

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE	PAGE 1 OF PAGES 2
2. AMENDMENT/MODIFICATION NO. 0001	3. EFFECTIVE DATE 7/18/03	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)	
6. ISSUED BY U.S. Army Corps of Engineers Honolulu Engineer District Construction/A-E Contract Branch Building 200 Fort Shafter, Hawaii 96858-5440	CODE	7. ADMINISTERED BY (If other than Item 6) U.S. Army Corps of Engineers Honolulu Engineer District Schofield Resident Office Building 230 Fort Shafter, Hawaii 96858-5440	CODE	
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)			(<input checked="" type="checkbox"/>) 9A. AMENDMENT OF SOLICITATION NO. DACA83-03-R-0013	
			(<input type="checkbox"/>) 9B. DATED (SEE ITEM 11) 7/3/03	
			10A. MODIFICATION OF CONTRACTS/ORDER NO.	
			10B. DATED (SEE ITEM 13)	
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 you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

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

(<input checked="" type="checkbox"/>) 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.)
FY03 MCA/BUP PN 52068/69, Whole Barracks Renewal Brigade Complex, Phase 3A, Quad C, Schofield Barracks, Oahu, Hawaii

(See page 2 of 2 pages)

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	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
_____ (Signature of person authorized to sign)		BY _____ (Signature of Contracting Officer)	

AM-0001
 RFP No. DACA83-03-R-0013
 Item 14 (Continued)

Standard Form 30
 Page 2 of 2 Pages

1. CHANGES TO SPECIFICATIONS. Attached hereto are new and revised pages and sections to the solicitation. The revision mark "(Am-0001)" is shown on each new and revised page.

A. REVISIONS. The following are revised paragraphs to the specifications. Changes are indicated in bold. The following are new, revised, and deleted paragraphs to the specification.

Main Table of Contents
 Section 01010, Chapter 5 Architectural Design, paragraphs 5-1.2.5 and 5-5.2.5

B. ADDITIONS. The following pages are added to the specification:

Section 01012 pages 1-24

Attachment Table of Contents page 2
 Attachment 28

C. DELETED PAGES. The following pages are deleted from the specifications:

Section 00100 - 52.236-27 "Site Visit"
 Section 01012 pages 1-24

2. CHANGES TO DRAWINGS. The following drawings are hereby added to the solicitation:

WHOLE BARRACKS RENEWAL BRIGADE COMPLEX
 QUAD C (RFP INFORMATION DRAWINGS)

<u>Ring No</u>	<u>Sht No.</u>	<u>Title</u>
1	TX-1	COVER SHEET, INDEX TO DRAWINGS, LOCATION MAP
2	TP-1	TOPOGRAPHIC SURVEY
3	AB-1	BUILDING 355 - FIRST FLOOR PLAN
4	AB-2	BUILDING 355 - SECOND FLOOR PLAN
5	AB-3	BUILDING 355 - THIRD FLOOR PLAN
6	AB-4	BUILDING 356 - FIRST FLOOR PLAN
7	AB-5	BUILDING 356 - SECOND FLOOR PLAN
8	AB-6	BUILDING 356 - THIRD FLOOR PLAN
9	AB-7	BUILDING 357 - FIRST FLOOR PLAN
10	AB-8	BUILDING 357 - SECOND FLOOR PLAN
11	AB-9	BUILDING 357 - THIRD FLOOR PLAN
12	AB-10	BUILDING 358 - FIRST FLOOR PLAN
13	AB-11	BUILDING 358 - THIRD FLOOR PLAN
14	AB-12	BUILDING 358 - THIRD FLOOR PLAN

3. The proposal due date of August 4, 2003, is hereby extended to August 11, 2003, 2:00 p.m., Hawaiian Standard Time (HST).

REQUEST FOR PROPOSALS NO. DACA83-03-R-0013

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Request for Proposals No. Design Build FY03 MCA/BUP PN 52068/69, Whole Barracks Renewal Brigade Complex Ph 3A, Quad C, Schofield Barracks, Oahu, Hawaii

<u>SECTION</u>	<u>TITLE</u>
00010	Main Table of Contents, SF 1442 and Bidding Schedule
00100	Instructions, Conditions, and Notices to Bidders
00120	Evaluation Factors for Award and Proposal Submission Requirements
00600	Representations & Certifications
00700	Contract Clauses
00800	Special Contract Requirements
Division 1 - General Requirements	
Divisions 2-16 - Technical Requirements	

Instruction to Offerors

1. This procurement is unrestricted.
2. The Contractor is required to COMPLETE AND RETURN a hard copy of the following sections of this solicitation: SECTION 00010 (ALL) and SECTION 00600 (ALL) and all Appendices. Contractors shall also follow instructions in Section 00120, "Evaluation Factors for Award and Proposal Submission Requirements.
3. See Section 00700, DFARS clause 52.204-7004, Required Central Contractor Registration (CCR) regarding registration in the CCR database. Lack of registration in the CCR database will make an offeror ineligible for award.
4. See Section 00100, Provision 52.236-27, Site Visit (Construction) Alternate I for information regarding the site visit and Provision S-36.4, Pre-Proposal Conference for information regarding the pre-proposal conference.

~~NOTE: FUNDS ARE NOT PRESENTLY AVAILABLE FOR THIS ACQUISITION. NO CONTRACT AWARD WILL BE MADE UNTIL APPROPRIATED FUNDS ARE MADE AVAILABLE TO THE CONTRACTING OFFICER FOR THE ACQUISITION.-(DELETED)~~

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SECTION 00100

52.204-6	DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUN 1999)
52.211-2	AVAILABILITY OF SPECIFICATIONS LISTED IN THE DOD INDEX OF SPECIFICATIONS AND STANDARDS (DODISS) AND DESCRIPTIONS LISTED IN THE ACQUISITION MANAGEMENT SYSTEMS & DATA REQUIREMENTS CONTROL LIST, DOD 5010.12-L (DEC 1999)
52.211-14	NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE (SEP 1990)
52.215-1	INSTRUCTIONS TO OFFERORS - COMPETITIVE ACQUISITION (MAY 2001)
52.215-16	FACILITIES CAPITAL COST OF MONEY (OCT 1997)
52.216-1	TYPE OF CONTRACT (APR 1984)
52.217-5	EVALUATION OF OPTIONS (JUL 1990)
52.219-24	SMALL DISADVANTAGED BUSINESS PARTICIPATION PROGRAM - TARGETS (OCT 2000)
52.222-23	NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)
52.225-12	NOTICE OF BUY AMERICAN ACT REQUIREMENT - CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS ACT (MAY 2002)
52.233-2	SERVICE OF PROTEST (AUG 1996)
52.236-27 I	SITE VISIT (CONSTRUCTION) (FEB 1995) -- ALTERNATE I (FEB 1995)
52.236-27	SITE VISIT (CONSTRUCTION) (FEB 1995) (DELETED)
52.236-28	PREPARATION OF PROPOSALS - CONSTRUCTION (OCT 1997)
S-36.4	PRE-PROPOSAL CONFERENCE (JUL 1995)
S-36.33	NOTIFICATION TO OFFERORS - ACCESS TO ARMY INSTALLATIONS (APR 2001)
S-36.2	MAGNITUDE OF THE PROPOSED PROJECT
S-28-3	PENAL SUM AND FORM OF OFFER GUARANTEE
S-2	ASBESTOS ABATEMENT (AUG 1996)
S-19.3	SMALL DISADVANTAGED BUSINESS GOALS FOR SUBCONTRACTING PLANS
S-19.1	APPROVAL OF SUBCONTRACTING PLAN
	APPENDIX A - SAMPLE SMALL BUSINESS SUBCONTRACTING PLAN

CHAPTER 5

ARCHITECTURAL DESIGN

5-1 DESIGN GOALS. Overall architectural goals for the Whole Barracks Renewal Brigade Complex QUAD C are to provide a functional, visually appealing campus of facilities that is a source of pride for residents, other facility users, and the installation. This chapter applies to all buildings under this RFP unless specifically noted otherwise.

5-1.1.1 The architectural floor plan is established and approved as shown in the RFP Concept Design Drawings. All architectural criteria must be met and accounted for, see paragraph 5-2 Applicable Codes and Standards. Any changes shall be brought to the attention of the Contracting Officer for resolution in writing.

5-1.1.2 Furnishings, Fixtures and Equipment (FF&E): FF&E is part of this project. Fixtures and Equipment (lighting, plumbing, mechanical equipment, etc.) described for programmed spaces shall be provided by the offeror as part of the base bid. Interior Furnishings (tables, chairs, sofa, bed, etc.) will be Government furnished and installed. Refer to SOW Chapter 2, para. 2-1.7 for scope of Furnishings, Fixtures, and Equipment that will be required to be provided by the offeror. Any furniture layout depicted in the RFP concept design drawings will be adhered to and not deviated from without approval of the customer. The number and location of furnishings serve as an indicator of the number of power, data and communications connection points. See electrical section for more detail.

5-1.2 Existing Quad Building Background and New Space Planning Intent

The existing Quad consists of four buildings-three stories each - constructed in 1917. The buildings were originally open sleeping and living spaces and until recently, a mixture of office and living spaces.

5-1.2.1 Building 355: ground floor will be used for heavy equipment storage for four medium and one large Company Operations Facilities (COFs). The second floor is designated for the Administration Offices for three medium COFs. The third floor is designated for the Administration Offices for one medium COF and one large COF. Also, the third floor will contain the existing refinished Gymnasium. The total area of Building 355 is approximately 6,160 SM.

5-1.2.2 Buildings 356 and 358: is reserved exclusively for Unaccompanied Enlisted Personnel Housing (UEPH), Laundry Room, and Game Room. It will have 50 sleeping rooms per floor for a total of 150 rooms per building. The total area of Building 356 & 358 is approximately 6,820 SM per building.

5-1.2.3 Building 357: ground floor will be designated as the Dining Facility; the space includes: Kitchen, sit down dining area, and dining support spaces. The second floor will have Soldier Support Services, Soldier Community Functions, Troop Aid Station, COF Restroom facilities, Dining area, and Classrooms. The third floor will contain the Battalion HQ functional spaces and Battalion Restroom facilities. Building 357 is approximately 6,966 SM.

5-1.2.4 The selected offeror will be required to demolish all of the existing interior partitions as well as the complete flooring system in the toilet and shower areas. Also, the selected offeror will be required to determine the location of existing partitions with respect to the proposed Concept Design Drawings, in order to remove as required. This may include concrete masonry walls that are not structural. The roof structure and roofing will also have to be removed for Buildings 356, 357, and 358. All buildings will require the removal of existing windows and doors and provide a larger opening to install new fenestrations (door & windows) as designed to meet the approval of State Historic Preservation Office (SHPO). Adjacent wall finishes, both interior and exterior shall match the existing surfaces before the new windows are installed. Additionally, all existing plumbing, mechanical and electrical items need to be removed as indicated. **For existing as-built drawings refer to Attachment No. 28 for Quad C RFP Information Drawings: contents include topographic survey and Building 355/356/357/358 floor plans.**

5-1.2.5 The Quad C building renovation design intent is to follow the Department of the Army Facilities Standardization Program for a Standard Company Operations Facility, Battalion Headquarters, and Dining Facilities.

5-1.3 **Exterior Design Objectives.** Design buildings to enhance the visual environment of the installation. Exterior materials, roof forms, and detailing shall comply with the Installation Design Guide and concept design drawing, and shall be compatible with the immediate local context. Use durable, low-maintenance materials.

5-1.4 **Interior Design Objectives.** Arrange spaces in an efficient, functional manner. Provide simple circulation schemes that allow easy way finding within buildings. Use durable materials and furnishings that can be easily maintained and replaced. Maximize use of day lighting and operable windows. Use interior surfaces that are easy to clean and light in color; avoid trendy or bright color schemes. Provide telephone/data jacks on multiple walls to allow optional locations for furniture. Structure interior spaces to allow maximum flexibility for future modifications; companies and battalions often change size or mission, requiring reconfiguration of facilities. Refer to SOW Chapter 14-Comprehensive Interior Design for detailed information and CID Package requirements.

5-1.5 **Material and Product Selection Criteria.** Materials shall meet the requirements of the SOW. The SOW includes a range of specificity: some material requirements are specific (no option); other material requirements allow a range of options. The SOW requirements establish a minimum quality level.

5-2 APPLICABLE CODES AND STANDARDS. Except as specified otherwise in the RFP, design and construction of facilities shall comply with the latest editions (as of the date of the RFP) of the following. Major criteria and references for building design are as listed but not limited to this list. Additional requirements are included throughout the RFP.

5-2.1 National Fire Codes, published by the National Fire Protection Association (NFPA), including NFPA 101 Life Safety Code.

5-2.2 International Building Code (IBC), 2000

5-2.3 Americans With Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG), 1998.

5-2.4 Unified Facilities Criteria (UFC) 4-010-01 Department of Defense Minimum Antiterrorism Standards for Buildings July 31, 2002.

5-2.5 AR 190-11, Physical Security of Arms, Ammunition, and Explosives, Change 1, Appendix G, para G-2.

5-2.6 American Architectural Manufacturer's Association (AAMA)

5-2.7 Architectural Woodworking Institute, AWI Quality Standards

5-2.8 Builders Hardware Manufacturers Association, ANSI/BHMA

5-2.9 Underwriters Laboratories.

5-2.10 Tile Council of America (TCA) Handbook for Ceramic Tile Installation.

5-2.11 The Schofield Barracks Installation Design Guide (IDG), excerpts of which are included in an

appendix to the Statement of Work.

- 5-2.12 UFC 3-600-01 Design: Fire Protection Engineering for Facilities (17 April 2003)
- 5-2.13 TI 800-01, Design Criteria, 20 July 1998
- 5-2.14 UFC 1-200-01, Design: General Building Requirements, July 31, 2002
- 5-2.15 Department of the Army Facilities Standardization Program, Standard Company Operations Facility, Dated February 1994.
- 5-2.16 Department of the Army Facilities Standardization Program, Standard Design for Brigade and Battalion Headquarters Facility, Dated August 1995.

5-3 IBC OCCUPANCY AND BUILDING TYPE CLASSIFICATIONS.

5-3.1 **General.** Occupancy classifications, construction types, allowable areas, maximum building heights, and fire separation requirements shall comply with the requirements of the International Building Code. Prior to issuance of the RFP, the design district shall coordinate with the authority having jurisdiction to determine occupancy classifications. Consult with the users to determine the hazard classification of items to be stored in the supply spaces.

5-3.2 **Construction:** All four building are Type II-A structures. All structural components, floor construction, bearing walls, and the roof shall be constructed of one-hour fire resistive construction.

5-3.3 **Occupancy Classification.** The IBC occupancy classification for the quad is as follows. Buildings 356 and 358 are both a Group R-2 occupancy. Building 355 is a mixed occupancy. The first floor is a Group S-1. The second floor is a Group B and Group S-1. The third floor is a Group A-3 and a Group B. Building 357 is also a mixed occupancy. The first floor is a Group A-2 and Group B. The second floor is a Group B and Group S-1, and the third floor is a Group A-3, Group B, and S-1.

5-3.4 **NFPA Classification.** The NFPA 101 classification for the quad is: Buildings 356 and 358 are both New Apartment Building occupancies. Building 355 is a mixed occupancy. The first floor is a Storage occupancy. The second floor is a New Assembly occupancy, New Business occupancy and a Storage occupancy. The third floor is a New Assembly occupancy, and a New Business occupancy. Building 357 is also a mixed occupancy. The first floor is a New Assembly occupancy, and a New Business occupancy. The second floor is a New Business occupancy and a Storage occupancy, and the third floor is a New Assembly occupancy.

5-3.5 **UEPH Buildings.** Occupancy classification: Residential R-2.

5-3.6 **Company Operations Facilities** Occupancy classification of administrative areas, and locker room facilities serving less than 50 occupants: Business Group B. Common Locker Rooms for 50 or more occupants: Assembly Group A-Division-3. Occupancy classification for supply areas: Storage Group S, Division 1 (or Division 2- verify contents of space with user).

5-3.7 **Battalion Headquarters.** Occupancy classification of administrative areas: Business Group B. Occupancy classification of classroom areas: Assembly Group A-3.

5-4 EXTERIOR DESIGN.

5-4.1 **General** the buildings are considered historical and any exterior construction shall be

sensitive to the original design. See the Historic Narrative for detailed narrative on the historic importance, general design intent and requirements, see SOW 15. The exterior design should closely replicate the original 1917 design. The Concept Design Drawings contrast the original design where the building must conform to NFPA 101, Life Safety Code. Some of the areas include the exterior stairways; rated partitions and doors are added to enclose the stairs. Also, some window and door openings were removed to provide a separation when enclosing the stairs was not practical.

5-4.2 **Acceptable Materials and Colors.** Exterior elements of the facilities shall comply with the attached architectural concept design drawings and the Installation Design Guide (IDG) unless required otherwise by applicable codes or this Statement of Work

5-4.3 **Quad Building Superstructure:** No specific requirement for the type of structural system is imposed other than to meet the applicable regulations, to dimensionally fit within the space allocated for structure and to accommodate the exterior materials shown on the exterior elevations and building sections.

5-4.4 **Detached Building Structures.** Concept design is based on a load-bearing masonry exterior wall with a manufactured steel truss roof structure.

5-4.4.1 Alternative pre-cast concrete beams or trusses, pre-engineered steel structure, or conventional steel rafter / purlin systems.

5-4.5 **Exterior Closure:**

5-4.5.1 **Exterior Finishes.** Emphasis shall be placed on low maintenance and durability for exterior finish materials. Materials shall be residential in size, scale, and texture. Exterior wall materials shall be painted concrete or concrete masonry unit:

5-4.5.2 Termite decay and protection for exterior wood materials (siding, trims, etc.) shall be in accordance with National Wood Window and Door Association (NWWDA) Standards. Each piece of treated material shall bear identification of the testing agency to indicate performance in accordance with NWWDA.

5-4.5.3 Trim elements. Aluminum or vinyl clad wood trim is preferred over painted or stained wood trim. Painted exterior surfaces shall be minimized. When exterior exposed wood trim is used the following requirements apply:

5-4.5.4 Exposed wood, such as window trim, door sills, window sills, railings and balusters, trellis, wood fencing, arbors, solar shading devices including louvers, arbors, and trellis shall be treated for rot resistance in accordance with NWWDA Industry Standards I.S.4, Water Repellent Preservative Treatment for Millwork.

5-4.5.5 Exterior surfaces requiring painting shall receive a minimum of one prime coat and two finish coats of paint. Wood trim frames, etc., shall be back primed. Exterior semi-transparent low sheen stains, two coats, are acceptable, where appropriate for wood, plywood, etc.

5-4.5.6 Existing exterior stair treads and landings shall be provided with non-slip type treads. Existing exterior stairs shall be provided with metal railings.

5-4.6 **Roofs.** Roofing material and color shall comply with the attached architectural concept design drawings. Roofing system shall have Underwriters Laboratory (UL) Class A rating for fire resistance, UL 90 wind resistance rating, and Factory Mutual (FM) 1-90 fire and wind resistance rating.

5-4.6.1 **Quad Building, Chiller Plant Building and Pump House Building Roofs.** Built-up roofs shall have a minimum pitch of 1:24 (1/2-inch: 1 foot.).

5-4.6.1.1 **Built-Up Roofing.** Provide 4-ply, built-up roofing for use over rigid board insulation on metal

decking for Quad Building Roofs. Provide 4-ply, built-up roofing for use over rigid board insulation on concrete slab of metal decking for Chiller Plant and Pump House Building. Provide manufacturers 20-year finish warranty.

5-4.6.2 **Gear Wash/Recreation Building Roofs.** Gear Wash/Recreation Building shall have sloped roof with a minimum pitch of 4:12. Refer to Attachment #25, Quad F Gear Wash/Recreational Building Sketches.

5-4.6.2.1 **Metal Roofing.** Standing seam steel or aluminum roof panels with integral or metal fascias. Provide manufacturers 20-year finish warranty.

5-4.6.3 **Roof water.** Conductor heads, scuppers and downspouts shall be provided for all roof areas. Provide calculation of gutter and downspout size if the existing conductor heads, scuppers and downspout dimensions cannot be determined. Calculations should be in accordance with SMACNA-03, Architectural Sheet Metal Manual. Provide 20-year manufacturers finish warranty. Downspouts draining onto a lower roof shall have metal or plastic splash deflectors. Downspouts shall be connected to the underground storm drainage system. Provide cast iron boot at the bottom of all downspouts.

5-4.6.4 **Rainfall Calculations:** Conductor heads, scuppers and downspouts shall be adequately sized to meet the following Design Rainfall Intensities:

Schofield Barracks: Design Rainfall Intensity (hourly in inches for a 5-minute period to be expected once in 10 years) = 188 mm (7.4 inches).

5-4.6.5 **Roof surface.** Roof surfaces shall be light colored to minimize heat gain. Roof water shall be diverted away from entrances and foundations.

5-4.6.6 **Roof Eave.** Existing Quad Building roof eave shall be removed and restored to its original Historic design and character. Use durable, low-maintenance materials. Refer to Architectural Concept Design Drawings for detail reference.

5-4.6.7 **Sheet Metal Work.** All Sheet metal material shall be copper.

Note: Flashing - Continuous stepped flashing to be installed at wall adjacent to roof slope. Design to facilitate easy maintenance and removal of roofing without removing or damaging the wall sidings. Provide metal drip edge of flashing at roof eaves.

5-4.7 **Trim and Flashing.** Materials shall comply with the RFP concept design drawings. Gutters, downspouts, and fascias shall be copper; comply with SMACNA Architectural Sheet Metal Manual; provide 20-year manufacturers finish warranty.

5-4.8 **Miscellaneous Exterior Elements.** Comply with the attached architectural concept design drawings. It is advisable to prohibit any use of exterior wood with painted finish; require pre-finished metal trim. Coordinate with user to include requirements for any building-mounted operational items such as communications antennae, special lighting, warning beacons, etc.

5-4.9 **Exterior Doors and Frames.**

5-4.9.1 **Doors.** Provide Historic doors as indicated on the concept design drawings. Refer to RFPconcept design drawings for door types and details. Fully glazed doors shall comply with wind load requirements of applicable codes. Telecomm Room doors shall be secured per AR 380-19 Information Systems Security.

5-4.9.4.1 **Hollow Metal Doors and Frames.** comply with ANSI A250.8/SDI 100. Doors shall be Level

3, physical performance Level A, Model 2; insulated; top edge closed flush. Frames shall be Level 3, 14 gauge, with continuously welded corners and seamless face joints. Doors and frames shall be constructed of hot dipped zinc coated steel sheet, complying with ASTM A653, Commercial Steel, Type B, minimum A60 coating weight; factory primed. Anchors and accessories shall be zinc coated. Frames in masonry shall have bituminous back-coating, plaster guards, and shall be grouted solid. Provide concealed wall and head anchors in frame sufficient to support the weight of the grouted frame. Provide minimum four concealed wall anchors at masonry rough openings. Provide minimum one concealed head anchor for frame rough openings greater than three feet. Fire-rated openings shall comply with NFPA 80, and the requirements of the labeling authority.

5-4.9.5 **Exterior Door Finish Hardware.**

5-4.9.5.1 **Hinges.** ANSI/BHMA A156.1; template, full mortise, heavy duty, anti-friction ball bearing, minimum size 114 mm x 114 mm [4 ½" x 4 ½"], stainless steel, non-removable pins.

5-4.9.5.2 **Locksets for Typical Exterior Door.** Provide stand-alone programmable electronic door locksets with audit capabilities. The lockset construction shall be all-metal, heavy-duty, and mortise. The lockset is equipped with hidden mechanical key override, an anti-pick latch and dead bolt, and a magnetic stripe reader. Each magnetic stripe card will be programmed to gain access into its respective module and sleeping/living rooms. Lockset shall be similar to Kaba Ilco, Solitaire 710-II Series or approved equal. The lockset shall include knob and lever torque test and "Ultra" finish with two-year warranty.

5-4.9.5.3 **Locksets for Typical Exterior Utility and Maintenance Doors.** spaces with doors covered by this paragraph include: Mechanical Rooms, Electrical Rooms, Telecommunication Rooms, Communication Rooms, Toilets, Janitor, and Stairwell. ANSI/BHMA A156.13; series 1000, grade 1, mortise lockset with removable core, non-ferrous base metal.

5-4.9.5.4 **Exit (Panic) Devices.** ANSI/BHMA 156.3; heavy-duty touch-pad type, through-bolted mounting. Listed and labeled for panic protection based on UL 305. Doors shall be provided with exit device if required by Building Code.

5-4.9.5.5 **Closers.** ANSI/BHMA A156.4; series C02000, Grade 1, hydraulic, factory-sized, adjustable to meet field conditions. Provide for all exterior doors, all doors to living units, and all doors opening to corridors and as required by codes. At exterior doors to lobbies, corridors, mechanical rooms, janitors closets, and COF supply areas provide overhead holders or closers with hold-open capability.

5-4.9.5.6 **Auxiliary Hardware.** ANSI/BHMA A156.16. Provide wall or floor stops for all exterior doors that do not have overhead holder/stops. Provide solid wood backing in the stud wall cavity for wall-mounted doorstops. Provide other hardware as necessary for a complete installation.

5-4.9.5.7 **Thresholds.** ANSI/BHMA A156.21; non-ferrous metal. Provide at all exterior doors. Provide inter-locking type threshold for UEPH Building 356 & 358 Living Unit only (threshold for Interior corridor door).

5-4.9.5.8 **Weatherstripping.** ANSI/BHMA A156.22. Provide at all exterior doors.

5-4.9.5.9 **Kick Plates.** ANSI/BHMA A156.6; stainless steel, 254 mm [10"]high x 51 mm [2"] less than door width. Provide at push side of all doors with closers.

5-4.9.5.10 **Locks and keys.** Lock cylinders shall have six pin tumblers and interchangeable cores, which are removable by a control key. Provide a master keying system. Locks for each organizational unit, including exterior storage shall be keyed alike. Contractor shall obtain the key biting report from the hardware manufacturer and provide the report to DPW at the end of the project. Locks and keys shall conform to the standards and requirements of the Builders Hardware Manufacturers Association (BHMA) listed above.

5-4.10 **Exterior Windows.** Provide Historic windows as indicated on the concept design drawings. Refer to concept design drawings for window types and details. Fully glazed windows shall comply with wind load requirements of applicable codes. All sleeping rooms shall have operable windows complying with egress requirements of applicable codes. Windows shall be operable and shall have locks.

5-4.10.1 **Screens.** Fiberglass screens shall be provided at all operable windows and be of window manufacturer's standard design. Fiberglass insect screens, 18 x 16 mesh size, shall be provided for all windows and sliding glass doors and should be the window or door manufacturers standard design for use with the windows and doors being provided. Insect screen frames shall be removable type for easy cleaning.

5-4.10.2 **Exterior Glass and Glazing.** To comply with force protection minimum standards: Single glazing and the inner pane of insulated glass assemblies in exterior windows and doors shall be minimum 6 mm (1/4-inch) annealed laminated glass.

5-4.11 **Insulation.** Insulation shall be provided to meet the following requirements:

5-4.11.1 Thermal and sound insulation shall have a flame spread rating of 25 or less and a smoke development rating of 50 or less exclusive of the vapor barrier when tested in accordance with ASTM E 84. A vapor barrier shall be provided on the warm side of exterior and ceiling insulation for thermal insulation.

5-4.11.2 Urethane is not allowed as an insulation material.

5-4.11.3 Polycyene expanding foam insulation will be permitted as a material to insulate ceilings and walls.

5-4.11.3 **Thermal Insulation.** Provide exterior wall, floor, and roof/ceiling assemblies with thermal transmittance (U-values) required to comply with the proposed energy calculations for the facilities. Insulation shall not be installed directly on top of suspended acoustical panel ceilings.

5-4.12 **Louvers:** Aluminum-framed louvered panels. Louver finish shall be Kynar 500 or approved equal. Kynar 500 properties: a fluoropolymer-polyvinylidene fluoride (PVDF). Finish shall be factory applied and oven baked. Total overall dry film thickness shall be 0.025mm (1mil) thick.

5-4.13 **Exterior Railings.** All exterior handrails and guardrails shall be replaced. Existing railing design does not conform to original historic design for Quad C. Design of exterior handrails and guardrails shall conform to historic character of Quad C. The design shall be coordinated with the State Historical Preservation Office. Exterior railing materials, including bolts and fasteners shall be painted hot-dipped galvanized steel. Design shall comply with all applicable codes. Final handrail design shall be approved by DPW.

5-5 INTERIOR DESIGN.

5-5.1 Floors and Flooring Material

5-5.1.1 **Floors.** Comply with requirements of applicable codes. Non-combustible construction is preferable, even where combustible materials are allowed by code. Floor finish materials shall be as specified in functional and area requirements listed in Chapter 2 of the Statement of Work.

5-5.1.2 **Quarry Tile.** will be the abrasive surface type as stated in the Tile Council of American Standard 137.1 (Ceramic Tile). Epoxy coatings, linoleum, vinyl and VCT are not acceptable substitutes for quarry tile. Grouting material for quarry tile shall be a grout system employing epoxy resin and hardener portions especially formulated for commercial installations where chemical resistance is important. All grout joints shall be sealed.

5-5.1.3 **Ceramic Tile.** Comply with ANSI A 137.1 and the recommendations of Tile Council of America (TCA) Handbook For Ceramic Tile Installation. Provide marble threshold under doors where a ceramic tile floor meets a different floor finish. All grout joints shall be sealed.

5-5.1.4 **Vinyl Composition Tile.** Vinyl composition tile shall conform to ASTM F 1066, Class 2, through pattern tile, Composition 1, asbestos-free, and shall be 12 inches square and 1/8 inch thick. The tile shall have the color and pattern uniformly distributed throughout the thickness of the tile. Flooring in any one continuous area shall be from the same lot and shall have the same shade and pattern.

5-5.1.5 **Resilient Base.** Base shall be manufacturers standard rubber, coved style (installed with resilient flooring). Base shall be 4 inches high and a minimum 1/8-inch thick. Job formed corners shall be provided.

5-5.1.6 **Carpet.** Carpet construction shall be woven; Type: Broadloom 3.6m minimum usable carpet width; Pile Type: Level Loop; Pile Fiber: Commercial 100% branded federally registered trademark nylon continuous filament; Pile Height: minimum 3.4mm in accordance with ASTM D418; Yarn Pile: minimum 2; Pile density: minimum 4696; Dye method: solution dyed; backing material: backing material shall be 100% synthetic material. Static control shall be provided to control static buildup to less than 3.5 kV when tested at 20% RH and 21 degrees C in accordance with AATCC TM 134.

5-5.1.7 **Concrete Floors:** All concrete floors on the first floor of all Quad C Buildings that will receive vinyl composition tile or carpet shall be provided with hardener/sealer that conforms to the following requirements:

5-5.1.7.1 **Qualifications:** the installer of hardener/sealer shall be certified and shall be on a list of preapproved applicators of the product.

5-5.1.7.2 **Technical Representative:** Hardener/sealer manufacturer's Technical Representative shall be made available for initial training of applicators and field observation during installation of the hardener/sealer. Technical Representative shall certify installations for warranty.

5-5.1.7.3 **Warranty:** Hardener/sealer manufacturer's "Full System 10 year warranty" on the replacement of all flooring material and labor that delaminates due to moisture migration, excessive vapor emissions or contaminates, shall be provided on all concrete floors to receive carpet and resilient flooring.

5-5.2 **Interior Walls and Partitions.** Comply with requirements of applicable codes. Non-combustible construction is preferable, even where combustible materials are allowed by code. The use of 16 mm [5/8"] Type X gypsum board shall be utilized where drywall partition is required.

5-5.2.1 **Offices and Administration areas** are to have full height drywall on metal stud partitions with sound insulation. The use of 16 mm [5/8"] Type X gypsum board shall be utilized where drywall partition is required.

5-5.2.2 **Interior walls:** Masonry or concrete walls at Arms Room, Heavy storage areas for the Company Operation Facilities (COF) shall have full height masonry or concrete walls.

5-5.2.3 **Arms Vault** needs to meet requirements at AR 190-11, Physical Security of Arms, Ammunition, and Explosives. Additional Arms Vault requirements are explained in SOW Ch 5, paragraph 5-7.2 and SOW Ch 6, paragraph 6.5-4

5-5.2.4 **Interior seismic walls:** these walls will be made of concrete. The wall finish shall be smooth; no visible snap-ties or formwork is permitted. These walls will be furred with 64 mm [2-1/2"] metal studs and gypsum board.

5-5.2.5 **Metal Support Systems.** Non-load bearing metal studs and furring shall comply with ASTM C 645; stud gauge shall be as required by height and loading, but shall not be less than 25 gauge. Maximum stud spacing: 406 mm [16"] on center. Provide galvanized finish.

5-5.2.6 **Gypsum Board.** Comply with ASTM C 36. Minimum panel thickness: 16 mm [5/8"]. Provide Type X panels in fire-rated assemblies. Provide moisture resistant panels at locations subject to moisture. Provide abuse-resistant panels where indicated in functional and area requirements. Joint treatment: ASTM C 475. Screws ASTM C 646. Drywall installation: ASTM C 840.

5-5.2.7 **Ceramic Tile:** Comply with ANSI A 137.1 and the recommendations of Tile Council of America (TCA) Handbook For Ceramic Tile Installation. Substrate for wall tile shall be cement backer board (gypsum board is not acceptable).

5-5.2.8 **Concrete seismic wall on existing concrete wall:** these conditions occur at the exterior facing concrete walls. The finish surface shall be smooth for paint application.

5-5.3 **Telecommunication Room (Tele)**

5-5.3.1 Require coordination with Schofield Barracks Physical Security Office, Harold Evans, and the Directorate of Information Management, Marion Robinson.

5-5.3.2 Telecomm. rooms which may house SIPR servers shall be treated as classified open storage areas.

5-5.3.3 Security for Telecomm rooms shall be per AR 380-19 information systems security.

5-5.4 **Ceilings.** Non-combustible construction is preferable, even where combustible materials are allowed by code. Ceiling finish materials shall be as specified in functional and area requirements listed in Chapter 2 of the Statement of Work, as indicated on the Concept Design Drawings, and comply with requirements of applicable codes. Textured ceiling finish may be provided in areas other than laundry or bathrooms. Interior finish on walls and ceilings shall be in accordance with NFPA 101. Provide access doors to maintain and service equipment above the ceiling.

5-5.4.1 **Acoustic Ceiling Tile.** Acoustic tile shall be smooth, nondirectional finish on scratch-resistance surface. Acoustic tile shall be washable, humidity resistant, and soil resistant. Provide acoustic tile complying with Class A: Flame Spread 25 or under (UL Labeled) per ASTM E 1264; NRC: 0.70 minimum; CAC: 35 minimum; Light Reflect Coefficient: 0.89 minimum.

5-5.4.2 **Fiberglass Ceiling Tile.** Fiberglass ceiling tile (frp) shall be easy-to-clean panel and made of fiberglass reinforced plastic. Panel surface allows dirt and grease to be cleaned off quickly and easily. As a frp panel it is extremely resistant to most stains and chemicals. The entire panel is moisture resistant and does not support mold or mildew, and it will not rust or corrode. Provided fiberglass tile complying with Class A: Flame Spread 25 or under (UL Labeled) per ASTM E 1264. Light Reflect Coefficient: 0.89 minimum.

5-5.5 **Interior Doors and Frames.** Provide hollow metal doors, or flush wood solid core doors at UEPH and administration spaces. Provide hollow metal doors at COF supply spaces. All frames shall be hollow metal. Hollow metal doors and frames shall have a minimum A60 galvanizing. Hollow metal frames shall have a minimum of 3 wall anchors and one floor anchor per jamb.

5-5.5.1 **Wood Doors.** Provide flush wood solid core doors complying with National Wood Window and Door Association (NWWDA) I.S.-1A. Stile edges shall be non-finger jointed hardwood compatible with face veneer. Provide American Woodwork Institute (AWI) Grade A hardwood face veneer for transparent finished

doors; provide AWI Sound Grade hardwood face veneer for painted doors. Transparent finished doors are preferred.

5-5.5.2 **Hollow Metal Doors.** Comply with ANSI A250.8/SDI 100. Doors shall be Level 2, physical performance Level B, Model 2; top edge closed flush, factory primed. Anchors and accessories shall be zinc coated.

5-5.5.3 **Hollow Metal Frames.** Comply with ANSI A250.8/SDI 100. Frames shall be Level 2, 16 gauge, with continuously welded corners and seamless face joints; factory primed. Anchors and accessories shall be zinc coated. Frames in masonry shall have bituminous back-coating, plaster guards, and shall be grouted solid. All hollow metal doors frames shall be painted (typical).

5-5.5.4 Arms Vault doors and frames needs to meet opening requirements at AR 190-11, Physical Security of Arms, Ammunition, and Explosives. Additional Arms Vault Door and Frame requirements are explained in SOW Ch 5, paragraph 5-7.2 .

5-5.5.5 Telecom Room doors and frames to meet opening requirements for Secret-rated work.

5-5.5.6 **Fire-rated and Smoke Control Doors and Frames.** Comply with International Building Code (IBC), NFPA 80, and requirements of labeling authority. Doors and frames shall bear labels from Underwriters Laboratories (UL), Factory Mutual Engineering and Research (FM) or War. Comply with positive pressure testing requirements of IBC.

5-5.6 **Interior Door Finish Hardware.**

5-5.6.1 **Hinges.** ANSI/BHMA A156.1; template, full mortise; Grade 1, ball bearing on doors with closers; Grade 2, bearing on doors without closers. Minimum 114 mm x 114 mm [4 ½" x 4 ½"], stainless steel metal.

5-5.6.2 **Locksets for Typical Interior Door.** Provide stand-alone programmable electronic door locksets with audit capabilities. The lockset construction shall be all-metal, heavy-duty, and mortise. The lockset is equipped with hidden mechanical key override, an anti-pick latch and dead bolt, and a magnetic stripe reader complying with ISO standards and ABA dimensional specifications. Each magnetic stripe card will be programmed to gain access into its respective module and sleeping/living rooms. Lockset shall be similar to Kaba Ilco, Solitaire 710-II Series or approved equal. The lockset shall include knob and lever torque test and "Ultra" finish with two-year warranty ANSI/BHMA A156.13; mortise lockset with removable core; non-ferrous base metal.

5-5.6.3 **Locksets for Typical Interior Utility and Maintenance Doors.** spaces with doors covered by this paragraph include: Mechanical Rooms, Electrical Rooms, Telecommunication Rooms, Communication Rooms, Toilets, Janitor and Stairwell. ANSI/BHMA A156.2; series 4000, Grade 1, non-ferrous base metal, removable core.

5-5.6.4 **Exit (Panic) Devices.** ANSI/BHMA 156.3; heavy-duty touch-pad type, through-bolted mounting. Listed and labeled for panic protection based on UL 305. Doors shall be provided with exit device if required by code.

5-5.6.5 **Closers.** ANSI/BHMA A156.4; series C02000, Grade 1, hydraulic, factory-sized, adjustable to meet field conditions. Provide for all entry doors to living units, all doors opening to corridors and as required by codes.

5-5.6.6 **Auxiliary Hardware.** ANSI/BHMA A156.16. Provide wall or floor stops for all doors that do not have overhead holder/stops. Provide other hardware as necessary for a complete installation.

5-5.6.7 **Kick Plates.** ANSI/BHMA A156.6; stainless steel, 254 mm [10"]high x 51 mm [2"] less than door width. Provide at push side of all doors with closers.

5-5.7 **Fireproofing Roof Structure.** The exposed metal roof truss and metal roof deck shall be fireproofed for one-hour protection. The fire resistive coating shall be elastomeric type. The fireproof material shall be capable of receiving a material finish like paint for example.

5-5.8 **Casework.**

5-5.8.1 **Service Areas in Living Units and Coffee Areas in Admin Areas**
Bathroom Vanity in Living Units
UEPH Building CQ Station Reception Desk
Vanity at Public Toilets

The following typical casework description shall apply to the spaces described above:

Provide architectural cabinetwork complying with AWI Quality Standards, Section 400, Custom Grade cabinets with high-pressure decorative laminate finish, meeting NEMA LD3 standards. Horizontal laminate: nominal .050" thick; vertical laminate: nominal .028" thick. Door and drawer edges shall be plastic laminate: nominal .028" thick. Countertop shall be post-formed high-pressure decorative laminate with waterfall front edge and integral covered backsplash, or solid surfacing material. Cabinets shall be constructed as specified and shall meet requirements of KCMA A161.1. The use of any particle board material for cabinet construction is not permitted.

5-5.8.2 **Other casework.** Provide architectural casework complying with AWI Section 400, Custom Grade cabinets with high-pressure decorative laminate finish meeting NEMA LD3 standards. Horizontal laminate: nominal 1.27mm [.050"] thick; vertical laminate: nominal 0.71mm [.028"] thick. Door and drawer edges shall be plastic laminate: nominal 0.71mm [.028"] thick. Work surfaces and counter shall be high-pressure decorative laminate, or solid surfacing material.

5-5.9 **Window Treatments.** Provide horizontal aluminum mini-blinds at all exterior windows. Blinds shall have one-inch wide by .008-inch thick slats with anti-static, anti-microbial polyester baked enamel finish. Provide heavy duty 25mm x 38mm [1" x 1-1/2"] steel headrail, and tubular steel bottom rail finished to match slats.

5-5.10 **Toilet Partitions.** Toilet partition panels shall be floor supported and reinforced to receive partition-mounted accessories. Finish shall be laminated plastic on solid phenolic core. Toilet partition hardware shall be stainless steel. Latching devices, pulls, and hinges for handicap compartments shall comply with Title III of the American Disability Act and Accessibility Guidelines.

5-5.11 **Elevators.** The offeror shall provide the services of an elevator inspector employed by an independent testing company to inspect the elevator, witness the final testing, and certify elevator. The inspector shall meet all qualification requirements of ASME QEI-1 and shall be certified in accordance with ASME QEI-1. The offeror shall provide an elevator certificate signed by the inspector for each elevator. The certificate shall be provided to the Contracting Officer within 30 days of the completion of testing.

5-5.12 **Sound Attenuation.**

5-5.12.1 **Testing.** Certified proof-of-performance field tests will be conducted to demonstrate that the floor and wall systems as constructed provide the required sound isolation. Tests for air-borne sound shall be made in compliance with ASTM E336. Tests for impact sound shall be made in compliance with ASTM E1007. Testing of 10 percent (minimum) of each type of floor and wall system is required. Location of test sites will be chosen at random by the Contracting Officer.

5-5.12.2 Any wall or floor system found to be inadequate shall have the deficiencies corrected and the

additional qualifying tests conducted at the contractor's expense. Testing at the contractor's expense of greater than 10 percent of each system may be required if the Contracting Officer determines that the quality of construction requires this additional testing.

5-5.12.3 Party walls (floor/ceiling construction between different organizational units) shall be designed to provide the minimum airborne sound transmission ratings and impact isolation ratings stated in Table 5-5.12

TABLE 5-5.12 - SOUND TRANSMISSION STANDARDS FOR PARTY WALL CONSTRUCTION

Area	FSTC ¹	FIIC ²
Party Walls at UEPH Bldgs. 356 and 358 at all Other Locations	52	N/A
Party Walls at UEPH Bldgs. 356 and 358 Sleeping/Living Rooms.	52	65
Party Walls at Bldg. 355 and 357	52	57
Operable partition at Bldg. 357 Classroom/Classroom	47	N/A

Note¹: Field Sound Transmission Class. See ASTM E336.

Note²: Field Impact Isolation Class. See ASTM E1007.

5-6 PAINT FINISHES AND COATING

5-6.1 Interior surfaces, except factory pre-finished material, shall be painted a minimum of one prime coat and two finish coat. Baths and laundry rooms, and all their painted trim shall be finish painted with semi-gloss latex. Natural finished interior doors are acceptable. All other areas shall be water-based latex low sheen washable eggshell finish for walls/trims and water-based latex low sheen washable eggshell finish for ceilings. Oil-based paint is not allowed except for surfaces that require special coating. Interior paint finish may be textured. When semi-gloss and low sheen painted surfaces are adjacent to each other, the wall surfaces in the room shall be finished with semi-gloss paint to avoid having two different finishes adjacent to each other.

5-6.2 All exterior surfaces including all utility appendages, shall receive a minimum of one prime coat and two finish coats of paint. Exterior paint shall be water-based latex. Exterior low sheen stains (two coats) will be acceptable, where appropriate for wood. Oil-based paint is not allowed except for surfaces that require special coating.

5-6.3 All painting work conform to and be in compliance with Unified Facilities Guide Specifications, Division 09-FINISHES, Section 09900, Paintings and Coatings.

5-6.4 Paints used on surfaces in areas of high humidity where mildew is possible and on fabric or vapor barrier over insulation shall contain a mildewcide. The mildewcide will not adversely affect the color, texture, or durability of the coating. The mildewcide shall be incorporated into the paint by the manufacturer and shall attain a surface disfigurement rating of 8 or greater when tested in accordance with ASTM D 3273 and evaluated in accordance with ASTM D 3274. Mercurial mildewcide and insecticides shall not be used in paints.

5-6.5 Colors shall be as approved from schemes submitted with proposal. All interior paint surfaces shall be painted off-white. Each proposal shall include three basic exterior and interior color coordinated schemes and color samples. Final selection of exterior colors will be made by the Installation Commander (USAGE-HI). Exterior color selections shall conform to the Installation Exterior Architectural Plan (IEAP).

All exterior wood trim to include framing members around garage door openings shall be "back-primed" (surfaces that will be inaccessible to field painting after installation of the wood trim shall be primed with one coat of primer before installation).

5-7 PHYSICAL SECURITY REQUIREMENTS.

5-7.1 **Anti Terrorism / Force Protection.** Designs shall conform to the Department of Defense Minimum Antiterrorism Standards for Buildings, July 31, 2002 listed as Reference 5-2.4. Offerors' proposals will be deemed acceptable provided they comply with the Physical Security Requirements described in paragraphs described below. UEPH buildings are classified as troop billeting structures; COFs, Locker Room Facilities, and Battalion HQs are classified as primary gathering structures

5-7.1.1 The AT/FP standard used to develop the proposed design is the Department of Defense Minimum Antiterrorism Standards for Buildings, July 31, 2002. Agreements regarding definitions include:

5-7.1.2 A perimeter barrier (controlled perimeter) is provided for this project.

5-7.1.3 Minimum Construction Standards based on conventional construction without analysis shall be provided. All minimum standoffs shall be provided according to the Standard.

5-7.1.4 The structure shall have a 33-foot exclusive clear zone.

5-7.1.5 Access to parking within 82 feet of Quad C Buildings will be controlled; defined in UFC 4-010-01, para. B-1.1.2.2.1. Parking along roadways within 82 feet of the buildings will not be allowed, defined in UFC 4-010-01, para. B-1.1.2.2.2.

5-7.1.6 UFC 4-010-01 The preferred location of electrical and mechanical equipment such as transformers, air-cooled condensers, and packaged chillers is outside the unobstructed space or on the roof. However, electrical and mechanical equipment is allowed within the unobstructed space as long as the equipment provides no opportunity for concealment of explosive devices, defined in para. B-1.3.1.

5-7.1.7 The Quad C structures shall be designed to resist progressive collapse since it is 3 stories in height. Progressive Collapse Vulnerability Assessment is attached to this RFP document for offerors' use.

5-7.1.8 Laminated 1/4 inch thick annealed glass is required for all exterior windows and doors, defined in para. B-3.1.1. Window frames shall be provided as defined in para. B-3.1.2.

5-7.1.9 Exterior doors that are not designated as Historic Type (See concept design drawings) are required to be hollow metal door type.

5-7.1.10 A Mass Notification Alert System is required for this project, defined in para. B-4.7

5-7.2 **Arms Vault at Company Operations Facilities.** Physical Security of Arms shall be in compliance with AR 190-11. Refer to SOW Ch 6, para. 6.5.4 for structural Arms Vault requirements. Refer to SOW Ch 2, para. 2-2.2.2 for Arms Vault in Building 355. New floors, walls, and ceilings shall be provided for each Arms Vault. Unless more stringent construction features are required by life safety or building codes, minimum construction requirements shall be as follows:

5-7.2.1 **Floor.** 152 mm [6"] slab on grade; reinforced with minimum 152 mm x 152 mm MW 25.8 x MW 25.8 [6 x 6, W2.4 x W2.4] welded wire fabric, on vapor barrier, on 152 mm [6"] deep porous fill.

5-7.2.2 **Walls.** 206 mm [8"] thick cast-in-place concrete reinforced with 15M [#5] bars at 152 mm [6"]

on center, each way, each face. Concrete masonry units reinforced in a similar manner, as described, will be permitted.

5-7.2.3 **Ceiling.** 206 mm [8"] thick cast-in-place concrete reinforced with 15M [#5] bars at 152 mm [6"] on center, each way, each face.

5-7.2.4 **Door and Frame.** Provide 44mm [1-3/4"] thick hollow metal door, industrial type construction, minimum 14 ga. skin plate thickness, and internally reinforced vertically with continuous steel stiffeners spaced 152mm [6"] max. on center. Provide steel bar type, Dutch door style daygate with metal shelf for issuing arms and ammo. Daygate shall have lock operated from outside by key, and from inside by handle. Comply with egress requirements of applicable codes.

Class 5-vault door and frame complying with Federal Specification AA-D-00600C. National Stock Number is 7110009351886; provide pass-thru window in daygate. Locks shall be Underwriters Laboratory listed Group 1 or 1R combination lock.

5-7.2.5 **Penetrations.** Penetrations shall be minimized. All openings or penetrations in Vault floor, walls or ceiling greater than .062 m² [96 square inches] shall be protected with welded steel rod-and-bar grid weighing 39.6 kg/m² [8.1 lb./sf], consisting of 25.4 mm x 4.8 mm [1" x 3/16"] vertical bearing bars at 25 mm [1"] on center, and 8 mm [5/16"] diameter horizontal rods at 50 mm [2"] on center; or equivalent protection.

5-7.2.6 **Arms Rack Anchor Rings.** Provide 10 mm [3/8"] diameter stainless steel bar bent into U-shape (25 mm inside radius). Overall length shall be 127 mm [5"]; embed 76 mm [3"] of horizontal legs (open end) in pre-drilled epoxy filled holes. U-shaped end will protrude from floor to provide anchorage for GFGI arms racks. Orient the projecting U-shape vertically. Provide anchor rings at 3'-0" on center along the floor inside the Arms Vault -Verify with DPW for exact installation and mounting location.

5-7.2.7 **Floor Anchors for GFGI Security Safes.** Provide 10 mm [3/8"] diameter stainless steel bar bent into U-shape (25 mm inside radius) with 2" long 90 degree returns at ends of vertical legs. Overall height shall be 127 mm [5"]; embed 76 mm [3"] of vertical legs (open end) in concrete floor slab; 51 mm [2"] of U-shaped end will protrude above slab to provide anchorage for GFGI security safe.

5-8 SIGNAGE

5-8.1 **Directional, Informational, and Motivational Signage.** Signs consist of exterior building signage, interior signage, Interior building directories, directional signs, and identification signs. All Exterior and Interior Signage shall comply with TM 5-807-10. Coordinate with installation facilities engineer (DPW) for location of all signs, color of sign, and verbiage to be included on all signs. All exterior signs and interior Building Directory Signs shall be constructed of minimum 0.090-inch thick aluminum sheets. All other signs shall be constructed of minimum 4.76 mm [3/16-inch] thick plastic acrylic sheets. All signage shall comply with requirements of ADAAG and UFAS. Refer to Attachment No. 1 for Sign Types described below.

5-8.2 **Exterior Signs:** provide the following Exterior Building Sign Types:

5-8.2.1 Provide a total of four Exterior Building Identification Signs, one per building, Type D4, Sign grid 1, size: 762 mm H x 1067 mm W [30"H x 42"W].

5-8.2.2 Provide a total of eight Exterior Building Number Signs, two per building, Type C8, wall mounted, Sign grid 1, size: 457 mm H x 1372 mm W [18"H x 54"W].

5-8.2.3 Provide all exterior doors with Room Identification Sign, Type BB2, wall mounted, size: 229 mm H x 229 mm W [9"H x 9"W].

5-8.2.4 Provide a total of 12 Exterior Guide Signs, Type AA5, wall mounted, size: 3 modules of 70 mm H x 457 mm [W 2-3/4"H x 18"W].

- 5-8.2.5 Provide a total of 12 Exterior Guide Signs, Type AA6, ceiling mounted, size: 3 modules of 102 mm H x 610 mm W [4"H x 24"W].
- 5-8.2.6 Provide a total of 15 Company Identification Sign, Type BB2 (similar), wall mounted, size: 305 mm H x 610 mm W [12"H x 24"W]. Text Size=1" Cap with ½" line spacing vertically in lieu of 3/8".
- 5-8.3 **Interior Signs:** provide the following Interior Building Sign Types:
 - 5-8.3.1 Provide eight Building Directory Signs, two per building, Type AA1, wall mounted, Sign grid 2, size: 1067 mm H x 1219 mm [42"H x 48"W].
 - 5-8.3.2 Provide all interior doors with Room Identification Sign, Type BB2, wall mounted, size: 229 mm H x 229 mm [9"H x 9"W].
- 5-8.4 See accessibility section for accessible signage requirements.

5-9 ACCESSIBILITY FOR HANDICAPPED (PHYSICALLY IMPAIRED) PERSONS, BARRIER FREE DESIGN.

- 5-9.1 Accessibility will be based on requirements of the Americans with Disabilities Act (ADA.) Public accommodation will be provided as described in the ADA Architectural Guidelines (ADAAG.). Refer to SOW Chapter 2 for ADA requirements for individual spaces.
- 5-9.2 Proposed accommodations generally consist of the following:
 - 5-9.2.1 Public areas will be ADA-compliant.
 - 5-9.2.2 Entries and exits accessible as required by ADA.
 - 5-9.2.3 An accessible path to all offices will be provided.
 - 5-9.2.4 Toilets Rooms to be ADA-compliant.
 - 5-9.2.5 All common use areas will be ADA-compliant.
 - 5-9.2.6 ADA-compliant directional and identification signage will be provided.
 - 5-9.2.7 All employee-only spaces will be provided with ADA-compliant approach, entry, turn-around and exit.
 - 5-9.2.8 Where disabled employees presently exist, provide path and floor area space suitable for accommodation should be provided. No disabled employees have been identified.
 - 5-9.2.9 ADA-compliant fire alarm systems are described in the Fire Protection Design Analysis.
 - 5-9.2.10 ADA-compliant communication systems are described in the Electrical Design Analysis.

SECTION 01012

DESIGN AFTER AWARD**1.0 GENERAL**

1.1 The Contractor shall propose a schedule for the number and composition of the design submittal phases. As a minimum, design submittals are required at the preliminary (50%), pre-final (90%) and final (100%). The requirements of each design stage are listed hereinafter. The Contractor shall reflect the number and schedules for the design submittals phases in the progress charts. As a maximum, the 50%, 90% and 100% shall be made into one consolidated package, which includes each of the thirteen (13) major categories listed in Paragraph, "Contents of 50% Design Submittal," the Building Interior Design, and long lead item submittals.

1.2 "Fast-tracking" is not allowed. The Contractor will not be allowed to proceed with construction until the Contracting Officer approves the 100% final design submittal.

2.0 DESIGNER OF RECORD

The Contractor shall identify a Designer of Record ("DOR") for each area of design. All design disciplines shall be accounted for by listed, registered Designer(s) of Record. Each DOR shall be responsible for ensuring integrity of their design and design integration in all construction submittals and extensions to design developed by others, such as the constructor, subcontractors or suppliers. The DOR shall review and approve all construction submittals and extensions to design, in accordance with the procedures, described in Section 01330 SUBMITTALS. Each DOR shall be responsible for the responses to "Requests for Information" (RFI's), applicable to their area of design responsibility. Each DOR shall stamp, sign, and date all design drawings under their responsible discipline at each design submittal stage (see Contract clause - "REGISTRATION OF DESIGNERS") and all submittals under their responsible discipline, in accordance with the submittal review procedures. The DOR shall sign-off on all applicable RFI responses. "

3.0 DEFINITION OF DESIGN SUBMITTALS

3.1 **PRELIMINARY CONFORMANCE REVIEW SUBMITTAL (50%).** The review of this submittal is primarily to insure that the contract documents and design analysis are proceeding in a timely manner and that the design criteria is being corrected interpreted. The submittal shall consist of the following:

1. Design Analysis, developed to 50%
2. 50% complete drawings
3. Outline Specifications
4. Environmental permits, as required. When environmental permits are not required, the Contractor shall provide a statement with justification to that effect.

3.2 **PRE-FINAL REVIEW SUBMITTAL (90%).** Hard copies and CADD drawings. The review of this submittal is to insure that the design is in accordance with directions provided the Contractor during the design process as well as the 50% submittal. The Contractor shall submit the following documents for Pre-final Design Review:

3.2.1. Design Analysis. The Design Analysis submitted for pre-final Design Review shall be in its final form. The Design Analysis shall include all backup material previously submitted and revised as necessary. All design calculations shall be included. The Design Analysis shall contain all explanatory material giving the design rationale for any design decisions, which would not be obvious to an engineer reviewing the Final Drawings and Specifications.

3.2.2. Drawings. The Contract Drawings submitted for pre-final Design Review shall include the drawings previously submitted which have been revised and completed as necessary. The Contractor is expected to have completed all of his coordination checks and have the drawings in a design complete condition. The drawings shall be complete at this time including the incorporation of any design review comments generated by the previous design review. The drawings shall contain all the details necessary to assure a clear understanding of the work throughout construction. Shop drawings will not be considered as design drawings. All design shall be shown on design drawings prior to submittal of shop drawings.

3.2.3. Specifications. The Draft Specifications on all items of work submitted for pre-final Design Review shall consist of legible marked-up specification sections.

3.2.4. Preliminary Conformance Review Submittal Annotated Review Comments (50%). Submittal review comments and responses.

3.3 **FINAL DESIGN SUBMITTAL (100%).** Hard copies and CADD drawings. The review of this submittal is to insure that the design is in accordance with directions provided the Contractor during the design process as well as the 50% submittal. The Contractor shall submit the following documents for Final Design Review:

3.3.1 Final Design Submittal, 1st Backcheck (100%). Hard copies and CADD drawings.

3.3.2 Final Design Submittal. 2nd Backcheck (a second backcheck submittal will be made if all of the comments were not satisfactorily resolved in the 1st Backcheck submittal as determined by the Contracting Officer). Note that additional backchecks will be required until all of the comments have been satisfactorily resolved.

3.3.3 Design Analysis, in final 100% complete form.

3.3.4 100% complete drawings.

3.3.4 Final typed specifications.

3.3.5 Environmental permits. When environmental permits are not required, the Contractor shall provide a statement with justification to that effect.

3.3.6 Pre-final Design (90%) Submittal review comments and responses.

3.3.7 Electronic Submission: All CADD files in native MicroStation Version 8 or latest format, as well as all prepared technical specifications shall be provided on CD-ROM. Two copies are required.

3.4 **COMPREHENSIVE INTERIOR DESIGN**

3.4.1 Definition. The Comprehensive Interior Design (CID) shall involve the selection and sampling of all applied finishes including material, color, texture and patterns necessary to complete the building's interior architectural features. The CID shall meet all requirements addressed in SOW CH 14, Comprehensive Interior Design.

3.4.2 Samples. Present architectural finish samples in orderly arrangements according to like rooms/areas receiving like finish. Each like room receiving like finishes will be noted as a Color Scheme. Each Color Scheme shall have a written description of material used. This written description shall use the same material abbreviations and notes that appear on the Room Finish Schedule and Legend in the contract drawings. Present pre-wired workstation finishes on a color board separate from the architectural finishes. Submit the CID binders concurrently with the architectural design submittals.

3.4.3 Preliminary Submittals. The Contractor shall submit three complete sets of the initial CID package. The design philosophy shall use a warm neutral background color with appropriate accent colors. All CID proposals shall be reviewed and approved by the Government. The Interior Designer shall revise the CID binders after each review and update the CID to satisfy review comments. Each submittal will follow this method of review until the Government approves the completed CID package.

3.4.4 Government Approval. Government approval will be sought from the Honolulu Engineer District, which is the District Authority Having Jurisdiction (DAHJ). The DAHJ will be consulted for all interpretations of Comprehensive Interior Design (CID) to be used in this project through the Contracting Officer. The Contractor shall direct all questions, interpretations and clarifications to the Contracting Officer. All requests for information by the Contractor shall be submitted to the Contracting Officer in writing with the appropriate sketches, basis for waiver, specific question and any other information deemed necessary by the DAHJ. In general, a minimum of seven (7) calendar days is required by the DAHJ to respond to all inquiries. The seven days will start from the day of receipt by the Contracting Officer. In the event interpretation or approval is required from HQUSACE, an additional seven (7) calendar days will normally be required.

3.4.5 Final Submittal. After approval of the Preliminary Submittal, the Contractor shall submit three (3) complete sets of the approved and final Comprehensive Interior Design package. Once the Contractor has submitted the CID and the Government has approved the submittal, all materials, finishes, colors, textures and pattern submitted and approved for this project are then considered as part of the contract and the Contractor shall furnish all approved CID finishes. No deviations will be considered.

3.4.6 Format. Submit all CID information and samples on 8 1/2"x 11" modules. Place the project title, base, architectural firm, page number and date on the bottom of each page or module.

3.4.6.1 The module shall support and anchor all samples. Anchor large or heavy samples with mechanical fasteners, Velcro, double-sided foam tape or contact cement. Rubber cement or glue will not be acceptable.

3.4.6.2 Assemble the 8 1/2" x 11" pages and modules in a 3" D-ring binder. Holes for placement of the modules in the binder shall be 3/8" in diameter. Each binder shall be identified on the outside spine and front cover by title, project number, percentage phase and date.

3.4.6.3 Material and finish samples shall indicate true pattern, color and texture.

3.4.6.4 Where paint manufacturers color names and numbers are used indicated the finish of the paint such as gloss, semi-gloss, flat and so on.

3.4.6.5 Signage may include emblems, striping, letters, numbers and logos. The interior designer shall consider visual appearance, organization, location, structural supports (if required) and relation to other base graphics. Indicate on a separate signage sheet the location and message for all signage. Submit a sample of the signage material finish and color with the structural finishes.

3.4.6.6 No photographs or colored photocopies of materials will be accepted or approved.

3.4.7 CID Binder. The CID Binder shall include the following information at each design submittal in this order:

=====

SEQUENCE OF CID SUBMITTAL

1. Title page
2. Table of contents
3. Design objectives - A statement of design objectives explaining the interior design philosophy of the facility shall be provided in the CID. Design objectives and the proposed method of accomplishing the objectives. Shall cover, when applicable, energy efficiency, safety, health, maintenance, image, personal performance of occupants and functional flexibility.
4. Interior floor plan
5. Interior sample finish boards

Scheme A
Scheme B
Scheme C

Example all restrooms could be noted as color scheme "A", all general open office finishes could be noted as color scheme "B" and the main lobby could be noted as color scheme "C".

6. Room finish schedule
 7. Signage
 8. Signage plan
 9. Pre-wired workstation composite floor plans
 10. Pre-wired workstation typical - elevations and component inventory.
 11. Pre-wired workstation panel identification plan with electrical outlet placement including base feed.
 12. Plan must show suitability of proposed space to suit the furniture to be provided.
- =====

4.0 QUANTITY OF DESIGN SUBMITTALS

4.1 General. The documents, which the Contractor shall submit to the Government for each submittal, are listed and generally described hereinafter.

DISTRIBUTION

Activity and Address	Drawing Size <Full>	Drawing Size <Half>	Color Boards**
U.S. Army Corp. of Engineers Honolulu Engineering District Bldg. 230, Room 318 Ft. Shafter, HI 96858 Attn: CEPOH-PP-A / Kenneth Cabalce	4	3	1
U.S. Army Corp. of Engineers Honolulu Engineering District Schofield Barracks, HI Attn: CEPOH-EC-S	2	2	1
U.S. Army Corp. of Engineers Honolulu Engineering District Bldg. 230, Room Ft. Shafter, HI 96858 Attn: CEPOH-EC-T	4	2	1
U.S. Army Corp. of Engineers Honolulu Engineering District Bldg. 230, Room Ft. Shafter, HI 96858 Attn: CEPOH-EC-D	2	2	1
U.S. Army Corp. of Engineers Honolulu Engineering District Bldg. 220, Room Ft. Shafter, HI 96858 Attn: CEPOH-EC-E	1	1	
3 rd Brigade Commander Schofield Barracks, HI	2	1	1
Director of Public Works U.S. Army Garrison, Hawaii Attn: Michael Kumabe WAAF, Schofield Barracks, HI 96857-5013	4	2	1

DISTRIBUTION

Activity and Address	Drawing Size <Full>	Drawing Size <Half>	Color Boards**
Directorate of Information Management U.S. Army Garrison, Hawaii Attn: Thomas Weber Fort Shafter, HI	2	2	
Military Police Battalion, Hawaii Attn: Harold Evans Helemano Military Reservation, HI	1	1	
State Historic Preservation Office Honolulu, HI		3	
Army Community of Excellence, Services Fort Lee, VA	1	1	
U.S. Army Information System Engineering Command Fort Detrick, MD	1	1	
U.S. Army Installation Management Agency Pacific Regional Office Fort Shafter, HI		1	

** Color boards shall be submitted with the 100% building submittal only.

5.0 MAILING OF DESIGN SUBMITTALS

5.1 General. Mail all design submittals to the Government during design and construction, using an overnight mailing service. The Government will furnish the Contractor addresses where each copy shall be mailed to after award of the contract. The submittals shall be mailed to the addresses listed in para. 4.1 Distribution.

5.2 Transmittal Letter. Each design submittal shall have a transmittal letter accompanying it indicating the date, design percentage, type of submittal, list of items submitted, transmittal number and point of contact with telephone number.

6.0 COORDINATION

6.1 Written Records. The Contractor shall prepare a written record of each design site visit, meeting, or conference, either telephonic or personal, and furnish within five (5) working days copies to the Contracting Officer and all parties involved. The written record shall include subject, names of

participants, outline of discussion, and recommendation or conclusions. Number each written record for the particular project under design in consecutive order.

6.2 Design Needs List. Throughout the life of his contract the Contractor shall furnish the COR a monthly "needs" list for design related items. This list shall itemize in an orderly fashion design data required by the Contractor to advance the design in a timely manner. Each list shall include a sequence number, description of action item, name of the individual or agency responsible for satisfying the action item and remarks. The list will be maintained on a continuous basis with satisfied action items checked off and new action items added as required. Once a request for information is initiated, that item shall remain on the list until the requested information has been furnished or otherwise resolved. Copies of the list will be mailed to both the Administrative Contracting Officer and the agencies tasked with supplying the information.

7.0 GOVERNMENT REVIEW

7.1 Design Schedule. Within 30 days after Notice to Proceed, the Contractor shall submit, for approval, a complete design schedule with all submittals and review times indicated in calendar dates. The Contractor shall update this schedule monthly. No design submittals will be reviewed or evaluated until after receipt and acceptance of the proposed design/review schedule.

7.2 Government Review Period. After receipt, the Government will be allowed thirty (30) calendar days to review and comment on each design submittal. The review will be for conformance with the technical requirements of the solicitation and the Successful Offeror's (Contractor's) RFP proposal. If the Contractor disagrees technically with any comment or comments and does not intend to comply with the comment, he must clearly outline, with ample justification, the reasons for noncompliance within seven (7) calendar days after receipt of these comments in order that the comment can be resolved. The Contractor shall provide and respond to all comments in DrChecks. The Contractor is cautioned in that if he believes the action required by any comment exceeds the requirements of this contract, that he should take no action and notify the COR in writing immediately. Review conferences will be held for each design submittal at a location to be furnished by the Contractor. The Contractor shall bring the personnel that developed the design submittal to the review conference. These conferences will take place the week after the receipt of the comments by the Contractor.

7.3 All documents submitted will be reviewed by the Government. Review comments will be issued to the A-E, indicating changes or other action required. All revisions shall be incorporated into the documents as required by review comments unless adequate justification is furnished to the Government indicating reason such actions or changes constitutes a change in the scope of work of this task order.

7.4 All review comments shall be resolved and annotated with the intended actions by the A-E. In cases of unsatisfactory compliance or resolution of comments, design documents will be returned to the A-E for correction.

7.5 DrChecks. After award of the task order, the A-E shall contact Resource Center Enterprises (1-800-428-4357) to register their firm and all sub-consultants in DrChecks (electronic government review system). Each firm will receive a registration key. Once the key is received, any individual from that firm will be able to register in DrChecks. The A-E will be responsible for accessing DrChecks to obtain review comments and provide annotated responses for this project at www.projnet.org. The A-E shall check and incorporate any applicable Honolulu District Design Quality Lessons learned (DQLL) into the design of this project.

7.6 Post review conference action. Copies of comments, annotated with comment action agreed on, will be made available to all parties before the conference adjourns. Unresolved problems will be resolved by immediate follow-on action at the end of conferences. Valid comments will be incorporated. After receipt of final (100%) corrected building design documents upon incorporation of backcheck comments the contractor may proceed with site and building development activities within

the parameters set forth in the contract and accepted design submittal. The Government, however, reserves the right to disapprove design document submittals if comments are significant (in the opinion of the Government, it does not comply with the contract documents nor the level of quality implied). If pre-final or final submittal(s) are incomplete or deficient, and require correction by the Contractor and re-submittal for review, the cost of rehandling and reviewing will be deducted from payment due the Contractor at the rate of \$ 5,000.00 per submittal.

8.0 DESIGN ANALYSIS

8.1 Media and Format. Present the design analysis on 8-1/2-inch by 11-inch paper except that larger sheets may be used when required for graphs or other special calculation forms. All sheets shall be in reproducible form. The material may be typewritten, hand lettered, handwritten, or a combination thereof, provided it is legible. Side margins shall be 1-inch minimum to permit side binding and head to head printing. Bottom margins shall be 1-1/4-inches, with page numbers centered 1 inch from the bottom.

8.2 Organization. Assign the several parts and sheets of the design analysis a sequential binding number and bind them under a cover indicating the name of the facility and project number, if applicable. The title page shall carry the designation of the submittal being made. The complete design analysis presented for final review with the final drawings and specifications shall carry the designation "FINAL DESIGN ANALYSIS" on the title page.

8.3 Design Calculations. Design calculations are a part of the design analysis. When they are voluminous, bind them separately from the narrative part of the design analysis. Present the design calculations in a clean and legible form incorporating a title page and index for each volume. Furnish a table of contents, which shall be an index of the indices, when there is more than one volume. Identify the source of loading conditions, supplementary sketches, graphs, formulae, and references. Explain all assumptions and conclusions. Calculation sheets shall carry the names or initials of the author and the checker and the dates of calculations and checking. No portion of the calculations shall be computed and checked by the same person.

8.4 Automatic Data Processing Systems (ADPS). When ADPS are used to perform design calculations, the design analysis shall include descriptions of the computer programs used and copies of the ADPS input data and output summaries. When the computer output is large, it may be divided into volumes at logical division points. Precede each set of computer printouts by an index and by a description of the computation performed. If several sets of computations are submitted, a general table of contents in addition to the individual indices shall accompany them. Preparation of the description, which must accompany each set of ADPS printouts, shall include the following:

1. Explain the design method, including assumptions, theories, and formulae.
2. Include applicable diagrams, adequately identified.
3. State exactly the computation performed by the computer.
4. Provide all necessary explanations of the computer printout format, symbols, and abbreviations.
5. Use adequate and consistent notation.
6. Provide sufficient information to permit manual checks of the results.

9.0 DRAWINGS

9.1 General. Prepare all drawings on Computer-Aided Design and Drafting (CADD) so that they are well-arranged and placed for ready reference and so that they present complete information. The Contractor shall prepare the drawings with the expectation that the Corps of Engineers, in the role of supervision, will be able to construct the facility without any additional assistance from the Contractor. Drawings shall be complete, unnecessary work such as duplicate views, notes and lettering, and repetition of details shall not be permitted. Do not show standard details not applicable to the project, and minimize unnecessary wasted space. Do not include details of standard products or items, which

are adequately covered by specifications on the drawings. Each Design Discipline shall provide a complete list of abbreviations and symbols used in their respective drawings. Detail the drawings such that conformance with the RFP can be checked and to the extent that shop drawings can be checked. Do not use shop drawings as design drawings. The design documents shall consist of drawings on a 36" x 24" format. The Contractor shall use standard Corps of Engineers title blocks and borders on all drawings. Submit an index of drawings with each submittal. The COR will furnish the Contractor file, drawing, and specification numbers for inclusion in the title blocks of the drawings.

9.2 Methods and Format. Create all drawings using CADD methods in MicroStation format. Save all Design Complete CADD files as MicroStation 8.0 or latest. The Contractor shall use EM 1110-1-1807 Standards Manual for U.S. Army Corps of Engineers Computer-Aided Design and Drafting (CADD) Systems as guidance to for standard details, cell libraries, title blocks, and layer/level assignments. Drawing features not addressed in EM 1110-1-1807 shall conform to drafting standards.

9.3 Use of Standard Fonts. Only standard fonts provided by MicroStation shall be used in the creation of CADD files. No fonts created by third parties or the designers are permitted.

9.4 Use of Reference Files. The uses of Reference files and Xrefs during the design stage are up to the discretion of the designers. All CADD files at Design Complete submittal shall be free standing, independent files, and not supported by reference files. All Reference files (MicroStation) shall be removed at Design Complete submittal.

9.5 Submittal Media. Submit all Design Complete CADD files on the following media.

-Read/Write CD-ROM Disk

10.0 SPECIFICATIONS

10.1 General. The Contractor shall submit marked-up and final specifications as required. The specifications may be any one of the major, well known master guide specification sources such as MASTERSPEC from the American Institute of Architects, SPECTEXT from Construction Specification Institute or Unified Facilities Guide Specifications (UFGS), etc. unless otherwise required. Use only one source for the project unless otherwise required. Edit the specifications for this project and submit in marked-up or redlined draft version at the Pre-Final Review submittal stage. If the design is based on a specific product, the specification shall consist of the important features of the product. The specification shall be detailed enough such that another product meeting the specification could be substituted and it would not adversely impact the project. After incorporation of comments, submit a final, design complete specification package. Delete all marked-out or redlined text and type in all inserted text.

10.2 Submittal Register. Develop the submittal requirements during construction during the design phase of the contract, by producing a Contractor Submittal Register during design. Attach a submittal register to each section of the specifications for the submittal requirements of that section. Prepare the Submittal Register on ENG Form 4288. The Contractor shall be responsible for listing all required submittals necessary to insure the project requirements are complied with. The Register shall identify submittal items such as shop drawings, manufacturer's literature, certificates of compliance, material samples, guarantees, test results, etc that the Contractor shall submit for review and/or approval action during the life of the construction contract. The Contractor shall place all the Submittal Register pages in an appendix of the final specifications.

11. CONTENTS OF 50% DESIGN SUBMITTAL

The 50% design submittals shall contain as a minimum, the following:

11.1 Paving, Grading and Drainage

11.1.1 Explanation of objectives and factors influencing siting decisions.

General overview of major site features planned, such as building orientation, drainage patterns, parking provisions, traffic circulation, provisions for the handicapped, security requirements, etc. Rationale for locating major site elements. Set back requirements or specific clearance requirements. Locations of borrow and spoil areas.

11.1.2 Requirements for flood protection. Selected storm drainage plan with respect to existing storm drainage system. Alternate schemes considered in arriving at selected plan. Disposition of storm water collected in the new system. Planned connections to the existing storm drainage system. Handling of roof runoff. Features and locations of special drainage structures. Types of materials to be specified for each installation. Selected design values to be used in the storm drainage calculations such as surface runoff coefficient, retardance coefficient, infiltration rate, and rainfall intensity based on a 10-year storm frequency. Design flood frequency and minimum elevation to provide flood protection. Planned finished floor elevations.

11.1.3 Slope stability analysis (cut and fill) and justification for any slopes steeper than 3:1 for cohesive soils and 4:1 for cohesionless soils.

11.1.4 Pavement design analysis shall include design method and all pertinent data including traffic types, volumes, soils data and any other data used to design the pavement structures. Flexible Pavements--required thickness of base and pavement based on the pavement design and established subgrade CBR. Rigid Pavements--required thickness of nonreinforced concrete pavement and the established modulus of subgrade reaction.

11.1.5 Traffic volume and type. Particular AASHTO design vehicles for which turning movements are to be provided for and corresponding minimum turning radius.

11.1.6 Requirements for curbs, sidewalks, guardrails, traffic signs, markings, fencing, etc. Intersections or connections to existing roads and streets. Traffic routing during construction.

11.1.7 Site plan (geometry) and grading and drainage plan.

11.1.8 An overall site plan on one drawing showing all paving, grading and drainage.

11.1.9 Permit applications.

11.2 Geotechnical. A geotechnical report and design analysis.

11.3 Water Supply and Sanitary Sewage.

11.3.1 Design narrative and design calculations for the water supply and wastewater systems relating to this project. Include an analysis of the existing water distribution system capability to supply sufficient quantity at adequate pressures for fire protection. If the existing water distribution system is inadequate, provide the design solution to augment the water supply to meet the fire protection requirements. Design for wastewater systems shall show sewage flows, pipe sizes, routing, elevations, pump type and capacities, wet well sizing, etc. The Contractor shall present an analysis presenting proposed corrections of deficiencies or confirming the adequacy of the existing water supply system to support the proposed building.

11.3.2 Drawings developed to the point of showing in plan the anticipated systems and layout. Rough details of pumping systems or other features requiring detail drawings.

11.3.3 Anticipated permit requirements for water and wastewater features.

11.3.4 Lawn and Landscaping Irrigation System.

The design submittal shall include drawings clearly showing the piping layout and location of sprinkler

heads coordinated with the landscaping plan, control valves, backflow preventers, rain check switches, controllers, etc. Indicate buildings, walks, shrubbery, trees, and other obstacles that might interfere with the proper operation of the sprinkler system. A design analysis calculating the pressures at each sprinkler head for the capacity and radius of throw is required. Details of the sprinkler head installation, valve boxes, and other irrigation appurtenances shall be submitted.

11.4 Landscape, Planting and Turfing.

11.4.1 The landscape planting design narrative shall describe the analysis of existing site conditions, including an indication of existing plant materials that are to remain on the site. The statement of concept shall indicate specific site problems related to proposed development and the rationale for proposed plant locations. The narrative shall also include a list of suggested types and sizes of plant materials which are to be used, based upon the designated functional and visual criteria.

11.4.2 The concept drawings shall be prepared at a scale which corresponds with the site layout and grading plans and, likewise, shall include reference coordinates, north arrows, graphic scales and appropriate legends. An overall planting layout shall be developed and shall include enlarged detail plans of specific areas, as needed, to clarify requirements. The proposed layout shall indicate shade trees, evergreen trees, flowering trees, shrub masses, etc., according to designated functional and visual locations of planting. A legend which also indicates sizes of plants recommended for each of the above categories shall be included. The drawings and all subsequent plans shall indicate existing and proposed buildings, paved areas, signs, light standards, transformers, dumpster areas, storm drainage system, and other structures and utilities.

11.5 Architectural

11.5.1 Design narrative shall provide a summary of functional space relationships, as well as circulation. There shall also be a general statement for the rationale behind the major design decisions.

11.5.2 Plans shall indicate dimensions, columns lines, and detail references. Toilets and other specialized areas shall be drawn to ¼" scale and shall show any needed interior features.

11.5.3 Finish schedule shall indicate material, finishes, colors and any special interior design features such as soffits, fascias, and lighting troughs, etc.

11.5.4 All required equipment shall be shown on the drawings with an equipment list.

11.5.5 List any special graphics requirements that will be provided.

11.5.6 Schedules shall be provided for both doors and windows. These schedules shall indicate sizes, types, and details for all items shown on floor plans.

11.5.7 Hardware sets using Builders Hardware Manufacturers Association Inc. (BHMA) designations.

11.5.8 Composite floor plan showing all prewired workstations or kitchen equipment. Also show typical elevations of each type of workstation or equipment.

11.5.9 Comprehensive Interior Design (CID) package.

11.5.10 List all references used in the design including but not limited to Government design documents and industry standards.

11.5.11 Specifications: The architectural work for the project shall be constructed in accordance with Unified Facilities Guide Specifications (UFGS). Edited UFGS specification sections shall clearly indicate design intent including products and execution to be provided.

11.6. Structural Design.

11.6.1 State the live loads to be used for design. Include roof and floor loads; wind loads, lateral earth pressure loads, seismic loads, etc., as applicable.

11.6.2 Describe the method of providing lateral stability for the structural system to meet seismic and wind load requirements. Include sufficient calculations to verify the adequacy of the method.

11.6.3 Furnish calculations for all principal roof, floor, and foundation members.

11.6.4 This submittal shall include drawings showing roof and floor framing plans as applicable. Principal members will be shown on the plans. A foundation plan shall also be furnished showing main footings and grade beams where applicable. Where beam, column, and footing schedules are used, show schedules and fill in sufficient items to indicate method to be used. Typical sections shall be furnished for roof, floor, and foundation conditions. Structural drawings for proposals and submittals shall be separate from architectural drawings.

11.6.5 Provide any computer analyses used shall be widely accepted, commercially available programs or complete documentation.

11.6.6 Antiterrorism/Force Protection (AT/FP) and Seismic Evaluation and Rehabilitation. The design analysis provided in the proposal submission shall be further developed. Complete the Government-furnished designs on AT/FP and seismic hazards mitigation, and provide detailed drawings reflecting the completed designs. Designs shall be stamped by a structural engineer licensed in the U.S.

11.6.7 A narrative description and supporting calculations shall show structural adequacy of existing structure to support new live loads. If existing floor systems will require strengthening to maintain structural integrity, provide an analysis and complete and detailed drawings showing the work.

11.7 Specific Mechanical and Plumbing Requirements:

11.7.1 List all references used in the design including Government design documents and industry standards.

11.7.2 Provide justification and brief description of the types of equipment, fixtures and piping materials proposed for use. Descriptions shall include narrative and catalog cuts.

11.7.3 Prepare detail calculations for systems such as sizing of air conditioning systems, heat recovery system, gas hot water heater and piping, and storage tanks.

11.7.3.1 Include computations for sizing equipment, air duct design, and U-factors for ceilings, roofs and exterior walls and floors. Contractor shall employ commercially available energy analysis techniques to determine the energy performance of all passive systems and features. Use of hourly energy load computer simulation (e.g., HAP, Trace, TRNSYS, DOE 2.1 Blast, etc.) is required. These calculations can be used to size the mechanical systems. Based on the results of calculations, provide a complete list of the materials and equipment proposed for heating and plumbing, with the manufacturer's published cataloged product installation specifications and roughing-in data. The heating and cooling equipment data shall include the manufacturer's wiring diagrams, installation specifications, ARI certification, and the standard warranty for the equipment.

11.7.4 include drawings of all areas including air conditioning, hot water, cold water, waste and vent piping. Drawings shall include plans, sections, piping isometric diagrams, control diagrams, DDC points list, sequence of operation, schedules and details. Minimum of 1:100 scale shall be used on all plan drawings, and building sections. Detailed drawings shall be minimum 1:50 scale. Detailed

drawings shall be provided for all mechanical spaces including, but not limited to, toilet areas, mechanical rooms, chiller plant, hot water plant and fire pump building. Minimum drawing requirements are as follows:

Room designations.

Mechanical legend and applicable notes.

Location of all ductwork or piping

Location and capacity of all terminal units (i.e., registers, diffusers, grilles, variable air volume boxes).

Exhaust fan and range hood location.

Size of all ductwork 400 mm (16 in.) or larger in any dimension and piping 100 mm (4 in.) or larger

Location of heating/cooling plant (i.e., boiler, chiller, cooling tower, etc).

Location of all air handling equipment.

Return air paths (i.e., undercut doors, transfer grilles).

Flue piping size and location.

Fixture schedule and designations

Location of utility entrances.

Waste and water pipe location and size.

Details of any building penetration (i.e. louvers, penthouses, powered roof ventilators, vents, etc.)

11.7.4.1 Equipment Schedule: Complete equipment Schedules shall be provided. Schedule shall include at minimum:

Capacity

Electrical characteristics

Efficiency (if applicable)

Manufacturer's name

Optional features to be provided

Physical size

Weight

11.7.6 Specifications: The mechanical and plumbing work for the project shall be constructed in accordance with Unified Facilities Guide Specifications (UFGS). Edited UFGS specification sections shall clearly indicate design intent including products and execution to be provided.

11.8 Fire Protection

11.8.1 Design documents: All Fire Protection Design documents shall be in accordance with ER 1110-345-700 and are required to be submitted for approval prior to start of construction. Fire protection symbols in NFPA 170 shall be used. See Scope of work, Chapter 12 for acronym definitions used in this paragraph.

11.8.2 Fire Protection Analysis is required to be submitted in accordance with UFC 1-200-01 and UFC 3-600-1. Requirement must be stated with what is being provided in the project to meet this requirement. Include proposal submittal and the following: Hydraulic analysis and node sketch for all sprinkler systems to be installed in all buildings in accordance with FSC and UFC. Calculations confirming the adequacy of the existing water supply shall be provided. Hydrant flow test is required and flow data shall be submitted. Hydrant flow test shall be performed with the Schofield Barracks Water Treatment Plant clearwell pumps off. Calculations for any fire pump and tank shall be provided. Locations of all fire pumps and tanks shall be shown. All IBC allowable area, allowable height, construction type to be used and location on property requirements shall be submitted. Fire alarm system type (addressable) to be discussed. Discussion of all the life safety requirements of LSC shall be included.

11.8.3 Fire Protection Drawings:

11.8.3.1 General: Minimum of 1:100 scale shall be used on all plan drawings, and building sections. Drawings shall show fire alarm systems, sprinkler system and life safety requirements (fire barriers, exits, etc.). Detail drawings shall be minimum 1:50 scale. Minimum drawing requirements are as follows:

11.8.3.2 Automatic Fire Sprinkler system: Sprinkler head plans, attic plans, building sections, sprinkler riser with shutoff valve and tamper switch, alarm check valve, preaction/deluge valve, local alarm gong, flow/pressure switch, wall penetrations, fire rated wall penetrations, fire department connection locations, and sprinkler design parameters (occupancy hazard for each room, minimum sprinkler density to be used for each occupancy hazard, minimum design area, most hydraulically remote area, sprinklered areas). Detail fire pump plans, sections, isometric diagram of the fire pump system, tank plans, tank sections, tank details and piping layout and details.

11.8.3.3 Fire alarm system: Plans showing location of all initiation devices (manual pull stations, duct smoke detectors, sprinkler flow switches, smoke detectors, magnetic door holders), visible/audible notification appliances, supervisory devices (tamper switches, low pressure switches), fire alarm panel, fire alarm exterior annunciator, and fire alarm diagram.

11.8.3.4 Life Safety: All fire rated walls shall be shown where they begin and where they end. All fire rated shafts, stairs, vertical openings, seismic joints shall be shown. Fire rated doors, fire rated door frames, fire rated windows and window frames, door hardware, fire dampers, and smoke dampers are to be shown with the appropriate fire rating in hours.

11.8.3.5 IBC requirements: Site plan showing the location of the project buildings in relation to other existing buildings, roads, parking lots, fuel tanks, water tanks, electric poles, exterior power lines.

11.8.3.6 Means of egress lighting and LED type exit signs meeting LSC shall be shown on the plans.

11.8.4 Specifications.

11.8.4.1 General requirements: The fire protection work for the project shall be constructed in accordance with Unified Facilities Guide Specifications (UFGS) sections 13920 Fire Pumps, 13930 Wet Pipe Sprinkler System, Fire Protection, 13945 Preaction/Deluge Sprinkler System, Fire Protection, 13851 Fire Detection and Alarm System Addressable, and 7840 Firestopping. Edited UFGS specification sections shall be used and revised in accordance with the restrictions in ER 1110-345-700, Appendix D and the following:

11.8.4.2 Sprinkler systems: No plastic piping or fittings, and "T drill method" are allowed. Sprinkler system design area, density and hydrant demand shown in 1008C shall be followed. Sway bracing and branch restraints are required. Government Shop drawing submittal approval and preparer approval is required.

11.8.4.3 Fire alarm systems: Class A looped fire alarm system is required. "T taps" are prohibited. Fire Protection Engineer qualification approval, Fire Protection Engineer shop drawing approval and fire alarm shop drawing submittal approval by the Government are required. Modify the operations paragraph to meet the Attachment Fire Alarm Control Matrix control sequence.

11.8.4.4 Firestopping, fire dampers, fire rated doors/door frames, smoke dampers, and exit signs, must be submitted for Government approval.

11.9 Interior Electrical System

11.9.1 The power riser or one-line diagram shall be essentially complete except for finalization of conduit and wire sizes.

11.9.2 Panelboards, switchboards, switchgear, motor control centers, and all other utilization

equipment shall be located on the floor plans. Schedules for applicable equipment shall be provided. The schedules shall include all pertinent information to fully describe the equipment. Elevations for free standing equipment shall be provided but need not be entirely finalized.

11.9.3 Details of the layouts for electrical closets and rooms shall be shown.

11.9.4 Receptacles and light fixture layouts (wiring not required at this stage) shall be shown for all rooms.

11.9.5 Areas where nonlinear loads will be encountered shall be identified. Per the requirements of paragraphs 4c and 4g of ETL 1110-3-403, the use of 75 degree C. (minimum) conductors is required. Branch circuits serving eight-wire systems furniture or groups of nonlinear loads shall be 3#12, 1#10 N., 1#12 GND. and 1#12 Isolated GND. Feeders serving panelboards with nonlinear loads shall have the neutral conductor ampacity based on at least 1.73 times the ampacity of the phase conductors. The neutral bus in the panelboards shall have the same criteria. The simplest way to accomplish the upsizing of the neutral conductor is to provide double ampacity neutrals or parallel conductors in sizes permitted by the National Electrical Code.

11.9.6 A completed fixture schedule shall be included on the drawings.

11.9.7 All removals shall be shown on demolition plans.

11.9.8 Describe energy conservation measures and/or techniques that are being incorporated into the design.

11.10 Exterior Electrical Distribution System

11.10.1 In a narrative, clearly describe the electrical distribution system and state the changes to be made to the existing system to accommodate this project. State any deficiencies to be corrected and provide a description of all new work being performed.

11.10.2 State the electrical characteristics of the power supply from the service point to the main service equipment.

11.10.3 Indicate the type, number, voltage rating and connections, and kVA rating of all transformers provided.

11.10.4 State the type of conductor to be used and provide a justification for its use.

11.10.5 Include a statement describing the criteria used for the exterior design such as primary and secondary voltage drop. Describe the physical characteristics of both the underground and overhead power lines. Provide the short circuit current available at the site and state the source of this value.

11.10.6 Include a description of all exterior lighting systems included in the design. Identify the fixture types, poles and design lighting levels. Provide point-to-point calculations showing that all design levels have been achieved.

11.10.7 The exterior electrical design drawings shall show all poles (lighting), underground conductors, manholes, handholes, ductbanks, and all pertinent components identified on the site plans.

11.10.8 All removals shall be shown on demolition plans.

11.11. Electronic Systems

Public Address System

Telecommunications System
Cable Television System
Intrusion Detection
Personal Alert (Mass Notification) System

Provide a descriptive narrative of all electronic systems that are required for this project. The design analysis shall include all calculations required to support design decisions and estimates at this stage of design. The analysis shall include specific criteria furnished, conference minutes and cost analyses of all systems considered.

11.11.1. Show location of telecommunications outlets (including pay phones) on the plans. Include legend and symbol definition to indicate height above finished floor. Show a Telecommunication Conduit System Riser Diagram.

11.11.2. Verification of the validity of any existing drawings and/or any other data furnished by the Government shall be the responsibility of the engineering services firm.

11.11.3. Provide a statement describing the extent of any exterior work such as telecommunication lines, cable television (TV) distribution cables, duct banks, etc., outside of 5 feet from the building line.

11.11.4. Exterior work to be shown on electrical site plan:

Existing and new telecommunications and cable television service lines, both overhead and underground, shall be properly identified. Show removals and relocations, if any.

11.11.5. Show the location of all electronic system panels, devices, outlets, etc., on the floor plans. Show the proposed riser diagrams for all systems. Provide a complete symbol legend for all devices or equipment shown on the plans. For work requiring removals or demolition, the designer shall show how demolition work is to be done.

11.12. Submit outline specifications unless otherwise indicated above.

11.13. Submit the SPIRIT rating sheet for sustainable level compliance as indicated in the SOW.

12.0 CONTENTS OF 90% DESIGN SUBMITTAL

12.1 General: The pre-final (90%) drawings are an extension of the reviewed 50% drawings and are to include the 50% comments and responses.

12.1.2 Design Analysis. The pre-final Fire Protection and Life Safety Analysis shall be included in the Design Analysis. The design analysis is an extension of the reviewed 50% design analysis and supports and verifies the design complies with the requirements of the project.

12.1.3 Drawings. The pre-final (90%) drawings are an extension of the review 50% drawings and include all revisions incorporated from the 50% review comments.

12.1.4. Provide pre-final (90%) marked up specifications. The Contractor shall submit all specification sections to be used clearly indicating what products and execution to be used in the final design.

12.1.5 Comment Response Package: Complete package showing all comments from all previous reviews and the respective response and disposition.

12.2 The site/utility portion of the 90% design submittal shall contain as a minimum, the following:

12.2.1 General Narratives:

12.2.1.1 Site/Layout: Explanation of objectives and factors influencing siting decisions. General overview of major site features planned, such as building orientation, drainage patterns, parking provisions, traffic circulation, provisions for the handicapped, security requirements, etc. Rationale for locating major site elements. Set back requirements or specific clearance requirements. Locations of borrow and spoil areas.

12.2.1.2 Utility Systems: Design narrative for the water supply, storm drainage, wastewater, electrical, and telecommunications systems relating to this project. Include an analysis of the existing distribution systems capability to supply sufficient quantity at adequate levels. If the existing distribution systems are inadequate, provide the design solution to augment the systems to provide the requirements for the new facilities.

12.2.2 All drawings included in the required technical data for the proposal submission (see SECTION 01010: STATEMENT OF WORK), shall be developed to 90 percent completion. In addition to the individual utility plans, submit a combined utility plan drawn to the same scale as the individual utility plans.

12.2.2.1 General Site Layout: Label and tie down locations of new site elements (buildings, walks, curbs, new pavements surfaces, gutters, parking, trash enclosures, bicycle racks, etc.) Scale shall be included.

12.2.2.2 Site Grading and Drainage Plans: Show locations of all sediment basins, diversion ditches, and other erosion control structures. Indicate the approximate drainage areas each will service. Indicate the materials, construction and capacity of each structure. Include limits of landscaping and seeded areas. Provide building grade sections (at least one view per axis of building(s) and extended through grading limits). General site grading and drainage shall be indicated by contour lines with an interval of not more than approximately 0.5 m [1.5 feet].

12.2.2.3 Road Alignment Plans: Scale shall be no greater than as indicated in SECTION 01010: STATEMENT OF WORK and profiles showing pavement and shoulder widths, azimuths and curve data, limits of grading, and erosion control. The materials to be used shall be indicated.

12.2.2.4 Traffic Control Plan: Traffic routing and signage shall be in accordance with The Manual on Uniform Traffic Control Devices for Streets and Highways, U.S. Department of Transportation, Federal Highways Administration.

12.2.2.5 Sanitary Sewer and Water Plan: Scale shall be as indicated in SECTION 01010: STATEMENT OF WORK and profiles showing location and elevation of pipe, thrust blocks, manholes, valves connections, etc. Materials and construction of pipes, valves, valve boxes, sewage treatment systems and appurtenances shall be indicated. Specifications shall be provided.

12.2.2.6 Electrical Plan Requirements:

12.2.2.6.1 Required diagrams and details on Site Electrical and Telecommunications Drawings.

12.2.2.6.1.a. Off-Site Electrical and Telecommunications Distribution Plans:

12.2.2.6.1.b. Off-Site Primary Circuit Routing Plans:

12.2.2.6.1.c. Off-Site One Line Diagrams

12.2.2.6.1.d. Off-Site Details.

12.2.2.6.1.e. On-Site Electrical and Telecommunications Distribution Plans:

12.2.2.6.1.f. On-Site One Line Diagrams

12.2.2.6.1.g. On-Site Distribution Transformer Schedule: Provide with the following headings:

Transformer Designation. Transformer Size (KVA). Building(s) Served.

Primary Phase(s) and Circuit to which connected.

12.2.2.6.1.h. Details shall include but not limited to poles, manholes, handholes, ductbanks, site

lighting poles, trenching, pad-mounted transformers and switches, etc. Calculations shall support all new manhole and handhole locations.

12.2.2.6.2 See Chapter 9, Electrical Systems, for other design requirements.

12.2.2.7 Specifications: Provide pre-final draft marked-up specifications, which include all sections, which apply to site/utility work.

12.2.2.8 Design Analysis: Design analysis shall include design calculations fully developed to support the design of the site and utility systems included in this submittal.

12.2.2.9 Geotechnical: Soils analysis and geotechnical report. Geotechnical information must be provided to support all assumptions and design parameters utilized in the presented site/utility design as applicable.

12.3 The building and landscaping portion of the 90% design submittal shall contain as a minimum, the following:

12.3.1 Landscaping and Irrigation System: The design submittal shall include drawings clearly showing the piping layout and location of sprinkler heads coordinated with the landscaping plan, control valves, backflow preventers, rain check switches, controllers, etc. Indicate buildings, walks, shrubbery, trees, and other obstacles that might interfere with the proper operation of the sprinkler system. A design analysis calculating the pressures at each sprinkler head for the capacity and radius of throw is required. Details of the sprinkler head installation, valve boxes, and other irrigation appurtenances shall be submitted.

12.3.2 Landscape, Planting and Turfing

12.3.2.1 The landscape planting design narrative shall describe the analysis of existing site conditions, including an indication of existing plant materials that are to remain on the site. The statement of concept shall indicate specific site problems related to proposed development and the rationale for proposed plant locations. The narrative shall also include a list of suggested types and sizes of plant materials, which are to be used, based upon the designated functional and visual criteria.

12.3.2.2 The drawings shall be prepared at a scale which corresponds with the site layout and grading plans and, likewise, shall include reference coordinates, north arrows, graphic scales and appropriate legends. An overall planting layout shall be developed and shall include enlarged detail plans of specific areas, as needed, to clarify requirements. The proposed layout shall indicate shade trees, evergreen trees, flowering trees, shrub masses, etc., according to designated functional and visual locations of planting. A legend that also indicates sizes of plants recommended for each of the above categories shall be included. The drawings and all subsequent plans shall indicate existing and proposed buildings, paved areas, signs, light standards, transformers, dumpster areas, storm drainage system, and other structures and utilities.

12.3.3 Architectural

12.3.3.1 The architectural analysis, drawings and specifications shall include the 50% submittal with corrections incorporated including the annotated comments indicating what corrections were done on the 50% submittal based on comments on the 50% submittal. Architectural specifications must be complete with all edits incorporated in the specification text.

12.3.3.2 Details: Complete Construction details, sections, interior elevations, exterior elevations, etc., shall be provided to describe the methods and materials of design.

12.3.3.3 Pre-wired workstation composite floor plans. Pre-wired workstation typicals - elevations and

component inventory. Pre-wired workstation panel identification plan with electrical outlet placement including base feed.

12.3.3.4 Comprehensive Interior Design package shall include the 50% submittal with corrections incorporated including the annotated comments indicating what corrections were done on the 50% submittal.

12.3.4 Structural Systems

12.3.4.1 State the live loads to be used for design. Include roof and floor loads; wind loads, lateral earth pressure loads, seismic loads, etc., as applicable.

12.3.4.2 Describe the method of providing lateral stability for the structural system to meet seismic and wind load requirements. Include sufficient calculations to verify the adequacy of the method.

12.3.4.3 Furnish calculations for all principal roof, floor, and foundation members.

12.3.4.4 This submittal shall include drawings showing roof and floor framing plans as applicable. Principal members will be shown on the plans. A foundation plan shall also be furnished showing main footings and grade beams where applicable. Where beam, column, and footing schedules are used, show schedules and fill in sufficient items to indicate method to be used. Show typical bar bending diagram if applicable. Typical sections shall be furnished for roof, floor, and foundation conditions. Structural drawings for proposals and submittals shall be separate from architectural drawings.

12.3.4.5 Provide any computer analyses used shall be widely accepted, commercially available programs and complete documentation of the input and output of the program.

12.3.4.6 Provide complete seismic analyses for all building structural components. Seismic calculations shall clearly demonstrate compliance with all requirements set forth in the Statement of Work.

12.3.5 Specific Mechanical and Plumbing Requirements:

12.3.5.1 The mechanical and plumbing analysis, drawings and specifications shall include the 50% submittal with corrections incorporated including the annotated comments indicating what corrections were done on the 50% submittal based on comments on the 50% submittal. Mechanical and plumbing specifications must be complete with all edits incorporated in the specification text.

12.3.5.2 Details: Construction details, sections, elevations, etc., shall be provided where required for clarification of methods and materials of design. All roof and exterior wall penetrations shall be detailed on the drawings.

12.3.6 Fire Protection: The Fire protection analysis, drawings and specifications shall include 50% submittal with corrections incorporated including the annotated comments indicating what corrections were done on the 50% submittal based on comments on the 50% submittal. Fire protection specifications must be complete with all edits incorporated in the specification text.

12.3.7 Electrical and Electronic Systems Requirements

12.3.7.1 The Electrical and Electronic systems design analysis, drawings, and specifications shall include the 50% submittal with corrections incorporated, including the annotated comments indicating what corrections were done on the 50% submittal based on comments on the 50% submittal. All requirements specified in the 50% submittal must be developed and completed to this 90% stage.

12.3.7.2 Electrical and Electronics Floor Plans. The floor plans shall show all principle architectural

features of the building, which will affect the electrical design. The floor plans shall also show (but not limited to) the following:

- Room designations.
- Electrical legend and applicable notes.
- Lighting fixtures, properly identified.
- Location of smoke detectors and fire alarm devices
- Location of telecommunication and cable TV outlets.
- Location of all electronic systems devices
- Switches for control of lighting.
- Receptacles.
- Location and designation of panel boards. Plans should clearly indicate type of mounting required (flush or surface) and be reflected accordingly in specifications. Service entrance (conduit and main disconnect).
- Location, designation and rating of motors and/or equipment which requires electrical service.
- Show method of termination and/or connection to motors and/or equipment. Show necessary junction boxes, disconnects, controllers (approximate only), conduit stubs, and receptacles required to serve the motor and/or equipment.
- All circuit wiring and cables (number and sizes)
- All conduit runs and sizes
- All riser and one line diagrams
- All other electrical and electronic equipment

12.3.7.3. Building Riser Diagram (from pad-mounted transformer to unit load center panel board): Indicate the types and sizes of electrical equipment and wiring. Include grounding and metering requirements.

12.3.7.4. Load Center and Panelboard Schedule(s): Schedule shall indicate the following information:

- Load Center/Panelboard Characteristics (Panel Designation, Voltage, Phase, Wires, Main Breaker Rating and Mounting)
- Branch Circuit Designations.
- Load Designations.
- Circuit Breaker Characteristics. (Number of Poles, Trip Rating, AIC Rating)
- Branch Circuit Connected Loads (AMPS).
- Special Features.

12.3.7.5 Lighting Fixture Schedule: (Schedule shall indicate the following information:)

- Fixture Designation.
- General Fixture Description.
- Number and Type of Lamp(s).
- Type of Mounting.
- Voltage
- Special Features.

12.3.7.6. Details: Details of all light fixtures shall be provided. Construction details, sections, elevations, etc., shall be provided where required for clarification of methods and materials of design.

12.3.7.7 Electrical and Electronic systems specifications must be complete with all mark-ups and edits incorporated in the specification text.

12.3.7.8 Design analysis and calculations for the electrical systems shall be prepared by a licensed professional engineer with experience and shall be stamped as such. The design analysis shall be separately bound, in one or more volumes. The design analysis shall include all calculations required to support design decisions, including (but not limited to) lighting calculations, voltage drop

calculations, load calculations (for transformers, conductor sizes, circuit breaker sizes, panelboard sizes, etc.), and short circuit calculations. The analysis shall also include specific criteria furnished, conference minutes, and cost analyses of all systems considered. Show functional and engineering criteria, design information, and calculations applicable to the project. The analysis shall be organized in a format appropriate for review, approval, and record purposes. The design calculations shall indicate methods and references identified, and shall explain assumptions and conclusions.

12.3.7.9. Voltage Drop (VD) Calculations: Provide voltage drop calculations of primary feeders, site lighting circuits, service laterals, feeder conductors, and selected branch circuits over 31m (100 ft) in length. Maximum allowable voltage drop for site lighting and service laterals is 3%. The combined voltage drop for the service laterals, unit feeders, and branch circuit cannot exceed 5%.

12.3.7.10 See Chapter 9, Electrical Systems, for other design requirements.

12.3.8 Kitchen Requirements: List all references used in the design including Government design documents and industry standards. Provide justification and brief description of the types of equipment, fixtures and piping materials proposed for use. Descriptions shall include narrative and catalog cuts. Prepare detail calculations for systems such as sizing of makeup air systems, exhaust systems, refrigeration equipment, kitchen equipment and gas piping. List of the materials and equipment proposed shall include the manufacturer's published cataloged product installation specifications and roughing-in data. The data shall include the manufacturer's wiring diagrams, installation specifications, certifications, and the standard warranty for the equipment. Include drawings of all areas. Drawings shall include plans, sections, piping isometric diagrams, control diagrams, sequence of operation, schedules and details. Minimum of 1:50 scale shall be used on all plan drawings, and building sections. The kitchen work for the project shall be constructed in accordance with Unified Facilities Guide Specifications (UFGS). Edited UFGS specification sections shall clearly indicate design intent including products and execution to be provided.

12.3.9 Sustainable Design: Provide a completed SPiRiT checklist to show compliance with the level indicated in the SOW and incorporated comments on the previous design submittal.

13.0 CONTENTS OF 100% DESIGN SUBMITTAL

13.1 General: A complete set of construction documents plans and specifications at the same level of detail as if the project were to be bid including a complete list of equipment, fixtures and materials to be used. The final (100%) drawings are an extension of the reviewed 90% drawings and are to include the 90% comments and responses. All details shall be shown on the drawings.

13.1.2 Complete design analysis for all design disciplines. The final Fire Protection and Life Safety Analysis shall be included in the Design Analysis. The design analysis is an extension of the reviewed 90% design analysis and supports and verifies the design complies with the requirements of the project.

13.1.3 The Final (100%) drawings are an extension of the review 90% drawings and include all revisions incorporated from the 90% review comments. Drawings shall be 100% complete, signed and sealed by the designer of record.

13.1.3. Provide Final (100%) specifications. The Contractor shall make final identification of all materials at this stage.

13.1.3 Comment Response Package: Complete package showing all comments from all previous reviews and the respective response and disposition.

13.1.3 Additional Requirements.

- a. Compliance Certification

(1) The Contractor shall certify that the features and standards offered in its submittals meet or exceed the corresponding mandatory features and standards stated in the Scope of Work. A certification to this effect shall be included on the title sheet of each submittal made under this section. The certification shall be signed by the person(s) authorized to bind the offeror under the offer, or by persons who have been delegated, in writing such authorization.

(2) The parties understand that, at the time of award, all features and standards proposed in the Contractor's accepted offer, including the mandatory requirements of the RFP, as amended by the Contractor's accepted offer, become binding upon both the Government and the Contractor. Deviations from the features and standards of the accepted offer, including deviations from the RFP's mandatory requirements, as amended by the accepted offer, may be approved by the Contracting Officer upon written application by the Contractor and agreement as to good and sufficient consideration by the parties, reflected in an equitable adjustment to the contract price.

b. Field Inspection. The Contractor shall verify field conditions, which are significant to design, by field inspection, researching and obtaining all necessary as-built drawings and reproducing them for his own use as necessary, and discussing status with knowledgeable personnel. The information shall be reflected in the design documents.

c. Additional Topographic Information. The Government has supplied all or a majority of the topographic information required for the project as part of the topographic survey sheets provided in the Request for Proposals drawings. Any additional topographic information required by the Contractor for design after award of the contract shall be procured and paid for by the successful Proposer.

d. Soil and Foundation Report. A final and complete soil and foundation report shall be furnished by the Contractor in accordance with Site Engineering Section of the Statement of Work.

13.2 The building and landscaping design portion of the 100% design submittal shall contain, as a minimum, the following items for all submittals:

13.2.1 Landscape and Planting Final design drawing(s) shall include a complete schedule of plant materials which indicates their botanical and common names, plan symbols, quantities, sizes, condition furnished, and pertinent remarks. The drawings shall be prepared at a scale that corresponds with the site layout and grading plans and, likewise, shall include reference coordinates, north arrows, graphic scales and appropriate legends. An overall planting layout shall be developed and shall include enlarged detail plans of specific areas as needed, to clarify requirements. Final design drawings, indicating proposed plants by a (+) mark for the plant location and a circle which is scaled at approximately 2/3 the ultimate growth spread (diameter) of plants, shall also include a complete schedule of plant materials which indicates botanical and common names, plan symbols, quantities, sizes, condition furnished, and pertinent remarks. Final drawings shall also include the basic details for installation of tree, shrub, and ground cover planting, as well as any other applicable details for clarification of specific project requirements.

13.2.2 Architectural

13.2.3.1 The architectural analysis, drawings and specifications shall include the 90% submittal with corrections incorporated including the annotated comments indicating what corrections were done on the 50% submittal based on comments on the 90% submittal. Architectural specifications must be complete with all edits incorporated in the specification text.

13.2.3.2 All architectural drawings shall be coordinated with the other engineering disciplines. Ensure that the plans are in compliance with the applicable codes. It will be the Contractor's responsibility to implement the comments generated from any design review submittal as well as verify the consistency between plans and specification. The evaluation of the Contractor's submittals shall be based on

degree to which the submittal meet the requirements set forth in this document and the specifications.

13.2.3.4 Comprehensive Interior Design package shall include the 90% submittal with corrections incorporated including the annotated comments indicating what corrections were done on the 90% submittal.

13.2.4 Structural Design

13.2.4.1 Furnish complete checked calculations for all structural members. Incorporate any changes required by comments on 90% Design Submittal.

13.2.4.2 Prior to this submittal, structural drawings shall be coordinated with all other design disciplines.

13.2.4.3 The final structural drawings shall contain the following information as a set of general notes:

The allowable soil bearing value.

The design stresses of structural materials used.

The design live loads used in the design of various portions of the structures.

The design wind speed.

The seismic acceleration coefficients, seismic use group, and performance level criteria used in design.

13.2.4.4 All structural drawings and calculations shall be checked and stamped by the designer of record (a registered Professional Engineer).

13.2.5 Specific Mechanical and Plumbing Requirements:

13.2.5.1 The mechanical and plumbing analysis, drawings and specifications shall include the 90% submittal with corrections incorporated including the annotated comments indicating what corrections were done on the 90% submittal based on comments on the 90% submittal. Mechanical and plumbing specifications must be complete with all editions incorporated in the specification text.

13.2.5.2 In addition to items submitted in the paragraph 11.4.7.1, the drawings shall be revised to include:

Double line ductwork

Double line piping for all piping 100 mm (4 in.) or larger on 1:50 drawings

Double line piping for all piping 200 mm (8 in.) or larger on 1:100 drawings

Thermostat locations

Size of all ductwork

Size of all piping

All details

13.2.5.3 Details: Construction details, sections, elevations, etc., shall be provided where required for clarification of methods and materials of design. All roof and exterior wall penetrations shall be detailed on the drawings.

13.2.6. Fire Protection: The Fire protection analysis, drawings and specifications shall include 90% submittal with corrections incorporated including the annotated comments indicating what corrections were done on the 90% submittal based on comments on the 90% submittal. Fire protection specifications must be complete with all editions incorporated in the specification text.

13.2.7 Specific Electrical and Electronic Requirements:

13.2.7.1 The Electrical and Electronic systems design analysis, drawings, and specifications shall

include the 90% submittal with corrections incorporated, including the annotated comments indicating what corrections were done on the 90% submittal based on comments on the 90% submittal. All requirements specified in the 90% submittal must be developed and completed to this 100% stage.

13.2.8 Kitchen Requirements: The kitchen design analysis, drawings and specifications shall include the 90% submittal with corrections incorporated including the annotated comments indicating what corrections were done on the 90% submittal based on comments on the 90% submittal. Mechanical and plumbing specifications must be complete with all editions incorporated in the specification text.

13.2.9 Specifications: Provide final specifications. The Contractor shall make final identification of all materials and finishes at this stage.

13.2.10 Sustainable Design: Provide a revised completed SPiRiT checklist to show compliance with the silver level of the SpiRiT checklist due to changes in the design from the 90% submittal to the 100% submittal.

14.0 DESIGN RELATED PRODUCTS

14.1 Architectural Renderings: Contractor shall provide the original and three copies of each ground level perspective artist's renderings of completed typical facilities with walks, parking, and landscaping. Renderings shall be no smaller than 14" x 18" or larger than 28" x 36", multi-colored, and shall be suitably titled, matted, and framed.

14.2 DD Form 1354: Three (3) sets of DD Form 1354, Transfer and Acceptance of Military Real Property shall be prepared in accordance with ER 415-345-38 and submitted to the Contracting Officer.

14.3 Reproduction: Upon Government approval of 100% design documents, the original will be returned to the Contractor for reproduction purposes. The Contractor will be responsible for his own reproduction as well as reproduction for Government use. The Government will require the same number of copies of the plans and specifications as were required for the review stages, no color boards will be required. The originals will be retained by the Contractor for recording of as-built conditions. Upon completion of the project, the original design documents corrected to reflect as-built conditions will be supplied to the Government.

ATTACHMENTS

- 1 SIGN TYPES
- 2 WATER ANALYSIS
- 3 PLUMBING AND HVAC DESIGN ANALYSIS
- 4 COOLING LOAD CALCULATIONS, VAC EQUIPMENT SELECTION, PLUMBING CALCULATIONS, PLUMBING EQUIPMENT SELECTION, AND CENTRAL MECHANICAL PLANT
- 5 FIRE PROTECTION DESIGN ANALYSIS AND CALCULATIONS
- 6 FIRE ALARM SEQUENCE OF OPERATION MATRIX
- 7 EXCAVATION PERMIT
- 8 LANDSCAPE DESIGN ANALYSIS
- 9 BLAST AND PROGRESSIVE COLLAPSE VULNERABILITY ASSESSMENT
- 10 SEISMIC EVALUATION AND REHABILITATION REPORT
- 11 FOOD SERVICE DESIGN ANALYSIS
- 12 FOOD SERVICE EQUIPMENT BROCHURES
- 13 SUSTAINABLE DESIGN SPIRIT CHECKLIST
- 14 RFP LIST OF DRAWINGS
15. PROPOSAL DATA SHEET
16. UFGS SECTION 13280A ASBESTOS ABATEMENT
17. UFGS SECTION 13281A LEAD HAZARD CONTROL ACTIVITIES
18. UNDERGROUND STORAGE TANK, PCB BALLAST, AND MERCURY LIGHT SWITCH INSPECTION FOR BLDGS. 355, 356, 357, AND 358
19. ASBESTOS INSPECTION REPORTS, QUAD C - BLDGS. 357 AND 358
20. BLDG 358
21. ASBESTOS INSPECTION REPORTS, QUAD C - BLDGS. 355 AND 356
22. BLDG. 356
23. WATER DISTRIBUTION ANALYSIS
24. TELECOMM DETAILS
25. GEAR WASH/RECREATION BUILDING
26. PRELIMINARY SOILS REPORT
27. GTB DETAILS

28. QUAD C RFP INFORMATION DRAWINGS

(Am-0001)

LIST OF DRAWINGS

Drawings Dated 15 July 2003

RING NO.	DRAWING NO.	SHT NO.	TITLE
FY03 MCA PN52068 & BUP PN52069, PHASE 3A WHOLE BARRACKS RENEWAL BRIGADE COMPLEX QUAD C (RFP INFORMATION DRAWINGS) SCHOFIELD BARRACKS, OAHU, HAWAII			
1		TX-1	COVER SHEET, INDEX TO DRAWINGS, LOCATION MAP
2		TP-1	TOPOGRAPHIC SURVEY
3		AB-1	BUILDING 355 - FIRST FLOOR PLAN
4		AB-2	BUILDING 355 - SECOND FLOOR PLAN
5		AB-3	BUILDING 355 - THIRD FLOOR PLAN
6		AB-4	BUILDING 356 - FIRST FLOOR PLAN
7		AB-5	BUILDING 356 - SECOND FLOOR PLAN
8		AB-6	BUILDING 356 - THIRD FLOOR PLAN
9		AB-7	BUILDING 357 - FIRST FLOOR PLAN
10		AB-8	BUILDING 357 - SECOND FLOOR PLAN
11		AB-9	BUILDING 357 - THIRD FLOOR PLAN
12		AB-10	BUILDING 358 - FIRST FLOOR PLAN
13		AB-11	BUILDING 358 - THIRD FLOOR PLAN
14		AB-12	BUILDING 358 - THIRD FLOOR PLAN
