate abutting adjacent buildings and important or unusual features. All horizontal dimensions shall occur on the plans and vertical dimensions on the sections and elevations.

g. Room Finish Schedules

Include signage.

h. Door, Window, and Louver Schedules

Door schedule shall include door and frame types and references to door details and hardware sets. Window and louver schedules shall indicate window and louver types, sizes, and references to details.

i. Fire Ratings

Clearly indicate wall ratings and fire hazards as required by the National Fire Protection Association Codes (NFPA). See Unified Facilities Criteria Handbook UFC 3-600-01, particularly Section 2-1 Basic Criteria and Section 2-1.2 Partitions and Military Handbook MIL-HDBK-1191. In addition to the wall rating criteria required by the Codes, provide a minimum of one-hour rated wall assembly around all Janitors Closets, Store Rooms, Mechanical and Electrical Rooms or Closets. Wall fire ratings shall be graphically shown by a continuous symbol or pattern within the wall on the reflected ceiling plan and/or on a Fire Protection/Life Safety Plan. When other functions coexist with the fire protection functions, their integration shall be clearly indicated with an analysis that describes how both functions will be served. Provide a separate, composite type floor plan which makes an accurate presentation of these various features and functions. By authorized written permission, where the building and features being shown are unusually simple, this information may be included on other drawings. Rated wall details shall include the design number of the testing laboratory certifying the rating.

j. Modular Design

Use modular design practices for the design of all masonry buildings or components of buildings. Dimensions shall be figured to whole or half-unit lengths (in increments of 4 inches) in order to reduce on-site cutting of masonry. Units less than 4 inches long shall be avoided.

k. Room and Door Numbering

The Room and Door Numbering system shall be consistent for all buildings

designed under any one contract. Room numbering shall start at the main entrance and proceed clockwise around functional areas.

l. Facility Elevation

The elevation of the first floor shall be indicated as 100 feet and shall be a minimum of 1 foot above finish grade. Elevation for other floors, footings, etc., shall be related to this figure. Sea level elevations shall not be shown on the building drawings. Show elevations of the first floor above sea level on the grading plan (Civil).

m. Access to Utilities

All utilities within the building, such as piping, ductwork, and electrical work, shall be concealed in finished areas unless otherwise specified in the Program and Performance Requirements. Provide plumbing chases in toilet areas. Carefully figure the clear space above ceilings and the size of chases to accommodate piping slopes and connections, ductwork crossovers, and fittings, HVAC piping and valve service spaces, and similar situations. Provide access to valves, cleanouts, etc. Space provided for utilities systems shall be adequate but not excessive.

3.8.5 Interior Design

Furnish Comprehensive Interior Design (CID) Package, including floor plans, finish and color schedules, interior design analysis, and sample/color boards, in accordance with SWD-AEIM, Chapter III, paragraph "Interior Design." SID refers to the building related exterior and interior finishes. CID includes the SID interior design package and the design, selection, arrangement, and color coordination of the furniture, furnishings, and art work. On the floor plan(s), show furnishings that are not considered part of the Contract, such as Government-furnished, Government-installed items, by the use of dashed lines and designated as "Not-In-Contract" (NIC). Use the design analysis to explain the desired image or visual appearance of the interior of the facility.

3.8.5.1 Submittal Requirements for /CID Notebooks (Color/Finish Sample Boards)

a. Furnish 4 sets of color/finish notebook(s) with attached samples of the proposed building-related finish materials mounted on 8-1/2 inch by 11 inch by 1/16 inch (215 mm by 280 mm by 1.5 mm) thick mat board in three-ring notebooks. Epoxy glue, hot-melt glue, or contact cement shall be used to attach samples; Scotch tape, double-backed tape, or rubber cement will not be acceptable. Heavy samples shall be mechanically fastened. Photographs or colored photocopies are not acceptable.

b. The notebooks shall be labeled on the outside spine and front cover with the phase percentage, CID , project title and location, Contract number, date, and the Contractor's name and address.

c. Sequence and Content of CID Submittal

The sequence and content of CID Submittals shall be as follows:

(1) Title Page.

(2) Table of Contents.

(3) Narrative of Interior Design Objectives.

(4) Exterior Elevation Drawing.

(5) Exterior Building Material Legend.

(6) Exterior Building Material Color Board(s).

(7) Room Finish Schedules.

(8) Interior Color Placement Plan.

(9) Interior Color Notebooks (according to color placement plan).

Each sample shall indicate color, texture, and finish; and, if patterned, shall be large enough to define full pattern. Samples shall be identified as to type of material, area of installation, manufacturer, and transmittal number under which certification of the material represented will be submitted in accordance with the requirements of Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES.

(10) Interior Floor Plan(s) And Furniture Layout, including an index keyed to the furniture, furnishings, and art work illustration sheets.

(11) Signage Location Plans(s).

(12) Interior Signage Color Notebooks.

(13) and (14) Not Used.

(15) Furniture and Furnishings Illustration Sheets, Layout for all rooms.

3.8.6 Structural Design

Drawings shall include foundation plans and details, floor framing plans for each floor when applicable, floor slab plans, and roof framing plans.

a. Show the location of all in-wall columns or pilasters.

b. Foundation and slab plans shall show the size and location of all foundation elements, such as foundation walls, grade beams and footings. Elevations for footings shall be indicated on the plan. Plans for slabs-on-grade and exterior stoop slabs at building entrances shall show location and type of joints, slab thicknesses and reinforcing, elevation of slab surfaces, and any other design features, such as equipment bases, heavy Lab equipments, isolated foundations and the in-slab electrical raceway, which affect the slab design.

c. The sizes, locations, and elevations of footings shall be shown.

d. Coordinate slab plans with the Electrical sheets and indicate the locations of in-slab electrical raceway trench ducts or similar items.

e. Show concrete slab-on-grade thicknesses and sections.

f. Show proposed treatment of special foundations and other unique or complex features and details.

g. Provide elevation views, sections, and details necessary to illustrate the design.

h. Roof framing plans shall show sufficient details to clearly indicate the type of framing system used, size, and spacing of members and their elevations.

i. Drawings shall include overall building plan dimensions, north arrows, and design notes.

j. Grid Systems, Dimensions, and Floor Elevations

Each foundation and slab plan and roof framing plan shall have an alpha-numeric grid system aligned with any in-wall columns or pilasters, or with load bearing and non-load bearing walls, as applicable. The same grid system shall be used for all plan views. Each plan view shown shall have all necessary dimensions. On plan views, the dimensions shall define the location of grid lines, offsets, and all structural elements, as well as the overall sizes of the structure. The finish elevation of the floor slab shall be indicated as 100 feet, and elevations for foundations, walls and roof members shall be referenced to this basic elevation.

k. Plan Sheets

(1) Foundation and Slab Plans

Foundation and slab plans shall show the size and location of all foundation elements, such as foundation walls, grade beams and footings. Elevations for footings shall be indicated on the plan. Plans for slabs-on-grade and exterior stoop slabs at building entrances shall show location and type of joints, slab thicknesses and reinforcing, elevation of slab surfaces, and any other design features, such as equipment bases, heavy Lab equipments, isolated foundations and the in-slab electrical raceway, which affect the slab design.

(2) Roof Framing Plans

Roof framing plans shall be provided for all parts of the structure. Plans shall show the size, spacing, and location of all roof framing members, their supporting in-wall columns, pilasters or walls, all

auxiliary members such as bracing and bridging, and the size and location of all major openings through the roof. Plans shall show support system for satellite dishes.

l. Elevation Views, Sections and Details Sheets

Elevation views, sections, and details necessary to illustrate fully the design shall be provided. Some requirements peculiar to the various structural materials are described below.

(1) Concrete

Include elevation views as necessary, plus sections and details to show the outlines of concrete cross-sections, reinforcing bar arrangements, concrete cover for rebar, installation of embedded items, and joint construction. All lap splice and embedment lengths for reinforcing bars shall be clearly indicated on the drawings. A sill detail for each foundation condition at exterior and interior doors shall be provided.

(2) Masonry

Wall reinforcing shall be located and identified on plans, in section cuts, elevation views, or in schedules. When required, include structural elevations to clarify the construction requirements for masonry reinforcement, especially the reinforcement around wall openings. Masonry details may be extracted from ICBO Bldg Code, SWD-AEIM, or other sources and incorporated into the final drawings. Edit the details to reflect the specific requirements of this project.

(3) Structural Steel, Steel Joists, and Steel Decking

Structural steel connections shall be fully detailed and shown on the drawings. The anchorage of beams, trusses, joists, and steel deck to walls or other bearings, and the extra framing or reinforcement required at deck openings shall also be detailed. Notes, details, or schedules on the drawings shall indicate the steel deck attachment method to be used, and shall give the size and spacing for perimeter, side lap, intermediate supports and end lap attachments. Welded connections shall be detailed using standard weld symbols illustrated in AWS D1.1. All applicable weld sizes, spacing, types, contours, and finishes shall be shown.

(4) Cold-Formed Steel Studs

Cold-formed steel connections shall be fully detailed and shown on the drawings. The anchorage of studs to top and bottom runners, of top and bottom runners to supporting members, and the extra framing at openings shall also be detailed. Notes, details, or schedules on the drawings shall indicate the steel stud and runner dimensions, spacing, and attachments.

m. Schedules

(1) Foundation Schedules

Foundation schedules for footings or grade beams shall be included as applicable. The schedule shall include all pertinent information required for the foundation system being used.

(2) Framing Schedules

For concrete framing, beam, and column schedules shall conform to the requirements of the ACI SP-66. For structural steel framing, provide a column schedule complete with design loads at splices, if any, and at column bases, plus a tabulation of the loads, shears, moments and/or axial loads to be resisted by the beams and their connections.

n. Equipment Loads

All equipment loads which exceed 176 pounds and are not supported by concrete slab-on-grade, shall be identified on the drawings by showing equipment locations, total weights, and reaction loads at support points.

o. Notes

(1) Design Notes

Under the heading "Designer's Notes," the structural drawings shall contain notes which begin:

"The structural design was prepared using the following data:".

The data then listed shall include the structural loading criteria used for design, such as roof and floor live loads, snow load design parameters, wind speed and wind load design parameters, seismic design parameters (Zone Z, I, Rw, C, and S values), allowable soil bearing pressures (as recommended by the foundation analysis), foundation design depth, design wind uplift pressures for steel joists and other data pertinent to future alterations. Also, to be listed are the ASTM designations and stress grades of the applicable structural materials: steel, masonry, concrete for each usage, reinforcing bars, and bolts.

(2) General Notes

Other notes, which direct the work to be performed, the materials to be used, etc., shall be grouped under the heading of "General Notes." Include in these notes a description of the building's structural system, if necessary.

3.8.7 Mechanical Design

plans, piping diagrams and isometrics, mechanical room sections, water and air flow diagrams, details, schedules, control diagrams, sequence of operations, etc., as necessary to define the required design intent. Floor plans shall use the architectural floor plans as a basis, with the building

outline half-toned. Large-scale plans of congested areas shall be provided. Coordinate with architectural design for provision of access panels for all concealed valves, traps and air vents, etc. Unless otherwise indicated, all floor plans shall be drawn at a minimum 1/8-inch = 1'-0" scale and shall show room names and numbers. Drawings shall include, but not limited to, the following:

a. Mechanical Abbreviation, Legend, and General Notes Sheet

This sheet shall include all mechanical abbreviations and symbols that will be used on the drawings. Include mechanical general installation notes that are required to clarify the construction intent that may not be readily apparent in the specifications or on the drawings. Symbols shall be grouped into sections; as a minimum, provide sections for Plumbing and HVAC. Control drawing symbols shall be shown on a separate drawing.

b. Plumbing Drawings

Plumbing Plans: Plumbing plans show show the design and layout of the domestic hot and cold water distribution systems; make-up water piping; soil, waste and vent piping; and storm water drainage system. Include routing of piping systems from the connections within the structure to a point 5 feet outside the structure. The grade of all drain lines shall be calculated and invert elevations established. All plans shall show plumbing fixtures. All electrical panels and equipment and pertinent HVAC equipment (e.g. chillers, expansion tanks, boilers, AHU's, pumps) shall be outlined in half-tone on the plumbing plans. Plans may be drawn at 1/8 inch = 1 foot scale as long as legibility is not compromised. Plumbing fixtures and drains shown on the drawings shall be designated by the same identification system used in the Construction Specification Plumbing Fixture Schedule. Soil, waste, vent and storm drainage piping shall be shown on separate sheets from cold and hot water distribution piping and make-up water piping. Provide a roof plan showing roof drains and sanitary vent penetrations. Include the following:

(1) Enlarged toilet room plans showing all fixtures, water, waste, and vent piping for each toilet area.

(2) Plumbing water and waste/vent riser diagrams for each toilet area. Provide plumbing water and waste/vent riser diagrams for each toilet area.

(3) Enlarged mechanical and boiler room plumbing plans, drawn at a minimum 1/4 inch = 1'-0" scale, showing layout of all plumbing equipment and piping within the rooms. To show spatial relationships, indicate the location of HVAC equipment, gas service, condenser water or chilled water entrances, fire protection entrance and risers, and electrical panels or equipment located in the room.

(4) Plumbing details, including those for roof and overflow drains, and schedules.

c. Mechanical HVAC Drawings, Details, and Schedules

Show on mechanical HVAC drawings, all items of mechanical equipment, including chilled water equipment, condenser water equipment, air handling units, air distribution and exhaust systems, etc., to clearly illustrate all HVAC system designs, and to determine proper space allocation within the intent of the architectural layout requirements. Plans and sections shall be developed sufficiently to ensure that major equipment items, piping, and ductwork cause no interference with structural members, electrical equipment, etc. Provide Schedules for each item of mechanical equipment. Provide installation details showing specification requirements such as isolation and balancing valves, thermometers, pressure gauges, equipment pads, strainers, vents, hangers, and vibration isolation for each item of mechanical equipment. Include enlarged mechanical and boiler room floor plans showing the layout of all HVAC equipment, piping, and ducts located within the rooms and dedicated access space for items requiring maintenance; and drawn at a minimum 1/4 inch = 1'-0" scale. Provide mechanical and boiler room sections to show equipment and components, ductwork connections and routing, and relationship to adjacent structural features. Provide chilled and hot water system flow diagrams, showing chillers, cooling towers, piping, pumps, boilers, and all connected cooling and heating equipment. Show associated GPM flow rates. Provide airflow diagrams showing CFM quantities for outside air, return air, and supply air; supply-air side of each diagram shall be broken down into zones, with each zone supply, return, and relief/exhaust CFM quantities identified.

Mechanical HVAC Plans: Mechanical HVAC plans shall show the design and layout of the hot water piping distribution system and equipment, chilled water piping distribution system and equipment, condenser water piping distribution system and equipment, air supply and distribution systems, and ventilation and exhaust systems. Air supply and distribution systems shall show all ductwork, including supply and return mains, branch ducts, and terminal unit (single and dual duct VAV and CV boxes) takeoffs; ductwork to diffusers; diffusers, grilles, and registers; and fire and fire/smoke dampers.

d. HVAC Control Drawings

Provide a one-line control diagram showing DDC interface points, detailed sequence of operations, and DDC control points list for all mechanical equipment and systems in accordance with SWD-AEIM, Chapter V.

3.8.8 Electrical Design

Provide plans, electrical and UPS room sections, single-line diagrams, riser diagrams, details, and schedules as necessary to define the required design intent. Coordinate the electrical and communications design with the design for other disciplines. Floor plans shall use the architectural floor plans as a basis with the building outline half-toned. Unless otherwise indicated, all floor plans shall be drawn at a minimum 1/4-inch = 1'-0"scale and shall show room names and numbers. Include the following as applicable:

a. Electrical Abbreviations and Legends

b. Drawing Notes

c. One-Line Diagram

Detail the complete electrical system with a simplified one-line diagram. The diagram shall show ratings of major equipment including short circuit ratings. Use standard symbols for electrical equipment including, but not limited to, switchgear, sectionalizing cabinets, transformers, generators, uniterruptible power systems (UPS), switchboards, panel boards, power distribution units (PDUs), motor control centers (MCCs), motor starters. Include switchgear fuses or circuit breaker ratings; transformer ratings (including K-ratings) and connection configuration; switchboard ratings (including metering); panelboard current and ampere interrupting current (AIC) ratings; PDU ratings (including isolation transformers and K-ratings), raceway and conduit sizes and material type; MCC ratings; motor starter ratings; and conductor and ground type, size, and insulation ratings.

d. Riser Diagrams

e. Power Plan

Detail the electrical wiring for outlets, including raised floor receptacles, other than lighting. Identify rooms by name and number. When applicable, include a power cable tray plan and communications tray plan, detailing the underfloor cable tray components, outlets, and routing.

f. Lighting Plan

Detail the electrical wiring and switching for lighting. Identify rooms by name and number.

g. Lighting Fixture Schedule

h. Panelboard and PDU Schedules

Detail the circuits and circuit breakers or fuse locations in various panelboards, including panelboards in power distribution units (PDUs). Panelboard schedules shall include the designation, location, mounting (flush or surface), number of phases and wires, voltage, capacity and total connected and demand load. Indicate the trip rating, frame size, interrupting rating, and number of poles for each circuit breaker in the panelboards. List the circuit number, circuit description, and load for each branch circuit. Include estimated maximum demand for each panel and for entire building and other relative information.

i. Emergency Systems

Detail the electrical requirements for emergency systems such as emergency generator, UPS, emergency lighting, and fire alarm system (coordinate with fire protection plans).

j. Site Plan

Detail the connection of pad-mounted switchgear, pad-mounted sectionalizing cabinets, vaults, and underground electrical and communications ducts. Show utilities the underground electric lines and communications ducts will cross.

k. Communications System

Detail the conduit and raceways required to support communications and audio/visual systems requirements, including, but not limited to intercoms, security, cable television, computer data, data transmission (local area network), and telephone.

l. Security System

Detail security camera and alarm requirements, and riser diagrams.

m. Lightning Protection System

Detail the lightning protection system including air terminal types and locations; cross and down conductor material, sizes and connections; ground rod material, sizes, and locations; ground counterpoise materials, sizes, and routing, and test well construction and locations. Show locations of all air terminals, roof conductors, down conductors, ground rods, and counterpoise.

n. Grounding System

Show locations for and detail grounding electrode; grounding conductor and bond materials, sizes, and locations; and isolation grounds.

o. Cathodic Protection System

Detail test point construction and locations, sacrificial anode systems, impressed current systems, etc.

p. Miscellaneous Details

Provide communications manhole details, electric vault details, special light fixture details, etc.

3.8.9 Fire Protection Design

Provide plans, diagrams, sections, and details as necessary to define the required design intent. Floor plans shall use the architectural floor plans as a basis, with the building outline half-toned. Unless otherwise indicated, floor plans shall be drawn at a minimum 1/8 inch = 1'-0" scale and shall show room names and numbers. Drawings shall include, but not limited to, the following:

a. Fire Protection Plans

Show the following on the fire protection plans:

- fire service entry and size to a point 5 feet outside of building;
- back flow preventer and size;
- system riser and size;
- zone risers, fire department connection, alarm bell, detectors, zones, room by room occupancy hazards and ceiling types per zone in tabular format, general description of system, applicable NFPA codes listing, sprinkler type per ceiling and application;
- water demand data, including design density, hose allowance, and design area for each applicable occupancy hazard; and
- a note stating that system shall be hydraulically designed.

Plans shall not show sprinkler piping or heads, unless it is necessary for coordination or system definition in special applications.

b. Fire Protection Details

Include the following fire protection details:

- mechanical riser diagram, including all pipe sizes;
- electrical riser diagram;
- any necessary sections to show routing of piping or sprinkler head locations, fire service entrance detail, exterior wall and slab penetration details, hydraulic design data from flow test provided by Government, hydrant designations from flow test, and fire protection symbols list.

c. Site Plan

Include:

- underground fire service main routing and size, from point of connection at existing water main, to building entry point;
- and fire hydrant locations used in flow test.

Label fire hydrants to match flow test designations shown on drawings and described in design analysis.

d. Life Safety Plan

Show:

- location of fire separation walls, column, floor and roof protection,
- path of travel for emergency egress and panic exits,
- access to building for fire fighting,
- rated doors and windows,
- requirement for mechanical and electrical penetrations through fire separation walls and floors,
- placement of fire extinguishers, and
- occupancy types.

3.8.10 Environmental Design

(AM#9)

~~Provide the following items:~~

~~Storm Water Pollution Prevention (SWPP) or Erosion and Sediment Control (ESC) Plan~~

~~The Contractor shall submit for Government review and approval a basic storm water pollution prevention plan, 100 percent complete, and is developed in accordance with Section 01421 BASIC STORM WATER POLLUTION PREVENTION PLAN to prevent storm water pollution and implement Best Mangement Practices, inspection and maintenance for compliance with Texas Pollutant Discharge Elimination System (TPDES) Construction Storm Water General Permit TXR 150000.~~

~~The Contractor shall discuss type of erosion and sediment control strucures in Sections 01356 and 01421, and provide drawings to show applicable construction DETAILS of erosion and sediment control structures to be established on-site prior to soil disturbing activities at various phases of construction.~~

~~Design Analysis~~

~~The Contractor shall prepare a Chapter in the Design Analysis (100 percent design) entitled: "Environmental Protection Compliance". This Chapter shall summarize how the project complies with all environmental laws and regulations per paragraph ENVIRONMENTAL DESIGN. This is in addition to Design Analysis content~~ **~~required~~** ~~per pararaph ENVIRONMENTAL DESIGN, the Chapter shall include the following:~~

~~a. The Permitting and/or Approving Authority(ies) for submittal of permits and notifications.~~

~~b. Construction/Operating Permits, Notices, Reviews and/or Approvals required. If, when checking with the agencies, a permit, notice or approval is not required, include a copy of the telephone conversation memorandum or letter from the agency.~~

~~c. Time required by the permitting agency, or agencies, to process the application(s) and issue the permits.~~

~~d. Fee schedule including filing/application fees, review fees, emissions fees, certification testing, etc.~~

~~e. Monitoring and/or compliance testing requirements.~~

~~f. Actual Environmental regulations governing the applications, exemptions, variances, etc. or at a minimum a brief summary of the regulation and title~~**(AM #9) The 100% environmental design shall include submittal of Asbestos Abatement Guideline Detail Sheets per Section 13280 ASBESTOS ABATEMENT and Erosion AND SEDIMENT CONTROL STRUCTURES DETAILs drawings per Section 01421 BASIC STORM WATER POLLUTION PREVENTION PLAN.**

3.9 **ATTACHMENTS**

Attachments A, B, and C follow this page.

3.9.1 **ATTACHMENT A**

CODE ANALYSIS

INTERNATIONAL BUILDING CODE (IBC) AND NFPA "LIFE SAFETY CODE" ANALYSIS

LIFE SAFETY AND FIRE PROTECTION IS AN INTEGRAL PART OF EVERY FACILITY DESIGN. RECOGNIZED CODES AND ACCEPTED SAFETY STANDARDS SHALL BE FOLLOWED IN THE DESIGN OF ALL FACILITIES. OF THE VARIOUS CODES AND SAFETY STANDARDS THE NATIONAL FIRE PROTECTION ASSOC. (NFPA) "LIFE SAFETY CODE" SHALL TAKE PRECEDENCE. ALL APPLICABLE REQUIREMENTS OF THE LIFE SAFETY CODE SHALL BE INCORPORATED INTO EACH DESIGN. FOR TYPE OF CONSTRUCTION, FIRE AREA LIMITATIONS, AND ALLOWABLE BUILDING HEIGHTS THE DESIGN SHALL FOLLOW THE INTERNATIONAL BUILDING CODE (IBC).

CHECK LIST

PROJECT NAME _____ DATE_____

LOCATION _____

3.9.1.1 BUILDING CODE ANALYSIS

a. OCCUPANCY CLASSIFICATION (See Table 5A):

Area:	Classification:
(GROUP: _____):	Div. _____
(GROUP: _____):	Div. _____
(GROUP: _____):	Div. _____

PRINCIPAL OCCUPANCY _____

OTHERS (SPECIFY) _____
_____
_____
_____

b. TYPE OF CONSTRUCTION :

_____

c. OCCUPANCY SEPERATION REQUIRED (SEE TABLE 5-B):

_____ TO _____ = _____ HRS
_____ TO _____ = _____ HRS
_____ TO _____ = _____ HRS
_____ TO _____ = _____ HRS
_____ TO _____ = _____ HRS

d. FIRE RESISTANCE OF EXTERIOR WALLS: (SEE TABLE 5-A)

NORTH _____
SOUTH _____
EAST _____
WEST _____
OTHER _____

e. OPENINGS IN EXTERIOR WALLS: (SEE TABLE 5-A)

NORTH _____
SOUTH _____
EAST _____
WEST _____
OTHER _____

f. MAX. ALLOWABLE FLOOR AREA (SEE TABLE 5-C):

ALLOWABLE:

IF SPRINKLERED: _____

ALLOW. AREA INCREASES _____
_____
_____
_____
_____

CALCULATED ACTUAL FLOOR AREA:

Floor Square Footage

Totals:

g. MAX. ALLOWABLE HEIGHT (SEE TABLE 5-D):

METERS (FEET): _____
STORIES: _____

Proposed Height of Building: _____

Actual No. of Stories: _____

h. COMMENTS:

_____
_____
_____
_____
_____

DESIGNER:_____

3.9.1.2 NFPA 101 "LIFE SAFETY CODE"

a. CLASSIFICATION OF OCCUPANCY:

_____

HAZARD OF CONTENTS:
LOW _____
_____
_____

ORDINARY _____
_____
_____

HIGH _____
_____
_____

b. FIRE RESISTIVE REQUIREMENTS:

EXTERIOR WALLS: _____ HRS _____

INTERIOR WALLS: _____ HRS _____

STRUCTURAL FRAME: _____ HRS _____

VERTICAL OPENINGS: _____ HRS _____

FLOORS: _____ HRS _____

ROOFS: _____ HRS _____

EXTERIOR DOORS: _____ HRS _____

EXTERIOR WINDOWS: _____ HRS _____

BOILER ROOM ENCLOSURE _____ HRS _____

OTHER (LIST) _____ HRS _____

_____ HRS _____

_____ HRS _____

_____ HRS ____

c. MEANS OF EGRESS:

OCCUPANCY LOAD FACTOR: _____

OCCUPANCY	FACTOR	ACTUAL AREA	ACTUAL LOAD

d. NUMBER OF EXITS REQUIRED:

e. MINIMUM WIDTH OF EXITS:

CALCULATED: _____

ACTUAL: _____

f. MAXIMUM ALLOWABLE TRAVEL DISTANCE TO EXIT:

WITH SPRINKLERS: _____

g. EXIT DOORS:

MINIMUM WIDTH ALLOWED:_____
MAXIMUM LEAF WIDTH ALLOWED: _____
WIDTH REQUIRED FOR NO.OF OCCUPANTS: _____

h. EXIT CORRIDORS:

MAX. COMMON PATH OF TRAVEL: _____
MINIMUM ALLOWABLE WIDTH: _____

REQUIRED TO HAVE EXIT AT EACH END OF CORRIDOR?
_____
DEAD END CORRIDORS ALLOWED? _____
MAXIMUM LENGTH: _____
WALL FIRE RESISTANCE REQUIRED: _____
_____
_____

DOORS & FRAME FIRE RESISTANCE REQUIRED:
_____
_____

i. STAIRS:

MINIMUM WIDTH _____ FOR OCCUP. LOAD OF _____
MINIMUM WIDTH _____ FOR OCCUP. LOAD OF _____
MINIMUM WIDTH _____ FOR OCCUP. LOAD OF _____
MINIMUM WIDTH _____ FOR OCCUP. LOAD OF _____
MAX. RISER ALLOWED: _____
MINIMUM TREAD ALLOWED: _____

LANDINGS:

MIN. SIZE: _____
MAX. VERTICAL DIST. BETWEEN LANDINGS: _____
_____
_____

REQUIRED HEIGHT OF RAILINGS:
_____
_____

HANDRAILS:

REQUIRED AT EACH SIDE? _____
INTERMEDIATE RAIL REQUIRED? _____

HEIGHT ABOVE NOSING _____
INTERMEDIATE RAIL REQUIRED? _____
MAX. SPACE ALLOWED BETWEEN RAILS: _____
_____

STAIR ENCLOSURE REQUIRED?_____

STAIR TO ROOF REQUIRED?_____

STAIR TO BASEMENT REQUIRED? _____

j. HATCHWAY ACCESS TO ROOF REQUIRED? _____

k. LADDER ACCESS TO ROOF REQUIRED?

_____

l. HORIZONTAL EXIT REQUIREMENTS:
_____

_____
_____

m. PROTECTION OF OPENINGS NEAR EXTERIOR STAIR EXIT DOORS:

_____
_____

n. SMOKEPROOF ENCLOSURE REQUIRED:

_____

_____

o. RAMPS:

MAX. SLOPE TO USE AS EXIT _____
HANDRAILS REQUIRED? _____

p. COMMENTS:

_____
_____
_____
_____
_____
_____

DESIGNER: _____

FOLLOWING IS A LIST OF ADDITIONAL "NFPA" CODES THAT ARE COMMONLY USED. INDICATE WHICH OF THESE CODES ARE USED AND ADD THOSE REQUIREMENTS TO THIS ANALYSIS.

UFC 3-600-01 DESIGN:	FIRE PROTECTION ENGINEERING FOR FACILITIES
NFPA 10	FIRE EXTINGUISHERS, PORTABLE
NFPA 75	COMPUTER/DATA PROCESSING FACILITIES
NFPA 80	FIRE DOORS AND WINDOWS
NFPA 88A	PARKING STRUCTURES
NFPA 409	AIRCRAFT HANGARS
AFM 88-4	DATA PROCESSING FAC. DESIGN AND CONST.
AF ETL 89-3	FIRE PROTECTION CRITERIA FOR ELECTRONIC

Typed Name and Signature of the
Licensed Architect/Engineer of Record
Professional Seal of the Licensed Architect/Engineer of Record

3.9.2 **ATTACHMENT B**

ADA ARCHITECTURAL DESIGN CHECKLIST

Project Name:_____
Project Location:_____
Design Phase:_____

ITEM NO.	INCORP	N/A	LATER
1. Established with the Base/owner of the facility the requirements for handicap accessibility.	____	_____	_____
2. Received a waiver for no handicap accessibility requirements on the facility.	_____	_____	_____
3. Facility is designed utilizing:			
New Construction Criteria	_____	_____	_____
Building Alteration Criteria	_____	_____	_____
Historic Building Preservation Criteria:	_____	_____	_____
4. Accessible Route (egress/corridors/halls/aisles).			
- Provided minimum fire egress routes.	_____	_____	_____
- Provided minimum site accessible routes.	_____	_____	_____
- Provided proper clearance widths.	_____	_____	_____
- Provided proper floor level changes.	_____	_____	_____
- Provided proper floor materials.	_____	_____	_____
- Provided protection from protruding objects.	_____	_____	_____
5. Ramps:			
- Maximum slopes less than 1:12	_____	_____	_____
- Maximum run less than 30 feet for 1:12 slopes 40 feet for 1:16 slopes	_____	_____	_____
- Minimum clear width exceeds 36-inches.	_____	_____	_____
- Provided proper edge protection.	_____	_____	_____
- Provided handrails of proper configuration and diameter.	_____	_____	_____
- Provided proper handrail extensions at top and bottom of ramp.	_____	_____	_____
- Provided handrails at proper mounting			

heights. _____ _____ _____
- Provided proper landings. _____ _____ _____
- Provided proper cross slope on ramp surface._____ _____ _____

ITEM NO.		INCORP	N/A	LATER
6.	Stairs:			
	- Protected the space below stairs from access by the blind.	_____	_____	_____
	- Provided handrails of proper configuration and diameter.	_____	_____	_____
	- Provided proper handrail extensions at top and bottom of stairs.	_____	_____	_____
	- Provided handrails at proper mounting heights.	_____	_____	_____
	- Provided treads greater than 11-inches in width.	_____	_____	_____
	- Provided Proper nosings.	_____	_____	_____
7.	Elevators:			
	- Provided buttons and lanterns at the proper mounting height.	_____	_____	_____
	- Provided Braille characters.	_____	_____	_____
	- Provided proper door widths.	_____	_____	_____
	- Provided proper clearance inside elevator car.	_____	_____	____
8.	Doors And Hardware:			
	- Provided proper door widths.	_____	_____	_____
	- Provided proper clearance on both sides of jambs.	_____	_____	_____
	- Entrance vestibules provided with adequate clearances.	_____	_____	_____
	- Provided levers on locksets and exit hardware.	_____	_____	_____
	- Provided closers with mechanical adjustments.	_____	_____	_____
	- Provided accessible thresholds.	_____	_____	_____
	- Provided protection plates on doors heavily used by wheel chair bound people.	_____	_____	_____

ITEM NO.		INCORP	N/A	LATER
9.	Toilet Facilities:			
	- Provided proper floor clearance through out the toilet rooms.	_____	_____	_____
	- Provided minimum number of required accessible fixtures.	_____	_____	_____
	- Provided accessible toilet stalls.	_____	_____	_____
	- Provided stall doors with correct direction of swing.	_____	_____	_____
	- Provided accessible water closets.	_____	_____	_____
	- Provided grab bars at accessible water closets.	_____	_____	_____
	- Provided grab bars with correct configuration and dimension.	_____	_____	_____
	- Provided accessible sinks/lavatories.	_____	_____	_____
	- Provided accessible urinals.	_____	_____	_____
	- Provided accessible water coolers and fountains.	_____	_____	_____
	- Provided accessible mirrors.	_____	_____	_____
	- Provided accessible toilet accessories at required locations.	_____	_____	_____
	- Provided all fixtures and accessories at proper mounting heights and clearances.	_____	_____	_____
	- Provided insulated or protected exposed pipes at lavatories.	_____	_____	_____
10.	Shower/Tub Facilities:			
	- Provided the minimum number of accessible showers/tubs.	_____	_____	_____
	- Provided showers/tubs with grab bars.	_____	_____	_____
	- Provided showers/tubs with seats as required.	_____	_____	_____
	- Provided controls mounted at the proper height and location.	_____	_____	_____
	- Provided proper clearances and dimensions in showers/tubs.	_____	_____	_____
	- Provided proper floor clearance through out shower/tubs rooms.	_____	_____	_____
	- Provided doors with correct direction of swing and clearance.	_____	_____	_____

ITEM NO.		INCORP	N/A	LATER	
11.	Storage:				
	- Provided accessible cabinets, shelves, closets, and drawers as required.	_____	_____	_____	
	- Provided proper clearance, mounting heights, and reach provisions.	_____	_____	_____	
12.	Telephones and Vending:				
	- Provided the minimum number of required accessible public telephones.	_____	_____	_____	
	- Provided proper floor clearance around telephone.	_____	_____	_____	
	- Phone and controls mounted at proper heights and within reach.	_____	_____	_____	
	- Provided vending machines on an accessible route.	_____	_____	_____	
	- Provided vending machines with accessible clearances and protruding object safe guards.	_____	_____	_____	
13.	Fixed Or Built-in Seating And Tables:				
	- Provided the minimum number of accommodations for accessibility in areas which required fixed furniture.	_____	_____	_____	
	- Provided proper floor clearance around furniture.	_____	_____	_____	
	- Provide proper knee space at tables.	_____	_____	_____	
	- Provided tables and counters with proper top surface heights.	_____	_____	_____	
14.	Assembly Areas:				
	- Provided the minimum number of accessible seating spaces.	_____	_____	_____	
	- Provided seating which is easily accessible to emergency egress.	_____	_____	_____	
	- Provided companion seating.	_____	_____	_____	
	- Integrated and dispersed accessible seating with the rest of the seating.	_____	_____	_____	
	- Provided accessible dressing rooms.	_____	_____	_____	
	- Provided level floor surface at accessible seat locations.	_____	_____	_____	
	- Provided clear ground or floor space at accessible seat locations	_____	_____	_____	
	- Provided access to all performing areas and associated spaces.	_____	_____	_____	

ITEM NO.		INCORP	N/A	LATER
15.	Dining Halls And Cafeterias:			
	- Provided the minimum number of accessible dining spaces.	_____	_____	_____
	- Provided accessible counters and bars.	_____	_____	_____
	- Provided accessible aisles between tables or walls.	_____	_____	_____
	- Provided clear floor space at accessible dining locations.	_____	_____	_____
	- Provided accessible food service lines meeting minimum clearances and reaches.	_____	_____	_____
	- Provided accessible tableware and condiment areas.	_____	_____	_____
	- Provided raised speaker platform with protected edges.	_____	_____	_____
16.	Medical Care Facilities:			
	- At least 10% of the general patient rooms are accessible.	_____	_____	_____
	- Provided the number of accessible patient rooms as required for specialized treatment,long term care, or alterations of existing patient rooms.	_____	_____	_____
	- Provided at least one accessible entrance with weather protecting canopy or roof overhang.	_____	_____	_____
	- Provided minimum clearances within the patient rooms and around the beds.	_____	_____	_____
	- Provided accessible patient toilet/bath rooms.	_____	_____	_____
17.	Business And Mercantile:			
	- Provided at least one accessible sales counter, services counter, teller, information window, etc.	_____	_____	_____
	- Security bollards when provided, do not prevent access or egress to people in wheel chairs.	_____	_____	_____
18.	Libraries:			
	- Provided access to all reading and stack areas, reference reference rooms, reserve areas, and special facilities or collections.	_____	_____	_____
	- Provided at least 5% or a minimum of one of each element or fixed seating, tables, or study carrels as accessible	_____	_____	_____
	- Provided at least one lane of check out areas as accessible.	_____	_____	_____
	- Provided adequate clearance and reach distances at card catalogs and magazine displays.	_____	_____	_____

- Provide stacks with minimum clear aisle width. _____ _____ _____

ITEM NO.		INCORP	N/A	LATER
19.	Temporary Lodging:			
	- All common and public use areas are accessible.	_____	_____	_____
	- Provided accessible units, sleeping rooms, and suites.	_____	_____	_____
	- Provided sleeping accommodations for persons with hearing impairments.	_____	_____	_____
	- Provided a dispersed class and a range of room options.	_____	_____	_____
	- Provided accessible rooms in ADAL projects.	_____	_____	_____
	- Provided an accessible route to accessible sleeping rooms.	_____	_____	_____
	- Provided accessible clearance widths within sleeping rooms and around beds.	_____	_____	_____
	- Provided accessible doors within accessible sleeping rooms.	_____	_____	_____
	- Provided accessible fixed or built-in furniture and storage units.	_____	_____	_____
	- Provided accessible controls throughout accessible units.	_____	_____	_____
	- Where provided as part of an accessible unit each of the following were provided as accessible: living area, dining area, at least one sleeping area, patio/terrace, balcony, toilet/bath, and carport/garage/parking.	_____	_____	_____
	- Where provided as apart of an accessible unit, the kitchen, kitchenettes, wet bars, or similar amenities were also provided with accessible features.	_____	_____	_____
	- Provided visual alarms, notification devices, and accessible telephones.	_____	_____	_____
	- Provided accessible doors and doorways designed to allow passage into and within all sleeping units or other covered units.	_____	_____	_____

20. Transportation Facilities:

(This section covers Air, Rail, and Bus public transportation facilities. See Section 10 of the ADA Guide for specific requirements for these facilities)

3.9.3 **ATTACHMENT C**

MECHANICAL ROOM SIZE FORM

****

NOTE: Mechanical Systems Design Documents and Guides - Mechanical Room Size Form

At the final design stage, the mechanical designer shall fill out this Mechanical Room Size Form and include it in the final design calculations.

****

Project:

Location:

Engineer:

Gross floor area of building:

Gross square footage includes (the entire building) stairs, corridors, etc.

Floor area of mechanical room:

Percent of gross building area is the mechanical room size:

Type of facility:

Sources of energy (E, G, S):

Mechanical equipment:

List of equipment outside the mechanical room and location:

Is the mechanical room too small?

Does the User think the mech room is too small? (Y, N, Don't know)

Additional remarks:

Abbreviations:

AC - air compressor
AHU - air handling unit
B - boiler
CU - air cooled condensing unit
DF - direct fired
DX - direct expansion chilled water heat exchanger

E - electric
FC - fan coil unit
FP - fire protection
G - natural gas or propane
HX - heat exchanger
LC - liquid chiller
MUA - make up air unit
UH - unit heater
ST - domestic hot water storage tank
S - steam

-- End of Section --

SECTION 01320F

PROJECT SCHEDULE
AMENDMENTS NO. 0002, 0006, and 0009

PART 1 GENERAL

1.1 QUALIFICATIONS

The Contractor shall designate a scheduler who shall he responsible for the preparation of the project schedule and periodic updates. The Scheduler shall have three years of experience in construction scheduling, estimating, cost management, and impact/change order analysis. The Scheduler shall have the responsibility of coordinating and updating the schedule and providing required updates in a timely manner. **(AM#2) This Scheduler shall be a full time employee whose sole responsibility will be scheduling and who shall be on the site at all times during progress of the work. Qualifications of this individual shall be submitted to the Contracting Officer for review and approval with the Offeror' management/technical proposal submission.** ~~Qualifications of the scheduler shall be submitted to the Contracting Officer for review with the Preliminary Project Schedule submission.~~

1.2 SEQUENCING AND PHASING

(AM#9) (Paragraph Deleted)

1.2.1 ~~Sequencing~~ **(AM#9) (Paragraph Deleted)**

1.2.1.1 **(AM#9)** Logic of Sequence, Required Completion & Liquidated Damages

Commence, prosecute, and complete the work under this contract in accordance with the following schedule and Section 00800 SPECIAL CONTRACT REQUIREMENT clauses COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK and LIQUIDATED DAMAGES**.**

(AM#9) (Paragraphs Deleted)

1.2.1.1.1 ~~Defined Logic of Sequence~~ **(AM#9) (Paragraph Deleted)**

1.2.1.1.2 Defined Required Completion and Liquidated Damages

(AM#9) All work is to be done in sequence ~~as defined in the above paragraphs~~ and ~~to~~ be completed within the duration allocated within the contract schedule. The renovation of each ~~of the~~ building~~s~~, **and** the construction of ~~the~~ independent sites, **which include re-locatable structures,** ~~and the re-locatable structures~~ are ~~each~~ considered separate items of work within the contract and each have separate contract completion times from the basic contract Notice to Proceed (NTP)**, as indicated below**. Each of these items of work have separate liquated damages associated with them and will be

assessed as determined by the Contracting Officer for failure to deliver the items of work within the time frame allocated as described below:

Item Of Work	Commencement Of Work	Completion Of Work In Calendar Days From Basic Contract NTP	Liquidated Damages Per Calendar Day
Building 4614 (Renovate for Admin)	Immediately after Basic Contract NTP	one-hundred-forty-one (141 days)	$5,000.00
Building 4615 (Renovate for Admin)	Immediately after Basic Contract NTP	one-hundred-forty-three (143 days)	$5,000.00
Building 4616 (Renovate for Admin)	Immediately after Basic Contract NTP	one-hundred-forty-six (146 days)	$5,000.00
Building 4617 (Renovate for Admin)	Immediately after Basic Contract NTP	one-hundred-forty-eight (148 days)	$5,000.00
Building 9413 (Renovate for 6 Company Ops)	Work to start 300 days after Basic Contract NTP	four-hundred-eight (408 days)	$5,000.00
Building 9418 (Renovate for 3 Company Ops)	Immediately after Basic Contract NTP	one-hundred-six (106 days)	$5,000.00
Building 9419 Renovate for 2 Company Ops & 1 Battalion HQ)	To start two weeks after completion and acceptance of Building 9418	two-hundred-thirty-one (231 days)	$5,000.00
Building 9420 (Renovate for 2 Company Ops & 1 Battalion HQ)	Work to start 120 days after Basic Contract NTP	two-hundred-thirty-eight (238 days)	$5,000.00
Building 9421 (Renovate for 1 Company Ops & 1 Battalion HQ)	To start two weeks after completion and acceptance of Building 9422	two-hundred-thirty-four (234 days)	$5,000.00
Building 9422 (Renovate for 3 Company Ops)	Immediately after Basic Contract NTP	one-hundred-eight (108 days)	$5,000.00
Building 9423 (Renovate for 3 Company Ops)	Work to start 300 days after Basic Contract NTP	four-hundred (400 days)	$5,000.00
Building 9424 (Renovate for 4 Company Ops)	Work to start 300 days after Basic Contract NTP	four-hundred-one (401 days)	$5,000.00

	Item Of Work	Commencement Of Work	Completion Of Work In Calendar Days From Basic Contract NTP	Liquidated Damages Per Calendar Day
	Building 9425 (Renovate for 3 Company Ops)	Work to start 300 days after Basic Contract NTP	four-hundred (400 days)	$5,000.00
	Building 9426 (Renovate for ½ Company Ops)	To start two weeks after completion and acceptance of Building 9427	two-hundred-forty-five (245 days)	$5,000.00
	Building 9427 (Renovate for ½ Company Ops)	Immediately after Basic Contract NTP	one-hundred-twenty-one (121 days)	$5,000.00
	Building 10001 (Renovate for 2 Company Ops & ½ Battalion HQ)	Work to start 210 days after Basic Contract NTP	three-hundred-two (302 days)	$5,000.00
	Building 10002 (Renovate for 2 Company Ops & ½ Battalion HQ)	Work to start 300 days after Basic Contract NTP	four-hundred-thirty-five (435 days)	$5,000.00
	Building 10003 (Renovate for 2 Company Ops & ½ Battalion HQ)	Immediately after Basic Contract NTP	one-hundred-sixteen (116 days)	$5,000.00
	Building 10004 (Renovate for 2 Company Ops & ½ Battalion HQ)	Work to start 210 days after Basic Contract NTP	three-hundred-four (304 days)	$5,000.00
(AM #0006)	**Building 10005 (Renovate for 3 Company Ops)**	**Work to start 120 days after Basic Contract NTP**	**three-hundred-twenty-two (322 days)**	**$5,000.00**
	~~Building 10005 (Renovate for 3 Company Ops)~~	~~Work to start 210 days after Basic Contract NTP~~	~~three-hundred-twenty-two (322 days)~~	~~$5,000.00~~
(AM #0006)	**Building 10006 (Renovate for 2 Company Ops & ½ Battalion HQ)**	**Work to start 120 days after Basic Contract NTP**	**three-hundred-seven (307 days)**	**$5,000.00**
	~~Building 10006 (Renovate for 2 Company Ops & ½ Battalion HQ)~~	~~Work to start 210 days after Basic Contract NTP~~	~~three-hundred-seven (307 days)~~	~~$5,000.00~~

Item Of Work	Commencement Of Work	Completion Of Work In Calendar Days From Basic Contract NTP	Liquidated Damages Per Calendar Day
(AM #0006) Building 10007 (Renovate for 2 Company Ops & ½ Battalion HQ)	**Work to start 120 days after Basic Contract NTP**	**three-hundred-nine (309 days)**	**$5,000.00**
~~Building 10007 (Renovate for 2 Company Ops & ½ Battalion HQ)~~	~~Work to start 210 days after Basic Contract NTP~~	~~three-hundred-nine (309 days)~~	~~$5,000.00~~
(AM#0006) Building 10008 (Renovate for 3 Company Ops)	**Work to start 120 days after Basic Contract NTP**	**three-hundred-thirteen (313 days)**	**$5,000.00**
~~Building 10008 (Renovate for 3 Company Ops)~~	~~Work to start 210 days after Basic Contract NTP~~	~~three-hundred-thirteen (313 days)~~	~~$5,000.00~~
(AM #0006)Building 10009 (Renovate for 2 Company Ops & 1 Battalion HQ)	**Work to start 120 days after Basic Contract NTP**	**three-hundred-sixteen (316 days)**	**$5,000.00**
~~Building 10009 (Renovate for 2 Company Ops & 1 Battalion HQ)~~	~~Work to start 210 days after Basic Contract NTP~~	~~three-hundred-sixteen (316 days)~~	~~$5,000.00~~
(AM #0006) Building 10010 (Renovate for 2 Company Ops & ½ Battalion HQ)	**Work to start 120 days after Basic Contract NTP**	**three-hundred-eighteen (318 days)**	**$5,000.00**
~~Building 10010 (Renovate for 2 Company Ops & ½ Battalion HQ)~~	~~Work to start 210 days after Basic Contract NTP~~	~~three-hundred-eighteen (318 days)~~	~~$5,000.00~~
(AM #0006) Building 10011 (Renovate for 2 Company Ops & ½ Battalion HQ)	**Work to start 120 days after Basic Contract NTP**	**three-hundred-twenty (320 days)**	**$5,000.00**
~~Building 10011 (Renovate for 2 Company Ops & ½ Battalion HQ)~~	~~Work to start 210 days after Basic Contract NTP~~	~~three-hundred-twenty (320 days)~~	~~$5,000.00~~
Building 10016 (Renovate for 2 Company Ops)	Immediately after Basic Contract NTP	one-hundred-thirteen (113 days)	$5,000.00

Item Of Work	Commencement Of Work	Completion Of Work In Calendar Days From Basic Contract NTP	Liquidated Damages Per Calendar Day
Building 10018 (Renovate for 2 Company Ops & ½ Battalion HQ)	To start two weeks after completion and acceptance of Building 10016	two-hundred-forty-three (243 days)	$5,000.00
Building 10020 (Renovate for 2 Company Ops & 1 Battalion HQ)	To start two weeks after completion and acceptance of Building 10021	three-hundred-eleven (311 days)	$5,000.00
Building 10021 (Renovate for 2 Company Ops & 1 Battalion HQ)	To start two weeks after completion and acceptance of Building 10022	two-hundred-eleven (211 days)	$5,000.00
Building 10022 (Renovate for 3 Company Ops)	Immediately after Basic Contract NTP	one-hundred-eleven (111 days)	$5,000.00
Building 10033 (Renovate for Server Room)	Immediately after Basic Contract NTP	two-hundred-thirty-six (236 days)	$5,000.00
Building 10040 (Renovate for Admin)	Work to start 300 days after Basic Contract NTP	four-hundred-forty-five (445 days)	$5,000.00
Building 10045 (Renovate for 1 Company Ops)	Work to start 300 days after Basic Contract NTP	four-hundred-forty-seven (447 days)	$5,000.00
Building 12002 (Renovate for 5 Company Ops)	Work to start 300 days after Basic Contract NTP	four-hundred-ten (410 days)	$5,000.00
Building 12003 (Renovate for 3 Company Ops)	Work to start 300 days after Basic Contract NTP	four-hundred-thirty-seven (437 days)	$5,000.00
Building 12004 (Renovate for 3 Company Ops)	Work to start 300 days after Basic Contract NTP	four-hundred-thirty-nine (439 days)	$5,000.00
Building 12008 (Renovate for 3 Company Ops)	Work to start 300 days after Basic Contract NTP	four-hundred-forty-three (443 days)	$5,000.00
Building 12010 (Renovate for 5 Company Ops)	Work to start 300 days after Basic Contract NTP	four-hundred-twelve (412 days)	$5,000.00

	Item Of Work	Commencement Of Work	Completion Of Work In Calendar Days From Basic Contract NTP	Liquidated Damages Per Calendar Day
	Building 12019 (Renovate for 5 Company Ops)	Work to start 300 days after Basic Contract NTP	four-hundred-fourteen (414 days)	$5,000.00
	Building 12020 (Renovate for 5 Company Ops)	Work to start 300 days after Basic Contract NTP	four-hundred-sixteen (416 days)	$5,000.00
	Building 16010 (Renovate for Company Ops/HQ)	Immediately after Basic Contract NTP	one-hundred-thirty-six (136 days)	$5,000.00
	Building 87009 (Renovate for 2 Battalion HQ)	Immediately after Basic Contract NTP	one-hundred-twenty-three (123 days)	$5,000.00
	Building 90038 (Renovate for Admin)	Immediately after Basic Contract NTP	one-hundred-thirty-eight (138 days)	$5,000.00
(AM #9)	**Site 1A (DOL Hardstand & Covered Shelter)**	**Immediately after Basic Contract NTP**	**ninety (90 days)**	**$2,500.00**
	Site 1B (DOL Admin w/parking, POV Parking, and Access Rd)	**Immediately after Basic Contract NTP**	**one-hundred-twenty (120 days)**	**$2,500.00**
~~**(AM #0006)**~~	~~**Site 1 (DOL Hardstand/ Cover/Admin)**~~	~~**Immediately after Basic Contract NTP**~~	~~**one-hundred-five (105 days)**~~	~~**$2,500.00**~~
	~~Site 1 (DOL Hardstand & Cover)~~	~~Immediately after Basic Contract NTP~~	~~one-hundred-five (105 days)~~	~~$2,500.00~~
	Site 2 (LZ Phantom Hardstand)	Immediately after Basic Contract NTP	ninety (90 days)	$2,500.00
(AM#9)	**Site 2 (LZ Phantom all other work)**	**Immediately after Basic Contract NTP**	**one-hundred-thirty-five (135 days)**	**$2,500.00**
(AM #0006) (AM#9)	**Site 3 (49000 Block)**	**Immediately after Basic Contract NTP**	**one-hundred-twenty (120 ~~75~~ days)**	**$2,500.00**
	~~Site 3 (49000 Block Hardstand)~~	~~Immediately after Basic Contract NTP~~	~~seventy-five (75 days)~~	~~$2,500.00~~

Item Of Work	Commencement Of Work	Completion Of Work In Calendar Days From Basic Contract NTP	Liquidated Damages Per Calendar Day
~~Site 3-R1 (Vehicle Maintenance)~~	~~Immediately after Basic Contract NTP~~	~~ninety (90 days)~~	~~$2,500.00~~
~~Site 3-R2 (Vehicle Maintenance)~~	~~Immediately after Basic Contract NTP~~	~~one-hundred-five (105 days)~~	~~$2,500.00~~
(AM #0006) Site 4 (4920 Block)	**To start two weeks after completion and acceptance of Site 2 (Hardstand) (AM#9)**	**one-hundred-fifty (150 days)**	**$2,500.00**
~~Site 4 (4920 Block Hardstand)~~	~~To start two weeks after completion and acceptance of Site 2~~	~~one-hundred-fifty (150 days)~~	~~$2,500.00~~
~~Site 4-R1 (Vehicle Maintenance)~~	~~To start two weeks after completion and acceptance of Site 2~~	~~one-hundred-fifty (150 days)~~	~~$2,500.00~~
~~Site 4-R2 (Vehicle Maintenance)~~	~~To start two weeks after completion and acceptance of Site 2~~	~~one-hundred-fifty (150 days)~~	~~$2,500.00~~
~~Site 4-R3 (Vehicle Maintenance)~~	~~To start two weeks after completion and acceptance of Site 2~~	~~one-hundred-fifty (150 days)~~	~~$2,500.00~~
~~Site 4-R4 (Vehicle Maintenance)~~	~~To start two weeks after completion and acceptance of Site 2~~	~~one-hundred-fifty (150 days)~~	~~$2,500.00~~
(AM #0006) (AM#9) Site 5 (4926 Block)	**To start two weeks after completion and acceptance of Site 1A**	**one-hundred-sixty-five (165 days)**	**$2,500.00**
~~Site 5 (4926 Block Hardstand)~~	~~To start two weeks after completion and acceptance of Site 1~~	~~one-hundred-sixty-five (165 days)~~	~~$2,500.00~~
~~Site 5-R1 (Vehicle Maintenance)~~	~~To start two weeks after completion and acceptance of Site 1~~	~~one-hundred-sixty-five (165 days)~~	~~$2,500.00~~
~~Site 5-R2 (Vehicle Maintenance)~~	~~To start two weeks after completion and acceptance of Site 1~~	~~one-hundred-sixty-five (165 days)~~	~~$2,500.00~~

	Item Of Work	Commencement Of Work	Completion Of Work In Calendar Days From Basic Contract NTP	Liquidated Damages Per Calendar Day
(AM#9)	~~Site 6 (Motor Pool Road Hardstand)~~	~~Immediately after Basic Contract NTP~~	~~sixty (60 days)~~	~~$2,500.00~~
(AM #0006) (AM#9)	**Site 8 (16000 Block)**	**Immediately after Basic Contract NTP**	**one-hundred-fifty (150 ~~165~~ days)**	**$2,500.00**
	~~Site 8 (16000 Block Classroom)~~	~~Immediately after Basic Contract NTP~~	~~one-hundred-sixty-five (165 days)~~	~~$2,500.00~~
(AM #0006) (AM#9)	**Site 9 (17000 Block)**	**Immediately after Basic Contract NTP**	**one-hundred-fifty (150 ~~165~~ days)**	**$2,500.00**
	~~Site 9 (17000 Block Unit Storage)~~	~~Immediately after Basic Contract NTP~~	~~one-hundred-sixty-five (165 days)~~	~~$2,500.00~~
(AM #0006)	**Site 10 (1900 Block)**	**Immediately after Basic Contract NTP**	**one-hundred-ninety-five (195 days)**	**$2,500.00**
	~~Site 10 (1900 Block Hardstand)~~	~~Immediately after Basic Contract NTP~~	~~one-hundred-ninety-five (195 days)~~	~~$2,500.00~~
	~~Site 10-R1 (Vehicle Maintenance)~~	~~Immediately after Basic Contract NTP~~	~~one-hundred-ninety-five (195 days)~~	~~$2,500.00~~
	~~Site 10-R2 (Vehicle Maintenance)~~	~~Immediately after Basic Contract NTP~~	~~one-hundred-ninety-five (195 days)~~	~~$2,500.00~~
	Site 11 (41st Street TVM)	Immediately after Basic Contract NTP	one-hundred-fifty (150 days)	$2,500.00
	Site 12 (37th Street TVM)	Immediately after Basic Contract NTP	one-hundred-sixty-five (165 days)	$2,500.00
	Site 13 (27th Street TVM)	Immediately after Basic Contract NTP	one-hundred-eighty (180 days)	$2,500.00
	Site 14 (25th Street TVM)	Immediately after Basic Contract NTP	one-hundred-ninety-five (195 days)	$2,500.00
	Site 15 16th Street TVM)	Immediately after Basic Contract NTP	two-hundred-ten (210 days)	$2,500.00
	Site 16 (Murphy Loop Parking South)	Immediately after Basic Contract NTP	thirty (30 days)	$2,500.00

	Item Of Work	Commencement Of Work	Completion Of Work In Calendar Days From Basic Contract NTP	Liquidated Damages Per Calendar Day
	Site 17 (Murphy Loop Parking North)	Immediately after Basic Contract NTP	forty-five (45 days)	$2,500.00
	Site 18 (7000 Block Overlay South)	Immediately after Basic Contract NTP	two-hundred-ten (210 days)	$2,500.00
	Site 19 (7000 Block Overlay North)	Immediately after Basic Contract NTP	two-hundred-forty (240 days)	$2,500.00
(AM #0006) (AM#9)	Site 20 (~~Bn HQ,~~ 4200 Block)	Immediately after Basic Contract NTP	two-hundred-ten (210 ~~180~~ days)	$2,500.00
	Site 21 (3500 Block West)	Immediately after Basic Contract NTP	two-hundred-ten (210 days)	$2,500.00
	Site 22 (3500 Block East)	Immediately after Basic Contract NTP	two-hundred-ten (210 days)	$2,500.00
	Site 23 (800 Block)	Immediately after Basic Contract NTP	one-hundred-ninety-five (195 days)	$2,500.00
	Site 24 (200/300 Block)	Immediately after Basic Contract NTP	one-hundred-fifteen (115 days)	$2,500.00
(AM#9)	~~Site 25 (9500 Block West)~~	~~Immediately after Basic Contract NTP~~	~~two-hundred-twenty-five (225)~~	~~$2,500.00~~
(AM#9)	Site 26 (9500 Block West ~~Central~~)	Immediately after Basic Contract NTP	two-hundred-twenty-five (225 days)	$2,500.00
	Site 27 (9500 Block East)	Immediately after Basic Contract NTP	two-hundred-twenty-five (225 days)	$2,500.00
	Site 28 (Murphy Rd & Bldg 728)	Immediately after Basic Contract NTP	two-hundred-twenty (220 days)	$2,500.00

	Item Of Work	Commencement Of Work	Completion Of Work In Calendar Days From Basic Contract NTP	Liquidated Damages Per Calendar Day
	Site 29 (Murphy Rd & Bldg 6978)	**Immediately after Basic Contract NTP**	**two-hundred-twenty (220 days)**	**$2,500.00**
	Site 30 (HAAF Apron Extension)	**Immediately after Basic Contract NTP**	**two-hundred-twenty (220 days)**	**$2,500.00**
(AM#9)	**Site 31 (Bldgs 4614, 4615, 4616, 4617 Site work ~~4600 Block~~)**	**Immediately after Basic Contract NTP**	**one-hundred-fifty (150 ~~220~~ days)**	**$2,500.00**
(AM#9)	**Site 32 (Demo 4400 Block) ~~of Site 20~~**	**To start two weeks after completion and acceptance of Site 20**	**four-hundred (400 days)**	**$2,500.00**

1.2.2 Phasing of the renovation of buildings and construction of sites.

The schedule shall be developed to show the phasing of the renovation of each building and the construction at each site. Work hours for the renovation of the buildings are 0800 hrs to 2000 hrs Monday through Friday and 0900 hrs to 1800 hrs Saturday. **(AM#9) Federal Holidays for barracks renovations are considered same as Saturday work schedule.** No work shall be done, or workers in and around the buildings, other than the hours stated above. Standard 40-hour work week shall apply to all other work areas. Additional time may be authorized, if needed, with a 48-hour advance notice to the Government.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 CONSTRUCTION SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittal

Network Diagram; G, RE

The diagram shall show a continuous activity flow from left to right. The diagrams shall be 36x48, minimum size unless explicitly modified by the Contracting Officer. The diagrams shall be legible, shall have activities 'grouped' or 'banded' by Project area, building or feature, and shall contain the following information:

a. Activity number
b. Activity description
c. Duration in workdays
e. Total float in workdays
f. Logic ties
h. Clearly marked critical path (s)
i. 'Banded' or 'grouping' identification on each sheet
j. Composed and/or milestone dates
k. Scale of sufficiently large scale to render a legible diagram

Dates shall be shown on the diagram for start of the project, any milestones required by the contract, and contract completion. The critical path shall be clearly identified. Submittal, review, procurement, fabrication, delivery, installation, start-up, and testing of special or long lead-time materials and equipment shall be included in the NAS diagram. Government and other agency activities shall be shown. These include but are not limited to: notice to proceed, approvals, inspections, and utility tie in for phasing requirements.

Reports; G, RE.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Pursuant to the Contract Clause, SCHEDULE FOR CONSTRUCTION CONTRACTS, a Project Schedule as described below shall be prepared. The scheduling of construction shall be the responsibility of the Contractor. Contractor management personnel shall actively participate in its development. Designers, subcontractors and suppliers working on the project shall also contribute in developing and maintaining an accurate Project Schedule. The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments.

3.2 BASIS FOR PAYMENT

The schedule shall be the basis for measuring Contractor progress. Lack of an approved schedule, scheduling personnel, or approved periodic schedule updates will result in an inability of the Contracting Officer to evaluate Contractor’s progress for the purposes of payment. In this event, progress payments will not be made until corrective action is taken and the schedule is approved by the Contracting Officer. The contractor’s pay estimates shall be based upon the amount of work completed as agreed upon between Government and Contractor personnel during the Periodic Progress Meetings further specified below.

3.3 PROJECT SCHEDULE

The computer software system utilized by the Contractor to produce the Project Schedule shall be capable of providing all requirements of this specification. Failure of the Contractor to meet the requirements of this specification shall result in the disapproval of the schedule. Manual methods used to produce any required information shall require approval by the Contracting Officer.

3.3.1 Use of the Critical Path Method

The Critical Path Method (CPM) of network calculation shall be used to generate the Project Schedule. The Contractor shall provide the Project Schedule in the Precedence Diagram Method (PDM)

3.3.2 Level of Detail Required

The Project Schedule shall be at a level of detail appropriate for the size and complexity of the project. Failure to develop or update the Project Schedule or provide data to the Contracting Officer at the appropriate level of detail, as specified by the Contracting Officer, shall result in the disapproval of the schedule. The Contracting Officer will use, but is not limited to, the following conditions to determine the appropriate level of detail to be used in the Project Schedule:

3.3.2.1 Activity Durations

Contractor submissions shall follow the direction of the Contracting Officer regarding reasonable activity durations. Reasonable durations are those that allow the progress of activities to be accurately determined between payment periods (usually less than 2 percent of the durations all non-procurement activities' are greater than 20 days).

3.3.2.2 Project Activities, General

Project activities consist of all construction activities, including design-related activities, mobilization, demobilization, placement of warranty tags, O&M manuals, jobsite clean-up, and required testing and training. Tasks related to the procurement of long lead materials or equipment shall be included as separate activities in the project schedule. These procurement tasks include, but are not limited to: submittals, approvals, procurement, fabrication, delivery, installation, start-up, testing, and training.

3.3.2.3 Critical Activities

The following activities shall be listed as separate line activities on the Contractor's project schedule:

a. Submission of mechanical/electrical layout drawings.

b. Submission and approval of 0 & M manuals.

c. Submission and approval of as-built drawings.

d. Submission of 1354 data and installed equipment lists.

e. Submission and approval of testing and air balance (TAB)

f. Submission of TAB specialist design review report.

g. Submission and approval of testing and balancing of HVAC plus commissioning plans and data.

h. Air and water balance dates.

I. HVAC commissioning dates.

j. Controls testing plan.

k. Controls testing.

l. Performance Verification testing.

m. Other systems testing, if required.

n. Prefinal inspection.

o. Correction of punchlist from prefinal inspection.

p. Final inspection.

3.3.2.4 Government Activities

Government and other agency activities that could impact progress shall be shown. These activities include, but are not limited to: the review of Government-approved submittals, approvals, inspections, utility tie-in, Government Furnished Equipment (GFE), and Notice to Proceed (NTP) for phasing requirements.

3.3.2.5 Responsibility

All activities shall be identified in the project schedule by the party responsible for performing the work. Responsibility includes, but is not limited to, the subcontracting firm, contractor work force, or government agency performing a given task. Activities shall not belong to more than one responsible party. The responsible party for each activity shall be identified by the Responsibility Code.

3.3.2.6 Work Areas

All activities shall be identified in the project schedule by the work area in which the activity occurs. Activities shall not be allowed to cover more than one work area. The work area of each activity shall be identified by the Work Area Code.

3.3.2.7 Modification or Claim Number

Any activity that is added or changed by contract modification or used to justify claimed time shall be identified by a mod or claim code that changed the activity. Activities shall not belong to more than one modification or claim item. The modification or claim number of each activity shall be identified by the Mod or Claim Number. Whenever possible, changes shall be added to the schedule by adding new activities. Existing activities shall not normally be changed to reflect modifications.

3.3.2.8 Bid Item

All activities shall be identified in the project schedule by the Bid Item to which the activity belongs. An activity shall not contain work in more than one bid item. The bid item for each appropriate activity shall be identified by the Bid Item Code.

3.3.2.9 Phase of Work

All activities shall be identified in the project schedule by the phases of work in which the activity occurs. Activities shall not contain work in more than one phase of work. The project phase of each activity shall be identified by the unique Phase of Work Code.

3.3.2.10 Category of Work

All activities shall be identified in the project schedule according to the category of work which best describes the activity. Category of work refers, but is not limited, to the procurement chain of activities including such items as submittals, approvals, procurement, fabrication, delivery, installation, start-up, and testing. The category of work for each activity shall be identified by the Category of Work Code.

3.3.2.11 Feature of Work (Work Breakdown Structure(WBS))

All activities shall be identified in the project schedule according to the feature of work to which the activity belongs. Feature of work refers, but is not limited to, a work breakdown structure for the project. The feature of work for each activity shall be identified by the Feature of Work Code or WBS Code.

3.3.2.12 Resources

All appropriate activities shall be assigned resources (labor, materials, equipment) that are expected to be used during the execution of the activity.

3.3.2.13 Costs

All work activities shall be cost-loaded with the amount budgeted. The sum of all activities in the schedule shall equal the total contract amount.

3.3.2.14 Design and Permit Activities

The Contractor shall integrate design and permitting activities, including necessary conferences, follow-up actions, and design package submission dates, into the schedule. These activities shall be coded to designate design and permitting.

3.3.2.15 Data Dictionary

The Contractor shall submit a coding scheme that shall be used throughout the project for all activity codes contained in the schedule. The coding scheme submitted shall list the values for each activity code category and translate those values into project specific designations. For example, a Responsibility Code Value, “ELE”, may be identified as “Electrical Subcontractor.” Activity code values shall represent the same information throughout the duration of the contract.

3.3.3 Scheduled Project Completion

3.3.3.1 Project Start Date

The schedule shall start no earlier than the date on which the NTP was acknowledged. The Contractor shall include as the first activity in the project schedule an activity called “Start Project”. The “Start Project” activity shall have an AES@ constraint date equal to the date that the NTP was acknowledged, and a zero day duration. It is possible for submittal activities to be started before NTP. If started, such activities will not alter the Contract start date or completion time for the Contract.

3.3.3.2 Constraint of Last Activity

Completion of the last activity in the schedule shall be constrained by the currently approved contract completion date. Calculation on project updates shall be such that if the early finish of the last activity falls after the contract completion date, then the float calculation shall reflect a negative float on the critical path. The Contractor shall include as the last activity in the project schedule an activity called “End Project”. The “End Project” activity shall have an “LF” constraint date equal to the completion date for the project, and a zero day duration.

3.3.3.3 Early Project Completion

In the event the project schedule shows completion of the project prior to the contract completion date, the Contractor shall identify those activities that have been accelerated and/or those activities that are scheduled in parallel to support the Contractor’s “early” completion. Contractor shall specifically address each of the activities noted in the narrative report at every project schedule update period to assist the Contracting Officer in evaluating the Contractor’s ability to actually complete prior to the contract period.

3.3.4 Interim Completion Dates

Contractually specified interim phasing completion dates shall be constrained to show negative float if the early finish date of the last activity in that phase falls after the interim completion date. Activities with separate completion dates shall also be constrained to show negative float if the completion date is not met.

3.3.4.1 Start Phase

The Contractor shall include as the first activity for a project phase an activity called “Start Phase X” where “X” refers to the phase of work. The “Start Phase X” activity shall have an “ES” constraint date equal to the date on which the NTP was acknowledged, and a zero day duration.

3.3.4.2 End Phase

The Contractor shall include as the last activity in a project phase an activity called “End Phase X” where “X” refers to the phase of work. The “End Phase X” activity shall have an “LF” constraint date equal to the completion date for the phase of the project, and a zero day duration.

3.3.4.3 Phase X

The Contractor shall include a hammock type activity for each project phase called “Phase X” where “X” refers to the phase of work. The “Phase X” activity shall be logically tied to the earliest and latest activities in the phase.

3.3.5 Default Progress Data Disallowed

Actual Start and Finish dates shall not be automatically updated by default mechanisms that may be included in CPM scheduling software systems. Actual Start and Finish dates on the CPM schedule shall match those dates provided from Contractor Quality Control Reports. Updating of the percent complete and the remaining duration of any activity shall be independent functions. Program features which calculate one of these parameters from the other shall be disabled.

3.3.6 Out-of-Sequence Progress

Activities that have posted progress without all preceding logic being satisfied (Out-of-Sequence Progress) will be allowed only on a case-by-case approval of the Contracting Officer. The Contractor shall propose logic corrections to eliminate all out of sequence progress or justify not changing the sequencing for approval prior to submitting an updated project schedule. If approval is not given, a revised schedule that reflects corrections to the original logic to show the current sequence of activities shall be submitted prior to payment being made for those items of work.

3.3.7 Negative Lags

Lag durations contained in the project schedule shall not have a negative value.

3.4 PROJECT SCHEDULE SUBMISSIONS

The Contractor shall provide the submissions as described below. The data disk, reports, and network diagrams required for each submission are contained in paragraph SUBMISSION REQUIREMENTS. A data disk and a printed, legible network diagram are required for each submission. Submissions shall contain the same level of detail as is being used by the contractor for project management.

3.4.1 Preliminary Project Schedule Submission

The Preliminary Project Schedule shall be submitted within 21 days of NTP defining the Contractor’s planned operations, including a detailed 100% design schedule and a summary of the balance of the project. The Government shall have 30 days for review. Upon review and acceptance of the Contracting Officer, this schedule shall be used for analysis and payment purposes until submittal of the Initial Schedule (see paragraph entitled “Initial Project Schedule Submission”). Upon submittal and approval, the updated initial schedule shall be used for payment purposes. The schedule shall include significant activities with milestone dates including:

Contract Notice to Proceed
Phases as specified in contract
Preliminary and Initial Schedule Submittal dates
Design Submittal Dates
Government Review Periods
Review Conference Dates
Resubmittal of Final Design/Construction Documents
Government Review of Final Design/Construction documents Construction Closeout Activities
(e.g., operation and maintenance manuals, record drawings testing of equipment and systems, prefinal inspection procedures, and correction of deficiencies, and final cleanup)
Commissioning of HVAC Systems
Substantial Completion

No payment will be made until this schedule is accepted.

3.4.2 Initial Project Schedule Submission

The Initial Project Schedule shall be submitted for approval within 14 calendar days after NTP. The schedule shall provide a logical sequence of activities which represent work activities through the entire project and shall be at an appropriate level of detail as defined in paragraph PROJECT

SCHEDULE. The Government has 14 days for approval.

3.4.2.1 Operations and Maintenance Manuals

Include activities on the Schedule for turn-over to the Government of the required number of copies of approved O&M manuals for all specification sections and for Operation and Maintenance training classes. The completion date for submittal of 0 & M Manuals 120 calendar days prior to the final acceptance inspection date. The amount to be withheld until completion and approval of these activities will be the amount indicated on the Bidding Schedule for "Operation and Maintenance Manuals."

3.4.2.2 Warranty Work

Include an activity subsequent to Project Transfer on the Schedule for Warranty Work. This activity shall be for a period of 365 days.

3.4.3 Periodic Schedule Updates

The Contractor shall submit periodic updates as required by the Contracting Officer. Updated data discussed in the periodic progress meetings will be the basis for the schedule updates. These submissions shall enable the Contracting Officer to assess Contractor’s progress. If the Contractor fails or refuses to furnish the information and project schedule data, which in the judgment of the Contracting Officer or authorized representative, is necessary for verifying the Contractor’s progress, the Contractor shall be deemed not to have provided an estimate upon which progress payment may be made.

3.4.4 Not Used

3.5 SUBMISSION REQUIREMENTS

The following items shall be submitted by the Contractor for the preliminary submission, initial submission, and every periodic project schedule update throughout the life of the project:

3.5.1 Data Disks

Three data disks containing the project schedule shall be provided. The automated scheduling software utilized by the Contractor shall be capable of direct data input into the scheduling system currently in use by the Government. The Government (e.g. the Fort Worth District) currently uses Primavera for Windows, Version 3.1, subject to current update. The Contractor will be responsible for the accuracy of this data and successful data transfer to the Government. In the event of faulty disk(s), the Contractor will be responsible for replacement.

3.5.1.1 File Medium

Required data shall be submitted on CD-ROM disk or 3.5 high-density diskette, formatted under Windows 95, 98, NT, or 2000, unless otherwise approved by the Contracting Officer.

3.5.1.2 Disk Label

A permanent exterior label shall be affixed to each disk submitted. The label shall indicate the scheduling program used, format of data transfer P3, PRX, STX, or MPX), file name, the type of schedule (Preliminary, Initial, Update, or Change), full contract number, project name, project

location, data date, name and telephone number or person responsible for the schedule, and the MS-DOS version used to format the disk.

3.5.1.3 File Name

Each file submitted shall have a name related to either the schedule data date, project name, or contract number. The Contractor shall develop a naming convention that will ensure that the names of the files submitted are unique. The Contractor shall submit the file naming convention to the Contracting Officer for approval.

3.5.2 Narrative Report

A Narrative Report shall be provided with the preliminary, initial, and each update of the project schedule. This report shall be provided as the basis of the Contractor’s progress payment request. The Narrative Report shall include: a description of activities along the 2 most critical paths, a description of current and anticipated problem areas or delaying factors and their impact, and an explanation of corrective actions taken or required to be taken to maintain and/or regain schedule. This report shall be provided for use with the updated schedule in evaluating current progress and as an indicator of upcoming progress. This report shall also accompany pay requests for payment evaluation, or required to be taken. The narrative report is expected to relay to the Government, the Contractor’s thorough analysis of the schedule output and its plans to compensate for any problems, either current or potential, which are revealed through that analysis.

3.5.3 Approved Changes Verification

Only project schedule changes that have been previously approved by the Contracting Officer shall be included in the periodic schedule updates. The Narrative Report shall specifically reference, on an activity by activity basis, all changes made since the previous period and relate each change to documented, approved schedule changes.

3.5.4 Schedule Reports

The software program used for scheduling shall be capable of producing the reports as listed. The format for each activity for the schedule reports listed below shall contain: Activity Numbers, Activity Description, Original Duration, Remaining Duration, Early Start Date, Early Finish Date, Late Start Date, Late Finish Date, Total Float. Actual Start and Actual Finish Dates shall be printed for those activities in progress or completed.

3.5.4.1 Activity Report

A list of all activities sorted according to activity number and then sorted according to Early Start Date. For completed activities, the Actual Start Date shall be used as the secondary sort.

3.5.4.2 Logic Report

A list of Preceding and Succeeding activities for every activity in ascending order by activity number. Preceding and succeeding activities shall include all information listed above in paragraph Schedule Reports. A blank line shall be left between each activity grouping.

3.5.4.3 Total Float Report

A list of all incomplete activities sorted in ascending order of total float. Activities which have the same amount of total float shall be listed in ascending order of Early Start Dates. Completed activities shall not be shown on this report.

3.5.4.4 Earnings Report

A compilation of the Contractor's Total Earnings on the project from the NTP until the most recent Monthly Progress Meeting.

3.5.5 Network Diagram

The network diagram shall be required on the preliminary and initial schedule submission and on periodic schedule update submissions. The network diagram shall depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. Activity numbers, descriptions, durations, milestones and constraint dates shall be shown, and the critical path shall easily apparent. The network diagram must be legible in its electronic form, or another means of production shall be required subject to Contracting Officer approval. Legibility shall be determined upon submission of the Preliminary Schedule. The Contracting Officer will use, but is not limited to, the following conditions to review compliance with this paragraph:

3.5.5.1 Continuous Flow

Diagrams shall show a continuous flow from left to right with no arrows from right to left. The activity number, description, duration, and estimated earned value shall be shown on the diagram.

3.5.5.2 Project Milestone Dates

Dates shall be shown on the diagram for start of project, any contract required interim completion dates, and contract completion dates.

3.5.5.3 Critical Path

The critical path shall be clearly shown.

3.5.5.4 Banding

Activities shall be coded so that banding is possible to assist in understanding the activity sequence. Typically, this flow will group activities by phase, category of work, work area, and/or responsibility.

3.5.5.5 S-Curves

Earnings curves showing projected early and late earnings and earnings to date.

3.5.5.6 Open Ends

Open Ended Activities other than the first and last activities, "Start Project" and "End Project", shall only be used with approval of the Contracting Officer.

3.6 PERIODIC PROGRESS MEETINGS

Progress meetings to discuss progress or payment shall be at regular intervals mutually agreed to at the pre-construction conference. During

these meetings the Contractor shall describe, on an activity by activity basis, all proposed revisions and adjustments to the project schedule required to reflect the current status of the project. During meetings the Contracting Officer will approve activity progress, proposed revisions, and adjustments as appropriate.

3.6.1 Meeting Attendance

The Contractor's Project Manager, Quality Control Manager or staff, and Scheduler shall attend the periodic progress meeting along with similar representation by the Government.

3.6.2 Update Submission Following Progress Meeting

A complete update of the project schedule containing all approved progress, revisions, and adjustments, based on the regular progress meeting, shall be submitted not later than 7 working days after the monthly progress meeting.

3.6.3 Progress Meeting Contents

Update information, including Actual Start Dates, Actual Finish Dates, Remaining Durations, and Cost-to-Date shall be subject to the approval of the Contracting Officer. As a minimum, the Contractor shall address the following items on an activity by activity basis during each progress meeting.

3.6.3.1 Start and Finish Dates

The Actual Start and Actual Finish dates for each activity currently in progress or completed

3.6.3.2 Duration

The estimated Remaining Duration for each activity in progress. Calculations shall be based on Remaining Duration in applicable work periods for each activity.

3.6.3.3 Earnings

The earnings for each activity started. Payment will be based on earnings for each in-progress or completed activity. Payment for individual activities will not be made for work that contains quality defects. A portion of the overall project amount may be retained based on lack of satisfactory progress.

3.6.3.4 Logic Changes

All logic changes pertaining to NTP on change orders, change orders to be incorporated into the schedule, contractor proposed changes in work sequence, corrections to schedule logic for out-of-sequence progress, lag durations, and other changes that have been made pursuant to contract provisions shall be specifically identified and discussed.

3.6.3.5 Other Changes

Other changes required due to delays in completion of any activity or group of activities include: 1) delays beyond the Contractor's control, such as strikes and unusual weather. 2) delays encountered due to submittals, Government Activities, deliveries or work stoppages which make re-planning the work necessary. 3) Changes required to correct a schedule which does not

represent the actual or planned prosecution and progress of the work.

3.7 REQUESTS FOR TIME EXTENSIONS

Any request for a time extension from the Contractor, whether as a result of added or changed work due to a modification, a differing site condition, or unusually severe weather, shall be accompanied by justification, project schedule data and supporting evidence as the Contracting Officer may deem necessary for a determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract. Submission of proof of delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is obligatory to any approvals. Such a request shall be in accordance with the requirements of other appropriate Contract Clauses and shall include, as a minimum:

a. A list of affected activities.

b. A brief explanation of the causes of the change.

c. An analysis of the overall impact of the change proposed.

d. A sub-network of the affected area.

Activities impacted in each justification for change shall be identified by a unique activity code contained in the required data file.

3.7.1 Not Used

3.7.2 Not Used

3.7.3 Additional Submission Requirements

For any requested time extension of over 2 weeks, the Contracting Officer may request an interim update with revised activities for a specific change request. The Contractor shall provide this disk within 4 days of the Contracting Officer’s request.

3.8 DIRECTED CHANGES

If the NTP is issued for changes prior to settlement of price and/or time, the Contractor shall submit proposed schedule revisions to the Contracting Officer within 7 calendar days of the NTP being issued. The proposed revisions to the schedule will be approved by the Contracting Officer prior to inclusion of those changes within the project schedule. If the Contractor fails to submit the proposed revisions, the Contracting Officer may furnish the Contractor with suggested revisions to the project schedule. The Contractor shall include these revisions in the project schedule until revisions are submitted, and final changes and impacts have been negotiated. If the Contractor has any objections to the revisions furnished by the Contracting Officer, the Contractor shall advise the Contracting Officer within 7 calendar days of receipt of the revisions, Regardless of the objections, the Contractor shall continue to update the schedule with the Contracting Officer’s revisions until a mutual agreement in the revisions is reached. If the Contractor fails to submit alternative revisions within 7 calendar days of receipt of the Contracting Officer’s proposed revisions, the Contractor will be deemed to have concurred with the Contracting Officers proposed revisions. The proposed revisions will then be the basis

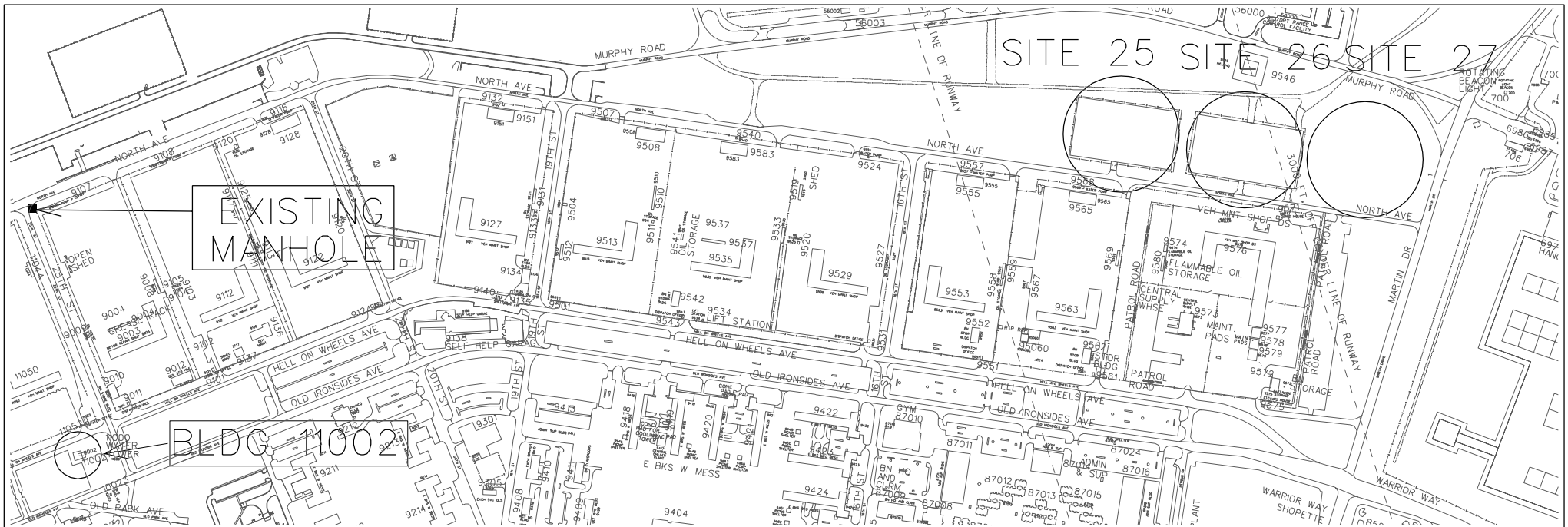
for an equitable adjustment for performance of the work.

3.9 OWNERSHIP OF FLOAT

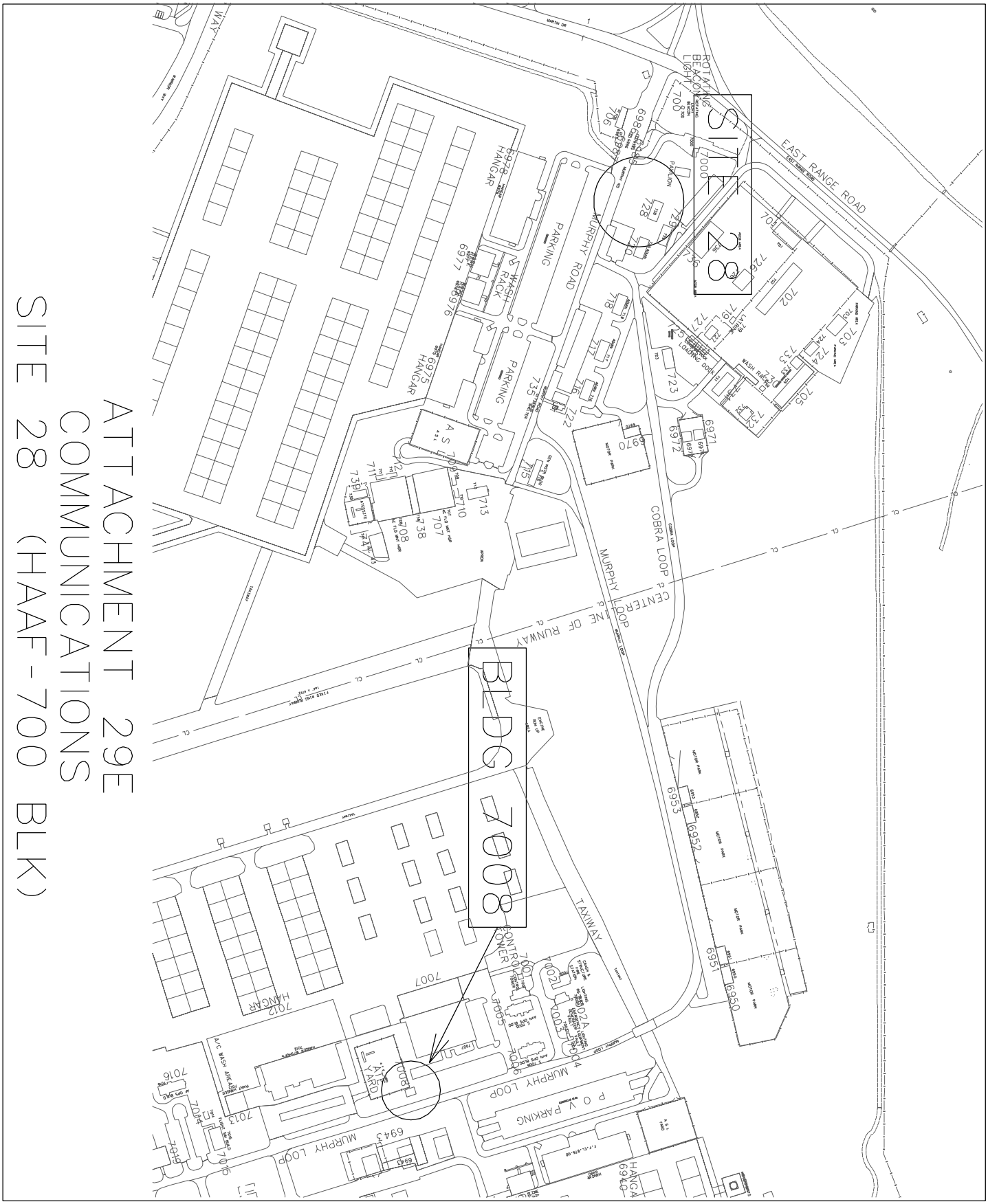
Float available in the schedule, at any time, shall not be considered for the exclusive use of either the Government or the Contractor. Use of Zero Free Float and Zero Total Float constraints shall not be allowed.

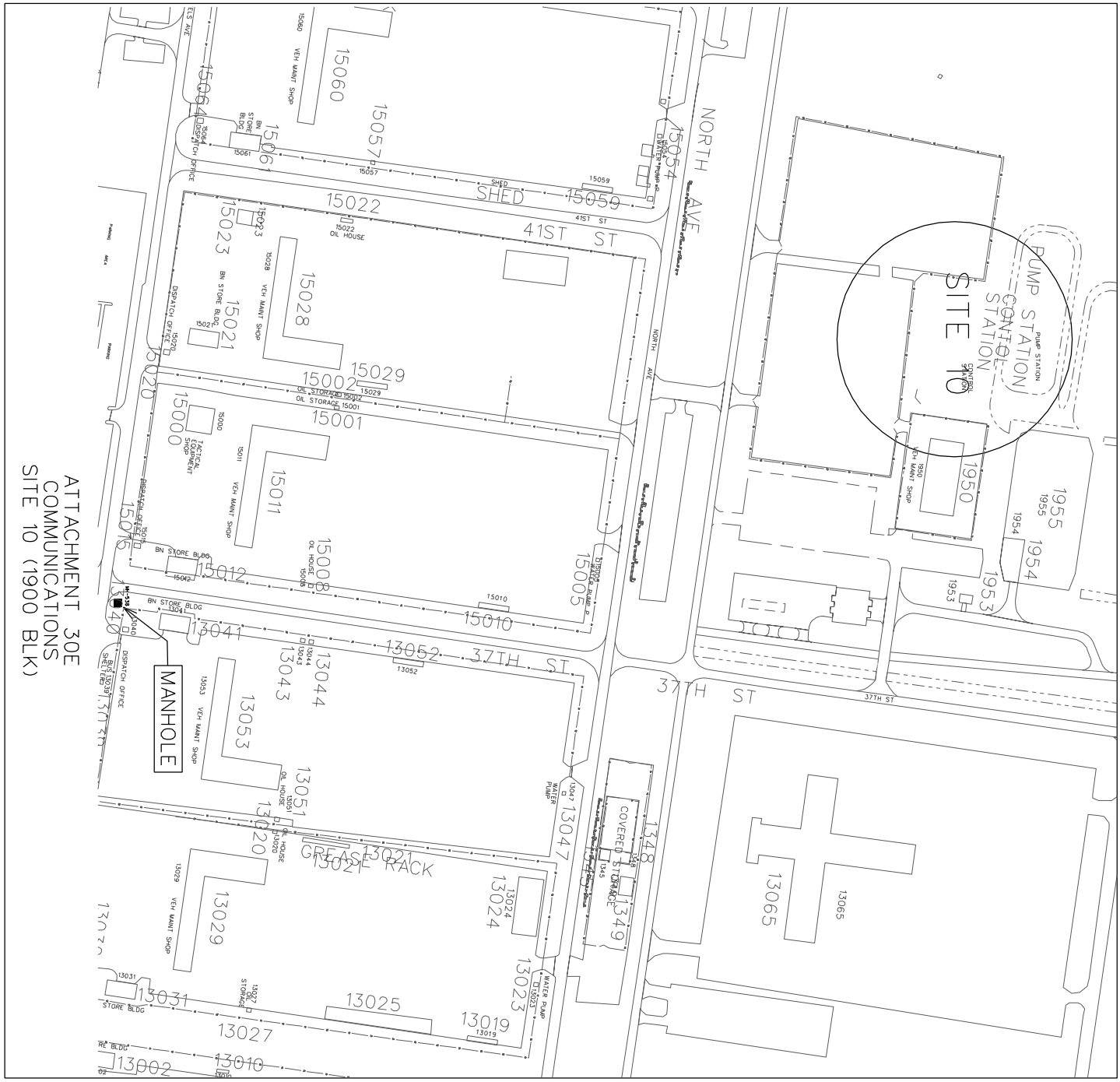
-- End of Section --

THIS PAGE INTENTIONALLY LEFT BLANK



ATTACHMENT 27E
COMMUNICATIONS
SITES 25, 26, & 27 (9500 BLK)


ATTACHMENT 29E
COMMUNICATIONS
SITE 28 (HAAF-700 BLK)
SITE 28
BLDG 7008
EAST RANGE ROAD
MURPHY ROAD
COBRA LOOP
CENTER LOOP
MURPHY LOOP
TAXIWAY
CONTROL TOWER
HANGAR
PARKING
ROTATING BEACON LIGHT
LOADING DOCK
WASH RACK
A/C WASH AREA
POV PARKING


ATTACHMENT 30E
COMMUNICATIONS
SITE 10 (1900 BLK)
MANHOLE
SITE 10
PUMP STATION
CONTROL STATION
NORTH AVE
41ST ST
37TH ST
GREASE RACK
COVERED STORAGE
SHED
DISPATCH OFFICE
VEH MAINT SHOP
BN STORE BLDG
OIL STORAGE
OIL HOUSE
WATER PUMP
15060
15057
15054
15059
15061
15022
15023
15028
15029
15021
15002
15001
15000
15011
15012
15005
15010
13041
13052
13044
13043
13053
13051
13020
13021
13047
13024
13023
13029
13031
13025
13019
13027
13010
13002
1950
1955
1954
1953
13065
1348
1349

K3 BARRACKS

1. ARCHITECTURAL – SEE SECTION 01010 GENERAL PROJECT DESCRIPTION AND DESIGN REQUIREMENTS

(AM#9) Provide proposals for two different barracks modules. One shall include handicap requirements for "Medical Hold" patients. The other shall be for regular housing of able-bodied soldiers. Refer to Texas Department of Licensing and Regulation for Industrialized and modular buildings to see requirements for both types.

2. STRUCTURAL – SEE SECTION 01010 GENERAL PROJECT DESCRIPTION AND DESIGN REQUIREMENTS

3. SPECIFIC PLUMBING DESIGN REQUIREMENTS

There are no specific plumbing requirements for this facility other than the General Plumbing Design Requirements.

4. SPECIFIC HEATING, VENTILATING, AND AIR CONDITIONING REQUIREMENTS

Facility will be heated and cooled.

Conditioned air shall be supplied directly to the common area. At a minimum, there shall be one thermostat per three-man module.The Barracks shall utilize a split system air conditioner with the air handler inside and the condenser outside.

Barracks Living Units shall be ventilated at 30 cfm per sleeping room.

Provide a vent hood over the cook top.

5. SPECIFIC FIRE PROTECTION REQUIREMENTS

Automatic sprinkler protection is required for Barracks. Refer to Fire Protection Design for design requirements.

Fire Hydrants. Refer to Civil Design for design requirements.

Fire Extinguishers and Cabinets. Fire Extinguishers are required. Refer to Architectural Design for design requirements.

Fire Alarm and Detection System. Fire Alarm and Detection system is required. Smoke detection is required in bedrooms. Refer to Electrical Design for design requirements.

6. ELECTRICAL DESIGN

Commercial grade luminaires with a residential appearance shall be provided in the barracks modules. Luminaires shall be provided in all barracks module rooms including walk-in closets. Low brightness wall-mounted luminaires with white lens shall be provided over vanity mirrors.

Average maintained illumination levels shall be 10 foot-candles in barrack's sleeping rooms.

There shall be a minimum of two ceiling mounted lighting fixtures switched independently.

All lighting fixtures in sleeping rooms, including toilets, shall be switched utilizing wall switches.

Electrical receptacles shall be provided in accordance with the National Electrical Code (NEC) requirements for dwelling units. Additional receptacles shall be provided as indicated herein. Receptacle circuits in sleeping rooms shall be protected with arc-fault circuit-interrupters as required by the NEC.

A minimum of one general-purpose 120 volt, 20-ampere duplex receptacle shall be provided on each wall in each room unless otherwise indicated. In rooms where walls exceed 10 feet horizontally, an additional duplex outlet shall be provided for each additional 10 feet of wall or fraction thereof. Receptacle spacing shall not exceed 10 feet. General-purpose receptacles are in addition to special purpose and dedicated outlets for special equipment.

One additional general-purpose 120 volt, 20-ampere quadruplex receptacle shall be provided on the wall next to the CATV jack.

One general-purpose 120 volt, 20-ampere, Ground Fault duplex receptacle shall be provided on the wall next to each lavatory.

Communications

There shall be a minimum of one CATV jack in each sleeping room.

There shall be a minimum of 1 telephone jack for each sleeping area.

Fire Alarm

A minihorn and smoke detector shall be provided in all barracks sleeping rooms.

In the event of an alarm condition from any initiating device, except smoke detectors in barracks sleeping rooms, all air handling units shall shut down, all notification appliances shall alert, and a signal shall be transmitted to the fire station. In the event of an alarm condition in a barrack’s sleeping room smoke detector, the minihorn that is located in the same room as the detector in alarm shall sound and a trouble signal indicating room number shall be sent to the fire alarm panel and a trouble signal shall be transmitted to the fire station.

If any smoke detector or minihorn is removed from its circuit, a trouble signal shall be generated at the fire alarm control panel and a trouble signal transmitted to the fire station.

Mass Notification

There shall be a minimum of one speaker and strobe in each sleeping room.

K4 BATTALION HEADQUARTERS
AMENDMENTS NO. 0005, 0006 and 0009

(AM #0005) This is a relocatable (AM#6) structure. See drawings for functional layout and requirements in addition to those listed here.

1. ARCHITECTURAL

Minimum turning radius shall be 15 feet for POV parking areas. Minimum turning radius for organizational and service vehicles shall be 25 feet except where fire truck access and semi-truck and trailer access is required (minimum turning radius of 55 feet). Minimum access drive width shall be 25 feet.

Ramps and sidewalks shall be provided for handicapped access to each **(AM#6) BN HQ Module**. The number of parking spaces and site access for the physically disabled shall be two spaces per facility.

See SECTION 01010 for additional requirements.

2. STRUCTURAL – SEE SECTION 01010

3. SPECIFIC PLUMBING DESIGN REQUIREMENTS

There are no specific plumbing requirements for this facility other than the General Plumbing Design Requirements.

4. SPECIFIC HEATING, VENTILATING, AND AIR CONDITIONING REQUIREMENTS

Facility is to be heated and cooled.

5. SPECIFIC FIRE PROTECTION REQUIREMENTS

Automatic sprinkler system is not required for Battalion Headquarters Facility.

Fire Hydrants. Refer to Civil Design for design requirements.

Fire Extinguishers. Provide 5 lb. ABC type fire extinguishers in accordance with NFPA 10. Refer to Architectural Design for design requirements.

Fire Alarm and Detection System. Fire Alarm and Detection System is required. Refer to Electrical Design for design requirements.

6. INTERIOR ELECTRICAL DESIGN

a. Complete and operational electrical systems including power, communication, cable television (CATV), lighting, fire detection and mass notification systems shall be provided.

b. Feeder neutrals shall be oversized and panelboards shall be equipped with 200% neutral busses. Dry-type transformers shall include

a K-4 rating if non-linear loads make up more than 50% of the total load.

c. Provide Transient Voltage Surge Suppression (TVSS).

d. Provide general-purpose receptacles for interior and exterior. Ground Fault Circuit Interrupter (GFCI) shall be provided per NEC.

e. Provide dedicated computer receptacles. Computer receptacles shall consist of a quadruplex receptacle or two duplex receptacles mounted in a single 2-gang box. A receptacle shall be provided for every 80 SF of administration space excluding private offices. A minimum of two computer receptacles shall be provided in private offices for flexibility in furniture placement. Each conference room and classroom shall be provided no fewer than four computer receptacles.

f. Provide a minimum of two floor mounted 19 inch LAN racks in communication room.

g. A communication duplex outlet (data & voice) shall be provided adjacent to each computer receptacle, facsimile receptacle and common use printer receptacle. A communication simplex outlet (voice), wall mounted 52 inches AFF, shall be provided in each electrical room, mechanical room and communications room/closet.

h. In open administrative areas a minimum of four dedicated receptacles shall be provided for copiers, facsimile machines, and common use network printers and shall be labeled “dedicated”.

i. CATV outlets with type F connectors shall be provided. A 120 volt, 20-ampere duplex receptacle shall be provided adjacent to each CATV outlet. This receptacle shall be in addition to the general-purpose receptacles required.

j. Electrical outlet devices, communication outlets, CATV outlets, and all faceplates shall be white. All outlets shall be mounted 18-inch AFF unless otherwise indicated. The location of outlets shall be coordinated with the furniture plans, and meet the requirements as otherwise stated herein.

k. Provide cable tray and 1-inch minimum electrical metallic tubing (EMT) conduit system for communication and CATV systems.

l. Provide occupancy sensors for interior lighting system as required elsewhere in RFP.

m. Provide photocell for exterior luminaries.

(AM #0009)
n. In addition to all other receptacle requirements, two receptacles shall be provided in center of each classroom to provide for connection of a projector.

K7 COMPANY OPERATIONS **(AM#6) MODULE**
AMENDMENT**S** NO. 0005, **0006 and 0009**

(AM #0005) This is a relocatable (AM#6) structure. See drawings for functional layout and requirements in addition to those listed here.

1. ARCHITECTURAL

Minimum turning radius shall be 15 feet for POV parking areas. Minimum turning radius for organizational and service vehicles shall be 25 feet except where fire truck access and semi-truck and trailer access is required (minimum turning radius of 55 feet). Minimum access drive width shall be 25 feet.

Ramps and sidewalks shall be provided for handicapped access to each Admin Facility. The number of parking spaces and site access for the physically disabled shall be two spaces per facility.

See SECTION 01010 for additional requirements.

2. STRUCTURAL – SEE SECTION 01010

3. SPECIFIC PLUMBING DESIGN REQUIREMENTS – COMPANY OPERATIONS RELOCATABLE

There are no specific plumbing requirements for this facility other than the General Plumbing Design Requirements.

4. SPECIFIC HEATING, VENTILATING, AND AIR CONDITIONING REQUIREMENTS – COMPANY OPERATIONS RELOCATABLE

Facility is to be heated and cooled.

5. SPECIFIC FIRE PROTECTION REQUIREMENTS – Company Ops.

Automatic sprinkler system is not required for Company Ops. Facility.

Fire Hydrants. Refer to Civil Design for design requirements.

Fire Extinguishers. Provide 5 lb. ABC type fire extinguishers in accordance with NFPA 10. Refer to Architectural Design for design requirements.

Fire Alarm and Detection System. Fire Alarm and Detection System is required. Refer to Electrical Design for design requirements.

6. COMPANY OPS - INTERIOR ELECTRICAL DESIGN

Complete and operational electrical systems including power, communication, cable television (CATV), IDS system, interior and

exterior lighting, fire detection and mass notification systems shall be provided.

a. Feeder neutrals shall be oversized and panelboards shall be equipped with 200% neutral busses. Dry-type transformers shall include a K-4 rating if non-linear loads make up more than 50% of the total load.

b. Transient Voltage Surge Suppression (TVSS).

c. Provide dedicated computer receptacles. Computer receptacles shall consist of a quadruplex receptacle or two duplex receptacles mounted in a single 2-gang box. A Receptacle shall be provided for every 80 SF of administration space excluding private offices. A minimum of two computer receptacles shall be provided in private offices for flexibility in furniture placement. Each conference room and classroom shall be provided no fewer than four computer receptacles.

d. A communication duplex outlet (data & voice) shall be provided alongside each computer receptacle, facsimile receptacle and common use printer receptacle. A communication simplex outlet (voice) shall be provided, wall mounted 52 inches AFF in each electrical room, mechanical room and communications room/closet.

e. In open administrative areas a minimum of four dedicated receptacles shall be provided for copiers, facsimile machines, and common use network printers and shall be labeled “dedicated”.

f. CATV outlets, type F connection, shall be provided. A 120 volt, 20-ampere duplex receptacle shall be provided adjacent to each CATV outlet. This receptacle shall be in addition to the general-purpose receptacles required.

g. General duplex receptacles devices, communication outlets, CATV outlets, and faceplates shall be white. All outlets shall be mounted 18-inch AFF unless otherwise indicated. The location of outlets shall be coordinated with the furniture plans, also assure a computer receptacle is provided adjacent to each communication outlet.

h. Provide cable tray and (AM #0009) 1-inch minimum electrical metallic tubing (EMT) conduit system for communication and CATV systems.

i. Provide occupancy sensors for interior lighting system.

j. Provide photocell for exterior luminaries.

k. A 1-inch raceway shall be provided between Company Ops’ communication room and arms rooms.

(AM #0009)
l. Patch panel in communications room shall be utilized as a termination point for cabling to outlets in a company ops supply facility. Each company ops facility shall provide service to one company ops supply facility.

K8 COMPANY OPERATIONS SUPPLY **MODULE (AM#6)**
AMENDMENT**S** NO. 0005, **0006 and 0009**

(AM #0005) This is a relocatable (AM#6) structure. See drawings for functional layout and requirements in addition to those listed here. See SECTION 01010 for additional requirements.

1. ARCHITECTURAL

Minimum access drive width shall be 25 feet. Minimum turning radius shall be 15 feet except where fire truck access is required. The minimum turning radius for a fire truck shall be 55 feet.

2. STRUCTURAL – SEE SECTION 01010

3. SPECIFIC PLUMBING DESIGN REQUIREMENTS – COMPANY OPERATIONS SUPPLY RELOCATABLE

There are no specific plumbing requirements for this facility other than the General Plumbing Design Requirements.

4. SPECIFIC HEATING, VENTILATING, AND AIR CONDITIONING REQUIREMENTS – COMPANY OPERATIONS SUPPLY RELOCATABLE

Facility is to be heated and cooled.

5. SPECIFIC FIRE PROTECTION REQUIREMENTS – Company Ops. Supply Facility

Automatic sprinkler protection shall be provided for Company Ops. Supply Facility as follows:

Supply/Storage Facility. Provide sprinkler protection per the requirements of UFC 3-600-01. Per UFC 3-600-01, 6-10.1 storage facilities must have complete automatic sprinkler protection. Sprinkler protection must be based on Class IV commodities as defined by NFPA 13. See Fire Protection Design for design requirements.

Fire Hydrants. Refer to Civil Design for design requirements.

Fire Extinguishers and Cabinets. Fire Extinguishers are required. Refer to Architectural Design for design requirements.

Fire Alarm and Detection System. Fire Alarm and Detection System is required. Refer to Electrical Design for design requirements.

6. COMPANY OPS SUPPLY - INTERIOR ELECTRICAL DESIGN

Complete and operational electrical systems including power, communication, (AM #0009) lighting, and fire detection systems shall be provided.

(AM #0009)

(AM #0009)(AM #0009) a. Provide two dedicated computer receptacles in the office. Computer receptacles shall consist of a quadruplex receptacle or two duplex receptacles mounted in a single 2-gang box. (AM #0009) b. A communication duplex outlet (data & voice) shall be provided alongside each computer receptacle. A communication simplex outlet (voice) shall be provided, wall mounted 52 inches AFF, in the mechanical room. Outlets shall be home run back to a patch panel in the company ops facility.

(AM #0009)

(AM #0009)

(AM #0009) c. General duplex receptacles, computer receptacles, communication outlets, and faceplates shall be white. All outlets shall be mounted 18-inch AFF unless otherwise indicated.

(AM #0009) (AM #0009) d. Provide occupancy sensors for interior lighting system.

(AM #0009) e. Provide photocell for exterior luminaries.

(AM #0009)

K10 DAYROOM
AMENDMENT NO. 0006 and 0009

(AM #0005) This is a relocatable facility. See drawings for functional layout and requirements in addition to those listed here.

1. ARCHITECTURAL – SEE SECTION 01010.

2. STRUCTURAL – SEE SECTION 01010.

3. SPECIFIC PLUMBING DESIGN REQUIREMENTS – DAYROOM RELOCATABLE

There are no specific plumbing requirements for this facility other than the General Plumbing Design Requirements.

4. SPECIFIC HEATING, VENTILATING, AND AIR CONDITIONING REQUIREMENTS – DAYROOM RELOCATABLE

Facility is to be heated and cooled.

Provide a vent hood over the **(AM#6**) counter.

(AM#6) **Provide built-in microwave**.

5. SPECIFIC FIRE PROTECTION REQUIREMENTS – Dayroom

Automatic sprinkler system is not required for Dayroom Facility.

Fire Hydrants. Refer to Civil Design for design requirements.

Fire Extinguishers. Provide 5 lb. ABC type fire extinguishers in accordance with NFPA 10. See Architectural Design for design requirements.

Fire Alarm and Detection System. Fire Alarm and Detection System is required. Refer to Electrical Design for design requirements.

Wet Chemical Extinguishing System. Provide a wet chemical extinguishing system in kitchen exhaust hood per the requirements of NFPA 17A.

6. DAYROOMS - INTERIOR ELECTRICAL DESIGN

(AM #0009) DELETED
(AM #0009) DELETED

(AM #0009) DELETED
(AM #0009)

(AM #0009) DELETED (AM #0009) DELETED
(AM #0009) DELETED

(AM #0009) DELETED

(AM #0009) DELETED

(AM #0009) DELETED

(AM #0009) DELETED
(AM #0009) DELETED
(AM #0009) 1. Complete and operational electrical systems including power, communication, cable television (CATV), lighting, fire detection and mass notification systems shall be provided.

(AM #0009) 2. Provide general-purpose receptacles for interior and exterior. Ground Fault Circuit Interrupter (GFCI) receptacles shall be provided per NEC.

(AM #0009) 3. Provide a minimum of two communication simplex outlets (voice).

(AM #0009) 4. CATV outlets with type F connectors shall be provided. A 120 volt, 20-ampere duplex receptacle shall be provided adjacent to each CATV outlet. This receptacle shall be in addition to the general-purpose receptacles required.

(AM #0009) 5. Electrical outlet devices, communication outlets, CATV outlets, and all faceplates shall be white. All outlets shall be mounted 18-inch AFF unless otherwise indicated.

(AM #0009) 6. Provide 1-inch minimum electrical metallic tubing (EMT) conduit system for communication and CATV systems.

(AM #0009) 7. Provide occupancy sensors for interior lighting system.

(AM #0009) 8. Provide photocell for exterior luminaries.

(AM #0009) 9. Provide type 66 protector blocks on exterior wall inside a lockable NEMA Type 4 cabinet. All interior copper cabling shall be home run to and terminated on these blocks. Cabinet shall be grounded to the building’s primary grounding system.

(AM #0009) 10. Provide a NEMA Type 4 cabinet (36” high by 36” wide by 12” deep minimum dimensions) mounted adjacent to telephone cabinet for CATV. All interior CATV cabling shall be home run to this cabinet. Cabinet shall be grounded to the building’s primary grounding system.

K12 STORAGE BUILDING
AMENDMENT NO. 0005 and 0009

(AM #0005) This is a permanent facility. See drawings for functional layout and requirements in addition to those listed here.

1. ARCHITECTURAL

Minimum access drive width shall be 25 feet. Minimum turning radius shall be 15 feet except where fire truck access is required. The minimum turning radius for a fire truck shall be 55 feet.

2. STRUCTURAL – SEE SECTION 01010.

3. SPECIFIC PLUMBING DESIGN REQUIREMENTS - STORAGE FACILITY

There are no specific plumbing requirements for this building other than the General Plumbing Design Requirements.

4. SPECIFIC HEATING AND VENTILATING REQUIREMENTS - STORAGE FACILITY

Provide heating with low intensity gas infrared heaters.

Heat building to 40 degrees F. for freeze protection. Include capacity allowance for fresh air quantities in accordance with ASHRAE 62-2001 Ventilation Standards.

Provide exhaust fans. Indoor summer design temperature shall be 10 degrees F above the outdoor design temperature.

5. SPECIFIC FIRE PROTECTION REQUIREMENTS – Storage Facility

Automatic sprinkler protection shall be provided for Storage Facility as follows:

Supply/Storage Facility. Provide sprinkler protection per the requirements of UFC 3-600-01. Per UFC 3-600-01, 6-10.1 storage facilities must have complete automatic sprinkler protection. Sprinkler protection must be based on Class IV commodities as defined by NFPA 13. Refer to Fire Protection Design for additional design requirements.

Fire Hydrants. Refer to Civil Design for design requirements.

Fire Extinguishers and Cabinets. Fire Extinguishers are required. Refer to Architectural Design for design requirements.

Fire Alarm and Detection System. Fire Alarm and Detection System is required. Refer to Electrical Design for design requirements.

6. STORAGE INTERIOR ELECTRICAL DESIGN

A minimum of one general-purpose 120 volt, 20-ampere duplex receptacle outlet shall be provided on each wall. **(AM #0009) Deleted sentences.**

Interior lighting system shall be low bay pulse-start metal halide or linear T5 or T8 fluorescent luminaires designed specifically for bay or warehouse applications.

(AM #0009) Deleted sentence.

(AM #0009) Deleted sentence.

Photocell controlled wall mounted lighting shall be provided at **(AM #0009) all** ___ entrances_____.

A complete fire alarm system consisting of pull stations, detectors, flow and tamper switches, control panel and fire alarm transmitter shall be provided.

(AM #0009) Provide a 4’ x 8’ x ¾” plywood backboard for mounting of protector blocks.

K14 UNIT STORAGE BUILDING
AMENDMENT NO. 0005, 0006 and 0009

(AM #0005) This is a relocatable facility. See drawing (AM#6) sheet A103 for functional layout and requirements in addition to those listed here.

1. ARCHITECTURAL UNIT STORAGE FACILITY

(AM#6)

Facility costs include, but are not limited to the structure, furniture, equipment, appliances, transport, placement and anchorage, ramps/stairs/porches and utility hookup. Infrastructure and site development costs are separate.

Minimum access drive width shall be 25 feet. Minimum turning radius shall be 15 feet except where fire truck access is required. The minimum turning radius for a fire truck shall be 55 feet.

GENERAL: These requirements are the minimum. Areas indicated are net square feet, and may be exceeded. See Architectural design requirements for information regarding individual facility cost limits, room size variations and allowable solutions.

2. STRUCTURAL – SEE SECTION 01010.

3. SPECIFIC PLUMBING DESIGN REQUIREMENTS - UNIT STORAGE RELOCATABLE

There are no specific plumbing requirements for this facility other than the General Plumbing Design Requirements.

4. SPECIFIC HEATING AND VENTILATING REQUIREMENTS - UNIT STORAGE RELOCATABLE

Provide heating with low intensity gas infrared heaters.

Air condition any offices.

Heat building to 40 degrees F. for freeze protection. Include capacity allowance for fresh air quantities in accordance with ASHRAE 62-2001 Ventilation Standards.

Provide exhaust fans. Indoor summer design temperature shall be 10 degrees F above the outdoor design temperature.

5. SPECIFIC FIRE PROTECTION REQUIREMENTS – Unit Storage Facility

Automatic sprinkler protection shall be provided for Unit Storage Facility as follows:

Unit Storage Facility. Provide sprinkler protection per the requirements of UFC 3-600-01. Per UFC 3-600-01, 6-10.1 storage facilities must have complete automatic sprinkler protection. Sprinkler protection must be based on Class IV commodities as defined by NFPA 13. Refer to Fire Protection Design for additional requirements.

Fire Hydrants. Refer to Civil Design for design requirements.

Fire Extinguishers and Cabinets. Fire Extinguishers are required. Refer to Architectural Design for design requirements.

Fire Alarm and Detection System. Fire Alarm and Detection System is required. Refer to Electrical Design for design requirements.

6. UNIT STORAGE INTERIOR ELECTRICAL DESIGN

A minimum of one general-purpose 120 volt, 20-ampere duplex receptacle outlet shall be provided on each wall. It is preferred to have receptacles centered on wall and accessible without having to go into a storage cage when cages are provided.

Interior lighting system shall be low bay pulse-start metal halide or linear T5 or T8 fluorescent luminaires designed specifically for bay or warehouse applications.

The communication system shall consist of a minimum of two simplex jack outlets (voice only) (AM #0009) except unit storage in the 17000 block shall have two duplex outlets (voice and data) in lieu of simplex jacks and shall have a single 19” rack in the communications room.

(AM #0009) Provide a 4’ x 8’ x ¾” plywood backboard for mounting of protector blocks except in the 17000 block where requirements for a building with a LAN shall be met.

Photocell controlled wall mounted lighting shall be provided at the entrances to all unit storage buildings

A complete fire alarm system consisting of pull stations, detectors, flow and tamper switches, control panel and fire alarm transmitter shall be provided.

K15 VEHICLE MAINTENANCE
AMENDMENT NO. 0005 and 0009

(AM #0005) This is a relocatable facility. See drawings for functional layout and requirements in addition to those listed here.

1. **ARCHITECTURAL VEHICLE MAINTENANCE FACILITIES**

Provide X ea @ 10,500 SF ea. 70-foot wide clearspan structure with no interior columns on 10" thick concrete slab that extends 5 feet beyond exterior wall face on all sides. Personnel door and manual vehicle door 20 feet wide by 12 feet high at each end. Minimum 12'-0" vertical clearance.

Shop Floor (9,200 SF) Seal concrete floor and provide negative pressure exhaust hoses for engine runs.
Tool Room (400 SF) Exterior entry, convenient to vehicle maintenance facilities. Separated from other spaces by wire mesh partitions.
General Item Repair (400 SF) 5 EA prewired workbenches. Separated from other spaces by wire mesh partitions.
Compact Item Repair (400 SF) 5 EA prewired workbenches. Separated from other spaces by wire mesh partitions.
Parts Storage (200 SF) Separated from other spaces by wire mesh partitions.

The Vehicle Maintenance facilities will be built from pre-manufactured components, furnished, and relocatable to meet these functional requirements. These facilities will be clear span sprung structures built from standard components. Creative solutions that minimize delivery time are encouraged. Facility costs include, but are not limited to the structures, components, furniture, equipment, appliances, transport, placement, anchorage, and utility hookup. Infrastructure and site development costs are separate.

Minimum turning radius onto hardstand from the tank trail shall be 30 feet. Minimum tank trail extension width shall be 30 feet. Minimum access drive width from the tank trail onto the hardstand shall be 28 feet. Minimum POV access drive width shall be 25 feet. Minimum POV turning radius shall be 25 feet from 15th Street to the POV access drive.

GENERAL: These requirements are the minimum. Areas indicated are net square feet, and may be exceeded. See Architectural design requirements for information regarding individual facility cost limits, room size variations and allowable solutions.

2. STRUCTURAL – SEE SECTION 01010.

3. SPECIFIC PLUMBING DESIGN REQUIREMENTS - VEHICLE MAINT FACILITY RELOCATABLE

Interior hose bibb connections shall be provided, one on each end of the shelter. Connection shall be freeze proof with integral vacuum

breaker/backflow preventer. Hydrants shall be 3/4 inch hose connections. The piping of the wall hydrants shall be drainable.

Emergency Eyewash/Showers shall be provided at the Vehicle Maintenance Shelter and shall comply with ANSI Z358.1. Waste is to discharge directly to facility floor.

The Vehicle Maintenance Shelter shall be equipped with a compressed air distribution system with the minimum number of compressors indicated below supplied to drops with quick disconnect fittings at appropriate locations in the shelter. Compressed air outlets shall each provide 4 cfm and be spaced every 20 feet along walls of each maintenance shelter. Provide hose reels at each compressed air drop. Mounting brackets shall be provided, for the air drops and the hose reels, to tie them to the nearest column, if the drops do not coincide with the columns. Hose length shall be coordinated with user requirements. A bracket for holding the hose end shall be provided at each hose reel location. Hose reels shall be auto reeling, wall-mounted, completely off the floor, to allow cleaning of particles and dust from the floor beneath the reel. Compressed air shall be supplied at a maximum of 120 psi, minimum of 90 psi at the connections. A minimum of two 50 percent capacity air compressors and two 50 percent capacity air dryers shall be provided. Compressors shall start and stop automatically at upper and lower pressure limits of the system. Air receivers shall be painted carbon steel, ASME pressure vessels, rated for the maximum pressure encountered. All compressed air piping shall be approved copper or Schedule 40 steel. Compressed air quick-disconnect connections shall be 1/4 inch.

A used oil tank, a used antifreeze tank and an off spec(used) fuel tank each of 500 gallon capacity shall be provided at each Vehicle Maintenance Facility. Tanks shall be above ground concrete encased storage tanks, factory fabricated, factory cast, factory tested, and be provided with secondary containment. The entire concrete encased tank assembly shall be UL listed in accordance with UL Subject 2085 Outline of Investigation for Insulated Above Ground Tanks for Flammable and Combustible Liquids. The tank and its location will comply with NFPA 30 Flammable and Combustible Liquids Code.

4. SPECIFIC HEATING AND VENTILATING REQUIREMENTS - VEHICLE MAINT. FACILITY RELOCATABLE

Provide heating with low intensity gas infrared heaters.

Heat building to 55 degrees F. Include capacity allowance for fresh air quantities in accordance with ASHRAE 62-2001 Ventilation Standards.

Provide exhaust fans. Indoor summer design temperature shall be 10 degrees F above the outdoor design temperature.

The Vehicle Maintenance Facility shall be provided with a fan driven hose vehicle exhaust system, which shall attach to exhaust pipe of vehicles to collect their exhaust. The system shall exhaust upward, so as not to injure personnel or damage other buildings or equipment. It shall also exhaust to the outside of the building. The exhaust system should be able to handle the high temperature exhaust from the Abrams

Tank, the Bradley Fighting Vehicle, and the Paladin Self Propelled Artillery Vehicle. Flexible exhaust hose shall be 0.012 inch minimum strip thickness of stainless steel. The flexible tubing shall be connected to the ductwork with a flanged connection. The flanged connection shall consist of steel flanges not less than 0.078 inches thick. The exhaust hose system shall be retractable when not in use; allowing it to be extended to the operating position, when required. The system shall be furnished complete with operating mechanism and all parts necessary for the systems retractability. Four hoses shall be provided at each vehicle maintenance shelter and their locations shall be coordinated with the base.

5. SPECIFIC FIRE PROTECTION REQUIREMENTS – Vehicle Maintenance Facility

Sprinkler System. Automatic sprinkler protection shall be provided for Vehicle Maintenance Facility. See fire Protection Design for design requirements.

Fire Hydrants. Refer to Civil Design for design requirements.

Fire Extinguishers and Cabinets. Fire Extinguishers are required. Refer to Architectural Design for design requirements.

Fire Alarm and Detection System. Fire Alarm and Detection System is required. Refer to Electrical Design for design requirements.

6. VEHICLE MAINTENANCE SHOP INTERIOR ELECTRICAL DESIGN

The design and construction of the vehicle maintenance shops shall comply with the NFPA 70, Article 511: Commercial Garages, Repair and Storage.

Provide a minimum of one quadraplex receptacle along the interior perimeter on either side of each bay and three additional ones shall be placed and evenly spaced along both walls not containing bays. If bay doors are only provided on one side of the shop then quad receptacles shall be placed and evenly spaced along opposite wall with a maximum distance of 20 feet between receptacles. Receptacle outlets in bays shall be mounted 48 inches AFF unless otherwise required by code or criteria.

A completely operational communication system including, but not limited to, one telephone **(AM #0009)** **4’ x 8’ x ¾” plywood** backboard and all necessary raceway, cabling, outlet boxes, terminations, jacks, and stainless steel faceplates shall be provided. No local area network required. All communication outlets shall be simplex jack outlets (voice only). All communications will be terminated on wall mounted telephone backboard.

A Mass Notification System shall be provided.

A fire alarm system consisting of pull stations, **(AM #0009)**____ detectors, **flow and tamper switches,** control panel and fire alarm transmitter shall be provided

Interior lighting system shall be low bay pulse-start metal halide or linear T5 or T8 fluorescent luminaires designed specifically for bay applications.

Photocell controlled wall mounted metal halide or compact fluorescent lighting shall be provided at building entrances.

K16 VAN DOCK
AMENDMENT NO. 0005, 0**006 and 0009**

This is a permanent facility. See drawings for functional layout and requirements in addition to those listed here.

1. ARCHITECTURAL

See drawings for functional layout and requirements.

2. STRUCTURAL – SEE SECTION 01010.

3. SPECIFIC PLUMBING DESIGN REQUIREMENTS

Provide freeze proof emergency eyewashes and showers near both ends of the dock and a freeze proof cold water sink in the middle of the dock.

4. SPECIFIC HEATING AND VENTILATING REQUIREMENTS

The Van Dock is not heated, cooled, or ventilated.

5. SPECIFIC FIRE PROTECTION REQUIREMENTS

6. SPECIFIC ELECTRICAL DESIGN REQUIREMENTS

(AM #0006) All conduit shall be rigid steel.

Electrical distribution shall be 120/208 volt, three phase, four wire and shall be sized for a load of 500 KVA.

Provide Transient Voltage Surge Suppression (TVSS) at the service entrance

Panelboards shall be weatherproof and lockable and mounted on galvanized steel rack adjacent to stairs.

Provide one 20A, 120V, ground fault, receptacle, suitable for a wet location, in each bay. Provide one 20A, 120V, ground fault, receptacle, suitable for a wet location, in the middle of the dock for a future vending machine. This vending machine receptacle shall be on a dedicated circuit.

Provide one 100A, 120/208 volt, 3-phase, 4-wire, disconnect switch in a Nema 4 enclosure at each bay. Provide a 100A, 4-wire, dedicated circuit to each disconnect switch.

Provide one weatherproof duplex communication outlet at each bay. Run two 4-pair, Category 6, #24 AWG solid unshielded twisted pair copper cables in 1" conduit from each jack to a patch panel in the Van Dock Commo Building.

Provide compact fluorescent or T5 or T8 fluorescent weatherproof luminaires over the raised dock. Average maintained illumination level shall be 20 footcandles. Provide a weatherproof, three-way switch at each end of dock for lights.

K21 MASTER FURNITURE LIST
AMENDMENT NO. 0009

Furniture List: See specification section 12400, standard type A or C1 for quality

K1-Admin Module
Office typical (3 offices):
(1) Single Pedestal Desk (60″ x 24″)
(1) Return with Pedestal (60″ x 24″)
(1) Mid-Back Task Chair

Open office workstation typical (10 stations):
(2) Worksurface (60″ x 24″)
(1) Worksurface corner (36″ x 36″)
(1) Pedestal-BBF
(1) Pedestal-FF
(7) Panels (65″ high)
(1) Mid-Back Task Chair
(1) Storage, Accessories and Supports

K2-Arms Storage
N/A

K3a-Barracks Module:
Bedroom Typical:
(1) Bed-3/3 single, stackable; w/ mattress
(1) 2-Drawer Night Stand (deep bottom drawer)
(1) Chest-5 drawer
(1) Desk w/ book hutch
(1) 2-Position, sled-base, Desk chair
(1) Metal TV Stand
(1) Table Lamp

Kitchen Typical:
(1) Microwave
(1) Refrigerator

K3b-ADA Medical Hold Barracks Module:
Bedroom Typical:
(1) Bed-3/3 single, stackable; w/ mattress
(1) 2-Drawer Night Stand (deep bottom drawer)
(1) Chest-3 drawer
(1) side chair
(1) Metal TV Stand
(1) Table Lamp

K4-Battalion Headquarters

Module A
Commanding Officer:
(1) Double Pedestal Desk (84″ x 30″)
(1) Credenza with Lateral Files (84″ x 24″)
(1) Hutch with Hinged Doors

(1) High-Back tack Chair
(2) Guest Chairs
(1) TV Cabinet

Executive Officer, Command Sgt. Major, S-1 Officer typical:
(1) Single Pedestal Desk (72″ x 24″)
(1) Bridge (48″ x 24″)
(1) Credenza with Pedestal (72″ x 24″)
(1) Mid-Back Tack Chair
(2) Guest Chairs

Duty Officer:
(1) Single Pedestal Desk (60″ x 24″)
(1) Return with Pedestal (60″ x 24″)
(1) Storage - File
(1) Mid-Back Task Chair

Clerical typical (8 stations):
(2) Worksurface (60″ x 24″)
(1) Pedestal-BBF
(1) Pedestal-FF
(1) Storage, Accessories and Supports
(4) Panels (65″ high)
(1) Mid-Back Task Chair

Conference Room Typical:
(14) Conference Chair
(1) Conference Table
(1) Credenza

Message Center/Mail Sort:
(1) Single Pedestal Desk (60″ x 24″)
(1) Mid-Back Task Chair

Module B
Classroom Typical (2 classrooms):
(36) Sled Base/Stackable Chair

Module C
Office Typical (6 offices):
(1) Single Pedestal Desk (60″ x 24″)
(1) Return with Pedestal (60″ x 24″)
(1) Mid-Back Task Chair

Clerical Workstations Typical (12 stations):
(2) Worksurface (60″ x 24″)
(1) Pedestal-BBF
(1) Pedestal-FF
(1) Storage, Accessories and Supports
(4) Panels (65″ high)
(1) Mid-Back Task Chair

Document Vault:
(1) Vault

Module D
Office Typical (2 offices):

(1) Single Pedestal Desk (60″ x 24″)
(1) Return with Pedestal (60″ x 24″)
(1) Mid-Back Task Chair

Classroom Typical (1 classroom):
(36) Sled Base/Stackable Chair

K5-Brigade Headquarters
N/A

K6-Classroom
Classroom Typical (2 classrooms):
(72) Sled Base/Stackable Chair

K7-Company Operations
Commanding Officer:
(1) Double Pedestal Desk (84″ x 30″)
(1) Credenza with Lateral Files (84″ x 24″)
(1) Hutch with Hinged Doors
(1) High-Back tack Chair
(2) Guest Chairs
(1) TV Cabinet

Private office typical (7 offices):
(1) Single Pedestal Desk (72″ x 24″)
(1) Bridge (48″ x 24″)
(1) Credenza with Pedestal (72″ x 24″)
(1) Mid-Back Tack Chair
(2) Guest Chairs

Training Office typical:
(1) Single Pedestal Desk (60″ x 24″)
(1) Return with Pedestal (60″ x 24″)
(1) Storage-File
(1) Mid-Back Task Chair
(1) Guest Chair

Office typical (2 offices):
(1) Single Pedestal Desk (60″ x 24″)
(1) Return with Pedestal (60″ x 24″)
(1) Mid-Back Task Chair

Conference Room Typical:
(14) Conference Chair
(1) Conference Table
(1) Credenza

K8-Company Operations Supply Building:
Office typical:
(1) Single Pedestal Desk (60″ x 24″)
(1) Return with Pedestal (60″ x 24″)
(1) Storage-File
(1) Mid-Back Task Chair
(1) Guest Chair

K9-Covered Storage
N/A

K10-Dayroom
Per request:
1 refrigerator
1 microwave

K11-Laundry (See drawings**)**

K12-Storage Building
(1) Single Pedestal Desk (60″ x 24″)
(1) Mid-Back Task Chair

K13-TVM
N/A

K14-Unit Storage Building
Office typical:
(1) Single Pedestal Desk (60″ x 24″)
(1) Return with Pedestal (60″ x 24″)
(1) Storage-File
(1) Mid-Back Task Chair
(1) Guest Chair

K15-Vehicle Maintenance
(1) Single Pedestal Desk (60″ x 24″)
(1) Mid-Back Task Chair

K16-Van Dock
N/A

K17-Van Dock Commo Building
N/A

K18-Commo Node Building
N/A

K19-Mail Kiosk
N/A

K20-Guard House
(1) Desk (60″ x 24″)
(1) Mid-Back Task Chair
(1) Guest Chair